MIXED SIGNALS:
LAWYERS' INFLUENCE ON IMMIGRANT EMPLOYER COMPLIANCE EFFORTS

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ABSTRACT

Although lawyers are often engaged to help organizations interpret regulatory directives, we know little about the role they may play in encouraging or suppressing different forms of organizational compliance efforts. Using theories of legal professionalism, I develop and test competing hypotheses regarding the moderating influence of lawyers on organizational compliance. I further seek to identify whether a key intra-professional difference – level of lawyer specialization – affects the strength of this moderation relationship. To test my hypotheses, I analyze immigrant employment authorization data before and after the issuance of a 2017 U.S. Citizenship and Immigration Services memo that revised the standards for evaluating certain H-1B visa applicants. Specifically, the memo suggested that applicants with the title "computer programmer" may not qualify for the visa unless the applicant's proposed wage level clearly indicates the complexity of the job duties. Regression analyses show that visa applications filed with the assistance of lawyers were more likely to demonstrate a literal compliance strategy in the year following the memo (listing a wage level above the local median for computer programmers), while applications independently were more likely to display an creative compliance strategy (using an alternative job title). Applications filed with more-specialized lawyers are more likely to demonstrate a creative compliance response than those filed with less-specialized lawyers.

BIOGRAPHICAL SKETCH

Laura Carver is an MS/PhD student in the department of International and Comparative Labor within the School of Industrial and Labor Relations at Cornell University. Her areas of research include law and organizations, migration policy, and non-standard work arrangements.

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INTRODUCTION

In the United States, although regulatory apparatuses have grown in scale and complexity, they are often ineffective at enforcing compliance among regulated organizations (Schneiberg & Bartley 2008). This point is underscored by the failure of such agencies to prevent recent crises in the financial (Levitin 2013), energy (Bagley 2010) and transportation (Raso 2019) sectors. What phenomena underlie this apparent regulatory inefficiency? One contributing factor may be the intrinsic ambiguity of much new regulation that allows for multiple possible interpretations (Lowi 1969). In many cases, regulation and accompanying regulatory oversight are directed at organizations, which must interpret changes to the regulatory environment and determine what they believe to be an acceptable form of compliance (Dobbin et al. 1993; Sutton et al. 1993; Kellogg 2009). The resultant "constructed" compliance (Edelman 1992) has the potential to subvert the original intention of the regulatory initiative: for instance, some scholars have argued that organizations responded to the Civil Rights Act by institutionalizing human resources departments but stripped them of their policy enforcement functions over time (Dobbin & Sutton 1998). Although much scholarship on organizational compliance has foregrounded organizational responses to formally codified law, recent research has demonstrated that organizations also actively interpret and respond to informal regulatory directives or government signals (Desai 2016).

Organizations that are the subject of regulation are therefore tasked with interpreting legal changes and selecting from a variety of potential compliance responses. To reduce uncertainty in their regulatory environment, they may engage third party actors (Edelman et al. 2001; Maitlis & Christianson 2014) that can advise as to an acceptable response. Given their subject-matter expertise, one such group of actors that are frequently involved in this process of

regulatory interpretation are lawyers (Huising & Silbey 2018). Within the literature on variable compliance, scholars have argued that lawyers tend to counsel their clients against a proactive response to regulatory change, reflecting the generally conservative orientation of the legal profession (Edelman et al. 1992; Sutton & Dobbin 1996; Edelman et al. 1999; Dobbin & Kelly 2007; Delmas & Toffel 2008) However, little research has sought to evaluate whether lawyers may play a *positive* role in promoting organizational compliance, and if so, what form this compliance may take.

In this paper, I seek to build our understanding of the sources of variable compliance by investigating how lawyers may shape proactive organizational responses to regulatory change. To build support for my hypotheses, I draw from competing theories of legal professionalism. One branch of legal theory suggests that lawyers, bound by professional duty to uphold the law (Parsons 1954), will actively encourage their organizational clients to deploy forms of compliance consistent with a literal interpretation of government directives (Winter & May 2002; Zacharias 2006). My first hypothesis, grounded in this literature, is that the presence of legal counsel will be associated with a greater likelihood of observing a literal compliance response among regulated actors; i.e., one that reflects an attempt to comply with the substance of the law. An alternative, opposing branch of scholarship implicates lawyers in corporate efforts to subvert the social aims of regulation by designing "creative" or "cosmetic" compliance responses (Gordon 1990) that allow organizations to avoid more substantive compliance (Kritzer 1999; Koniak 2003). This body of research provides support for my second, oppositional hypothesis: that when regulated organizations use lawyers, they will be more likely to demonstrate a *creative* compliance response to new regulation.

Furthermore, although previous sociological research on organizational compliance has largely treated lawyers as a homogeneous group, extant legal scholarship suggests that intra-professional differences in level of specialization may impact a lawyer's willingness to facilitate "creative" forms of compliance on behalf of their clients. While literature on occupational commitment implies that greater specialization may increase an individual's affective commitment to their distinct professional identity (Becker & Carper 1956; Meyer et al. 1993), legal studies have argued the opposite: that increased specialization has blurred the line between lawyers' and clients' interests, and thereby alienated practicing lawyers from the general public service mission of the profession (Nelson & Trubek 1992; Francis 2005; Ariens 2016). From this alienation, it follows that lawyers would be increasingly willing to recommend "creative" forms of compliance if it serves the interest of their clients. I therefore incorporate a measure of lawyer specialization into my study to assess whether specialization is associated with a higher or lower likelihood of observing creative compliance efforts among regulated organizations.

To test my hypotheses, I conduct an analysis of immigrant employment authorization data, before and after the issuance of a March 2017 U.S. Citizenship and Immigration Services (CIS) memorandum that revised the standards for evaluating some H-1B visa applications. The H-1B program, created in 1990, allows organizations to hire highly-skilled immigrant workers on temporary visas (Chishti & Yale-Loehr 2016). Between 2015 and 2019, H-1B visas were the largest category of temporary employment-based immigration visas issued by U.S. CIS (U.S. Department of State 2019). However, the change in bureaucratic leadership under the presidency of Donald Trump has evidently affected rates of H-1B visa approval, which have decreased approximately 14 percent between 2016 and 2019 (Rangarajan 2019). In this climate of

uncertainty, rather than making formal statutory change[1], U.S. CIS has periodically[2] issued revised guidelines or evaluation criteria for H-1B applications on their website. Any interested party, including current or prospective H-1B employers, can sign up to receive email notifications when U.S. CIS publishes these updates online. The memo U.S. CIS issued on March 31st, 2017 suggested that applicants with the title "computer programmer" may not qualify for the H-1B visa unless the proposed wage clearly reflects the prospective employee's skill level and the complexity of the job in question (a higher wage presumably providing U.S. CIS agents with a heuristic for evaluating the "specialty" nature of the position, and thus, qualification for a "specialty occupation" visa) (U.S. CIS 2017a). In response to this memo, I propose that prospective H-1B employers have two primary proactive responses at their disposal: a *literal* response, in which they raise the wage level on applications for computer programmers post-memo, or a *creative* response, in which they abandon the occupational title "computer programmer" in favor of an alternative occupational title. Which response they adopt on a given application may be affected by whether or not they engage a lawyer to file said application on their behalf, and the degree of specialization of the lawyer in question.

The dataset for this study, obtained from the Department of Labor through a Freedom of Information Act request, contains the population of Labor Condition Applications (the necessary

[1] According to lawyers interviewed by Reuters, U.S. CIS's shifting adjudication criteria represent "a stealth campaign by the [Trump] administration against the H-1B program in the absence of public regulatory changes or changes passed by Congress, which could be debated and decided in the open." (Torbati 2017)

[2] A report authored by the Office of Senator Edward J. Markey went so far as to argue that "through a relentless barrage of executive orders, memoranda, guidance, rulemaking and informal directives, President Trump has remade our immigration system." (Office of Senator Edward J. Markey 2019, p. 2). With regards to the H-1B program specifically, the American Immigration Lawyers Association made note of two such consequential memoranda in a report published in March 2018: the 2017 memo targeting computer programmers that is the subject of this study, and another issued in February 2018. The latter memo "heightened evidentiary requirements for all H-1B petitions involving third-party worksites" (AILA 2018, p.11), i.e., visa applications for immigrants employed through a subcontractor.

first step in filing an H-1B visa application) filed by prospective H-1B employers from April 2016 to March 2018, one year before and after the memo's issuance. This represents 1,185,090 Labor Condition Applications (LCAs), of which 66.5 percent are filed by lawyers on behalf of the sponsoring employer. 788,641 of the applications are filed on behalf of immigrants in information technology (IT) occupations. Each LCA contains information about the proposed position (occupational title, salary, location of work), the sponsoring employer (employer name, business location, industry) and whether or not an attorney was used to file the LCA. The LCA also generally specifies the wage level (ranging from 1 – 4)[3] associated with the occupation in the locality where the H-1B worker would be employed, with a corresponding salary determined by the Department of Labor using data from their Occupational Employment Statistics survey. Wage level 3 represents the median local occupational wage (Costa & Hira 2020). The LCA, once certified, may then be submitted to U.S. CIS as part of the final visa application for review.[4] Internal documentation from U.S. CIS suggests that wage level, as indicated on the LCA, is an important component of the application (U.S. CIS 2019a). A lower wage level may be taken as evidence by U.S. CIS that the employer is not properly compensating the prospective immigrant employee for the job to be performed, or alternatively, that the job itself does not qualify as a "specialty occupation". Both may be grounds for issuing a denial of the visa application (U.S. CIS 2019b, U.S. CIS 2019c).

[3] There are exceptions that allow employers to file LCA applications without specifying a wage level. These represent 4.1 percent of applications in my dataset. See "Data and Analysis" section for more detail.

[4] Not all certified LCAs are ultimately submitted to U.S. CIS, so there is not a one-to-one correspondence between LCAs and final H-1B applications. Analysis of publicly available records from U.S. CIS indicates that, between fiscal years 2016 – 2018, the conversion rate of certified LCAs into H-1B petitions is between 58.7 and 64.6 percent. However, given the limitations on available data from U.S. CIS, recent research has used LCA data as a valid proxy for assessing employer filing patterns and immigrant compensation levels (see: Costa & Hira 2020).

Regression analyses indicate that when LCAs are filed with the assistance of lawyers, they are more likely to demonstrate a direct compliance strategy in response to the memo – increased wage level for computer programmers – than LCAs filed independently. On the other hand, LCAs filed with the assistance of lawyers are less likely to demonstrate a creative compliance response – dropping the use of the computer programmer title – than LCAs filed without lawyers. There is also evidence that lawyer specialization matters: when LCAs are filed with more specialized lawyers, as indicated by the total number of LCAs filed by each lawyer in the previous year, they are more likely to show a creative compliance response to the memo. Collectively, these results suggest that lawyers moderate organizational behavior by encouraging companies to adopt some compliance responses, but not others. However, intra-professional differences among lawyers affect the character of this moderation relationship.

