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ABSTRACT

Weighting the H-1B Lottery: Implications for Worker and Diversity and Employment Concentration

The H-1B program allows firms in the United States to temporarily hire foreign workers in specialty occupations. Demand outstrips supply, and the government allocates status through a random lottery. In September 2025, The United States Department of Homeland Security (DHS) proposed a new lottery process that would weight applications favoring workers receiving higher wage offers. This short article demonstrates that a weighted lottery would increase the ethnic diversity of H-1B recipients. Implications for H-1B employment concentration are particularly sensitive to threshold cutoffs used to construct weights.

JEL Classification: J61, J68, F22

Keywords: skilled workers, H-1B, lottery, ethnic diversity

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1 Introduction

Highly-skilled foreign nationals seeking temporary employment in the United States often do so through the H-1B program. Since fiscal year (FY) 2006, the US has limited new H-1B issuances for employees of most firms to just 85,000 per year, 20,000 of which are reserved for applicants who have obtained a masters degree or more education from a US university.[1] Demand far outstrips supply. The US received more than 85,000 petitions during the first week of application eligibility for fiscal years (FYs) 2008, 2009, and 2014 through today. These conditions have prompted the US to allocate status through a random lottery. A worker seeking new H-1B status for FY 2026 only had a 1-in-4 chance of winning.

In September 2025, DHS (2025) proposed changing the lottery "to implement a weighted selection process that would generally favor the allocation of H-1B visas to higher skilled and higher paid aliens, while maintaining the opportunity for employers to secure H-1B workers at all wage levels." Namely, it would create four separate "Levels" reflecting where an H-1B applicant falls within the wage distribution of his/her occupation and metropolitan area of employment. Those in the highest level (termed "fully competent") would be entered into the H-1B selection pool four times. Those in levels three ("experienced"), two ("qualified"), and one ("entry") would receive three, two, and one lottery entries, respectively.

A large economics literature has argued that H-1B caps (and curbs to immigration more generally) reduce US productivity, GDP, innovation, and wages paid to US-born workers.[2] Others have argued that the lottery itself exacerbates employee search costs and stifles GDP.[3] This article assesses how the DHS proposal to move toward a random selection process that is more consistent with willingness to pay allocation would affect two other outcomes of interest. Specifically, it uses past data on H-1B recipients to perform weighted lottery simulations to understand how this system would affect the ethnic diversity of H-1B recipients and the concentration of H-1B employment in firms that heavily use the program. The results find that diversity would rise, but concentration implications are somewhat ambiguous and sensitive to threshold cutoffs used to construct weights. Such insights are valuable because existing studies highlight the economic benefits and costs of diversity,[4] while employment among H-1B dependent firms (including so-called domestic outsourcing specialists) is a particular source of public frustration.[5]

[1] Petitions for new H-1B status to work for colleges, universities, and non-profit research institutions are exempt from this cap.

[2] See Prato (2025), Bernstein et al. (2025), Mayda et al. (2023, 2018), Azoulay et al. (2022), Peri et al. (2015), Felbermayr et al. (2010), Hunt (2011), and Kerr and Lincoln (2010).

[3] See Sharma and Sparber (2024) and Sparber (2018).

[4] See Montalvo and Reynal-Querol (2021), Ozgen (2021), Haus-Reve et al. (2021), Ramasamy and Yeung (2016), Marino and Parrotta (2015), Marino et al. (2012), Sparber (2008), and Ottaviano and Peri (2006).

[5] See Costa and Hira (2021, 2020).

2 Background and Methods

The proposed DHS (2025) rule would use Occupational Employment and Wage Statistics (OEWS) data to identify prevailing wages for a given occupation and location. The percentile range in which an H-1B applicant's wage falls within their relevant occupation-location group would determine his/her skill level, and hence, the number of lottery entries the applicant would receive. DHS would classify workers above the 67th percentile in Level IV, those above the 50th in Level III, workers above the 34th percentile as Level II, and those below this value as Level I.

Unfortunately, US Citizenship and Immigration Services (USCIS) does not provide individual-level H-1B wage data through its online Data Hub. However, a Freedom of Information Act (FOIA) request provided the universe of H-1B recipients for FY 2009 – a year in which H-1B status was in high demand and all new issuances were allocated by lottery. Insofar that the distribution of randomly selected workers was reflective of the universe of applicants, this can be informative for how a change in the lottery procedure would affect outcomes.

Available data does not permit a merge to OEWS occupation and location wage distributions. Instead, I divide workers into levels based upon DHS proposed percentile cutoffs within broad occupation groupings of H-1B recipients. I assign each worker the relevant number of lottery entries and then run 1000 weighted lottery simulations. I record the winners' countries of birth and the names of the firms employing them. I then calculate the ethnic diversity and employment concentration of winners and compare predictions to observed outcomes from FY 2009.

