

# Barrier to Entry: The Political Economy of H1-B Visas

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## ABSTRACT

*Securing an H-1B visa represents one of the foremost avenues for foreign workers with an advanced degree to join the U.S. labor force. In its present form, it has permitted millions of so qualified individuals (and their spouses and children) to enter the U.S. In the process, the quota system implemented by Congress consistently served as an ineffective ceiling. The proverbial fence was climbed many times, although legally. This paper analyzes the legislative history of the program economically and attempts to explain the issuance of H-1B visas utilizing socio-economic variables.*

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*“A nonimmigrant is an alien admitted to the United States for a specified purpose and temporary period but not for permanent residence.”*

U.S. Department of Homeland Security, 2006

*“AN ACT To establish operational control over the international land and maritime borders of the United States. ... This act may be cited as the ‘Secure Fence Act of 2006’.”*

H.R. 6061, pp. 1–2, September 14, 2006

## 1. Introduction

At the end of 2000, the population of the United States officially included 35 million immigrants, a figure accounting for 12.4 percent of all residents and representing an almost threefold increase since 1970 (Freeman, 2006). By the beginning of 2006, counted among the total number of foreign-born souls on U.S. soil were an estimated 11 million people who had entered the county illegally (Hoefer et al., 2006).

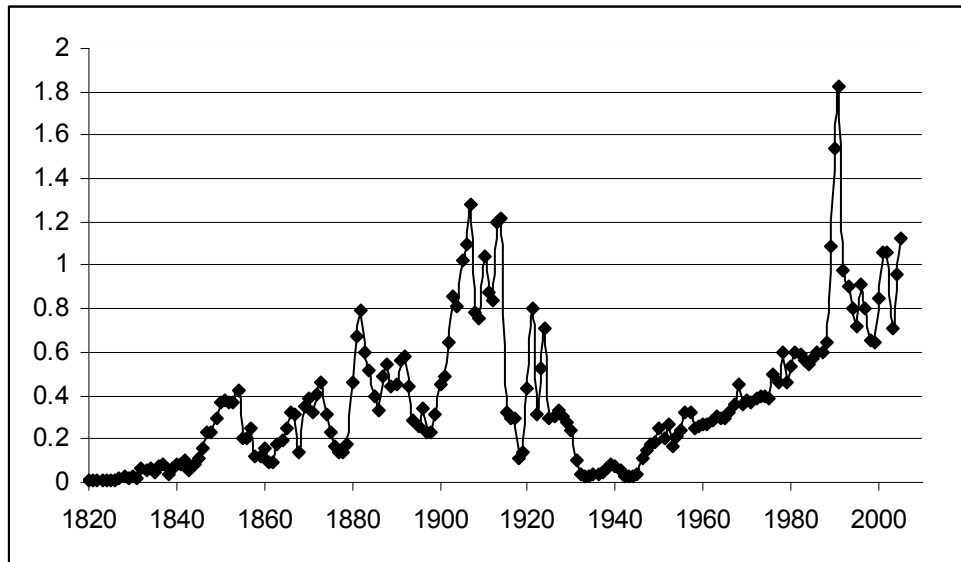
As a nation of immigrants, the United States has a long history of welcoming newcomers to its shores. Figure 1 traces the number of immigrants, by year, from 1820 to 2005. The big spike at the end of the 1980s was a result of the Immigration Reform and Control Act (IRCA) of November 6, 1986, which provided pathways to legal immigrant status for aliens who had lived in the U.S. illegally since 1982, and introduced sanctions for employers who provided work to illegal immigrants.<sup>1</sup>

The first federal activity in the area of immigration, which was theretofore under

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<sup>1</sup> The sanctions subsequently were derided as “toothless” (Chiswick, 1988).

Figure 1. Immigration to the United States, Fiscal Years 1820–2005 (in millions)



Source: U.S. Department of Homeland Security (2003, 2005).

the auspices of the individual states, is recorded on March 26, 1790.<sup>2</sup> At that time naturalization was determined to require two years of residence. This residence requirement was subsequently, in 1798, raised to 14 years. The Naturalization Act of 1802, in addition to reducing the residency requirement to five years, established a number of basic conditions for immigrants to satisfy, including allegiance to the Constitution. The first time that “undesirable immigrants” were identified in federal law and prohibited from entering was the Act of March 3, 1875 (Shughart et al., 1986, p. 83). The next extensive overhaul of immigration laws was provided by the March 03, 1903 Immigration Act, which added to the list of inadmissible immigrants, including those who held proscribed opinions. Other oft-cited legislative actions that comprehensively revamped and consolidated U.S. immigration law include the Immigration and Naturalization Act (INA) of June 27, 1952, which ended racial and gender discrimination

<sup>2</sup> The Yearbook of Immigration Statistics, now published by the U.S. Department of Homeland Security and available online, provides a legislative history of the immigration in the United States. This overview lists no less than 142 major immigration-related legislative actions between 1790 and 1996. (Available at: <http://www.uscis.gov/graphics/shared/aboutus/statistics/legishist/index.htm>, last accessed 10/03/2006.)