I begin by reviewing the sociological research on organizational mediation of law and the existing evidence as to the role of lawyers in this process. While much of this research has focused on organizational responses to formal statutory change such as that embodied by new laws, this literature provides insights generalizable to settings, such as my own, when the "regulation" in question is much less formal and instead functions largely as a signal to regulated actors. I then present the data and models used to test my hypotheses, followed by a series of robustness checks that address potential confounders. I close with recommendations for future research and a discussion of the practical implications of my findings for the functioning of the H-1B visa program.

THEORY

Research in organizational sociology shows that firms are responsive to new laws and directives from the government, although the way in which they respond depends on their

interpretation of the law in question. Early studies in this domain focused on organizations' responses to anti-discrimination laws, such as the Civil Rights Act, and whether or not these laws have had the intended effect of increasing parity between advantaged and disadvantaged groups in the workplace. For instance, some have argued that the growth in human resource management (HRM) divisions may ultimately improve organizations' performance on key diversity measures, such as the proportion of women and minority workers employed in management roles (Konrad & Linnehan 1994). Others are less sanguine about the role government directives or enforcement may have on improving organizational outcomes for minority workers: Edelman's (1992) seminal work argues that HRM departments are mostly ineffectual, while Hirsh (2009) finds that direct legal pressure does not beget either gender or racial desegregation in the workplace. More recent research has expanded the scope of government mandates under study, exploring organizations' responsiveness to environmental protection regulation (Gunningham et al. 2004; Short & Toffel 2010), new educational and teaching standards (Porter et al. 2015), and workplace safety and overtime laws (Kellogg 2009; Barrett et al. 2014).

A key factor motivating this process of organizational interpretation is the inherent ambiguity of new laws, regulations, and other government signals (Sutton et al. 1994; Dobbin & Sutton 1998). Rarely are laws written with enough precision to preclude the possibility of multiple interpretations (Lowi 1969) and thus, organizations affected by new laws have an array of possible compliance responses at their disposal. How, then, do organizations winnow potential responses and forge a coherent path forward? Studies of organizational "sensemaking" (Weick 1995) suggest that organizations exposed to exogenous shocks, such as new regulation, engage various meso-level actors to help shape a response to these environmental disturbances (Maitlis

& Christianson 2014). Indeed, there is evidence that organizations rely heavily on specific intra- and extra-organizational groups to reduce uncertainty they experience stemming from the "disruptive ambiguity" (Weick et al. 2005, p. 413) of regulatory change. Such groups include internal human resources/personnel experts (Edelman et al. 1991; Dobbin et al. 1993); marketing professionals (Gilad 2014); management consultants (Edelman et al. 2001); government agency representatives (Desai 2016); and, naturally, lawyers (Huising & Silbey 2018).

In spite of their seeming centrality in the legal ecosystem, surprisingly little is known about the positive influence lawyers may exert over organizational compliance efforts. Recent corporate scandals involving lawyers have perhaps bolstered public perceptions that lawyers encourage corporate attempts to avoid or manipulate the law. The central role of lawyers in the Enron scandal received significant press coverage (Hilden 2002; New York Times Editorial Board 2002) and precipitated a small crisis in the legal community over the apparent decline in professional ethics (Rhode & Paton 2002; Gordon 2003; Koniak 2003). This said, the sociological research that does seek to isolate the effect of lawyers on organizational compliance does not necessarily support the idea that lawyers actively promote corporate malfeasance. Notably, Dobbin and Kelly (2007) argue that lawyers recommended organizational *inaction* to guard against Title VII lawsuits, citing a lack of clear precedent established by prior litigation. Per the authors, the lawyers' training in case law made them averse to experimenting with untested forms of compliance, and they counseled their corporate clients against a proactive response. This study builds on previous research that indicates, relative to HR professionals, lawyers tend to discourage companies from adopting compliance strategies that are novel or otherwise perceived in the legal community as risky (Edelman et al. 1992; Sutton & Dobbin 1996; Edelman et al. 1999). Dobbin and Kelly's conclusion is echoed by Delmas and Toffel

(2008), who find that the presence of an influential legal affairs department decreases a company's likelihood of voluntarily adopting an international standard for environmental management practices. In these studies, lawyers' primary motive is to protect their clients or employer from exposure to liability, leading them to caution against a proactive response to a changing legal climate – and consequently, lawyers have a chilling effect on organizational compliance efforts. This research suggests the following hypothesis regarding the moderating effect of lawyers on compliance:

H1: When organizations use lawyers, they will be less likely to demonstrate any compliance response to new regulation.

The lawyers in Dobbin and Kelly (2007) and Delmas and Toffel (2008) serve mostly as sounding boards for executives seeking to develop new policies and procedures absent any direct interaction with a regulatory body. However, we know that lawyers represent organizations in a variety of substantively different contexts. For example, and germane to the present study, lawyers may help organizations conduct parts of their business operations that require regulatory approval, such as filing for employment visas (Heys 2015), patent applications (Süzeroğlu-Melchiors et al. 2017), and construction or development permits (Pilconis 2017). While sociological studies have posited lawyers' function as primarily negative (protecting their organizational clients from exposure to legal scrutiny), these use cases suggest lawyers may also play a positive role (helping their clients maximize their chance of approval vis-à-vis a regulatory entity). In the latter scenarios, it is not possible for lawyers to insulate their clients from exposure to regulatory enforcement and must instead confront it head-on. Given the

difference in professional mandate this implies, lawyers may not demonstrate the same preference for inaction hypothesized above.

Furthermore, previous research has treated lawyers as a homogenous group, without testing for intra-professional differences that may impact a given lawyer's likelihood of recommending different forms of compliance. Yet lawyers' professional identity is far from monolithic (Granfield 2007; Weresh 2009), which suggests that organizational sociology should be attentive professional differences among lawyers that may be salient to the outcome of interest. In sum, I seek to build on existing research by 1) investigating the role of lawyers on compliance in a fundamentally different regulatory environment – one which necessitates direct interaction with a regulator in order for the organization to maintain day-to-day business operations – and 2) assessing whether professional differences within the legal community affect the compliance strategies adopted by their organizational clients. To develop hypothetical predictions about lawyers' influence over organizational compliance, I therefore draw from legal scholarship, which offers competing theories of legal professionalism relevant to my analysis.

Lawyers as Professionals: Two Perspectives

One prevailing theory in legal scholarship positions lawyers as wardens of the public good. According to this perspective, lawyers play a key informational role by communicating the substance of new laws to their clientele (Winter & May 2002). In addition to their informational function, lawyers are obligated to enforce the law and thus prevent fraud or wrongdoing within organizations they represent (Parsons 1954; American Bar Association 2020); they are, in other words, "compliance monitors" (Parker et al. 2009, p. 207). Lawyers occupy a unique advisory position because, although they are often hired by organizations and individuals at-will, they

have an independent legal authority that empowers and impels them to enforce the law (Zacharias 2006). Lawyers can exercise coercive power over their clients, for example by threatening to disclose damaging information (Simon 1988).

Although strong-arming clients into compliance may introduce some friction into the client-lawyer relationship, consistently high demand for legal services allows lawyers to maintain their professional standards without fear of monetary loss (Larson 1977). Lawyers, represented by the national bar, exercise a professional monopoly over provision of legal services. Clients thus often do not have access to information to navigate the legal system independently. In this sense, lawyers are prototypical "professionals" as described by Abbott (1988): asymmetry of expertise between lawyers and their clients allows them to operate largely autonomously, and their exclusive knowledge of law mitigates the risk that they will lose jurisdiction to other professional groups. Lawyers have adopted strict ethical codes both as a means of establishing their professional monopoly over legal services, per the professionalism theory, but also because these ethical codes serve as a signal to clients who otherwise might be unable to judge the quality of the legal services offered (Von Nordenflycht 2010). This leads to my second hypothesis, counter to H1:

H2: When organizations use lawyers, they will be more likely to demonstrate a literal compliance response, i.e. one that reflects an attempt to comply with the substance of the law.

A second, and perhaps more dominant, branch of scholarship argues that lawyers' ability to act in the public interest is compromised by their financial ties to their clients (Fried 1976). Regulated organizations' duty to comply with the law (and in so doing achieve some desired

social end) may be superseded by other considerations, such as the economic performance of the organization (Rose 2007). This suggests that self-interested organizations may either seek to evade regulation in its entirety, or alternatively, deploy a response that nominally reflects compliance while undermining the social aims advanced by the regulation (Ostas 2004; Mun 2016). Lawyers' dual mandate to uphold the law *and* promote their clients' interests may create a dilemma for practitioners (Pepper 1995; Shapiro 2002), which is often resolved by promoting the latter of these strategies (that is, a superficial form of compliance rather than avoiding compliance entirely) (Remus 2014). Lawyers may, per Gordon (1990), be responsible for "constructing devices that will formally satisfy the regulation while defeating its substance," "designing the cosmetic appearance of compliance," or otherwise developing "creative forms of compliance" (p. 277) that better serve the needs of the corporate client but weaken the intended effect of the law. Some contend that the growth of corporate firms has exacerbated this problem: membership in these firms has arguably stripped lawyers of their independent professional identity, creating a post-professional world of legal practice in which the client's needs are viewed as more important than the lawyer's ostensible professional priority of defending and applying the law (Glendon 1994; Kritzer 1999). There is evidence that pressure to meet client demands, even if these demands are ethically fraught, leads some disillusioned young lawyers to abandon the profession altogether (Granfield & Koenig 2003). This provides support for my third hypothesis, which runs counter to both H1 and H2:

H3: When organizations use lawyers, they will be more likely to demonstrate a creative compliance response, i.e. one inconsistent with a literal interpretation of new regulation.

The Role of Specialization

However, as noted above, law is a heterogeneous profession, and intra-professional differences may affect lawyers' propensity to recommend creative compliance strategies to their organizational clients. One notable axis along which lawyers differ is their relative level of professional specialization. In the legal community, research has shown that specialization is proceeding apace (Nelson 1988; Heinz et al. 2005), driven by an increasingly complex legal system and the concomitant growth in corporate demand for legal services (Hadfield 1999). Elite law firms, for their part, have sought to capitalize on this demand by rationalizing their internal structures and promoting increased specialization among the lawyers in their employ (Heinz et al. 2001).

