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Measuring the Impacts of the H-1B Visa Program on Foreign Labor Markets: Two Recent Quasi-Experimental Studies

The H-1B visa program, created by the Immigration Act of 1990 (P.L. 101-649), allows U.S. employers to hire temporary foreign workers in specialty occupations requiring a college degree. Many H-1B workers eventually become lawful permanent residents through the employment-based immigration system.

Under current law, cap-subject employers may hire up to 65,000 new H-1B workers each year, as well as an additional 20,000 workers with masters' degrees or greater education levels. There is no cap on H-1B workers extending their stay, or on the number of new H-1B workers hired by university, nonprofit research, and government research employers.

In 2021, the House Subcommittee on Immigration and Citizenship held a hearing on how U.S. immigration policies affect hiring in foreign labor markets. At that hearing, advocates for the H-1B program testified that if workers with skills difficult to find in the domestic labor market are turned away from the United States, their skills will benefit foreign competitors. At the same hearing, critics of the H-1B program testified that the program is used not only to hire foreign workers with skills difficult to find in the domestic market, but also to hire foreign workers with the same skills as available domestic workers while paying foreign workers lower wages. Difficulties in measuring the impacts of the H-1B program contribute to these disagreements.

Measurement Issues

Several factors make it difficult to measure the impact of the H-1B program on foreign labor markets. These issues are discussed below, as are steps taken to address them in the two studies profiled.

Lack of Variation

Empirical studies require variation. When laws and policies do not change and there is no variation in how they affect different firms and countries, there is no way to measure their impact. Sources of variation that make it possible for researchers to study the impacts of the H-1B program include a lottery for H-1B petitions and changes in H-1B laws and policies.

Selection Issues

Over the past two decades, cap-subject H-1B workers have been increasingly hired by a small group of large firms in the scientific and business services, computer, and information technology staffing industries with experience in navigating the H-1B application process. These large employers are not typical of U.S. employers; they are a selected group. This selection problem means that

comparing employment patterns by country for multinational U.S. employers that use the H-1B program with multinational U.S. employers that do not use the H-1B program will not yield accurate estimates of the impact of this program. However, when some multinational U.S. employers are selected at random to have their H-1B petitions accepted and others are not, researchers can compare employment changes by country between selected and unselected employers and avoid this selection issue.

Time Lag

Studying the impacts of the H-1B program can require years of data, as impacts may take time to observe. Data access issues cause further delays. Gaining research access to confidential U.S. data on multinational companies is a lengthy process. Gaining research access to confidential employer records in other countries can involve similar processes in those countries. Meanwhile, labor markets change, as do the ways firms use the H-1B program.

Quasi-Experimental Studies

Because of the above-mentioned measurement issues, until recently research on the H-1B program has not directly examined the impacts of the program on foreign labor markets. The studies highlighted in this In Focus avoid these issues by using random or unexpected variation between employers and/or between different time periods. Studies that use this kind of variation, which was not intended as an experiment, are called *quasi-experimental studies*. They provide the best available evidence of *causal impacts* of programs such as H-1B.

One source of variation used by researchers to evaluate the impacts of the H-1B program is that U.S. Citizenship and Immigration Services (USCIS) used lotteries to select which petitions to consider during years when employer demand for new H-1B workers exceeded the number available to cap-subject firms. This happened in FY2006–FY2009 and in every year since FY2014. Having H-1B petition acceptance decided by lottery makes it possible to avoid selection bias in studying the impacts of the H-1B program by comparing outcomes for firms whose petitions were accepted (“won the lottery”) with outcomes for firms whose petitions were denied (“lost the lottery”).

A second source of variation used by researchers to evaluate the impacts of the H-1B program is policy changes over time. The American Competitiveness in the Twenty-first Century Act of 2000 (P.L. 106-313) temporarily increased the number of new H-1B workers that cap-subject employers could hire. When this temporary increase expired in 2004, the number of these visas available decreased from 195,000 per year to the current 65,000 per

year. Another policy change occurred in 2017, when the first Trump Administration issued internal policy memoranda that tightened eligibility for H-1B status. For example, USCIS ceased presuming that an entry-level computer programming position qualified as a specialty occupation and ceased giving deference to previous petition approvals when H-1B workers applied to extend their stay. This resulted in a 41% increase in H-1B employer petition denials from the third to the fourth quarters of FY2017.

