

# The Effect of Firm Lobbying on High-Skilled Visa Adjudication\*

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## Abstract

Skilled foreign-born workers are critical to firms. Yet political or cultural factors can lead governments to restrict skilled immigration. To what extent, and how, does lobbying help firms overcome immigration barriers? This study explores these questions by focusing on the case of U.S. firms and an exogenous increase in H-1B high-skilled visa denial rates following the election of Trump in 2016. I construct an original firm-level dataset that combines the universe of U.S. temporary high-skilled visa petitions through 2017 with firms' immigration lobbying reports and financial information. Leveraging the data and text analysis, I document key stylized facts about U.S. immigration lobbying behavior: who, how, and what firms lobby. Using a difference-in-differences design, I find that firms' bureaucratic lobbying under the Trump administration reduced denial rates on their visa petitions by at least four percentage points. These findings bridge existing research on immigration policymaking and lobbying effectiveness.

**Key Words:** Immigration, Firms, Lobbying

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# 1 Introduction

Highly skilled foreign-born workers are critical to firms' productivity and performance (W. R. Kerr and Lincoln 2010). Despite firms' need for these workers, or the broader benefits they bring to the economy,<sup>1</sup> political or cultural factors can still lead governments to restrict their entry (Goldstein and Peters 2014; Hopkins 2010; Malhotra, Margalit, and Mo 2013; Norris and Inglehart 2019). When confronted with unfavorable policy environments, firms are known to lobby.<sup>2</sup> In fact, studies show that firms spend significantly more money on lobbying than other means such as campaign contributions (Figueiredo and Richter 2014; Huneeus and Kim 2021)

Yet, despite the prominence of firm lobbying, our understanding of its influence on immigration policymaking has been limited. On the one hand, the immigration literature has focused mainly on public attitudes and overlooked firms.<sup>3</sup> This is a critical oversight because studies frequently find a notable gap between hostile public attitudes and more receptive government policy outputs, suggesting that interest groups and businesses may play a key role (Freeman and Tandler 2012). Furthermore, the structure of skilled admissions is often designed to allow firms themselves to select the workers they want (S. P. Kerr, W. R. Kerr, and Lincoln 2015, p. 148). Thus, firms should play a central role in, at the very least, skilled immigration policymaking. On the other hand,

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<sup>1</sup>For example, benefits regarding innovation (W. R. Kerr and Lincoln 2010), productivity (Peri, Shih, and Sparber 2015), and tax contributions (National Academies of Sciences, Engineering, and Medicine 2017, p. 422).

<sup>2</sup>Following Bombardini and Trebbi (2020), I define lobbying as “the process of political influence by corporations and other business interests on the adoption, retention, or amendment of public policy through selective communication of information and material exchange with political officials.”

<sup>3</sup>The important seminal work by Peters (2014, 2017) on firms and low-skilled immigration policy is a rare exception and brings the focus back to firms. For a systematic review of the immigration literature on public attitudes, see Hainmueller and Hopkins (2014).

the empirical lobbying literature emphasizes firms, but it has neglected immigration compared to other key policy areas of economic globalization, such as trade and finance (Figueiredo and Richter 2014, p. 168). Since policy barriers to immigration and trade can jointly shape firms' decision to stay or move overseas (Peters 2014, 2017), the underdevelopment of firms' immigration lobbying in the literature thus precludes insights on issues such as the politics of global value chains, trade, and offshoring (e.g., Owen and Johnston 2017; Rickard 2021).

An important emerging literature has sought to improve our understanding by examining firms' immigration lobbying activities (e.g., W. R. Kerr, Lincoln, and Mishra 2014; Peters 2014, 2017). However, most of this research has focused on explaining lobbying behavior (e.g., W. R. Kerr, Lincoln, and Mishra 2014), as opposed to identifying the effects of lobbying. Furthermore, extant attempts at assessing firms' lobbying impact on immigration policy have only been able to do so indirectly at an aggregated industry level (e.g., Facchini, Mayda, and Mishra 2011; Peters 2017). To the best of my knowledge, no study has examined its impact on policy outcomes directly at the *firm* level. For many researchers, data availability and inference challenges have limited studies on the causal effect of lobbying behavior (Figueiredo and Richter 2014). Thus, while lobbying is often assumed to be effective, empirical assessments of whether and how lobbying helps firms overcome immigration barriers, especially under hostile political environments, are still lacking.

This study provides such a firm-level assessment. To overcome challenges to causal inference, I use a Difference-in-Differences (DiD) research design that focuses on the case of U.S. firms and an exogenous increase in H-1B high-skilled visa denial rates triggered by the election of Donald Trump in November 2016. While Trump's anti-immigration stance was well known during his campaign (Timm 2016), the election results came as a shock—all major vote forecasters predicted a Clinton victory (Kennedy et al. 2018). Since the start of the Trump administration in 2017,

it actively sought to restrict the entry of H-1B high-skilled foreign workers through increased visa denial rates (National Foundation for American Policy 2020), higher processing fees as well as longer wait times (Anderson 2020), and outright bans (White House 2020). Notably, these restrictions have taken the form of changes in rulemaking and implementation instead of new laws (U.S. Citizenship and Immigration Services 2017a), which created room for firms to lobby for firm-specific protection.<sup>4</sup> As such, my identification strategy exploits increases in the value and lobbying of skilled visas that stemmed from the exogenous election result. Specifically, I assess whether firms that lobbied on immigration during the Trump administration (the treatment group) experienced smaller increases in high-skilled visa denial rates than firms that did not lobby during the same period (the control group). By comparing the before-and-after changes in denial rates for both treatment and control groups, the DiD design allows me to account for biases due to (1) systematic differences between firms that lobby and those that do not (W. R. Kerr, Lincoln, and Mishra 2014), and (2) general lobbying trends in the United States.

To overcome data challenges, I constructed an original dataset that merges the universe of all U.S. firms that petitioned for temporary high-skilled visa workers (H-1B and L-1) between 1991 and 2017 ( $\approx 480,000$  firms) with their immigration lobbying reports ( $\approx 7300$  reports between 1999 and 2017) and financial information (2008–2017), yielding a total of around 1.25 million firm-year observations. The petitions data come from a large Freedom of Information Act (FOIA) request I submitted to the U.S. Citizenship and Immigration Services (USCIS). Overall, the dataset provides vital information needed in the analyses, such as petition totals and statuses, lobbying intensity (i.e., total reports and expenditure), lobbying report content (e.g., particular issues and agencies targeted), industry, and size. Furthermore, it covers both publicly listed and private

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<sup>4</sup>See You (2017) on the positive association between rulemaking and lobbying for particularistic benefits.

firms, mitigating potential concerns about sample selection and generalizability. Lastly, the firm-level matching of visa petitions with detailed lobbying reports enables precise empirical tests more closely linked to potential lobbying mechanisms.

I hypothesize that firms' lobbying may influence visa decisions in three main ways. First, building on a fast-growing literature on bureaucratic lobbying (e.g., Boehmke, Gailmard, and Patty 2013; You 2017), I expect firms to directly lobby agencies in charge of visa adjudication, e.g., the USCIS, to influence adjudication processes and final determinations. Second, drawing on recent research on the lobbying of president's offices (Haeder and S. W. Yackee 2015; West and Raso 2012), I posit that firms may also lobby agencies and offices higher up in the bureaucratic hierarchy, e.g., the Department of Homeland Security (DHS) or the Executive Office of the President (EOP), to indirectly pressure visa-adjudicating agencies into more favorable determinations. Third, since legislators have incentives (Ritchie 2018) and various techniques to influence bureaucrats' decision making (Hall and Miler 2008), firms may also try to influence visa-adjudicating agencies by lobbying indirectly through legislators.

To corroborate the feasibility of these lobbying strategies and guide subsequent empirical analyses, I first document stylized facts about U.S. firms' lobbying activities in recent years based on my dataset. At the national level, I find that while immigration lobbying declined during the second term of the Obama administration, this trend reversed in the first year of the Trump administration, with increased targeting of executive agencies that hold influence over immigration policy implementation. This is consistent with the literature's findings that the lobbying of bureaucracies, in addition to legislatures, increases on issues that are more conflictual (McKay 2011) or have more room for particularistic benefits (You 2017). At the firm level, I find that few firms lobbied on immigration under the Trump administration, but those that did tend to be

more persistent and larger (as measured by total sales), which is consistent with broader findings in the literature (e.g., W. R. Kerr, Lincoln, and Mishra 2014). Applying a structural topic model to quarterly immigration lobbying reports between 2008 and 2017, I find that “H-1B Visas” was the second most common lobbying topic (following “Comprehensive Immigration Reform”), and its prevalence increased right after the inauguration of Trump.

Building on these stylized facts, I then conduct DiD analyses of the effect of firm lobbying on visa adjudication using data on all high-skilled visa petitions filed from 1991 through 2017. While H-1B denial rates generally increased under the first year of the Trump administration, I find that firms’ immigration lobbying under Trump attenuated denial rate increases by around 4 percentage points, even after controlling for the effect of firm- and industry-specific characteristics. This result suggests a sizeable payoff, given an average H-1B denial rate that is about 6% throughout the period. Furthermore, consistent with the H-1B adjudication process and the bureaucratic lobbying literature, I find more pronounced effects when the treatment condition is narrowly defined as only counting immigration lobbying activities that mention specific texts (“skilled”, “H-1B”, and “visas”) or target relevant bureaucracies (e.g., the USCIS). Additionally, I find that lobbying congressional members alone had no statistically discernable effect on H-1B denial rates, suggesting that the effect stems mainly from lobbying bureaucracies. Lastly, a range of placebo tests rules out the possibility that the findings are driven by pre-treatment trends, untheorized temporal shocks, or unobserved firm characteristics.