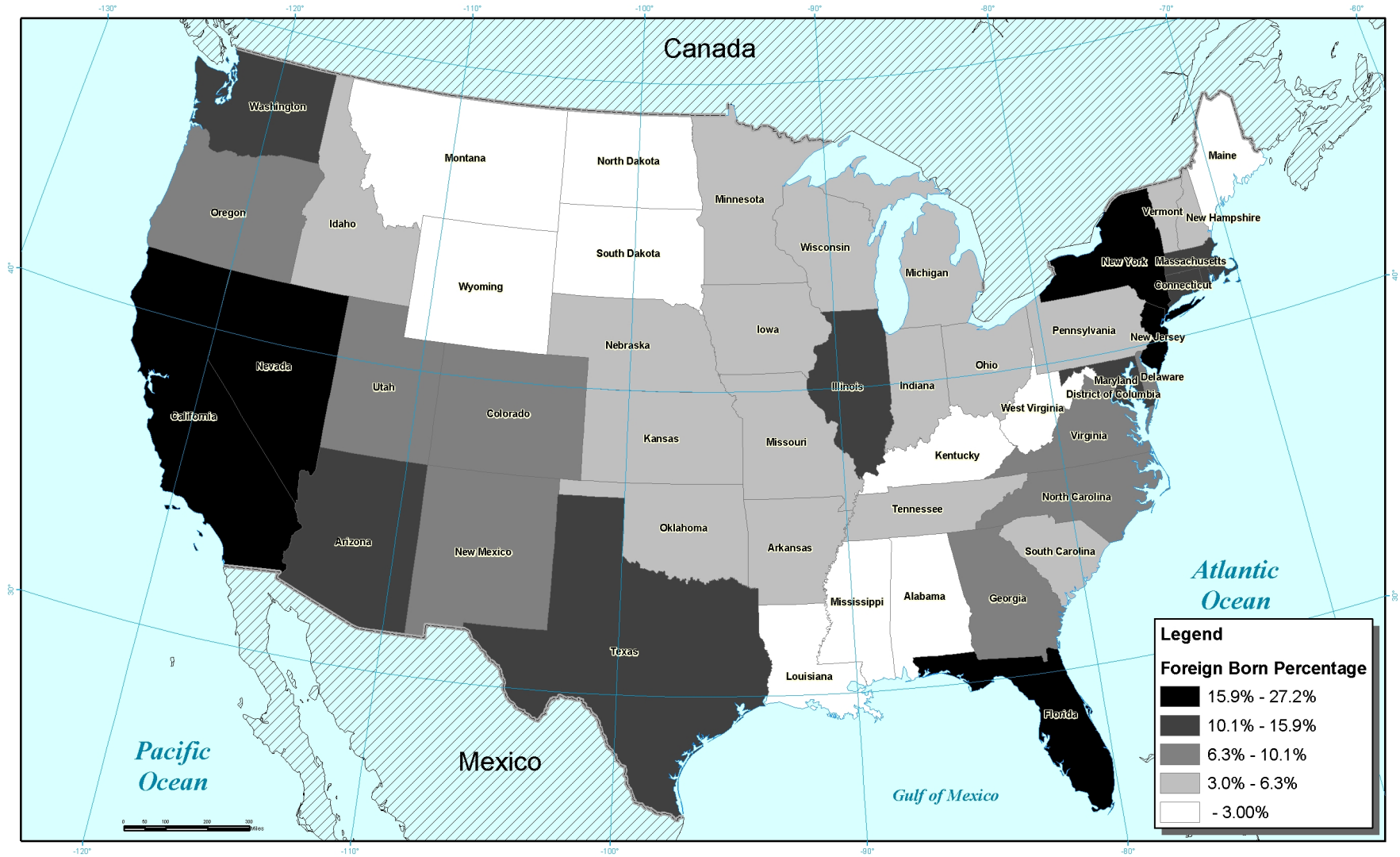
with respect to immigration, the previously mentioned IRCA of 1986 as well as the Immigration Act of November 29, 1990. Most recently, national security related legislation has increased the regulatory burden on immigrants – and even tourists – who want to enter the United States of America. Concurrently, in September of 2006, Congress passed and the President signed the “Secure Fence Act,” which is supposed to alleviate the problem of illegal immigration by building a 700-mile long layered fence along the border with Mexico. Critically, however, the law only permits but does not require the executive to spend the allotted moneys on such a fence.

Figure 2 provides a state-by-state comparison of the percentage of foreign-born residents in the continental United States. Not surprisingly, the “border states” reveal relatively higher population percentages on this measure. However, the percentages shown may mask a large immigrant influx in recent years to the southern states, such as South Carolina, Georgia and Mississippi (Camarota and McArdle, 2003).

There exist a whole host of various nonimmigrant visa categories. Appendix Table A1 provides an overview of the different categories, extending from “Transit Aliens” (C-Visas) to “Other”, which encompasses U-Visas for alien battered spouses. A number of the nonimmigrant pathways in-between are directly related to economic reasons for entering the United States, namely investors (E-Visas), temporary workers (including H-1B visas), and intra-company transferees (L-Visas).

