Hiring High-Skilled Labor through Mergers and Acquisitions*

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First draft: December 2019
This draft: April 2021

* For their valuable comments and suggestions, the authors thank Michael Ewens, Huasheng Gao, Xavier Giroud, Yihui Pan, Tracy Yue Wang, Wenyu Wang, Joshua White (discussant), Liu Yang, Rebecca Zarutskie (discussant), and seminar attendants at the 2021 AFA meetings, the Labor and Finance Online Seminar, the Corporate Finance Workshop, the 2021 MFA conference, and Renmin University. This research was financially supported by an Early Career Scheme research grant (ECS Grant No. 21502720) from the Research Grant Council, Hong Kong SAR. Send correspondence to Feng Zhang, University of Utah, David Eccles School of Business, Department of Finance, 1655 Campus Center Dr, Salt Lake City, UT 84112; telephone: +1-801-587-9476. E-mail: feng.zhang@eccles.utah.edu.

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Abstract

In two natural experiments based on H-1B visa lotteries and a drastic cut in the annual H-1B visa quota, we document that firms respond to shortages in high-skilled workers by acquiring target firms that have these workers. Additional tests show that desire for the target's skilled workers is an important driver of these acquisitions. Acquirers that successfully obtain skilled workers from their targets outperform acquirers that withdraw their acquisition bids for exogenous reasons. Our findings suggest that skilled labor is a driver of acquisition decisions and a source of synergy gains.

Keywords: Acquihiring; Skilled foreign labor; Synergies; H-1B visa; Mergers and acquisitions

1. Introduction

Firms recruiting high-skilled labor through traditional means may find the process slow and inefficient, especially when skilled workers are in short supply and have non-compete agreements with their existing employers. In fact, some firms have resorted to "acquihiring," the practice of hiring skilled workers from other firms through mergers and acquisitions (M&As). For example, Mark Zuckerberg, the founder and CEO of Facebook, acknowledged: "Facebook has not once bought a company for the company itself. We buy companies to get excellent people" (Hindman, 2010). [1] Evan Spiegel, the founder and CEO of Snap, similarly stated: "Typically if you buy a business, it comes with a really talented team and I think for us the team is everything" (Murphy and Kruppa, 2020).

Although acquihiring is increasingly common among high-tech firms (Needleman, 2012), academic research and evidence on this practice is limited primarily because acquirers rarely specify whether they buy a target firm for its skilled workers. In addition, documenting causal effects of firms' demand for skilled labor on their M&A decisions is difficult because demand for talent is endogenous and is correlated with other firm characteristics.

In this study, we take an experimental approach and examine whether firms with unmet demand for high-skilled workers for exogenous reasons are more likely to acquire other firms with such high-skilled workers. Through two natural experiments, we document for the first time that firms exposed to exogenous skilled labor shortages acquire other firms that employ high-skilled labor but do not acquire firms without skilled workers. The targeted firms tend to be small high-tech firms that have a history of actively hiring high-skilled workers who have skills similar to the acquiring firms' workers. Additional tests suggest these acquirers seek to gain access to the target's

[1] For example, Facebook acquired Spool, a young startup providing mobile-bookmarking service, in July 2012 for its five employees: https://www.cnet.com/news/facebook-acquires-mobile-bookmarking-service-spool/.

skilled workers, not just their tangible assets or intellectual properties. Furthermore, we find in a third quasi-experiment that acquirers that successfully access skilled labor from their target firms outperform firms that withdraw their acquisition bids for exogenous reasons. The high-skilled workers secured from the target firm seem to help enhance the acquirer's performance. Overall, our findings suggest that skilled labor is an important factor in acquisition decisions and a source of merger synergies.

Our first natural experiment utilizes the random lotteries employed by the United States Citizenship and Immigration Service (USCIS) office to allocate H-1B visas. H-1B is the primary work visa for U.S. employers seeking to hire skilled foreign workers. The supply of H-1B visas is capped by an annual quota, which drastically dropped from 195,000 in 2003 to 65,000 in 2004 and has been binding since 2004. When the annual quota is binding, the USCIS uses random lotteries to allocate H-1B visas to petitioners and, by doing so, creates random variation in the likelihood that firms receive H-1B visas. As a result, some unlucky firms cannot hire or retain the high-skilled foreign workers they need.

These unlucky firms have several options after losing H-1B visa lotteries. First, they can hire skilled workers directly from the labor market to replace the H-1B workers who failed to obtain visas. Hiring H-1B workers from the labor market is difficult because of the limited supply of high-skilled foreign workers. The firm has to offer high wages to lure H-1B visa holders from their current employers and often faces the hurdle of non-compete agreements. Hiring local skilled workers in the labor market is more feasible, but local workers often lack the skills of H-1B workers (Kerr, 2013; Bernstein et al., 2018; Chen, Hshieh, and Zhang, 2020).

Second, firms seeking high-skilled foreign workers can poach them from competitors; however, doing so is difficult given the presence of non-compete laws. Consistent with the importance of

non-compete laws, we find firms short on skilled foreign workers are more likely to acquihire if the target firm is protected by non-compete laws (discussed in greater details later).

Third, some firms can temporarily relocate a foreign worker who loses the H-1B visa lottery to a foreign affiliate (e.g., an office in Vancouver, Canada) and reapply for an H-1B visa in the future.[2] The foreign worker, however, may not be as productive if the firm's foreign affiliate lacks a team of collaborators comparable to those at the U.S. offices. In addition, this option is only available to multinational corporations with pre-existing foreign affiliates. Consistent with this constraint, we find that firms without foreign affiliates are more likely to acquihire than firms with foreign affiliates when they are short on skilled foreign workers.

Fourth, firms can forgo or delay planned projects that require the high-skilled foreign workers, outsource the projects to other firms, or form strategic alliances with firms that have the resources to develop the projects. Forgoing or delaying projects is obviously costly. Outsourcing and forming strategic alliances are suboptimal given that the firm is trying to hire foreign workers for the planned projects in the first place. Both of these options are also difficult to implement for high-tech research projects because of the intangible nature of intellectual property (e.g., risk of IP theft, etc.).

Given the limitations of the above options, unlucky firms may acquire target firms that have the skilled foreign workers they need.[3] Acquihiring not only circumvents the limitations of the

[2] An H-1B visa applicant can continue to work for his or her employer and reapply for an H-1B visa after losing the H-1B lottery if the applicant continues to be in F-1 student visa status while on Optional Practical Training (OPT). OPT is a temporary employment authorization that is valid for only one year before 2008. It is extended to three years in 2008 but only for foreign students in STEM related majors. Thus, the OPT program has a minimal impact on our results based on the second natural experiment (the 2004 reduction in the annual H-1B visa cap). The OPT program does not affect the randomness of the H-1B lotteries or the results based on our first natural experiment as long as petitioners on OPT are evenly distributed among our sample firms. Unfortunately, the I-129 microdata do not allow us to identify which applicants are on OPT.

[3] For acquisitions in which the acquirer is considered a "successor-in-interest", employers do not have to file amended H-1B petitions or new LCAs so long as the acquired H-1B worker's job function, duties, and work location are

above options but also recruits an entire team, whose members possess team-specific capital that is crucial for innovation (Jaravel, Petkova, and Bell, 2018). We thus hypothesize that some unlucky firms will acquihire. Consistent with this hypothesis, we find that firms that lose more H-1B visa lotteries take over more target firms that have high-skilled H-1B workers. Each one standard deviation decrease in the likelihood of winning H-1B visa lottery raises the number of acquisitions in the following year by about 7%.

Our second natural experiment uses the aforementioned drastic reduction in the annual H-1B visa quota in 2004. We expect that, after this cut in the H-1B quota, firms reliant on H-1B workers will pursue more acquisitions than firms that only use local workers. We classify a firm as a treated firm if it received H-1B visas before 2004 and as a control firm otherwise. Difference-in-differences (diff-in-diff) estimation results show that after 2004 the treated firms initiate 25% more acquisitions targeting firms with high-skilled H-1B workers than the control firms. Falsification tests show that our diff-in-diff model is properly specified and does not produce false treatment effects.

Both natural experiments suggest firms short on skilled H-1B workers acquire other firms that have skilled H-1B workers. Yet it remains possible that these acquisitions are driven by the acquirer's desire for the target's tangible assets and intellectual properties and not for the target's skilled labor. Given that these potential drivers are not mutually exclusive, it is also possible that firms seeking H-1B workers acquire other firms for their H-1B workers on top of their tangible assets and intellectual properties.

expected to remain unchanged. The acquirer is only required to place a "notice" in each impacted H-1B worker's "Public Access File" (i.e., subject to review by the U.S. Department of Labor) before the effective date of employment post-acquisition. This notice must indicate that the acquirer accepts the obligations and liabilities of the H-1B workers' LCAs filed by the target firm. Otherwise, the acquirer must file amended H-1B petitions or change of employer applications with the USCIS before the employee begins employment with the acquirer. Note that these new filings with USCIS, which have a median processing time of 13 days in our sample, are not subject to the H-1B visa cap.

We conduct a long battery of tests to distinguish between the potential drivers of the acquisitions made by the firms short on H-1B workers. One batch of test results shows that shortages of H-1B workers induce firms to acquire more target firms with H-1B workers, more target firms whose H-1B workers possess skills similar to the acquirers' H-1B workers, more high-tech target firms that likely have skilled workers, and more target firms with only negligible amounts of tangible assets. By contrast, shortages of H-1B workers do not induce firms to acquire more target firms without H-1B workers, more target firms whose H-1B workers do not possess skills similar to the acquirers' H-1B workers, more low-tech target firms, or more target firms that have a significant amount of tangible assets. These results suggest that skilled workers, as opposed to tangible assets, drive these acquisitions.

Our test results also show that shortages of H-1B workers induce firms to acquire more target firms with and without patents, as well as more target firms in the same industry and across different industries. Thus, these acquisitions are not solely driven by the target's intellectual property or the acquirer's desire to lower industry competition.

Acquihiring is more appealing if the target firm operates in states with strong enforcement of non-compete labor laws, which impose a higher cost on poaching talents from the target (Chen, Gao, and Ma, 2020). We test this prediction and find that deficits in high-skilled labor have greater effects on the number of acquisitions when the target firm is headquartered in states with strong enforceability of non-compete laws.

The acquirer, if truly buying talent, may grant stock options to the acquihired skilled workers after the acquisition because firms usually use stock options to attract and retain talent. We find firms short on H-1B workers not only make more acquisitions but also grant more stock options to employees after the acquisition.

One concern with acquihiring is that the acquired talent may leave the acquirer soon after the acquisition. The acquirer usually prevents them from leaving with non-compete agreements and by granting stock options that will be forfeited if they leave early.[4] Since experienced acquirers are better at retaining acquired employees (Puranam and Srikanth, 2007; Kim, 2020), they may find it more appealing to hire skilled labor through M&As. Consistent with this expectation, we find that shortages of H-1B workers have a greater impact on M&A activity for experienced acquirers.