The study contributes to our understanding of immigration policymaking and lobbying effectiveness. First, it goes beyond the immigration literature’s focus on public attitudes and responds to calls to bring interest groups, especially firms, back into immigration policymaking (Freeman and Tandler 2012; Peters 2017), providing a more complete picture of immigration politics. Second,

it joins an emerging literature that sheds light on the influence of bureaucracies in immigration policy decision making and implementation (e.g., Ellermann 2005; Satzewich 2015). Third, its findings add to a fast-growing empirical literature that explores the means and effectiveness of lobbying across various issue areas (Figueiredo and Richter 2014; Huneeus and Kim 2021).

## 2 The H-1B Visa Program

The H-1B Specialty Occupation Visa is the largest temporary high-skilled immigration program in the United States (S. P. Kerr, W. R. Kerr, and Lincoln 2015), with an estimated population of around 583,000 as of September 2019 (U.S. Citizenship and Immigration Services 2019). The visa is firm-sponsored, which means that firms first identify the foreign-born workers they want to hire and then file a petition to the U.S. government to obtain visas for the workers. The petitioning process consists of two main steps. First, firms need to apply for and receive Labor Condition Application (LCA) certification from the Department of Labor (DOL), stating that their hiring complies with specific labor requirements.<sup>5</sup> Second, firms submit completed forms, and the DOL-certified LCA, to the USCIS for adjudication. Once approved, H-1B workers are authorized to stay in the United States for up to three years, with the duration extendable to a maximum of six years. Beginning in the Fiscal Year (FY) 2004, H-1B visas have been subject to a numerical cap of 65,000 new visas per year, with a 20,000 exemption for workers who have a master’s degree or higher from a U.S. institution and additional exemptions for hiring in higher education institutions and non-profit organizations.<sup>6</sup>

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<sup>5</sup>For example, workers are paid the “prevailing wage” compared to similarly qualified workers in the area.

<sup>6</sup>See U.S. Citizenship and Immigration Services (2020a) for further details about the H-1B visa program. See Table A.1 in the Appendix for a comparison of the H-1B with the second-largest temporary high-skilled immigration program, the L-1 Intra-Company Transferee Visa.

Firms highly demand H-1B visas. Since the creation of the H-1B category under the Immigration Act of 1990, more than 96,000 U.S. firms have relied on it to employ skilled foreign workers.<sup>7</sup> Furthermore, the annual H-1B cap has been exhausted every fiscal year since 2004 (National Foundation for American Policy 2020), often within days of the first day of filing (American Immigration Lawyers Association 2016). Given the high demand, the USCIS began to use a computer-generated random selection process (“lottery”) in FY 2008 to allocate H-1B visas during years when petitions exceed the cap within the filing period.<sup>8</sup>

The increase in H-1B denial rates under the Trump administration raised costs and caused delays in firms’ hiring. The National Foundation for American Policy (2020) reports that denial rates for H-1B petitions regarding “initial” (new) employment have more than tripled, increasing from 6% in FY 2015 to 21% in FY 2019. Similarly, denial rates for “continuing” (extended) employment increased fourfold from 3% in FY 2015 to 12% in FY 2019. The main reason for such increases in denial rates stems from changes in the legal standards used by the USCIS to adjudicate cases. Following Trump’s April 2017 “Buy American and Hire American Executive Order” (White House 2017), the USCIS implemented a series of changes in rulemaking, policy memoranda, and operations on H-1B adjudication (U.S. Citizenship and Immigration Services 2017a). For example, the USCIS changed its interpretation of what qualifies as a “specialty occupation” and now requires proof of the potential projects assigned to visa workers within the first three years of employment (National Foundation for American Policy 2020). Furthermore, it issued a policy memorandum in October 2017 rescinding previous agency policy that “when adjudicating petition extensions involving the same parties and underlying facts as the initial

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<sup>7</sup>Calculations are based on the author’s data.

<sup>8</sup>See U.S. Citizenship and Immigration Services (2020b) for details of the selection process.



petition, to defer to prior determinations of eligibility, except in certain, limited circumstances” (U.S. Citizenship and Immigration Services 2017b). Such heightened scrutiny led to a substantial increase in the percentage of cases with Requests for Evidence (RFEs), nearly doubling from 22.3% in FY 2015 to 40.2% in FY 2019, which have been incredibly costly and time-consuming for firms (National Foundation for American Policy 2020).

### 3 Firm Lobbying and H-1B Visa Adjudication

How might firms lobby in response to increased denial rates on H-1B visa petitions under the Trump administration? The most straightforward strategy is to lobby federal agencies that are in charge of visa adjudication *directly*. A fast-growing literature examines how business interests influence policy outputs by lobbying bureaucratic implementation.<sup>9</sup> The literature shows that while most interest groups lobby the legislature, a majority of them also lobby the bureaucracy (Boehmke, Gailmard, and Patty 2013). Furthermore, business interests tend to dominate bureaucratic rulemaking, e.g., during notice and comment procedures (J. W. Yackee and S. W. Yackee 2006). Building on this literature, I expect firms to lobby two federal agencies to influence the H-1B visa adjudication process: the USCIS and the DOL. As previously discussed, the DOL certifies whether firms’ hiring meets labor requirements, and the USCIS reviews and makes the final determinations on H-1B visa petitions. By lobbying the two agencies, firms may be able to reduce the chance of failing labor condition certification or being issued evidence requests, which should decrease their H-1B denial rates.

Meanwhile, firms may also try to lobby visa-adjudicating agencies *indirectly* through offices and

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<sup>9</sup>See, e.g., Bennedsen and Feldmann (2006), Boehmke, Gailmard, and Patty (2013), Haeder and S. W. Yackee (2015), McKay (2011), J. W. Yackee and S. W. Yackee (2006), S. W. Yackee (2006), and You (2017).

agencies higher up in the bureaucratic hierarchy. One potentially valuable target is the president, who sits at the top of the entire bureaucracy. Scholars have recently begun to explore the understudied interaction between presidents and interest groups and whether it affects bureaucratic policymaking. For example, recent studies show that business' lobbying of the U.S. president's Office of Management and Budget (OMB) or the Office of Information or Regulatory Affairs (OIRA, a subunit of OMB) is associated with subsequent changes in federal agencies' rulemaking (e.g., Haeder and S. W. Yackee 2015, 2020). Such lobbying can be effective because it provides the president's offices with both strong signals of business interests and the technical details of policy ramifications (e.g., Haeder and S. W. Yackee 2015). The president can then use the rule review powers of these offices to "identify, modify, and occasionally block" agency rulemaking that conflicts with "the priorities of the White House and its key constituents" (West and Raso 2012, p. 501). Building on this literature, I posit that firms may lobby Trump's Executive Office (consisting of the White House Office, the OMB, etc.) as an indirect way to influence the USCIS' decision making. Another potentially valuable target is the DHS, the direct parent agency of the USCIS. Given the hierarchical nature between the two agencies, firms may also aim to lobby the Secretary of Homeland Security's offices to create pressure on the USCIS' decision making in H-1B petitions.

A third strategy focuses on the indirect lobbying of visa-adjudicating agencies but goes through legislators instead. An extensive literature shows that legislators can use various techniques (e.g., appropriations, hearings, or administrative rules and procedures) to influence bureaucrats' decision making (e.g., Hall and Miler 2008; McCubbins, Noll, and Weingast 1987). Given such powers, legislators are often called upon by interest groups to influence bureaucratic policymaking and output. For example, recent studies show that while a large part of U.S. lobbying activities aims

to influence the bureaucratic implementation of passed legislation, nearly half of the lobbying targets are legislators (You 2017). Furthermore, legislators are also known to use their influence on bureaucracies as a covert way to satisfy conflicting interests from constituents and interest groups (Ritchie 2018). In the context of H-1B visa adjudication, firms may thus lobby Senators or House Representatives in the hope of leveraging their influence to pressure the USCIS or the DOL into making quicker and more favorable determinations on their H-1B petitions.

Anecdotal evidence based on lobbying reports supports the feasibility of these strategies. On the one hand, some firms focus entirely on the bureaucracy in their lobbying. For example, during the fourth quarter of 2017, Amazon lobbied the USCIS, the DOL, and the White House on “Issues related to DACA, high-skilled immigration, and visa processing; workforce issues.”<sup>10</sup> Amazon’s venue choice suggests lobbying strategies that are more consistent with the direct lobbying of bureaucracies or indirect lobbying through higher-level bureaucracies. On the other hand, many firms lobby both bureaucracies and legislators. For example, in the second quarter of 2017, Oracle lobbied the DOL, the DHS, the EOP, the Senate, and the House on “Issues pertaining to immigrant and non-immigrant visas for skilled professionals; issues surrounding executive action on high-skilled immigration policy and VISA bulletin; issues related to lawful permanent residence.”<sup>11</sup> In this case, Oracle’s venue selection suggests that all three lobbying strategies may be in play.

The natural question, then, is to what extent firms’ lobbying can reduce their H-1B denial rates under a hostile environment and whether some strategies are more effective than others. Lobbying is often assumed to produce a payoff given firms’ incurred costs (Figueiredo and Richter 2014). Lobbying on H-1B petitions may be even more likely to produce a payoff since the firm-specific

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<sup>10</sup>See the full report: <https://disclosurespreview.house.gov/ld/ldxmlrelease/2017/Q4/300929492.xml>.

<sup>11</sup>See the full report: <https://disclosurespreview.house.gov/ld/ldxmlrelease/2017/Q2/300896247.xml>.

nature of H-1B petitions should trigger less counter-lobbying by opposing firms or interest groups than immigration legislation. Yet H-1B petitions also faced significantly higher scrutiny during the Trump administration, which may reduce the firms' lobbying effectiveness. For example, the USCIS has even publicly touted its accomplishments on restricting H-1B visas.<sup>12</sup> Thus, the net effect of firm lobbying can be unclear a priori, and I explore empirically below.