It is the H-1B type of nonimmigrant visa that is most often cited in political disputes about immigration policies. While illegal immigrants working in low-paying occupations, i.e., as seasonal farmhands, in cleaning crews, or on construction sites, ostensibly were the intended targets of the “Secure Fence Act”, much immigration-

Figure 2. Percentage of the population that is foreign born (by state; Alaska = 5.4%, Hawaii = 17.2%; Puerto Rico = 3.0%)



Source: U.S. Census Bureau 2005 American Community Survey.

related angst is due to the apparent growing displacement of native workers by highly skilled knowledge workers who enter the country on H-1B “specialty occupation” visas, a kind of reverse outsourcing of high-quality jobs. The Department of Labor defines the H-1B program as follows:

An employer seeking to employ a foreign worker temporarily in a specialty occupation uses the H-1B program. Specialty occupations require theoretical and practical application of a body of highly specialized knowledge along with at least a bachelor's degree or its equivalent. Examples include architecture, engineering, mathematics, physical sciences, medicine and health, education, and business specialties, etc.<sup>3</sup>

There is still considerable controversy in the economics profession as to what extent legal (and illegal) immigration has adverse wage effects on U.S. employees (see, for example, Borjas, 2003; Card 2005).<sup>4</sup> The weight of the evidence does, however, support the conclusion that the distribution of skills – perhaps by statutory design – has “fatter” tails for the immigration population. This is contrary to earlier fears of a “sustained decline in immigrant labor-market quality” (Barrett, 1996, p. 335). According to a novel longitudinal study, this is especially conspicuous at the top end: “The proportion of NIS-P legal immigrants with postgraduate schooling (17+ years) is almost three times larger than that among the native-born enumerated in the 1996 CPS: 21% of the immigrants versus 8% of the native-born” (Jasso et al., 2000, p. 131).

Advocacy with regard to the wages paid to this specialized cohort of workers runs the gamut from fear of wage-depression (“cheap labor”) for native experts (Miano, 2005; an especially vitriolic example can be found in Matloff, 2006), to conclusions that the

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<sup>3</sup> Source: <http://www.ows.doleta.gov/foreign/faqsanswers.asp#h1b1>.

<sup>4</sup> The highly publicized dispute between these two eminent experts on labor economics was foreshadowed by the respective titles of their therein cited studies, specifically “The Labor Demand Curve *Is* Downward Sloping: Reexamining the Impact of Immigration on the Labor Market” (Borjas, 2003; emphasis in original) and “Is the New Immigration Really So Bad?” (Card, 2005).

evidence supports a hypothesis of equivalent wages and no evidence for adverse wage effects on natives (Zavodny, 2003). Similarly, the innovative activities of highly educated immigrants have been shown to make above-average contributions to US economic growth (Chellaraj et al., 2005). This judgment was echoed in testimony before a Senate subcommittee hearing in August of 2006, which concluded that

our historic openness to foreign workers and our flexible visa categories have enabled us to respond to changes in market forces, thereby giving the United States a great competitive advantage. The United States remains today the world leader in innovation, but other countries are working hard to catch-up. Our current visa policies are making their job easier by keeping the best global talent out of the United States. (Kaplan, 2006)

If this judgment is correct, overly restrictive limitations on entry by immigrants otherwise employable in specialty occupations may be akin to fencing off the future.

This paper attempts an analysis of the political economy of this particular nonimmigrant group, namely holders of H-1B visas. In section 2, we provide a short history of this visa category as well as a simple-interest group analysis of policies related to H-1B. Section 3 describes the available data and its limitations as well as a simple model for explaining variations in the number of H-1B visas issued. We present our preliminary results in Section 4 before concluding in Section 5.

## **2. A Short History of the H-1B Visa Program**

A number of studies in the fields of population and immigration research (e.g., Lowell, 2000; Zavodny, 2003) have traced the origins of the H-1B program back to the aforementioned INA of 1952.<sup>5</sup> That law contained, for the first time, references to a

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<sup>5</sup> An updated version of this act is available at <http://www.uscis.gov/lpBin/lpext.dll?f=id&id=slb-act>. An earlier version is available in “The Immigration and Nationality Act of 1952 as Amended Through 1961,” *International Migration Digest*, Vol. 1, No. 1 (Spring 1964), pp. 34–46.

special category of non-immigrants (H), namely those of “distinguished merit and ability” who only intend to enter the United States for a clearly temporary purpose. After numerous amendments to this act and the passing of various other laws with immigration-related provisions, the H-1B program as it exists today was implemented by the Immigration Act of 1990.<sup>6</sup> Following the passage of this law, non-immigrants were permitted to enter the United States in this visa category for employment-related purposes even if there were indications of immigration intent, such as the absence of a foreign residence (Wassem 2005, 2006). Employers were now required to fulfill a labor certification requirement ensuring that no U.S. resident with equivalent qualifications was available for the job and that prevailing wages would be paid. The act also imposed a cap of 65,000 H-1B visas per year.

In the subsequent American Competitiveness and Workforce Improvement Act of 1998,<sup>7</sup> Congress made the findings that “American companies today are engaged in fierce competition in global markets” and that “companies across America are faced with severe high skill labor shortages that threaten their competitiveness.” The legislators also took account of the continuing problems caused by the numerical limit on H-1B visas: “In fiscal year 1998 the cap is expected to be reached as early as May if Congress takes no action.” Consequently, besides creating new subcategories of H visas, the ceiling was set to 115,000 in fiscal years 1999 and 2000, and to 107,500 in fiscal year 2001. It was obligated to revert back to 65,000 in fiscal year 2002.