Taken together, this long battery of tests suggests that skilled labor is an important driver of the acquisitions initiated by firms exposed to exogenous shortages of H-1B workers. Of course, acquiring skilled labor and acquiring tangible assets or intellectual property are not mutually exclusive. The test results tell us that skilled labor is *one* important driver but probably *not the only* driver of these acquisitions. One cannot exclude tangible assets and intellectual properties as possible drivers of some of these acquisitions.

Do acquisitions motivated by skilled labor enhance the acquirer's performance? On the one hand, acquihiring affords the acquirer the means to hire entire teams of employees from the target, absorbing any accumulated team-specific human capital (e.g., Jaravel, Petkova and Bell, 2018). Acquihiring also circumvents labor laws that inhibit labor mobility, such as those that enforce non-compete and non-disclosure agreements between employees and their former employers (Marx, Strumsky and Fleming, 2009; Garmaise, 2011). On the other hand, acquihired employees could leave the acquirer shortly after the acquisition if they cannot integrate themselves into the workforce of the merged firm (Kim, 2020). It is thus an empirical question whether acquihiring enhances or hinders the acquirer's performance. We address this question in a third quasi-natural

[4] See http://www.calstartuplawfirm.com/business-lawyer-blog/acquihire-non-compete.php.

experiment following Bena and Li (2014) and Seru (2014). Among a sample of acquirers that share similar employee skills with their targets, we compare the performance of acquirers that successfully obtain skilled labor from the target firm to the performance of acquirers that withdraw their acquisition bids for exogenous reasons. We discover that acquirers of completed deals outperform acquirers of withdrawn deals. In addition, acquirer performance increases with employee skill similarities between the target and the acquirer. These results suggest that the skilled workers acquihired from the target add value to the acquirer.

Our paper contributes to a nascent literature. To our knowledge, there are only four recent studies on the role of labor in M&As. First, Tate and Yang (2016) show that diversifying acquisitions are more likely to occur between industries that have greater degrees of human capital transferability. Second, Chen, Gao, and Ma (2020) show that firms headquartered in states that adopt trade secret laws are more likely to be acquired. Trade secret laws raise the cost of poaching employees from other firms. Third, Kim (2020) finds that employees recruited through M&As by high-tech startups are more likely to leave the startup than other employees. Lastly, Ouimet and Zarutskie (2020) parse 10-K statements of target firms for keywords such as “skill” and “skilled” and find a positive relationship between the occurrence of these keywords and post-merger employment outcomes of target firm employees.

Our study complements these studies by showing for the first time that firms respond to skilled labor shortages by acquiring other firms with such skilled labor. Yet our study differs from these studies in three important ways. First, we exploit two exogenous shocks to the supply of high-skilled labor to explore causal effects of skilled labor shortages on firms’ acquisition decisions. Our findings highlight high-skilled labor as a vital factor in M&As. Second, while the existing studies explore the general labor force, we focus on high-skilled foreign labor. Recruiting from the

labor market is easier for common employees than for high-skilled foreign workers, who are fewer and more difficult to replace with local workers. Therefore, when facing shortages of high-skilled foreign workers, firms are more likely to acquire other firms possessing such high-skilled workers. Third, whereas none of the existing studies assess acquirer performance after labor-driven acquisitions, we show for the first time that acquirers' financial performance improves after obtaining skilled workers from their targets.

We also contribute to the broader literature on why firms take over other firms. Extant studies show that firms pursue acquisitions for various reasons. These include synergy gains, technological or regulatory changes, incentives to buy assets using relatively overvalued equity, intellectual property, managerial overconfidence, empire building, and killing target firms' disruptive innovation.[5] Our study adds to this literature by offering human capital as a crucial element of acquisition decisions and an important source of synergy gains.

2. Data Sources and Sample Construction

Our analysis uses six datasets. We build a sample of U.S. public firms from CRSP/Compustat. We measure each firm's demand for and supply of skilled foreign labor using the Labor Condition Application (LCA) microdata from the U.S. Department of Labor (DOL) and the I-129 petitions microdata from the U.S. Citizenship and Immigration Services (USCIS), respectively. LCAs are records of H-1B applications, whereas I-129 petitions are records of H-1B visa grants. We use Thomson Reuters's SDC data to identify M&As undertaken by firms in our sample. Lastly, we use the PatentsView database to gauge firm patenting activity.

[5] See, among others, Harford (2005), Harford and Li (2007), Rhodes-Kropf and Viswanathan (2004), Hoberg and Phillips (2010), Ahern and Harford (2014), Levi, Li, and Zhang (2010, 2014), Bena and Li (2014), and Cunningham, Ederer, and Ma (2020). See Betton, Eckbo, and Thorburn (2008) for a review of this literature.

We match firms in CRSP/Compustat with acquirer and target firms in SDC using the CUSIP number. We then pair them to companies in LCAs, I-129 petitions, and PatentsView using a fuzzy string-matching algorithm based on firm name following Chen, Hshieh, and Zhang (2020). Because firm names can have different formats across databases, we standardize firm names in all databases to ensure that legal entity type identifiers (e.g., "Inc", "corporation", etc.) and abbreviations are formatted consistently. To further safeguard the integrity of our matching procedure, we manually inspect the final set of matched firm names.

We form a panel of firm-years from the merged datasets described above. Following the literature (e.g., Xu, 2018), we exclude from our sample utility firms (SIC code between 4900 and 4999), financial firms (SIC code between 6000 and 6999), and public sector firms (SIC code over 9000). Since the H-1B visa program follows the governmental fiscal year that starts on October 1, we construct our variables by the governmental fiscal year rather than calendar year. "Year" will refer to the governmental "fiscal year" henceforth. We only keep firm-years from 2001 to 2017 since the LCAs data begin in 2001, and the I-129 petitions data end in 2017.

From the SDC database, we retrieve mergers and acquisitions announced between 2001 and 2017 by U.S. public firms. Following prior studies,[6] we require that the deal must be in the form of a merger, an acquisition of majority interest, or an acquisition of assets; the deal must also be a control bid in which the acquirer owns less than half of the target firm's outstanding shares before the deal and aims to own more than half after the deal.

Table 1 displays the frequency of public firms and their acquisitions each year. The number of firms steadily decreases from 4,356 in 2001 to 3,024 in 2009 and stabilizes around 2,900 since then. There is also a temporal downward trend in the number of public firms that file LCAs and

[6] See, among others, Betton, Eckbo, and Thorburn (2008) and Bessembinder, Cooper, and Zhang (2019).

the number of public firms with approved I-129 petitions. The number of LCA-filers drops from about 1,500 at the beginning of the sample period to about 1,000 at the end, while the number of firms with approved I-129 petitions falls from about 1,300 to 631 during the same period.

The sample firms initiate approximately 1,000 acquisitions per year before the financial crisis. The volume of acquisitions drops to 636 in 2009 and steadily rises to 1,020 in 2014 before declining to 752 in 2017. The number of acquisitions targeting firms that received any H-1B visas varies less over time, ranging between 251 in 2009/2017 and 421 in 2006.

3. Skilled Labor Shortages and Acquisition Activity: Results Based on H-1B Visa Lottery

3.1. H-1B visa lottery

The Immigration Act of 1990 created the H-1B visa program with an initial annual quota of 65,000 visas that lasted until 1999. The cap was raised to 115,000 in 1999 and further to 195,000 in 2001, but sharply reverted to 65,000 in 2004. In 2006, 20,000 H-1B visas were added for foreign workers with a master's degree or higher from a U.S. institution. The annual cap has not been adjusted since then. The annual cap was never reached before 2004 but has always been binding since 2004.

To hire a skilled immigrant under the H-1B visa program, an employer must first file an LCA to the Department of Labor. The employer can file one LCA for multiple foreign workers as long as the workers are in the same job category or position. Once the LCA is certified, the employer can submit an I-129 petition separately for each foreign worker specified in the certified LCA to the USCIS office. A granted H-1B work visa is valid for three years and may be extended once for another three years.

On the first business day in April, the USCIS starts accepting I-129 petitions for the coming fiscal year that starts in October. The USCIS must keep petitions open for at least five business days. If the annual quota is not reached within the first five days, the USCIS processes all petitions submitted before the date when the annual quota is reached and conducts lotteries to allocate the remaining H-1B visas to the petitions submitted on that date. If the volume of submitted I-129 petitions reaches the annual quota within the first five days, the USCIS will stop accepting I-129 petitions after a specific cutoff day that is unknown to petitioners in advance. The USCIS determines the cutoff day *ad hoc* once it thinks it already has or will have enough petitions by the cutoff day. The USCIS then uses lotteries to allocate the cap-subject H-1B visas to petitions submitted before the cutoff date. In fiscal years 2008 and 2009 and 2014–2017, the quota was reached within five days and all cap-subject H-1B visas were allocated using computer-based random algorithms. This lottery algorithm results in random variations in the fraction of a firm's demand for skilled foreign workers that is met. Therefore, our analysis in Section 3 focuses on fiscal years 2008 and 2009 and 2014–2017 because the lottery win rate is random across firms in these years.

Lucky firms have more of their demand for high-skilled foreign labor satisfied in H-1B lotteries, while unlucky firms have less (or none). In addition to the alternative options discussed in the introduction—including direct hiring in the labor market, relocating workers to foreign affiliates, forgoing or delaying planned projects, outsourcing planned projects, and forming strategic alliances with other firms—unlucky firms may acquire skilled workers through M&As. We thus hypothesize that the higher the fraction of H-1B visa petitions a company fails to get approved, the more likely it will acquire talent through mergers and acquisitions.

3.2. Verifying the randomness of the H-1B visa lottery

We measure a firm's demand for cap-subject H-1B visas using the number of visas it requests in its LCA filings. We estimate the number of cap-subject H-1B visas granted to a firm using the I-129 petitions data. We obtained approximately 5.5 million processed I-129 petitions from 1999 to 2017 through a Freedom of Information Act (FOIA) request on June 30, 2016. A firm's fraction of demand for cap-subject H-1B visas that is met (i.e., its lottery win rate) is the ratio of the number of visas received to the number requested by the firm. Our measures follow Chen, Hshieh, and Zhang (2020) and are akin to Kerr and Lincoln (2010) and Xu (2018).

Table 2 Panel A reports summary statistics of the fraction of cap-subject H-1B demand that is met in each of the six lottery years (2008 and 2009 and 2014–2017) for our sample of public firms. The LCA-filing firms demand more and more H-1B visas over time: the average demand more than doubled from 17.30 visas in 2008 to 47.96 in 2017. The average number of cap-subject H-1B visas granted to each firm per annum also rose from 7.69 in 2008 to 12.52 in 2017, but the rate of growth is smaller than that of the demand. As a result, the fraction of demand met by supply fell from 52% in 2008 to 36% in 2017.

