Immigration, Inequality, and the State:

Three Essays on the Employment of Foreign Nationals in the United States

by

Ben A. Rissing

Bachelor of Science in Mechanical Engineering, University of Virginia, 2005
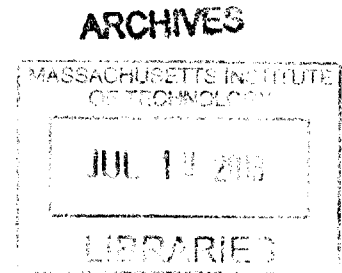Masters of Engineering Management, Duke University, 2006

Submitted to the Department of Alfred P. Sloan School of Management
in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

at the

Massachusetts Institute of Technology

September 2013

The author hereby grants to MIT permission to reproduce and to distribute publicly paper and electronic copies of this thesis document in whole or in part in any medium now known or hereafter created.

Author:_____
Department of the Sloan School of Management
July 16, 2013

Certified by:_____
Emilio J. Castilla
Associate Professor of Management
Thesis Supervisor

Accepted by:_____
Ezra Zuckerman
Professor of Technological Innovation, Entrepreneurship, and Strategic Management
Chair, MIT Sloan School of Management PhD Program

1

Abstract

This dissertation examines how U.S. immigration policies, as implemented by government agents, shape migration and key employment outcomes of foreign nationals. Using unique quantitative and qualitative data, never previously available outside the U.S. Citizenship and Immigration Services (U.S. CIS) and U.S. Department of Labor (U.S. DoL), I assess agents' work legalization decisions that annually affect hundreds of thousands of workers. In so doing, I distinguish between competing theoretical accounts of labor market inequality and regulatory failure.

In my first essay, I examine new U.S. CIS Freedom of Information Act data on the entire population of approved and denied H-1B temporary work visas over a five year period. I find that immigrant workers from sending countries with lower levels of economic development are less likely to receive approvals for initial and continuing employment requests, all else equal. In support of social boundary theories, but not theories of preference-based inequality, I find no statistically significant differences in approval outcomes among those immigrants previously granted legal standing and seeking to change jobs or employers.

In the second essay (co-authored with Professor Emilio J. Castilla), we examine quantitative data on the entire population of approved and denied labor certification requests, a key prerequisite for most employment-based green cards, evaluated by U.S. DoL agents over a 40 month period. We find that approvals differ significantly depending on immigrants' foreign citizenship, all else equal. Yet, and in support of statistical accounts of inequality, we find that approvals are equally likely for immigrant workers from the vast majority of citizenship groups when agents review audited applications with detailed employment information.

In my final essay, I analyze qualitative data from U.S. DoL analysts charged with ensuring that the hiring of immigrant workers will not adversely affect the employment of U.S. citizens. In so doing, I explore why regulation may fail to achieve its desired outcome. In contrast to past work, I proposed that well-designed and faithfully-enacted regulation may produce inconsistent or ineffective outcomes when reliant on regulated actors' truthful accounts of their activities, resulting in "anomic regulation" that masks evaluation rules and constrains regulated actors' ability to improve compliance.

Acknowledgements

For Fred W. Wendhack

Table of Contents

Introduction

On April 2nd 2007, two letters were generated by the U.S. Department of Homeland Security (U.S. DHS) that would dramatically shape the employment prospects of two skilled foreign nationals seeking to work in the United States. Both of these individuals were well-qualified, having received bachelor's degrees in the field of Computer Engineering. Further, both had received job offers to work at Microsoft Corporation in identical Systems Analysis and Programing positions that paid $76,000 annually. One of these two workers was Canadian, and the other was Indian. Yet, each individual received a very different physical notification from the U.S. DHS regarding their pending H-1B temporary work visa applications, a necessary prerequisite allowing them to live and work in the United States. The Canadian applicant was approved, while the Indian applicant's request was denied. These two real examples highlight disparity in the process by which immigrant credentials and qualifications may be evaluated by government agents charged with implementing federal immigration regulations. Yet these two immigrants are not alone. Hundreds of thousands of foreign workers undergo such assessments in the United States each year.