However, continuing shortages led to a revision of these new caps in the American Competitiveness in the Twenty-Century Act of 2000. New, significantly higher

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<sup>6</sup> The act is posted in its entirety at <http://www.thomas.gov/> (no stable URL available).

<sup>7</sup> Id.



limits of 195,000 were granted for the fiscal years 2001 through 2003. At the same time, H-1B visas granted to researchers at universities and nonprofit research institutions were exempted from the ceiling. Since 2004 the 65,000 maximum is in effect again. In addition, new protections for the native workforce included a requirement that not only salaries but also benefits for the nonimmigrant workers must be comparable to those of employed U.S. workers. A more expensive fee structure was imposed, the proceeds of which were earmarked for training and education of resident employees. The 2004 H-1B Visa Reform Act, furthermore, tightened the prevailing wage rule, raising the fraction of the prevailing wage that must be paid from 95% to 100%. It also decreed that no U.S. worker could be displaced by the new employee 90 days prior or subsequent to the hiring of the foreign citizen.<sup>8</sup>

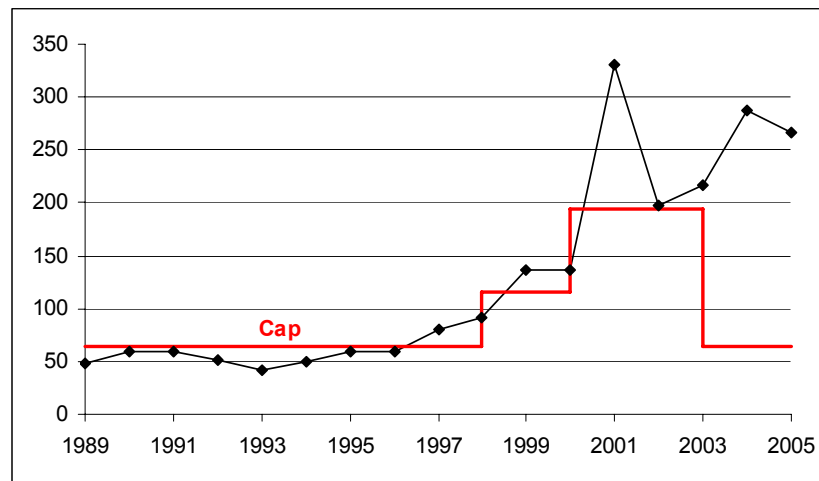
The futility of these attempts to legislate labor market demand is made clear by a recent report by the Inspector General of the Department of Homeland Security (U.S. DHS, 2005b), which presented the results of an investigation into why statutory limits were exceeded by the executive agencies tasked with enforcing the nation's immigration laws. Testimony during the U.S. Senate's Judiciary Committee hearings on "U.S. Visa Policy: Competition for International Scholars, Scientists and Skilled Workers" in August of 2006 indicated that the "H-1B cap for Fiscal Year 2007 was reached *more than four months before that fiscal year* even began" (Cooper, 2006; emphasis added). In the summer of 2006 the waiting time for companies who wanted to hire H-1B workers approached 16 months.

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<sup>8</sup> All changes to the H-1B regulations are published by the Department of Labor, Wage and Hour Division at <http://www.dol.gov/esa/regs/compliance/whd/FactSheet62/whdfs62A.htm>; last accessed August 9, 2006.

Figure 3 shows the number of approved H-1B petitions for the fiscal years 1999 to 2005. Clearly, even though the ceilings were sometimes not observed, they had long ago been rendered out-of-date by the extensive use of exemptions. In fiscal year 2001, less than half of the 331,206 approved petitions (or only 163,200) fell under the cap.

*Figure 3.* H-1B petitions approved, Fiscal Years 1989–2005, with Cap (in 1,000s)

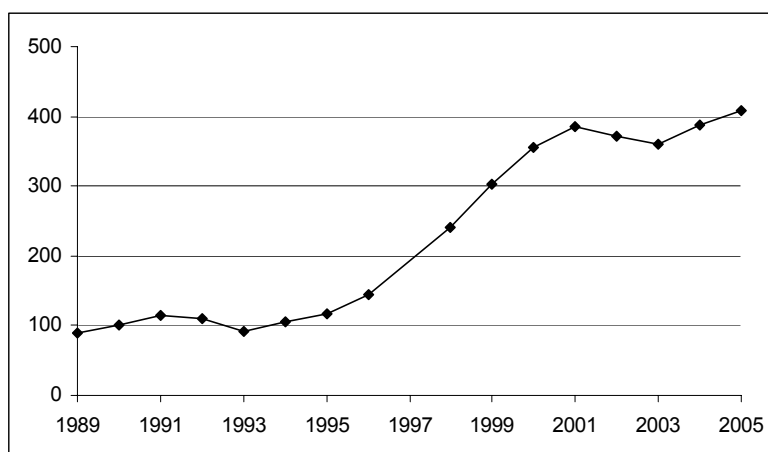


*Sources:* Lowell (2000); Yale-Loehr (2003); Wassem (2006).

