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Losing the Best and the Brightest: The Disappearing Wage Premium for H-1B Visa Recipients

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Losing the Best and the Brightest: The Disappearing Wage Premium for H-1B Visa Recipients

ABSTRACT

The pressure for immigration reform in the technology industry revolves heavily around the use of the H-1B visa, which allows companies to temporarily hire highly skilled workers. This Note provides an empirical analysis of the historical wages of H-1B workers and domestic workers in the technology industry to determine whether H-1B workers earn more or less than domestic workers in the same industry. In the technology industry, H-1B workers' wage premium has eroded in recent years relative to domestic workers, leading to stagnant wages that may deter the "best and the brightest" from choosing to enter into the H-1B process. To enhance the H-1B program, Congress should adopt immigration reform that sets aside a certain number of visas specifically for the technology industry. Additionally, this reform should mimic Canada's hybrid system by adopting a points-based system that gives preference to immigrants with arranged employment opportunities. Finally, as seen in the success of Canada's Provincial Nominee Program, the reform should allot these visas to each state to determine the most effective and efficient allocation of H-1B visas in the state and allow immigrants to apply directly to each state.

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If Fabien Beckers' immigration fate was left to the H-1B program, the United States would have lost Beckers and his life-saving technology company.¹ Beckers founded Morpheus Medical, now Arterys,² a company that created the first cardiac diagnostic tool that provides 3D interactivity, flow, and pressure inside the heart non-invasively via a ten-minute MRI exam.³ The company, which aims to combat cardiovascular disease, has serious life-saving potential.⁴ Beckers, a French citizen, obtained his Ph.D. at Cambridge and arrived in the United States in 2010 to attend Stanford's Graduate School of Business.⁵ After finding business partners, obtaining money from investors, and finding customers, Beckers had one last hurdle to conquer before he graduated: he needed an H-1B visa.⁶

Stakes were high. Investors in Morpheus Medical had conditioned their investments on Beckers finding a way to legally remain in the United States.⁷ Beckers's application for an H-1B visa, a specialty visa for highly skilled immigrants, was denied.⁸ He appealed the determination and was again denied.⁹ Unable to obtain an H-1B visa and running out of options, Beckers was close to facing

1. See Fabien Beckers, *Startups Speak: Immigration and the Innovation Economy*, ENGINE (May 1, 2013), <http://engine.is/issues/startups-speak-immigration-and-the-innovation-economy/191>.

2. See ARTERYS, <https://www.arterys.com/> (last visited Mar. 14, 2015).

3. See Fabien Beckers, INNOVATION MOVEMENT, <http://declareinnovation.com/Innovator-of-the-Week/Fabien-Beckers.aspx> (last visited Mar. 14, 2015).

4. See *Mission*, ARTERYS, <https://www.arterys.com/about> (last visited Mar. 14, 2015) (stating that cardiovascular disease, the disease that Arterys aims to combat, is the number one cause of mortality worldwide); see also Beckers, *supra* note 1 (referring to Morpheus Medical as a "life-saving company").

5. See Beckers, *supra* note 1.

6. See *id.*

7. See *id.*

8. See *id.* ("When my H-1B application was denied, my appeal failed, and other avenues were successively closed off . . .").

9. See *id.*

deportation.¹⁰ By a stroke of luck, Beckers eventually received an O-1 visa, a three-year “genius” visa that requires an immigrant to be at the top of their field.¹¹ However, had it been left to the H-1B program, the United States would have lost Beckers and the lives that his technology company would save.¹²

The technology industry’s demands for highly skilled workers remain largely unmet.¹³ Amidst concern regarding domestic unemployment rates and job creation, four of the largest high-tech companies in the country—Intel, Microsoft, IBM, and Oracle—had a combined ten thousand job openings in 2013.¹⁴ Some tech employers, unable to satisfy their demand for highly skilled employees with domestic workers, look to fill jobs by temporarily employing workers from overseas.¹⁵ The technology industry relies more on foreign workers than any other industry, and 61 percent of H-1B visas approved in 2012 were for computer-related occupations.¹⁶

10. See *id.* (“But since I am a French citizen, I faced deportation, and the possibility of losing the chance to build this life-saving company.”).

11. See Jessica Leber, *Silicon Valley Fights for Immigrant Talent*, MIT TECH. REV. (July 26, 2013), <http://www.technologyreview.com/news/516546/silicon-valley-fights-for-immigrant-talent/>. For a description of the O-1 visa, see *O-1 Visa: Individuals with Extraordinary Ability or Achievement*, U.S. CITIZENSHIP & IMMIGR. SERVICES, <http://www.uscis.gov/working-united-states/temporary-workers/o-1-individuals-extraordinary-ability-or-achievement/o-1-visa-individuals-extraordinary-ability-or-achievement> (last visited Mar. 14, 2015).

12. See Beckers, *supra* note 1.

13. See H.R. REP. NO. 106-692, at 15 (2000) (quoting OFFICE OF TECH. POLICY, U.S. DEPT OF COMMERCE, AMERICA’S NEW DEFICIT: THE SHORTAGE OF INFORMATION TECHNOLOGY WORKERS 1 (1997)) (“[T]here is substantial evidence that the United States is having trouble keeping up with the demand for new information technology workers.”); see also *Over 100 Leading Tech Executives Urge President Obama and Congress to Enact High-Skilled Immigration Reform*, TECHNET (Mar. 14, 2013), [hereinafter *Tech Executives*] <http://www.technet.org/over-100-leading-tech-executives-urge-president-obama-and-congress-to-enact-high-skilled-immigration-reform/> (presenting a letter from tech industry executives to address “the need for more qualified, highly-skilled professionals, domestic and foreign,” and urging the President to enact immigration reform this year).

14. See *Tech Executives*, *supra* note 13 (“Four high-tech companies alone—IBM, Intel, Microsoft and Oracle—have combined 10,000 openings in the United States.”).

15. See Jeffrey L. Gower, *As Dumb as We Wanna Be: U.S. H-1B Visa Policy and the “Brain Blocking” of Asian Technology Professionals*, 12 RUTGERS RACE & L. REV. 243, 244 (2011) (“[H-1B] visas allow for foreign professionals to enter the country for a limited period of time and are the primary mechanism for entry-level positions in the information technology sector.”).

16. See U.S. CITIZENSHIP & IMMIGRATION SERVS., U.S. DEPT OF HOMELAND SEC., CHARACTERISTICS OF H1B SPECIALTY OCCUPATION WORKERS 2 (2013), <http://www.uscis.gov/sites/default/files/USCIS/Resources/Reports%20and%20Studies/H-1B/h1b-fy-12-characteristics.pdf>; see also Gower, *supra* note 15, at 244 (“The information technology sector disproportionately relies on H-1B visas compared to other industries.”); Neil G. Ruiz et al., *The Search for Skills: Demand for H-1B Immigrant Workers in U.S. Metropolitan Areas*, BROOKINGS (July 18, 2012), <http://www.brookings.edu/research/reports/2012/07/18-h1b-visas-labor-immigration#overview> (“Computer occupations were the most highly requested occupation group in all but 11 metros of the 106 high-demand metros [among H-1B applications.]”).

The H-1B visa is a legal mechanism for technology employers to temporarily hire workers from abroad in specialty occupations,¹⁷ a term that is defined in the Immigration and Nationality Act.¹⁸ Many jobs in the technology industry qualify as specialty occupations, including computer programmers and system analysts.¹⁹ Congress enacted the H-1B visa program with the intent of helping US employers who cannot otherwise obtain needed business skills and abilities from the domestic workforce.²⁰ To quell concerns of foreign workers replacing domestic workers, Congress capped the number of visas that could be distributed every year.²¹ The competition for these visas in the technology industry remains fierce.²² In the first six days of the 2015 application period, applicants filed almost three times as many applications as the number of available visas.²³

17. See Karen Jensen, Note, *Barriers to H-1B Visa Sponsorship in the IT Consulting Industry: The Economic Incentive to Alter H-1B Policy*, 35 *FORDHAM INT'L L.J.* 1027, 1029 (2012) (“H-1B visas are temporary visas for highly skilled foreign workers that permit employment in a specialty occupation in the United States.”).

18. See 8 U.S.C. § 1184(i) (2012). The Immigration and Nationality Act defines a specialty occupation as “an occupation that requires (A) the theoretical and practical application of a body of highly specialized knowledge, and (B) attainment of a bachelor’s or higher degree in the specific specialty (or its equivalent) as a minimum for entry into the occupation in the United States.” § 1184(i)(1); see also 8 C.F.R. § 214.2(h)(4)(iii)(A) (2015).

To qualify as a specialty occupation, the position must meet one of the following criteria: (1) A baccalaureate or higher degree or its equivalent is normally the minimum requirement for entry into the particular position; (2) The degree requirement is common to the industry in parallel positions among similar organizations or, in the alternative, an employer may show that its particular position is so complex or unique that it can be performed only by an individual with a degree; (3) The employer normally requires a degree or its equivalent for the position; or (4) The nature of the specific duties are so specialized and complex that knowledge required to perform the duties is usually associated with the attainment of a baccalaureate or higher degree.

8 C.F.R. § 214.2(h)(4)(iii)(A) (2015).

19. See U.S. CITIZENSHIP & IMMIGRATION SERVS., *supra* note 16, at 2 (citing 8 C.F.R. 214.2(h)(4)(ii)) (“Specialty occupations may include, but are not limited to, computer systems analysts and programmers, physicians, professors, engineers, and accountants.”).

20. *H-1B Program*, U.S. DEPT LAB., <http://www.dol.gov/whd/immigration/h1b.htm> (last visited Mar. 14, 2015) (“The intent of the H-1B provisions is to help employers who cannot otherwise obtain needed business skills and abilities from the U.S. workforce by authorizing the temporary employment of qualified individuals who are not otherwise authorized to work in the United States.”).

21. See Gower, *supra* note 15, at 248 (“Once relatively easy to obtain, various political pressures have reduced the visa quota of non-citizens by two-thirds since 2003.”).