This dissertation examines how U.S. immigration policies, as implemented by agents acting on behalf of the federal government, shape migration and key employment outcomes of foreign nationals. While important studies have deepened our understanding of processes contributing to labor market inequality, relatively little attention has been directed to the role of government in shaping such unequal outcomes. The three chapters of this dissertation make use of unique quantitative and qualitative data to draw important theoretical, empirical, and practical implications for the literatures on inequality, employment, and regulation.

Each year millions of individuals cross national boarders for employment opportunities. These migrations are driven by interconnected global workforces, variations in earning potential among countries, and work opportunities, among others. Further, an increasing global population and changing climate may lead to greater flows of migrants in the future.

Destination countries, such as the United States, have long sought to manage the admission of foreign workers and coordinate their stay. Through employment-based work visa programs, government agents assess the qualifications of potential immigrants and hiring efforts of U.S. employers, resulting in the approval or denial of a foreign worker employment request. Scholars have argued that individuals and organizations are affected by broader institutional forces, notably including the policies and decisions of governments. This said, we are rarely privy to the decisions of government agents that may affect key employment outcomes. This dissertation uses new data, never previously available for academic analysis, to examine inequality mechanisms and theories of regulatory failure that may shape government agents' decisions in the largest U.S. immigrant work authorization programs.

In my first essay, titled "Inequality in the Work Visa Approvals of U.S. Immigrants," I examine the largest *temporary* employment-based admission pathway by which immigrants may work in the United States, the H-1B temporary work visa system. Using unique data obtained through the Freedom of Information Act, I analyze the decisions of U.S. CIS agents across the entire population of H-1B cases evaluated over a five year period. I find that immigrants from less developed sending countries are more likely to have their initial and continuing employment visa requests denied, controlling for key factors including salary, education, degree field, occupation, industry, timing of application request, and whether the application meets key U.S. CIS evaluation criteria. Immigrants previously granted H-1B visas with "current" legal status

are also subject to government approval when seeking to change jobs or employers. In support of social boundary theories, but not theories of preference-based inequality, I find no statistically significant differences in approval outcomes among those immigrants previously granted legal standing and seeking to change jobs or employers. Findings from this work have implications for theories of immigrant labor market assimilation, in addition to theories of inequality, social closure, and social boundaries.

In the second essay (co-authored with Professor Emilio J. Castilla), we examine quantitative data for the U.S. DoL labor certification program in a study titled "Statistical- or Preference-based Inequality in the Employment of Foreign Nationals." Labor certification approval is a key prerequisite for the majority of foreign nationals seeking an employment-based green card, the largest *permanent* pathway by which immigrants may work in the United States. Using quantitative data on all approved and denied labor certification evaluations reached over a 40 month period, we find approvals significantly differ depending on immigrants' foreign citizenship, all else equal. Regarding the largest groups of foreign workers seeking certification, also termed "new immigrant groups" in the literature, we find that Asian applicants are more likely to receive approval, while Latin American applicants are less likely to receive approval, relative to Canadian individuals, all else equal. We are also in a unique position to empirically differentiate between statistical and preference-based theories of inequality using unique data on the subpopulation of applications selected for audit, and thus are reviewed with detailed employment-relevant information. In support of statistical accounts of inequality, we find that approvals are equally likely for immigrant workers from the vast majority of citizenship groups when agents review audited applications with detailed employment information.

In contrast to the first two essays that empirically distinguish between competing explanations of labor market inequality, my third and final essay uses qualitative data to explore why government regulation may fail to achieve its desired outcome. In this essay, titled "The Paradox of Anomic Regulation," I analyze interview data from 48 U.S. DoL agents that evaluate labor certification applications. These agents are charged with ensuring that the hiring of immigrant workers will not adversely affect the employment of U.S. citizens. Scholars have argued that regulation may produce ineffective or inconsistent outcomes due to excessive discretion afforded to government regulators, unclear or symbolic legislative processes, unreasonable and inordinately legalistic laws, and regulatory capture through responsive regulation. In contrast to these arguments, I propose that well-designed and faithfully-enacted regulation may nonetheless fail to achieve desired outcomes when reliant on regulated actors' truthful accounts of their activities. This may result in "anomic regulation," characterized by perceptions of normlessness and lack of rule, as evaluation rule confidentiality and limited feedback may constrain the ability of both regulators and regulated actors to improve compliance outcomes. Through interview data with actual government decision makers and program administrators, I examine how agents may confidently reach regulatory judgments according to stated regulations, yet simultaneously perceive that their legitimate evaluations fail to achieve desired statutory outcomes.