## 4 Data and Measures

To assess the effect of firms' lobbying on H-1B visa adjudication, I construct an original dataset that connects firms' petitions for temporary high-skilled visa workers (H-1B and L-1) to their lobbying activities and financial information. The dataset includes all U.S. firms (publicly traded or private) that filed such a petition between 1991 and 2017, yielding around 480 thousand unique firms and 1.25 million firm-year observations.

**Petitions Data.** The petitions data are based on original administrative data I acquired through a Freedom of Information Act (FOIA) request submitted to the USCIS, including around 7.2 million petitions. The year 1991 marks the first year H-1B visa petitions were received, adjudications began in 1992, and 2017 is when the latest full-year data was available at the time of the FOIA request. The administrative data draws on information firms entered in form I-129, "Petitioning for a Nonimmigrant Worker."<sup>13</sup> The data includes key information related to the petitioner (e.g., name and address), the case (e.g., visa class, approval status, and year received), and the beneficiary (e.g., country of birth). For each petition, I link the petitioner's name (usually a firm) with standardized company identifiers (BvD IDs) from Bureau van Dijk's Orbis database, which

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<sup>12</sup>See news release in 2019: <https://www.uscis.gov/news/news-releases/uscis-commemorates-second-anniversary-of-buy-american-and-hire-american-executive-order>.

<sup>13</sup>See the current version of the form: <https://www.uscis.gov/i-129>.

contains information for more than 400 million companies and entities globally.<sup>14</sup> I then aggregate the data up to the firm level and calculate **H-1B Denial Rates** for each firm and year, the outcome of interest.<sup>15</sup>

**Lobbying Data.** Data on firms’ immigration lobbying activities come from the LobbyView database (Kim 2018). Specifically, I extracted all lobbying reports between 1999 and 2017 that list “IMM” (Immigration) as the general issue area code, yielding around 7,300 reports. The reports include information about the client’s (firm’s) name, address, lobbying expenditure, specific lobbying issues (open-ended), and target venues (e.g., Senate, House, federal agencies, etc.).<sup>16</sup> I then link the client names to BvD IDs, aggregate the data up to the firm level, and construct measures for my predictors. These predictors include, e.g., whether firms lobbied on immigration in 2017, total immigration lobbying reports firms filed in a given year, and whether firms mentioned

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<sup>14</sup>For details about Orbis, see <https://www.bvdinfo.com/en-us/our-products/data/international/orbis>. Matching petitioner names to common firm IDs is a notoriously challenging task. For example, the names of the same firm can vary depending on abbreviations, name changes, and even spelling errors. To systematically overcome this challenge, I employ Orbis’ “batch search” function to extract unique firm identifiers in their database. The process yielded around 50% “A” (best) matches out of 990 thousand petitioner names, i.e., approximately 480 thousand unique matched firms. I thus limit my dataset to these identifiable firms.

<sup>15</sup>For each year, H-1B denial rates equal total denied petitions divided by total petitions (approved, denied, revoked, and administratively closed). The calculations include petitions for both initial employment (for new employees) and continuing employment (for existing employees).

<sup>16</sup>Beginning in 2008, the Honest Leadership and Open Government Act of 2007 requires lobbyists to file disclosure reports more frequently, from semi-annual to quarterly and by electronic filing. However, the basic structure of lobbying reports has remained the same. Note that reports filed before 2008 are all in paper format and often filled out handwritten. LobbyView uses Optical Character Recognition (OCR) technology to parse these documents, but accuracy issues still exist, especially regarding open-ended questions on lobbying issues and target venues. To ensure the data’s quality, I manually check and recode all reports between 1999 and 2007.

specific keywords (e.g., “H-1B”) or targeted specific agencies (e.g., the USCIS).

**Financial data.** Firm-level financial information comes from Orbis. It is important to note that Orbis only reports data for up to ten recent years, and thus the data is limited to the period between 2008 and 2017. Additionally, missing information is a common problem for many private firms and earlier years. Thus, I focus on a set of variables known to predict lobbying behavior (W. R. Kerr, Lincoln, and Mishra 2014) but have less data missingness across firms and years. These variables include industry (4-digit code according to the North American Industry Classification System, NAICS), size (small, medium, large, very large), and public or private status.

Overall, the dataset is unique for two reasons. First, it covers both publicly listed and private firms, mitigating potential concerns about sample selection and generalizability. Indeed, biases related to firms’ selection into lobbying have been a persistent concern in the literature (Figueiredo and Richter 2014). While recent studies on immigration lobbying have greatly expanded their sample to include most public firms,<sup>17</sup> selection can still be a concern as public firms tend to be larger and more likely to lobby than the average private firm. The administrative data I obtained help overcome this problem by including all public and private U.S. firms that have petitioned before on temporary high-skilled visa workers, regardless of the outcome. As such, my dataset captures a more complete data-generating process, providing information regarding whether these firms lobbied on immigration under the Trump administration and, in turn, whether their petition was approved or denied. Second, by linking visa petitions with details contained in lobbying reports, the dataset allows researchers to obtain cleaner estimated effects that are closely linked to potential lobbying mechanisms. For example, given our contextual knowledge about the H-1B

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<sup>17</sup>For example, the largest firm-level dataset on immigration lobbying to date from W. R. Kerr, Lincoln, and Mishra (2014) includes 3,260 publicly traded firms from 1998 to 2006.

visa adjudication process, researchers can refine the treatment condition to only include lobbying activities that mention specific keywords such as “H-1B visas” or target particular venues like the USCIS.

## 5 Stylized Facts

Drawing on the data, I document key stylized facts about recent immigration lobbying in the United States that corroborate lobbying strategies discussed in Section 3 and guide the empirical analysis in Section 6.

### 5.1 National Trends in U.S. Immigration Lobbying

I begin with two main aggregate trends. On the one hand, firms’ immigration lobbying declined during the second term of the Obama administration but rose during the Trump administration’s first year. The left panel of Figure 1 plots immigration lobbying over time as measured by estimated lobbying expenditures.<sup>18</sup> It shows that immigration lobbying intensity has generally increased between 1999 and 2017. However, in recent years, immigration lobbying first declined during Obama’s second term (Jan. 2013 – Jan. 2017) and then rose again during Trump’s first year (Jan. 2017 – Jan. 2021). This trend reversal is consistent with the series of immigration restrictions the Trump administration implemented since 2017 (as discussed in Section 2).

On the other hand, bureaucrats grew as lobbying targets under the Trump administration while legislators declined. The right panel of Figure 1 compares the prevalence of target venues

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<sup>18</sup>Following LobbyView, I estimate immigration lobbying expenditures by (1) dividing the total lobbying expenditures in each report by the total number of issue areas appearing in the report and (2) summing up the results for all immigration reports by firms and years.

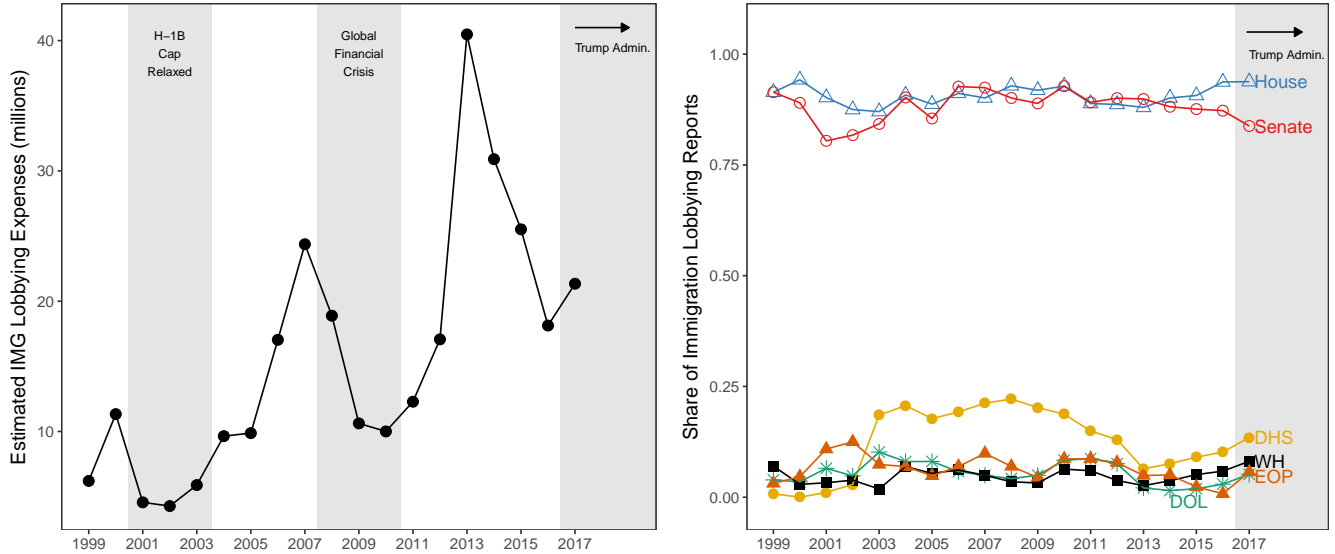


Figure 1: **Immigration Lobbying by U.S. Firms, 1999 – 2017.** The left panel shows the increase in firms’ lobbying expenses on immigration over time. While immigration lobbying declined during the second term of the Obama administration, it began increasing again during the first year of the Trump administration. The right panel shows top government entities targeted by firms in their immigration lobbying reports. Data in 2017 show a decline in the lobbying of legislators and an increase in the targeting of bureaucrats and the president’s offices.

over time, as measured by the share of immigration reports that list a specific venue.<sup>19</sup> The panel shows an increase in 2017 in the lobbying of federal agencies and offices. Notably, the share of immigration lobbying reports targeting the Executive Office of the President (EOP) increased substantially from around 0.8% to 5.7%. In contrast, the panel shows a decline in the lobbying of congressional members (mostly Senators). These changes suggest a potential shift towards lobbying strategies that target bureaucracies directly or indirectly to influence immigration policy implementation, as discussed in Section 3. The pattern is consistent with the literature’s findings that the lobbying of bureaucracies, in addition to legislatures, increases on issues that are more conflictual (McKay 2011) or have more room for particularistic benefits (You 2017).

