Immigration Policy and Firms' Labor Demand

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Very Preliminary Draft

Abstract

We examine how firms adjust their labor demand to changes in immigration policy as embodied by interior immigration enforcement and sanctuary policies. Exploiting the temporal and geographic variation in the adoption of tougher immigration enforcement and sanctuary policies at the local and state levels, we find that firms boost their demand for low-skilled foreign-born labor under the H-2B visa program as enforcement intensifies, whereas they reduce it in the presence of sanctuary policies. In addition, firms' demand for guest workers is inversely related to native's employment in occupations hiring most H-2B workers, questioning the positive externality of a tougher stance on immigration enforcement on natives. However, it does not significantly alter natives' wages or hours worked, nor does it appear to crowd them out of those occupations.

Keywords: Labor Demand, Immigration Enforcement, Unauthorized Immigration, Low-skilled Workers, United States.

JEL Codes: J23, J15, J01.

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1. Introduction

Throughout history, countries have often toughened immigration laws under the pretense of protecting native workers. In the United States, the intensification of immigration enforcement that has been taking place at the local and state levels since the early 2000s has been responsible for roughly 3 million deportations between 2009 and 2016 alone (Chishti *et al*., 2017). More recently, interior arrests and removals by Immigration Customs Enforcement (ICE) rose in 2017, after President Trump gave the agency broader authority to detain unauthorized migrants (Gramlich, 2020). Increased arrests and removals might have a non-negligible impact in specific labor markets. After all, an estimated 24 percent of the workforce in the service sector –a sector which accounts for more than 75 percent of the country's GDP in 2017,[4] is undocumented (Drew, 2017). As immigration policy continues to toughen, where will firms look for workers? Will they resort to guest worker programs? Or will they hire more natives? And, in the former case, can we conclude that guest worker programs crowd out natives from specific occupations?

We address these questions by examining how firms' demand for short-term, low-skilled, foreign-born labor responds to changes in immigration policy as embodied by interior immigration enforcement and sanctuary policies. Specifically, we exploit the temporal and geographic variation in the adoption of tougher immigration enforcement and sanctuary policies at the local and state levels to gauge how firms' demand for guest workers under the H-2B visa program has fluctuated in response to recent changes in immigration policy. The H-2B visa program –designed to allow for the hiring of foreign workers for non-agricultural short-term low-skill jobs, can be a lengthy, bureaucratic, and expensive process replete of uncertainty (Bruno, 2020). Firms encounter substantial visa petition and attorney fees, *e.g.* the

[4] See Distribution of gross domestic product (GDP) across economic sectors in the U.S. 2017, Statista.

visa petition fee alone is $190/worker.[5] Importantly, the process is lengthy and requires firms to plan well in advance. Up to 4 months can go by from the firm's application submission to its final approval. During that time, firms find themselves in limbo, not being able to plan or planning without knowing if their requests will be approved.[6] Therefore, a priori, it is unclear how firms' demand for temporary guest workers might respond to intensified interior immigration enforcement and sanctuary policies.

If the undocumented labor they used to rely upon is scarce and hiring natives is either difficult or prohibitively expensive, employers may turn to guest worker programs. This would be the case if interior immigration enforcement is high and there is no sanctuary policy in place. If, instead, the undocumented labor firms rely upon rises, either because immigration enforcement did not significantly rise in the locality and/or a sanctuary policy was adopted, the opposite might occur. Employers may reduce their demand for workers with an H-2B visa. Finally, if forecasting future labor demand needs is challenging, the application process is too complicated or expensive, or hiring substitute native workers is a possibility, firms' H-2B worker requests may remain unchanged. In sum, a priori, it is unclear how firms' demand for H-2B workers might change amid recent immigration policy changes.