Findings from these three essays also have several additional implications pertaining to theory and practice. First, the government evaluations under study in this dissertation are rarely observed, and as such, organizational data and census records generally fail to account for those individuals that seek legal employment in the United States but are denied by lawful government decisions. The processes that shape these outcomes have not received detailed study in the

literature. Further, and given that current laws mandate the equitable evaluation of foreign national applications regardless of their place of origin, these essays included recommendations to minimize or avoid the inequality in the employment evaluations under study in this work.

Inequality in the Work Visa Approvals of U.S. Immigrants

Ben A. Rissing[1]
Massachusetts Institute of Technology

Abstract

This study examines how U.S. immigration policies, as implemented by government agents, shape migration and key employment outcomes of skilled foreign nationals. Using a unique dataset, which encompasses the entire population of 1,441,856 H-1B temporary work visa requests evaluated by government agents from May 2005 to April 2010, I assess whether agents' visa approval and denial decisions are shaped by immigrants' sending country characteristics. Through this program, government agents mediate a key institutional boundary: access to the U.S. labor market, by conferring or withholding legal standing to potential immigrants. While no formal evaluation criteria pertains to immigrant country of origin, I find that immigrant workers from sending countries with lower levels of economic development are less likely to receive approvals for initial and continuing employment requests, all else equal. Further, and in support of social boundary theories but not theories of persistent preference-based inequality, I find no statistically significant differences in approval outcomes among those immigrants previously granted legal work authorization and seeking to change jobs or employers. The paper concludes by discussing the implications of these findings for theories of inequality and labor market mobility, in addition to practical considerations regarding the efficient and fair administration of immigration policy.

The employment of immigrant workers in the United States is a topic that has received great theoretical and policy attention. The United States has long sought to attract foreign nationals and coordinate their stay. Today, immigrants comprise 15 percent of the U.S. labor force (U.S. Census Bureau 2012), and scholars have argued that skilled foreign nationals disproportionately contribute to domestic patenting, startup creation, and scholarly work (Kerr and Lincoln 2010; Hunt 2011). Researchers have thus been keenly interested in factors that shape these foreign individuals' migration decisions and subsequent destination country employment (see Massey et al. 1993; Waters and Eschbach 1995; or Freeman 2006 for reviews). Studies have suggested that select immigrants may experience unequal destination country labor market outcomes due to organizational sources of inequality inside firms (see, e.g. Castilla 2008), variations in immigrants' educational investments (Hirschman and Wong 1984; Friedberg 2000), and immigrant sending country characteristics (Chiswick 1978; Borjas 1987; Jasso and Rosenzweig 1990a, 1990b; Tubergen, Mass and Flap 2004), among others.

Yet, existing immigration and labor market theories rarely account for the employment approval decisions of destination country governments and the agents acting on their behalf. In many developed countries, government agents assess the qualifications of immigrant workers, resulting in the approval or denial of migration and employment requests. With regards to immigrant workers, we are rarely privy to the subtleties of destination countries' legal immigration selection processes, and heretofore we have been unable to study how such work authorization decisions shape the employment of individuals. Frequently unobserved are those

potential immigrants who attempt to legally migrate to, or work in, a destination country but are nonetheless turned away due to the decisions of government agents.[2]

In the United States, a key context in which government agents play a major role in shaping the work outcomes of individuals is through the implementation of employment-based immigration policies, specifically visa reviews. By law, employment-based immigration into the United States today contains no formal evaluation criteria pertaining to immigrant country of origin, and immigrant workers are selected based upon their skills and qualifications (see Title VII of the 1964 Civil Rights Act and the Hart-Celler Immigration Act). Despite available information about the content of visa evaluation criteria, little is known about how the migration and employment outcomes of potential immigrants are shaped by the visa evaluations of government agents. Just as key studies have argued that hiring managers play a critical role in affecting inequality within organizations (see, e.g., Petersen and Saporta 2004; Fernandez and Sosa 2005; Fernandez and Friedrich 2011; Castilla 2011), so too may the work authorization decisions of government agents differentially shape the employment of specific immigrant groups in the United States.

