

THE DEMAND AND NEW LEGISLATION FOR SKILLED TEMPORARY WORKERS (H-1BS) IN THE UNITED STATES

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There has been a recent hubbub of concern about a lack of workers in the burgeoning information technology occupations in the United States and, indeed, around the globe. In this past Fall of 2000, the U.S. Congress passed legislation that will significantly increase the cap or number of permitted 'H-1B' visaholders. These are highly skilled temporary 'specialty workers' the majority of whom, as shall be shown below, work in computer-related occupations. Given U.S. pre-eminence in information technology, and a proven record of demand for skilled workers, it is likely that the new legislation will enhance U.S. access to foreign labor. This article lays out several critical pieces of the issues that surround that H-1B visa legislation. First, it briefly discusses the immediate geneses of the current visa and then goes on to lay out the major features of the new legislation. Second, it provides estimates of the H-1B workforce in the United States. Third, it describes the general characteristics of the H-1B population, in particular the number of visas issued over the past decade to nations that are leading suppliers of these visas. Finally, concluding comments entertain the nature of the shortage of information technology workers in the United States.

LEGISLATIVE HISTORY AND REGULATIONS

The H-1 visa was originally created under the Immigration and Nationality Act of 1952 and, although it had no numerical limit, never ran over 15,000 per year visas during its first two decades of life. Still, by the 1980s the numbers grew from 21,000 per year to 49,000 per year and the Immigration and Naturalization Service (INS) came under fire from organized labor and Congress for its administration of the H-1 classification.

In response to the concerns of organized labor and Congress, the INS commissioned Booz, Allen and Hamilton to conduct a study.¹ The report found the use of H-1 non-immigrants in entry and middle level positions to be inappropriate — such workers did not possess the skills intended by Congress for the visa. At the same time, they found no adverse impact on U.S. workers. Nonetheless, the legislative history indicates that there were several H-1 issues of concern. In a parallel to today's debate, some observers believed that reliance on these foreign workers was excessive and that H-1 non-

immigrants had an adverse impact on U.S. wages and working conditions.

Thus in early 1990, the INS issued a regulation that significantly tightened up the H-1 classification by articulating standards for qualification as a professional or a person of prominence. Going further, the Immigration Act of 1990 required prospective employers to file labor condition applications for the H-1B with the U.S. Department of Labor (DOL) as to wages and working conditions. The H-1B visa is a sub category of the temporary worker H category, which covers professional and other highly skilled persons. Other H categories include H1-A's who are registered nurses. Temporary workers may be admitted in H-1B status for the period of time required by the employer, up to a maximum initial stay of three years. The period of stay may be extended for up to three additional years, for a maximum total period of admission of six years. Admissions of H-1B non-immigrants were limited to 65,000 a year.

And while tightening up the H-1B classification in many areas, the legislation permitted the entry of non-

immigrant H-1B workers who may possess intent to immigrate permanently at some future time. In effect, the new legislation continued the H-1B as a temporary work authorization program. Yet, by removing the requirement of temporary intent, the H-1B differs from other non-immigrant visas and implicitly encourages a transition to permanent residency. Indeed, employers since 1970 were permitted to employ H-1 workers in jobs that were of a permanent nature, and by 1990 just over half of the employers of H-1s reported that the job was intended to continue permanently. At least half and likely many more of H-1Bs intend to stay and become permanent 'green card' residents.²

Pressures on the cap and new legislation

Beginning in 1997, the visas permitted under the 1990 Act proved not to be enough as the numbers of H-1Bs sought by employers exceeded that cap. In the closing months of 1998, the U.S. Congress passed the 'American Competitiveness and Work Force Improvement Act' (ACWIA). This legislation provided a provisional increase in the number of available H-1B visas from 65,000 per year to 115,000 per year in 1999 and 2000, and 107,500 in 2001. The numerical limit was to return to 65,000 in the year 2002.

However, the new number has not been sufficient given backlogs carried over from previous fiscal years and an ever-growing demand. Available visas under the cap ran out before years' end in 1998 and 1999. By the middle of fiscal year 2000, the INS would process no new applications. In mid-2000, with the demand for H-1B workers exceeding even the expanded cap, Congress was once again being lobbied to increase the H-1B