What effect increased specialization will have on the professional orientation of lawyers is a matter of debate (Moorhead 2010). On one hand, studies of occupational identification suggest that specialization triggers increased commitment to a given profession. As knowledge and experience in a specific domain increases, an individual's affective commitment to and interest in that particular profession also tends to increase (Becker & Carper 1956; Meyer et al. 1993). It is also plausible that specialization may reflect already-established commitment to a given field of law by those who have chosen to study it, i.e., a greater commitment to upholding the law in their area of expertise. For instance, Erlanger et al. (1996) show that ideological commitment to progressive causes among law students is a strong predictor of eventual work in "public interest" specialties, such as environmental, consumer protection, or affirmative action law. Finally, from an institutional perspective, specialization has also encouraged the development of new specialty law associations, which may play a positive role in reinforcing professional and ethical norms among the lawyers that constitute their membership (Kilpatrick

1997). Taken together, this literature implies that greater specialization, operating through repeated effort and thus accumulated expertise, will be associated with a stronger commitment among lawyers to maintaining substantive compliance among their client base:

H4: When organizations use more specialized lawyers, they will <u>less likely</u> to demonstrate a creative compliance response than when they use less specialized lawyers.

Although there are theoretical reasons to believe specialization will promote increased professional identification, legal scholarship tends to take the opposing perspective; namely, that specialization will have a deleterious effect on a lawyer's ability to maintain a professional identity independent of their corporate clients and/or employers (Spangler 1986). The fragmentation of lawyers into smaller and more specialized communities of practice has arguably tied lawyers closer to their clients and obscured the broader public service mission of the legal profession (Francis 2005; Ariens 2016). Specialization also implies fragmentation of professional oversight, which some have argued prevents the national bar from exercising discipline over sub-communities of lawyers. Per Nelson & Trubek (1992), the fragmentation of the legal profession has led to "the erosion of a distinctive professional tradition and the absence of a centralized power within the profession capable of enforcing a particular vision of professional ideals" (p. 13). This research implies a gradation of professional commitment within the legal field, where specialization tends to alienate lawyers from abstract professional ideals and increases the likelihood that lawyers will promote their clients' interests at the expense of strict adherence to the law. This leads to my final hypothesis, in opposition to H4:

H5: When organizations use more specialized lawyers, they will be more likely to demonstrate a creative compliance response than when they use less specialized lawyers.

SETTING

The H-1B temporary employment visa is reserved for highly-skilled immigrants in "specialty occupations" (8 C.F.R. § 214.2(h)(1)(ii)(B)), defined as those that require application of specialized knowledge, and that typically require an individual with a minimum of a Bachelor's degree in a related field (8 U.S.C. § 1184(i)(1)(B))[5]. The visa was created as part of the Immigration Act of 1990, a legislative effort to retool the immigration system to foster economic growth and promote American competitiveness in an increasingly globalized world (Chishti & Yale-Loehr 2016). In recent years, utilization of the H-1B visa has been highest among technology companies such as IBM and Google, as well as India-based technology consulting firms like Infosys and Tata Consultancy Services (Kight 2018; Pierce & Gelatt 2018)[6]. H-1B workers themselves predominantly occupy computer-related occupations (U.S. Department of Labor 2018; 2019).

[5] U.S. CIS outlines more specific qualifying criteria for H-1B workers in addition to those listed in the Code of Federal Regulations. Per U.S. CIS's website, "the position must also meet one of the following criteria to qualify as a specialty occupation: Bachelor's or higher degree or its equivalent is normally the minimum entry requirement for the particular position; The degree requirement is common to the industry in parallel positions among similar organization or, in the alternative, the job is so complex or unique that it can be performed only by an individual with a degree; The employer normally requires a degree or its equivalent for the position; The nature of the specific duties is so specialized and complex that the knowledge required to perform the duties is usually associated with the attainment of a bachelor's or higher degree." (U.S. CIS 2020a)

[6] Since its inception, the government has imposed a numerical cap on the number of H-1B visas for new employment that can be issued on a yearly basis. The cap is currently set at 65,000 for immigrants with a Bachelor's degree or its equivalent (8 U.S.C. § 1184(g)(1)(A)(vii)), with an additional 20,000 new employment visas reserved for immigrants holding a Master's degree or higher from an accredited U.S. university (8 U.S.C. § 1184(g)(5)(C)). New employment applications subject to the cap must be submitted during a short filing window, which typically takes place in the first week of April (U.S. CIS 2016; U.S. CIS 2017b; U.S. CIS 2017c). Large technology firms and other major employers of H-1B visa holders have argued for an increase in the cap to address the perceived IT skill shortage among domestic workers (Gates 2008; Torres 2017). H-1B visa extensions, amendments, and inter-company transfer applications, however, are not subject to the cap (8 C.F.R. § 214.2(h)(2)(i)).

The first step in the H-1B application process is to file a Labor Condition Application (LCA) with the Department of Labor (DOL). In the LCA, the employer must attest to the fact that they are paying the H-1B worker at or above the local prevailing wage for the occupation, and that employment of the H-1B worker will not "adversely affect the condition of workers similarly employed" (20 C.F.R. § 655.730(d)(2)). The employer must also report details of the proffered position on the LCA, including occupational title, job location, and wage level. Wage level (1, 2, 3 or 4) is a categorization system used by the DOL to set prevailing wages for different skill levels within occupations and locations of work. The DOL determines the salary that corresponds to each wage level using data from Occupational Employment Statistics survey conducted by the Bureau of Labor Statistics (U.S. DOL 2020). Wage level 1 reflects the local 17^{th} wage percentile for the occupation, wage level 2 corresponds to the local 34^{th} wage percentile, wage level 3 represents the median local wage, and wage level 4 is the 67^{th} local wage percentile (Costa and Hira 2020).

Almost all LCAs are approved (in my dataset, just 1.26 percent of applications are denied). A final visa application submitted to U.S. CIS for adjudication must contain a certified LCA, along with other documentation and filing fees, at which point a final determination on the visa is reached. All salary and position details listed on the LCA must be consistent with those listed on the ultimate application to U.S. CIS. Indeed, internal documentation from U.S. CIS indicates that the LCA is reviewed carefully by their agents in order to assess the proposed position's level of specialization (U.S. CIS 2017d).

Under the current administration, U.S. CIS periodically offers information and guidance to employers filing H-1B applications in the form of internal "memos", which the agency publishes through their website. Employers, immigration attorneys, and other interested parties

can sign up on the website to receive automatic notifications when new policy memoranda are released[7]. One such memo was released on March 31st, 2017, titled "Rescission of the December 22, 2000 'Guidance memo on H1B computer related positions.'" This document provided adjudicators with updated evaluation guidelines for H-1B applications for computer programmer positions. In short, the memo called into question whether computer programmers are really qualified for the H-1B visa, making note of the fact that many domestic workers within the occupation possess an Associate's, rather than the H-1B-requisite Bachelor's degree.

The memo states [italics/underlines added for emphasis]:

"The fact that a person may be employed as a computer programmer… *is not sufficient to establish the position as a specialty occupation.* Thus… a petitioner must provide other evidence to establish that the particular position is one in a specialty occupation."

"In general, *a petitioner must distinguish its proffered position from others within the same occupation through the proper wage level designation* to indicate factors such as the complexity of the job duties, the level of judgment, the amount and level of supervision, and the level of understanding required to perform the job duties." (U.S. CIS

[7] Although not formal legal directives, employers and immigration lawyers seeking to maximize their chances of visa approval are likely particularly sensitive to changing administrative guidelines, like those communicated in memos, in the current regulatory climate. According to a report authored by the American Immigration Lawyers' Association, "With respect to employment-based immigration, the business community has been hit with unprecedented scrutiny of nonimmigrant petitions for skilled workers, managers, executives, and others… As a result, the uncertainty and unpredictability of the legal immigration process has increased dramatically." (AILA 2018, p. 3)

2017a)

In response to the memo, the American Immigration Lawyers Association (AILA) published a document with talking points for its members (practicing attorneys and immigration law professors) to convey to their clients, acknowledging the inherent ambiguity of the memo and advising some degree of caution in interpretation: "the true test of this memo, like any other, will be in how it is interpreted by adjudicators in the field, when the rubber meets the road over the next few months as H-1Bs are adjudicated" (AILA 2017).

Although the memo was open to interpretation, U.S. CIS restated the importance of wage level as a proxy for the position's skill requirements and job complexity. This likely reflects the Trump administration's stated priority of protecting American workers' wages from potential undercutting by companies hiring non-native workers at a wage discount (U.S. CIS 2020b). As the memo explicitly references the "proper wage level designation" as a signifier of a valid specialty occupation deserving of an H-1B visa, one possible response to this memo among prospective H-1B employers would be to increase the wage level on LCAs filed for computer programmer positions. Although what constitutes a "proper" wage level is open to interpretation, an internal U.S. CIS email discussing the repercussions of the memo[8], indicates that applications listing wage levels 1 and 2 may be reasonably questioned by agents if the wage seems inappropriately low. The same could not be said of applications for wage level 3 and 4, per the same email: "Note that trying to distinguish a Level III from a Level IV position, however, is very difficult under the [current] guidance, so we recommend against analyzing the

[8] The contents of this email were released in 2019 as part of a Freedom of Information Act (FOIA) request filed by the American Immigration Lawyers Association.

appropriateness of the wage level in such cases until further DOL and USCIS guidance is issued." (U.S. CIS 2019d, p. 1). Of course, prospective H-1B employers were not privy to the content of this email at the time it was sent, but it may be reasonably inferred that applications filed for computer programmers listing a salary below the local occupational median (i.e., wage levels 1 and 2) would be more likely to provoke regulatory scrutiny. This is true both because they are the two lowest possible wage level designations, but also because setting the wage level below the local occupational median seems intuitively at odds with the Trump administration's putative efforts to prevent wage undercutting and job loss for native workers. I thus use the wage level listed on the application to code my measure of literal compliance with the memo.

Notably, U.S. CIS did not recommend employers reconsider the occupational category of their prospective employees in the memo. This is perhaps obvious, given U.S. CIS's underlying assumption that occupational title should be a substantive reflection of the job to be performed (U.S. CIS 2019a); this assumption is echoed in academic theories of job titles and task allocation (Grant et al. 2014). Nonetheless, there is evidence that H-1B employers can and do manipulate occupational titles and job details to better serve their interests. Per Ontiveros (2017): "In setting job title, for example, someone who works in the computer software field could be considered a 'software engineer,' a 'systems analyst,' or a 'programmer.' An employer can choose the job title with the lowest average salary and use it on the LCA" (p. 12). A second potential response to the memo among prospective H-1B employers, therefore, is to simply stop using the SOC code for computer programmers on subsequent applications. I consider this a creative response to the memo's content.

