

a geographical analysis of h-1b visa holders

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introduction

This paper measures the number of H-1B Visa holders across regions in the United States. While demographers William H. Frey and George Borjas have analyzed the settlement patterns of immigrants in the U. S., and AnnaLee Saxenian of the Department of City and Regional Planning at the University of California – Berkeley has analyzed the role of Silicon Valley’s “New Immigrant Entrepreneurs”, it is believed that this paper provides the first look at the locations of H-1B Visa holders. As such, it is expected that the paper will raise as many questions as it answers. It begins by briefly explaining, the history and conditions of the H-1B visa program. The report’s data and the results are then explained. The conclusion draws on the work of Frey, Saxenian, and others in order to comment on the role of these special immigrants in the post-industrial or “new economy”.

the h-1b visa program

H-1B visas were established as part of the Immigration Act of 1990. The H-1B temporary worker visa is designated for individuals coming to the U.S. to perform services in a specialty occupation – one “which requires theoretical and practical application of a body of highly specialized knowledge, and attainment of a bachelor's or higher degree for the specific specialization (or its equivalent in experience).” The visas are assigned to companies, who then sponsor an immigrant. As part of the application process, employers are required

Top 10 Countries of Origin of H-1B Workers	
FY 1998	First Half FY 1999
India	India
China	China
Canada	Canada
Taiwan	Philippines
Philippines	Taiwan
U.K.	Korea
Japan	Japan
Germany	U.K.
Pakistan	Pakistan
France	Russia

Table 1. Source Y Axis.

to file a Labor Condition Application (LCA) with the Department of Labor (DOL). The LCA makes certain claims concerning the prevailing wage, working conditions, and possible labor disputes. After approving the LCA, the DOL passes it on to the Immigration and Naturalization Service (INS), who is then responsible for enforcing immigrant labor regulations. For instance, H-1B status allows the individual to enter the U.S. up to ten days prior to beginning employment and leave the country no more than ten days after the authorized H-1B employment has ended. If the employment is terminated early at the behest of the employer, the employer is legally responsible for paying the individual's travel expenses back to their home country. Employment may only be accepted from the employer for whom INS approved an H-1B petition and adhere to the terms and conditions specified in that H-1B petition. An H-1B holder who seeks to change employers must have a new H-1B petition or some other appropriate employment status approved by INS before they can begin the new employment. With companies making workforce cutbacks due to the recent downturn in the U.S. economy, confusion has emerged on this issue of late. Reports have indicated that both immigrants and the INS are uncertain as to whether and when they must return to their native country in the event of job loss.

H-1B Visa Holder Origins	
Country	Percent
India	44%
China	9%
Britain	5%
Philippines	3%
Canada	3%
Taiwan	2%
Japan	2%
Germany	2%
Pakistan	2%
France	2%

Table 2. Source Y Axis.

On October 17, 2000, President William J. Clinton signed into law the “American Competitiveness In The Twenty-First Century Act” (S. 2045) and H.R. 5362, an Act to increase the level of skilled workers admitted to the United States and the fees charged to employers who petition to employ H-1B non-immigrant workers. The Acts were intended to “recognize the importance of allowing additional skilled workers into the United States to work in the short-run, while supporting longer-term efforts to prepare American workers for the jobs of the new economy.” S. 2045 increased the “H-1B Cap” to 195,000 for Fiscal Years 2001 through 2003. H.R. 5362 increased the fees charged to employers who are petitioners for the employment of H-1B non-immigrant workers, from \$500 to \$1,000. The funds generated by the fee were intended to assist in equipping U.S. workers with the skills necessary for employment in the “new economy”, and are administered by the Employment and Training Administration of the DOL. A recent report indicated that ETA has distributed \$95 million to 43 projects around the country since last spring, training approximately 10,000 people (Dean). In 1991, the first cap (65,000) on H-1B Visas was introduced. 1996 was the first year in which the cap was reached by year's end. In 1997, the cap was reached in August – two months prior to the end of the fiscal year. It was achieved by May in 1998 and subsequently expanded to 115,000 for 1999 and 2000. At present, the cap will return to 65,000 in 2003, when it is hoped that native workers will be able to fill the gap in estimated labor demand. The caps have been a contentious issue over this period, with various high-tech lobbies citing the increasing need for higher skilled employees, and therefore

cap increases, while others fight against them in an effort to preserve and provide native jobs. This paper is an effort to further understand high-tech economic development, and is not intended to advocate in one way or another on Visa caps.

about the data

Data for this report was obtained in March of 2001, from "The ZaZona Website Park", www.zazona.com, whose administrator maintains an LCA Database. It contains LCA records from the DOL obtained under the Freedom of Information Act. Norm Matloff, a professor at the University of California-Davis, who has written extensively on immigration issues, has used the data in critiques of the H1-B program.