Since H-1B workers are generally less experienced than the population of workers, the percentile cutoffs used in this exercise likely occur at lower wages than what the DHS has proposed. To address this limitation, I repeat the simulation exercise using more selective criteria. This helps to understand how selectivity affects diversity and concentration outcomes. The least selective cutoff percentiles are the DHS values above. The middle and most selective cutoffs are {0.75, 0.67, 0.34} and {0.90, 0.75, 0.50}, respectively. Critically, the H-1B Visa Reform Act of 2004 relieved H-1B-dependent employers from additional legal obligations if they employ only H-1B workers who earned at least $60,000. This became the modal wage and sat at the 70th percentile for computer-related workers – the most dominant occupation both within the H-1B program and among outsourcing specialists. The DHS Level in which these workers fall will have particularly important consequences for the weighted lottery.

3 Results

3.1 Ethnic Diversity

Many domestic-outsourcing companies are based in India, and Indians account for the largest share of new H-1B recipients: Table 1 reports that Indians accounted for 64.5% of new issuances in FY 2009, followed by China (6.6%) and Canada (3.4%). Economists commonly measure diversity with the ethnolinguistic factionalization (ELF) index – the probability that two people, drawn at

random, will be from different ethnic groups. In FY 2009, ELF of new H-1B issuances equaled 0.576.

Table 1: Percentage of New H-1Bs Issued by Country of Origin (FY 2009 distribution)

	Observed %	**Simulated %** *by Selectivity Level*		
Origin Country	*N/A*	*Least*	*Mid*	*Most*
India	64.5	64.3	63.1	60.5
China	6.6	7.3	7.5	7.9
Canada	3.4	4.6	4.8	5.4
South Korea	2.6	2.2	2.2	2.4
Philippines	2.3	1.8	1.8	1.8
Taiwan	1.9	1.5	1.5	1.6
Pakistan	1.2	1.1	1.2	1.2
Japan	1.1	0.8	0.8	0.9
Mexico	1.0	1.1	1.2	1.2
United Kingdom	1.0	1.1	1.2	1.4

Cutoff values for weighted lottery simulations described in text.

Figure 1 displays histograms of simulated results for weighted lotteries based on differing degrees of H-1B selectivity. It clearly illustrates that a weighted lottery would substantially increase diversity, with larger increases for more selective weighting criteria. The most selective criteria considered results in a probability that two H-1B workers will be from different groups (0.657) that is eight percentage points higher than what occurred in the actual unweighted lottery. The proportion of Indians winning the lottery decreases by four percentage points when the weights are most selective. By contrast, Chinese and Canadian workers see large increases in the probability of winning.

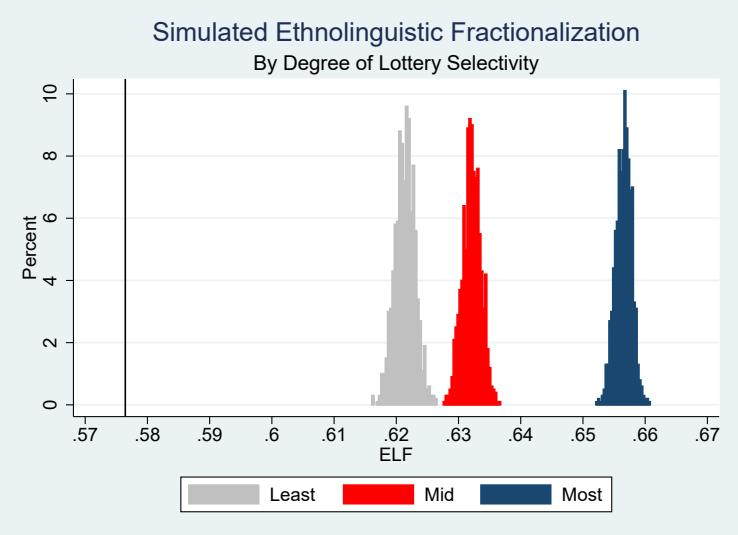
3.2 Employment Concentration

Large and small users of the H-1B program exhibit very different wage offer profiles. See Figure 2. Large users – those hiring 250 or more new H-1B workers in FY 2008 – extended wage offers highly concentrated near $60,000 (at $63,707), reflecting their response to the H-1B Visa Reform Act of 2004. The average wage offered by small users – those hiring five or fewer new H-1B workers – demonstrated a slightly lower mean ($62,448) but much wider distribution.