DATA AND ANALYSIS

The dataset for this analysis contains a record of every Labor Condition Application (LCA) filed on behalf of prospective H-1B employees between April 1st, 2016 and March 31st, 2018 (a two-year period bracketing the release of the "computer programmers" memo). This represents 1,185,090 distinct LCAs. The Department of Labor (DOL) makes these LCA records publicly available; however, preliminary analyses of the public files indicated that substantial portions of the data salient to my proposed study were missing. I therefore supplemented these public files with data received from the DOL via a Freedom of Information Act (FOIA) request[9]. Of note, I am limiting the applications in my regression models to those filed for positions in information technology (IT) occupations (66.5 percent of all LCAs filed during this time period, representing 788,641 total applications)[10]. This is intended to better isolate the effect of the memo on computer programmers without capturing macro-level changes that may be occurring in the (H-1B) IT occupational field absent the memo. For example, if wages are increasing for IT workers overall in the year following the memo at a greater rate than non-IT workers, and the reference category in my models contain applications for non-IT workers, the resulting "computer programmer" coefficient may overstate the positive impact of the memo on wages for programmers.

Dependent variables: The first dependent variable, used to measure of literal compliance with the memo, is a binary indicator for whether the LCA lists a wage level greater than the median local wage for the occupation (i.e. the wage level is set at 3 or 4).[11] Employers must

[9] FOIA request filed by Professor Ben Rissing.
[10] I.e., applications on which the Standard Occupational Code begins with "15-1", which the Bureau of Labor Statistics defines as "Computer Occupations" (BLS 2018).
[11] I use wage level 3 as a dividing line for reasons described in the "Setting" section. This said, the interactive effect of the post-memo and computer programmer dummies, shown in Table 2, is consistent if the dependent variable is

select among the four potential wage levels when determining the prevailing wage for the position[12], and as U.S. CIS noted in the March 2017 memo, wage level is considered an important proxy for the skill level and complexity of the job duties associated with the position. In the year prior to the memo's issuance, 19.8 percent of LCAs for IT positions, and 8.0 percent of those for computer programmers listed the wage level as 3 or 4. In the year following the number, these percentages increased to 24.0 and 12.9 percent, respectively (see Table 1).

The second dependent variable, my measure of creative compliance with the memo, is a binary indicator for whether or not the application was filed for a position with the Standard Occupational Classification (SOC) code for computer programmers. Between the year before the memo, and the year after the memo, usage of this SOC code on H-1B LCAs filed for IT occupations fell by 58.6 percent (see Table 1).

[Insert Table 1 here]

Independent variables: The first independent variable is a binary variable indicating whether the application was filed after the memo's issuance on March 31st, 2017 ("post-memo"). 49.1 percent of applications in my dataset were filed in the year following the memo. To test hypothesis 2 (measuring literal compliance), I interact the "post-memo" dummy with the "computer programmer" dummy described above. My data also contains an indicator for whether or not the application was filed with the assistance of a lawyer (a required Yes/No field

instead coded as one if the wage level is above level 1, zero otherwise. Similarly, the interactive effect shown in Table 2 is consistent if the models instead predict wage level as a continuous variable (excluding applications with no wage level listed).

[12] 4.1 percent of the LCAs for IT positions in my dataset do not list a wage level because the employer used an alternative survey, rather than the Bureau of Labor Statistics' Occupational Employment Statistics (OES) survey, to determine the prevailing wage for the proffered position. For the purposes of my analysis, because U.S. CIS agents do not have an easy heuristic for evaluating the "Level" of these positions, I consider LCAs with no wage level to be below Wage Level 3 and code them as zero. However, the models shown in Table 2 produce consistent results if applications with no wage level are instead dropped from the data.

on every filed LCA). Lawyers filed 60.8 percent of the applications for IT occupations during the time period under study, although this percentage is higher after the memo's issuance (see Table 1). To test Hypotheses 1-3, I estimate the models separately for applications filed with an assistance of a lawyer and those filed without a lawyer, and use post-hoc tests to determine if the observed difference in coefficients between the lawyer and non-lawyer models is statistically significant. To test Hypotheses 4-5, I introduce a third independent variable that represents a lawyer's specialization in the field employment immigration: the (logged) number of applications filed by the lawyer in the preceding year. If the LCA was filed before the memo, this variable represents the total number of LCAs the same lawyer filed between April 1st, 2015 and March 31st, 2016. If the LCA was filed after the memo, this variable represents the total number of LCAs the same lawyer filed between April 1st, 2016 and March 31st, 2017.

Control variables: All models include a control for the logged number of applications filed by the organization. This variable is intended to capture resource differences, both financial and informational, between H-1B employers that may impact both the dependent variables as well as their likelihood of using a lawyer to file an LCA.

The models also control for state or territory of employment, with the largest proportion of applications listing worksites in California (18.5 percent), followed by Texas (11.0 percent), and New Jersey (7.9 percent), the natural log of the number workers represented by the application (89.7 percent of applications represent a single worker),[13] whether or not the proffered position is full-time (82.9 percent of applications are for full-time positions), and employer North American Industry Classification System (NAICS) code. Lastly, I control for

[13] Employers may use a single LCA to file multiple H-1B petitions for different workers with identical job details however, as noted above, the vast majority of LCAs are filed for a single worker.

petition type and visa subcategory. The largest proportion of H-1B LCAs are filed for new employment (41.7 percent of applications), then for applications to amend existing H-1B visas (23.3 percent), followed by extensions of existing H-1B positions (21.2 percent). The remaining LCAs are comprised of applications for changes in employment status, concurrent employment applications for existing H-1B visa holders, and applications to transfer employers. More than 99 percent of LCAs are filed for standard H-1B visas, with less than one percent of observations representing applications for H-1B1 visas (reserved for workers from Chile or Singapore).

Hypothesis tests: I begin by testing organizations' use of a literal compliance strategy in response to the memo.[14] This has bearing on both Hypotheses 1 and 2. The former predicts that the use of lawyers will not affect an application's likelihood of displaying a literal compliance response post-memo (paying computer programmers at or above the local occupational median). The latter predicts that when an application is filed through a lawyer, it will be more likely to display a literal compliance response to the memo than independently filed LCAs. Thus, these hypotheses are mutually exclusive; finding support for one necessarily provides evidence against the other. Table 2 shows a series of regressions intended to test these hypotheses by predicting the likelihood of a given application displaying a wage level at or above the local occupational median wage. Model 1 of Table 2 contains all LCAs filed by organizations for H-1B workers in IT occupations during the time window under analysis. The key independent variables in Model 1 are an indicator for whether the application was filed in the year following the memo (vs. the

[14] Of note, all subsequent models (shown in Tables 2, 3, 4 and all robustness checks) predicting dichotomous outcomes are estimated as Ordinary Least Squares, rather than logistic, regressions. It is increasingly recognized as inappropriate to use logistic regression to estimate models containing interaction terms (Mustillo et al. 2018), as do main text Tables 3 and 4, and Appendix Tables 1, 3, 4, 5, and 7. Nonetheless, results of main text Tables 2 and 3 are consistent if models are estimated using logistic regression, although these models converge only after eliminating application type controls. The results of main text Table 4, estimated as a logistic regression, are consistent after accounting for nonlinearity at the upper end of the filing volume distribution, which appears to be driven by a few large law firms (see Appendix A for details).

year prior to the memo), an indicator for whether the application represents worker(s) with the occupational code for computer programmers, and an interaction of the two. This regression reflects a differences-in-differences design, which allows for the interpretation of the interaction term as the effect of the memo on the likelihood of being at or above the local median wage for IT workers classified as "computer programmers," compared to other IT workers. Model 1 also controls for full-time status, the (logged) total number of workers listed on the LCA, the (logged) total applications filed by the organization, the type of petition, employer industry, the state/U.S. territory of employment, and H-1B sub-category.

The post*programmer interaction term in Model 1 is positive and significant ($p<.001$), indicating that overall, employers are engaging in a literal compliance response to the memo's content. Model 2 contains identical controls to Model 1, but limits the applications to those filed by lawyers. In Model 2, the interaction term is again positive and significant ($p<.001$), indicating that computer programmers are approximately 2.7 percent more likely to be assigned a wage level at or above the local median wage after the memo than other IT workers that also had their LCAs filed by a lawyer. Model 3 uses the same controls as Models 1 and 2, but limits the data to only applications that organizations filed independently (i.e., without the assistance of a lawyer). Unlike the previous two models, the interaction term is significant ($p<.05$) but slightly negative, showing that computer programmers are 0.8 percent less likely to be assigned a wage at or above the local median post-memo compared to their non-programmer counterparts, when organizations file their LCAs independently. A Wald test of the equality of the interaction terms between Models 2 and 3 produces a chi-squared statistic of 50.58, indicating that the observable difference in coefficient size and direction between the two models is statistically significant ($p<.001$).

It's worth noting that the main effect of post-memo, across Models 1-3, is significant ($p<.001$) and large – IT applicants were between 3.2 and 5.5 percent more likely to be assigned a wage level equivalent to or greater than the local occupational median in the year following the memo compared to the previous year. This likely reflects employers' attempts to mitigate the risk of ultimate application denial (once under evaluation at U.S. CIS) given U.S. CIS's general increased scrutiny of H-1B applications under the Trump administration. The main effect of being a computer programmer on wage level is negative but varies by filer type, with computer programmers between 5.4 (independently-filed applications) and 11.0 percent (lawyer-filed applications) less likely to be compensated at or above the local median wage ($p<.001$ in both models). Nonetheless, the statistically significant difference in the size and direction of the interaction term between Models 2 and 3 indicates that the use of lawyers is associated with a stronger deployment of literal compliance in direct response to the memo. Collectively, the results of these models provide evidence in support of Hypothesis 2 and against Hypothesis

[Insert Table 2]

According to Hypothesis 3, applications filed with the assistance of lawyers should be more likely to demonstrate a creative compliance response to the memo, i.e., should be less likely to use the occupational title "computer programmer" post-memo. Table 3 contains regression analyses to test this hypothesis by predicting the likelihood of an LCA using the SOC code "computer programmer". Model 1 of Table 3 uses all LCAs filed for IT occupations, Model 2 uses just LCAs filed by lawyers, and Model 3 contains only applications that organizations filed independently. The key independent variable in Table 3 is simply the binary indicator for whether the application was filed in the year after the memo. The remainder of the controls are identical to those used in the regressions in Table 2, with the addition of categorical controls for

wage level (1, 2, 3, 4, or "N/A"). The overall effect of the memo on the likelihood of an application using the SOC code for computer programmers appears to be strong and negative. Per Model 1, applications filed in the year following the memo are 11.0 percent less likely to use the occupational code for computer programmers overall ($p<.001$). Model 2, limited to LCAs filed by lawyers, indicates that applications filed post-memo are 6.1 less likely to use the computer programmer SOC code ($p<.001$), while Model 3, limited to independently-filed LCAs, shows that applications are a full 18.8 percent less likely to do so ($p<.001$). A Wald test of the equality of the post-memo coefficient between Models 2 and 3 confirms that the size difference between these coefficients is statistically significant ($\chi^2 = 4413.72$, $p<.001$). In direct opposition to Hypothesis 3, applications that organizations filed independently are more likely to display a creative compliance response – dropping use of the title computer programmer – than applications filed by lawyers.