In Table 2 Panel B we test whether the fraction of a firm's capped H-1B demand met by supply is random across observable firm characteristics. We regress the fraction of demand met on six firm characteristics: firm size, leverage ratio, ROA, Tobin's Q, cash holding, and labor intensity (employee count divided by book assets). Coefficients on these characteristics are all insignificant, which suggests the fraction of demand met varies randomly across firms and is not biased towards any of the firm characteristics. This result is consistent with prior studies (Doran, Gelber, and Isen, 2016; Wu, 2018; Chen, Hshieh, and Zhang, 2020).

3.3. Likelihood of winning the H-1B visa lottery and acquisition activity

We identify the average effect of the H-1B visa lottery on a firm's acquisition activity by estimating the following model:

$$y_{i,t+1} = \beta \times \%\ Demand\ Met_{it} + \gamma X_{it} + \alpha_i + \alpha_t + \varepsilon_{it}, \quad (1)$$

where $y_{i,t+1}$ is firm i's acquisition activity in year $t+1$. We focus on acquisition activity one year ahead because identifying and negotiating with target firms often take time. $\%\ Demand\ Met_{it}$ is the fraction of firm *i*'s demand for cap-subject H-1B visas that is met in year *t*. X_{it} is a vector of firm characteristics and α_i and α_t are firm and year fixed effects, respectively.

Table 3 Panel A presents summary statistics of the variables used to estimate model (1). The average firm demands 36.5 H-1B visas in a year, and about 50% of their demand is met. The average firm would need to hire 18 skilled workers to fill the vacancy left by the foreign workers who lose the H-1B lottery. The average shortage of 18 employees is large enough to potentially induce a firm to acquire a small target firm, as many acquihire targets are young startups with only a few employees (e.g., see Footnote 1 on Facebook's acquisition of Spool in July 2012 for its five workers). On average, firms initiate 0.40 acquisitions per annum. About 45% (0.18/0.40) of the target firms have received at least one H-1B visa by the announcement date of the acquisition.

Table 3 Panel B reports the estimation results of model (1). The dependent variables in columns (1) and (3) are the natural logarithm of one plus the total count of acquisitions and the natural logarithm of one plus the total count of acquisitions targeting firms who have hired H-1B workers, respectively. In columns (2) and (4), we change the dependent variables to an indicator of acquisitions and an indicator of acquisitions targeting firms that have hired H-1B workers, respectively. The coefficient on the fraction of H-1B demand met is negative and statistically significant throughout the four columns. The economic magnitudes of the effects are large. Each one standard deviation (38 percentage points) reduction in the likelihood of winning the H-1B

lottery raises the number of acquisitions by 6.9% and raises the number of acquisitions targeting firms that have hired H-1B workers by 7.6%.[7] The probability of initiating acquisitions increases by 2.3 percentage points while the probability of initiating acquisitions targeting firms that have hired H-1B workers increases by approximately 1.5 percentage points for each one standard deviation decrease in the fraction of H-1B demand met.

These results show that, after losing H-1B visa lotteries, a firm is more likely to engage in acquisitions, especially acquisitions involving target firms with a history of hiring H-1B workers.

4. Reduced Supply of H-1B Visas and Acquisition Activity

As discussed above, the annual H-1B quota reverted to 65,000 in 2004 from 195,000 in 2003. This abrupt drop was largely unanticipated (Kato and Sparber, 2013; Xu, 2018; Chen, Hshieh, and Zhang, 2020) and caused a shortage of high-skilled workers for firms dependent on H-1B workers. We hypothesize that these H-1B dependent firms are more likely to acquire firms (and especially firms with H-1B workers) than other firms that are not reliant on H-1B workers.

We classify a public firm into the treated group if it received H-1B visas before 2004 and into the control group otherwise.[8] We then estimate the following diff-in-diff model:

$$y_{i,t+1} = \beta(Treatment_i \times Year_t \geq 2004) + \gamma X_{it} + \alpha_i + \alpha_t + \varepsilon_{it}. \qquad (2)$$

The dependent variable is firm *i*'s acquisition activity in year *t+1*. $Treatment_i$ is a dummy variable equal to one for the treated firms, and zero otherwise. $Year_t \geq 2004$ is a dummy variable

[7] Our regression has this form: $Ln(1+Y) = a + bX + u$. For each unit of change in X, the change in Y, ΔY, is approximately $(1+Y+\Delta Y)/(1+Y) = \exp(b)$. Solving the equation yields $\frac{\Delta Y}{Y} = [\exp(b)-1](1+1/Y)$. For each unit change in X, Y changes by $100 * [\exp(b)-1](1+1/Y)$ percent.

[8] Our treatment classification follows Chen, Hshieh, and Zhang (2020) and is similar to Kerr and Lincoln (2010) and Xu (2018). The results remain qualitatively unchanged when we classify a public company into the treated group if it filed LCAs before 2004.

equal to one if year t is greater than or equal to 2004, and zero otherwise. X_{it} is a vector of firm characteristics. α_i and α_t are firm and year fixed effects, respectively. We cluster standard errors at the firm level following the suggestions of Petersen (2009). We estimate the model using firms active in 2003 over the seven years (2001–2007) around 2004. The estimation sample starts in 2001 because LCAs data are unavailable before 2001; the sample ends in 2007 to avoid any confounding effects of the financial crisis starting in 2008 or any overlap with the sample period for the H-1B lottery-based natural experiment.[9]

Table 4 Panel A reports summary statistics of the variables used to estimate model (2). About 47% of the firm-year observations are from treated firms and 51% of the firm-years occur after 2004. The average company acquires 0.29 targets per annum and about 34% (0.10/0.29) of the target firms have hired H-1B workers prior to their acquisition announcement date.

Table 4 Panel B presents the estimation results for model (2). The dependent variables in the four columns are the same as those in our lottery-based analysis (Table 3 Panel B). The coefficient on the interaction variable is positive and statistically significant at the one percent level in all four columns except in column (2) where the dependent variable is the indicator for acquisitions. The results show that the 2004 reduction in H-1B visa cap caused H-1B-dependent firms to make more acquisitions, particularly acquisitions targeting firms that have hired H-1B workers.

The average treatment effects are economically substantial. Compared to the control firms, the treated firms acquired 12% more firms and 25% more target firms with H-1B workers per annum after 2004 than before. Concerning the extensive margins, the treated firms are about 2 percentage points more likely to acquire target firms that have hired H-1B workers.

[9] Our diff-in-diff results are unlikely to be driven by any confounding events in 2004. Such confounding events must not only affect acquisition activities of firms, but also have effects that correlate with H-1B-dependency. In addition, such effects must conform to the long battery of cross-sectional tests in Section 5.

A diff-in-diff model assumes that the treated and control firms have parallel trends in the outcome variable before the treatment event. The parallel trends assumption is not testable. We check whether this assumption is empirically violated in our setting following prior studies (Roberts and Whited, 2013). Specifically, we estimate a dynamic version of model (2) by replacing the interaction variable with the interactions between the treatment dummy and dummies for each year from 2001 to 2007, omitting 2003 to avoid multicollinearity and making 2003 the benchmark year. Coefficients on the interaction variables for 2001 and 2002 will be different from zero if the parallel trends assumption does not hold. The estimation results of the dynamic diff-in-diff model (Table 4 Panel C) show that these coefficients are insignificant throughout the four columns, which suggest that the parallel trends assumption is not violated in model (2). The results also show a weaker treatment effect in 2004 relative to 2005-2007, which may be attributable to the time needed to identify and broker deals with viable targets.

A diff-in-diff model could produce false positive treatment effects if the treated and control firms have heterogeneous characteristics that are not controlled for in model (2) (Roberts and Whited, 2013). To address this concern, we conduct the following falsification test. Pretending that the annual H-1B quota significantly dropped in 2014, we classify a firm into the treated group if it received H-1B visas before 2014, and into the control group otherwise. We then estimate a diff-in-diff model identical to model (2) with two differences: 1) replacing the post-2004 indicator with the post-2014 indicator and 2) altering the estimation period to 2011-2017. The falsification test results, reported in Table 5, show that the coefficient on the interaction variable is insignificant throughout the four columns. These results indicate that the diff-in-diff model does not produce false positive treatment effects in our setting.

In sum, Section 4 shows that H-1B-dependent firms are more likely to acquire firms that have hired H-1B workers than the control firms after the 2004 reduction in the annual H-1B visa cap. This result and the results based on H-1B visa lotteries are all consistent with our hypothesis that firms obtain high-skilled workers through mergers and acquisitions when facing shortages of high-skilled labor. In the next section, we provide additional evidence that skilled labor is one, albeit not the only, driver of the acquisitions initiated by firms short on H-1B workers.

5. Acquiring Talent or Not?

Our two natural experiments reveal that shortages of high-skilled foreign workers induce firms to acquire other firms with such high-skilled foreign workers. Yet it remains possible that these acquisitions are intended for buying the tangible assets and intellectual property of the target firms rather than for hiring their skilled workers. Employing a long battery of additional tests, this section explores whether hiring the target's skilled labor is one driver of these acquisitions. The test results suggest that hiring the target's talent is an important driver of these acquisitions. Of course, hiring talent and acquiring other assets are not mutually exclusive. It is possible that some of these acquisitions are driven by the target firm's skilled labor on top of the target's tangible assets and intellectual property.

5.1. Acquisitions of target firms with versus without H-1B workers

Sections 3 and 4 show that firms acquire more target firms with H-1B workers when facing H-1B visa shortages. If recruiting talent is a primary driver of these M&As, our baseline results will be weaker among acquisitions in which the target firm has no H-1B workers. Out of the 15,675 acquisitions made by the firms in our lottery-based analysis and the diff-in-diff model, 5,399

(34.4%) target firms have employed H-1B workers at the time of the acquisition announcement and 10,276 (65.6%) target firms have not (Panel A of Table 6).

To test the prediction, we estimate models (1) and (2) with the dependent variable replaced with the natural logarithm of one plus the number of acquisitions in which the target firm has never hired H-1B workers. The coefficient on the H-1B lottery win rate in model (1) and the coefficient on the interaction variable in model (2) are both insignificant, as documented in the second row of Table 6 Panel C and the second row of Table 6 Panel D, respectively. Taken together, these results suggest that firms short on H-1B workers acquire more firms with H-1B workers but not more firms without H-1B workers. The results are consistent with hiring talent being a primary driver of these M&As.

5.2. Acquisitions in which the acquirer and the target have H-1B workers with similar skills

We also estimate the similarity of the acquirer's and the target's H-1B workers before the acquisition announcement as follows. For each firm, we construct a vector of H-1B worker counts. Each element of the vector corresponds to a unique job category specified in I-129 petitions. The similarity score for an acquisition equals the cosine similarity of the acquirer's and the target's job function count vectors.[10] The similarity score is zero if the acquirer/target has not hired H-1B workers before the acquisition. A higher similarity score means that the target firm's H-1B workers possess skills more similar to the acquirer's H-1B workers.