22. See Matt Richtel, *Tech Recruiting Clashes with Immigration Rules*, *N.Y. TIMES*, Apr. 11, 2009, <http://www.nytimes.com/2009/04/12/business/12immig.html?pagewanted=all&r=0> (noting the intense competition for H-1B visas) (“Since 2004, there has been a growing gap between the number of H-1B visas sought and those granted, through a lottery.”).

23. See Press Release, U.S. Citizenship & Immigration Servs., USCIS Reaches FY 2015 Cap (Apr. 7, 2014), <http://www.uscis.gov/news/uscis-reaches-fy-2015-h-1b-cap> (announcing, days after beginning to accept applications for H-1B visas for fiscal year 2015, a sufficient amount of applications had been received to meet the statutory cap).

Scholars are concerned about the wage outcomes of H-1B visa holders, particularly in the technology industry.²⁴ However, studies on the wages of H-1B visa holders find conflicting results. Some suggest that the high demand for these foreign workers has resulted in increased wages for H-1B visa recipients.²⁵ Others report stagnant wages, which suggests that the industry is simply hoping to capitalize on a cheap source of highly skilled foreign labor.²⁶

Tech industry leaders desire reform of the H-1B process to ensure the sustainability of the immigration system.²⁷ In 2008, Bill Gates stated that if he could change one law in the United States, it would be the H-1B visa cap.²⁸ Responding to the tech sector's concerns, a group of senators recently introduced a bill entitled the Border Security, Economic Opportunity, and Immigration Modernization Act that proposed comprehensive immigration reform.²⁹ Among other changes to the H-1B program, the bill would immediately increase the H-1B visa cap from 65,000 to 115,000, with

24. See Eric Markowitz, *H-1B Visas: Clever Trick for Cheap Tech Talent?*, INC. (July 2, 2013), <http://www.inc.com/eric-markowitz/are-h1bs-just-a-clever-trick-for-cheap-labor.html>.

25. For conflicting views on the impact of H-1B workers on domestic wages, compare Jennifer Hunt, *Which Immigrants Are Most Innovative and Entrepreneurial?: Distinctions by Entry Visa*, 29 J. LAB. ECON. 417, 443 (finding that foreign workers who enter into the United States with a temporary student or work visa earn more than domestic workers), with JOHN MIANO, CTR. FOR IMMIGRATION STUDIES, *THE BOTTOM OF THE PAY SCALE: WAGES FOR H-1B COMPUTER PROGRAMMERS 1* (2005), available at <http://www.cis.org/sites/cis.org/files/articles/2005/back1305.pdf> ("In spite of the requirement that H-1B workers be paid the prevailing wage, H-1B workers earn significantly less than their American counterparts.").

26. See *supra* note 25 and accompanying text.

27. See Somini Sangupta, *Tech Industry Pushes to Amend Immigration Bill*, N.Y. TIMES, May 19, 2013, http://www.nytimes.com/2013/05/20/technology/tech-industry-pushes-to-amend-immigration-bill.html?pagewanted=all&_r=0 (quoting Michael Moritz, Chairman, Sequoia Capital) ("America's place will be assured if we can continue to be the magnet for the smartest and most energetic young people from all over the world. We need to attract them to the U.S. and keep them here. There's a danger that this sentiment gets lost amidst all the mindless politicking."). Many large companies within the technology industry have expressed dissatisfaction with the current H-1B visa process—more specifically, the current caps placed on the system. Interest groups such as Compete America, backed by many corporations, universities, research institutions, trade associations, and FWD.us, backed by technology powerhouses such as Mark Zuckerberg and Bill Gates, have avidly petitioned Congress in support of comprehensive immigration reform. Compete America advocates for a market-based H-1B visa cap and credits the pitfalls of the H-1B system to jobs lost in America due to the shortage of skilled foreign workers. See *About us*, FWD.US, http://www.fwd.us/about_us (last visited Mar. 14, 2015); *Who We Are*, COMPETE AM., <http://www.competeamerica.org/about-us/> (last visited Mar. 14, 2015).

28. Patrick Thibodeau, *Gates to Appear Before Congress on Eve of H-1B Visa Rush*, NETWORKWORLD (Mar. 5, 2008, 12:00 PM), <http://www.networkworld.com/article/2284029/data-center/gates-to-appear-before-congress-on-eve-of-h-1b-visa-rush.html> ("If I could just change one law in the U.S. it would be this,' Gates said.").

29. Border Security, Economic Opportunity, and Immigration Modernization Act, S. 744, 113th Cong. (2013).

an upper limit set to 180,000 visas per year.³⁰ However, the bill's "good faith" clause requires a company to show that they have put forth efforts to hire domestic workers to fill the job.³¹

This Note explores the implications of the proposed changes to the H-1B process and engages in an empirical analysis of the historical wages of H-1B visa holders to determine if these temporary workers earn a wage premium or garner a wage penalty relative to their domestic counterparts. Part I discusses the H-1B process in the context of the technology industry, including an in-depth look at the proposed legislation and Congressional caps on H-1B visas.³² Part II analyzes the current state of the technology industry's labor force and the supply and demand principles underlying the industry's insistence on more H-1B visas.³³ Part III provides an empirical analysis of H-1B workers' wages to determine if they are paid a statistically significant different salary than their domestic worker counterparts.³⁴ Part IV recommends that Congress allow states to control the distribution of H-1B visas, while abolishing the good faith showing proposed for obtaining an H-1B visa.³⁵ Part IV also argues that Congress should set aside a specific number of visas for particular industries within the technology industry to address the technology industry's specific need for highly skilled workers.³⁶

I. H-1B VISAS IN THE TECHNOLOGY INDUSTRY

Employers seeking to temporarily hire foreign workers for high-skilled jobs usually proceed through the H-1B visa process.³⁷ Qualification for an H-1B visa requires an employer-employee relationship to exist in a job that qualifies as a specialty occupation related to the visa holder's degree.³⁸ The employer must agree to pay at least the "actual or prevailing wage for [each] occupation,

30. See *id.* § 4101(a)(4).

31. See *infra* Part II.

32. See *infra* Part I.

33. See *infra* Part II.

34. See *infra* Part III.

35. See *infra* Part IV.

36. See *infra* Part IV.

37. See Gower, *supra* note 15, at 244. There do exist a handful of alternatives to the H-1B visa. See Brian John Halliday, Note, *In Order to Hire the Best Person for the Job, We Have to Do What?: A Look at the H-1B Visa Program: The Short-Term Solution for Continued American Competitiveness in the Global High-Technology Marketplace*, 11 U. FLA. J.L. & PUB. POL'Y 33, 68-71 (1999).

38. See *Understanding H-1B Requirements*, U.S. CITIZENSHIP & IMMIGR. SERVICES, <http://www.uscis.gov/eir/visa-guide/h-1b-specialty-occupation/understanding-h-1b-requirements> (last visited Mar. 14, 2015) (noting the wage requirement as "Requirement 4").

whichever is higher.”³⁹ Should an applicant and their employer meet these requirements, they are eligible to apply for a H-1B visa.⁴⁰ Successful applicants must proceed through a lottery process to obtain a visa.⁴¹ A lottery for H-1B visas has been in place since the demand for these visas exceeded the statutorily mandated cap placed on the amount of visas available.⁴²

In practice, employers may apply for applications in early April.⁴³ US Citizenship and Immigration Services (USCIS) began accepting applications for H-1B visas for the 2015 fiscal year on April 1, 2015.⁴⁴ Since the enactment of the H-1B visa program in the Immigration Act of 1990,⁴⁵ the demand for these visas has consistently exceeded the supply.⁴⁶ As enacted, the H-1B visa program capped the amount of H-1B visas issued annually at the current cap, 65,000.⁴⁷

However, these caps left the technology industry with an insatiable demand for highly skilled workers in the 1990s.⁴⁸ In response to these demands, Congress enacted the American Competitiveness and Workforce Improvement Act of 1998, which raised the number of H-1B visas from 65,000 to 115,000 for 1999 to 2000, and to 107,500 for 2001.⁴⁹ Congress expected the Act to be only a short-term fix, but was quickly convinced that the technology

39. *Id.*

40. *See id.*

41. *See* Richtel, *supra* note 22.

42. *See id.*

43. *See* Press Release, U.S. Citizenship & Immigration Servs., USCIS Will Accept H-1B Petitions for Fiscal Year 2016 Beginning April 1, 2015 (Mar. 12, 2015), available at <http://www.uscis.gov/news/uscis-will-accept-h-1b-petitions-fiscal-year-2016-beginning-april-1-2015> (stating the agency will begin accepting H-1B petitions that are subject to the FY 2016 cap on April 1, 2015).

44. *Id.*

45. *See* Immigration Act of 1990, Pub. L. No. 101-649, 104 Stat. 4978; Courtney L. Cromwell, Note, *Friend or Foe of the U.S. Labor Market: Why Congress Should Raise or Eliminate the H-1B Visa Cap*, 3 BROOK. J. CORP. FIN. & COM. L. 455, 459–60 (2009) (discussing the enactment of the H-1B program).

46. *See* Ruiz et al., *supra* note 16. The graphs that chart “Demand Over Time” show the demand for H-1B visas far exceeded the number of visas issued from 2001 to 2011. *Id.*

47. *See* Cromwell, *supra* note 45, at 460 (“The protections implemented for the domestic workforce included capping the amount of H-1B visas issued annually at 65,000 (subject to increases by Congress) . . .”).

48. *See* Christopher Fulmer, Note, *A Critical Look at the H-1B Visa Program and Its Effects on U.S. and Foreign Workers: A Controversial Program Unhinged From its Original Intent*, 13 LEWIS & CLARK L. REV. 823, 833 (2009) (“During the 1990s, IT industry leaders grew concerned over a shortage of skilled workers, citing studies that found a dwindling number of U.S. college graduates in computer science, widespread job vacancies, and other signs that demand was outstripping supply at an alarming rate.”).