Aside from adding to the literature examining the consequences of immigration policies on undocumented immigrants and their families (*e.g.* Amuedo-Dorantes, Arenas-Arroyo, and Sevilla 2018; Watson 2014), the analysis contributes to our understanding of how firms and labor markets respond to changes in local labor supply brought about by changes in immigration policy. Previous studies have examined how firms adjust to changes in the local labor supply (*e.g*. Dustmann and Glitz 2015), as well as the labor-market effects of workforce reductions in the farm sector (*e.g.* Clemens, Lewis, and Postel 2018). Yet, to date, there is a

5 The U.S Department of State provides fees on its webpage: https://travel.state.gov/content/travel/en/us-visas/visa-information-resources/fees/fees-visa-services.html

6 See: https://www.nytimes.com/2018/06/27/business/economy/visas-usa-foreign-labor.html

lack of understanding of how firms adjust their labor demand to labor shortages emanating from immigration enforcement policies. Given the increases in arrests and removals, and the swift implementation of executive orders that revive controversial interior immigration enforcement programs after 2017, gaining an understanding of how a tougher immigration policy environment affects U.S. firms is imperative.

2. Data

We combine three different data sources for our analysis. *First*, we gather data on H-2B visa applications and certifications come from the Office of Foreign Labor Certification (OFLC).[7] It comprises the whole universe of visa applications for temporary non-agricultural workers for each fiscal year. In addition to the number of requested workers, the data also contains information on the zip code of the firm, as well as on the occupations at the 5-digit SOC code level for which workers are being requested.[8] By focusing on the number of requested workers, we can gauge the impact of intensified interior immigration enforcement on the firms' labor demand. The number of requested workers is a cleaner metric of firms' labor demand than the number of visa applications submitted in the locality, since one single firm can account for most requested workers in the local labor market. Additionally, relative to the number of certified workers, the number of requested workers is less likely to reflect unobserved factors influencing the processing and approval of visa applications, as well as firms' posterior changes in hiring.

Secondly, we gather information on two sets of immigration policies –those accentuating enforcement, as well as sanctuary policies. For the former, we collect data on several interior immigration enforcement initiatives, which we combine into an index that

[7] The OFLC provides information on H-2B visas from 2008 onwards on its homepage (https://www.dol.gov/agencies/eta/foreign-labor/performance)

[8] When investigating the impact of H-2B visas on labor market outcomes, we aggregate firms' labor requests at the 2-digit SOC code level as a compromise between examining the impact of immigration policies on labor market outcomes at a detailed level and having sufficiently large cell sizes in our analysis.

serves as a better proxy for the tougher immigration enforcement climate in the county than any single policy measure, while simultaneously accounting for the interconnectedness of the various enforcement initiatives. Following Amuedo-Dorantes, Arenas-Arroyo, and Sevilla (2018), for each policy *k,* we create a dummy variable ($IE_{c,t}^{k}$) that equals 1 if the policy was in place in county *c* in year *t*. This is done for each of the following measures: local 287(g) agreements, state-level 287(g) agreements, Secure Communities, omnibus immigration laws, and employment verification mandates (*i.e.* E-Verify). We then aggregate the various policy indices to obtain a proxy for the enforcement intensity firms in county *c* and year *t* are exposed to, *i.e.* $IE_{c,t} = \sum_{k \in K}^{k} IE_{c,t}^{k}$.[9] We are also interested in assessing the impact of sanctuary policies. To that end, we gather data on the enactment of sanctuary policies at the county level. We construct a dummy variable ($SP_{c,t}$) that equals 1 when county *c* has a sanctuary policy in place in year *t*.

Finally, to assess the implications for natives, we use individual-level data on employment and wages from the American Community Survey (ACS). Besides its large sample size of approximately 3.5 million households, the ACS provides information on ethnicity and citizenship status, enabling us to study the impact of H-2B visas on key labor market outcome of natives in the impacted occupations.