Table 6 Panel B shows that 10,966 acquirers have H-1B workers. They have a mean number of H-1B workers of 628 and a median of 16, suggesting that the distribution of the number of H-1B workers is significantly skewed. On average, 32.5% of the H-1B workers hold positions in IT, 14.2% in engineering, 2.3% in biological sciences, and 2.0% in mathematical sciences.

[10] This measure is similar to the product similarity measure developed by Hoberg and Philips (2010).

Table 6 Panel A shows that 5,399 target firms have H-1B workers. The target firms have an average of 56 H-1B workers and a median of 4. The targets' and the acquirers' H-1B workers have overlapping job functions. On average, 41.5% of the targets' H-1B workers hold positions in IT, 20.9% in engineering, 3.8% in biological sciences, and 3.3% in mathematical sciences. The fractions are comparable to those for the acquirers' H-1B workers.

The acquirer and the target both have hired H-1B workers in 4,339 (28%) of the 15,675 acquisitions in our sample (Table 6 Panel A). The mean (median) job function similarity score between the acquirer's and the target's H-1B workers is 0.46 (0.45). In about 80% of the 4,339 acquisitions, the acquirer and the target have positive H-1B worker job function similarity scores. In short, the acquirer's and the target's H-1B workers share common skills.

The higher the H-1B job function similarity score, the more likely the acquirer is buying the target's H-1B workers. Therefore, we estimate models (1) and (2) with the dependent variable replaced with the natural logarithm of one plus the number of acquisitions in which the acquirer's and the target's H-1B workers have positive job function similarity scores. The regression results show that the coefficient on the H-1B lottery win rate in model (1) remains negative and statistically significant (row (3) of Table 6 Panel C) and the coefficient on the interaction variable in model (2) remains positive and significant (row (3) of Table 6 Panel D).

We repeat the analysis by replacing the dependent variable with the natural logarithm of one plus the number of acquisitions in which the target has no H-1B workers or the acquirer's and the target's H-1B workers do not have positive job function similarity scores. The regression results show an insignificant coefficient on the H-1B lottery win rate (row (4) of Table 6 Panel C) and an insignificant coefficient on the interaction variable in model (2) (row (4) of Table 6 Panel D).

The results in this subsection show that the acquirers' and the targets' H-1B workers have similar job functions. Firms short on H-1B workers acquire firms whose H-1B workers have similar skills and, by contrast, do not acquire firms without H-1B workers or firms whose H-1B workers do not have the skills they need. The results suggest that skilled labor is a driver of the acquisitions initiated by firms seeking skilled H-1B workers.

5.3. Acquisitions with versus acquisitions without disclosed transaction size

Anecdotal evidence suggests that talent-driven acquisitions often target small, young startups with high-skilled workforces and negligible tangible assets.[11] For example, Facebook acquired Spool in July 2012 solely for its five employees. Spool had no tangible assets to disclose in the acquisition. As a result, transaction value is less likely to be disclosed for talent-driven acquisitions because the target firms have less assets on their books, ceteris paribus.[12] In fact, about half of our sample acquisitions have an undisclosed transaction size (Table 6 Panel A).

We therefore investigate whether shortages of high-skilled labor lead to more acquisitions with undisclosed transaction size. To do so, we estimate models (1) and (2) with the dependent variable replaced with the natural logarithm of one plus the number of acquisitions with undisclosed transaction size and the natural logarithm of one plus the number of acquisitions with disclosed transaction size, respectively. The estimation results, reported in rows (5) and (6) of Panels C and D of Table 6, show that shortfalls in skilled labor lead to more acquisitions with undisclosed transaction value, which are more likely to be talent-driven acquisitions. Conversely, shortages of skilled labor do not lead to more acquisitions with disclosed transaction size.

[11] See https://tomtunguz.com/startup-acquihire-trends/.
[12] The SEC requires the acquirer to disclose the transaction size if the target firm is large relative to the acquiring firm, which can be measured relative to investment, asset, or income. Therefore, an undisclosed transaction size does not necessarily mean that the target firm has negligible tangible assets. Yet an undisclosed transaction size likely indicates that the target firm has relatively less tangible assets, ceteris paribus.

5.4. Acquisitions of high-tech versus low-tech targets

High-tech industries rely on skilled employees for innovation. If firms acquihire when short on skilled labor, they are more likely to take over targets in high-tech industry sectors. Following the literature (e.g., Goldschlag and Miranda, 2016; Kim, 2020), we classify the 4-digit NAICS industries with the highest fraction of STEM employment as high-tech sectors. About 36% of the target firms in our sample are high-tech firms (Table 6 Panel A).

We re-estimate models (1) and (2), replacing the dependent variable with the natural logarithm of one plus the number of acquisitions targeting high-tech firms and the natural logarithm of the number of acquisitions targeting firms in other sectors (or low-tech), respectively. Rows (7) and (8) of Table 6 Panel C show that firms have similar propensities to go after high-tech versus low-tech targets after losing H-1B lotteries. In contrast, rows (7) and (8) of Table 6 Panel D show that the treated H-1B-dependent firms are more likely to acquire high-tech targets but not low-tech targets after the 2004 reduction in the H-1B visa quota.

Overall, shortfalls in skilled labor lead to more acquisitions of high-tech targets, which have more skilled employees and are more likely to involve acquihiring. This effect is weaker for low-tech targets.

5.5. Acquisitions of targets with versus targets without patents

Skilled workers and R&D investments create intellectual property such as patents. Shortages of skilled labor curtail patent production in-house, which could force firms to buy patents through mergers and acquisitions. Skilled labor shortages could thus turn a firm's innovation strategy from internal development to external acquisition. If so, patents rather than talent could drive our main findings.

We test this possibility by distinguishing acquisitions of targets with patents from acquisitions of targets without patents. About 86% of the target firms in our sample do not have patents (Table 6 Panel A). The regression results in rows (9) and (10) of Panels C and D in Table 6 show that deficits in skilled labor lead to more acquisitions of targets with or without patents. Thus, it is unlikely that these acquirers are solely buying patents from the target firms.

5.6. Acquisitions of targets in the same industry versus a different industry

Skilled labor shortages could motivate the firm to acquire its industry competitors to lower product market competition. We test this possibility by distinguishing acquisitions in which the acquirer and the target are in the same industry (non-diversifying acquisitions) and acquisitions in which they are from different industries (diversifying acquisitions). About 38% of the target firms in our sample are in the same industry as the acquirer (Table 6 Panel A). The regression results in rows (11) and (12) of Panels C and D in Table 6 show that skilled labor shortages lead to both more non-diversifying acquisitions and more diversifying acquisitions. These results suggest the acquirer's desire to lower industry competition is unlikely the sole driver of these acquisitions.

5.7. Non-compete state laws

Poaching talent from a firm is more difficult if the firm operates in states with strong enforcement of non-compete laws. Therefore, an acquisition is more likely to be an acquihire if the target firm is headquartered in states with strong non-compete laws (Chen, Gao, and Ma, 2020). We test this prediction by re-estimating models (1) and (2) and replacing the dependent variable with the natural logarithm of one plus the number of acquisitions in which the target is headquartered in states with strong/weak enforceability of non-compete labor laws. We regard the target firm's headquarter state as having strong (weak) enforceability of non-compete labor laws

if its enforceability index (from Garmaise 2011 and Ertimur et al. 2018) is above (below) the median within our sample of targets.

Rows (13) and (14) of Table 6 Panel C report the estimation results of model (1) separately for the number of targets with strong and weak enforceability of non-compete laws, respectively. The coefficient on the H-1B lottery win rate is negative in both rows but is statistically significant only when the dependent variable is the number of targets located in strong enforceability states. Rows (13) and (14) of Table 6 Panel D report the estimation results of model (2). The coefficient on the interaction variable is positive and statistically significant in both rows.

Taken together, these results suggest that shortages of skilled employees induce firms to acquire targets located in states with strong enforcement of non-compete laws. The effect is weaker for targets located in states with weaker enforcement of non-compete laws. The results are consistent with firms resorting to acquihiring when it is more difficult to obtain the target's skilled employees in the presence of stronger non-compete laws.

5.8. Employee stock options

Firms attract and retain talented employees by granting them stock options. We thus expect an increase in the acquirer's outstanding employee stock options and new options grants if the acquirer is truly recruiting talents through M&A.[13] To test this hypothesis, we estimate model (1) using several measures of employee stock options grants as dependent variables. Because employee stock options data are unavailable over the earlier period of our sample, we cannot test this hypothesis within the second natural experiment.[14]

[13] Carter and Lynch (2004) and Babenko (2009), for example, measure employee turnover using the number of forfeited options deflated by the number of outstanding options.
[14] The Compustat employee stock options database has limited coverage in earlier years.

Table 7 reports the estimation results using four outcome variables related to employee stock options: (1) the ratio of employee stock options grants to outstanding employee stock options, averaged over years *t* and *t+1*; (2) the average new stock option grants per employee in years *t* and *t+1*; (3) the average percentage change in employee stock options in years *t* and *t+1*; and (4) the average change in outstanding stock options per employee in years *t* and *t+1*. We observe that the coefficient on the fraction of H-1B demand met is negative and statistically significant across the four columns. These results show that firms grant more stock options to employees after losing H-1B visa lotteries. Since firms often rely on stock options to attract and retain skilled employees, these results are consistent with the acquihiring hypothesis.

5.9. Experienced acquirers

Prior work shows that experienced acquirers are better at retaining acquired employees (Puranam and Srikanth, 2007; Kim, 2020). Thus, we expect experienced acquirers to find it more appealing to hire skilled labor through M&As when they need H-1B workers. We classify a firm as an experienced acquirer if its cumulative number of completed M&As up to the lottery year exceeds the sample median in the first natural experiment (up to 2003 in the second natural experiment).

To test the prediction, we first interact the experienced acquirer indicator with the H-1B lottery win rate in model (1) to understand its cross-sectional effects. The coefficient on this interaction variable is negative and statistically significant throughout the four columns (Table 8 Panel A). We also interact the experienced acquirer indicator with *Treatment* $\times$ *Year* $\geqslant$*2004* in model (2). The coefficient on this triple interaction variable is positive and statistically significant in all columns except in column (2) where the dependent variable is the acquisition dummy (Table 8 Panel B). Taken together, the results suggest that experienced acquirers, which are likely better at

retaining acquihired employees, undertake more acquisitions than inexperienced acquirers when they lack H-1B workers.