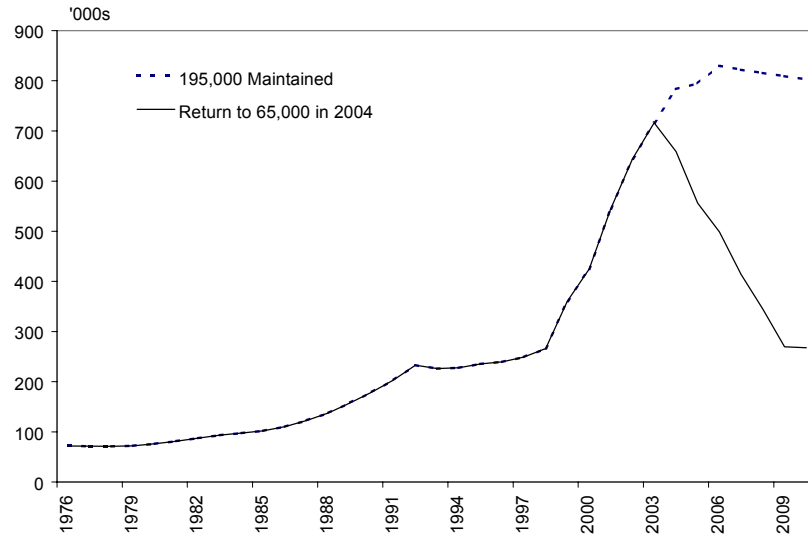
allowance.

In October of 2000, Congress overwhelmingly passed the American Competitiveness in the Twenty-First Century Act (ACTFCA). President Clinton signed the bill into law shortly thereafter. Under ACTFCA the number of H-1B visas that can be issued is increased to 195,000 for fiscal years 2001 through 2003, after which it will return to 65,000 unless Congress were to once again set a new cap. At the same time, there is no numerical cap on H-1B workers employed by a college, university, or employees of non-profit or government research organizations. Just how many research H-1Bs might be admitted outside the cap is unknown, although one estimate places the number at between 6,000 and 10,000.³ This may be about right given that, as of 1997, there were only 28,000 temporary visa holders employed in U.S. educational and governmental institutions.⁴

A couple of important new features are also added. The H-1B visa is now 'fully portable' meaning that H-1B workers may switch employers as soon as a new employer files a petition with the INS. Former law necessitated the approval of a petition before a worker could change employers. And recall that the H-1B may adjust within the United States to a permanent green card. The new law permits H-1B workers to stay beyond six years if their green card applications have been in processing for at least a year. One-year extensions may be granted until the employment visa is approved and adjustment of status is final.

Further, the per country limit no longer applies for permanent employment visas when, in any given quarter, the total number of applications received is less than the annual cap. Until now no single country was permitted more than seven

Figure 1: Estimated H-1B population, 1976-2010



per cent of the employment-based visas under which almost all H-1Bs are admitted to the United States. What this means is that large numbers of Indian, Chinese, and Filipino H-1Bs who previously faced individual caps on their country's numbers can now enter under the overall cap of 140,000 employment-based green cards.

Finally, Congress likes the idea of levying a training fee on employers and ACTFCA raises the H-1B training fee from \$500 to \$1000. The bulk of the fee goes to programs that support education and training for native-born students and workers. Unfortunately, these programs have not been evaluated. Likewise, goals to reduce the processing time required for both temporary and permanent visas are welcome, but funding is not assured.

WORKFORCE POPULATION ESTIMATES

Since the H-1 visa was created in 1952, we have had a good idea of how many H-1 workers are entering the country, but

no benchmark estimate exists of the population actually working in the country at any given point in time. Because the administrative data does not track H-1Bs, a demographic model was constructed to estimate the resident H-1B population working in the United States.⁵ The final population does not just depend on the addition of the entering cohorts over time, but must account for the rate at which they exit the H-1 population. The entering cohorts of H-1s are depleted by emigration, deaths, and adjustment to permanent status.

Figure 1 starts in 1976 with the first year for which population estimates can be generated, at which time there were 72,000 H-1 workers in the United States. The population grew to 82,000 in 1981 and, at the outset of 1991 when the new cap applied, the population of H-1Bs is estimated to have stood at 204,000. As of 2000, the population is estimated to have grown to 425,000, drawing upon entry cohorts that increased from 49,000 new H-1Bs in 1992 to 115,000 in 2000.

The forecast H-1B population shows, especially under the new ACTFCA legislation, that the population grows rapidly. It reaches 715,000 in the legislation's third year in 2003. The projections then show a decline in the H-1B population assuming that the number of H-1B visas issued drops to the 65,000 cap again in three-years time (solid line in Figure 1). On the other hand, if Congress were to keep minimum levels of 195,000 visas per year in place, momentum would see the population reaching 830,000 in 2006 before falling down to a more or less stable size of 800,000. No matter how one looks at it, the new cap will generate a very sizable population of 'temporary' workers.