All three data sources are merged at the county-year level. The county is the smallest geographical area we can use without imposing overwhelming restrictions. We collapse the information in the H-2B visa data file from the zip to the county level using the quarterly USPS-county crosswalks provided by the U.S. Department of Housing and Urban Development.[10]

[9] The mean for the interior immigration enforcement index over the 2010 through 2019 period equals 1.6 and has a standard deviation of 0.94. The index varies between 0 (no enforcement initiatives were in place) and 5 (when all 5 policies under consideration were implemented).
[10] The crosswalk can be found here: https://www.huduser.gov/portal/datasets/usps_crosswalk.html

3. Methodology

Our main aim is to learn about how firms' labor demand for low-skilled short-term foreign workers under the H-2B program has responded to the intensification of interior immigration enforcement and the subsequent adoption of sanctuary policies over the past two decades. We rely on a quasi-experimental approach exploiting the geographic and temporal variation in interior immigration enforcement and sanctuary policies over that span for identification purposes. Our model is given by:

$$(1) \qquad y_{c,t} = \alpha + \beta_1 IE_{c,t} + \beta_2 SP_{c,t} + X'_{c,t}\,\gamma + \theta_c + \pi_t + \varepsilon_{ct}$$

where $y_{c,t}$ denotes the number of H-2B workers requested by firms per 1,000 individuals in the labor force in county *c* and year *t*.[11] Our key regressors are the immigration enforcement index, IE_{ct}, which serves as a proxy for the intensity of interior immigration enforcement in the county where the firm operates in any given year, and $SP_{c,t}$ –a dummy variable equal to 1 if the county adopted a sanctuary policy. The vector *X* controls for county-specific traits descriptive of the labor force composition of the county, such as the shares of blacks, white, and Hispanics, as well as of the county's unemployment rate and gross domestic product. Finally, equation (1) includes county and year fixed effects. Standard errors are clustered at the county level.

We are interested in β_1 and β_2, which capture the impact of immigration enforcement and sanctuary policies in county *c* and year *t* on the number of workers requested by firms under the H-2B program. After controlling for the abovementioned covariates, our identifying assumption is that, in the absence of intensified interior immigration enforcement or sanctuary policy, firms' labor demand in counties with more stringent enforcement and less sanctuary would have been similar to those in counties offering a more welcoming environment. While this "parallel trends" assumption is untestable, we conduct two event studies enabling us to

[11] Labor force data by county and year is collected from the U.S. Bureau of Labor Statistics.

examine: (1) if differences across the two sets of counties with regards to the number of requested H-2B workers predated the adoption of stricter enforcement or a more benevolent sanctuary policy, and (2) any immigration enforcement/sanctuary policy dynamics. Specifically, the event study specification is given by:

$$(2) \qquad y_{c,t} = \alpha + \sum_{j=-2, j\neq -1}^{4} \beta_j IP_{c,t}^{j} + X'_{c,t}\,\gamma + \theta_c + \pi_t + \varepsilon_{c,t}$$

where IP_{ct}^{j} are indicators for each of the *j* periods preceding or following the policy change in county *c* and year *t*. The coefficients β_j capture the immigration policy effect (enforcement or sanctuary policy) dynamics up to 2 periods *before* and 4 periods *after* the respective policy indicator first turns positive in the county.

4. Firms' H2-B Labor Demand Amid Intensified Immigration Enforcement

Table 1 displays the results from estimating equation (1) using three alternative model specifications. Column (1) includes information on the level of interior immigration enforcement and on the existence of a sanctuary policy, along with county and year fixed effects, whereas columns (2) and (3) progressively add county time-varying economic and population traits, respectively. In all instances, we find evidence of interior immigration enforcement raising firms' demand for foreign labor under the H-2B visa program, whereas the opposite appears to be the case for sanctuary policies. Based on the estimates from the most complete model specification in column (3), a one standard deviation increase in the intensity of interior immigration enforcement (roughly equal to half the average level of interior immigration enforcement during the period examined) raises the requested number of H-2B workers by 4 percent.[12] In contrast, sanctuary policies raise the rate of requested workers under the H-2B visa program per 1,000 in the labor force by 0.076 or approximately 3.6 percent.[13]

[12] Computed as: [(0.94*0.088)/2.14]*100=3.90 percent, where 0.94 is the standard deviation of the interior immigration enforcement index, 0.088 is the estimated coefficient, and 2.14 is the mean of the dependent variable.
[13] Computed as: [0.0764*1/2.14]*100=3.57 percent, where 0.0764 is the estimated coefficient and 2.14 is the mean of the dependent variable.