[Insert Table 3]

Table 4 provides evidence that allows me to adjudicate between the competing predictions of Hypothesis 4 and 5. Hypothesis 4 holds that increased lawyer specialization will decrease an organization's likelihood of using a creative compliance response on a given application, while Hypothesis 5 predicts that lawyer specialization will increase the likelihood of creative compliance on an application. To test these hypotheses, I limit the data to only lawyer-filed LCAs, and introduce an additional independent variable that measures a lawyer's specialization – the (logged) number of H-1B LCAs filed by that lawyer in the preceding year.[15]

[15] This filing volume variable is lagged by one year to account for potential left-censoring resulting from the truncated observation window of my original dataset (i.e., I am unable to determine when a lawyer files their first LCA and develop an aggregate measure of specialization/expertise from that point onward). For example, if a lawyer retires after filing one LCA on the first date in my data, they will appear equivalently specialized as a lawyer whose first LCA is filed on the last day of my data. By lagging the filing volume variable by one year, I am able to better address censoring issues of this nature. To create this measure, I used additional publicly available LCA data

The key independent variables in Table 4 are thus the post-memo indicator, the logged number of LCAs filed by the lawyer in the previous year, and their interaction. I interpret the interaction term as the effect of lawyer specialization on employers' likelihood of using the computer programmer title after the memo.

Model 1 in Table 4 contains the three independent variables mentioned above, as well as controls for full-time status, the (logged) total number of workers listed on the LCA, the type of petition, employer industry, the state/U.S. territory of employment, and H-1B sub-category. The main effect of post-memo on the likelihood of an LCA referencing the SOC code for computer programmers is negative and significant ($p<.001$). The main effect of lawyer specialization is positive and significant ($p<.001$), indicating that more-specialized lawyers are more likely to file applications for computer programmers. This could reflect differences in the clientele that more-specialized lawyers attract (e.g. firms that hire more low-level positions, such as programmers). The interaction term of the two, however, is negative and significant ($p<.001$), indicating that as lawyer specialization increases, their client organizations are less likely to use the title computer programmer in the wake of the memo. The results of Table 4 therefore provide evidence in support of Hypothesis 5 and against Hypothesis 4. This said, the significant main effect of logged number of LCAs filed in the previous year may indicate some selection occurring at the employer level. In the subsequent section, I include a robustness check to ensure that the significant interaction term in Table 4 is also not simply a result of a related selection process,

from the Department of Labor starting from fiscal year 2015. "1" was added to each instance of the variable pre-log transformation so that observations with a value of zero (representing lawyers who had not filed an LCA the previous year) would not become undefined through the transformation and subsequently dropped from the regression.

whereby employers who are more likely to deploy a creative compliance strategy are also more likely to use specialized lawyers.

[Insert Table 4]

ROBUSTNESS CHECKS

The strong main effects of the "Post-Memo" coefficient in both Tables 2 and 3 indicate that the climate of uncertainty under the Trump administration has influenced overall H-1B employer filing strategies. In order to better isolate the effect of the memo specifically without capturing other strategic employer shifts happening as a result of general administrative change, I re-ran the models in Tables 2 and 3 but limited the data to three months prior to and three months after the memo's issuance. However, the memo was released just prior to the new H-1B application filing window (new applications that are subject to the yearly cap), and the applicant pools in the three months preceding and following the memo may be compositionally different, with new visa applicants likely having less human capital. I therefore limited these models to non-new applications (e.g. existing visa extensions, amendments, inter-company transfers, etc.). The results of these regressions are presented in Tables 5 and 6. Even when limiting the data to applications filed in a six-month window bracketing the memo's release, the results remain consistent. Per Table 5, Model 2, lawyer-filed applications for computer programmers are 2.5 percent more likely to display a wage level above the local median wage after the memo, compared to their non-programmer counterparts ($p<.05$). Independently filed applications for computer programmers (Table 5, Model 3), on the other hand, are actually 2.9 percent *less* likely to be assigned a wage level above the local median after the memo compared to non-programmers ($p<.01$). The difference in the interaction term coefficients between Models 2 and 3

is statistically significant ($\chi^2 = 20.17$, $p<.001$). Table 6 shows parallel analysis to Table 3. According to Table 6, Model 2, lawyer-filed applications are 6.4 percent less likely to use the SOC code for computer programmer in the three months following the memo ($p<.001$) while independently filed applications are 15.3 percent less likely to do so ($p<.001$). The difference in these coefficients is also statistically significant ($\chi^2 = 60.78$, $p<.001$). The results of these models thus lend credence to my argument that employers are responding directly to the memo's content.

A second series of checks are intended to address potential sources of bias introduced by the endogenous decision to use a lawyer to file an LCA. Assignment to the "treatment" of a lawyer is likely non-random, both at the organizational and application level. In particular, organizations that use lawyers may be different on measures that influence their hiring and compensation decisions, and thus the outcomes displayed on the LCAs they file. Tables 2 and 3 include controls for employer industry and employer H-1B filing volume to account for such inter-organizational differences, with the latter variable serving as both a proxy for both size and financial resources, as well as level of familiarity with the H-1B system. Nonetheless, these variables may not capture unobservable differences between employers that introduce endogeneity into my models. To address this possibility, I re-ran Model 1 from both Table 2 and Table 3, limited to applications filed by organizations who have filed LCAs both with *and* without lawyers (both before and after the memo was issued), and included employer fixed effects. I have also introduced a dummy variable indicating whether the application was filed through a lawyer and interacted it with the independent variable(s) of interest; this new interaction, in combination with the addition of employer fixed effects, allows me to detect the effect of the lawyer on the dependent variable *within* companies. This check is necessarily

imperfect because only a small fraction of employers file both with and without lawyers, and even fewer do so both before and after the issuance of the memo. Of the 32,808 unique employers in the dataset that filed LCAs for IT positions, 28,085 (85.6 percent) exclusively filed LCAs through lawyers, and 2,431 (7.4 percent) exclusively filed LCAs independently. Just 722 employers (2.2 percent) filed LCAs both with and without lawyers both before and after the memo. These employers appear to be compositionally different than the average H-1B employer: the median number of LCAs filed by the former group is 3,148, compared to a median value of 323 for all employers. This may indicate that the 722 employers that filed both with and without lawyers in both time periods are larger and/or more dependent on H-1B workers compared to the average LCA-filing employer. Nonetheless, the existence of these employers provides an opportunity to test the within-organization effect of lawyer use on compliance strategy adopted.

The results of the above-described models are presented in Tables 7 and 8. Table 7 shows the results of the regression predicting whether the application lists a wage level at or above the local median. The coefficient of the three-way interaction between the post-memo, computer programmer SOC code, and lawyer-filed dummies is directionally consistent with the effect of lawyers indicated by main text Table 2, but it decreases substantially in magnitude and is not statistically significant. Table 8 displays the results of a regression predicting use of the SOC code for computer programmers. The interaction between the post-memo and lawyer-filed dummies is positive and marginally significant ($p<.1$), indicating that when a given company uses a lawyer to file their LCA, they are marginally more likely to use the SOC code for computer programmers than if they had filed their LCA independently. This provides additional support for the results shown in Table 3, in that the use of lawyers is associated with a marginally lower likelihood of using a creative compliance strategy.

It is also possible that within an organization, lawyers are non-randomly assigned to some applications and not others. For example, it could be the case that employers are more likely to engage a lawyer to file LCAs for more-skilled or otherwise more-valued prospective employees, which would also presumably influence the wages offered. The potential bias introduced by this type of selection appears to be less of a concern given the relative paucity of employers that file both with and without lawyers. Nonetheless, I test for the possibility of application-level selection affecting my results by limiting the data to applications filed by companies who either always or never used lawyers, and reproducing Tables 2 and 3 (shown in Tables 9 and 10). Table 9 shows the results of a series of regressions predicting whether the LCA displays a wage level above the local median. As shown in Table 9, Model 2, applications for computer programmers filed with the assistance of lawyers are 3.8 percent more likely to offer compensation at or above the median local wage after the memo than those for non-programmers, compared to 2.7 percent more likely among self-filed applications (shown in Model 3). These results are directionally consistent with those of Table 2, although post-hoc testing indicates that the observable difference in coefficient size is insignificant ($\chi^2 = 1.67$, $p>.1$). According to Table 10, Model 2, applications filed through lawyers are 5.1 percent less likely to use the SOC code for computer programmers in the year following the memo, while per Table 10, Model 3, independently-filed applications are 12.8 percent less likely. The difference in the size of the post-memo coefficients between Table 10 Models 2 and 3 is highly significant ($\chi^2 = 1041.92$, $p<.001$).

Beyond the binary decision of whether to engage a lawyer or not, employers could differ on some unobservable characteristic that both shapes the relative specialization of the lawyer they engage and their likelihood of using creative forms of compliance (i.e., companies that are *a priori* more likely to use creative forms of compliance may tend to engage more specialized

lawyers). This form of selection could bias the results shown in Table 4. To account for this possibility, I limit the data to applications filed by companies who used multiple lawyers to file LCAs, and re-run the Table 4 model on these observations with employer fixed effects. The resulting interaction of Post-Memo*Ln(Apps Filed by Lawyer in Previous Year), shown in Table 11, can be interpreted as the effect of lawyer specialization on the likelihood of using the computer programmer SOC code post-memo, *within* a given company. The interaction term in this model remains negative and significant ($p<.001$), providing evidence for the validity of the findings in Table 4.