A similar upward trend of in the H-1B population can be seen in Figure 4. The number of H-1B admissions to the U.S. – based on so-called I-94 data, which refers to a document that all visitors to the U.S. have to fill out when entering the country and turn back in when leaving – has steadily increased from 1989 to 2005. Although there is likely to be some upward bias (immigration statistics usually do not exclude more than one admission of the same individual in a given fiscal year), the general trend is unmistakable.

Another tendency is revealed in Figure 5. Utilizing data from the DHS, one can identify the percentage of H-1B visa-holders by state of intended destination. The pattern for 2005 (the last year for which these data are available) does mirror prior years in the

Figure 4. H-1B admissions, I-94 data, Fiscal Years 1989–2005 (in 1,000s)

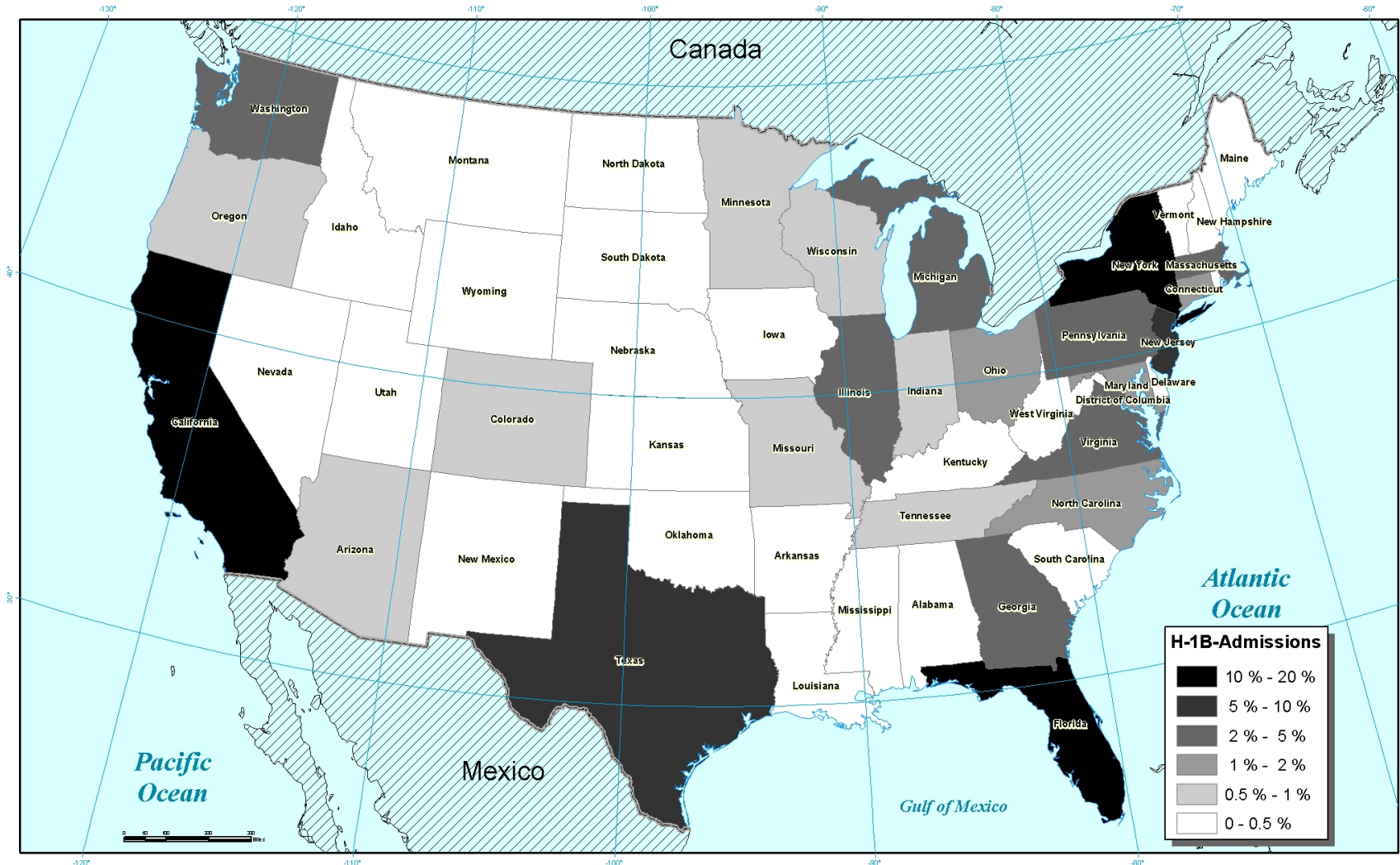


Sources: Yearbook of Immigration Statistics (1998, 2005); Immigration and Naturalization Service (1998); U.S. Department of Homeland Security (2003, 2005)

concentration of such nonimmigrant movement in California, Florida, New York, and Texas. More profoundly in its impact on congressional debates on this topic, however, is the dearth of such inflows in the middle of the country and certain southern states.