5.10. Firms with foreign operations

Firms that fail to secure H-1B visas for their foreign skilled workers could temporarily relocate the workers to a foreign affiliate (e.g., a branch in Canada). This option mitigates the need for acquihire as these firms can reapply for H-1B visas for the foreign worker in the future. Yet this option is available only to firms that have such foreign affiliates. Therefore, we expect that our main results will be stronger for firms without foreign affiliates.

We employ two proxies for the existence of foreign affiliates. The first proxy is the firm's outbound income shifting constructed by De Simone, Mills, and Stomberg (2019). Outbound income shifting is likely to finance foreign investments or pay for foreign workers (Drake, Goldman, and Murphy, 2021). The second proxy is the fraction of the firm's employees that are in a foreign country, which we retrieve from the Compustat Segments dataset. We then create the low foreign operation (low foreign employment) indicator that takes the value of one if the firm's outbound income shifting (foreign employment) is below the sample median in the year.

We interact the low foreign operation/employment indicator with the H-1B lottery win rate in model (1) and with $Treatment \times Year \geqslant 2004$ in model (2) to understand its cross-sectional effects. The estimation results, reported in Table 9, show that our baseline results are stronger in firms with low foreign operations/employment. The results suggest that the demand for H-1B visas is more inelastic for firms without foreign branches. This inelasticity makes these firms more likely to hire skilled workers through M&As in response to negative shocks to the H-1B visa supply.

In sum, the long battery of tests in Section 5 shows that firms short on H-1B workers acquire target firms for their skilled workers. The results suggest that skilled labor is an important driver

of acquisition decisions. Of course, skilled labor is not the only driver because buying skilled labor and buying other assets are not mutually exclusive.

6. Acquirer Performance after Skilled Labor-Driven Acquisitions

Does acquihiring enhance the acquirer's performance? It enhances the acquirer's performance if the acquihired skilled employees add value to the acquirer. However, the acquirer's performance may not improve or even worsen if there are high labor integration costs (e.g., clashing work cultures between the acquirer and the target) or the acquihired skilled employees leave the acquirer soon after the acquisition (Kim, 2020). It is thus an empirical question whether acquihiring strengthens the acquirer's performance. Below we study this empirical question using a third quasi-natural experiment.

An acquisition is more likely to be labor-driven if the acquirer's and the target's existing H-1B workers have similar job functions (Tate and Yang, 2016). Similar job functions facilitate human capital transferability from the target firm to the acquirer and thus can reinforce the acquirer's performance. We thus examine the post-acquisition performance of acquirers whose existing employees have job functions similar to the target firm's employees. In the same manner as Section 5.2, we measure labor function similarity between the acquirer and the target with the cosine similarity of their job function count vectors derived from the I-129 microdata. A higher cosine similarity score implies a higher level of human capital transferability from the target firm to the acquirer. If acquihiring enhances the acquirer's performance, the enhancement will concentrate in acquisitions where the acquirer and the target have similar and transferable employee skills.

Assessing the acquirer's post-acquisition performance is challenging because one cannot observe what the acquirer's performance would have been had the acquisition failed. This is a challenge faced by the mergers and acquisitions literature as a whole. Prior studies meet the challenge by constructing control acquisition bids that are withdrawn for exogenous reasons (Bena and Li, 2014; Seru, 2014). We follow these studies and form a sample of control acquisitions that are withdrawn for exogenous reasons. Specifically, we retrieve from Factiva news articles on each withdrawn acquisition and classify the reason for withdrawal as endogenous if one or more of the following criteria is satisfied. First, the acquisition bid was withdrawn because of disagreements on growth strategy, restructuring, valuation, or news of negative developments. Second, the acquisition bid was expected to fail. Third, there is scarce information for us to decide the reason for withdrawal.

For each exogenously withdrawn acquisition bid, we select a matching completed treatment acquisition in which the acquirer's and the target's labor functions have a positive cosine similarity score. As explained above, these acquisitions are more likely to be skilled labor-driven and thus are more likely to have improved post-acquisition acquirer performance. As in Bena and Li (2014), the withdrawn acquisitions and the matched completed deals must meet the following criteria. First, the acquirer of the withdrawn deal, the acquirer of the completed deal, and their target firms must all have the same four-digit NAICS industry code. Second, the completed deal's announcement is within a three-year window centered at the announcement year of the withdrawn deal. Third, if a withdrawn deal has multiple matching completed deals, we keep the completed deal that has the closest relative size (the ratio of the target firm's total assets over acquirer's) to the withdrawn

deal.[15] We can identify 27 deals withdrawn for exogenous reasons and 27 matched completed deals.

Table 10 Panel A compares the operating performance—measured by return on assets (ROA) and return on equity (ROE)—of the acquirers of the completed deals (completed acquirers) versus the acquirers of the withdrawn deals (withdrawn acquirers).[16] The completed and withdrawn acquirers have similar operating performance and similar firm characteristics before the acquisition. They also have similar labor function similarity scores with their target firms. The withdrawn acquirers seem comparable to the completed acquirers and provide a reasonable benchmark to assess the post-acquisition performance of the completed acquirers. The completed acquirers outperform the withdrawn over the three years after the acquisition: the average annual ROA of the completed acquirers is 8% versus 6% for the withdrawn acquirers, while the average ROE is 20% versus 9%.

We estimate the following diff-in-diff model to further test the post-acquisition performance of the completed acquirers:

$$y_{it+1} = \beta(Treatment_i \times Post_t) + \gamma X_{it} + \alpha_i + \alpha_t + \beta_t + \epsilon_{it} \qquad (3)$$

where the outcome variable, y_{it+1}, is ROA or ROE of acquirer i at year $t+1$. $Treatment_i$ is a dummy variable equal to one if the acquirer completed the deal, and zero if the deal was withdrawn for exogenous reasons. $Post_t$ is a dummy variable equal to 1 if period t is in the post-announcement window, and zero otherwise. α_i, α_t, β_t are event/deal, event year, and calendar year fixed effects, respectively. Lastly, ϵ_{it} is the error term.

[15] In the case that relative size is missing, we keep the completed deal that has the closest labor overlap score to the withdrawn deal.
[16] In unreported results, we find insignificant differences in patenting activity between the acquirers of completed deals and the acquirers of the withdrawn deals.

The first two columns of Table 10 Panel B present the estimation results of model (3). The dependent variable is ROA in column (1) and ROE in column (2). The coefficient on the interaction variable is positive and statistically significant in both columns, showing that the completed acquirers outperform the withdrawn acquirers after the acquisition.

To trace the source of the completed acquirers' outperformance, we divide the acquisitions into two groups based on the level of the acquirer-target employee job function similarity. Columns (3) and (4) report the estimation results of model (3) for the high-similarity group; columns (5) and (6) are for the low-similarity group. The coefficient on the interaction variable remains positive and significant for the high-similarity group but becomes insignificant for the low-similarity group. These results suggest that acquihired employees contribute to the outperformance of the completed acquirers. Their contribution is significant only when their skills are similar to the skills of the acquirer's existing employees.

7. Conclusions

Skilled labor is crucial for firm innovation and operating performance. Firms typically hire skilled labor directly from the labor market. Yet more and more firms, especially high-tech firms, recruit skilled labor through M&As. In fact, acquihiring has "become commonplace in Silicon Valley" as competition for skilled workers intensifies (Needleman, 2012). We thus expect firms to acquihire when they lack skilled labor.

In two natural experiments we document that, when exposed to exogenous negative shocks to the supply of skilled labor, firms pursue more acquisitions, especially more acquisitions targeting firms who possess the skilled labor they need. We also find that the skilled employees recruited from the target firm help reinforce the acquirer's performance.

This study advances our understanding of acquihiring but leaves some questions unanswered. For example, although the two natural experiments allow us to show that shortages in skilled labor drive firms' merger and acquisition activities, we and previous studies cannot categorically identify which acquisitions are pure acquihires and which are not. To meet this challenge, prospective studies will need detailed information on the acquirer's and the target's employees (e.g., their education records and employment histories).

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Appendix: Variable Definition

Variable	Definition
	a. Dependent Variables
Ln(No. Acq.)	The natural logarithm of one plus the number of M&A deals in year *t+1*
Has Acq.	An indicator of whether the public company (acquirer) has an M&A deal in year *t+1*
Ln(No. Acq. with H-1B Hires)	The natural logarithm of one plus the number of M&A deals with target firms having H-1B hires in year *t+1*
Has Acq. with H-1B Hires	An indicator of whether the public company (acquirer) has an M&A deal with target firms having H-1B hires in year *t+1*
Percentage of New Options Granted	The ratio of new employee option grants to outstanding employee options, averaged over years *t* and *t+1*
New Options Granted per Employee	The average new option grants per employee in years *t* and *t+1*
Percentage Change in Outstanding Options	The average percentage change in employee options in years *t* and *t+1*
Change in Outstanding Options per Employee	The average change in outstanding options per employee in years *t* and *t+1*
	b. Firm Characteristics
Size	The natural logarithm of total market capitalization in year *t*
Leverage	Long-term debt plus debt in current liabilities divided by book assets in year *t*
ROA	Net income divided by book assets in year *t*
Tobin's Q	Firm market value (book assets plus market capitalization minus book equity) divided by replacement cost of assets (book assets) in year *t*
Cash	Cash holdings divided by book assets in year *t*
Employment	Employee count divided by book assets in year *t*

Table 1: Frequencies of Companies and their Acquisitions

This table summarizes the number of public companies, the number of public companies filing Labor Condition Applications (LCA), the number of public companies with approved I-129 petitions, the number of acquisitions made by public companies, and the number of acquisitions made by public companies involving targets with H-1B workers for each fiscal year in our sample. The last column lists the annual H-1B visa cap for each fiscal year.

Fiscal Year	No. Public Companies	No. Companies Filing LCA	No. Companies Filing I-129	No. Acq.	No. Acq. with H-1B hires	H-1B visa cap
2001	4356	1403	1283	1037	286	195000
2002	4012	1619	1445	954	315	195000
2003	3744	1454	1295	903	315	195000
2004	3698	1561	1431	1099	348	65000
2005	3610	1568	1440	1034	368	65000
2006	3537	1480	1345	1189	421	85000
2007	3423	1445	1283	1140	354	85000
2008	3210	1326	1167	1031	362	85000
2009	3024	1194	1045	636	251	85000
2010	2908	1114	1022	758	294	85000
2011	2836	1101	1004	946	320	85000
2012	2795	1064	950	820	301	85000
2013	2844	1054	940	939	320	85000
2014	2966	1073	977	1020	341	85000
2015	2931	1086	934	905	273	85000
2016	2855	1016	901	772	277	85000
2017	2837	1005	631	752	251	85000

Table 2: The Fraction of a Company's Demand for High-Skilled Foreign Labor that is Met

Panel A summarizes the number of public companies filing cap-subject Labor Condition Applications, the average number of cap-subject foreign workers each LCA filer demanded, the average number of cap-subject H-1B visas granted to the company, and the fraction of demand for high-skilled foreign labor that is met, by year. The sample period is over the years of 2008-2009 and 2014-2017 in which lotteries are held to allocate all cap-subject H-1B visas. We estimate a company's demand for cap-subject foreign workers using its LCA filings and the number of cap-subject H-1B visas granted to the company using its processed I-129 petitions. Panel B presents the OLS regression results of company-year panel regressions using the sample of public companies that demand at least one cap-subject H-1B visa in the year. The dependent variable is the fraction of the company's demand for cap-subject H-1B visa that is met by supply in year *t*. The explanatory variables are company characteristics related to size, leverage, ROA, Tobin's Q, cash, and employment in year *t*. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses are clustered at the public company level.