Both studies summarized below provide evidence that when more H-1B petitions are rejected in the United States, employment increases for workers with similar skills in foreign labor markets. Neither study addresses whether the H-1B program is used not only to hire workers with skills difficult to find in the United States, but may also be used to hire workers with skills common in the United States.

Glennon (2023)

This study examines what happened to employment in multinational firms by country when these firms were unable to hire as many H-1B workers in the United States as they demonstrated interest in hiring during 2005-2013. It relies on data from surveys required of U.S.-based multinational companies (conducted by the Bureau of Economic Analysis), merged with these companies' Labor Condition Applications (LCAs) and H-1B employer petitions data.

For some analyses, this study focuses on the 2004 reduction in the H-1B cap, comparing firms that previously had and had not been heavy users of the H-1B program. Firms that were heavy users of the H-1B program before 2004 had greater increases in employment in foreign countries after the cap reduction than similar firms that were not heavy users. Much (but not all) of this growth in foreign employment was in China, India, and Canada. Multinational firms that were more dependent on H-1B workers before 2004 were more likely to establish operations in additional foreign countries after 2004 and more likely to begin conducting research and development activities in new foreign countries after 2004.

Other analyses in this study focus on firms that applied for new H-1B workers in 2007 and 2008, when H-1B petition acceptance was decided by lottery. These firms hired an average of 0.42 employees in foreign countries for every H-1B petition they submitted that did not win the lottery.

Although this study examines changes in the H-1B program that took place nearly two decades ago, it provides clear evidence that multinational firms can shift employment between countries, and respond to H-1B restrictions in the United States by hiring these (or similar) workers in other countries.

Brinatti and Guo (2024)

This study examines how the increase in denials of H-1B petitions in 2017 affected Canadian immigration, Canadian employment, and other aspects of the Canadian economy. It uses H-1B petition data, Canadian visa application data, and Canadian datasets measuring the employment, revenues, and trading patterns of Canadian employers and the location and countries of birth of their employees.

The study finds that tightened H-1B restrictions in the United States starting in March of 2017 were associated with increases in the admission of skilled workers to Canada in 2018 and 2019. H-1B petition denials in the United States increased most for computer occupations, and the increases in immigrant admissions to Canada were statistically significant for people in the occupations (such as computer occupations) and countries (such as India) most affected by the change in H-1B restrictions. Canada prioritized the immigration of highly educated people who could speak English or French and had job offers in Canada, and there were no limits on the number of such people who could be granted permanent residence in Canada. The authors estimate that there was an increase of one permanent resident application to Canada for every four H-1B visa denials in the United States.

Canadian firms with a history of hiring immigrants in industries that tended to employ people in computer occupations hired more immigrants starting in 2017. These “more exposed” Canadian firms also hired an average of 0.5 more Canadian-born workers per additional immigrant hired. However, the earnings of Canadian-born workers in these firms decreased. These firms had an increase in sales (proportionate to their employment growth) and an increase in exports (for firms that were already exporting). Patterns of changes were similar for multinational firms and domestic Canadian firms.

Brinatti and Guo combine these empirical findings with various assumptions and equations in a theoretical model of how changes in the H-1B program affected workers in the United States and Canada. Their model produces estimates of impacts on Canadian-born workers that varied by the type of work they did. It estimates Canadian-born computer scientists were worse off overall because they earned less when more computer scientists immigrated to Canada, while Canadian-born workers in other occupations were better off overall because their employment increased. The authors concluded that on the whole, changes in the H-1B program in 2017 made Canadian-born workers better off.

Their model estimated an opposite pattern of effects in the United States. With fewer H-1B workers in computer occupations in the United States, U.S.-born workers in computer occupations earned higher wages, while there was less hiring for U.S.-born workers in other occupations in the United States. The size of these impacts was determined by the extent of trade between the United States and Canada. The more goods and services are freely traded between these two countries, the less it mattered in which country computer jobs were located.

Additional Resources

A companion In Focus is CRS In Focus IF12933, *Measuring the Impacts of the H-1B Visa Program on U.S. Labor Markets: Two Recent Quasi-Experimental Studies*. A more comprehensive report on this topic is CRS Report R47164, *U.S. Employment-Based Immigration Policy*.

Elizabeth Weber Handwerker, Analyst in Labor Policy

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