<sup>19</sup>Note that firms can lobby multiple venues on the same issue.



NAICS	Code	# Firms	% Lobbied	Example Firm
Agriculture, Forestry, Fishing, Hunting	11	131	0.8	LAND O'LAKES INC
Mining, Quarrying, and Oil/Gas Extraction	21	304	0.0	OCCIDENTAL PETROLEUM CORP
Utilities	22	179	0.0	PACIFIC GAS & ELECTRIC COMPANY
Construction	23	1263	0.1	LENNAR CORP
Manufacturing	31-33	7287	0.4	APPLE INC
Wholesale Trade	42	2440	0.1	NU SKIN ENTERPRISES INC
Retail Trade	44-45	1763	0.3	WALMART INC
Transportation and Warehousing	48-49	951	0.1	DELTA AIR LINES INC
Information	51	1772	0.6	MICROSOFT CORPORATION
Finance and Insurance	52	2396	0.0	THE WESTERN UNION CO
Real Estate and Rental and Leasing	53	451	0.0	CBRE GROUP INC
Professional, Scientific, Technical SVC	54	9547	0.1	ACCENTURE LLP
Management of Companies and Enterprises	55	444	0.5	SVB FINANCIAL GROUP
Admin., Waste Management, Remediation SVC	56	2673	0.1	EQUIFAX INC
Educational Services	61	706	0.3	SAS INSTITUTE INC
Health Care and Social Assistance	62	2699	0.0	COMMUNITY HEALTH SYSTEMS INC
Arts, Entertainment, and Recreation	71	271	1.1	FELD ENTERTAINMENT INC
Accommodation and Food Services	72	494	1.2	MCDONALDS CORP
Other Services (except Public Administration)	81	686	0.1	DESALES MEDIA GROUP INC
Public Administration	92	137	0.0	PAUL HASTINGS LLP

Table 1: **Descriptive Statistics of Immigration Lobbying in 2017 by NAICS 2-digit Industries.**

## 5.2 Firm-Level Patterns in U.S. Immigration Lobbying

Next, I zoom in to the firm level to better understand which firms are lobbying on immigration during this period, how frequently they lobby, and what they are lobbying on. I document five key firm-level patterns that motivate and guide my empirical tests.

First, immigration lobbying was extremely rare under the Trump administration. Of the 49,843 firms that petitioned for temporary high-skilled workers in 2017, only 79 firms (or  $79/49843 = 0.16\%$ ) lobbied on immigration. This number is considerably lower than the 10% the lobbying literature has documented (W. R. Kerr, Lincoln, and Mishra 2014). However, the result is not surprising as my data include both public and private firms, as opposed to extant studies' focus on public firms that are larger and more likely to lobby. Furthermore, firms may anticipate smaller lobbying payoffs under the Trump administration and thus reduce their activities. Table 1 breaks down these petitioning firms by two-digit NAICS industries and presents the percentage of immigration lobbying in each industry. The results show a wide variation across industries.

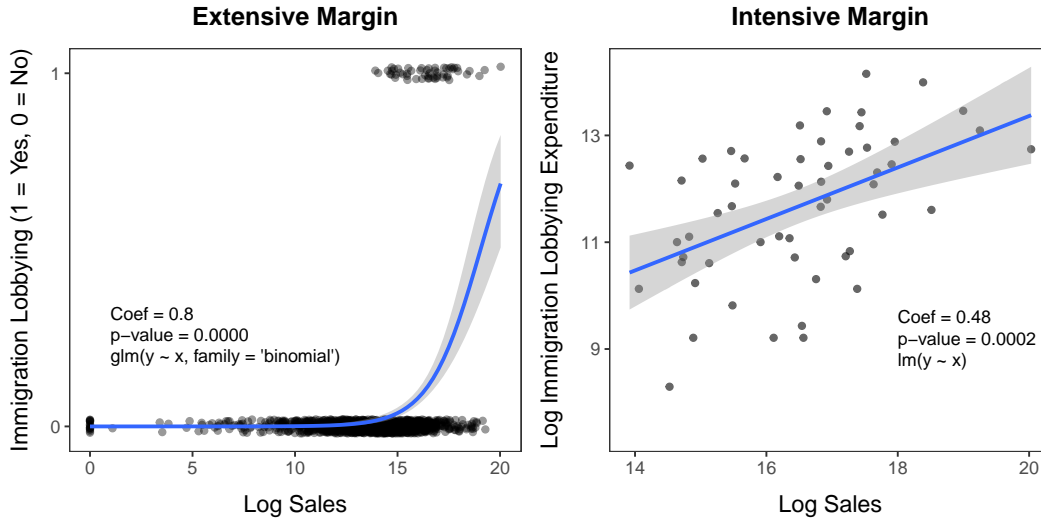


Figure 2: **Firm Size and Immigration Lobbying, 2017.** The figure shows a positive and statistically significant correlation between firms’ 2017 sales (logged) and the extensive and intensive margins of immigration lobbying in 2017.

While demand for temporary high-skilled workers concentrated mainly in industries related to “Professional, Scientific, and Technical Services” (9547 firms) and “Manufacturing” (7287 firms), only 0.1% and 0.4% of firms in these industries, respectively, lobbied on immigration. In contrast, fewer firms in sectors related to “Accommodation and Food Services” (494 firms) petitioned for temporary high-skilled workers, but a relatively larger percentage of these firms lobbied (1.2%). These patterns point to the importance of accounting for baseline industry-level differences in lobbying behavior and H-1B denial rates in empirical models.

Second, firms that did lobby on immigration under the Trump administration tend to be larger, which is consistent with findings in existing lobbying research (e.g., Huneus and Kim 2021; W. R. Kerr, Lincoln, and Mishra 2014). Figure 2 suggests that this pattern holds on both extensive and intensive margins. The figure plots a firm’s 2017 sales (logged) against whether the firm lobbied on immigration or not in 2017 in the left panel and 2017 immigration lobbying expenditures (logged) in the right panel. Both panels show a positive and statistically significant correlation. Figure 3

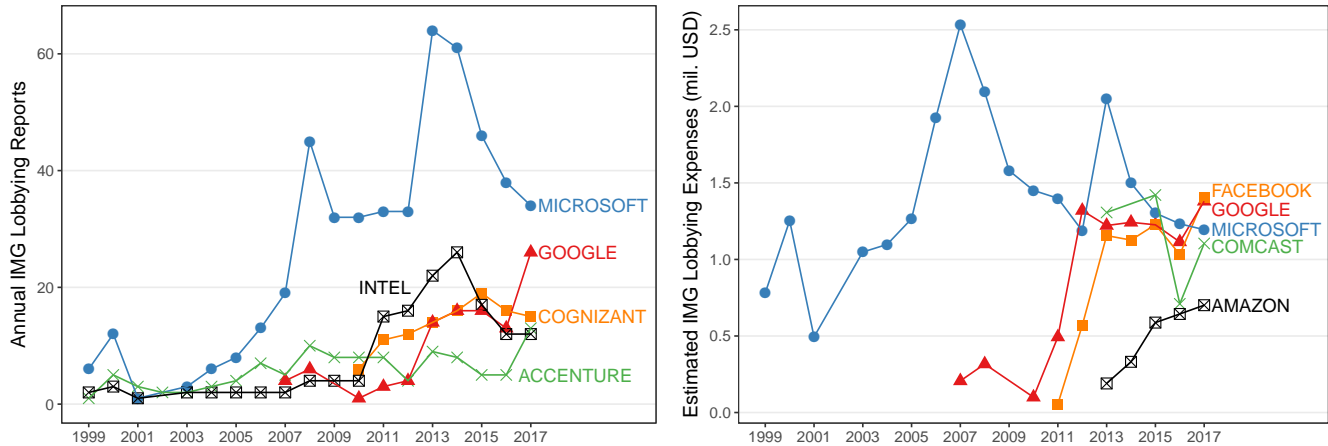


Figure 3: **Top Firms Lobbying on Immigration, 2017.** The left panel shows that Microsoft was the largest lobbyist on immigration in 2017 based on the number of reports filed (34). The right panel shows that Facebook was the largest lobbyist on immigration in 2017 based on estimated immigration lobbying expenses (\$1.4 million).

identifies the top five firms lobbying on immigration in 2017 regarding the number of lobbying reports filed and estimated expenditures. Consistent with common perceptions, large firms in technology and software industries that rely on temporary high-skilled foreign workers lobbied the most. For example, Microsoft, the top immigration lobbying firm in 2017, filed 34 reports and spent an estimated \$1.2 million.

Third, the immigration-lobbying firms above were also highly persistent in lobbying. Following Huneus and Kim (2021), I track each firm’s lobbying activities in two consecutive years as a conservative measure of persistence. As shown in Figure 4, around 87% of firms that lobbied on immigration in 2017 had also lobbied in 2016. Furthermore, nearly 100% of firms that did not lobby in 2016 did not lobby in 2017. The finding joins existing studies that document the persistence of firm lobbying in immigration (W. R. Kerr, Lincoln, and Mishra 2014) and other economic issue areas (Figueiredo and Richter 2014; Huneus and Kim 2021).