A. Demand for and Supply of High-Skilled Foreign Workers Subject to H-1B Visa Cap, by Year

Year	# Companies Filing Cap-subject LCA	# Cap-subject H-1B visas demanded	# Cap-subject H-1B visas granted	% Cap-subject H-1B demand that is met
2008	741	17.30	7.69	0.52
2009	735	22.39	10.08	0.54
2014	592	44.33	13.16	0.62
2015	615	51.81	11.51	0.46
2016	622	42.77	11.55	0.42
2017	572	47.96	12.52	0.36

B. Company Characteristics and the Fraction of Demand for Cap-subject H-1B Visa that is Met

	(1)	(2)
	% H-1B Demand Met	
Size	0.040	0.030
	(1.15)	(1.51)
Leverage	-0.035	0.046
	(-0.46)	(0.67)
ROA	0.159	-0.097
	(1.06)	(-1.19)
Tobin's Q	0.016	-0.001
	(0.83)	(-0.14)
Cash	0.148	-0.043
	(0.64)	(-0.50)
Employment	7.530	-3.990
	(1.22)	(-0.89)
Observations	3877	3877
Adj. R-Squared	0.012	0.196
Company FE	No	Yes
Year FE	Yes	Yes

Table 3: The Fraction of H-1B Demand Met in Lotteries and Public Companies' M&A Activity

Panel A presents summary statistics of the variables relevant to model (1). Panel B presents OLS estimation results of company-year panel regressions in model (1) over the years of 2008-2009 and 2014-2017 using the first natural experiment. The main independent variable is the fraction of the company's demand for H-1B visas that is met (or the probability of winning H-1B visas). We estimate a company's demand for cap-subject foreign workers using its LCA filings and the number of cap-subject H-1B visas granted to the company using its processed I-129 petitions. The dependent variables are the natural logarithm of one plus the number of M&A deals in year *t+1* in column (1), an indicator of whether the public company (acquirer) has an M&A deal in *t+1* in column (2), the natural logarithm of one plus the number of M&A deals with target firms having H-1B hires in year *t+1* in column (3), and an indicator of whether the public company (acquirer) has an M&A deal with target firms having H-1B hires in *t+1* in column (4). Other explanatory variables are a set of firm characteristics measured in year *t*. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses are clustered at the public company level.

Panel A: Summary Statistics

	N	Mean	Std. Dev.	5-%ile	25-%ile	50-%ile	75-%ile	95-%ile
No. Cap-subject H-1B visas granted	3877	10.92	58.34	0.00	0.00	1.00	4.00	30.00
No. Cap-subject H-1B demanded	3877	36.48	267.80	1.00	1.00	3.00	8.00	71.00
% H-1B Demand Met	3877	0.49	0.38	0.00	0.00	0.50	0.90	1.00
No. Acq.	3877	0.40	0.93	0.00	0.00	0.00	0.00	2.00
No. Acq. with H-1B Hires	3877	0.18	0.50	0.00	0.00	0.00	0.00	1.00

Panel B: Regression Results

	(1)	(2)	(3)	(4)
	Ln(No. Acq.)	Has Acq.	Ln(No. Acq. with H-1B Workers)	Has Acq. with H-1B Workers
% H-1B Demand Met	-0.053***	-0.061***	-0.031**	-0.043***
	(0.019)	(0.022)	(0.013)	(0.016)
Size	0.035**	0.042***	-0.002	-0.002
	(0.014)	(0.016)	(0.009)	(0.012)
Leverage	-0.129**	-0.101*	-0.079**	-0.075
	(0.055)	(0.059)	(0.037)	(0.046)
ROA	-0.034	-0.013	-0.022	-0.028
	(0.046)	(0.051)	(0.022)	(0.028)
Tobin's Q	-0.000	-0.003	0.006	0.007
	(0.006)	(0.007)	(0.004)	(0.005)
Cash	0.123	0.082	0.092*	0.106
	(0.081)	(0.092)	(0.053)	(0.066)
Employment	-0.326	-0.503	-0.282**	-0.391**
	(0.531)	(0.744)	(0.143)	(0.183)
Observations	3877	3877	3877	3877
Adj. R-Squared	0.345	0.267	0.198	0.164
Company FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 4: Diff-in-Diff Estimation Results Based on the 2004 Reduction in H-1B Visa Cap

Panel A presents summary statistics of the relevant variables in model (2). Panel B presents the OLS regression results of the diff-in-diff model in (2) over the 2001-2007 period. The dependent variables are the natural logarithm of one plus the number of M&A deals in year *t+1* in column (1), an indicator of whether the public company (acquirer) has an M&A deal in *t+1* in column (2), the natural logarithm of one plus the number of M&A deals with target firms having H-1B hires in year *t+1* in column (3), and an indicator of whether the public company (acquirer) has an M&A deal with target firms having H-1B hires in *t+1* in column (4). Treatment is a dummy variable equal to 1 if the public company received any approved I-129 petitions prior to 2004, and 0 otherwise. The control variables include size, leverage, ROA, Tobin's Q, cash, employment, company fixed effects, and year fixed effects. Panel C replaces the lone interaction variable in Panel B with a set of interaction variables between the treatment dummy and year dummies; the interaction variable for the year of 2003 is omitted to avoid multi-collinearity. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses are clustered at the public company level.

Panel A: Summary Statistics

	N	Mean	Std. Dev.	5-%ile	25-%ile	50-%ile	75-%ile	95-%ile
Treatment	21930	0.47	0.50	0.00	0.00	0.00	1.00	1.00
Year≥2004	21930	0.51	0.50	0.00	0.00	1.00	1.00	1.00
No. Acq.	21930	0.29	0.82	0.00	0.00	0.00	0.00	2.00
No. Acq. with H-1B Hires	21930	0.10	0.41	0.00	0.00	0.00	0.00	1.00

Panel B: Regression Results

	(1)	(2)	(3)	(4)
	Ln(No. Acq.)	Has Acq.	Ln(No. Acq. with H-1B Workers)	Has Acq. with H-1B Workers
Treatment x Year≥2004	0.027***	0.015	0.022***	0.024***
	(0.010)	(0.010)	(0.006)	(0.007)
Size	0.043***	0.044***	0.017***	0.022***
	(0.005)	(0.005)	(0.003)	(0.003)
Leverage	-0.039**	-0.040**	-0.024**	-0.030**
	(0.017)	(0.018)	(0.011)	(0.013)
ROA	0.001	0.003*	0.001	0.001
	(0.002)	(0.002)	(0.001)	(0.001)
Tobin's Q	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.000)	(0.001)
Cash	0.155***	0.183***	0.080***	0.107***
	(0.025)	(0.027)	(0.017)	(0.020)
Employment	-0.009	0.002	-0.000	0.001
	(0.020)	(0.023)	(0.010)	(0.015)
Observations	21930	21930	21930	21930
Adj. R-Squared	0.368	0.288	0.279	0.210
Company FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Panel C: Treatment Dynamics

	(1)	(2)	(3)	(4)
	Ln(No. Acq.)	Has Acq.	Ln(No. Acq. with H-1B Workers)	Has Acq. with H-1B Workers
Treatment x Year=2001	-0.022	0.010	-0.009	-0.016
	(0.014)	(0.016)	(0.009)	(0.011)
Treatment x Year=2002	-0.008	0.007	-0.008	-0.018
	(0.014)	(0.015)	(0.009)	(0.011)
Treatment x Year=2004	0.009	0.018	0.010	0.007
	(0.014)	(0.016)	(0.009)	(0.012)
Treatment x Year=2005	0.014	0.010	0.025**	0.025**
	(0.016)	(0.017)	(0.010)	(0.013)
Treatment x Year=2006	0.030*	0.021	0.014	0.006
	(0.017)	(0.018)	(0.011)	(0.013)
Treatment x Year=2007	0.021	0.022	0.018	0.015
	(0.018)	(0.019)	(0.011)	(0.014)
Observations	21930	21930	21930	21930
Adj. R-Squared	0.368	0.282	0.279	0.210
Controls	Yes	Yes	Yes	Yes
Company FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 5: Falsification Test of the Diff-in-Diff Model

This table presents results of a falsification test of the diff-in-diff model. Pretending that the annual H-1B quota were significantly reduced in 2014, we classify a firm into the treated group if it had been granted H-1B visas before 2014 and into the control group otherwise. We then estimate a diff-in-diff model identical to model (2) except for two changes: the post-2004 indicator is replaced with the post-2014 indicator and the estimation period is changed to 2011-2017. The dependent variable is the natural logarithm of one plus the number of M&A deals in year *t+1* in column (1), an indicator of whether the public company (acquirer) has an M&A deal in *t+1* in column (2), the natural logarithm of one plus the number of M&A deals with target firms having H-1B hires in year *t+1* in column (3), and an indicator of whether the public company (acquirer) has an M&A deal with target firms having H-1B hires in *t+1* in column (4). Treatment is a dummy variable equal to one if the public company received any approved I-129 petitions prior to 2014, and zero otherwise. The control variables include size, leverage, ROA, Tobin's Q, cash, employment, company fixed effects, and year fixed effects. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses are clustered at the public company level.

	(1)	(2)	(3)	(4)
	Ln(No. Acq.)	Has Acq.	Ln(No. Acq. with H-1B Workers)	Has Acq. with H-1B Workers
Treatment x Year≥2014	-0.010	-0.015	-0.009	-0.011
	(0.011)	(0.012)	(0.007)	(0.008)
Size	0.037***	0.038***	0.003	0.004
	(0.006)	(0.006)	(0.003)	(0.003)
Leverage	-0.067***	-0.081***	-0.027**	-0.035**
	(0.024)	(0.027)	(0.012)	(0.015)
ROA	-0.009	-0.008	-0.003	-0.004
	(0.007)	(0.008)	(0.003)	(0.004)
Tobin's Q	-0.000***	-0.000***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Cash	0.146***	0.185***	0.064***	0.082***
	(0.026)	(0.032)	(0.017)	(0.023)
Employment	-0.194	-0.277	-0.051	-0.073
	(0.181)	(0.225)	(0.060)	(0.081)
Observations	16488	16488	16488	16488
Adj. R-Squared	0.382	0.287	0.237	0.188
Company FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 6: Acquiring Talent or Tangible/Intellectual Assets?