Studying the impact of these government agent decisions is critical, as U.S. immigration authorities may view immigrants from specific sending countries as relatively more desirable than others (Jasso 1988; Calavita 1992:172; Ngai 2003; Ramji-Nogales et al. 2007; Ramji-Nogales et al. 2009; Rissing and Castilla 2012). For instance, immigration border control agents may stereotype foreign nationals by sending country to determine which individuals should receive detailed and time-consuming entry inspections (Gilboy 1991). The United States has

---

[2] For a parallel discussion of the risks inherent in selection bias when studying employment outcomes, see, e.g., Fernandez and Weinberg (1997) and Castilla (2005).

long positioned itself as a land of opportunity for foreign nationals, yet the decisions of immigration authorities may disadvantage select immigrant groups, all else equal.

This study investigates the employment authorization decisions of government agents, through the analysis of a dataset containing information on the entire population of both approved and denied foreign workers seeking H-1B temporary work visas in the United States over a period spanning five federal fiscal years. The H-1B work visa is reserved for skilled foreign workers of "distinguished merit and ability" (U.S. CIS 2010a, 2010b), who typically hold a minimum of a bachelor's degree (see Lowell 2001; Kapur and McHale 2005: 54; or Mithas and Lucas 2010 for a policy discussion of this visa). Similar to hiring processes in organizations, government agents assess immigrant qualifications for a described job opportunity in this work visa assessment. The unique data for this study have never before been publicly available outside of U.S. Citizenship and Immigration Services (U.S. CIS), and the critical visa decision outcomes in this dataset have shaped hundreds of thousands of skilled foreign workers' employment outcomes annually, in positions ranging from technicians to corporate managers and surgeons.

Despite new interest in how applicants' legal status affects immigrant outcomes in the United States (Menjívar 2006; King et al. 2012; Menjívar and Abrego 2012), recent studies have been unable to examine the process by which their legal status is conferred, and any inequality that may exist within such assessments. I make initial steps to address this question by examining a critical aspect of legal foreign-born workers' careers – the authorization of employment status – within the largest (and likely most economically significant) temporary employment visa system in the United States. These key work authorization decisions are reached by government agents acting on behalf of U.S. CIS within the U.S. Department of Homeland Security (U.S. DHS). For

the first time in the literature, I specifically assess whether any visa approval disparities exist among qualified immigrants from different sending countries seeking employment in the United States through the H-1B temporary work visa program. Through this visa program, government agents approve or deny the key employment requests of foreign workers, including: (1) initial hiring, (2) three-year employment continuation, (3) change of job within an existing employer, and (4) change of employer.

Consistent with the literature on the labor market experiences of U.S. immigrants (Chiswick 1978; Borjas 1987; Jasso and Rosenzweig 1990a, 1990b; Tubergen, Mass and Flap 2004), I examine whether disparities in visa approvals for immigrants with the same measured skills may be attributable to variations in immigrant sending country characteristics, such as level of economic development. Further, I study visa approval outcomes while controlling for key factors including immigrants' annual offered salary, highest degree, degree field, occupation, industry, month of application receipt, and whether the application meets key U.S. CIS review criteria. In contrast to existing studies that frequently examine firm-level employment decisions or samples of workers, I analyze the process by which U.S. CIS agents evaluate immigrant human capital across every hiring, promotion, and employment continuation request that has taken place among all foreign workers seeking H-1B temporary work visas at every U.S. employer over the span of five federal fiscal years.

Labor market inequality may be attributable to decision makers with a "taste" for discrimination or preference for workers belonging to particular groups (Becker 1957). Along these lines, studies have explored persistent inequality shaped by status-based attributions and stereotyping (Zelditch 1968; Berger et al. 1977; England 1992; England and Browne 1992; Ridgeway 1997; Jasso 2001). In contrast, scholars have suggested that when groups compete for

a livelihood they may reduce competition by excluding outsiders deemed to be inferior or unsuitable (frequently identified via observable characteristics), through a process described as social closure (Weber 1978; Parkin 1979; Weeden 2002). Consistent with this view, social boundary theories suggest that bias will be more likely to emerge in decisions that confer membership or access to a social group – such as immigrant visa evaluations awarding legal work authorization (see Lamont and Molnar 2002 for a review). Through the analysis of government agents' visa approval and denial determinations reached for a variety of employment events, I empirically distinguish between these two competing theoretical explanations of unequal labor market outcomes (persistent taste-based preferences versus bias present at social boundaries).