This pattern is an important motivation for the DiD research design. It suggests that firms that lobby are quite different compared to those that do not. Thus, even if one finds a negative

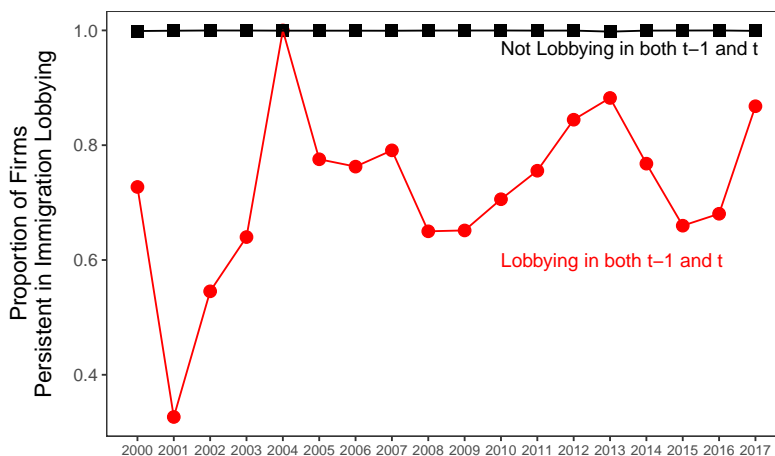


Figure 4: **Persistence in Immigration Lobbying.** The figure shows that around 87% of firms that lobbied on immigration in 2017 had also lobbied in 2016. Nearly all firms that did not lobby in 2016 did not lobby in 2017.

correlation between lobbying and H-1B visa denial rates, the results may be driven not by lobbying itself but by the characteristics of firms that choose to lobby. An aggressive way to address such differences is by employing firm fixed-effects, which can account for all time-invariant firm-specific factors. However, given the persistence in firms’ lobbying behavior over time, little variation is often left in the data to estimate lobbying effects once firm fixed-effects are used. By exploiting temporal changes in lobbying activities stemming from an exogenous shock, the DiD design can deal with persistence issues in the data while still allowing the inclusion of firm fixed-effects that can address concerns about omitted variable bias (Figueiredo and Richter 2014, 170–171).

Turning to lobby content, a fourth pattern is that H-1B visas are among the most prevalent lobbying topics for U.S. firms in recent years. To systematically gauge main topics lobbied by U.S. firms, I apply a Structural Topic Model (Roberts et al. 2014) to quarterly immigration lobbying reports between 2008 and 2017.<sup>20</sup> During these ten years, 418 firms lobbied on immigration and filed 5,546 lobbying reports that list immigration as a general issue area. I use the specific

<sup>20</sup>The year 2008 marks when firms were first required to file quarterly disclosure reports, and 2017 is the most recent year available in the analysis.



Figure 5: **Top Five Topics in U.S. Immigration Lobbying, 2008–2017.** This figure shows the five most common topics, expected topic proportions, and most highly associated words. The results are based on a Structural Topic Model applied to quarterly immigration lobbying reports.

lobbying issues detailed in the reports as the text corpora to fit a simple model that includes firm and quarter fixed-effects. The results show that a five-topic model achieves the best balance between the topic exclusivity and semantic coherence, two important criteria for selecting the number of topics (Roberts et al. 2014).<sup>21</sup>

As shown in Figure 5, I find that H-1B visas (Topic 2) are the second most common immigration lobbying topic among firms, with an expected topic proportion of 0.22. Other prevalent topics include Comprehensive Immigration Reform (Topic 1), Border Security Act of 2013 (Topic 3), High-Skilled Immigration Acts (Topic 4), and Various Other Immigration-Related Legislation (Topic 5). Notably, the results suggest that the H-1B visas topic is distinct from the High-Skilled Immigration Acts topic. The former focuses on H-1B visa technicalities, and the latter emphasizes legislation related to high-skilled foreign workers in general. One fundamental assumption underlying discussions surrounding the effect of firm lobbying on H-1B adjudication is whether firms actually lobbied on the topic in the first place. These results provide systematic evidence supportive of the assumption.<sup>22</sup>

Focusing on topic dynamics, the fifth and final pattern is that the topic prevalence of H-1B

<sup>21</sup>See Figure B.1 in the Appendix for results on selecting the number of topics. As a robustness check, Figure B.2

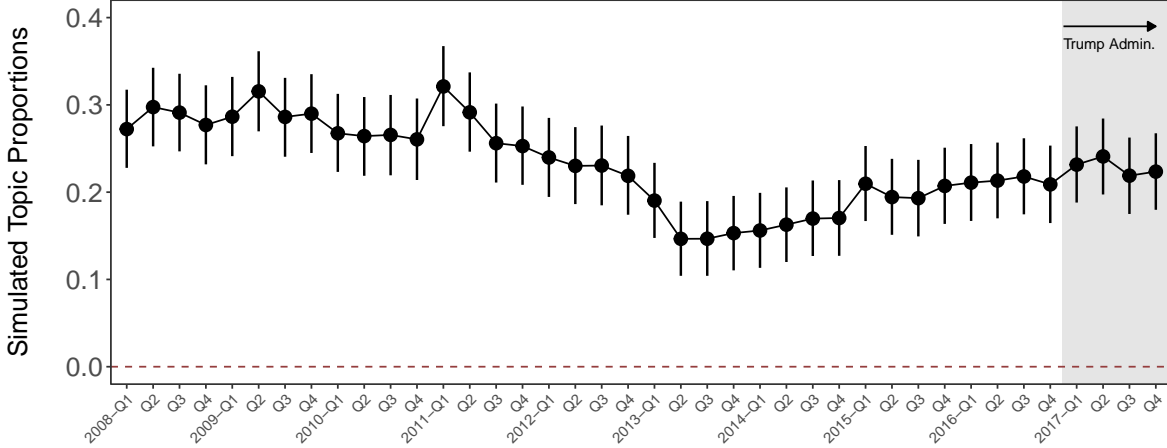


Figure 6: **Quarterly Changes in the Prevalence of Topic 2 H-1B Visas, 2008 – 2017.** The figure shows that the topic prevalence of H-1B visas increased right after the Trump administration.

visas increased right after the start of the Trump administration. Building on the topic model results, I predict the proportion of the H-1B visas topic among all immigration topics for each quarter between 2008 and 2017.<sup>23</sup> As shown in Figure 6, while the predicted proportion of the topic first decreased from around 0.22 to 0.21 between the third and fourth quarter of 2016, it increased from 0.21 to 0.23 between the fourth quarter of 2016 and the first quarter of 2017, a difference of 0.02 (95% C.I. = 0.003 to 0.042). In contrast, Figure B.3 in the Appendix shows that the prevalence of high-skilled immigration legislation as a topic decreased by 0.04 (95% C.I. = -0.074 to -0.006) between the fourth quarter of 2016 and the first quarter of 2017. These patterns point to a notable change in firms’ lobbying priorities under the Trump administration.

Overall, the stylized facts documented above suggest that large U.S. firms shifted their lobbying away from high-skilled immigration legislation and towards H-1B visas and bureaucratic

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in the Appendix shows that a four-topic model produces similar results.

<sup>22</sup>Note that firms can sometimes be vague on specific lobbying issues for unintentional or intentional reasons (e.g., entering “High-skilled Immigration” in the report instead of “H-1B visa adjudication”). Thus, the prevalence of the H-1B visa topic may be even higher.

<sup>23</sup>Predictions are based on Monte Carlo simulations using the full model and the empirical distribution of the data.

implementation. The reported change in lobbying behavior provides descriptive evidence consistent with expected firm responses to rising H-1B visa restrictions imposed under the Trump administration.

## 6 Evaluating the Effects of Firm Lobbying

Building on the stylized facts, I turn to estimate the effect of firm lobbying on H-1B visa adjudication using a series of DiD analyses. The key identification assumption underlying DiD analysis is the parallel trends assumption, which assumes that treated units would follow the trends of untreated units had they not been treated. An informal visual examination of the data shows the plausibility of this assumption and previews the main results. Figure 7 presents average H-1B denial rates over time among firms that lobbied on immigration in 2017 (treatment group) and firms that did not (control group). The figure shows that pre-treatment trends were quite similar between the two groups, increasing confidence in the parallel trends assumption. It also shows a consistently higher average denial rate in the control group than the treatment group, which indicates that non-lobbying firms already experienced higher H-1B denial rates before the Trump administration. In 2017, denial rates increased in both groups, but firms in the treatment group saw a notably smaller increase than the control group. Assuming that the parallel trends assumption holds, the smaller increase among treated firms would thus suggest that their immigration lobbying reduced H-1B denial rates.

To estimate the DiD effect more systematically, I fit the following regression model:

$$D_{fit} = \tau(\lambda_f P_t) + \alpha_f + \beta_i + \gamma_t + \epsilon_{it}, \quad (1)$$

where the outcome variable  $D_{fit}$  measures the H-1B denial rate for firm  $f$  in industry  $i$  and year  $t$ . The treatment-group dummy variable  $\lambda_f$  equals 1 if firm  $f$  lobbied on immigration in 2017 and 0

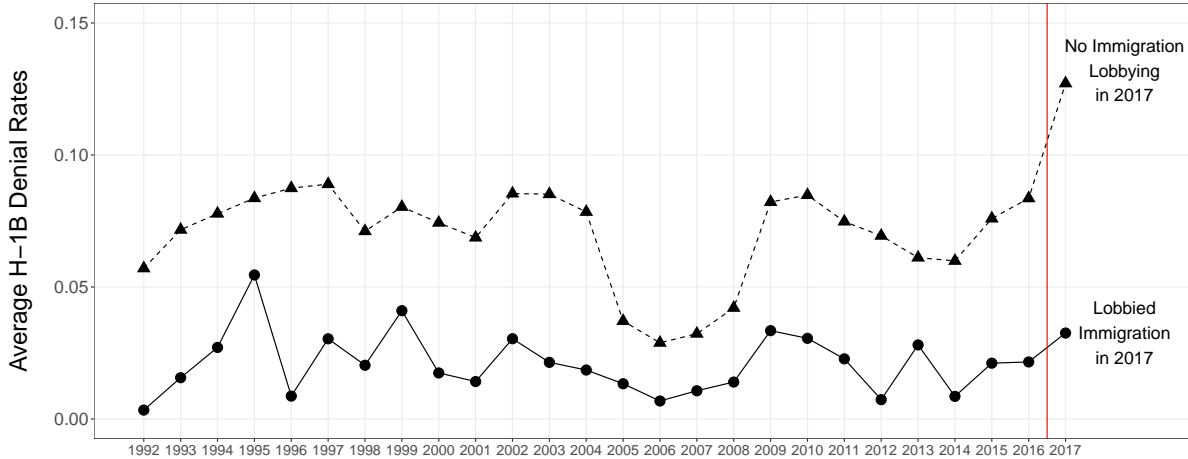


Figure 7: **Trends in H-1B Denial Rates Grouped by Treatment Status, 1992–2017.** The figure illustrates the plausibility of the parallel trends assumption underlying the DiD analysis. It shows that pre-treatment trends were similar between the treatment group (immigration lobbying in 2017) and the control group (no immigration lobbying in 2017). The red vertical line indicates the start of the Trump administration in January 2017.