49. *See id.*; *see also* American Competitiveness and Workforce Improvement Act of 1998, Pub. L. No. 105-277, 112 Stat. 2681.

industry faced a continuing labor shortage.⁵⁰ Congress again took action when it passed the American Competitiveness in the Twenty-First Century Act of 2000, which raised the cap on H-1B visas to 195,000 for 2001 to 2003.⁵¹ Since 2004, the cap has hovered around 65,000 with an allowance of 20,000 additional H-1B visas for those individuals who hold advanced degrees from a US university.⁵²

The historical caps enacted by Congress are largely reactionary to the technology industry's lobbying for an increased cap.⁵³ While many hoped that the technology industry's need for foreign workers would decrease due to the amount of domestic college students graduating with computer or technology degrees, the industry's cries for an increased cap have only grown stronger.⁵⁴ The push and pull between Congress and the technology industry will only cease with comprehensive immigration reform.⁵⁵ Without this, the industry's high-skilled labor needs will remain unmet.

II. ISSUES UNDERLYING THE H-1B VISA DEBATE

A. The Proposed Legislation: A Good Faith Showing

The Border Security, Economic Opportunity, and Immigration Modernization Act was introduced into the Senate on April 16, 2013.⁵⁶ The bill, which passed the Senate by a 68–32 vote on June 27, 2013, proposes sweeping changes to the structure of our immigration

50. See Fulmer, *supra* note 48, at 833.

51. See *id.*; see also American Competitiveness in the Twenty-First Century Act of 2000, Pub. L. No. 106-313, 114 Stat. 1251.

52. See Jill H. Wilson, *Immigration Facts: Temporary Foreign Workers*, BROOKINGS (June 18, 2013), <http://www.brookings.edu/research/reports/2013/06/18-temporary-workers-wilson> (noting the cap in the graph “Temporary Worker Visas Issued”).

53. See Norman Matloff, *On the Need for Reform of the H-1B Non-Immigrant Work Visa in Computer-Related Occupations*, 36 U. MICH. J.L. REFORM 815, 822–24 (2003) (“Moreover, throughout the latter half of the 1990’s [sic], both major political parties had been anxious to curry favor with the high-tech industry, which they considered a large untapped source of campaign funding, especially in ‘soft money,’ i.e. donations to parties, which had no legal limit.”).

54. See Darrell M. West, *H-1B Visa Caps Show Need for Immigration Reform*, BROOKINGS (Apr. 16, 2014, 7:30 AM), <http://www.brookings.edu/blogs/techtank/posts/2014/04/16-h1b-visa-immigration-reform-west> (noting the “shortage of IT workers and the limited supply of H-1B visas”).

55. See *id.*

56. *Major Actions: S.744–113th Congress (2013–2014)*, CONGRESS.GOV, <https://www.congress.gov/bill/113th-congress/senate-bill/744/actions> (last visited Mar. 24, 2015); see also Border Security, Economic Opportunity, and Immigration Modernization Act, S. 744, 113th Cong. (2013).

system.⁵⁷ The main provision requires employers to have taken “good faith steps” to recruit domestic workers for the position for which the H-1B visa is sought.⁵⁸ The bill also requires employers to post the job opening on a website maintained by the US Department of Labor (DOL).⁵⁹ H-1B dependent employers⁶⁰ are further required to offer the job to “any United States worker who applies and is equally or better qualified for the job for which the nonimmigrant or nonimmigrants is or are sought.”⁶¹

The good faith requirement was met with contentious opposition in the Senate Judiciary Committee.⁶² Senator Chuck Grassley, an avid opponent of the H-1B visa process, proposed an amendment that required all employers, not just H-1B dependent employers, to make a good faith showing as provided by the statute.⁶³ However, many opponents of protectionist measures in the visa process felt that the good faith effort went too far, and the amendment failed by a wide margin.⁶⁴ The tension in the Senate surrounding the good faith requirement suggests that it will be a major sticking point in the House.⁶⁵ Because the good faith requirement was described as

57. See *Major Actions: S.744–113th Congress (2013–2014)*, *supra* note 56. On December 10, 2014, the Committee on the Judiciary held hearings on the bill but the bill has yet to pass in the House. See *id.*

58. See S. 744 § 4211. This provision reads, in relevant part:

(2) RECRUITMENT.— . . .

(G) An employer, prior to filing the application—

(i) has taken good faith steps to recruit United States workers . . . using procedures that meet industry-wide standards and offering compensation that is at least as great as that required to be offered to H-1B nonimmigrants under subparagraph (A);

(ii) has advertised the job on an Internet website maintained by the Secretary of Labor for the purpose of such advertising; and

(iii) if the employer is an H-1B skilled worker dependent employer, has offered the job to any United States worker who applies and is equally or better qualified for the job for which the non-immigrant or nonimmigrants is or are sought.

Id. (citations omitted) (internal quotation marks omitted).

59. See *id.* § 4231.

60. “An employer is considered H-1B-dependent if it has: 25 or fewer full-time equivalent employees and at least eight H-1B nonimmigrant workers; or 26–50 full-time equivalent employees and at least 13 H-1B nonimmigrant workers; or 51 or more full-time equivalent employees of whom 15 percent [sic] or more are H-1B nonimmigrant workers.” U.S. WAGE & LABOR DIV., U.S. DEP’T OF LABOR, FACT SHEET #62C: WHO IS AN H-1B DEPENDENT EMPLOYER? (2008), available at <http://www.dol.gov/whd/regs/compliance/FactSheet62/whdfs62C.pdf>.

61. S. 744 § 4211.

62. See Patrick Thibodeau, *Senators Begin Contentious H-1B Battle*, COMPUTERWORLD (May 15, 2013, 7:00 AM), <http://www.computerworld.com/article/2497436/technology-law-regulation/senators-begin-contentious-h-1b-battle.html>.

63. See *id.*

64. See *id.*

65. See *id.*

a “deal breaker” with the potential of sinking the entire bill, the good faith requirement and the lesser requirements that apply to all H-1B employers should be considered separately from the H-1B immigration bill.⁶⁶ If these requirements are included, they may cause the entire edifice of immigration reform to crumble.⁶⁷

The technology industry also vigorously opposes the good faith requirement.⁶⁸ Many within the technology industry believe that the requirement will create an unnecessary administrative burden and will make it harder for employers to use H-1B visas, should they obtain them.⁶⁹ Further, a good faith showing sorely lacks an enforcement mechanism.⁷⁰ The bill does not highlight any specific administrative procedures for companies to follow while proving their good faith effort, which leaves one wondering if this will be enforced at all.⁷¹ Before incorporating the good faith requirement into the proposed legislation, Congress should consider the potential of this provision to hinder immigration reform.⁷²

The good faith provision attempts to shore up any claims of discrimination on behalf of domestic workers.⁷³ However, the provision, which only requires employers to consider domestic workers in the hiring process, fails to consider other adverse employment actions that may befall domestic workers due to preference for H-1B employees.⁷⁴ While it is illegal to fire a domestic employee to hire a H-1B employee, H-1B opponents often present anecdotal evidence

66. *See id.*

67. *See id.*

68. *See Sangupta, supra note 27.*

69. *See id.*; *see also* Fedricka Shouten, *Deal Eases Some Hiring Restrictions for U.S. Tech Workers*, USA TODAY, May 21, 2013, <http://www.usatoday.com/story/news/politics/2013/05/21/hatch-schumer-immigration-deal-technology-h-1b-visas/2346741/> (“AFL-CIO officials charged that the Republican’s measures would ‘undercut protections for both aspiring citizens and U.S. workers.’”).

70. *See* Border Security, Economic Opportunity, and Immigration Modernization Act, S. 744, 113th Cong. § 4211(c)(2) (2013) (stating that an employer, prior to filing the H-1B application must have “taken good faith steps to recruit United States workers,” without defining the term “good faith,” the employer also must use “procedures that meet industry-wide standards,” and no enforcement mechanism to these provisions is offered).

71. *See supra* note 70 and accompanying text.

72. *See* Thibodeau, *supra* note 62.

73. *See* Press Release, Senator Chuck Grassley, Grassley Works to Eliminate Fraud and Abuse from H-1B Visa Program (Mar. 18, 2013), <http://www.grassley.senate.gov/news/news-releases/grassley-works-eliminate-fraud-and-abuse-h-1b-visa-program-0> (“When times are tough, like they are now, it’s especially important that Americans get every consideration before an employer looks to hire from abroad,’ Grassley said. ‘The legislation will benefit the American worker, while still ensuring that U.S. companies get the specialized workers they need.’”).

74. *See* S. 744 § 4211.

suggesting that this practice is far too common in technology firms.⁷⁵ The good faith provisions for both H-1B dependent employers and other H-1B employers are ineffective in providing a safe harbor from claims of discrimination by domestic workers and ultimately provide more unnecessary red tape for employers looking for temporary workers. The good faith provisions of the bill should only be mandated for H-1B dependent employers and no other showing should be required for other H-1B employers.

B. Educational Structure Overhaul

Underlying the debate on the H-1B program are views on the sufficiency of the US educational system to train new workers, particularly in the science, technology, engineering, and math (STEM) fields.⁷⁶ While many institutions of higher education placed emphasis on STEM fields in recent years, a recent US Census report stated that 75 percent of US citizens with STEM degrees are not working in that field.⁷⁷ Meanwhile, a prominent economic study on H-1B visas showed that immigrant scientists and engineers accounted for more than half of the net increase in the US science and engineering labor force since 1995.⁷⁸ Reports with similar findings have prompted backlash in the House, where representatives voiced concern over the current proposed immigration reform bill allowing for too many H-1B visas when US citizens were passed up for jobs that were given to foreign workers.⁷⁹ Yet this explanation seems incomplete, as there continues

75. See Thibodeau, *supra* note 62. For example, Senator Diane Feinstein expressed concerns through this anecdote:

A while back I met with a group of workers in San Diego, interestingly enough they, were all above the age of 50 They'd all been replaced by H-1B workers, and you saw it clearly. They were traditional engineers; the technology had moved on. What was seen to be desirable was the young, flexible, highly qualified techie, generally Asian in Californian, and I felt very badly for these people.

Id. (quoting Senator Diane Feinstein).

76. See Peter H. Schuck & John E. Tyler, *Making the Case for Changing U.S. Policy Regarding Highly Skilled Immigrants*, 38 *FORDHAM URB. L.J.* 327, 330 (2010) (“[There is] a supply shortage being created by an aging STEM population and not enough native STEM graduates.”).