Again, many of these temporary H-1B workers will desire to adjust to permanent green card status. But the employment-based green card cap is only 140,000 per

year, so it is likely that if a simple majority of H-1Bs attempt to adjust they will not be able to do so. There are other competitors for green cards, from foreign students, to intracompany transferees, to businessmen. Still, the H-1Bs will be here and they and their employers will lobby for permanent residency. Given the predictable pressures that will build from this it may well be that the U.S. Congress will next turn its attentions to an expansion of the permanent cap as well.

CHARACTERISTICS OF H-1B WORKERS

Given the precarious nature of U.S. immigration data we cannot say too much about the actual numbers of the H-1B workforce in terms of where they come from or which occupations they fill. However, in the past year new data from the Immigration and Naturalization Service permit us to say some concrete things about the characteristics of those who have entered with new visas.

Occupations

Table 1 shows the occupations of new H-1B visaholders in the first five months of fiscal year 2000. Computer occupations comprise just half of the H-1Bs approved with occupations in architecture, engineering, and surveying making up an additional 13 per cent. No other major occupational grouping was greater than 10 per cent of the total. Clearly,

Table 1: Occupations by major occupation for approved H-1B petitions, first five months of fiscal year 2000

Occupation	Total	Per cent
Computer Related	25,106	49.8
Architecture, Engineering and Surveying	6,710	13.3
Administrative Specializations	4,845	9.6
Education	3,133	6.2
Health and Medicine	1,887	3.7
Managers and Officials, n.e.c.	1,758	3.5
Social Sciences	1,391	2.8
Life Sciences	1,263	2.5
Miscellaneous Professional, Technical and Managerial	1,178	2.3
Mathematics and Physical Sciences	1,000	2.0
Art	745	1.5
Various Writing, Law, Fashion Models, Entertainment, Museum and Archival Sciences, Religion and Theology	1,353	2.7
Total Known Occupations	50,369	100.0
Occupations Not Known	1,205	-

Source: U.S. Immigration and Naturalization service, 'Characteristics of Speciality Occupation Workers (H-1B)', Washington, D.C., <http://www.ins.usdoj.gov/graphics/services/employerinfo/hlb.htm> February, 2000

Note: The total includes only 'new' H-1B petitions that are counted towards the statutory cap

there is demand for computer workers.

Unfortunately, trends cannot be followed on an industry basis because the INS does not collect industry data. If they had, it is likely that the changes by industry would reflect those seen in a sample of occupational statistics. For example, in 1989 education and nonprofit science industries dominated H-1 visas (23 per cent), followed by hospitals and health care (18 per cent), and entertainment (13 per cent). As a point of comparison, a study of the top 100 users of H-1 visas in 1998 finds that 80 per cent of H-1B employers are in information technology industries.⁶ Information technology has come to dominate the H-1B visa as no single industry has previously.

Countries of Origin

A shift in H-1 occupations has been accompanied by a shift in the countries from which H-1 visaholders come. Table 2 shows the ten leading H-1B source countries for the past decade. The Philippines was the leading country of origin for H-1s from 1989 through 1992, during the period in which medical-related occupations dominated the H-1 program. The number of Filipinos peaked in 1995, at

the end of the 'H-1A' nursing program. Indian H-1Bs grew steadily from 1989, clearly becoming the largest category in 1994, then doubling in size by 1996, and quintupling by 1999 — a remarkable pattern of growth, accounting for nearly half of all visas issued in 1999 (47 per cent).

No other country during the lifetime of the program has so completely dominated the H-1 visa. This is because India has a large supply of computer-trained workers and, most likely, because prior waves of Indian information technology workers have successfully established a beachhead in an industry that places them first in the demand queue. The information technology industry is the leading growth sector of the U.S. economy and it is drawing on the readily available source of trained IT engineers from India.

Prior Visa Status

The H-1Bs need not always apply from abroad to enter as temporary speciality workers. A sample survey of 134,400 H-1B visaholders in fiscal year 1999 shows that 40 per cent had changed to their new status from a prior temporary visa within the United States. For exam-

Table 2: H-1 visas issued by country of origin, 1989 to 1999

Country	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
India	2,144	2,697	4,102	5,552	7,606	11,301	15,528	19,203	31,686	40,247	55,047
UK	6,663	7,174	8,794	6,726	3,993	4,230	4,771	5,601	6,928	6,343	6,665
China	837	610	1,145	894	1,031	1,256	1,887	2,330	3,214	3,883	5,779
Japan	3,678	3,791	5,167	2,767	2,152	2,217	2,070	2,411	2,929	2,878	3,339
Phillipines	6,055	7,302	7,221	7,550	7,596	8,753	10,026	4,601	2,685	2,758	3,065
France	2,318	2,293	2,413	1,686	870	1,003	1,216	1,463	1,894	2,110	2,633
Germany	1,798	1,637	1,888	1,501	1,012	1,092	1,484	1,518	2,088	2,242	2,451
Mexico	2,951	3,727	3,227	2,488	1,307	1,147	1,451	1,909	2,785	2,320	2,419
Australia	872	827	1,102	990	863	1,050	1,042	1,123	1,438	1,666	1,651
Russia	2,256	3,709	3,942	1,651	1,892	1,245	1,196	1,255	1,357	1,395	1,619
TOTAL	48,820	58,673	59,325	51,667	42,206	49,284	59,093	60,072	80,608	91,378	116,695