Panel A summarizes the characteristics of the target firms in three acquisition samples: (1) the target firms of all acquisitions in our sample, (2) the target firms of acquisitions in which the acquirer and the target both have H-1B workers at the time of the acquisition announcement, and (3) the target firms of acquisitions in which the acquirer and the target both have H-1B workers at the time of the acquisition announcement and their H-1B workers have positive job function similarity scores. Panel B summarizes the characteristics of the acquirers in the same three acquisition samples in Panel A. Panel C presents OLS estimation results of company-year panel regressions in model (1) over the years of 2008-2009 and 2014-2017 using the first natural experiment. The main independent variable is the fraction of the company's demand for H-1B visa that is met in year *t* (or the probability of winning H-1B visas). The dependent variable is the natural logarithm of one plus the number of M&A deals in year *t+1* in which the target firm or the deal has certain characteristics: the target has H-1B workers or not (rows (1)-(2)), the target has H-1B workers with positive job function similarity scores or not (rows (3)-(4)), the deal's transaction size is disclosed or undisclosed (rows (5)-(6)), the target is in high-tech industries or not (rows (7)-(8)), the target has patents or not (rows (9)-(10)), the target firm is in the same industry or not (rows (11)-(12)), and the target firm is in a state with strong or weak enforcement of non-compete laws (rows (13)-(14)). Panel D presents the OLS regression results of the diff-in-diff model in model (2) over the 2001-2007 period. Treatment is a dummy variable equal to one if the public company received any approved I-129 petitions prior to 2004, and zero otherwise. The control variables include size, leverage, ROA, Tobin's Q, cash, employment, company fixed effects, and year fixed effects. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses are clustered at the public company level.

Panel A: Summary Statistics of H-1B Workers and Characteristics of the Target Firms

	All targets			Targets: acquirer & target both have H-1B workers			Targets: acquirer & target have H-1B workers of similar skills		
	N	Mean	Median	N	Mean	Median	N	Mean	Median
No. H-1B Workers	5399	55.75	4.000	4339	60.27	5.000	3461	74.41	6.000
% of Engineer H-1B Workers	5399	0.209	0.000	4339	0.205	0.000	3461	0.202	0.000
% of Math H-1B Workers	5399	0.033	0.000	4339	0.033	0.000	3461	0.031	0.000
% of IT H-1B Workers	5399	0.415	0.333	4339	0.441	0.400	3461	0.502	0.500
% of Bio H-1B Workers	5399	0.038	0.000	4339	0.038	0.000	3461	0.036	0.000
% of Other H-1B Workers	5399	0.305	0.133	4339	0.283	0.115	3461	0.228	0.091
Acq.-Target H-1B Skill Similarity	4339	0.458	0.441	4339	0.461	0.445	3461	0.578	0.634
Transaction Size Undisclosed	15675	0.468	0.000	4339	0.372	0.000	3461	0.374	0.000
Transaction Size ($B)	8340	0.479	0.050	2724	0.981	0.093	2166	1.096	0.100
High-tech	15675	0.356	0.000	4339	0.527	1.000	3461	0.571	1.000
Without Patent	15675	0.860	1.000	4339	0.714	1.000	3461	0.694	1.000
Acquirer/Target in Same Industry	15675	0.384	0.000	4339	0.364	0.000	3461	0.365	0.000
Strong Non-Compete Laws	15675	0.432	0.000	4339	0.380	0.000	3461	0.365	0.000

Panel B: Summary Statistics of H-1B Workers and Characteristics of the Acquirers

	All acquirers			Acquirers: acquirer & target both have H-1B workers			Acquirers: acquirer & target have H-1B workers of similar skills		
	N	Mean	Median	N	Mean	Median	N	Mean	Median
No. H-1B Workers	10966	627.78	16.00	4339	999.61	41.00	3461	1238.68	77.00
% of Engineer H-1B Workers	10966	0.142	0.009	4339	0.165	0.029	3461	0.182	0.049
% of Math H-1B Workers	10966	0.020	0.000	4339	0.023	0.000	3461	0.025	0.000
% of IT H-1B Workers	10966	0.325	0.188	4339	0.393	0.317	3461	0.442	0.427
% of Bio H-1B Workers	10966	0.023	0.000	4339	0.028	0.000	3461	0.030	0.000
% of Other H-1B Workers	10966	0.490	0.394	4339	0.390	0.369	3461	0.320	0.327
Acq.-Target H-1B Skill Similarity	4339	0.461	0.445	4339	0.461	0.445	3461	0.578	0.634
Size ($B)	15668	11.890	1.293	4335	22.095	2.500	3457	25.223	3.072
Leverage	15622	0.246	0.219	4317	0.194	0.174	3440	0.184	0.162
ROA	15671	0.055	0.082	4339	0.060	0.082	3461	0.061	0.081
Tobin's Q	15650	1.975	1.631	4335	2.115	1.813	3457	2.184	1.863
Cash	15672	0.151	0.085	4339	0.205	0.150	3461	0.221	0.176
No. Workers (Thousands)	15527	20.338	3.996	4298	32.619	5.577	3428	35.198	5.700

Panel C: Additional Results Based on H-1B Lotteries

		% H-1B Demand Met				Controls
	Dependent variable	Coefficient	Std. Error	N	Adj. R2	Firm FE Year FE
(1)	Ln(No. Acq. with H-1B Workers)	-0.031**	(0.013)	3877	0.198	Yes
(2)	Ln(No. Acq. w/o H-1B Workers)	-0.027	(0.017)	3877	0.279	Yes
(3)	Ln(No. Acq. with H-1B Workers of Similar Skills)	-0.032***	(0.012)	3877	0.202	Yes
(4)	Ln(No. Acq. w/o H-1B Workers of Similar Skills)	-0.027	(0.017)	3877	0.284	Yes
(5)	Ln(No. Acq. with Size Undisclosed)	-0.023***	(0.007)	3877	0.316	Yes
(6)	Ln(No. Acq. with Size Disclosed)	-0.011*	(0.006)	3877	0.190	Yes
(7)	Ln(No. High-tech Acq.)	-0.019***	(0.005)	3877	0.306	Yes
(8)	Ln(No. Low-tech Acq.)	-0.016**	(0.007)	3877	0.300	Yes
(9)	Ln(No. Acq. of Targets w/o Patent)	-0.023***	(0.009)	3877	0.326	Yes
(10)	Ln(No. Acq. of Targets with Patent)	-0.010**	(0.004)	3877	0.188	Yes
(11)	Ln(No. Acq. in the same industry)	-0.023*	(0.013)	3877	0.224	Yes
(12)	Ln(No. Acq. in different industry)	-0.038**	(0.016)	3877	0.335	Yes
(13)	Ln(No. Acq. of Targets in Strong Non-Compete Laws)	-0.041***	(0.014)	3877	0.216	Yes
(14)	Ln(No. Acq. of Targets in Weak Non-Compete Laws)	-0.016	(0.016)	3877	0.266	Yes

Panel D: Additional Results Based on the Diff-in-Diff Model

		Treatment x Year≥2004				Controls
					Adj.	Firm FE
	Dependent variable	Coefficient	Std. Error	N	R2	Year FE
(1)	Ln(No. Acq. with H-1B Workers)	0.022***	(0.006)	21930	0.279	Yes
(2)	Ln(No. Acq. w/o H-1B Workers)	0.012	(0.009)	21930	0.296	Yes
(3)	Ln(No. Acq. with H-1B Workers of Similar Skills)	0.020***	(0.005)	21930	0.330	Yes
(4)	Ln(No. Acq. w/o H-1B Workers of Similar Skills)	0.012	(0.009)	21930	0.322	Yes
(5)	Ln(No. Acq. with Size Undisclosed)	0.024***	(0.007)	21930	0.358	Yes
(6)	Ln(No. Acq. with Size Disclosed)	0.009	(0.008)	21930	0.260	Yes
(7)	Ln(No. High-tech Acq.)	0.027***	(0.006)	21930	0.317	Yes
(8)	Ln(No. Low-tech Acq.)	0.008	(0.008)	21930	0.334	Yes
(9)	Ln(No. Acq. of Targets w/o Patent)	0.022**	(0.009)	21930	0.348	Yes
(10)	Ln(No. Acq. of Targets with Patent)	0.009**	(0.004)	21930	0.166	Yes
(11)	Ln(No. Acq. in the same industry)	0.012*	(0.007)	21930	0.266	Yes
(12)	Ln(No. Acq. in different industry)	0.021***	(0.008)	21930	0.330	Yes
(13)	Ln(No. Acq. of Targets in Strong Non-Compete Laws)	0.013*	(0.007)	21930	0.248	Yes
(14)	Ln(No. Acq. of Targets in Weak Non-Compete Laws)	0.020**	(0.008)	21930	0.289	Yes

Table 7: Employee Stock Options

This table presents OLS estimation results of company-year panel regressions in model (1) over the years of 2008-2009 and 2014-2017 using the first natural experiment. The main independent variable is the fraction of the company's demand for H-1B visa that is met (or the probability of winning H-1B visas). We estimate a company's demand for cap-subject foreign workers using its LCA filings, and the number of cap-subject H-1B visas granted to the company using its processed I-129 petitions. The dependent variables in the four columns are: (1) the ratio of new employee options grants to outstanding employee options, averaged over years *t* and *t+1*, (2) the average new option grants per employee in years *t* and *t+1*, (3) the average percentage change in employee options in years *t* and *t+1*, and (4) the average change in outstanding options per employee in years *t* and *t+1*. The control variables are a set of firm characteristics measured in year *t*. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses are clustered at the public company level.

	(1)	(2)	(3)	(4)
Dependent variable	Percentage of New Options Granted	New Options Granted per Employee	Percentage Change in Outstanding Options	Change in Outstanding Options per Employee
% H-1B Demand Met	-0.030**	-0.799*	-0.021**	-0.341**
	(0.013)	(0.413)	(0.010)	(0.143)
Size	-0.011	-0.351	-0.009	-0.102
	(0.011)	(0.341)	(0.008)	(0.163)
Leverage	0.050	2.083	0.010	1.500*
	(0.039)	(1.792)	(0.025)	(0.794)
ROA	-0.125***	-5.296*	-0.063**	-1.914
	(0.037)	(3.160)	(0.029)	(1.235)
Tobin's Q	0.003	0.001	0.000	-0.081
	(0.004)	(0.156)	(0.003)	(0.078)
Cash	-0.104*	-1.072	-0.070	-0.115
	(0.058)	(2.131)	(0.047)	(1.113)
Employment	-0.316	-19.704	-0.272*	-6.643
	(0.262)	(21.737)	(0.140)	(8.243)
Observations	3877	3877	3877	3877
Adj. R-Squared	0.413	0.641	0.351	0.616
Company FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 8: Experienced versus Inexperienced Acquirers

We classify a firm as an experienced acquirer if its cumulative number of completed M&As up to the lottery year) exceeds the sample median in the first natural experiment (up to 2003 in the second natural experiment). We add the interaction between the experienced acquirer indicator and the fraction of H-1B demand met to model (1) and present the OLS estimation results of the augmented model in Panel A. We add the interaction between the experienced acquirer indicator and *Treatment* × *Year*⩾*2004* to model (2) and present the OLS regression results of the augmented diff-in-diff model in Panel B. The two panels have the same set of dependent variables: the natural logarithm of one plus the number of M&A deals in year *t+1* in column (1), an indicator of whether the public company (acquirer) has an M&A deal in *t+1* in column (2), the natural logarithm of one plus the number of M&A deals with target firms having H-1B hires in year *t+1* in column (3), and an indicator of whether the public company (acquirer) has an M&A deal with target firms having H-1B hires in *t+1* in column (4). The control variables include size, leverage, ROA, Tobin's Q, cash, employment, company fixed effects, and year fixed effects. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses are clustered at the public company level.