An alternative interpretation of the results of Table 3 is that employers are hiring native workers for computer programmer positions after the memo, rather than simply changing the SOC code they use on LCAs. As a test of this interpretation, I limited the applications in my data to companies who show fairly consistent demand for the H-1B visa both before and after the memo (that is, companies who filed between 45 – 55 percent of their total LCAs after the memo), and re-ran the models shown in Table 3. Since these companies have evidently not adjusted their H-1B hiring levels in response to the memo, if this alternative interpretation is correct, we should not expect the memo to have an effect on the likelihood of these companies using the SOC code for computer programmer. The results of these models, shown in Table 12, indicate that applications filed by this sub-set of companies are between 5.0 percent (lawyer-filed LCAs) and 15.6 percent (independently filed LCAs) less likely to use the SOC code for computer programmers post-memo ($p<.001$). This check thus provides evidence that the observed decline in the SOC code for computer programmers is indeed a creative compliance response, and not solely attributable to changing demand for H-1B workers.

Lastly, although the year-over-year decline in the use of the computer programmer SOC code shown in Table 1 appears extreme, it is possible that it reflects a secular trend toward the elimination of the occupation in the U.S. unrelated to the memo. To check for the existence of such a trend, I incorporated additional publicly available Labor Condition Application filing data from the Department of Labor, and graphed the percentage of LCAs comprised of computer programmer applications each month from 2014 through 2018 (Figure 1). Although the percentage of LCAs made up of computer programmers is indeed declining in the years preceding the memo, Figure 1 shows that the post-memo rate of decline is anomalous.

DISCUSSION AND CONCLUSION

This study contributes to the literature on organizational mediation of law by theorizing and testing a role for a key sub-organizational group of professional actors: lawyers. While previous research has shown that lawyers tend to suppress proactive organizational attempts at compliance, my research suggests that in some contexts, lawyers may encourage organizations to adopt some forms of compliance but not others. Specifically, when organizations engage lawyers to file their H-1B visa applications, they are more likely to display a *literal* compliance response to new regulatory guidelines than when they file their applications independently, which in this context involves increasing the salary offered select prospective immigrant employees. This does not necessarily contradict the findings of earlier scholarship on the topic that suggests lawyers subdue organizational compliance efforts, such as Dobbin and Kelly's (2007) study of firms' responses to Title XII lawsuits. Rather, it builds on them by exploring the role of lawyers in a substantively different legal environment. The H-1B employment application process requires organizations to interact with a government body in order to hire workers; under these

circumstances, non-compliance is not a valid strategy for avoiding regulatory oversight. Lawyers, in this context, appear to advocate for forms of compliance that are consistent with a literal interpretation of the regulation in question. On the other hand, organizations using lawyers in my study are less likely to use a *creative* form of compliance on their H-1B applications, i.e., are less likely to stop using an occupational title that appears to be receiving greater regulatory scrutiny, than organizations that file their applications independently. This finding is consistent with Dobbin and Kelly's research and supports their assertion that legal profession is change-averse and conservative in orientation. I also draw attention to a key intra-professional difference within the legal community, level of specialization, that impacts client organizations' likelihood of using a creative compliance strategy. Although the legal profession as a whole may suppress the deployment of creative compliance, this effect is strongest among the least-specialized lawyers.

These findings also have practical implications for the functioning of the H-1B program. If employers continue to increase the salaries offered prospective H-1B employees in order to mitigate increased scrutiny under the current administration, this could have ripple effects across IT industry and the network of H-1B subcontracting companies that supply it with workers (Geisler 2017; Ontiveros 2017). Smaller companies and startups that already struggle to attract high-skill immigrant workers (Roach & Skrentny 2019) may find themselves unable to pay the wage premium needed to secure a favorable visa adjudication, further advantaging larger companies with more resources. Alternatively, the increased cost of hiring H-1B workers may encourage some employers to pursue outsourcing strategies, rather than increase H-1B worker wages to the level perceived necessary to receive a favorable adjudication. If the volume of H-1B visa applications drops as a result of this process of "pricing out", this could also prove

problematic for the functioning of U.S. CIS, an organization whose budget is derived in substantial measure from visa application filing fees (Rissing & Carver 2020).

In addition, the apparent ease with which some employers shift occupational categories of their prospective H-1B employees raises some questions about the veracity of the attestations they are making through the application process. Legal scholars have noted the lack of effective H-1B program oversight that facilitates the exploitation of immigrant workers: for example, Fulmer (2009) argues that statutory limitations on the Department of Labor's authority to investigate allegations of wage underpayment to H-1B workers allow companies to pay below the prevailing wage without fear of repercussions. Similarly, Rissing (2020) finds that immigrant labor certifications are approved by the Department of Labor at much lower rates when audited or inspected relative to those that are based solely on employer attestations. This study provides additional empirical evidence in support of these claims and suggests that on-the-ground regulatory oversight (e.g., worksite audits) may be warranted to ensure H-1B workers' employment conditions and compensation are in line with what employers report on their LCAs.

This study has several limitations that may be addressed by future research. First, my dataset for this analysis does not provide information as to the eventual success or failure of the application under U.S. CIS review. I am thus unable to determine which compliance strategy – literal or creative – is more effective at securing ultimate visa approval. Additional research is necessary to better understand how companies and lawyers using either strategy learn from prior successes or failures in the application process, and how this affects their propensity to use the same strategy on future applications. It seems likely that lawyers would facilitate organizational learning and strategic adaptation because they serve as nodes in the network of H-1B employers,

and therefore can provide a given employer with information gleaned from their experience across all client companies.

Additionally, and as noted by Fulmer (2009) and Ontiveros (2017), employers may illegally pay their workers on H-1B below the salary listed on their LCA. Even if lawyers encourage companies to increase the wages listed on the LCA, this may not be sufficient to guarantee that H-1B workers are compensated at this level on the ground. This suggests that compliance is a multi-stage process, and the initial deployment of a literal compliance response may ultimately be undermined by subsequent organizational decisions. The data used in this analysis represents the first "phase" of compliance, but I cannot observe organizational behavior outside of the application process. Additional research may overcome this limitation by examining the extent to which literal compliance responses are enacted consistently over a multi-step process – and thus, whether the initial literal compliance response actually serves to uphold the social aim of the regulation.

Lastly, future research may also seek to extend and verify these findings by testing the role of lawyers on organizational compliance in different settings. I have assumed that lawyers are more likely to recommend a literal form of compliance at least partially because regulatory oversight is an unavoidable aspect of the visa application process. Other scholars may test this assumption by studying other settings in which organizations are subject to direct government oversight, such as the patent or new drug application process, and assessing whether lawyers have a moderating effect akin to the one identified in my study. I have also studied one axis along which lawyers differ – level of specialization – but additional research is needed to probe other intra-professional differences in the legal community that may affect lawyers' willingness to advocate for different forms of organizational compliance. For instance, I am unable to

delineate in-house vs. external counsel in my data, but there is evidence that in-house lawyers experience unique conflicts of interest that may affect the forms of compliance they recommend (Jenoff 2012). Additionally, demographic differences among lawyers may be associated with different levels of intrinsic or extrinsic motivation, and in turn, their relative commitment to serving the public good. Identifying relevant professional differences, such as those suggested above, may be necessary in order to fully understand the moderating effect of lawyers on organizational compliance.

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TABLES AND FIGURES

Table 1. Descriptive Data: LCAs Filed for H-1B Workers in IT Occupations, One Year Pre- and Post-Memo

	Pre-Memo	Post-Memo	% Change
Overall			
No. Filed	401,319	387,322	-3.5%
No. Filed for Programmers	71,206	29,465	-58.6%
Average Salary[1]	$107,058	$107,245	0.0%
Average Salary for Programmers	$93,501	$91,206	-2.4%
% of LCAs with Wage Level 3 or 4	19.8%	24.0%	21.1%
% of LCAs for Programmers with Wage Level 3/4	8.0%	12.9%	62.0%
Lawyer-Filed LCAs			
No. Filed	235,944	243,923	3.4%
No. Filed for "Programmers"	28,037	13,241	-52.7%
Average Salary	$117,694	$111,208	-5.5%
Average Salary for "Programmers"	$90,025	$94,849	5.4%
% of LCAs with Wage Level 3 or 4	24.0%	28.4%	18.7%
% of LCAs for Programmers with Wage Level 3/4	9.6%	16.1%	68.5%
Independently-Filed LCAs			
No. Filed	165,375	143,399	-13.3%
No. Filed for "Programmers"	43,169	16,224	-62.4%
Average Salary	$91,882	$100,505	9.4%
Average Salary for "Programmers"	$95,758	$88,232	-7.9%
% of LCAs with Wage Level 3 or 4	13.8%	16.3%	18.5%
% of LCAs for Programmers with Wage Level 3/4	6.9%	10.3%	48.1%

[1] This value averages across all IT positions, including computer programmers.

Table 2. OLS Regression Predicting Likelihood of Wage Level At or Above Local Median on LCA, One Year Pre- and Post-Memo (IT Occupations Only)

	(1) All LCAs	(2) Lawyer-Filed	(3) Self-Filed
Post-Memo	0.046***	0.055***	0.032***
	(0.001)	(0.001)	(0.002)
"Computer Programmer" SOC Code	-0.094***	-0.110***	-0.054***
	(0.002)	(0.003)	(0.002)
Post*Programmer	0.011***	0.027***	-0.008*
	(0.003)	(0.005)	(0.003)
Wald Test of Lawyer [Post*Programmer] = Self [Post*Programmer]			$\chi^2 = 50.58$***
Full Time	-0.029***	-0.031***	-0.019***
	(0.001)	(0.001)	(0.001)
Ln(Total Workers on LCA)	-0.013***	-0.038***	-0.009***
	(0.001)	(0.001)	(0.002)
Ln(Total LCAs Filed by Org.)	0.001***	-0.004***	0.018***
	(0.000)	(0.000)	(0.000)
Intercept	-0.080	-0.060	0.327***
N	785,593	478,097	307,496
r^2	0.07	0.07	0.08

Models also control for petition type (6 vars), employer NAICS (32 vars), state/territory of employment (54 vars), and visa category (3 vars). Results are consistent if applications with wage level "N/A" excluded.
* p<.05, ** p<.01, *** p<.001

Table 3. OLS Regression Predicting Likelihood of SOC Code for "Computer Programmer" Listed on LCA, One Year Pre- and Post-Memo (IT Occupations Only)

	(1) All LCAs	(2) Lawyer-Filed	(3) Self-Filed
Post-Memo	-0.110***	-0.061***	-0.188***
	(0.001)	(0.001)	(0.002)
Wald Test of Lawyer [Post] = Self [Post]			$\chi^2 = 4413.72$***
Full Time	0.018***	-0.003***	0.044***
	(0.001)	(0.001)	(0.001)
Ln(Total Workers on LCA)	-0.010***	-0.003**	-0.011***
	(0.001)	(0.001)	(0.002)
Ln(Total LCAs Filed by Org.)	0.009***	0.012***	-0.005***
	(0.000)	(0.000)	(0.000)
Intercept	0.001	0.018	0.067
N	784,383	478,097	306,286
r^2	0.07	0.07	0.08