77. See Wesley Robinson, *Most with College STEM Degrees Go to Work in Other Fields, Survey Finds*, *WASH. POST*, July 10, 2014, http://www.washingtonpost.com/local/education/most-with-college-stem-degrees-go-to-other-fields-of-work/2014/07/10/9aede466-084d-11e4-bbf1-cc51275e7f8f_story.html.

78. See William R. Kerr & William F. Lincoln, *The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention*, 28 *J. LAB. ECON.* 473, 473–74 (2010).

79. See Ramsey Cox, *Sessions Criticizes Gates’s Call for Visas amid Microsoft Layoffs*, *HILL* (July 17, 2014, 4:11 PM), <http://thehill.com/blogs/floor-action/senate/212599-sessions-teases-gates-call-for-immigrant-workers-yet-lays-off-18k>.

to be ten thousand job openings in four of the largest tech companies.⁸⁰ The tension between the lack of STEM graduates pursuing technology jobs and the need for H-1B workers is mounting, and immigration reform must address these issues.

The calls for a strengthened domestic educational system and a more liberal H-1B program are often made in tandem.⁸¹ These two missions seem to complement each other: First, strengthen the educational system so that domestic workers can fill highly skilled technology positions and then, use the H-1B program to fill any gaps.⁸² However, the problem with this rationale is that the H-1B program has been around for more than two decades and technology firms are still relying heavily on the program to supply a highly skilled work force.⁸³ This is contrary to the program's original intent of eventually weaning the United States off temporary foreign workers as domestic workers become superiorly skilled.⁸⁴ On the other side of the debate, studies have found that restricting the number of H-1B visas can disproportionately discourage high-ability international students from pursuing their education in the United States, implying that a restrictive H-1B policy consequently weakens the pool of undergraduate students graduating from our domestic universities.⁸⁵ Directed immigration reform will have to balance the presentation of opportunities for highly skilled foreign workers while continuing to promote the necessary infrastructure to train domestic workers to eventually fill their positions.⁸⁶

80. *Tech Executives*, *supra* note 13.

81. See Bill Gates, *How to Keep America Competitive*, WASH. POST, Feb. 25, 2007, <http://www.washingtonpost.com/wp-dyn/content/article/2007/02/23/AR2007022301697.html> (“Two steps are critical. First, we must demand strong schools so that young Americans enter the workforce with the math, science and problem-solving skills they need to succeed in the knowledge economy. We must also make it easier for foreign-born scientists and engineers to work for U.S. companies.”).

82. See *id.*

83. See Cox, *supra* note 79.

84. See Fulmer, *supra* note 48, at 825 (quoting Secretary of Labor Robert Reich) (“[W]hat was conceived as a means to meet temporary business needs for unique, highly skilled professionals from abroad is, in fact, being used by some employers to bring in relatively large numbers of foreign workers who may well be displacing U.S. workers and eroding employers’ commitment to the domestic workforce.”).

85. See Takao Kato & Chad Sparber, *Quotas and Quality: The Effect of H-1B Visa Restrictions on the Pool of Prospective Undergraduate Students from Abroad*, 95 REV. ECON. & STAT. 109, 109 (2013).

86. See *id.*

C. Wage and Age Discrimination in the H-1B Visa Program

The H-1B program also raises significant questions about labor participation and compensation among both foreign and domestic workers.⁸⁷ Several economic studies have looked at the compensation of H-1B visa holders relative to domestic workers, but their findings are inconsistent.⁸⁸ Contrary to the popular belief that foreign workers are a cheap source of labor for US firms, Mithas and Lucas find that non-US citizen information technology (IT) professionals earn a significantly higher wage than domestic IT workers, suggesting that foreign IT professionals and domestic workers are complements.⁸⁹ The study also found some evidence that restrictive visa policies and lower visa caps result in higher salary premiums for those with a work visa.⁹⁰ Other studies have found that H-1B visas benefit the companies who employ them.⁹¹

Through the H-1B program, foreign workers are statutorily protected from inequality in wages.⁹² When filing an H-1B application with the DOL, employers must pay the “required wage” to the H-1B worker for the duration of that worker’s “authorized period of stay.”⁹³ After filling out their Labor Condition Application (LCA), employers are required to pay the higher of the offered wage for the position or the prevailing wage for that position, as determined externally by the DOL.⁹⁴ The DOL’s Wage and Hour Division enforces the H-1B wage provisions and has the authority, after an opportunity for a hearing, to order the employer to pay the required wage rate.⁹⁵ However, the

87. See Sunil Mithas & Henry C. Lucas, Jr., *Are Foreign IT Workers Cheaper? U.S. Visa Policies and Compensation of Information Technology Professionals*, 56 MGMT. SCI. 745, 745 (2010).

88. Compare Mithas & Lucas, *supra* note 87 (finding that foreign IT professionals earn a wage premium after controlling for human capital attributes), with MIANO, *supra* note 25 (finding that H-1B workers earn significantly less than their domestic worker counterparts).

89. See Mithas & Lucas, *supra* note 87, at 760.

90. See *id.*

91. See Michael A. Clemens, *Why Do Programmers Earn More in Houston than Hyderabad?: Evidence from Randomized Processing of US Visas*, 103 AM. ECON. REV. 198, 201 (2013) (“The results suggest that, in this setting, the large majority of workers’ value arises from location alone.”).

92. See Sabrina Underwood, Note, *Achieving the American Daydream: The Social, Economic, and Political Inequalities Experienced by Temporary Workers Under the H-1B Visa Program*, 15 GEO. IMMIGR. L.J. 727, 737 (2001) (“H-1B workers are protected from inequality in wages by the provisions and regulations in the H-1B, although some criticize the federal agencies for failure to enforce the regulations.”).

93. See 8 C.F.R. § 214.2(h)(4)(iii)(B)(2) (2015).

94. See U.S. WAGE & LABOR DIV., U.S. DEPT OF LABOR, FACT SHEET #62U: WHAT IS THE WAGE AND HOUR DIVISION’S ENFORCEMENT AUTHORITY UNDER THE H-1B PROGRAM? (2008), available at <http://www.dol.gov/whd/regs/compliance/FactSheet62/whdfs62U.pdf>.

95. See *id.*

Wage and Hour Division may only initiate H-1B-related investigations through four limited mechanisms: a direct “complaint from an aggrieved person or organization;” through “specific credible information from a reliable source;” a “random investigation” for repeat “willful” violators; or when “[t]he Secretary of Labor has reasonable cause to believe that the employer is not in compliance.”⁹⁶ Therefore, protections for H-1B workers are toothless and fail to prevent wage discrimination.

Violations of wage requirements are rare, but do occur.⁹⁷ Recently, an Indianapolis-based healthcare recruiting and staffing company was charged with violating several H-1B wage obligations.⁹⁸ Among other charges, the company failed to pay the prevailing wage rate to the H-1B visa recipients.⁹⁹ The company was ordered to pay \$81,454 in civil money penalties and almost \$40,000 in back wages to six employees in violation of the H-1B wage regulations.¹⁰⁰ The order also barred the company from participating in the H-1B program for one year and will be subject to a records review by the DOL for a two-year period.¹⁰¹ On rare occasions, criminal charges may occur due to H-1B wage-related violations.¹⁰² In 2009, an IT firm was indicted on ten federal counts, including conspiracy and mail fraud, after allegedly using fraudulent documents to bring H-1B workers to the United States.

One critic of the H-1B visa program has noted two ways that an H-1B employer can abuse the system to save money in labor costs.¹⁰³ “Type I” savings occur when the employer pays an H-1B worker less than the norm for comparable American workers, while “Type II” savings occur when an H-1B employer decides to hire a

96. *Id.*

97. See Nicole Brooks, *Beware of H-1B Wage Law Violations: Company to be Debarred, Ordered to Pay Over \$120,000 in Penalties and Back Pay for H-1B/LCA Violations*, MARTINDALE, Aug. 4, 2014, http://www.martindale.com/administrative-law/article_2174862.htm; see also Jung S. Hahm, Note, *American Competitiveness and Workforce Improvement Act of 1998: Balancing Economic and Labor Interests Under the New H-1B Visa Program*, 85 CORNELL L. REV. 1673, 1698 (1999) (“Despite the large potential benefit of the H-1B visa program for the U.S. economy, the program also has proven fertile grounds for potential abuses by H-1B employers against both domestic workforce and foreign IT workers on temporary H-1B visas.”).

98. See Brooks, *supra* note 97.

99. See *id.*

100. See *id.*

101. See *id.*

102. See Moira Herbst, *Visa Fraud Sparks Arrests Nationwide*, BLOOMBERG (Feb. 13, 2009), <http://www.bloomberg.com/bw/stories/2009-02-13/visa-fraud-sparks-arrests-nationwide-businessweek-business-news-stock-market-and-financial-advice> (reporting an ongoing federal probe into H-1B visa fraud led to thirteen arrests and the indictment of IT services firm Vision Systems Group).

103. See Matloff, *supra* note 53, at 816.

young H-1B worker in lieu of an older American worker.¹⁰⁴ “Type I” savings amount to wage discrimination against H-1B workers, while “Type II” savings could amount to age discrimination against domestic workers.¹⁰⁵ Though most H-1B workers are under the age of thirty, an age discrimination argument holds less weight when applied to the technology industry, where younger workers, regardless if they are American or not, generally already have a competitive advantage because they were programming or using technology at an earlier age.¹⁰⁶ However, this “ageism” in the technology sector is cause for concern of discrimination, and this worry is not confined to the H-1B program.¹⁰⁷ Though older workers can have the same necessary skills as younger workers, there are other reasons, such as a lack of demand for high wages and benefits and less familial commitments, why the industry may prefer younger workers.¹⁰⁸ Should H-1B employers be seeking to abuse the system, “Type I” savings are the most likely to occur.¹⁰⁹ The proceeding empirical analysis seeks to determine if “Type I” savings are actually present in the technology industry.¹¹⁰

III. DATA AND THEORETICAL FRAMEWORK

A. Theoretical Framework

Economic studies suggest that the wages of both American workers and H-1B visa recipients are determined by the aggregate supply and demand of both foreign and domestic technology workers and whether these two groups complement or substitute each other.¹¹¹ Foreign and domestic workers will be substitutes if employers are indifferent between the two groups of workers.¹¹² These groups are complements if hiring a worker from one group increases the demand for a worker in the other group.¹¹³

Legislators who passed the American Competitiveness and Workforce Improvement Act of 1998 rejected the notion that H-1B and domestic workers are substitutes and instead focused on the

104. *See id.*

105. *See id.*

106. *See id.*

107. *See* Verne Koptoyoff, *Tech Industry Job Ads: Older Workers Need Not Apply*, FORTUNE (June 19, 2014, 10:45 AM), <http://fortune.com/2014/06/19/tech-job-ads-discrimination/> (“Critics have long accused the technology industry of ageism.”).