Figure 3 illustrates that the weighted simulations in this exercise result in a higher concentration of H-1B employment among large users than the actual unweighted lottery yielded (21.2%). This could cause consternation for small business advocates who fear that small firms would find it difficult to compete against wealthier employers under willingness to pay mechanisms.[6] That may be the wrong interpretation, however. First, exceptionally strict cutoff criteria not illustrated in this article (e.g., {0.95, 0.925, 0.90}) do decrease representation of large firms and increase

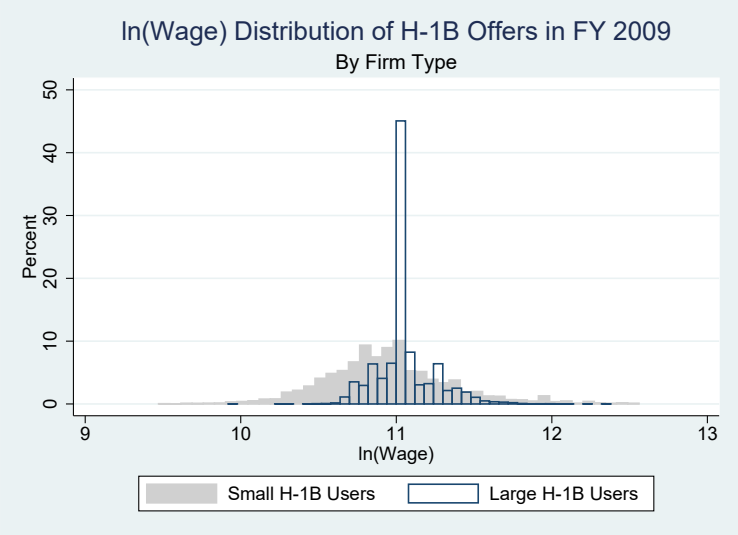
[6]See Jacobson (2025), Hesson (2025), Esterline (2023), and Palagashvili and O'Connor (2021).

Figure 1: Ethnolinguistic Fractionalization of New H-1B Workers



Observed ELF in FY 2009 was 0.576. Weighted lottery simulations yield higher levels of diversity as selectivity increases.

Figure 2: Distribution of New H-1B Wage Offers



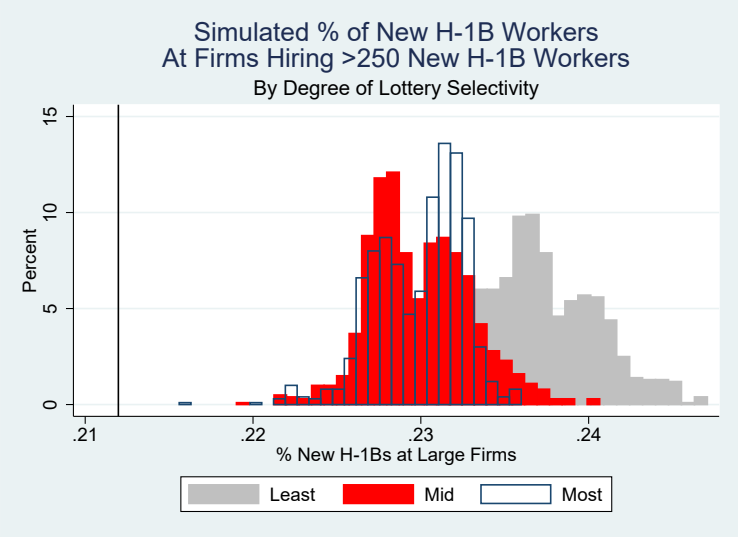
Small H-1B Users are firms hiring five or fewer new H-1B workers. Large H-1B users hired more than 250 new H-1B workers. Log-wage offers more than four standard deviations from the mean are suppressed from the figure.

that of firms hiring five or fewer new H-1B workers. Second, Glennon (2024) finds that when a firm's prospective employees lose the lottery, the firm instead employs them at overseas locations. Knowing this, workers might prefer job offers from multinational corporations in an unweighted lottery system, *ceteris paribus*. Small firms might be underrepresented in the FY 2009 distribution simply because they find it more difficult to absorb random lottery shocks, and therefore avoid

participating in the existing system altogether. In other words, the FY 2009 distribution of H-1B applications might not be representative of what would occur under weighted lottery allocation.

In this context, the most interesting takeaway from Figure 3 is not the comparison between unweighted and weighted outcomes, but rather the decrease in employment concentration evident when computer-related workers earning the modal wage $60,000 per year are excluded from Level IV. Small firms fare better when the lowest-paid workers at H-1B dependent firms have a reduced probability of winning the lottery.

Figure 3: Share of New H-1B Employment at Large H-1B Using Firms



Observed share of H-1Bs hired by large users in FY 2009 was 21.2%. Weighted lottery simulations yield higher levels of concentration that are mitigated if computer-related workers earning the modal wage are excluded from the top Level.

4 Conclusion

DHS has proposed allocating new H-1B status through a weighted lottery that favors applicants receiving higher-paying job offers. Past evidence suggests that steps toward willingness to pay allocation and away from the current unweighted lottery would increase GDP and reduce costs associated with the H-1B program. This article simulates weighted lottery outcomes and finds that the DHS alternative is also likely to increase the ethnic diversity of H-1B recipients. More selective weighting schemes that place the abundance of computer-related workers earning $60,000 per year – a well-populated mode in the data – would decrease the concentration of H-1B employment among firms that heavily use the program.

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