Research Briefs
IN ECONOMIC POLICY

CATO INSTITUTE

January 13, 2021 | Number 246

Buying Lottery Tickets for Foreign Workers

Search-Cost Externalities Induced by H-1B Policy

By Rishi Sharma, Colgate University; and Chad Sparber, Colgate University and IZA

The H-1B program provides an important method for college-educated foreign citizens to secure temporary legal employment in the United States. Though available for workers in a number of occupations, the program is particularly popular among science, technology, engineering, and mathematics (STEM) workers. For example, U.S. Citizenship and Immigration Services (USCIS) reports that computer-related workers alone accounted for 66.1 percent of H-1B visas issued in fiscal year (FY) 2019. Many economists credit the program (or foreign STEM workers more generally) for generating a substantial share of recent growth in U.S. innovation, technology, productivity, wages, and gross domestic product. Such evidence led the National Academies of Sciences, Engineering, and Medicine to argue in its 2017 summary on the economic effects of immigration that "the prospects for long-run economic growth in the United States would be considerably dimmed without the contributions of high-skilled immigrants."

Less-sanguine views of skilled immigration and the H-1B program generally focus on two concerns. The first is the possibility that infusions of skilled workers might reduce wages paid to subsets of native-born labor. The second—as recently articulated by economists Daniel Costa and Ron Hira—is that "companies with an outsourcing business model rely on the H-1B program to build and expand a business model based on outsourcing jobs. In this arrangement, rather than being employed directly by the company that hired them, the H-1B workers ultimately work for third-party clients, either on- or off-site." The authors note that just 30 firms accounted for 27 percent of H-1B visa issuances in FY 19, half of which used an outsourcing model.

We develop a theoretical model arguing that the U.S. government's response to this first concern has exacerbated costs associated with the second. In an effort to reduce potential labor market competition between foreign- and native-born skilled workers, the United States limits the number of new H-1B entrants (at most firms) to just 85,000 per year. This cap (or quota) is far exceeded by interest in the H-1B program. At its peak to date, USCIS received more than 236,000 petitions for new H-1B status in the first week of application eligibility for FY 17. The government has responded to this excess demand by allocating new H-1B status through a random lottery. Our theoretical model demonstrates that this has generated two presumably unintended costs.

First, it has incentivized firms to search for (and extend offers to) far more workers than can actually be hired through the program. Firms have a target level of employment. In the presence of a lottery, they must extend a number of job offers in excess of this target to hit it. These excess job searches and offers are costly. Moreover, any offer extended by one firm creates a negative externality on competing firms by reducing the chances that they will win the lottery and secure permission to hire the individuals they would like to employ.

Editor, Jeffrey Miron, Harvard University and Cato Institute

Second, firms facing lower costs associated with searching for new H-1B workers have rationally responded to the quota and lottery by specializing in domestic outsourcing services that contract out labor to other firms. These lower costs might arise, for example, if such outsourcing specialists already employ a large number of qualified workers overseas and therefore do not face the same challenges as domestic firms when seeking new people to work in the United States. In principle, this specialization could reduce firms' collective hiring costs: one would generally expect efficiency to improve if services are supplied by the most-inexpensive providers. In practice, however, these outsourcing specialists further increase the aggregate number of job searches in excess of the H-1B visa limit, reduce the chances that any one petition for H-1B status will win the lottery, and therefore raise the size of the negative job-search externality. Altogether, externalities induced by the quota, lottery, and excess job searches cost U.S. firms hundreds of millions of dollars per year, perhaps exceeding $1 billion during the late 2010s, when firms submitted an extraordinarily high number of H-1B petitions on behalf of prospective employees.

Our analysis complements three recent contributions to the literature. First, empirical evidence shows that U.S. government restrictions on the number of new H-1B visas available to prospective workers each year caused H-1B employment to become increasingly concentrated among a small group of employers. After documenting similar trends, we build a theory that illustrates that this behavior is indeed a result of H-1B policy design. Second, other economists have argued that firms respond to H-1B restrictions by moving production abroad to foreign affiliates. Our theory instead models domestic outsourcing behavior of the sort criticized by Daniel Costa, Ron Hira, and other H-1B opponents—namely, that some firms (many of which are foreign-owned) specialize in hiring foreign workers and then send their employees to third-party work sites within the United States. Third, while past papers have argued that H-1B restrictions and the H-1B lottery harm aggregate productivity, wages, the selection of foreign employment, and firm outcomes, our research adds to these costs by recognizing that the lottery allocation mechanism also generates substantial losses associated with job-search externalities. In an effort to win the lottery, firms search for far more foreign workers than they actually intend to hire.

There is now considerable evidence that by restricting the skilled-labor force, the H-1B quota reduces U.S. productivity and wages paid to American-born workers. Firm outcomes such as sales and profits have declined as well. H-1B employment is increasingly concentrated among a smaller set of firms. Since firms receive permission to hire only those who win the lottery, lottery allocation prevents employers from selecting the foreign workers whom they most desire. Some firms have responded by moving operations overseas. Our work highlights an important additional cost of the quota: firms are forced to spend vast sums of money searching for workers who will not receive the legal right to work in the United States or contracting with firms specializing in domestic outsourcing services that further exacerbate these job-search costs.

NOTE:

This research brief is based on Rishi Sharma and Chad Sparber, "Buying Lottery Tickets for Foreign Workers: Search Cost Externalities Induced by H-1B Policy," IZA Discussion Paper no. 13892, November 2020, http://ftp.iza.org/dp13892.pdf.