108. *See id.*

109. *See* MIANO, *supra* note 25, at 6.

110. *See infra* Part III.

111. *See* Mithas & Lucas, *supra* note 87, at 748.

112. *See id.*

113. *See id.*

possibility of job creation by expanding the H-1B program.¹¹⁴ The Senate acknowledged the complementary nature of the groups, stating “there is a fixed number of jobs and competition for which is a zero-sum game.”¹¹⁵ The lack of data showing a correlation between the percentage of foreign workers in a particular occupation and unemployment rates in the same occupation was particularly convincing to the legislature.¹¹⁶ An economic study that found that H-1B workers contribute to the productivity of American firms and generate jobs for American workers recently confirmed this approach.¹¹⁷ The study, which focused on Indian computer programmers, found that foreign programmers are far more valuable to US employers when they are in the United States than when they are in India, which is evidence that the cap is inhibiting economically useful transactions.¹¹⁸

Similarly, there is extensive empirical literature that aims to determine whether certain groups earn a pay premium or pay penalty.¹¹⁹ A pay premium results when the labor demand exceeds the labor supply for that labor market, causing scarcity.¹²⁰ A pay penalty occurs when there exists an excess of labor supply relative to labor demand or other factors, such as discrimination, suppressing the wages of workers.¹²¹ Should the two groups act as substitutes, an increase in the labor demand for immigrant workers will depress the labor demand of other workers, causing immigrant workers to earn a pay premium.¹²² The reverse is also true.¹²³ There is no consensus on the impact of H-1B visas on domestic worker’s wages.¹²⁴

114. See Fulmer, *supra* note 48, at 826.

115. *Id.* (quoting S. REP. NO. 105-186, at 13 (1998)).

116. See Fulmer, *supra* note 48, at 826.

117. See Clemens, *supra* note 91, at 201.

118. *Id.*

119. See, e.g., Joni Hersch, *Skin Color Discrimination and Immigrant Pay*, 58 EMORY L.J. 357, 357 (2008); Olof Åslund & Lena Hensvik, *Seeking Similarity: How Immigrants and Natives Manage in the Labor Market*, 32 J. LAB. ECON. 405, 425 (2014).

120. See Mithas & Lucas, *supra* note 87, at 748–49.

121. See Hersch, *supra* note 119, at 357 (“Discrimination is a residual inference drawn after taking into account legitimate productivity-related characteristics. Pay disparities between groups of workers that remain after taking such characteristics into account in the regression analysis are frequently attributed to discrimination.”).

122. See Mithas & Lucas, *supra* note 87, at 748–49.

123. See *id.*

124. MAGNUS LOFSTROM & JOSEPH HAYES, H-1BS: HOW DO THEY STACK UP TO US BORN WORKERS? 2 (2011), available at <http://nbn-resolving.de/urn:nbn:de:101:1-201203016393> (discussing the lack of individual level data in several economic studies and potential inaccuracies that could stem from this lack of data). Researchers have competing views on H-1B’s impact on wages. See Kerr & Lincoln, *supra* note 78, at 7 n.9 (“Studies of the impact of H-1Bs on visas are mixed.”). Compare Hunt, *supra* note 25, at 443 (finding that foreign workers who enter the United States with a temporary student or worker visa earn more than domestic

Should H-1B visa holders earn significantly less than their domestic counterparts in similar jobs, it is likely that either the supply for these temporary workers is too great or they are experiencing some sort of discrimination that will push down their wages.¹²⁵ The sheer number of applications from companies requesting H-1B visas suggests that the former is unlikely.¹²⁶ Therefore, should H-1B holders experience a pay penalty, discrimination, rather than an excess of supply, may be inferred as the source.¹²⁷ There also may be differences in other characteristics in the data, such as language proficiency or cultural familiarity, if relevant, that are not available in the data. The lower relative pay may also be discouraging highly skilled foreign workers from applying to the H-1B program, which leads to a workforce that is significantly less skilled, in which case the pay gap is not due to discrimination.

B. Labor Condition Application Data and Process

Prior research on the H-1B visa program is primarily descriptive due to data constraints and limitations.¹²⁸ However, to inform the empirical analysis, this study uses the DOL's Office of Foreign Labor Certification (OFLC) online database, which maintains micro-data with individually specified data for each Labor Condition Application (LCA).¹²⁹ Each LCA, which is a portion of the H-1B application, stipulates the required wage levels and working conditions that the sponsoring employer guarantees for the H-1B

workers), and Mithas & Lucas, *supra* note 87, at 748–49 (finding that foreign IT professionals earn a salary premium when compared to IT workers with US citizenship), with Matloff, *supra* note 53, at 822–24 (citing many studies stating that an employer will pay H-1B workers less than Americans with the same qualifications), and MIANO, *supra* note 25 (“[I]n spite of the requirement that H-1B workers be paid the prevailing wage, H-1B workers earn significantly less than their American counterparts.”).

125. See Mithas & Lucas, *supra* note 87, at 748–49; see also Hersch, *supra* note 119, at 357.

126. See Press Release, U.S. Citizenship & Immigration Servs., *supra* note 23 (stating that within ten days, the USCIS received 172,500 applications, a number exceeding the visa cap by almost three times).

127. See Underwood, *supra* note 92, at 727 (suggesting discrimination is at play with the H-1B visa program).

128. See Kerr & Lincoln, *supra* note 78, at 484 (noting issues with obtaining estimates of H-1B entry rates and population stocks, two measures which are not definitively known). To obtain a good estimate on entry rates and population stocks, see B. Lindsay Lowell, *H-1B Temporary Workers: Estimating the Population* (Ctr. for Comparative Immigration Studies, Working Paper No. 12, 2000), available at <http://ccis.ucsd.edu/wp-content/uploads/2012/08/wrkg12.pdf>.

129. See *OFLC Performance Data*, U.S. DEPT. LAB., <http://www.foreignlaborcert.doleta.gov/performance/data.cfm> (last visited Mar. 17, 2015).

worker.¹³⁰ The database, which is updated each fiscal year, contains a comprehensive record of each employer who submitted an LCA application¹³¹ in conjunction with their H-1B visa, their industry code as reported by the North American Industrial Classification System (NAICS), and whether the application was denied, withdrawn, or certified.¹³² An important advantage of the LCA data is that it measures latent demand for H-1B visas, as all applications are reported regardless of whether the H-1B visa is ultimately granted.¹³³

The LCA micro-data includes valuable parameters to obtain wage information on H-1B visa holders, such as the employer's proposed wage and the industry prevailing wage for this type of job.¹³⁴ The industry prevailing wage is not self-reported and is determined externally, usually by the State Economic Security Agency operating in each state.¹³⁵ The database also reports the 2010 Standard Occupational Classification (SOC) code for each job, which classifies workers by occupational categories.¹³⁶ Occupations may differ from industries, and occupations are often more closely linked to what an

130. See Anthony F. Silato & Scott R. Malyk, *Harsh Rulings Against H-1B Employers for LCA Violations*, AM. B. ASS'N (Sept. 25, 2012), <http://apps.americanbar.org/litigation/committees/employment/email/summer2012/summer2012-0912-harsh-rulings-against-h1b-employers-lca-violations.html>.

[T]he LCA is an attestation to the Department of Labor (DOL) that: (i) The working conditions for the foreign national will be identical to those of U.S. workers; (ii) the salary will equal either the prevailing wage in the area of employment or match the actual wage being paid to others similarly employed by the employer, whichever is greater

Id. For the actual LCA, see U.S. DEP'T OF LABOR, LABOR CONDITION APPLICATION FOR H-1B NON-IMMIGRANTS, available at <http://www.doleta.gov/regions/REG05/Documents/eta-9035.pdf>.

131. To proceed though the H-1B visa application process, an LCA application must be certified. However, this does not mean that the H-1B application will be granted, as additional paperwork is required for the H-1B application. See Halliday, *supra* note 37, at 43 ("Once the U.S. employer has properly determined the prevailing wage for the specialty occupation in question, and has obtained a certified LCA from the DOL, the employer is in a position to prepare and file the actual H-1B petition with the INS."). Once a sponsoring company submits their application, USCIS officers compare the actual wage stated on the application to the prevailing wage for the position as determined by various guidance from the DOL. See Sarah Jain, Note, *Looking to the North While Playing Doctor: Solving the H-1B Visa Problem by Following Canada's Lead*, 10 MINN. J. GLOBAL TRADE 433, 439–40 (2001).

132. See *OFLC Performance Data*, *supra* note 129.

133. See Kerr & Lincoln, *supra* note 78, at 487.

134. See *H-1B Program Database*, FOREIGN LAB. CERTIFICATION DATA CENTER, <http://www.flcdatacenter.com/CaseH1B.aspx> (last visited Mar. 17, 2015) (describing the different fields contained within the data).

135. See *id.*

136. See *H-1B iCert LCA*, U.S. DEP'T LAB., http://www.foreignlaborcert.doleta.gov/docs/lca/LCA_Record_Layout_FY13.doc (last visited Mar. 17, 2015) (noting for each field name the description of the field); see also *Standard Occupational Classification*, BUREAU LAB. STAT., <http://www.bls.gov/soc/> (last visited Mar. 17, 2015).

individual earns.¹³⁷ Industry classifications are based on the type of activity at an individual's work, while an occupation is the kind of work a person does to earn a living.¹³⁸ Individuals are sorted into industries based on the SOC code, rather than the NAICS code, for each individual's job because certain workers may be hired into technology companies but not perform technology work, such as performing administrative or management work instead.¹³⁹ As a result of using the SOC code to dictate whether the individual is in a technology occupation, this study captures only those who perform technical work.¹⁴⁰ Additionally, this study restricts the sample to only H-1B visa seekers.¹⁴¹

Table 1 reports the summary statistics for H-1B LCA applications for each year. All wage information is reported in 2013 dollars.