Employing Skilled Immigrants in the United States

Each year, government agents review hundreds of thousands of H-1B visa requests to determine whether potential immigrants are qualified to work in specified U.S. jobs based on their human capital. These key visa decisions, based on a paper application and reached without meeting the foreign national in person, shape immigrants' ability to reside and work in the United States. Today, potential immigrant workers are evaluated through a system of federal guidelines pertaining to the skills of these individuals. Moreover, with the passage of the 1965 Hart-Celler Immigration Act, immigrant admissions are no longer limited by country-specific quotas (for a discussion of immigrant admissions to the United States while under the 1882 Chinese Exclusion Act, see Calavita 2000). Rather, current visa evaluation systems mandate fairness and equality, regardless of immigrant nationality or place of origin.[3]

---

[3] See also the academic literature seeking to understand the intended effects of equal employment opportunity laws (Kalev et al. 2006; Tomaskovic-Devey and Stainback 2007), and the joint role of both firms and the government in these processes (see Edelman and Suchman 1997).

Immigrant Sending Country Economic Conditions and Labor Market Inequality

Scholars have argued that foreign nationals' country of origin may affect their desirability as determined by immigration authorities (Jasso 1988; Gilboy 1991; Calavita 1992:172; Ngai 2003; Ramji-Nogales et al. 2007; Ramji-Nogales et al. 2009; Rissing and Castilla 2012; Hainmueller and Hangartner 2013). Immigrants from less developed sending countries may be particularly disadvantaged during labor market assessments made in industrialized destination countries, such as the United States. The prior experiences of immigrants originating from sending countries with less similar institutions, occupational structures, and technical systems to those used in a destination country may be perceived to be less valuable. Thus, immigrants with the same measured skills may nonetheless experience unequal labor market outcomes associated with variations in the economic conditions of their sending country (see e.g. Chiswick 1978, 1979; Borjas 1987, 1988; Jasso and Rosenzweig 1990a, 1990b; Friedberg 2000; Tubergen, Mass and Flap 2004).

In the United States, government assessment of immigrant credentials during the review of key employment-based visas is intended to be fair and merit-based, specifically protecting immigrants regardless of nationality or place of origin.[4] Yet, government agents' evaluations too may be shaped by perceptions regarding the value of immigrant human capital from particular sending countries when these foreign workers seek employment. This leads to this study's first theoretical proposition, *that initial employment visa approvals will be more likely for immigrants originating from sending countries with higher levels of economic development (as measured by annual GDP per capita), all else equal.*

---

[4] For a discussion of the federal regulations that govern the lawful entry and employment of foreign nationals, see Higham 1955; Soysal 1994: 126; Richardson and Lester 2004; Zolberg 2006; Jasso and Rosenzweig 2009; Jasso 2011; and Rissing and Castilla 2012.

Scholars of inequality have sought to understand when unequal outcomes, such as those described above, may arise in labor market settings. Some attribute inequality to employers or decision makers with a "taste" for discrimination (Becker 1957). Such taste-based theories of inequality describe persistent unequal labor market outcomes resulting from decision makers' preferences and stereotypes regarding specific demographic groups. Similar mechanisms are proposed in the research on status-based attributions, arguing that observable differences may inform stereotypes and expectations that affect work-relevant outcomes (Zelditch 1968; Berger et al. 1977; England 1992; England and Browne 1992; Ridgeway 1997; Jasso 2001). These authors have argued that such biased attitudes and beliefs may produce inequality in a wide variety of work-relevant context.

In contrast to these theories predicting persistent bias, scholars have argued that labor market inequality may be context-specific and thus more likely to arise surrounding specific employment events. Petersen (2000) and Petersen and Saporta (2004), for instance, argue that inequality may be most likely to occur when job applicants are initially evaluated for an employment opportunity, rather than subsequent promotion or termination decisions pertaining to current employees. Early work on social closure argues that groups may seek to monopolize opportunities by excluding individuals deemed to inferior or ineligible (Weber 1974; Parkin 1979; Weeden 2002). Membership may be precluded to individuals based on any visible characteristic (Weber 1974: 342). Domestic competition over high-skilled jobs may thus lead government agents to exclude select foreign national workers when approval will confer legal work authorization status and in turn U.S. labor market access.

