

# 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 sheds light on 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 immigration lobbying behavior: who, how, and what firms lobby. Using a series of difference-in-differences designs, I find that firms' lobbying under the Trump administration reduced denial rates on their visa petitions by around 4 percentage points. These findings bridge existing literatures 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; Ghosh, Mayda, and Ortega 2014; Dimmock, Huang, and Weisbenner 2019). 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 (Hopkins 2010; Malhotra, Margalit, and Mo 2013; Goldstein and Peters 2014; 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 2004; Huneus and Kim 2019)

Yet, despite the prominence of firm lobbying, few studies have examined it under the context of immigration policymaking. 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 such as firms 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), and thus one

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<sup>1</sup>For example, benefits regarding innovation (W. R. Kerr and Lincoln 2010; Hunt and Gauthier-Loiselle 2010), productivity (Peri 2012; 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>Peters (2017) is a rare exception and brings the focus back to firms. See Hainmueller and Hopkins (2014) for a systematic review of the immigration literature on public attitudes.

would expect firms to play a central role in, at the very least, skilled immigration policymaking. On the other hand, the empirical lobbying literature emphasizes firms, but immigration has so far been neglected 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 2017), the underdevelopment of immigration lobbying in the literature thus precludes valuable insights in International Political Economy, such as the politics of global production.

Among the few recent studies on firms' immigration lobbying, the main goal has been to explain lobbying behavior instead of identifying effects (e.g., W. R. Kerr, Lincoln, and Mishra 2014; Peters 2017). Meanwhile, extant attempts at assessing the impact of firms' lobbying on immigration policy have only done so at an aggregated industry level (e.g., Facchini, Mayda, and Mishra 2011; Peters 2017). To the best of my knowledge, no study has explored the impact of immigration lobbying at the *firm* level. For many researchers, data and methodological challenges have generally limited studies on the causal effect of lobbying behavior (Figueiredo and Richter 2014). This begs the question of whether and how lobbying can actually help firms overcome immigration barriers, especially under hostile political environments.

To address these questions, 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 has 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 and 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 lower 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 test the effect, I construct 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 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 firms, which mitigates potential concerns about sample selection and the generalizability. Lastly, the firm-level matching of visa petitions with detailed lobbying reports

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

enables precise empirical tests that are more closely linked to potential lobbying mechanisms.

Using the data, I first document stylized facts about U.S. firms' lobbying activities in recent years. 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, which is consistent with the findings in extant lobbying research (Figueiredo and Richter 2014; W. R. Kerr, Lincoln, and Mishra 2014; Huneus and Kim 2019; Bombardini and Trebbi 2020). 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 saw a statistically significant increase right before-and-after the inauguration of Trump.

Building on these stylized facts, my DiD analyses of all high-skilled visa petitions filed from 1991 through 2017 shows that firms' lobbying under the Trump administration reduced their H-1B denial rates by around 4 percentage points (or 0.2 standard deviations of the outcome). Consistent with the H-1B adjudication process and the bureaucratic lobbying literature, I find even larger 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 certain bureaucracies (e.g., the U.S. Citizenship and Immigration Services, USCIS; the Department of Homeland Security, DHS; the Executive Office of the President, EOP). Additionally, I find that

lobbying congressional members alone has no systematic effect on H-1B denial rates. Lastly, a range of placebo tests rules out the possibility that the findings are driven by pre-treatment trends, un-theorized temporal shocks, or unobserved firm characteristics.

This study makes three notable contributions to extant literatures on immigration and lobbying. First, it goes beyond the immigration literature’s common focus on public attitudes and brings interest groups back into immigration policymaking (Freeman and Tandler 2012), which provides a more complete picture of immigration politics. Second, it joins a growing literature that sheds light on the importance of bureaucracies in immigration policy decision-making and implementation (e.g., Hanson and Spilimbergo 2001; Ellermann 2005; Susan Webb Yackee 2006; J. W. Yackee and Susan Webb Yackee 2006; Eule 2014; Satzewich 2015). Third, it contributes to a fast-growing empirical literature that explores the means and effectiveness of lobbying (Figueiredo and Richter 2014; Huneus and Kim 2019).

## 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>

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 has 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)

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

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

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

employment increased fourfold from 3% in FY 2015 to 12% in FY 2019. The main reason for such increases in denial rates stem from changes in the legal standards used by USCIS to adjudicate cases. Following Trump’s April 2017 “Buy American and Hire American Executive Order” (White House 2017), 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, 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, USCIS 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 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

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



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 Susan Webb 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 LCA certification or being issued RFEs, which should decrease their H-1B denial rates.

Meanwhile, firms may also try to lobby visa-adjudicating agencies *indirectly* through offices and 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 Susan Webb Yackee 2015; Haeder and Susan W. Yackee 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 Susan Webb 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

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You (2017).

firms may lobby Trump’s executive office (consisting of the White House Office, the OMB, etc.) as an indirect way to influence the USCIS’ decisionmaking.<sup>10</sup> Another potentially valuable target is the Department of Homeland Security (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 pressure the USCIS’ decisionmaking in H-1B petitions.

A third strategy focuses on the indirect lobbying of visa-adjudicating agencies but going 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’ decisionmaking (e.g., Arnold 1987; McCubbins, Noll, and Weingast 1987; Hall and Miler 2008). 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>11</sup> Amazon’s

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<sup>10</sup>Note that the EOP consists of the White House Office, the OMB, etc.