Source: U.S. Department of State, Visa Office

ple, 23 per cent or 30,800 had changed from 'foreign student' status (F visa). Smaller percentages, just three per cent, had changed from spouse of a temporary speciality worker (H-4), exchange visitor (J-1), or visitors for pleasure (B-2).⁷ What this means, of course, is that the H-1B visa offers many foreign students an avenue to extend their stay and, with increased caps on the H-1B, many more may choose to do so. The pool of possible students is large, as of the 1998/99 school year there were 491,000 foreign students in the United States. Of these, only 2,436 were from Australia.⁸

CONCLUSIONS

There is strong demand for H-1B temporary workers in the United States and the demand is being generated by the information technology (IT) revolution. The core IT workforce that consists of computer scientists and engineers, as well as computer programmers, has increased from 974,000 in 1989 to 2,450,000 in the year 2000.⁹ Recent Bureau of Labor Statistics forecasts put the future growth of computer scientists and engineers at a rapid pace through 2008.¹⁰ Highly trained computer science jobs are projected to grow by 99 per cent while the somewhat lesser skilled programming jobs are forecast to grow 30 per cent. Both of these core IT occupations are set to outstrip the forecast 14 per cent growth for the labor force overall.

Estimates suggest that H-1Bs are an important supply of IT workers. At the outset of 1989, H-1Bs made up 4 to 7 per cent of IT labor force growth. In 1999, following Congress' unprecedented increase in visas, the H-1Bs made up 54 to 60 per cent of IT labor force growth. Over the entire ten years from 1989 to 1999, the core IT occupations grew 7.4 per cent per year on average, to which

H-1Bs in the U.S. contributed 20 per cent on average. Today, H-1Bs comprise about 10 per cent of the total IT labor force, while permanent immigrants comprise another 10 per cent.¹¹ What is the nature of the shortages that these workers are meeting?

At first glance, it appears reasonable that shortages have existed because the supply of new graduates in the computer sciences has been too little in the face of this strong employment growth. Between 1987 and 1992 the annual graduation rate of new computer science and engineering students declined from 51,000 to 38,000. Computer science bachelor degrees show marked declines through the mid-1990s, although master degrees and doctorates evidenced slow but steady growth. But the educational marketplace is responding to IT demand, and increases in new graduates are in the offing. There are reports that enrollments in computer science programs have increased, about 46 per cent in 1996 and 35 per cent in 1997.¹²

Yet, IT workers are commonly trained in a variety of fields and there has been no clear evidence of a shortage of workers for the average IT job. A commission at the National Research Council (NRC) acting on a Congressional mandate concluded in 2000, not only that IT labor shortages are not evident, but that the supply of H-1Bs may well slow wage growth in IT occupations.¹³ Their conclusion rested on expert testimony, specially contracted research, and their own study of trends in wages and unemployment. Unfortunately, the NRC's findings were issued a few weeks after the Congress passed the new ACTFCA legislation that increases the cap on H-1B visas.

If IT employers have any solid reason to argue for more H-1Bs it lies in two

facts.

First, IT employers are likely to experience the same shortages that exist throughout the U.S. economy. At the same time, the IT sector drives over one-third of the 'New Economy's' productivity and that commands attention. Second, and until IT graduation rates begin to rise, native-born IT workers have not provided the highly educated labor most in demand. Consider that, among core IT workers, over one-third of natives do not even have a college degree, while practically all foreign IT workers are college educated. At the upper end, just one-seventh of natives have a Masters degree or better as compared with four-tenths of all foreign IT workers.¹⁴ The 40 per cent of H-1B workers who have a Masters degree or

better help supply this elite segment of the IT market.

The temporary skilled H-1B visa has clearly come of age. In the 1970s and 1980s the numbers admitted were relatively small and no single industry or country of origin dominated the use of the visa. That has changed. Today use of the visa is primarily driven by employer demand for information technology services. India, and other Asian nations, send the most H-1B visaholders. These changes were set into play by the global marketplace for labor, the rapidly growing IT sector, a pool of English speaking Indian engineers, and government policies that have facilitated use of the H-1B visa.

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