A record in the database corresponds to one immigrant and includes Visa Type (H-1B, H-2B, and Permanent), State and City of Employment, Job Title, Salary, Pay Rate, and Dates of Employment. The database includes over 600,000 records (all Visa types), with slightly over 400,000 H-1B records analyzed for this report. State and City of Employment were used to determine the Metropolitan Statistical Area where work occurred for current visa holders. It should be noted that in some instances the City of Employment was not precisely coded. For example, some records indicated City as "Northern New Jersey", "multiple counties", or "none". This occurred in 2 to 5 percent of the records. This does not necessarily indicate carelessness on the part of the employer or the Department of Labor. H-1B holders may work as

consultants and travel to several different regions. Nonetheless, care should be used in the analysis of the data. Hairs should not be split too finely when comparing regions; in most cases the disparities are such that the margin of error will not distort the conclusions.

results

Nine states contain two-thirds of all H-1B holders. California leads by 20,000 over New York, which itself has 20,000 more holders than Texas. New Jersey and Florida round out the top five. These states are the same as the top five states which Frey and DeVol identified as leaders in receiving foreign immigrants (Figure 1). The top three maintain the same position in each analysis; however, New Jersey tops Florida in H1-B holders - a flip-flop from Frey and DeVol, owing, as will become clear later, to its proximity to New York City. Illinois, Frey and DeVol's sixth state, slips behind Massachusetts in the H-1B analysis, an indicator of Massachusetts high-tech strength relative to Illinois.

Rank	State	H-1B Visas
1	California	75,362 (17%)
2	New York	53,607 (12%)
3	Texas	34,701 (8%)
4	New Jersey	30,465 (7%)
5	Florida	22,472 (5%)
6	Massachusetts	21,947 (5%)
7	Illinois	21,527 (5%)
8	Virginia	18,348 (4%)
9	Michigan	16,010 (4%)

Table 3. Nine states contain two-thirds of H-1B holders.

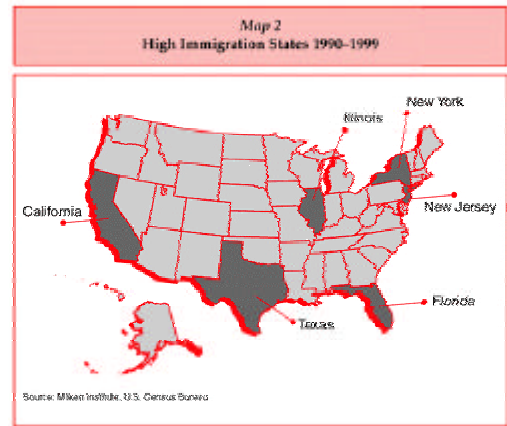


Figure 1. Frey/DeVol High Immigration States.

The regional analysis of the data is more interesting. Using a gross analysis, the New York CMSA contains over twice the number of H-1B holders as second place San Francisco, and more than the top three California MSAs

	MSA	Total H-1B Holders
1	New York-Northern New Jersey-Long Island, NY-NJ-CT-PA	80,316
2	San Francisco-Oakland-San Jose, CA	36,171
3	Los Angeles-Riverside-Orange County, CA	28,962
4	Washington-Baltimore, DC-MD-VA-WV	27,991
5	Boston-Worcester-Lawrence, MA-NH-ME-CT	21,078
6	Chicago-Gary-Kenosha, IL-IN-WI	18,264
7	Dallas-Fort Worth, TX	14,858
8	Detroit-Ann Arbor-Flint, MI	12,725
9	Atlanta, GA	11,338
10	Houston-Galveston-Brazoria, TX	11,110
11	Miami-Fort Lauderdale, FL	11,104
12	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD	10,860
13	Seattle-Tacoma-Bremerton, WA	8,892
14	Minneapolis-St. Paul, MN-WI	5,524
15	Denver-Boulder-Greeley, CO	4,621
16	San Diego, CA	4,326
17	Pittsburgh, PA	4,142
18	Raleigh-Durham-Chapel Hill, NC	3,685
19	Austin-San Marcos, TX	3,282
20	Columbus, OH	3,044

Table 4. The New York CMSA contains more H-1B workers than the state of California.

combined. Using per capita data based on 2000 U. S. Census numbers, cities with a greater concentration of technical workers are revealed. The San Francisco-Oakland-San Jose CMSA ranks first, with 1 visa holder

