

BY LINDSAY LI

## Immigration and Labor Market Outcomes

**Parag Mahajan, Nicolas Morales, Kevin Shih, Mingyu Chen, and Agostina Brinatti. “The Impact of Immigration on Firms and Workers: Insights from the H-1B Lottery.” Federal Reserve Bank of Richmond Working Paper No. 24-04, April 2024.**

Immigration policy is a contentious issue. Some fear that an influx of immigrants will “crowd out” natives in the labor market — that is, displace native workers by competing for the same jobs — while others claim that immigrants increase productivity by contributing new skill sets that supplement the skills of natives.

Isolating the consequences of immigration on both firm-level and individual-level outcomes is challenging, however, due to confounding factors.

For instance, suppose a firm that hires foreign-born workers sees a boom in production. It’s difficult to ascertain if high-skill immigrants directly caused this development or if characteristics of firms likely to attract foreign-born workers (such as larger sizes and higher productivity) made the difference.

A recent working paper by Nicolas Morales of the Richmond Fed and co-authors Parag Mahajan, Kevin Shih, Mingyu Chen, and Agostina Brinatti sought to disentangle this dynamic by using the H-1B visa program as a source of random variation in immigrant inflow. High-skilled, college-educated immigrants come to the United States primarily through this visa. Employers select and sponsor immigrants, applying for the visa on their behalf. There’s an annual cap on the number of H-1B visas issued, and in 2007, for the first time since the program’s inception, all regular cap applications for H-1B workers went through a lottery to determine acceptance because of high demand.

The researchers exploited this unexpected lottery as a random shock to a

firm’s ability to hire new immigrants. In other words, because the acceptance or rejection of a firm’s 2007 H-1B application was random, the addition or non-addition of an immigrant worker is plausibly unrelated to any firm-specific characteristics that might act as confounding factors. Thus, the authors created a dataset

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consisting of all firms that submitted at least one application for an H-1B visa in 2007. For these firms, they obtained administrative data from the Census Bureau on measures like revenue and employment, as well as information on wages, workers’ country of birth, and career trajectories of workers employed at such firms.

With the key measure of lottery “win rate” — the fraction of a firm’s applications that were successful — they ran an event study analysis. This type of research methodology explores changes in outcome variables, such as firm revenue, before and after a specific event — in this case, the H-1B lottery. Of primary interest was any differences in outcomes between firms that “win” the lottery and firms that “lose” the lottery. Importantly, the authors found that firms with more lottery success were not trending differently than firms with less lottery success before the event; thus, any differences after the event can be attributed directly to getting H-1B workers through the lottery.

At the firm level, the researchers found that lottery winners on average experienced higher employment growth, higher survival probability, and expansions in revenues and payroll.

Which firms respond the most to lottery luck? For small firms, defined as firms with fewer than 10 employees, the effect was greater than average; this might indicate that small firms are constrained in their ability to hire needed talent if they lose the lottery. For large firms, defined as firms with more than 100 employees, the effect was only marginal; this might indicate that such firms have additional channels and resources for acquiring the foreign talent they seek.

Notably for the policy debate, there was no evidence of a decline in either the native college workforce or the overall native workforce for lottery-winning firms. That is, H-1B immigrants don’t seem to displace native workers. In fact, among high-paying, high-productivity firms, lottery winners hire *more* college-educated natives. The authors hypothesized that these firms might be constrained by not having appropriate talent to grow the firm; upon acquiring such talent through the H-1B program, they can expand in all types of employees.

Moreover, at the individual-worker level, most incumbents at winning firms benefited from an H-1B coworker: Both non-college graduates and young college-educated natives with low tenure at the firm experienced wage gains. This observation supports the notion that immigrants tend to bring skills that complement the skills of many native workers. As firms increase their employment of immigrants, demand for native workers who work in complementary tasks is also pushed up. In general, the presence of immigrants can promote specialization that reduces their direct competition with natives. The authors noted, however, that young (under age 40) college-educated natives with high tenure at the firm did experience lower wages. In the end, though, this population comprised only about 4 percent of the workers in the sample. **EF**