otherwise. The treatment-period dummy variable  $P_t$  equals 1 for year 2017 and 0 otherwise. The variables  $\alpha_f$  and  $\beta_i$  represent firm and industry fixed-effects, respectively.<sup>24</sup> The two variables account for any time-invariant features of firms or industries that are likely to correlate with lobbying and denial rates. For example, larger firms are more likely to lobby and may have more influence over visa decisions. Additionally, firms in different industries vary widely in how often they petition and lobby. The USCIS’ visa adjudication standards can also vary across industries (National Foundation for American Policy 2020, p. 1). The variable  $\gamma_t$  represents year fixed-effects, which account for unit-invariant time trends in H-1B denial rates. I cluster standard errors by firms to allow for within-unit correlations of errors. The coefficient of interest is  $\tau$ , which is the DiD estimate for the effect of firm lobbying.<sup>25</sup>

<sup>24</sup>Note that firm and year fixed-effects subsume the constitutive terms of the interaction in the equation.

<sup>25</sup>As a robustness check, I also fit a DiD model focusing only on the two years right before-and-after the shock in H-1B denial rates stemming from the Trump administration (2016 vs. 2017). As shown in column (3) of Table C.2 in the Appendix, the results are substantively similar, reducing potential concerns about the findings being driven



I fit three versions of equation (1) to data between 1992 and 2017. I first fit a **baseline** model that includes the interaction term and the fixed effects but does not distinguish between specific texts or target venues. Results here serve as a baseline estimate for the effect of firms having *any* immigration lobbying activities in 2017. While these estimates may be noisier, they can be informative as firms are often vague in their issue descriptions. Next, I fit a **text-specific** model similar to the baseline but with a more refined treatment focused on immigration lobbying that explicitly mentioned the keywords “Visa” and either “Skilled” or “H-1B.” Results from this model provide cleaner estimates of the lobbying effect pertaining to H-1B adjudication. The third set of **venue** and **text-specific** models further distinguishes the treatment by target venue: the USCIS, the DOL, the DHS, the White House and the EOP combined, and only Congress (House or Senate). Results from these models provide insights into the effectiveness of different lobbying strategies discussed in Section 3.

The results reveal three main findings. First, firms’ immigration lobby in 2017 reduced H-1B denial rates. As shown in Figure 8, the baseline estimate indicates that immigration lobbying reduced firms’ H-1B denial rate by around 0.04 (95% C.I. = -0.052 to -0.028).<sup>26</sup> How big is this effect in substantive terms? For firms with the mean H-1B denial rate of 0.059, it represents an 

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by some observations having negative regression weights when using a multi-period DiD estimator (Imai and Kim 2021). Additionally, I also fit DiD models that explicitly account for firm size and public listing status. I exclude firm fixed-effects from these models as these covariates are entirely time-invariant. As shown in Table C.3 in the Appendix, I find that the estimates are larger in magnitude than those estimated from equation (1). This is expected as firm fixed-effects account for many unobserved factors beyond firm size and thus results based on them are very conservative. Consistent with expectations, I also find that both firm size and public listing status are positively correlated with lower H-1B visa denial rates.

<sup>26</sup>See Table C.2 in the Appendix for details and Table C.1 for descriptive statistics.

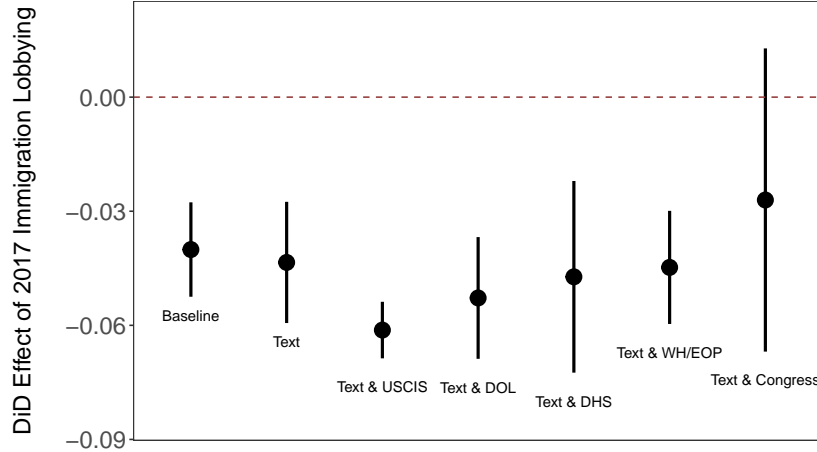


Figure 8: **The Effect of Immigration Lobbying in 2017.** This figure presents point estimates and 95% confidence intervals.

approximately 68% decrease in denial rate. Given that one standard deviation in H-1B denial rates is around 0.21, it also means an effect size of about 0.2 standard deviations of the outcome. In comparison, the effect of increasing a firm’s size—a stronger predictor of the outcome—from small to very large according to Orbis reduces H-1B denial rates by around 0.034 (see column (3) of Table C.3 in the Appendix). Hence, the effect of lobbying is approximately 118% of the effect size of firm magnitude. These results suggest that firms’ lobbying produced a sizable payoff on H-1B visa adjudication.

Second, refining the definition of treated firms to only those who mention “H-1B”-related keywords in their lobbying report increases the point estimate to -0.043 (95% C.I. = -0.059 to -0.028). This result increases confidence that the findings above capture the effect of lobbying on H-1B per se and were not driven by immigration lobbying on non-related issues.

Third, firms’ lobbying on bureaucratic implementation appears to drive the effect. For example, when firms target the USCIS in their lobbying, the effect of lobbying increases to around -0.061 (95% C.I. = -0.069 to -0.054), a nearly 50% increase compared to the basic text-specific estimate. Targeting the DOL also produces a larger effect of around -0.053 (95% C.I. = -0.069

to -0.037). These findings are consistent with the fact that the USCIS and the DOL are the main decisionmakers in the H-1B adjudication process, and thus directly lobbying them yields the largest payoff. In addition, when firms target the DHS or the WH/EOP, the effect size of lobbying also sees small increases, which supports the idea that applying pressure through parent agencies/offices can be an effective lobbying strategy. In contrast, when firms only target Congress in lobbying, the effect is more than 60% smaller than the basic text-specific estimate and also imprecisely estimated. The smaller point estimate here, while positive, suggests that the effects found earlier stem mainly from lobbying bureaucracies and not legislators. However, assessing whether targeting legislators by itself is an effective lobbying strategy is difficult. A close examination of the data indicates that firms that focus on H-1B visas but only target legislators could also be lobbying about legislation. For example, in 2017, some firms mentioned immigration reform and specific bills in addition to the H-1B visa. If these firms' main intention was not about influencing H-1B adjudication in the first place, then their lobbying should have less influence on denial rates. Systematically distinguishing firms' intentions, however, is difficult as firms' reported answers on specific lobbying issues are often brief and vague. The mixed intentions captured in the treatment measure here may have thus led to less precise estimates. Nevertheless, what is more clear from the overall results above is that firms benefit from lobbying bureaucracies in the case of H-1B visa adjudication.

To assess the robustness of these results, I conduct a variety of placebo tests. First, I perform temporal placebo checks. In particular, I first interact the treatment-group dummy in equation (1) with a “fake” treatment-timing dummy, the year 2004 (i.e., the middle of the pre-treatment period) to see if immigration lobbying under the Trump administration affects changes in H-1B denial rates during the pre-treatment period (1991–2016) *before* the Trump administration. As shown in

column (1) of Table C.4 in the Appendix, the DiD estimate is small and imprecisely estimated. Next, instead of an arbitrary treatment-timing dummy, I follow Autor (2003) and interact the treatment-group indicator with time dummies for all periods except the last pre-treatment year (2016), the comparison baseline. The decomposition of the treatment effect over time allows me to conduct placebo tests for each year in the pre-treatment period. As shown in column (2) of Table C.4 in the Appendix, all point estimates associated with treatment timing before 2016 are either small and imprecisely estimated or in the opposite direction. Meanwhile, the point estimate associated with the true treatment timing (2017) is still negative and statistically significant. Lastly, I interact a dummy variable for immigration lobbying before the Trump administration (2016) with the true treatment-timing dummy (2017) to see if pre-treatment lobbying affects changes in denial rates before and after the Trump administration. As shown in column (3) of Table C.4 in the Appendix, the point estimate associated with pre-Trump immigration lobbying is again small and imprecisely estimated. Together, the results point to an effect of immigration lobbying under the Trump administration per se, as opposed to general trends in firm lobbying and H-1B denial rates or untheorized temporal shocks.

Second, I conduct placebo treatment checks using firm lobbying in issue areas that are unlikely to be related to immigration.<sup>27</sup> In particular, I examine all lobbying reports in LobbyView between 1999 and 2017 and calculate how often each issue area is listed in a lobbying report that also includes immigration as an issue area. I then assume that issue areas that rarely co-exist with immigration are less likely to be related to immigration. I focus on three such issue areas: Tobacco (TOB), Beverage (BEV), and Commodities (CDT). For each issue area, I created a placebo treat-

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<sup>27</sup>See <https://lda.congress.gov/ld/help/default.htm?url=Documents%2FAppCodes.htm> for a full list of lobbying issue areas.

ment dummy variable that equals 1 if firms lobbied on the specific issue but not on immigration in 2017 and 0 otherwise. I then re-estimate equation (1) using these placebo treatment indicators. As shown in Table C.5 in the Appendix, point estimates associated with the interaction terms are generally smaller and imprecisely estimated. Such results suggest that my findings on immigration lobbying are unlikely due to chance alone or unobserved firm characteristics that affect both firms' tendency to lobby and susceptibility to visa denials. Instead, the results show that the effects are confined to immigration lobbying, which has been closely linked to H-1B visas in recent years, as shown in Figure 5.