<sup>11</sup>See the full report here: <https://soprweb.senate.gov/index.cfm?event=getFilingDetails&filingID=75D29043->

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>12</sup> In this case, Oracle’s venue selection suggests that all three lobbying strategies may be in play.

The natural question, then, is whether firms’ lobbying can reduce their H-1B denial rates. Lobbying is often assumed to produce a payoff given the costs firms incur (Figueiredo and Richter 2014). Lobbying on H-1B petitions may be even more likely to produce a payoff since the firm-specific nature of H-1B petitions should trigger less counter-lobbying by opposing firms or interest groups compared to immigration legislation. Yet H-1B petitions have also faced significantly higher scrutiny during the Trump administration, which may reduce the firms’ lobbying effectiveness.<sup>13</sup> As such, whether firms’ lobbying can affect H-1B visa adjudication is unclear a priori, and I explore the question empirically in the next two sections.

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<sup>12</sup>See the full report here: <https://soprweb.senate.gov/index.cfm?event=getFilingDetails&filingID=15B58C1F-BA61-43B9-8905-34CEB7AABBF4&filingTypeID=3>.

<sup>13</sup>The USCIS has publicly touted its accomplishments on restricting H-1B visas in 2019. See news release here: <https://www.uscis.gov/news/news-releases/uscis-commemorates-second-anniversary-of-buy-american-and-hire-american-executive-order>.

## 4 Data

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 that 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, and 2017 is the latest full-year data was available when the FOIA request was submitted. The administrative data draws on information firms entered in form I-129 “Petitioning for a Nonimmigrant Worker.”<sup>14</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 name of the petitioner (usually a firm) with standardized company identifiers (BvD IDs) from Bureau van Dijk’s Orbis database, which currently contains information for more than 375 million companies and entities globally.<sup>15</sup> I then aggregate the

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<sup>14</sup>See the current version of the form: <https://www.uscis.gov/i-129>.

<sup>15</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 the “batch search” function in Orbis to extract unique identifiers for firms in the Orbis 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.

data up to the firm level and calculate H-1B Denial Rates for each firm and year, the outcome of interest.<sup>16</sup>

**Lobbying Data.** Data on firms' immigration lobbying activities come from the LobbyView database (Kim 2018).<sup>17</sup> Specifically, I extracted all lobbying reports between 1999 and 2017 that list "IMM" (Immigration) as the general issue area code, which yields 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>18</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 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

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<sup>16</sup>For each year, H-1B denial rates equal to 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>17</sup>See website: <https://www.lobbyview.org/>.

<sup>18</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.

(W. R. Kerr, Lincoln, and Mishra 2014) but have less data missingness across firms and years. These variables include industry (North American Industry Classification System, NAICS, 4-digit level), size (small, medium, large, very large), and public/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 has been a persistent concern in the literature (Figueiredo and Richter 2014). While existing studies on immigration lobbying have greatly expanded their sample to include most public firms,<sup>19</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. firm 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 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.

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<sup>19</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.

## 4.1 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 5.

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

I begin with aggregate trends. First, 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>20</sup> It shows that the intensity of immigration lobbying has generally increased between 1999 and 2017. However, in recent years, immigration lobbying first declined during the second term of the Obama (Jan. 2013 – Jan. 2017) and then rose again during the Trump administration (Jan. 2017 –). This trend reversal is consistent with the series of immigration restrictions the Trump administration implemented since 2017 (as discussed in Section 2).

Second, bureaucrats grew as lobbying targets under the Trump administration while legislators declined. The right panel of Figure 1 compares the prevalence of target venues over time, as measured by the share of immigration reports that list a specific venue.<sup>21</sup> The panel shows an increase in 2017 in the lobbying of federal agencies and offices. Notably, the share of immigration lobbying reports that targeted the EOP increased substantially from around 0.7% to 5.7%. In contrast, the panel shows a decline in the lobbying of both House representatives and Senators.

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<sup>20</sup>Following LobbyView, I estimate immigration lobbying expenditures by (1) dividing the total lobbying expense of 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.

<sup>21</sup>Note that firms can lobby multiple venues on the same issue.