Scholars of social boundaries have similarly argued that unequal outcomes may be more likely to arise during decisions that confer membership or access to a social group (for a review,

19

see Lamont and Molnar 2002). Socially constructed boundaries, such as "legal" or "documented" status among immigrants, have received great attention from a variety of academic disciplines and have been argued to be key structural components of inequality (see for instance Jasso and Rosenzweig 1990a; Portes and Zhou 1993; Portes 1995: 24; Alba and Nee 2003:53; Menjívar 2006; Massey and Sanchez 2010; King et al. 2012; Menjívar and Abrego 2012). Social boundaries (also referred to as "bright" boundaries, for instance, in Zolberg and Woon 1999; Alba 2005) are unambiguous institutionalized barriers that shape members' life chances and social standing. In the case of the authorization of immigrants' legal employment opportunities, government agents are the exclusive gatekeepers of this unique and critical boundary that determines which foreign nationals are, and are not, eligible to legally work and reside in a destination country.

Scholars have argued that bias may exist in the evaluation of potential immigrant candidates where approval confers legal entry into a destination country or membership (Jasso 1988; Gilboy 1991; Calavita 1992:172; Ngai 2003; Ramji-Nogales et al. 2007; Ramji-Nogales et al. 2009; Hainmueller and Hangartner 2013). Similarly, studies of in-group and out-group bias have found that U.S. citizens' negatively regard immigrants described as "undocumented." Yet, U.S. citizens regard "documented" immigrants as similar to Americans themselves (the in-group) on dimensions of warmth and competence (Lee and Fiske 2006).

Through the H-1B temporary work visa program, government agents control a key institutional boundary: access to the U.S. labor market, by conferring or withholding legal standing to potential immigrants seeking initial employment or continuing employment. For these requests, approval confers "current" H-1B status and three years of U.S. employment eligibility. As these decisions confer legal status, this may trigger an assessment of immigrant

similarity to U.S. natives, and comparisons of foreign workers' sending country characteristics to

that of the United States. Sending country attributions, however, may be less salient during

evaluations of previously-vetted immigrants already in "current" legal status seeking to change

job or change employer. If such requests are denied, the immigrant may continue to work with a

previously approved employer and job, provided this opportunity still exists.[5] This leads to the

study's second theoretical proposition, according to theories of social boundaries, *that visa*

approvals will be equally likely for immigrant workers during employment requests that do not

confer or extend legal status (change of job, change of employer), while unequal outcomes will

affect those employment requests that do confer or extend legal status (initial and continuing

employment). Alternatively, should unequal outcomes attributable to applicant sending country

level of economic development be present across all types of employment requests, this could be

evidence of persistent bias, as described in theories of preference-based inequality and status-

based attributions. Figure 1 below contains a visual representation of the competing inequality

theories described in the second research proposition.

[Insert Figure 1 about here]

For the first time in the literature, I empirically examine the process by which U.S. CIS

agents evaluate immigrant requests to work in the United States. In particular, I address whether

foreign workers with the same measured educational credentials, seeking to migrate from

sending countries with various levels of economic development, are differentially able to

immigrate to (and remain in) the United States through initial and continuing employment

requests, and subsequent transitions between jobs and employers. The aforementioned two

research propositions are tested controlling for key variables that could account for immigrants'

---

[5] Most immigrants with "current" H-1B status thus file for requests to change jobs or employers while they are still actively employed to avoid the risk of falling out of status in the event of application denial.

differential treatment during visa evaluations, including annual offered salary, education level, occupation, industry, month of application receipt, and whether the application meets key U.S. CIS's review criteria.

Research Setting

With this study, I examine the U.S. CIS evaluation process that shapes skilled immigrants' ability to work in the United States on the H-1B temporary work visa program. Under current law, there is a limited quantity of approximately 85,000 initial employment H-1B visas available during each of the five federal fiscal years under analysis in this study (for additional policy and visa background, see Lowell 2001; Kapur and McHale 2005: 54; Mithas and Lucas 2010). In practice, however, more than 100,000 initial employment visas are granted each year as select occupations (university faculty, and academic researchers, among others) and employers (e.g., nonprofit organizations, institutions of higher education, and governmental research organizations) are exempt from this visa cap (see 20 USC 1001(a) or 8 Code of Federal Regulations (CFR) 214.2(h)(19)(iii)(c)). Here, I examine only those visas that qualify for government agent evaluation. Applications that are turned away by U.S. CIS because they were received after the annual cap on initial employment visas has been reached are not the subject of this empirical investigation and do not appear in the records available for this study. Further, while a finite quantity of initial employment H-1B visas are available each year; no constraints limit the quantity of H-1B visas that might be granted for requests for continuing employment, change of job, or change of employer.