Models also control for petition type (6 vars), employer NAICS (32 vars), state/territory of employment (54 vars), wage level (5 vars), and visa category (3 vars).
* p<.05, ** p<.01, *** p<.001

Table 4. OLS Regression Predicting Likelihood of SOC Code for "Computer Programmer" Listed on Lawyer-Filed LCA, One Year Pre- and Post-Memo (IT Occupations Only)

	(1) All Lawyer-Filed LCAs
Post-Memo	-0.026***
	(0.002)
Ln(Apps Filed by Lawyer in Previous Year)	0.013***
	(0.000)
Post-Memo*Ln(Apps Filed by Lawyer in Previous Year)	-0.007***
	(0.000)
Full Time	0.000
	(0.001)
Ln(Total Workers on LCA)	0.002*
	(0.001)
Ln(Total LCAs Filed by Org.)	0.009***
	(0.000)
Intercept	0.073
N†	437097
r^2	0.07

†8.5 % of applications that have been filed by a lawyer are missing the lawyer's name (41,003 observations). These applications are dropped from the above regression.
Model also controls for petition type (6 vars), employer NAICS (30 vars), state/territory of employment (54 vars), wage level (5 vars), and visa category (3 vars).* p<.05, ** p<.01, *** p<.001

Table 5. OLS Regression Predicting Likelihood of Wage Level At or Above Local Median on LCA, 3 Months Pre- and Post-Memo (IT Occupations and Non-New Petitions Only)

	(1) All LCAs	(2) Lawyer-Filed	(3) Self-Filed
Post-Memo	-0.013***	-0.012***	-0.006
	(0.003)	(0.003)	(0.004)
"Computer Programmer" SOC Code	-0.098***	-0.127***	-0.025***
	(0.005)	(0.007)	(0.006)
Post*Programmer	0.000	0.025*	-0.029**
	(0.007)	(0.011)	(0.009)
Wald Test of Lawyer [Post*Programmer] = Self [Post*Programmer]			$\chi^2 = 20.17$***
Full Time	0.238***	0.265***	0.120***
	(0.023)	(0.031)	(0.034)
Ln(Total Workers on LCA)	0.018***	0.011+	0.032**
	(0.005)	(0.006)	(0.010)
Ln(Total LCAs Filed by Org.)	-0.011***	-0.018***	0.016***
	(0.000)	(0.001)	(0.001)
Intercept	-0.406**	-0.524*	-0.284
N	124775	81202	43573
r^2	0.09	0.09	0.04

Models also control for petition type (6 vars), employer NAICS (26 vars), state/territory of employment (54 vars), and visa category (3 vars).
* p<.05, ** p<.01, *** p<.001

Table 6. OLS Regression Predicting Likelihood of SOC Code for "Computer Programmer" Listed on LCA, Three Months Pre- and Post-Memo (IT Occupations and Non-New Petitions Only)

	(1) All LCAs	(2) Lawyer-Filed	(3) Self-Filed
Post-Memo	-0.092***	-0.064***	-0.153***
	(0.007)	(0.008)	(0.012)
Wald Test of Lawyer [Post] = Self [Post]			$\chi^2 = 60.78$***
Full Time	0.020+	0.017	0.094***
	(0.012)	(0.011)	(0.027)
Ln(Total Workers on LCA)	0.112***	-0.061**	0.163***
	(0.017)	(0.023)	(0.027)
Ln(Total LCAs Filed by Org.)	0.007***	-0.003***	-0.011***
	(0.000)	(0.001)	(0.001)
Intercept	-0.189	-0.091	-0.770+
N	127687	71225	56462
r^2	0.08	0.08	0.06

Models also control for petition type (6 vars), employer NAICS (26 vars), state/territory of employment (54 vars), wage level (5 vars), and visa category (3 vars).
* p<.05, ** p<.01, *** p<.001

Table 7. OLS Regression Predicting Likelihood of Wage Level At or Above Local Median on LCA, One Year Pre- and Post-Memo (IT Occupations Only), with Employer F.E.

	(1) All LCAs
Post-Memo	0.050***
	(0.002)
"Computer Programmer" SOC Code	-0.060***
	(0.003)
Lawyer-Filed	0.026***
	(0.003)
Post*Programmer	-0.038***
	(0.005)
Post*Lawyer-Filed	-0.010**
	(0.003)
Programmer*Lawyer-Filed	0.013**
	(0.005)
Post*Programmer*Lawyer-Filed	0.004
	(0.007)
Employer Fixed Effects (722 vars)	Yes
Intercept	0.079
N	193470
r^2	0.19

Model also controls for full-time status, ln(total workers on LCA), petition type (6 vars), state/territory of employment (48 vars), and visa category (3 vars).
* p<.05, ** p<.01, *** p<.001

Table 8. OLS Regression Predicting Likelihood of SOC Code for "Computer Programmer" Listed on LCA, One Year Pre- and Post-Memo (IT Occupations Only), with Employer F.E.

	(1) All LCAs
Post-Memo	-0.108***
	(0.003)
Lawyer-Filed	-0.010***
	(0.003)
Post*Lawyer-Filed	0.007+
	(0.004)
Employer Fixed Effects (722 vars)	Yes
Intercept	0.022
N	193,234
r^2	0.26

Model also controls for full-time status, ln(total workers on LCA), petition type, state/territory of employment (48 vars), wage level (5 vars) and visa category (3 vars).
* p<.05, ** p<.01, *** p<.001

Table 9. OLS Regression Predicting Likelihood of Wage Level At or Above Local Median on LCA for Monofilers*, One Year Pre- and Post-Memo (IT Occupations Only)
*i.e., organizations that either exclusively or never file LCAs through lawyers

	(1) All LCAs	(2) Lawyer-Filed	(3) Self-Filed
Post-Memo	0.042***	0.054***	0.017***
	(0.001)	(0.002)	(0.002)
"Computer Programmer" SOC Code	-0.133***	-0.134***	-0.067***
	(0.003)	(0.004)	(0.004)
Post*Programmer	0.035***	0.038***	0.027***
	(0.005)	(0.008)	(0.006)
Wald Test of Lawyer [Post*Programmer] = Self [Post*Programmer]			$\chi^2 = 1.67$
Full Time	-0.035***	-0.040***	-0.014***
	(0.001)	(0.001)	(0.001)
Ln(Total Workers on LCA)	-0.033***	-0.069***	0.001
	(0.001)	(0.002)	(0.003)
Ln(Total LCAs Filed by Org.)	-0.001**	0.001+	0.018***
	(0.000)	(0.000)	(0.000)
Intercept	-0.030	-0.027	0.558***
N	432246	301192	131054
r^2	0.07	0.07	0.1

Models also control for petition type (6 vars), employer NAICS (32 vars), state/territory of employment (54 vars), and visa category (3 vars).
* p<.05, ** p<.01, *** p<.001

Table 10. OLS Regression Predicting Likelihood of SOC Code for "Computer Programmer" Listed on LCA for Monofilers*, One Year Pre- and Post-Memo (IT Occupations Only)

*i.e., organizations that either exclusively or never file LCAs through lawyers

	(1) All LCAs	(2) Lawyer-Filed	(3) Self-Filed
Post-Memo	-0.072***	-0.051***	-0.128***
	(0.001)	(0.001)	(0.002)
Wald Test of Lawyer [Post] = Self [Post]			χ^2 = 1041.92***
Full Time	0.003***	0.001	0.011***
	(0.001)	(0.001)	(0.001)
Ln(Total Workers on LCA)	0.002*	0.007***	-0.014***
	(0.001)	(0.001)	(0.002)
Ln(Total LCAs Filed by Org.)	-0.008***	-0.005***	-0.029***
	(0.000)	(0.000)	(0.000)
Intercept	0.089	0.015	0.234*
N	432050	301192	130858
r^2	0.06	0.05	0.11

Models also control for petition type (6 vars), employer NAICS (32 vars), state/territory of employment (54 vars), wage level (5 vars) and visa category (3 vars).

* p<.05, ** p<.01, *** p<.001

Table 11. OLS Regression Predicting Likelihood of SOC Code for "Computer Programmer" Listed on Lawyer-Filed LCA, One Year Pre- and Post-Memo (IT Occupations Only), with Employer F.E.

	(1) All Lawyer-Filed LCAs
Post-Memo	-0.024***
	(0.003)
Ln(Apps Filed by Lawyer in Previous Year)	0.002***
	(0.000)
Post-Memo*Ln(Apps Filed by Lawyer in Previous Year)	-0.004***
	(0.000)
Full Time	-0.002*
	(0.001)
Ln(Total Workers on LCA)	-0.006***
	(0.001)
Employer Fixed Effects (5,829 vars)	Yes
Intercept	0.306*
N	275902
r^2	0.29

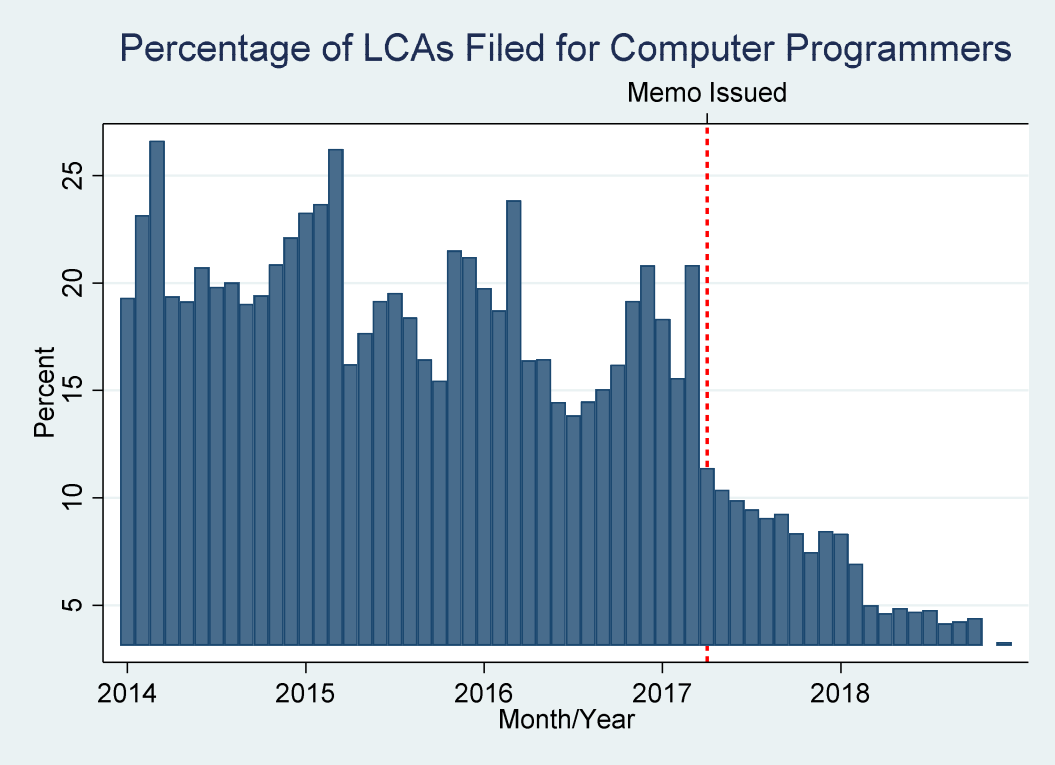
Model also controls for petition type (6 vars), employer NAICS (26 vars), state/territory of employment (52 vars), wage level (5 vars) and visa category (3 vars).
* p<.05, ** p<.01, *** p<.001