A limited number of interest models have analyzed the immigration debate either empirically (Shughart et al., 1986; from an enforcement perspective), through country comparisons of statutes (Freeman and Birrell, 2001), or theoretically (Amegashie, 2004; Kaempfer et al., 2004). Shughart et al. (1986) posited a testable hypothesis, in which enforcement actions rather than being proportionate to immigration activity changes in intensity according to the business cycle. They showed, for the time period prior to 1986, that when the economy is doing well – and the labor market experiences shortages – enforcement activity by the executive branch wanes. In times of tight labor markets, however, more such action ensues. Freeman and Birrell (2001) suggested that by 2000 a consensus had developed in the United States in which even traditionally wary labor interests such as the AFC-CIO supported the legalization of low-skilled undocumented immigrants while still fighting against the extension of additional slots for documented

Figure 5. Percentage of the H-1B admissions in 2005 (by state of destination; Alaska = 0.06%, Hawaii = 0.27%)



Source: DHS, Yearbook of Immigration Statistics, 2005, Non-Immigrant Supplemental, Table 5

specialty workers. This is somewhat different from the conclusions in Kaempfer et al. (2004), who model immigration policy under the assumption of political-support maximizing politicians and deduce that, *ceteris paribus*, “immigration restrictions are likely to be looser for skilled workers” (p. 164). The partial equilibrium model in Amegashie (2004) allows for consideration of variations in the intensity of voter preferences. The theoretical, comparative static results support the empirical findings in Shughart et al. (1986) and furthermore suggest that, all else equal, an increase in the power of unions will decrease immigration and vice versa.

It is also the case that industries which extensively rely on highly educated employees have an obvious interest in a larger worker pool to choose from. The appeal by Bill Gates, Chairman of Microsoft, to “get rid of the H-1B visa caps” is only one expression of this desire.<sup>9</sup> Table 1, listing the top five occupations for which H-1B visas were approved in 2000 and 2002, further reinforces this understanding and the preeminence of IT-related professions. It is also noteworthy that a strong minority of eventual immigrants to the United States consists of formerly nonimmigrant workers at a rate of 4% and student and exchange visitors with 6 % (Massey and Malone, 2002).

In what follows, we test a simple model to explain the number of H-1B visas approved since the current system was implemented in 1990. We will utilize socio-economic variables to explain the growth in the number of such permits issued.

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<sup>9</sup> McCullagh, D. “Gates wants to scrap H-1B visa restrictions”, *CNET News.com*, April 27, 2005, available at [http://news.com.com/Gates+wants+to+scrap+H-1B+visa+restrictions/2100-1022\\_3-5687039.html](http://news.com.com/Gates+wants+to+scrap+H-1B+visa+restrictions/2100-1022_3-5687039.html); accessed September 13, 2006.

*Table 1. H-1B approval by occupation and percentage of total, 2000 and 2002*

<b>Year 2000</b>		<b>Year 2002</b>	
<b>Occupations</b>	<b>Percentage</b>	<b>Occupations</b>	<b>Percentage</b>
Systems analysis and programming (IT-related)	54	Systems analysis and programming (IT-related)	31
Electric/electronic engineering	5	College and university education	8
Computer related (IT-related)	4	Accountants, auditors, and related occupations	5
College and university education	3	Electric/electronic engineering	4
Accountants, auditors, and related occupations	3	Computer related (IT-related)	3

*Source:* GAO analysis of immigration data, U.S. GAO-03-883, p. 12.

### **3. Data and Model**

The data used in our analysis has been procured from various sources, including the Census Bureau, the Bureau of Economic Analysis, and the Office of Immigration Statistics at the DHS. Not only do security and privacy considerations limit the researchers' access to H-1B visa data (and immigration-related data in general), but it has been a perennial concern of policymakers and social scientists alike that it is practically impossible to confidently estimate the H-1B population at any point in time. Lowell (2000, p. 13) concluded that "the administration data does not track the entries and exits of H-1s in any meaningful fashion." Similar criticism was leveled in a 46-page General Accounting Office report in 2003 with the telling title "H-1B Foreign Workers: Better Tracking Needed to Help Determine H-1B Program's Effects on U.S. Workforce."

In the subsequent part of this paper we attempt to model the issuance of H-1B visas while utilizing several of the variables suggested by the above discussion of the political economy of these decisions. These include annual (unfortunately, H-1B numbers are only available annually and, given the protracted waiting times, monthly data would

probably introduce intractable biases) indicators of the growth of the economy, average hourly earnings growth for workers with advanced degrees as well as the percentage of unionization in the United States. Appendix Table A2 defines these variables and identifies their sources. Table 2 provides summary statistics and Table 3 shows the correlation matrix.