Table 1. LCA Statistics

	2013 H-1B LCA Application Data
Total Number of Applications Filed	420,385
Percentage of Applications Certified	86%
Percentage of H-1B Recipients in the Technology Industry	64%
Mean Hourly Wage of all H-1B Recipients	\$39.83
Mean Hourly Wage of All H-1B Recipients in the Technology Industry	\$38.87

137. See Mike Walden, *Occupation vs. Industry*, N.C. ST. U. (Nov. 3, 2006, 8:35 AM), http://www.ncsu.edu/project/calcommblogs/economic/archives/2006/11/occupation_vs_i.html.

138. See *id.*

139. See Leslie J. Pollack et al., *A Common Language for Classifying and Describing Occupations: The Development, Structure, and Application of the Standard Occupational Classification*, 41 HUM. RESOURCE MGMT. 297, 297 (2002).

140. See *id.*

141. The LCA micro-data also includes information on individuals seeking to obtain an H-2B visa, or specific H-1B visas from Singapore and Chile, for example. This study only seeks to capture those visas that will be affected by the H-1B visa cap, and therefore drops all observations that are not traditional H-1B visas. See *H-1B iCert LCA*, *supra* note 136.

Mean Hourly Wage of H-1B Tech Workers in Silicon Valley	\$45.94
Percentage of Employer Wages Higher than the Industry Prevailing Wage	76%
Percentage of Employer Wages Higher than the Industry Prevailing Wage in the Technology Industry	77%

As detailed in the LCA micro-data, the number of applications far exceeded the 2013 statutory cap on H-1B visas by a factor of almost 6.5.¹⁴² The bulk of applications, 86 percent, were certified and proceeded to the next step of the process.¹⁴³ While H-1B applicants in the technology industry earn a slightly lower wage than the average H-1B applicant, H-1B tech applicants in Silicon Valley earn a significantly higher wage than the average H-1B applicant.¹⁴⁴ More than three-fourths of employers, including 77 percent of employers within the technology industry, paid a higher wage than the industry at large, which suggests that H-1B workers earn a pay premium compared to domestic workers.¹⁴⁵

C. *The National Survey of College Graduates*

In addition to the LCA micro-data, this study utilizes the National Survey of College Graduates (NSCG), a nationally representative survey conducted by the National Science Foundation.¹⁴⁶ This study utilizes the two most recent publicly available waves of the NSCG, which surveyed individuals in 2010 and 2003.¹⁴⁷ The 2010 survey is a stratified random sample of respondents to both the American Community Survey and the 2008 NSCG who reported having a bachelor's degree or higher.¹⁴⁸ The 2003 NSCG is a

142. The statutory cap in 2013 was 65,000. See Press Release, U.S. Citizenship & Immigration Servs., USCIS Reaches Fiscal Year 2013 H-1B Cap (June 12, 2012), <http://www.uscis.gov/news/uscis-reaches-fiscal-year-2013-h-1b-cap>.

143. See *supra* Table 1.

144. See *supra* Table 1.

145. See *supra* Table 1.

146. See *National Survey of College Graduates*, NAT'L SCI. FOUND., <http://www.nsf.gov/statistics/srvygrads/> (last visited Mar. 17, 2015).

147. *Id.*

148. *Id.* ("The 2010 NSCG incorporated a dual frame sample design where it selected a portion of its sample from the 2009 American Community Survey respondents who indicated

stratified random sample of respondents to the 2000 Census who reported having a bachelor's degree or higher.¹⁴⁹ Respondents currently reside in the United States and are under the age of seventy-six.¹⁵⁰ In addition to its large sample size, the NSCG is of particular use to this study because it surveys individuals that have the potential to fill the high-skilled jobs that are currently occupied by H-1B visa holders.¹⁵¹

Individuals surveyed through the NSCG who indicate that they are not a US citizen are asked if they have a temporary visa, and if so, if the visa is for work, for study or training, or is a dependent visa.¹⁵² While the survey does not distinguish between H-1B visas and other temporary work visas, H-1B visas are one of the most popular types of work visas, and notably, H-1B visas are listed first among the different types of work visas listed in the NSCG survey.¹⁵³ For purposes of empirical study, this Note will refer to all temporary work visas as H-1B visas.

Table 2 shows the summary statistics for each wave of the NCSG, with wages reported in 2010 dollars.¹⁵⁴

Table 2. Summary Statistics (NCSG)

	2003	2010
Total Sample Size	99,650	76,728
Percentage of Individuals in Technology Jobs	9.1%	6.9%

they had a bachelor's degree or higher in any field of study. The remaining portion of the 2010 NSCG sample was selected from respondents to the 2008 NSCG.”)

149. *Id.* (“The 2003 NSCG selected its sample from the 2000 decennial census long form respondents who indicated they had a bachelor's degree or higher in any field of study. The 2003 NSCG survey respondents served as the sample source for future survey cycles within the 2000 decade (i.e., the 2006 and 2008 NSCG).”).

150. *Id.*

151. *See* Hunt, *supra* note 25, at 10 (noting the NSCG's large sample size).

152. *See* ECON. & STATISTICS ADMIN., U.S. DEP'T OF COMMERCE, 2010 NATIONAL SURVEY OF COLLEGE GRADUATES 11 (2010), available at http://www.nsf.gov/statistics/srvygrads/surveys/srvygrads_newrespond2010.pdf (question E11).

153. *See id.*; *see also* *H-1B Alternatives: When No H-1Bs Are Available*, JACKSON LEWIS (Nov. 13, 2012), <http://www.jacksonlewis.com/resources.php?NewsID=4259> (“H-1B visas are the most popular employment-based visa for professional workers.”).

154. For this analysis, the study used a restricted sample of those with hourly wages between two dollars and one thousand dollars. Technology jobs include all computer and information scientists, computer support specialists, computer system analysts, database administrators, network and computer systems administrators, network systems and data communications analysts, other computer information science occupations, and computer software engineers. *See National Survey of College Graduates, supra* note 146.

Percentage of Foreign Born Individuals	21.3%	25%
Percentage of Individuals with Temporary Work Visas	1.3%	1.8%
Average Total Annual Income	\$85,940	\$82,482
Average Total Income of Tech Workers	\$93,143	\$89,560
Average Total Income of Foreign Born Workers	\$92,140	\$90,296
Average Total Income of Domestic Workers	\$84,288	\$79,794
Average Total Income of Temporary Visa Workers	\$83,874	\$92,774
Average Total Income of Temporary Visa Tech Workers	\$88,700	\$89,251

Though immigrants make up nearly one-quarter of the NSCG 2010 sample, these results are not surprising, as immigrants represented 24 percent of the US science and engineering workforce with a bachelor's degree in the 2000 census.¹⁵⁵ Though recent estimates of the percentage of immigrants in the workforce total only 12 percent, the NSCG captures a substantially greater immigrant population due to the prerequisite that the individual must have obtained at least a bachelor's degree before being surveyed.¹⁵⁶

After restricting the sample to only those who report a positive total income, interesting trends emerge in the data. In 2003, H-1B workers had slightly less total income than domestic workers.¹⁵⁷ H-1B workers in the technology industry earned more than both H-1B workers not in the technology industry and all domestic workers.¹⁵⁸ In 2010, H-1B workers earned more than their US-born counterparts by a significant amount, while H-1B workers in the tech industry earned slightly less than all H-1B workers.¹⁵⁹ In 2010, the average salary for

155. See Kerr & Lincoln, *supra* note 78, at 474.

156. See *National Survey of College Graduates*, *supra* note 146.

157. See *supra* Table 2.

158. See *supra* Table 2.

159. See *supra* Table 2.

tech workers was almost identical to the salary of H-1B tech workers.¹⁶⁰

IV. EMPIRICAL SPECIFICATION AND RESULTS

A. Empirical Specification

In order to determine if H-1B visa holders in fact earn a pay premium or pay penalty, a multiple regressions analysis was used to predict wage equations for H-1B visa holders using data available from the 2010 wave of the NSCG with the goal of identifying a pay differential holding characteristics constant.

The empirical specification relies on a conventional log wage equation of the following general form:

$$\text{Ln}(\text{wage}) = X\beta_1 + \beta_2 \text{H1B} + \beta_3 \text{techindustry} + \beta_4 \text{H1B} * \text{techindustry} + \epsilon \quad (2)$$

The dependent variable is the log of annual salary. “X” represents a vector of individual and firm characteristics. The main coefficient of interest for the purposes of determining the effect of having an H-1B visa in the technology industry is the coefficient on the interaction term between H-1B and tech industry, “ β_4 .” This coefficient represents the effect of having an H-1B visa in the technology industry and the premium for belonging to this demographic. Each regression controls for variables such as age, sex, location of firm, race, and education.

B. Results

The 2003 and 2010 regressions present starkly different results. Table 3 reports the effects on wage of H-1B visas holders in the technology industry in 2003 while Table 4 reports the same effects for 2010. In each regression, controls are added to the previous regression and are used to analyze the effect on the interaction coefficient of H-1B and technology industry.