Panel A: Results Based on H-1B Lotteries

	(1)	(2)	(3)	(4)
	Ln(No. Acq.)	Has Acq.	Ln(No. Acq. with H-1B Workers)	Has Acq. with H-1B Workers
% H-1B Demand Met	-0.041***	-0.049***	-0.013*	-0.019**
x Experienced Acquirer	(0.011)	(0.013)	(0.008)	(0.010)
% H-1B Demand Met	-0.002	-0.002	-0.007*	-0.009*
	(0.006)	(0.008)	(0.003)	(0.005)
Size	0.001	0.001	0.007	0.010
	(0.009)	(0.011)	(0.006)	(0.008)
Leverage	0.027	0.038	0.033*	0.044*
	(0.029)	(0.041)	(0.019)	(0.026)
ROA	0.011	0.017	-0.035***	-0.047***
	(0.021)	(0.030)	(0.013)	(0.017)
Tobin's Q	0.001	0.001	0.003*	0.004*
	(0.003)	(0.004)	(0.002)	(0.002)
Cash	-0.041	-0.061	-0.014	-0.019
	(0.060)	(0.085)	(0.025)	(0.035)
Employment	4.966	7.201	-0.286	-0.378
	(3.341)	(4.828)	(0.627)	(0.891)
Observations	3877	3877	3877	3877
Adj. R-Squared	0.351	0.274	0.201	0.167
Company FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Panel B: Results Based on the Diff-in-Diff Model

	(1)	(2)	(3)	(4)
	Ln(No. Acq.)	Has Acq.	Ln(No. Acq. with H-1B Workers)	Has Acq. with H-1B Workers
Treatment x Year≥2004	0.053***	0.030	0.041***	0.047***
x Experienced Acquirer	(0.019)	(0.020)	(0.011)	(0.014)
Treatment x Year≥2004	-0.003	-0.004	-0.002	-0.003
	(0.004)	(0.006)	(0.003)	(0.004)
Size	0.006**	0.009***	0.004**	0.005***
	(0.002)	(0.003)	(0.001)	(0.002)
Leverage	-0.002	-0.002	-0.000	-0.000
	(0.005)	(0.007)	(0.003)	(0.004)
ROA	0.003	0.004	0.003	0.004
	(0.004)	(0.006)	(0.002)	(0.003)
Tobin's Q	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)
Cash	0.035***	0.051***	0.020***	0.028***
	(0.013)	(0.019)	(0.007)	(0.010)
Employment	0.011	0.018	0.010	0.015
	(0.017)	(0.024)	(0.010)	(0.014)
Observations	21930	21930	21930	21930
Adj. R-Squared	0.377	0.295	0.284	0.215
Company FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes

Table 9: Firms with Foreign Operations or Employment

We classify a firm as having low foreign operation if its estimated outbound income shifting to finance foreign investments or operations is below the sample median in a year (De Simone, Mills, and Stomberg, 2019). We classify a firm as having low foreign employment if its fraction of employment in foreign countries reported in Compustat Segments is below the sample median in a year. We add the interaction between the low foreign operation/employment indicator and the fraction of H-1B demand met to model (1) and present the OLS estimation results of the augmented model in Panel A. We add the interaction between the low foreign operation/employment indicator and *Treatment* × *Year≥2004* to model (2) and present the OLS regression results of the augmented diff-in-diff model in Panel B. The two panels have the same set of dependent variables: the natural logarithm of one plus the number of M&A deals in year *t+1* in column (1), an indicator of whether the public company (acquirer) has an M&A deal in *t+1* in column (2), the natural logarithm of one plus the number of M&A deals with target firms having H-1B hires in year *t+1* in column (3), and an indicator of whether the public company (acquirer) has an M&A deal with target firms having H-1B hires in *t+1* in column (4). The control variables include size, leverage, ROA, Tobin's Q, cash, employment, company fixed effects, and year fixed effects. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses are clustered at the public company level.

Panel A: Results Based on H-1B Lotteries

	(1)	(2)	(3)	(4)
	Ln(No. Acq.)	Has Acq.	Ln(No. Acq. with H-1B Workers)	Has Acq. with H-1B Workers
% H-1B Demand Met	-0.027*	-0.026	-0.020***	-0.027***
x Low Foreign Operation	(0.016)	(0.019)	(0.008)	(0.009)
% H-1B Demand Met	-0.021**	-0.028*	-0.009*	-0.013**
	(0.010)	(0.014)	(0.005)	(0.006)
Observations	3877	3877	3877	3877
Adj. R-Squared	0.347	0.269	0.199	0.166
Controls, Firm & Year FEs	Yes	Yes	Yes	Yes
% H-1B Demand Met	-0.032**	-0.028*	-0.021***	-0.025**
x Low Foreign Employment	(0.014)	(0.016)	(0.008)	(0.010)
% H-1B Demand Met	-0.026***	-0.033***	-0.013***	-0.019***
	(0.008)	(0.010)	(0.005)	(0.006)
Observations	3877	3877	3877	3877
Adj. R-Squared	0.346	0.269	0.199	0.166
Controls, Firm & Year FEs	Yes	Yes	Yes	Yes

Panel B: Results Based on the Diff-in-Diff Model

	(1)	(2)	(3)	(4)
	Ln(No. Acq.)	Has Acq.	Ln(No. Acq. with H-1B Workers)	Has Acq. with H-1B Workers
Treatment x Year≥2004	0.046**	0.045**	0.027**	0.030**
x Low Foreign Operation	(0.020)	(0.021)	(0.012)	(0.015)
Treatment x Year≥2004	0.009	-0.004	0.010	0.012
	(0.013)	(0.013)	(0.007)	(0.009)
Observations	21930	21930	21930	21930
Adj. R-Squared	0.369	0.288	0.279	0.210
Controls, Firm & Year FEs	Yes	Yes	Yes	Yes
Treatment x Year≥2004	0.019	0.030	0.036*	0.049*
x Low Foreign Employment	(0.035)	(0.040)	(0.021)	(0.029)
Treatment x Year≥2004	0.026**	0.013	0.020***	0.021***
	(0.010)	(0.011)	(0.006)	(0.007)
Observations	21930	21930	21930	21930
Adj. R-Squared	0.368	0.288	0.279	0.210
Controls, Firm & Year FEs	Yes	Yes	Yes	Yes

Table 10: Post-Acquisition Operating Performance—a Quasi-experiment

Panel A compares ROA, ROE, the acquirer-target labor function similarity score, and other firm characteristics for treated and control acquirers. The control acquirers withdraw their acquisition bids for exogenous reasons. For each control acquirer, we identify a matched acquirer (the treated acquirer) that successfully completes its acquisition and has similar firm characteristics as the control acquirer and similar acquisition characteristics as the control acquisition. Panel B presents OLS estimation results of model (3) using data over the six years around the treated and control acquisitions. Treatment equals one for the treated acquirer and zero for the control acquirer. Post equals one if it is one of the three years after the treated or control acquisition and zero if it is one of the three years before the treated or control acquisition. The control variables include size, leverage, Tobin's Q, cash, employment, acquirer fixed effects, year fixed effects, and event year fixed effects. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively. Standard errors in parentheses are clustered at the M&A deal level.

Panel A: Summary Statistics

	Treated			Control			
	N	Mean	Std. Dev.	N	Mean	Std. Dev.	Diff. in Means
ROA, 3 years pre M&A	91	0.089	0.109	96	0.075	0.122	0.014
ROA, 3 years post M&A	61	0.081	0.099	58	0.056	0.164	0.025
ROE, 3 years pre M&A	91	0.149	0.275	96	0.168	0.203	-0.019
ROE, 3 years post M&A	57	0.197	0.107	57	0.088	0.471	0.108*
Labor function similarity score	95	0.659	0.280	100	0.647	0.243	0.012
Size, pre M&A	95	7.444	2.013	100	7.451	2.051	-0.006
Leverage, pre M&A	95	0.175	0.186	100	0.153	0.158	0.022
Tobin's Q, pre M&A	95	2.893	4.386	100	3.062	4.681	-0.169
Cash, pre M&A	95	0.208	0.181	100	0.271	0.239	-0.063**
Employment, pre M&A	95	0.004	0.005	100	0.003	0.004	0.000

Panel B: Average Treatment Effects for Sample with H-1B Job Overlap

	(1)	(2)	(3)	(4)	(5)	(6)
	All		High labor similarity		Low labor similarity	
	ROA	ROE	ROA	ROE	ROA	ROE
Treatment x Post	0.037*	0.125**	0.074**	0.192**	-0.008	0.029
	(0.020)	(0.054)	(0.031)	(0.087)	(0.019)	(0.032)
Size	0.011	0.043	0.002	0.035	0.024**	0.049
	(0.010)	(0.030)	(0.019)	(0.050)	(0.011)	(0.031)
Leverage	0.014	0.251	0.077	0.289	-0.061	0.137
	(0.061)	(0.163)	(0.091)	(0.229)	(0.074)	(0.143)
Tobin's Q	0.001	-0.001	0.001	0.000	-0.004	-0.001
	(0.002)	(0.003)	(0.002)	(0.004)	(0.006)	(0.013)
Cash	-0.021	0.044	0.027	0.064	0.021	0.216
	(0.041)	(0.077)	(0.066)	(0.152)	(0.084)	(0.159)
Employment	1.884	2.602	0.676	-1.428	13.146	25.715
	(2.740)	(5.390)	(2.402)	(6.581)	(7.872)	(15.205)
Observations	306	300	169	166	137	134
Adj. R-Squared	0.583	0.410	0.442	0.252	0.762	0.794
Event FE	Yes	Yes	Yes	Yes	Yes	Yes
Event Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Calendar Year FE	Yes	Yes	Yes	Yes	Yes	Yes