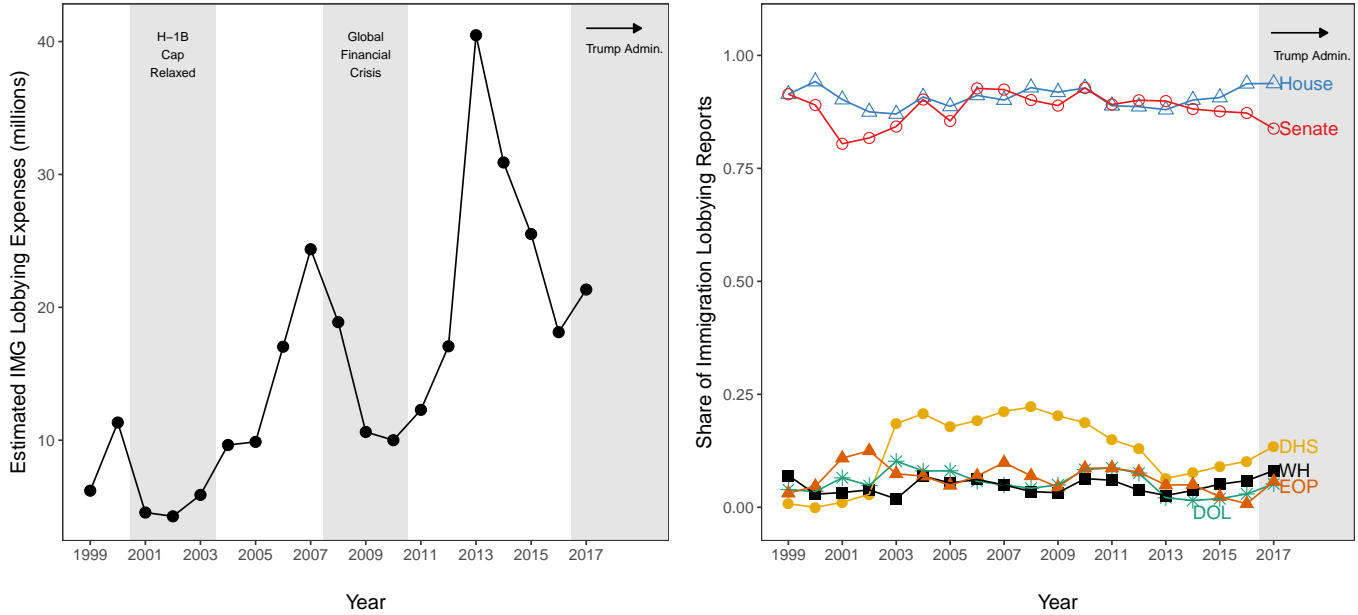


Figure 1: **Immigration Lobbying by U.S. Firms, 1999 – 2017.** The left panel shows the increase in firms’ lobbying expenses on immigration over time. While immigration lobbying declined during the second term of the Obama administration, it began increasing again during the first year of the Trump administration. 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.

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).

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

I now turn to firm-level patterns. 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).



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.**

However, the result is not surprising as my data include both public and private firms, instead of 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. While recent demand for temporary high-skilled workers concentrates 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" 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 industry differences in lobbying behavior and H-1B denial rates in the empirical models.

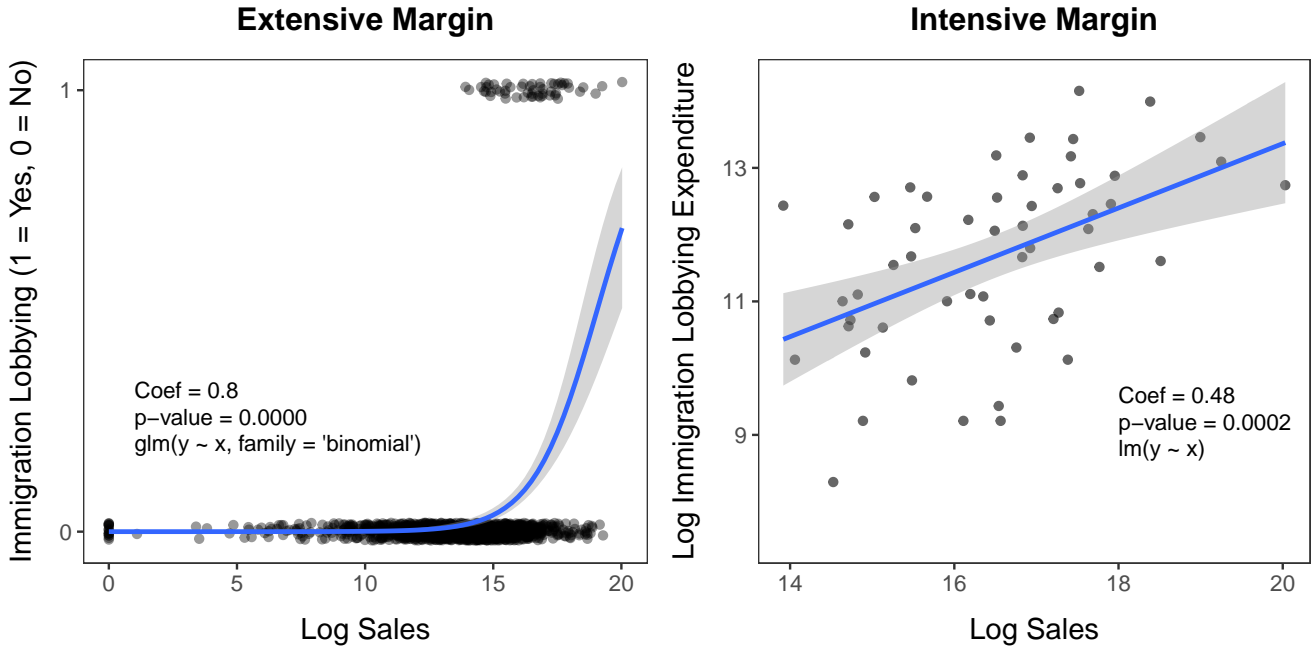


Figure 2: **Firm Size and Immigration Lobbying, 2017**. The figure shows a positive and statistically significant correlation between firms' log sales and the extensive and intensive margins of immigration lobbying in 2017.

Second, larger firms are more likely to lobby on immigration under the Trump administration. Figure 2 shows that this pattern holds on both extensive and intensive margins. The left panel plots firm's log sales against whether the firm lobbied on immigration in 2017, while the right panel plots log sales against immigration lobbying expenditures. Consistent with the findings in extant lobbying research (e.g., Figueiredo and Richter 2014; W. R. Kerr, Lincoln, and Mishra 2014; Huneus and Kim 2019), both panels show a positive and statistically significant correlation. Figure 3 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 \$1.4 million.