160. See *supra* Table 2.

Table 3. Regression Results (2003 NSCG)

	(1)	(2)	(3)	(4)	(5)
H-1B Visa	0.026 (0.033)	-0.017 (0.034)	-0.041 (0.034)	-0.060* (0.034)	-0.063* (0.031)
Tech	0.250** (0.010)	0.160*** (0.009)	0.204*** (0.010)	0.204*** (0.009)	0.093*** (0.010)
Tech * H-1B Visa	-0.045 (0.048)	0.031 (0.048)	0.054 (0.049)	0.109** (0.047)	0.096*** (0.046)
R-squared	0.01	0.14	0.19	0.36	0.46
Sex, Race	—	Yes	Yes	Yes	Yes
Age	—	Yes	Yes	Yes	Yes
Disability	—	—	Yes	Yes	Yes
Education	—	—	Yes	Yes	Yes
Region	—	—	—	Yes	Yes
Firm and Industry Characteristics	—	—	—	—	Yes
	(1)	(2)	(3)	(4)	(5)
H-1B Visa	0.026 (0.033)	-0.017 (0.034)	-0.041 (0.034)	-0.060* (0.034)	-0.063* (0.031)
Tech	0.250** (0.010)	0.160*** (0.009)	0.204*** (0.010)	0.204*** (0.009)	0.093*** (0.010)
Tech * H-1B Visa	-0.045 (0.048)	0.031 (0.048)	0.054 (0.049)	0.109** (0.047)	0.096*** (0.046)
R-squared	0.01	0.14	0.19	0.36	0.46
Sex, Race	—	Yes	Yes	Yes	Yes
Age	—	Yes	Yes	Yes	Yes
Disability	—	—	Yes	Yes	Yes
Education	—	—	Yes	Yes	Yes
Region	—	—	—	Yes	Yes
Firm and Industry Characteristics	—	—	—	—	Yes

* $p < 0.10$; ** $p < 0.05$, *** $p < 0.01$

N=79,771: Coefficients from ordinary least squares (OLS) regressions weighted with survey weights. Log annual salary is the dependent variable. Standard errors reported in parentheses.

Table 4. Regression Results (2010 NSCG)

	(1)	(2)	(3)	(4)	(5)
H-1B Visa	0.221*** (0.046)	0.188*** (0.049)	0.148*** (0.050)	0.095** (0.046)	0.047 (0.042)
Tech	0.268*** (0.020)	0.230*** (0.019)	0.179*** (0.019)	0.173*** (0.016)	0.097*** (0.018)
Tech * H-1B Visa	-0.202*** (0.058)	-0.121** (0.059)	-0.107* (0.060)	-0.001 (0.057)	0.032 (0.052)
R-squared	0.01	0.16	0.22	0.40	0.49
Sex, Race	—	Yes	Yes	Yes	Yes
Age	—	Yes	Yes	Yes	Yes
Disability	—	—	Yes	Yes	Yes
Education	—	—	Yes	Yes	Yes
Region	—	—	—	Yes	Yes
Firm and Industry	—	—	—	—	Yes
Characteristics Industry	—	—	—	—	Yes

* $p < 0.10$; ** $p < 0.05$, *** $p < 0.01$

N=59,621 : Coefficients from OLS regressions weighted with survey weights. Log hourly wage is the dependent variable. Standard errors reported in parentheses.

In 2003, for each equation, the interaction coefficient is positive and statistically significant. This result shows that the technology

industry, relative to other industries requiring labor from H-1B visa holders, pays a wage premium.¹⁶¹ This indicates a greater need for H-1B workers or a shortage of qualified workers, which will drive up the price that firms are willing to pay individuals with the requisite skills for the job.¹⁶² In the final regression, where all demographic and firm characteristics within the NSCG are controlled for, H-1B immigrants in the tech industry earn a pay premium of almost 10 percent.¹⁶³ However, the same is not true for H-1B recipients that are not in the technology industry. Those immigrants earn a slight pay penalty of six log points, or roughly 7 percent less than their domestic counterparts.¹⁶⁴

However, in 2010, the interaction coefficient vacillates from slightly negative to slightly positive depending on the controls, indicating that the pay premium that H-1B technology workers experienced in the past years had diminished by the next wave of the NSCG. The only consistently significant subsection of the sample is domestic workers in the technology industry who earn a pay premium of 10 percent when controlling for each demographic and firm characteristics. H-1B recipients in the tech industry receive a non-significant pay premium in 2010; though the question of whether they earn a pay premium or penalty is particularly sensitive to the controls used in each regression, suggesting no effect of being an H-1B worker in the tech industry relative to other domestic tech workers.

The visa cap in place likely drives the discrepancy between the 2003 and 2010 results. While the visa cap for the fiscal year 2003 was 195,000, the cap quickly reverted back to the current level of 65,000 for the fiscal year 2004, which began in October 2003.¹⁶⁵ The summary statistics for 2003 show that, on average, domestic workers in the technology industry still earned more than H-1B workers in the tech industry.¹⁶⁶ Therefore, these results suggest that when faced with a greater supply of H-1B workers, the pay premium for H-1B workers in the tech industry will disappear. However, after controlling for other factors such as education and firm

161. For other examples of a wage premium analysis, see Hersch, *supra* note 119.

162. See Mithas & Lucas, *supra* note 87, at 748.

163. Log points, as reported in the regression tables, are easily converted into magnitudes. See Robert Halvorsen & Raymond Palmquist, *The Interpretation of Dummy Variables in Semilogarithmic Equations*, 70 AM. ECON. REV. 474, 474-75 (1980).

164. See *id.*

165. See Mithas & Lucas, *supra* note 87, at 747 (“The maximum number of new H-1B visas issued per year had an annual cap of 65,000 from fiscal years 1991 to 1998, 115,000 in 1999 and 2000, 195,000 from 2001 to 2003, and 65,000 there-after.”).

166. See *supra* Table 2.

characteristics, the pay premium is very much at play.¹⁶⁷ This suggests that there are certain educational levels and skills that H-1B workers possessed that proved so valuable that they commanded a pay premium over domestic workers in 2003.¹⁶⁸

There are a few explanations for the disappearance of such a statistically significant pay premium for H-1B tech workers in 2010 after controlling for various demographic and firm characteristics. Importantly, the 2010 cap on H-1B visas was more restrictive than the cap for the 2003 fiscal year, with only 65,000 H-1B recipients allowed to enter the country in 2010.¹⁶⁹ Over the seven-year gap between survey respondents, Americans may have learned similar skills, causing demand for H-1B technology workers to subside. However, anecdotal evidence regarding the American education system's lack of training in technology careers suggests the opposite.¹⁷⁰

Further, the disappearance of the H-1B worker's pay premium in 2010 may reflect the quality of immigrants that are coming to the United States to work in technology firms. Relocation for better job opportunities often suggests a willingness to take risks because of the challenges associated with moving to a new location with a different culture and economic environment.¹⁷¹ However, the restrictive H-1B visa cap only compounds the additional risks associated with migrating to the United States, as individuals must engage in the hiring process with a US firm with slim chances of actually obtaining employment. These institutional barriers may dissuade high-performing foreign technology workers from applying to US firms, thus lowering the quality of workers and the wages that they command.

Finally, the disappearance of the pay premium in 2010 for H-1B visa recipients may be attributed to a quelling of discrimination against all H-1B workers. As noted above, the average salary for H-1B workers significantly increased from 2003 to 2010.¹⁷² The prior pay penalty that all H-1B workers saw could likely be attributed to discrimination, as they earned lower wages than most of their

167. See *supra* Table 3.

168. See *supra* Table 3.

169. See Mithas & Lucas, *supra* note 87, at 747.

170. See Jensen, *supra* note 17, at 1028 ("Our primary and secondary school systems are increasingly failing to produce the skilled workers needed to utilize fully our ever more sophisticated and complex stock of intellectual and physical capital") (quoting *Comprehensive Immigration Reform in 2009; Can We Do It and How?: Hearing Before the Subcomm. on Immigration, Refugees & Border Sec. of the S. Comm. on the Judiciary*, 111th Cong. 10–11 (2009) (statement of Alan Greenspan, former Chairman, Federal Reserve System of the United States)).

171. See Mithas & Lucas, *supra* note 87, at 749.

172. See *supra* Table 2.

equivalent domestic counterparts. While this was not the case in the technology industry, the equalizing of the two groups from 2003 to 2010 suggests diminished discrimination. Therefore, these statistics tell a hopeful story that discrimination has subsided for all H-1B workers.

V. SOLUTION: LESSONS FROM CANADA

To capitalize on the benefits that the H-1B program provides to the technology industry, the legislature should allot the current budget of H-1B visas as technology industry-specific visas to the states in addition to adopting a hybrid system and allowing states to nominate immigrants for H-1B visas. This solution will work to benefit both the technology industry and H-1B recipients, as well as the visa system and each state's technology industry.

A. *Set Aside Technology-Specific Visas*

As the technology industry is the most frequent user of H-1B visas,¹⁷³ Congress should allow for a sizeable portion of the current H-1B cap to go towards the technology industry, while creating different H-1B visa caps for the other industries. By allotting a large portion of visas to the technology industry, the rest of the H-1B program will be able to flourish while providing the technology industry with directed, efficient means to obtain the temporary high-skilled work they need. Those not in the technology industry will benefit from reduced competition in the H-1B lottery, which has historically flooded the H-1B lottery with requests.¹⁷⁴

A large portion of H-1B visas should be allocated to the technology industry, on the stipulation that each company receiving the visa follows the Immigration and Nationality Act. Allowing technology companies to vie for specific visas independent of other industries will allow for greater self-policing of the potential abuses in the H-1B system. Technology companies who want to utilize these visas will act as enforcement mechanisms such that others in the industry do not jeopardize their opportunity to use the visa, as abuses of the H-1B process are what Congressional leaders point to when

173. See Gower, *supra* note 15, at 244 ("The information technology sector disproportionately relies on H-1B visas compared to other industries."); see also Ruiz et al., *supra* note 16 (reporting that among H-1B applications, computer occupations were the most highly requested occupation group in all but 11 metros of the 106 high-demand metros).

174. See Ruiz et al., *supra* note 16.

opposing the expansion of the H-1B visa program.¹⁷⁵ Should H-1B abuses continue to occur, the expansion of the program may be in jeopardy.¹⁷⁶ As a result, technology leaders will be more vigilant and vocal about opposing H-1B abuses. This will lead to greater transparency in the visa process and less abuse of the system, which will benefit the overall H-1B and visa systems.