	MSA	Per Capita
1	San Francisco-Oakland-San Jose, CA	195
2	New York-Northern New Jersey-Long Island, NY-NJ-CT-PA	264
3	Washington-Baltimore, DC-MD-VA-WV	272
4	Boston-Worcester-Lawrence, MA-NH-ME-CT	276
5	Raleigh-Durham-Chapel Hill, NC	322
6	Miami-Fort Lauderdale, FL	349
7	Dallas-Fort Worth, TX	351
8	Atlanta, GA	363
9	Austin-San Marcos, TX	381
10	Seattle-Tacoma-Bremerton, WA	400
11	Houston-Galveston-Brazoria, TX	420
12	Detroit-Ann Arbor-Flint, MI	429
13	Chicago-Gary-Kenosha, IL-IN-WI	501
14	Columbus, OH	506
15	Minneapolis-St. Paul, MN-WI	537
16	Denver-Boulder-Greeley, CO	559
17	Los Angeles-Riverside-Orange County, CA	565
18	Pittsburgh, PA	569
19	Philadelphia-Wilmington-Atlantic City, PA-NJ-DE-MD	570
20	San Diego, CA	650

Table 5. The San Francisco, Raleigh-Durham, and Austin MSAs are notable for their high proportions of H-1B workers.

for every 195 citizens. Austin, which ranked second to San Jose in concentration of high tech jobs in a June 2000 Department of Housing and Urban Development report, jumps ten spots in the per capita

ranking while Raleigh-Durham moves up even further, from eighteenth to fifth. Los Angeles (14), Philadelphia (7) and Chicago (7) make the greatest ranking drops when comparing gross to per capita numbers. Table 2 shows the HUD

City	State	High Tech Jobs	Total Jobs	Category	Percent
San Jose	CA	125,386	892,535	PMSA	14%
Austin	TX	53,780	452,550	MSA	12%
Tampa	FL	99,490	942,625	MSA	11%
Boston	MA	290,708	2,807,448	MSA	10%
Washington	DC	203,681	1,990,234	PMSA	10%
Philadelphia	PA	197,477	2,070,906	PMSA	10%
Dallas	TX	172,430	1,681,202	PMSA	10%
Houston	TX	163,968	1,668,030	PMSA	10%
Phoenix	AZ	123,230	1,219,912	MSA	10%
San Diego	CA	121,554	1,212,689	PMSA	10%
Seattle	WA	111,938	1,127,648	PMSA	10%
Denver	CO	87,492	920,931	PMSA	10%
Oakland	CA	83,142	856,943	PMSA	10%
Chicago	IL	339,318	3,651,282	PMSA	9%
Los Angeles	CA	336,046	3,588,831	PMSA	9%
New York	NY	315,173	3,506,562	PMSA	9%
Detroit	MI	166,899	1,888,120	PMSA	9%
Atlanta	GA	158,732	1,819,372	MSA	9%
Minneapolis	MN	140,074	1,493,223	MSA	9%
St. Louis	MO	105,394	1,188,388	MSA	9%
Cleveland	OH	94,771	1,023,002	PMSA	9%
San Francisco	CA	85,396	934,164	PMSA	9%
Portland	OR	72,511	817,712	PMSA	9%
Charlotte	NC	61,993	719,456	MSA	9%
Orlando	FL	58,310	703,523	MSA	8%

Table 6. HUD The State of the Cities 2000 Report - Percentage of technical to total jobs.

technical labor concentration data to use as comparison to the per capita data in this report.

conclusion

This report makes two findings. First, states that lead in attracting immigrants, regardless of skill level, also lead in attracting highly skilled H-1B workers. Second, H-1B per capita worker levels, not surprisingly correlated with overall levels of high-tech employment in a region. As many of the top H-1B regions have also demonstrated economic success over the last decade, questioning whether immigrants are responsible for the economic growth or whether the economic growth attracted the immigrants to the region is a worthy exercise,

especially for policy makers charged with creating economic success in their region. While a complete analysis of these forces goes beyond the scope of this report, a summary of others findings is provided here.