Third, firms are highly persistent in immigration lobbying. Following Huneus and Kim (2019),

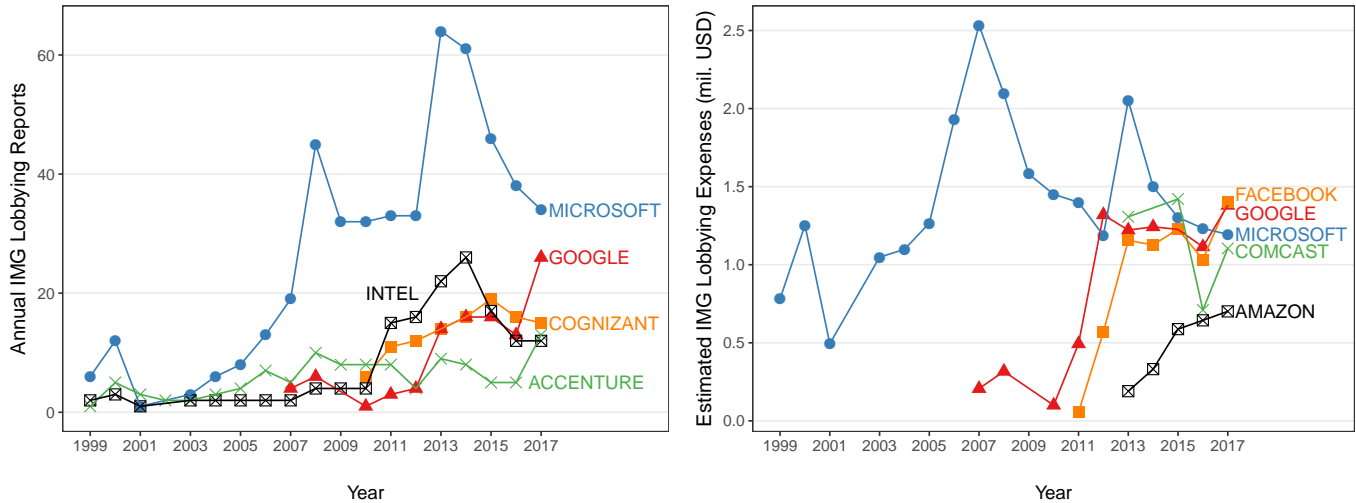


Figure 3: **Top Firms Lobbying on Immigration, 2017.** The left panel shows that Microsoft is the largest lobbyist on immigration in 2017 based on the number of reports filed (34). The right panel shows that Facebook is the largest lobbyist on immigration in 2017 based on estimated immigration lobbying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

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 issue areas (Figueiredo and Richter 2014; Huneus and Kim 2019). This stylized fact is an important motivation for my 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 correlation between lobbying and H-1B visa denial rates, the results may be driven not by lobbying itself but by 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, there is usually little variation left in the data to estimate lobbying effects once firm fixed-effects are used. By exploiting temporal changes in lobbying activities stemming from an

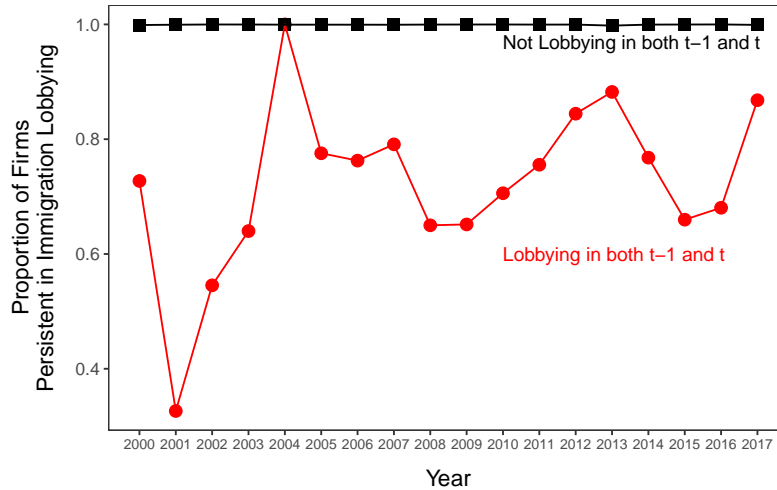


Figure 4: **Persistence in Immigration Lobbying.** The figure shows that around 87% of firms that lobbied on immigration in 2017 had also lobbied in 2016. Nearly all firms that did not lobby in 2016 did not lobby in 2017.

exogenous shock, the DiD design can deal with persistence issues in the data while also allowing firm fixed-effects that can address concerns about omitted variable bias (Figueiredo and Richter 2014).

Fourth, H-1B visas are one of the most important lobbying topics for U.S. firms in recent years. To gauge main topics lobbied by U.S. firms systematically, I apply a Structural Topic Model (Roberts et al. 2014) to quarterly immigration lobbying reports between 2008 and 2017.<sup>22</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 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.<sup>23</sup> I find that H-1B visas

<sup>22</sup>Note that the year 2008 marks when firms were first required to file quarterly disclosure reports and 2017 is most recent year in the analysis.

<sup>23</sup>See Figure C.1 in the Appendix for results about selecting the number of topics. Figure C.2 in the Appendix shows that a four-topic model produces similar results.