A key concern in the interpretation of the results in Panel A refers to the possibility that the number of H-2B workers requested by firms might have already differed across counties with a tougher stance on immigration enforcement, relative to those with a more benign posture, prior to adoption of any of two sets of policies on interior immigration enforcement. To assess if that appears to have been the case, we estimate the model in equation (2) for each of the policies under consideration. According to the results Table 2, there is no clear evidence of the number of H-2B workers requested by firms being distinctively different from zero in the years prior to the enforcement index turning positive in the county. The number of H-2B workers requested by firms only rises following the adoption of tougher immigration enforcement policies, albeit for only the period. In a similar vein, we fail to find evidence of the number of H-2B workers requested by firms significantly varying in the years preceding the adoption of a sanctuary policy across firms in counties with such a policy in place, relative to firms in non-sanctuary counties. However, unlike we observe in the case of immigration enforcement, the number of H-2B workers requested by firms only seems to significantly drop four years after the adoption of a sanctuary policy, possibly hinting on these policies taking some time to affect firms' labor demands.

The results in Table 1 and 2 are suggestive of firms boosting their demand for foreign-born temporary workers under the H-2B program when immigration enforcement intensifies, and curtailing it when there is a more benevolent sanctuary environment. Is this response negatively impacting natives seeking employment or working in the occupations where most H-2B workers are hired? To address this question, we combine data on the number of H-2B workers requested by firms with individual-level data on the employment, hours of work, and wages of native workers in the top 8 occupations of workers with an H-2B visa from the ACS.[14]

[14] We focus on the top eight H-2B occupations, which include: building and grounds cleaning and maintenance, construction and extraction, production, food preparation and serving related, personal care and service, and transportation and material moving occupations.

We then estimate native employment, wage and weekly hours of work regressions in those occupations as a function of the labor demand under the H-2B visa program in the county where the respondent resides.[15] In addition, to gauge any crowding-out of natives, we also restrict the sample to those at work and model natives' employment likelihood in one of the occupations hiring the most H-2B worker relative to other ones.

As shown in Table 3, there is evidence of the number of H-2B workers requested by firms minimally impacting the employment of natives. A one standard deviation increase in the former (roughly equal to a 50 percent increase in the average number of requested H-2B workers per county and year) lowers native employment by less than half a percent –namely, 0.41 percent.[16] However, we find no evidence of firms' requests for H-2B workers significantly impacting natives' wages (Column (2)) or work hours (Column (3)) in those occupations, nor their propensity to be employed in one of the occupations hiring most H-2B workers relative to other occupations (Column (4)). One possible explanation might be that the shift towards a more costly H-2B workforce results in increased hiring scrutiny by firms, which may curtail the hiring of natives without further impacts on their wages or work hours.

5. Summary and Conclusions

There is an ongoing debate about the benefits and drawbacks of intensified immigration enforcement and the more recent adoption of sanctuary policies. While immigration policies are often introduced with the goal of protecting native workers, their impact on firms' labor demand if often overlooked, clouding our understanding of the overall impact on immigration

[15] We estimate the equation: $y_{ict} = \alpha + \beta_1 Requested\ H2B\ workers_{ct-1} + X'_{ict}\ \gamma + Z'_{ct}\ \delta + \theta_c + \pi_t + \varepsilon_{ict}$ where y_{ict} is a dummy indicative of whether the respondent is employed in one of the occupations hiring the most H-2B workers and, if so, her/his log hourly wages and weekly hours of work. We also restrict the sample to those at work and model natives' employment likelihood in one of the occupations hiring the most H-2B workers relative to other occupations.

[16] Computed as: [(1.18*0.003)/0.87]*100=0.41 percent, where 1.18 is the standard deviation of the number of requested workers per 1,000 individuals in the labor force, 0.003 is the estimated coefficient, and 0.87 the dependent variable mean.

policies on natives' labor market prospects. Using a unique data set, we document how increasing immigration enforcement at the local and state level raises firms' demand for foreign workers under the H-2B visa program, while the opposite appears to be the case in the presence of a sanctuary policy environment. Ironically, the increase in H-2B workers potentially brought over by a tougher stance on immigration enforcement has a negative impact on natives' employment prospects, albeit rather small. Altogether, the results are suggestive of how immigration policy brought about by changes in interior immigration enforcement and sanctuary policies can alter the channels through which firms hire workers, with marginal spillover effects on natives. Further research on the role of immigration policy on firms' labor demand is well-warranted.