While some argue that high-tech companies are interested in recruiting workers from overseas to keep wages artificially low for skilled U.S. citizens, in a previous study on the efforts of India to create a Silicon Valley of it's own, I found a strong desire on the part of many Indian engineers to leave India for work in other countries, especially in the U.S. To many, Silicon Valley represents the pinnacle of technological milieu and achievement, and gaining employment there is a sign of accomplishment. Moreover, the U.S. is viewed as more flexible in attitude (ability is given primacy to educational background - i.e. a proficient English major can land a job in computer science) and provides greater funding opportunity. It would be economic folly to ignore these advantages. Consider the case of Germany, where reportedly a reputation for unfriendliness to foreigners has hindered their attempts to attract skilled workers, and therefore hampered their overall economy. In 2000, Chancellor Gerhard Schroeder introduced a "green card" program for IT workers, with a goal of enticing 20,000 workers to his country. The program attracted only 5,000 workers, although that was a substantial increase over the 884 from the previous year. Fulfilling foreign worker demands has become a desirable policy goal and economic strategy in U.S. regions as well. According to a recent Los Angeles Times, Boston Mayor Thomas

M Menino established the Office of New Bostonians two years ago, a social service agency that helps immigrants get settled. New communities of Haitians, Brazilians and Chinese have sprung up, transforming Boston into a city without an ethnic majority for the first time in its history. City Councilman James F. Kenney has similar aspirations for Philadelphia, including a Cabinet-level agency and attracting more international flights to and from their airport. The article concludes that immigrants, services and an elusive quality called "lifestyle" are part of a formula for economic success in the "new economy". It quotes William H. Frey, "They [cities] can turn themselves into new-economy hubs or they can bail themselves out with immigration. Those two factors make the difference between gaining and losing."

As mentioned previously, immigrants typically gravitate to a small number of geographic areas. These areas share several common characteristics: a port of entry, a healthy local economy, and enclaves of previous immigrants. Saxenian goes beyond this in her analysis of immigrants in Silicon Valley, by attempting to gain an understanding of skilled immigrants "ethnic strategies" – non-market mechanisms that immigrants mobilize to make economic progress. She tries to locate the equivalent of the rotating credit associations utilized by restaurants, garment manufacturers, and small-scale retail for high-tech workers. Her answer is the social and professional networks which function both regionally and globally. Organizations, such as the Silicon Valley Indian Professionals Association (SIPA) and

the Chinese Institute of Engineers (CIE/USA), combine elements of traditional culture and high-tech practices, creating ethnic identity and exchanging ideas. The North American Taiwanese Engineers Association uses Mandarin at meetings and social events. Interestingly, the groups have developed along ethnic lines, with little overlap between ethnic associations - a similarity shared with the traditional city, where ethnic sections provide homogeneity within heterogeneity. The associations are forums for cross-generational investment and mentoring. Beyond the immediate region, the associations provide an advantage over competitors by providing language, cultural artifice, and contacts to build relationships in Asia. Researchers at Berkeley found a significant correlation between these ties and California exports: for every 1 percent increase in first generation immigrants from a given country, exports increase almost .5 percent. From this, some of the positive impacts of immigration can be seen, especially when considered in the context of a highly competitive, global economy.

To facilitate these results, it is necessary to develop a regional culture that is amenable to change and new ideas. Notably, this includes finding long-term solutions to the rapidly growing demand for workers with technical skills, a challenge posed by President Clinton when he signed the "American Competitiveness In The Twenty-First Century Act". America owes its current success to the past efforts of immigrants, and to continue along its current trajectory, immigrants, regardless of skill or ethnicity, need to continue to play a role.

references

- Chaudhry, Lakshmi, "H-1B Visa Fight Escalating", Wired News, July 13, 2000.
- Clinton, William J., "American Competitiveness In The Twenty-First Century Act ", October 17, 2000.
- "Demand for IT workers is down 44%, study says", San Jose Mercury News, April 2, 2001.
- Dean, Katie. "H-1B Visas a Boon to Local Talent", Wired News, April 26, 2001.
- Frey, William H. and Devol, Ross. "America's Demography In The New Century: Aging Baby Boomers And New Immigrants As Major Players", Milken Institute, March 8, 2000.
- Iyengar, Swaroopa. "Even the INS Unsure Over H-1B", Wired News, March 23, 2001.
- Kettmann, Steve. "Germany's Nagging IT Problem", Wired News, April 11, 2001.
- "Panel Urges Boost In High-Tech Visas", San Jose Mercury News, March 23, 2001.
- Saxenian, AnnaLee, Silicon Valley's New Immigrant Entrepreneurs, Public Policy Institute of California, 1999.
- "Tech Fuels Growth Of Asian-American Population", San Jose Mercury News, April 1, 2001.
- Tobar, Hector and Fields, Robin, "Columbus Blazes a Trail for '21st Century Cities'", LA Times, May 5, 2001.
- U. S. Department of Housing and Urban Development, "The State Of The Cities 2000", June 2000.
- Y AXIS, The H-1B Company, <http://www.y-axis.com/default.html>.
- Zand, Rob, "Technopolis of India?", December, 2000.
- ZaZona Website Park, <http://www.zazona.com/>.