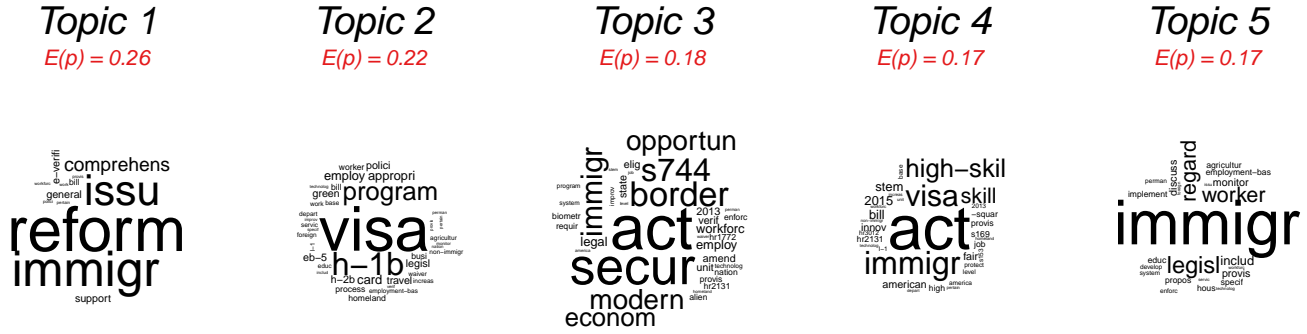


Figure 5: **Top Five Topics in U.S. Immigration Lobbying, 2008–2017.** This figure shows the five most common topics, expected topic proportions, and most highly associated words. The results are based on a Structural Topic Model applied to quarterly immigration lobbying reports.

(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>24</sup>

Fifth, the topic prevalence of H-1B visas increased right before-and-after 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>25</sup> As shown in Figure 6,

<sup>24</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”) and thus the prevalence of the H-1B visa topic may be even higher.

<sup>25</sup>Predictions are based on Monte Carlo simulations using the full model and the empirical distribution of the data.

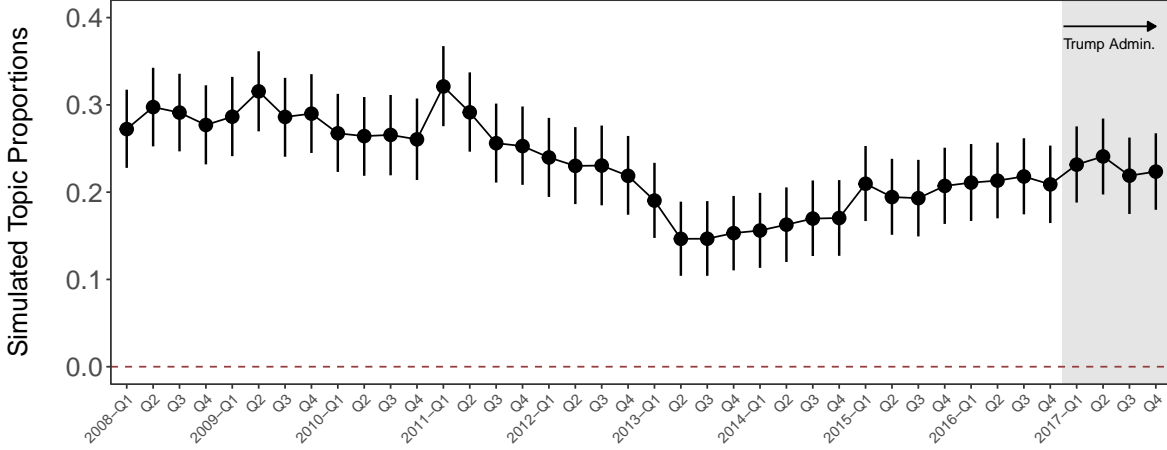


Figure 6: **Quarterly Changes in the Prevalence of Topic 2 H-1B Visas, 2008 – 2017.** The figure shows that the topic prevalence of H-1B visas increased right before-and-after the Trump administration.

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 then 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 C.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 in this study suggest that large U.S. firms shifted their lobbying away from high-skilled immigration legislation and towards H-1B visas and bureaucratic implementation. The documented change in lobbying behavior provides descriptive evidence supportive of firms response to rising H-1B visa restrictions imposed under the Trump administration discussed in Section 2.

## 5 Testing 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, which increases confidence in the parallel trends assumption. It also shows a 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. Since 2017, denial rates increased in both groups, but firms in the treatment group saw a notably slower increase than the control group. Assuming that the parallel trends assumption holds, the slower 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 to the data:

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

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 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>26</sup> The two variables

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<sup>26</sup>Note that firm and year fixed-effects subsume the constitutive terms of the interaction in the equation.