Table 12. OLS Regression Predicting Likelihood of SOC Code for "Computer Programmer" Listed on LCA, One Year Pre- and Post-Memo (IT Occupations Only)*
*Applications limited to organizations who filed between 45-55% of their total LCAs post-memo

	(1) All LCAs	(2) Lawyer-Filed	(2) Self-Filed
Post-Memo	-0.087***	-0.050***	-0.156***
	(0.002)	(0.001)	(0.003)
Wald Test of Lawyer [Post] = Self [Post]			χ^2 = 843.48***
Full Time	0.001	-0.002*	0.013***
	(0.001)	(0.001)	(0.002)
Ln(Total Workers on LCA)	0.003***	0.015***	0.001
	(0.001)	(0.001)	(0.004)
Ln(Total LCAs Filed by Org.)	-0.006***	-0.012***	-0.013***
	(0.000)	(0.000)	(0.001)
Intercept	0.114	0.024	0.128
N	205776	128693	77083
r^2	0.07	0.06	0.09

Models also control for petition type (6 vars), employer NAICS (27 vars), state of employment (51 vars), wage level (5 vars), and visa category (3 vars).
* p<.05, ** p<.01, *** p<.001

Figure 1. Percentage of LCAs Filed for Computer Programmers, Month-to-Month



APPENDIX

The results of main text Table 4 indicate that as a lawyer's specialization increases, the likelihood of their filing an LCA for a computer programmer decreases in the wake of the memo. However, when this model is estimated as a logit with identical control variables, the interaction term of interest (Post-Memo*Ln(Apps Filed by Lawyer in Previous Year)) changes direction (see Appendix Table 1).

[Insert Appendix Table 1]

To investigate this discrepancy, I first generated basic descriptive data on lawyer specialization and the proportion of their pre- and post-memo filings for computer programmers, shown in Appendix Table 2a. Generally, the descriptive data indicates that as the (logged) lagged filing volume increases, the proportion of applications for computer programmers decreased to a greater degree in the year following the memo, consistent with the linear effect indicated in main text Table 4.

[Insert Appendix Table 2a]

The most noteworthy exception to this pattern is the lawyers with the highest (logged) lagged filing volume, for whom the decrease in computer programmer LCAs post-memo is less pronounced. Within this group of highest-volume filers, 53.3 percent of applications were filed by lawyers working for Fragomen, Del Rey, Bernsen & Loewy, LLP, one of the largest and most prolific employment immigration law firms (Castañeda 2019). Of the 438,918 applications for IT positions filed by lawyers in my data, 81,653 (18.6 percent) were filed by lawyers working for Fragomen. Given the preponderance of Fragomen attorneys within the group of high-volume filers, I divided them into two sub-groups, shown in Appendix Table 2b.

[Insert Appendix Table 2b]

The stark contrast within the highest-volume filers between attorneys that are and are not employed by Fragomen seems to indicate a qualitative difference stemming from the Fragomen association. These descriptive data suggest that there may be non-linearity in the relationship between lawyer filing volume and the usage of "creative compliance" strategies by their client firms, and that this non-linearity may stem from aberrant behavior among lawyers employed by the largest immigration law firms, such as Fragomen. I therefore re-estimated the main text Table 4 model as a logit, but limited the data to applications filed by attorneys not in the highest filing volume group (i.e., I removed attorneys whose rounded logged filing volume equals 9). The resulting model, shown in Appendix Table 3, produces an interactive effect of post-memo and lawyer specialization consistent with that shown in main text Table 4. The interaction term is negative and significant, indicating that as lawyer specialization increases, they are less likely to use the title computer programmer on LCAs filed after the memo.

[Insert Appendix Table 3]

Collectively, these results suggest that the initial difference between the interactive effect shown in main text Table 4 and the logistic regression shown in Appendix Table 1 is attributable to the relative rigidity of the OLS assumption of linearity; nonetheless, the effect of lawyer specialization on the use of creative compliance by client firms is evidently mostly linear up until a certain threshold of specialization. These results further suggest that I should be attentive to inter-law firm variation that may moderate the effect of lawyer specialization on my outcomes of interest. As a final, more conservative check of the findings of main text Table 4, I therefore re-estimated the original model (including applications filed by the highest filing-volume attorneys) and included law firm fixed effects. The results of the model using law firm fixed effects, shown

in Appendix Table 4, are significant and directionally consistent with those shown in main text Table 4.

[Insert Appendix Table 4]

APPENDIX REFERENCES

Castañeda, Leonardo. 2019. “H-1B: Meet the Attorneys Behind the Tech Industry’s Favorite Visa.” *The Mercury News*. Retrieved June 10, 2020 (https://www.mercurynews.com/2019/04/21/h-1b-meet-the-attorneys-behind-the-tech-industrys-favorite-visa/).

APPENDIX TABLES

Table 1. Logistic Regression Predicting Likelihood of SOC Code for "Computer Programmer" Listed on Lawyer-Filed LCA, One Year Pre- and Post-Memo (IT Occupations Only)

	(1) All Lawyer-Filed LCAs
Post-Memo	-2.037***
	(0.052)
Ln(Apps Filed by Lawyer in Previous Year)	0.123***
	(0.004)
Post-Memo*Ln(Apps Filed by Lawyer in Previous Year)	0.154***
	(0.007)
Full Time	0.014+
	(0.007)
Ln(Total Workers on LCA)	0.131***
	(0.012)
Ln(Total Apps Filed by Org.)	0.076***
	(0.003)
Intercept	-3.861**
N	437104
Pseudo R^2	0.125

Model also controls for petition type, employer NAICS (30 vars), state/territory of employment (54 vars), wage level (5 vars), and visa category (3 vars). * p<.05, ** p<.01, *** p<.001

Table 2a. Percentage of Total LCAs Filed for Computer Programmers, Pre- and Post-Memo, by Lawyer Level of Specialization

Log(Lagged Filing Volume) - Rounded to Integer	No. LCAs Filed	% of LCAs Filed for Computer Programmers		
		Pre-Memo	Post-Memo	Change
0	23,275	6.07%	3.56%	-2.51%
1	4,009	7.32%	4.66%	-2.66%
2	6,438	18.68%	4.05%	-14.63%
3	15,100	7.51%	3.17%	-4.34%
4	34,516	7.92%	2.37%	-5.55%
5	75,332	7.03%	2.12%	-4.91%
6	105,540	9.26%	2.52%	-6.74%
7	92,817	12.78%	4.63%	-8.15%
8	42,218	15.48%	5.40%	-10.08%
9	39,673	29.26%	25.29%	-%

Table 2b. Percentage of Total LCAs Filed for Computer Programmers, Pre- and Post-Memo, by Lawyer Level of Specialization

Log(Lagged Filing Volume) - Rounded to Integer	No. LCAs Filed	% of LCAs Filed for Computer Programmers		
		Pre-Memo	Post-Memo	Change
0	23,275	6.07%	3.56%	-2.51%
1	4,009	7.32%	4.66%	-2.66%
2	6,438	18.68%	4.05%	-14.63%
3	15,100	7.51%	3.17%	-4.34%
4	34,516	7.92%	2.37%	-5.55%
5	75,332	7.03%	2.12%	-4.91%
6	105,540	9.26%	2.52%	-6.74%
7	92,817	12.78%	4.63%	-8.15%
8	42,218	15.48%	5.40%	-10.08%
9 (No Fragomen)	18,512	30.10%	22.20%	-7.90%
9 (Fragomen Attys)	21,161	28.59%	28.31%	-0.28%

Table 3. Logistic Regression Predicting Likelihood of SOC Code for "Computer Programmer" Listed on Lawyer-Filed LCA, One Year Pre- and Post-Memo (IT Occupations Only; Not Including Highest-Volume Filers)

	(1) All Lawyer-Filed LCAs
Post-Memo	-1.047***
	(0.051)
Ln(Apps Filed by Lawyer in Previous Year)	0.110***
	(0.004)
Post-Memo*Ln(Apps Filed by Lawyer in Previous Year)	-0.033***
	(0.008)
Full Time	0.062***
	(0.009)
Ln(Total Workers on LCA)	0.379***
	(0.012)
Ln(Total Apps Filed by Org.)	-0.074***
	(0.003)
Intercept	-3.547**
N	397436
Pseudo R^2	0.12

Model also controls for petition type (6 vars), employer NAICS (30 vars), state/territory of employment (54 vars), wage level (5 vars), and visa category (3 vars). * p<.05, ** p<.01, *** p<.001

Table 4. OLS Regression Predicting Likelihood of SOC Code for "Computer Programmer" Listed on Lawyer-Filed LCA, One Year Pre- and Post-Memo (IT Occupations Only), with Law Firm F.E.

	(1) All Lawyer-Filed LCAs
Post-Memo	-0.009**
	(0.003)
Ln(Apps Filed by Lawyer in Previous Year)	0.009***
	(0.000)
Post-Memo*Ln(Apps Filed by Lawyer in Previous Year)	-0.009***
	(0.000)
Full Time	0.004***
	(0.001)
Ln(Total Workers on LCA)	0.010***
	(0.001)
Ln(Total Apps Filed by Org.)	0.013***
	(0.000)
Law Firm Fixed Effects (3,787 vars)	Yes
Intercept	0.081
N	431624
r^2	0.20

Model also controls for petition type (6 vars), employer NAICS (30 vars), state/territory of employment (54 vars), wage level (5 vars), and visa category (3 vars). * p<.05, ** p<.01, *** p<.001