Table 2. Descriptive statistics

	<i>H1B GROWTH</i>	<i>RELATIVE WAGE</i>	<i>UNIONS</i>	<i>DUMMY 2001</i>	<i>COMP</i>	<i>GAP</i>	<i>INTER ACTION</i>
Mean	16.4013	-42.7915	-0.0686	0.2500	0.6512	-0.8188	3.6486
St. DEV	40.1520	42.2926	0.2041	0.4472	0.5622	1.4707	42.5898
Kurt	6.4267	-0.3700	15.9464	-0.4396	-1.2837	-0.0560	0.8122
Skew	2.0714	-0.9365	-3.9906	1.2778	0.4789	0.9055	0.5853
Range	182.4900	131.6550	0.8292	1.0000	1.6303	4.8000	165.9320
Min	-40.3600	-131.7302	-0.8332	0.0000	0.0626	-2.6000	-71.0650
Max	142.1300	-0.0752	-0.0040	1.0000	1.6929	2.2000	94.8670
n	16	16	16	16	16	16	16

Table 3. Correlation matrix

	<i>H1B GROWTH</i>	<i>RELATIVE WAGE</i>	<i>UNIONS</i>	<i>DUMMY 2001</i>	<i>GDP SHARE of COMP</i>	<i>GAP</i>	<i>INTER ACTION</i>
H1B GROWTH	1						
RELATIVE WAGE	-0.2096	1					
UNIONS	-0.0242	-0.2822	1				
DUMMY 2001	-0.2637	-0.7174	0.1531	1			
COMP	0.1641	-0.8988	0.2791	0.7913	1		
GAP	0.3085	0.0431	-0.1439	-0.4181	0.0662	1	

Following the earlier discussions, one would – *a priori* – expect to find evidence that the growth in H1-B visas is positively related to the relative size of the computer

industry. According to the classical analysis of labor market decisions, the growth in real wages paid to advanced degree holders relative to the wages paid to an average worker would make it more attractive to work in the United States. As argued in Amegashie (2004), the higher the growth in the unionization rate (unionization as percent of labor force) the lower, *ceteris paribus*, should be immigration. In order to capture the increase in the overall enforcement of immigration rules after 2001, we use a dummy variable that is equal to 1 for every year starting in 2002. We also include the percentage of the deviation of real GDP from potential GDP (GAP) to see if the increased performance of the U.S. economy leads to higher growth in H1-B approvals. Finally, we have interacted the relative share of the computer industry with the output gap to determine to what extent the relationship between the growth of approvals and the relative share of the computer industry depends on output gap.

#### **4. Results and Conclusion**

Table 4 presents the results of three specifications of our empirical model. In model 1, the first four independent variables are included (excluding output gap and the interaction term). In addition to the first four independent variables, Model 2 includes output gap, and, finally, Model 3 incorporates the interaction term.

The coefficients on the variables (except the relative wage variable) are significant in the expected direction. One interesting finding is that the interaction term reveals that the increase in the growth in H1-B approvals in response to increased share of the computer industry seems to be lower when the economy is moving toward the



potential or higher than the potential. In other words, it seems that it is harder to procure these visas when they are most needed.<sup>10</sup>

*Table 4.* Results for the two empirical models. Dependent variable is the growth in H-1B visas issued between 1989 and 2005

VARIABLE	Model 1		Model 2		Model 3	
	COEFF.	P VALUE	COEFF.	P VALUE	COEFF.	P VALUE
INTERCEPT	−386.9677	0.2118	−807.9487	0.0139	−646.4849	0.0194
RELATIVE WAGE	196.9331	0.2313	395.2836	0.0156	327.8013	0.0255
UNIONS	−43.3307	0.0003	−102.8101	0.0063	−234.7115	0.0002
DUMMY 2001	−97.5022	0.0225	−194.1446	0.0018	−60.7729	0.0007
COMP	70.4102	0.0529	133.7391	0.0025	106.9625	0.0005
GAP			−22.3675	0.0630	0.3905	0.9582
INTER ACTION					−35.9790	0.0181
R-Square	0.48		0.69		0.79	
Adjusted R-Square	0.29		0.53		0.66	
F-Stat	2.53		4.42		5.94	
Overall Significance	0.1006		0.022		0.0093	

*Notes:* Standard errors are corrected for heteroscedasticity using the Newey-West method; t-statistics are shown in parentheses.

This paper analyzes the legislative history of a particular nonimmigrant visa program in the United States of America and models the issuance of such visas for the time period from 1989 to 2005 using socio-economic variables. At the beginning of this period the H-1B program as it is known today was initiated through the passage of the Immigration Act of 1990. We determine that the change in the number of “specialty

<sup>10</sup> The third model has the variance inflation factors of the two of the independent variables exceeding 10 (the highest is 15). It is probably due to the interaction term. In all three models, there was no heteroscedasticity and the tests for autocorrelation were inconclusive.

occupation” worker permits issued, as predicted by theoretical models, is negatively impacted by additional enforcement requirements and the level of unionization. Annual changes in the growth of wages for workers with an advanced degree are not found to have any significant effect. Puzzlingly, an increase in economic growth is shown to have a negative impact on the number of permits issued as well. However, this may merely represent the echo of a quota system that is broken.