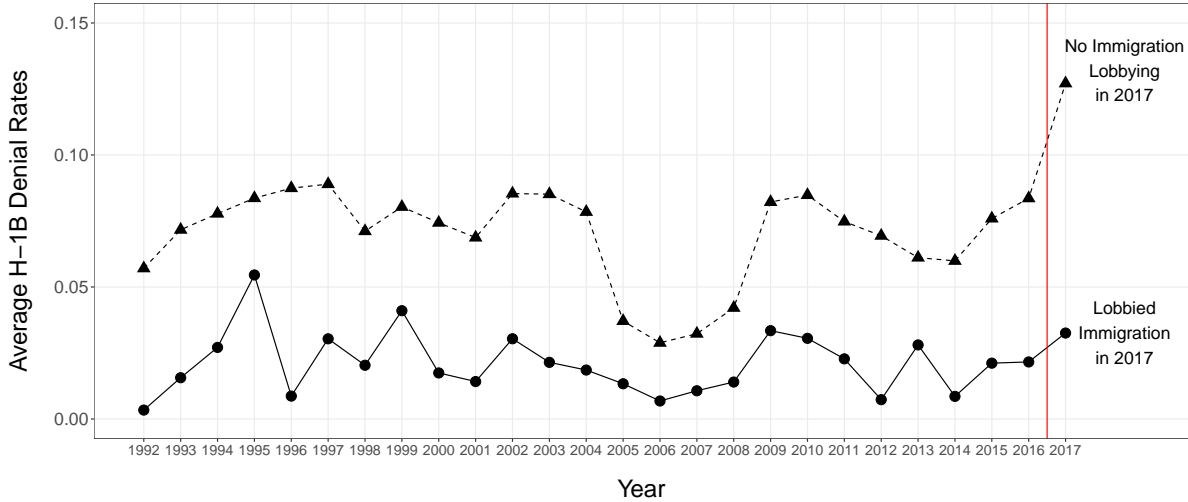


Figure 7: **Trends in H-1B Denial Rates Grouped by Treatment Status, 1991–2017.** The figure illustrates the plausibility of the parallel trends assumption underlying the DiD analysis. It shows that pre-treatment trends were similar between the treatment group (immigration lobbying in 2017) and control group (no immigration lobbying in 2017). The red vertical line indicates the start of the Trump administration in January 2017.

account for any time-invariant features of firms or industries that are likely to be correlated 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 they petition and lobby. Lastly, 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 correlation of errors. The coefficient of interest is  $\tau$ , which is the DiD estimate for the effect of firm lobbying.<sup>27</sup>

<sup>27</sup>As a robustness check, 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. The results show that the DiD estimate is 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. I also find that both firm size and public listing status are positively correlated with lower H-1B visa denial rates. These results demonstrate the importance of accounting for firm size when estimating lobbying effects. For result



I fit three versions of equation (1) to data between 1991 and 2017. I first fit two baseline models that include the interaction term and the fixed effects but does not distinguish between specific texts or target venues. One model includes firm and year fixed-effects, while the other further includes industry fixed-effects. These results serve as baseline estimates for the effect of any immigration lobbying activities regardless of listed issues and target venues. 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.” These results provide cleaner estimates of the lobbying effect pertaining to H-1B adjudication. A 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 Congress. Results from these models provide insights into the effectiveness of different lobbying strategies discussed in Section 3.

Results summarized in Figure 8 show that firms’ immigration lobby reduced H-1B denial rates.<sup>28</sup> First, the most conservative baseline estimate (second estimate from the left) indicates that the effect of firm lobbying is around -0.040 (95% C.I = -0.052 to -0.028). How big is this effect in substantive terms? For a typical firm with a mean H-1B denial rate of 0.059, it represents an approximately 68% decrease in denial rate. Given that one standard deviation in H-1B denial rates is around 0.21, it also represents an effect size of about 0.2 standard deviations of the outcome. These results suggest that firms’ lobbying produced a sizable payoff on H-1B visa adjudication. Meanwhile, narrowing the definition of treated firms to only those who mention H-1B related

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details, see Table B.2 in the Appendix.

<sup>28</sup>Table B.1 in the Appendix presents details

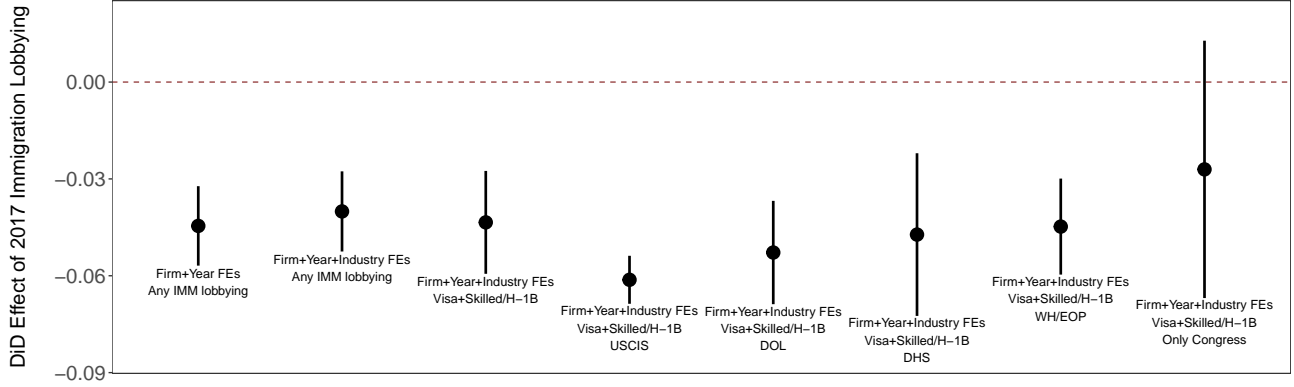


Figure 8: **The Effect of Immigration Lobbying in 2017.** This figure presents point estimates and 95% confidence intervals.

keywords (third estimate from the left) increases the point estimate to -0.043 (95% C.I = -0.059 to -0.028), which increases confidence in the findings.