The H-1B temporary work visa is reserved for foreign nationals of "distinguished merit and ability and who [are] coming temporarily to the United States to perform temporary services of an exceptional nature requiring such merit and ability" (see 8 CFR 214.2(h)). Consistent with

this view, academic studies have shown that foreign workers residing on the H-1B visa may make significant U.S. economic contributions during their stay (Wadhwa et al. 2007a; Wadhwa et al. 2007b; Kerr and Lincoln 2010; Hunt 2011). Employers wishing to hire a foreign worker through this program must file an I-129 Petition for a Nonimmigrant Worker, which is reviewed by agents acting on behalf of the U.S. CIS (Neufeld 2011).[6] The agents that evaluate these visa requests *never* meet the immigrant worker in person and visa approval or denial decisions are made solely on the basis of an evaluated visa application.[7] U.S. CIS agents are afforded a degree of discretion in interpreting H-1B evaluation criteria (U.S. CIS 2010b; Patrick 2012), which may lead to the inconsistent application of their legal directives (Davis 1969; Lipsky 1976, 1980; Wilson 1980). It is unknown if government agents' judgments are applied uniformly, especially given concerns regarding information transparency issues (restricted by agency jurisdiction and law), employer accountability (U.S. GAO 2011), and low U.S. CIS employee morale and job satisfaction (U.S. GAO 2012a, 2012b).[8]

U.S. CIS agents' evaluation of these visa requests pertain to three broad areas: job position, immigrant human capital, and the completeness of the application itself (for additional information on evaluation criteria, see Kurzban 2010). Job position evaluation criteria include the form and extent of compensation, and whether the job position described requires a specific course of study and theoretical knowledge. Immigrant worker criteria include whether the

---

[6] I-129 petitions are submitted to the U.S. CIS alongside a Labor Condition Application (LCA) to confirm that the salary offering for the foreign worker is above a "prevailing," or minimum, salary associated with the immigrant's occupation. The U.S. Department of Labor reviews LCAs through an automated system that is highly likely to result in a certification.

[7] Unlike some other U.S. employment-based visas, the H-1B temporary work visa does not require a "labor market test." That is, a foreign national worker can be employed on a temporary H-1B visa even if qualified and willing U.S. citizen workers might be available for the position. While this study's quantitative models control for the month of application receipt, and thus domestic economic fluctuations, the availability of qualified U.S. citizen workers are not factors affecting the evaluation of these visa requests.

[8] In an internal 2011 U.S. DHS survey, one out of every three U.S. CIS workers indicated that they were not satisfied with their job.

immigrant worker holds at least a bachelor's degree or equivalent, whether the immigrant's highest degree field matches the occupation field as specified by O*NET data,[9] whether the immigrant holds any necessary professional licensure, and whether or not the immigrant holds a non-technical degree in business or the liberal arts – which may be grounds for denial.[10] Finally, applications filed by employers previously identified by the government as "willful violators" of immigration visa programs are evaluated with greater scrutiny.

None of the aforementioned H-1B visa evaluation criteria pertain to immigrant sending country characteristics, nor do any country-specific visa quotas limit U.S. CIS agent's approval decisions. Given existing law that mandates equality on the basis of nationality during government immigration decisions, and the current H-1B temporary work visa evaluation criteria, which contain *no* provisions surrounding immigrant citizenship, we should not expect to observe differences in visa approval outcomes across citizenship groups, all else equal (see 20 CFR 656.17, Title VII of the 1964 Civil Rights Act, and also the Immigration Act of 1990).