## 7 Conclusion

To what extent, and how, does lobbying help firms overcome immigration barriers? Focusing on the case of H-1B temporary high-skilled visas in the United States, this study shows that firms lobbying under the Trump administration reduced their H-1B visa denial rates by at least 4 percentage points. Furthermore, firms targeting bureaucracies in their lobbying yielded even larger payoffs. Together, the results suggest that the ability to influence the bureaucratic implementation stage of immigration policy, e.g., visa adjudication, plays a key role in helping U.S. firms overcome immigration restrictions, especially after decades of immigration reform deadlock. That firms' lobbying reduced skilled visa denial rates despite extraordinary scrutiny from the Trump administration, a "hard case," suggests that the findings provide insights on the lower-bound effect of firm-lobbying in immigration policy implementation.

The study makes three main contributions. First, by examining the visa adjudication process for high-skilled temporary migrants, the study reveals new patterns and effects of behind-the-scenes "interest group politics" in immigration where policies have concentrated costs and bene-

fits. This extends existing immigration research that has mostly focused on low-skilled permanent immigration, public attitudes, and “majoritarian politics” (Freeman and Tendler 2012). Furthermore, by focusing on the firm-level variation in visa adjudication, the study can hold constant the potential influence of public opinion and make cleaner inferences about lobbying effects. Overall, the study joins a growing empirical literature that seeks to improve our understanding of the domestic politics of immigration policymaking (e.g., Facchini and Mayda 2009; Facchini, Mayda, and Mishra 2011; Peters 2014, 2017).

Second, the study responds to recent calls in the field for a better understanding of the economic policymaking of bureaucrats and agencies (Copelovitch and Pevehouse 2015, 466). Specifically, the study’s findings in immigration join a growing literature that examines the impact of bureaucracies in rulemaking and implementation (e.g., Ellermann 2005; Eule 2014; Satzewich 2015; J. W. Yackee and S. W. Yackee 2006; S. W. Yackee 2006). More research is needed on other ways the executive branch exerts influence on immigration (e.g., notice-and-comment rulemaking or executive actions) and firms’ influence over those processes.

Third, the study’s findings add to an emerging empirical literature that improves our understanding of the effectiveness and mechanisms of domestic lobbying on different economic policies (Bombardini and Trebbi 2020; Figueiredo and Richter 2014). To be sure, disentangling firms’ lobbying strategies and comparing their effectiveness is extremely challenging as firms have incentives to obscure their political activities. However, the study’s original dataset should help facilitate future research in this direction by linking firms’ immigration petitions and lobbying activities. To further advance the research agenda, researchers can integrate additional information on connections between firm executives, lobbyists, bureaucrats, and bill-sponsoring legislators.

More broadly, the findings raise normative questions about resource misallocation and political

representation. Few firms lobby on immigration, and those that do tend to be large and persistent. Thus, while lobbying can help firms overcome immigration barriers, it may also distort human capital allocation in the economy by creating unequal access to global talent across firms.

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# **The Effect of Firm Lobbying on High-Skilled Visa Adjudication**

Online Appendix

## Appendix A Visa Policies

	<i>H-1B Specialty Occupation</i>	<i>L-1 Intra-Company Transferee</i>
<i>Skill Level</i>	High	High
<i>Skill Type</i>	Generic	Firm-specific
<i>Purpose</i>	Non-immigrant Temporary Work Visa	Non-immigrant Temporary Work Visa
<i>Dual Intent</i>	Yes	Yes
<i>Annual Quota</i>	65,000 + 20,000 (advanced degree exemption)	No limit
<i>Employer Eligibility</i>	Any U.S. based company, assuming other requirements are met	Only multinational firms qualify
<i>Labor Condition Application</i>	Required	Not required
<i>Employee Eligibility</i>	Specialized knowledge in the field	Worked for multinational firm for at least one continuous year (within the past three years) An executive/manager (L-1A) or a worker with specialized knowledge (L-1B)
<i>Educational Requirement</i>	At minimum a bachelor's degree	No degree requirement
<i>Maximum Duration</i>	6 years (Initial 3 + Ext. 3)	L-1A: 7 years (Initial 3 + Ext. 2 × 2) L-1B: 5 years (Initial 3 + Ext. 2)

Table A.1: **Major U.S. Temporary High-Skilled Immigration Programs.** *Source:* U.S. Citizenship and Immigration Services (2020a) and Title 2 Section 214 of the Immigration and Nationality Act.

## Appendix B Text Analysis

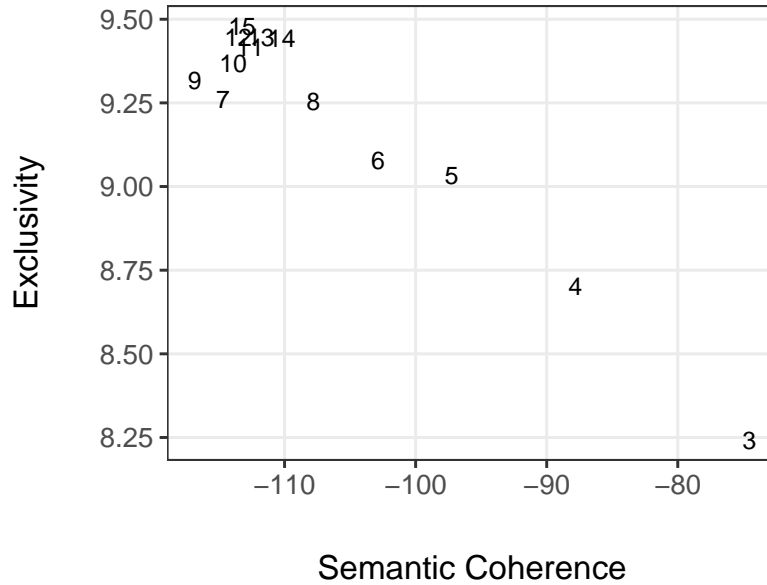


Figure B.1: **Selecting the Number of Topics.** This figure compares the average exclusivity and semantic coherence as the number of user-specified topics change based on the `searchK` function in the `stm` package. Higher values indicate higher levels of exclusivity and coherence. Thus, models closer to the top-right corner are more desirable. The study presents results from a five-topic model in the main text as it yields a good balance between the two criteria.

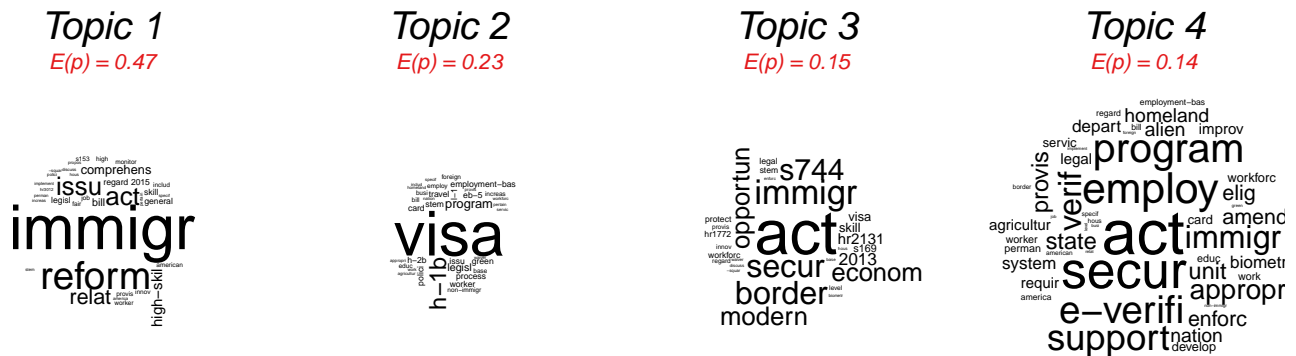


Figure B.2: **Top Four Topics in Immigration Lobbying, 2008–2017.** This figure presents results using a four-topic model instead of the five-topic model discussed in Figure 5. As shown in the figure, the results are similar: a four-topic model essentially combines Topic 4 and 5 of the main five-topic model.

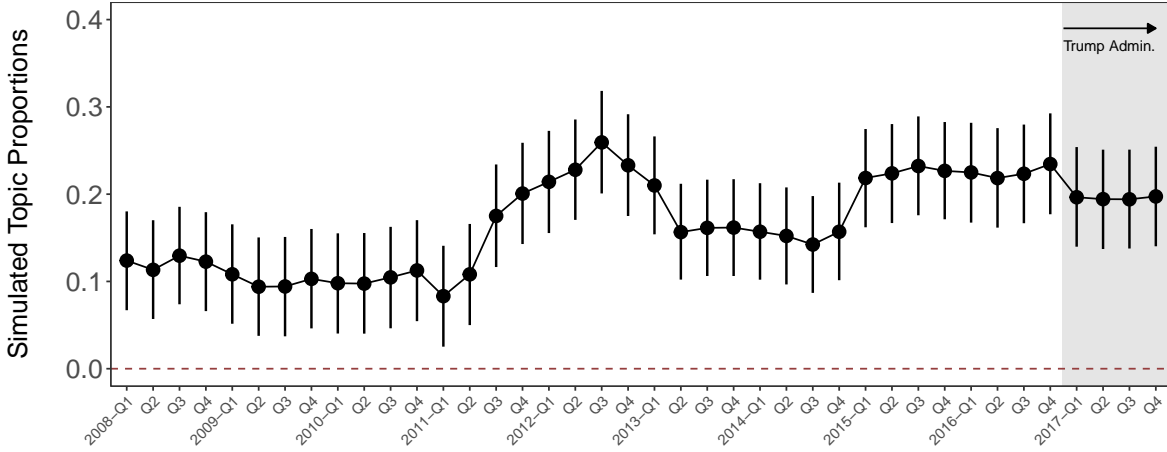


Figure B.3: **Quarterly Changes in the Prevalence of Topic 4 “High-Skilled Immigration Acts”, 2008 – 2017.** The figure shows that the prevalence of high-skilled immigration legislation as a topic decreased right before and after the Trump administration.