B. A Hybrid System

Two competing models exist for selecting economic immigrants in industrialized nations: points-based and employer-led selection.¹⁷⁷ A points-based system, as adopted in the United Kingdom and Denmark, allows immigrants who have a sufficient number of skills and experiences to enter the country.¹⁷⁸ Employer-based systems, as seen in the US H-1B process, allow employers to select their workforce subject to government regulations.¹⁷⁹ Many countries, such as Australia and Canada, have adopted hybrid systems, which balance the flexibility of point systems while prioritizing employer demand.¹⁸⁰ To remain competitive, the United States must shift from their employer-based selection to a hybrid approach.

In a points-based system, the government controls the flow of immigrants by requiring immigrants to apply directly to the government.¹⁸¹ The government selects immigrants by allotting a number of points to each immigrant quality that they desire: education, language, and work experience in high-demand occupations and selecting the immigrants that have the most points.¹⁸² The points-based system allows for flexibility in response to industry demand, but many immigrants arrive to the host country without a job offer and some are unable to find work.¹⁸³ Recent research

175. See Patrick Thibodeau, *Southern California Edison Layoffs Get U.S. Senate Attention*, IT WORLD (Feb. 6, 2015), <http://www.itworld.com/article/2881477/southern-california-edison-layoffs-get-us-senate-attention.html>.

176. See *id.*

177. See DEMETRIOS G. PAPADEMETRIOU & MADELINE SUMPTION, MIGRATION POLICY INST., *RETHINKING POINTS SYSTEMS AND EMPLOYER-SELECTED IMMIGRATION 1* (2011), available at http://www.migrationpolicy.org/pubs/rethinking_pointssystem.pdf.

178. See *id.*

179. See *id.*

180. See *id.* at 9.

181. See *id.* at 2.

182. See *id.*

183. See *id.* at 3.

suggests that points-based systems may contribute to “brain-waste” as they under-employ foreign workers once they enter the country.¹⁸⁴

In contrast, employer-based systems allow employers to select the applicants that they wish to employ.¹⁸⁵ The US H-1B visa system is a prime example of the advantages and disadvantages of the employer-based system.¹⁸⁶ While foreign workers have little risk of being unemployed, concerns abound that employers will pay below-market wages or will contribute to illegal immigration once the temporary work visa period ends.¹⁸⁷

Hybrid systems combine the best of both the points-based systems and employer-based systems.¹⁸⁸ Hybrid systems prioritize employer demand while using a points test to distinguish between immigrants, most often used by awarding points for a job offer.¹⁸⁹ Both Canada and New Zealand have implemented a hybrid system by utilizing point systems while also allowing some form of employer-selected immigration.¹⁹⁰ For instance, Canada uses the point system but awards up to ten extra points for immigrants who have a job offer.¹⁹¹ Canada awards up to ten points for arranged employment, but offers a maximum of twenty-five points for education and twenty-eight points for language.¹⁹²

The US H-1B visa system should adopt Canada’s hybrid system by awarding points for not only education and language, but also arranged employment, experience, and adaptability.¹⁹³ This hybrid system for the H-1B visa system will prefer the “best and brightest” for entry into the country, while prioritizing actual employer demand by awarding extra points for arranged employment. The hybrid system will not only once again encourage highly skilled individuals to apply for an H-1B visa, but will also ensure that the US technology sector is getting the highly skilled individuals that it needs.

184. See *id.* at 4. For recent research on points-based systems, see DEPT OF IMMIGRATION & CITIZENSHIP, ADDITIONAL RESULTS FROM THE CONTINUOUS SURVEY OF AUSTRALIA’S MIGRANTS, available at http://www.immi.gov.au/media/publications/research/_pdf/csam-additional-results.pdf.

185. See PAPADEMETRIOU & SUMPTION, *supra* note 177, at 3.

186. See *id.*

187. See *id.* at 4.

188. See *id.* at 5.

189. See *id.* at 5–6.

190. See *id.* at 6.

191. See *Canada Immigration Points Calculator*, WORKPERMIT.COM, http://www.workpermit.com/canada/points_calculator.htm (last visited Mar. 17, 2015).

192. See *id.*

193. See *id.*

C. A State-Centric System

After adopting a hybrid system, the United States should also adopt a state-centric system that allows each state to nominate immigrants for an H-1B visa. The technology-specific visas should be allotted to each individual state, based on the demand for H-1B visas and the population of the state and size of the state's technology industry. Canada recently adopted the Provincial Nominee Program (PNP), which allows provinces and territories to nominate immigrants for visas.¹⁹⁴ While most of the provincial nominees will have to have an offer of employment, the territory will also have to determine if each candidate meets their own requirements in an informal points-based system.¹⁹⁵ This system embodies both the hybrid system and a state-centric system, and the United States should adopt a similar program.

Canada's PNP requires immigrants to first apply directly to the province or territory where the immigrant wants to settle.¹⁹⁶ After a province nominates an immigrant, they then apply to Citizenship and Immigration Canada (CIC) to become a permanent resident of Canada.¹⁹⁷ Each province has special categories that it is interested in—Ontario will get individuals interested in the Investors category,¹⁹⁸ while Saskatchewan seeks workers in the Entrepreneur and Farm category.¹⁹⁹ Each province also has an agreement with the government allowing them to select a number of immigrants, subject to regional requirements and needs.²⁰⁰ Not only is the process more streamlined for each state to get the workers it needs, but processing under the PNP is faster than any federal immigration program.²⁰¹

The United States should implement a similar program, where each immigrant directly applies to the state where they are interested in working. States, like provinces in Canada, will advertise for the specific industry they are seeking workers in and will nominate

194. See *Provincial Nominee Program (PNP) Immigration*, PNP IMMIGR., <http://pnpimmigration.com/> (last visited Mar. 17, 2015).

195. See *id.*

196. See *Provincial Nominees*, GOV'T CAN., <http://www.cic.gc.ca/english/immigrate/provincial/index.asp> (last visited Mar. 17, 2015).

197. See *id.*

198. See *Opportunities Ontario Provincial Nominee Program (PNP)*, CANADAVISA.COM, <http://www.canadavisa.com/ontario-provincial-nominee-program.html> (last visited Mar. 17, 2015).

199. See *Saskatchewan Immigrant Nominee Program (SINP)*, CANADAVISA.COM, <http://www.canadavisa.com/saskatchewan-provincial-nominee-program.html> (last visited Mar. 17, 2015).

200. See *Provincial Nominee Program (PNP) Immigration*, *supra* note 194.

201. See *id.*

individuals based on a hybrid system. While in Canada, immigrants are required to apply for permanent citizenship after a province nominates them, the United States should maintain a temporary immigrant status for H-1B workers.²⁰² As implemented in the United States, this state-centric program will ensure that each state obtains the workers that it needs.

However, the number of H-1B visas will continue to be subject to the legislatively mandated caps, rather than each state's agreement with the government. The DOL should be the regulatory body to fix the allotment of H-1B visas to the states and should employ expert statisticians to determine the equitable distribution of visas. The DOL, the current overseer of the H-1B lottery, not only has a large amount of institutional knowledge about the H-1B visa process, but also has a wealth of historical data on the trends for state H-1B visas.²⁰³ The DOL, not Congress, is in the best position to fairly and efficiently allocate the budget of technology visas to the states.

Moreover, after the initial allotment is in place, the states should be allowed to barter with other states to exchange H-1B visas for other temporary employment visas. Facing pressures from their own technology industries, states will be in the best position to assess the labor market in their states and the demand for H-1B visas. Should the state see more of a need for other types of temporary work visas—for instance if New York needs additional H-1B visas for fashion models or if California sees a need for more agricultural workers—the state should be able to engage in a trade for the types of visas they need.²⁰⁴

Free trade of temporary work visas will serve two purposes. First, it will ensure that H-1B visas are going to those states and companies that need them the most. By designating states as the central mechanism for distributing visas, states are free to enact the policy of distributing visas in a way that will best benefit their constituency. States will also be in a more proximate position to monitor each individual company that obtains an H-1B visa and can take disciplinary matters into their own hands should they detect H-1B violations, rather than waiting for the DOL to adjudicate the matter. The distribution of visas within states will be left up to the state legislatures, who can enact a lottery system or determine

202. See *id.*

203. See *H-1B Program*, *supra* note 20.

204. There are many types of temporary work visas other than H-1B visas. For an exhaustive list, see *Temporary Work Visas*, U.S. DEPT ST., <http://travel.state.gov/content/visas/english/employment/temporary.html> (last visited Mar. 17, 2015).

another equitable solution to the excess demand for H-1B visas that will best serve their residents.

Furthermore, allowing free trade of temporary work visas will promote economic efficiency by allowing each state to specialize in the industry that gives them the highest competitive advantage. For states that are agriculturally minded, the need for H-1B visas may be at a minimum. However, they can trade their allotted H-1B visas for agricultural temporary work visas. Both states and society will benefit from this trade, and each state will be able to specialize in the industry that gives them the greatest returns. Ultimately, allotting H-1B visas in proportion to the demands of each state will allow for a greater chance that a true market equilibrium will occur.

VI. CONCLUSION

H-1B visas are a valuable source of high-skilled labor that strengthens the US economy and provides a way to avoid labor shortages in fields that require technical knowledge. The current bill before the House—the Border Security, Economic Opportunity, and Immigration Modernization Act of 2013—offers little change to the H-1B process, other than increasing the visa cap. These visas have the potential to radically improve the immigration system for high-skilled labor should they be put to their highest use.

Setting aside specific H-1B visas for the technology industry will not only make the H-1B process fair and effective but will also benefit both the domestic workers and the foreign workers that will be working in the technology industry by creating settled expectations surrounding the probability of obtaining an H-1B visa. Further, creating a hybrid system that allows each immigrant to apply directly to the state where they would like to work will ensure that each state is getting the type of worker that it needs. Finally, by allowing states to barter with each other for temporary work visas, each state will be able to specialize in the industry that gives them the highest competitive advantage.

H-1B reform must be addressed for the sake of the domestic technology industry. The industry, struggling with labor shortages and job postings that are not filled by domestic talent, has been constrained for far too long by the H-1B visa cap. However, increasing the cap is not enough. Engaging in steps, such as a hybrid system, that will meaningfully change the way that highly skilled immigrants apply for H-1B visas is a necessary step towards meaningful

immigration reform.

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