

## Don't Blame H-1B Workers for Woes

### Cutting visas for high-skilled immigrants won't lessen U.S. economic pain and could stifle domestic innovation, new research suggests

By [Vivek Wadhwa](#)

As the U.S. recession deepens and job losses mount, finding fault with foreigners is very much in vogue. The tendency reared its head recently as U.S. senators Bernie Sanders (I-Vt.) and Charles Grassley (R-Iowa) began pushing for legislation that would restrict banks and other financial institutions from hiring [immigrants](#) on the temporary work permits known as H-1B visas.

Grassley and Saunders got their dander up after an Associated Press story detailed how big U.S. banks brought in skilled foreign labor during the six years before the financial crisis. These workers entered the U.S. on H-1B visas and some firms (not necessarily these banks) found ways to pay H-1B workers less than Americans in comparable positions, the article claimed. Outraged by these findings, Sanders and Grassley pushed the Senate to pass legislation restricting banks from hiring H-1Bs.

I am no fan of H-1B visas either. These visas are valid for up to six years. If a worker on an H-1B visa wants to stay permanently, he has to apply for a permanent resident visa. These visas are in very short supply and [can take more than a decade to obtain](#). While they wait for permanent residence, some H-1B workers get paid below-market salaries and [endure many other hardships](#).

#### Innovation Could be Hampered

But placing limits on this mechanism for bringing foreign workers to the U.S. is not the answer to the country's rising unemployment rate and may undermine efforts to spur technological innovation. New research highlights the significant contribution made by foreign nationals to the U.S. economy and undercuts arguments that foreign students may be "crowding out" Americans in science and engineering and leading them to pursue careers in professions like medicine or law.

First is a paper by William R. Kerr of Harvard Business School and William F. Lincoln of the University of Michigan, which finds that holders of H-1B visas add substantially to U.S. innovation. It also suggests that immigrant workers may even cause increases in patent activity, a good proxy for innovation, by workers who are U.S. citizens.

In the work, titled "[The Supply Side of Innovation: H-1B Visa Reforms and U.S. Ethnic Invention](#)," Kerr and Lincoln built algorithms that recognize likely foreign names on U.S. patent applications. They used these algorithms to parse 15 years of data to create an estimate of foreigners filing patents in the U.S. The researchers then cross-referenced annual patent tallies for foreign inventors with the numbers of H-1B visas awarded each year. They also broke down the regional location of H-1B visa recipients and regional location of patent applicants.

## **Positive Impact on Patents**

Increased numbers of H-1B visas strongly correlate with increased numbers of patents applied for in the U.S. by immigrant inventors, according to Kerr and Lincoln. The researchers also found no evidence that increasing H-1B visa awards decreased innovation by U.S.-born researchers in the form of patent applications, a decrease that is often described as "crowding out." To the contrary, their analysis identified a weak but still positive impact (often called "crowding in") on the numbers of patents filed by non-immigrants in regions where the number of H-1B visas awarded were highest.

This means that increasing the critical mass of knowledge workers at worst did no harm to non-immigrant knowledge workers. At best, non-immigrant knowledge workers benefit from intellectual cross-pollination and interaction with foreign workers plying the same trade. Even more telling, Kerr and Lincoln found that in periods when H-1B visa numbers went down, so did patent applications filed by immigrants. And when H-1B visa numbers went up, patent applications followed suit.

The research showed that Indian and Chinese H-1B holders are disproportionately represented among those who file for patents, especially in the computer field. Indians contributed to 7.6% and Chinese contributed to 11.8% of all patents filed from 2000 to 2004, even though Indians and Chinese comprise less than 1% of the U.S. population each. Tech companies were highly dependent on Indians and Chinese for their innovation. In 2006, these groups contributed to 33% of patents filed by Intel ([INTC](#)), 23% of those for Microsoft ([MSFT](#)), and 22% of patents filed by IBM ([IBM](#)). Even for consumer giant Procter & Gamble ([PG](#)), the immigrant patent contribution was 11%.

## **Immigrants Jump-Start Startups**

My research, too, has explored immigrants' potent contributions to U.S. innovation. [More than half of Silicon Valley startups](#) were founded by immigrants over the last decade. These immigrant-founded tech companies employed 450,000 workers and had sales of \$52 billion in 2005.

And while Kerr and Lincoln looked at changes on a year-to-year basis, other recent research shows that decade-over-decade advantages may be even stronger. Jennifer Hunt of McGill University and Marjolaine Gauthier-Loiselle of Princeton University analyzed long-term changes in a paper published in January titled "[How Much Does Immigration Boost Innovation?](#)".

According to their calculations, for every percentage point rise in the share of immigrant college graduates in the U.S. population, the total per capita number of patents for the entire population should increase by an astonishing 6%. Even more important, Hunt and Gauthier-Loiselle found that natives are not crowded out by immigrants, and that "immigrants do have positive spillovers, resulting in an increase in patents per capita of 9%-18% in response to a one-percentage-point increase in immigrant college graduates."

## **Waiting Decades for a Visa**

My research found similar trends when we examined global patent filings by foreign nationals residing in the U.S. with the World Intellectual Property Organization of Geneva. We determined that foreign nationals residing in the U.S. were named as inventors in 25.6% of international patent applications filed from the U.S. in 2006. This increased from 7.6% in 1998. When trying to understand the reason for the 337% increase, we uncovered some worrying statistics. As of Sept. 30, 2006, there were 1,181,505 educated and skilled professionals waiting to gain legal permanent-resident status.

These workers were on visas like the H-1B. To make matters worse, there is yearly allotment of only 120,000 permanent resident visas for such skilled workers and a 7% limit on how many visas can go to immigrants from any one country. So immigrants from populous countries such as India and China could be waiting decades for a permanent resident visa unless immigration quotas are relaxed.

Anecdotal evidence and media reports supported what we feared—that highly skilled workers are getting frustrated with the immigration process and are seeing greater opportunities in [countries like India and China](#). Tens of thousands are returning home.

## **Layoffs Force Immigrants to Go Home**

The economic downturn has made matters much worse. When American workers who have the skills to file patents and develop new technologies get laid off, they [often start new companies](#). And these companies generate employment and help the economy recover. When workers on H-1B visas get laid off, they usually have no choice but to return home and start their companies abroad. So they are planting the seeds for future economic growth in their home countries, seeds that could easily have been planted in the U.S.

So the critics of skilled immigration may get their wish. We will scare away the world's best and brightest who have always flocked to our shores. But the next Silicon Valley won't be in located the U.S. It will likely be in Hyderabad or Shanghai.

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