# Appendix C DiD Analysis

Table C.1: Descriptive Statistics for DiD Analysis

Statistic	N	Mean	Median	St. Dev.	Min	Max
H-1B Denial Rate	454,947	0.0590	0	0.2086	0	1
2016 IMM Lobbying (any)	454,947	0.0024	0	0.0488	0	1
2017 IMM Lobbying (any)	454,947	0.0033	0	0.0573	0	1
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa”)	454,947	0.0009	0	0.0299	0	1
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa” & targets USCIS)	454,947	0.0001	0	0.0091	0	1
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa” & targets DOL)	454,947	0.0002	0	0.0150	0	1
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa” & targets DHS)	454,947	0.0003	0	0.0175	0	1
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa” & targets WH/EOP)	454,947	0.0005	0	0.0218	0	1
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa” & targets Only Congress)	454,947	0.0003	0	0.0169	0	1
2017 Tobacco Lobbying Only	454,947	0.0001	0	0.0120	0	1
2017 Beverage Lobbying Only	454,947	0.0001	0	0.0121	0	1
2017 Commodities Lobbying Only	454,947	0.0002	0	0.0158	0	1
Public Firm	454,947	0.0398	0	0.1956	0	1
Size: Small	454,765	0.4529	0.0000	0.4978	0.0000	1.0000
Size: Medium	454,765	0.2883	0.0000	0.4530	0.0000	1.0000
Size: Large	454,765	0.1331	0.0000	0.3397	0.0000	1.0000
Size: Very Large	454,765	0.1257	0.0000	0.3315	0.0000	1.0000

Table C.2: DiD Regression Results: Main

	<i>Dependent Variable:</i> H-1B Denial Rates								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
2017 IMM Lobbying (any) × Trump Administration (2017)	-0.045*** (0.006)	-0.040*** (0.006)	-0.027*** (0.006)						
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa”) × Trump Administration (2017)				-0.043*** (0.008)					
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa” & Only Congress) × Trump Administration (2017)					-0.027 (0.020)				
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa” & USCIS) × Trump Administration (2017)						-0.061*** (0.004)			
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa” & DOL) × Trump Administration (2017)							-0.053*** (0.008)		
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa” & DHS) × Trump Administration (2017)								-0.047*** (0.013)	
2017 IMM Lobbying (“Skilled”/“H-1B”/“Visa” & WH/EOP) × Trump Administration (2017)									-0.045*** (0.008)
Fixed Effects: Firm (BvD ID)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects: Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects: Industry	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Group Size: Firms	384,462	113,539	43,492	113,539	113,539	113,539	113,539	113,539	113,539
Group Size: Years	26	26	2	26	26	26	26	26	26
Group Size: Industries	0	305	298	305	305	305	305	305	305
Observations	981,096	454,947	57,898	454,947	454,947	454,947	454,947	454,947	454,947
R <sup>2</sup>	0.658	0.512	0.874	0.512	0.512	0.512	0.512	0.512	0.512
Adjusted R <sup>2</sup>	0.438	0.349	0.483	0.349	0.349	0.349	0.349	0.349	0.349

*Note:* Standard errors clustered by firms in parentheses. <sup>+</sup>p<0.1; \*p<0.05; \*\*\*p<0.01; \*\*\*\*p<0.001. Note that firm and year fixed-effects subsume the constitutive terms of the interactions. Column (1)–(3) estimate the effect of immigration lobbying in 2017, ignoring specific lobbying issues and target venues. Column (3) estimates the effect using only the two periods right before-and-after the exogenous shock (2016 vs. 2017). Column (4) estimates the effect when only considering 2017 immigration lobbying that specifies “Skilled”/“H-1B”/“Visa” in reports. Column (5)–(9) further restricts the treatment condition to only firms that targeted specific government agencies.

Table C.3: DiD Regression Results: Controlling for Size

	<i>Dependent Variable:</i> H-1B Denial Rates		
	(1)	(2)	(3)
Immigration Lobbying in 2017 (any)	-0.013*** (0.003)	-0.015*** (0.003)	-0.012*** (0.003)
Immigration Lobbying in 2017 (any) × Trump Administration (2017)	-0.051*** (0.006)	-0.053*** (0.006)	-0.051*** (0.006)
Size: Medium	-0.011*** (0.001)		-0.011*** (0.001)
Size: Large	-0.025*** (0.001)		-0.025*** (0.001)
Size: Very Large	-0.035*** (0.001)		-0.034*** (0.001)
Public Firm		-0.023*** (0.001)	-0.001 (0.001)
Fixed Effects: Year	Yes	Yes	Yes
Fixed Effects: Industry	Yes	Yes	Yes
Group Size: Years	26	26	26
Group Size: Industries	305	305	305
Observations	454,765	454,947	454,765
R <sup>2</sup>	0.033	0.030	0.033
Adjusted R <sup>2</sup>	0.032	0.029	0.032

*Note:* Standard errors clustered by firms in parentheses. <sup>+</sup>p<0.1; \*p<0.05; \*\*\*p<0.01; \*\*\*p<0.001. Note that year fixed-effects subsume the treatment-period constitutive term of the interactions.

Table C.4: DiD Regression Results: Time Placebos

	<i>Dependent Variable:</i> H-1B Denial Rates		
	(1)	(2)	(3)
Immigration Lobbying in 2017 (any) × Placebo Timing (2004)	0.001 (0.006)		
Immigration Lobbying in 2017 (any) × Trump Administration (2017)		-0.025*** (0.007)	-0.030** (0.010)
Immigration Lobbying in 2016 (any) × Trump Administration (2017)			-0.017 (0.013)
Immigration Lobbying in 2017 (any) × Placebo Timing (1992)		0.008 (0.011)	
Immigration Lobbying in 2017 (any) × Placebo Timing (1993)		0.001 (0.010)	
Immigration Lobbying in 2017 (any) × Placebo Timing (1994)		0.006 (0.018)	
Immigration Lobbying in 2017 (any) × Placebo Timing (1995)		0.045 (0.028)	
Immigration Lobbying in 2017 (any) × Placebo Timing (1996)		-0.008 (0.009)	
Immigration Lobbying in 2017 (any) × Placebo Timing (1997)		0.016 (0.016)	
Immigration Lobbying in 2017 (any) × Placebo Timing (1998)		0.017 (0.010)	
Immigration Lobbying in 2017 (any) × Placebo Timing (1999)		0.025 (0.025)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2000)		0.017+ (0.010)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2001)		0.007 (0.007)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2002)		0.018 (0.014)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2003)		0.018 (0.011)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2004)		0.021+ (0.012)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2005)		0.029** (0.011)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2006)		0.026*** (0.006)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2007)		0.028*** (0.007)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2008)		0.024** (0.008)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2009)		0.022 (0.015)	

Immigration Lobbying in 2017 (any) × Placebo Timing (2010)		0.017 (0.016)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2011)		0.017 (0.011)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2012)		-0.001 (0.005)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2013)		0.019 (0.017)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2014)		0.006 (0.005)	
Immigration Lobbying in 2017 (any) × Placebo Timing (2015)		0.005 (0.005)	
<hr/>			
Fixed Effects: Firm (BvD ID)	Yes	Yes	Yes
Fixed Effects: Year	Yes	Yes	Yes
Fixed Effects: Industry	Yes	Yes	Yes
<hr/>			
Group Size: Firms	107,235	113,539	113,539
Group Size: Years	25	26	26
Group Size: Industries	304	305	305
<hr/>			
Exclude Post-treatment 2017 Observations	Yes	No	No
Observations	425,850	454,947	454,947
R <sup>2</sup>	0.508	0.512	0.512
Adjusted R <sup>2</sup>	0.342	0.349	0.349

*Note:* Standard errors clustered by firms in parentheses. <sup>+</sup>p<0.1; \*p<0.05; \*\*\*p<0.01; \*\*\*p<0.001. Note that firm and year fixed-effects subsume the constitutive terms of the interactions. Column (2) decomposes the treatment effect over time by interacting the treatment group indicator with time dummies for each year except for 2016 (the last pre-treatment period). Thus, coefficients in the model represent the estimated effect in year  $t$  compared to that of 2016 (the omitted baseline).

Table C.5: DiD Regression Results: Placebo Treatments

	<i>Dependent Variable:</i> H-1B Denial Rates		
	(1)	(2)	(3)
Only Tobacco Lobbying in 2017 x Trump Administration (2017)	-0.033 (0.036)		
Only Beverage Lobbying in 2017 x Trump Administration (2017)		0.063 (0.106)	
Only Commodities Lobbying in 2017 x Trump Administration (2017)			0.035 (0.090)
Fixed Effects: Firm (BvD ID)	Yes	Yes	Yes
Fixed Effects: Year	Yes	Yes	Yes
Fixed Effects: Industry	Yes	Yes	Yes
Group Size: Firms	113,539	113,539	113,539
Group Size: Years	26	26	26
Group Size: Industries	305	305	305
Observations	454,947	454,947	454,947
R <sup>2</sup>	0.512	0.512	0.512
Adjusted R <sup>2</sup>	0.349	0.349	0.349

*Note:* Standard errors clustered by firms in parentheses. <sup>+</sup>p<0.1; \*p<0.05; \*\*p<0.01; \*\*\*p<0.001. Note that firm and year fixed-effects subsume the constitutive terms of the interactions.