## Appendix

Table A1. Nonimmigrant classes of admission

<b>Class</b>	<b>Description</b>
<b>Transit aliens</b>	
C-1	Aliens in continuous and immediate transit through the United States
C-2	Aliens in transit to the United Nations Headquarters District
C-3	Foreign government officials, attendants, servants, and personal employees, and spouses and children in transit
C-4	Transit Without Visa (TWOV) aliens
<b>Temporary visitors for business</b>	
B-1	Temporary visitors for business
GB	Visa Waiver Program – temporary visitors for business to Guam
WB	Visa Waiver Program – temporary visitors for business
<b>Temporary visitors for pleasure</b>	
B-2	Temporary visitors for pleasure
GT	Visa Waiver Program – temporary visitors for pleasure to Guam
WT	Visa Waiver Program – temporary visitors for pleasure
<b>Treaty traders and investors</b>	
E-1	Treaty traders and spouses and children
E-2	Treaty investors and spouses and children
E-3	Australian Free Trade Agreement principals and spouses and children
<b>Students</b>	
F-1	Students – academic institutions
F-2	Spouses and children of F-1
F-3	Canadian or Mexican national commuter students – academic institutions
M-1	Students – vocational/nonacademic institutions
M-2	Spouses and children of M-1
M-3	Canadian or Mexican national commuter students – vocational/nonacademic institutions
<b>Temporary workers and trainees</b>	
<b>H-1B</b>	<b>Temporary workers with “specialty occupation”</b>
H-1B1	Chile and Singapore Free Trade Agreement aliens
H-1C	Nurses under the Nursing Relief for Disadvantaged Areas Act of 1999
H-2A	Seasonal agricultural workers
H-2B	Seasonal nonagricultural workers
HR	Returning H-2B workers
H-3	Industrial trainees
H-4	Spouses and children of H-1, H-2, or H-3
O-1	Temporary workers with extraordinary ability/achievement in the sciences, arts, education, business, or athletics
O-2	Temporary workers accompanying and assisting O-1
O-3	Spouses and children of O-1 and O-2
P-1	Temporary workers – internationally recognized athletes or entertainers for a specific competition or performance
P-2	Temporary workers – artists or entertainers under reciprocal exchange programs with a similar organization of a foreign state
P-3	Temporary workers – artists or entertainers under culturally unique programs
P-4	Spouses and children of P-1, P-2, or P-3
Q-1	Temporary workers in international cultural exchange programs
R-1	Temporary workers in religious occupations
R-2	Spouses and children of R-1
TN	North American Free Trade Agreement (NAFTA) professional workers
TD	Spouses and children of TN
<b>Representatives of foreign information media</b>	
I-1	Representatives of foreign information media and spouses and children
<b>Exchange visitors</b>	
J-1	Exchange visitors
J-2	Spouses and children of J-1
<b>Intracompany transferees</b>	
L-1	Intracompany transferees
L-2	Spouses and children of L-1
<b>Irish Peace Process Cultural Training Program</b>	
Q-2	Irish Peace Process Cultural and Training Program aliens
Q-3	Spouses and children of Q-2

<b>Class</b>	<b>Description</b>
<b>Foreign government officials</b>	
A-1	Ambassadors, public ministers, career diplomatic or consular officers and spouses and children
A-2	Other foreign government officials or employees and spouses and children
A-3	Attendants, servants, or personal employees of A-1 and A-2 and spouses and children
<b>Representatives of international organizations</b>	
G-1	Principal resident representatives of recognized foreign member governments to international organizations, staff, and spouses and children
G-2	Temporary representatives of recognized foreign member governments to international organizations and spouses and children
G-3	Representatives of unrecognized or nonmember foreign governments to international organizations and spouses and children
G-4	Officers or employees of unrecognized international organizations and spouses and children
G-5	Attendants, servants, or personal employees of G-1, G-2, G-3, or G-4 and spouses and children
<b>NATO officials</b>	
N-1 to N-7	North Atlantic Treaty Organization (NATO) aliens, spouses, and children
<b>Other categories</b>	
BE	Bering Strait Agreement aliens
K-1	Alien fiancés(ees) of U.S. citizens
K-2	Children of fiancés(ees) of U.S. citizens
K-3	Alien spouses of U.S. citizens
K-4	Alien children of U.S. citizens
N-8	Parents of international organization special immigrants
N-9	Children of N-8 or international organization special immigrants
T-1 to T-5	Victims of a severe form of trafficking and spouses, children, parents, and siblings
U-1 to U-4	Aliens suffering physical or mental abuse as victims of criminal activity and spouses, children, and parents
V-1 to V-3	Spouses and children of a lawful permanent residents who has been waiting three years or more for immigrant visas and dependents

*Source:* Grieco (2006); Department of Homeland Security.

Table A2. Variable definitions and data sources

<b>Variable Name</b>	<b>Description</b>	<b>Source(s)</b>
<i>HIBGROWTH</i>	The percentage change in the number of H1-B visas issued, 1989–2005	Lowell (2000); Yale-Loehr (2003); Wassem (2006)
<i>RGDPGROWTH</i>	The percentage change in real GDP (2000 Dollars) from one year to the next between 1989 and 2005	Census Bureau
<i>RGDPGROWTHCOMP</i>	The percentage change in real GDP (2000 Dollars) from one year to the next between 1989 and 2005 in the computer industry	Census Bureau
<i>WAGEGROWTH</i>	The percentage change in real average hourly wages (2005 dollars) for workers with an advanced degree	Mishel et al. (2006)
<i>UNIONIZATION</i>	The growth of unions as percent of labor force	Mishel et al. (2006)
<i>DUMMY2001</i>	A dummy that is equal to zero up to and including 2001 and equal to one afterwards	

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