Second, firms' lobbying on bureaucratic implementation appears to drive the effect. For example, when firms target USCIS in their lobbying (fourth estimate from the left), the effect of lobbying increases to around -0.061 (95% C.I = -0.069 to -0.054), a nearly 50% increase compared to the simple 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 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 their lobbying, the effect is more than 60% smaller than the simple text-specific estimate and statistically indistinguishable from zero. Further examination of the data suggests that the main reason is that firms that focus on H-1B visas but only target legislators may be lobbying about legislation instead of visa adjudication. Most firms that only lobbied legislators in 2017 mentioned immigration reform and specific bills in addition to H-1B visas. If these firms'

main intention was not about influencing H-1B adjudication in the first place, then their lobbying should have little influence on denial rates. Thus, while indirect lobbying through legislators may be an effective strategy, there is little evidence that firms solely relied on it during this period. Overall, the results suggest that, in the case of H-1B visa adjudication, firms tend to target and benefit from lobbying bureaucracies.

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 B.3, the DiD estimate is small and statistically indistinguishable from zero. 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 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 B.3, 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. Finally, 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 B.3, the point estimate associated with pre-Trump immigration lobbying is again small and statistically indistinguishable from zero. 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 un-theorized temporal shocks.

Second, I conduct placebo treatment checks using firm lobbying in issue areas that are unlikely to be related to immigration.<sup>29</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. Issue areas that rarely co-exist with immigration are thus 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 create a placebo treatment 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 B.4, all estimates associated with the interaction term are statistically indistinguishable from zero. Such null effects 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.

## 6 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

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<sup>29</sup>See the full list of issue areas in lobbying reports here: <https://lda.congress.gov/ld/help/default.htm?url=Documents%2FAppCodes.htm>

stage plays a key role in helping firms overcome immigration restrictions. That firms' lobbying reduced skilled visa denial rates despite extraordinary scrutiny from the Trump administration, a "hard case," suggests that the findings should provide insights on the lower bound effect of firm-lobbying in immigration policy implementation.

Yet, not all firms have such influence. The study shows that very few firms lobby on immigration and those that do tend to be large and persistent. The findings suggests that, while lobbying can help firms overcome immigration barriers, it can also distort the allocation of human capital in the economy by creating unequal access to global talent across firms.

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## 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: **Comparing 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 DiD Analysis

Table B.1: DiD Regression Results: Main

	<i>Dependent Variable:</i> 1992–2017 H-1B Denial Rates							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IMM Lobbying in 2017 (any) × Trump Administration (2017)	-0.045*** (0.006)	-0.040*** (0.006)						
IMM Lobbying in 2017 (“Skilled”/“H-1B”/“Visa”) × Trump Administration (2017)				-0.043*** (0.008)				
IMM Lobbying in 2017 (“Skilled”/“H-1B”/“Visa” & Only Congress) × Trump Administration (2017)					-0.027 (0.020)			
IMM Lobbying in 2017 (“Skilled”/“H-1B”/“Visa” & USCIS) × Trump Administration (2017)						-0.061*** (0.004)		
IMM Lobbying in 2017 (“Skilled”/“H-1B”/“Visa” & DOL) × Trump Administration (2017)							-0.053*** (0.008)	
IMM Lobbying in 2017 (“Skilled”/“H-1B”/“Visa” & DHS) × Trump Administration (2017)								-0.047*** (0.013)
IMM Lobbying in 2017 (“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
Fixed Effects: Year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects: Industry	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Group Size: Firms	384,462	113,539	113,539	113,539	113,539	113,539	113,539	113,539
Group Size: Years	26	26	26	26	26	26	26	26
Group Size: Industries	0	305	305	305	305	305	305	305
Observations	981,096	454,947	454,947	454,947	454,947	454,947	454,947	454,947
R <sup>2</sup>	0.658	0.512	0.512	0.512	0.512	0.512	0.512	0.512
Adjusted R <sup>2</sup>	0.438	0.349	0.349	0.349	0.349	0.349	0.349	0.349

*Note:* Robust 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)–(2) estimate the treatment effect of immigration lobbying in 2017 ignoring specific lobbying issues and target venues. Column (3) estimates the treatment effect when only considering immigration lobbying that specifies “Skilled”/“H-1B”/“Visa” in reports. Column (4)–(8) further restricts the treatment condition to only firms that targeted specific government agencies.

Table B.2: DiD Regression Results: Controlling for Size

	<i>Dependent Variable:</i> 1992–2017 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:* Robust 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.

Table B.3: 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 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:* Robust 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 treatment effect in year  $t$  compared to that of 2016 (the omitted baseline).

Table B.4: DiD Regression Results: Placebo Treatments

	<i>Dependent Variable:</i> 1992–2017 H-1B Denial Rates		
	(1)	(2)	(3)
Tobacco Lobbying Only in 2017 x Trump Administration (2017)	−0.033 (0.036)		
Beverage Lobbying Only in 2017 x Trump Administration (2017)		0.063 (0.106)	
Commodities Lobbying Only 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:* Robust 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.