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Table 1: Immigration Policy and Firms' Demand for H-2B Workers

Model Specification:	**(1)**	**(2)**	**(3)**
Immigration Enforcement (IE)	0.0968**	0.0799*	0.0764*
	(0.044)	(0.042)	(0.042)
Sanctuary Policies (SP)	-0.2580***	-0.2092***	-0.1776**
	(0.067)	(0.066)	(0.073)
Observations	24,608	24,608	24,608
R-squared	0.596	0.596	0.596
Economic Conditions	No	Yes	Yes
Population Characteristics	No	No	Yes
County FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Mean D.V.		2.14	

Notes: Panel A uses the number of H-2B requested workers per 1,000 individuals in the labor force as the dependent variable. All the columns include county-level controls for the shares of blacks, white, Hispanics, as well as the county's unemployment rate and GDP. Standard errors are clustered at the county level. ***p<0.01, **p<0.05, *p<0.1.

Table 2: Event Study Results for Firms' Demand for H-2B Workers

Immigration Policy (IP):	**Immigration Enforcement (IE)**	**Sanctuary Policy (SP)**
Two Years Prior IP > 0	-0.7420	0.1435
	(0.645)	(0.303)
One Year Prior IP > 0	0.0939	0.1523
	(0.332)	(0.586)
One Year After IP > 0	0.7046**	-0.0244
	(0.319)	(0.254)
Two Years After IP > 0	-0.2183	0.0237
	(0.245)	(0.455)
Three Years After IP > 0	0.8016	-0.3980
	(0.516)	(0.618)
Four Years After IP > 0	0.6089	-1.0669*
	(0.743)	(0.611)
Observations	24,608	24,608
R-squared	0.596	0.596
County-Level Traits	Yes	Yes
County and Year FE	Yes	Yes
Mean D.V.	2.14	2.14

Notes: The regression includes the economic and population county-level controls from the most complete model specification in Table 1, *i.e.* the shares of blacks, white, Hispanics, as well as the county's unemployment rate and GDP. Standard errors are clustered at the county level. ***p<0.01, **p<0.05, *p<0.1.

Table 3: The Impact of Firms' Demand for H-2B Workers on Natives

Column:	**(1)**	**(2)**	**(3)**	**(4)**
Outcome:	**Employment**	**Log (wage)**	**Log(hours)**	**Crowding Out of Natives**
H-2B Requested Workers $_{t-1}$	**-0.003****	-0.004	0.001	0.001
	(0.001)	(0.004)	(0.002)	(0.001)
Observations	436,879	384,632	384,632	639,348
R-squared	0.047	0.172	0.058	0.064
Economic Conditions	Yes	Yes	Yes	Yes
Individual Characteristics	Yes	Yes	Yes	Yes
County & Year FE	Yes	Yes	Yes	Yes

Notes: *Sample:* Natives 18 to 64 years old in the top H-2B occupations (*i.e.* building and grounds cleaning and maintenance, construction and extraction, production, food preparation and serving related, personal care and service and transportation and material moving occupations). Colum (1) reports the results for the period 2011-2018. The dependent variable equals 1 if the individual is employed, and 0 otherwise. The dependent variable in column (2) is the logarithm of the hourly wage earned by those employed in those occupations. The dependent variable in column (3) is the logarithm of weekly hours worked by those employed in the occupations of interest. Column (4) gauges any crowding-out impacts on natives. The sample includes all employed 18 to 64-year-old natives regardless of the occupation. The dependent variable equals 1 if the native works in any of the top H-2B occupations, and 0 otherwise. The results in columns (2) and (3) refer to the 2010-2017 period since wages and hours worked are reported for the year prior to the survey. Columns (1), (2), (3) and (4) include GDP to control for the economic conditions as well as, individual controls –namely, age, marital status, education level, race, ethnic group, and number of children. Standard errors are clustered at the county level. ***p<0.01, **p<0.05, *p<0.1.