# Appendix C Text Analysis

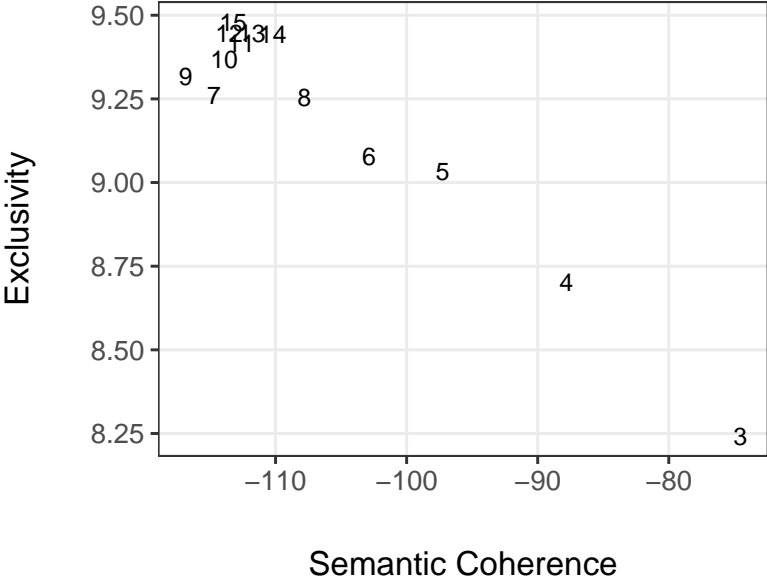


Figure C.1: **Selecting the Number of Topics.** This figure compares the average exclusivity and semantic coherence as the number of user-specified topics change based on the searchK function in the *stm* package. Higher values indicate higher levels of exclusivity and coherence. Thus, models closer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

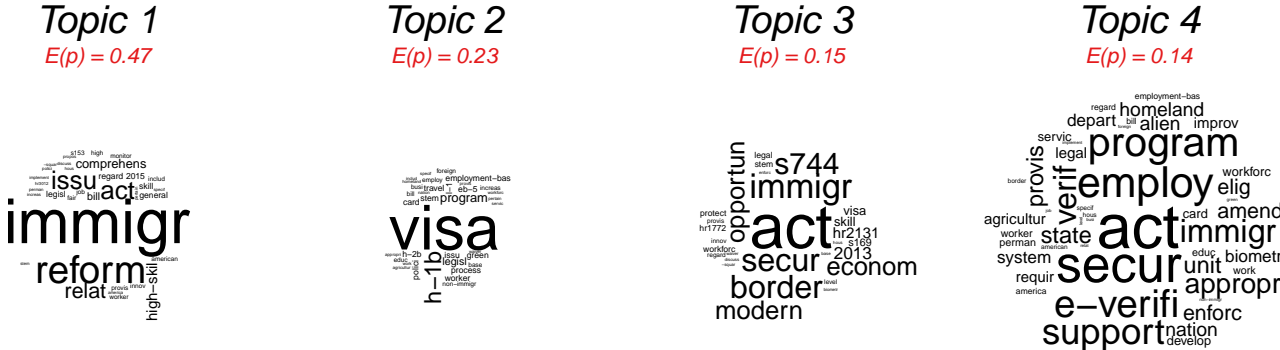


Figure C.2: **Top Four Topics in Immigration Lobbying, 2008–2017.** This figure presents results using a four-topic model, as opposed to the five-topic model discussed in Figure 5. As shown in the figure, the results are similar: a four-topic model essentially combines Topic 4 and 5 of the main five-topic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

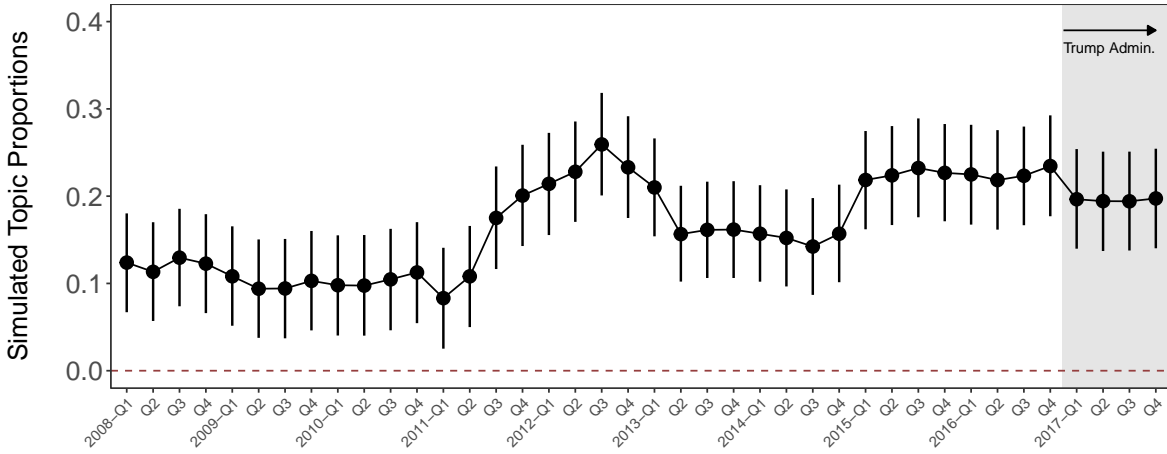


Figure C.3: **Quarterly Changes in the Prevalence of Topic 4 High-Skilled Immigration Acts, 2008 – 2017.** The figure shows that the prevalence of high-skilled immigration legislation as a topic decreased right before-and-after the Trump administration.