Data

To address the question of whether key visa approval outcomes may vary by immigrant sending country characteristics, I analyze internal U.S. CIS records on the entire population of *all approved and denied* H-1B temporary work visa requests across *all work classifications* evaluated between May 2005 and April 2010. These records were obtained through two years of negotiations and discussions across multiple federal departments including the U.S. Department of Homeland Security (U.S. DHS), U.S. Citizenship and Immigration Services (U.S. CIS), U.S. Government Accountability Office (U.S. GAO), and National Science Foundation (NSF), among

---

[9] Additional information on O*Net can be found at http://www.onetonline.org/

[10] If an immigrant has obtained a college degree in business or the liberal arts without further credentials, this immigrant may not be eligible for an H-1B visa. For more information see *Matter of Michael Hertz Assoc., 19 I&N Dec. 558 (Comm. 1988)*.

others. This culminated in a Freedom of Information Act (FOIA) request describing the

individual-level H-1B records stored within U.S. CIS. This request was subsequently approved,

processed, and completed in August of 2011 (see Calavita 1992:10-17 for a discussion of the

challenges of obtaining immigration data through the FOIA, and Kerr and Lincoln 2010 for a

description of data constraints that have limited past empirical study of the H-1B program). The

released files include detailed information on the characteristics of the immigrant worker

(country of citizenship, highest degree level, and highest degree field), occupation (salary and

job title), employer (name and industry), and the government agent review process (visa

approval outcome, work classification, and date of application receipt). With regards to the

immigrant worker-level approval data sought for this study, personal correspondence with the

U.S. DHS Director of the Office of Immigration Statistics indicates that "there is no precedent

where these data have been made available in individual form to the public."

The unique records obtained for this research describe the full population of 1,441,856 visa

applications filed by 246,378 domestic employers between May 2005 and April 2010. This

dataset includes 684,629 applications for initial employment, 461,512 applications requesting

continuing employment, and a further 205,090 and 53,374 applications requesting a change in

employer or change in occupation, respectively.[11] The approval rate of these applications varied

by the requested work classification, including applications for initial employment (87.7 percent

approved), change in employer (93.5 percent approved), continuing employment (95.6 percent

approved), and change in occupation (96.2 percent approved).[12]

---

[11] The dataset includes a further 31,618 applications representing petition amendments, and 5,633 applications for foreign nationals seeking concurrent employment with a secondary firm. Approval and denial determinations are available for these applications but are not evaluated in this study.

[12] Internal memorandums obtained from the U.S. CIS History Office and Library indicate that these approval rates are consistent with those reached in the mid-1990s (see U.S. Immigration and Naturalization Services 1999).

Immigrants in this dataset claimed citizenship from 226 distinct countries, the largest of which is India, followed by China and Canada, respectively comprising 52.1, 8.6, and 3.9 percent of all applications over this five-year period. Consistent with other studies of labor market inequality among foreign workers in the United States (Borjas 1987; Jasso and Rosenzweig 1990; Tubergen, Mass and Flap 2004, among others), this data includes key controls to account for differences associated with variations in immigrants' sending country, including distance from the United States (measured in thousands of miles between capital cities with a mean value of 6.62), sending country income inequality (measured using Gini ratios, with a mean value of 0.36),[13] and application volume (the natural log of the quantity of visa applications received by country per year, with a mean value of 7.85). With specific attention to this study's theoretical propositions, I control for immigrants' sending country level of economic development, measured as the natural log of year- and country-specific GDP per capita, with a mean value of 7.77 (or $2,236 USD).

Regressions further include broad controls for the world region associated with each immigrant's country of origin. Due to this great diversity in sending countries, and for simplicity reasons, sending countries are aggregated into seven world regions (Asia, Europe, Canada, Latin America, Africa, The Middle East, and Australia and Oceania). For regression analyses, Canada is the reference category among these world regions, as Canada and the United States have a number of commonalities, including similar GDP growth, levels of unemployment, English language fluency, and geographic proximity (Lipset 1990). Further, survey evidence suggests that Americans' have strong feelings of favorability toward Canada (Jones and Saad 2012). The

[13] A Gini ratio of zero represents complete income equality in a country where all citizens have identical income, while a Gini value of one expresses the maximum level of income inequality where all wealth is held by a single individual.

data available for this study allows for detailed controls pertaining to the characteristics and qualifications of the immigrant. H-1B immigrant worker salaries are relatively high, with the mean natural log salary for an initial hire is 10.42 ($60,093). Mean natural log salaries are higher for immigrants seeking visa approval for mid-career events, including employment continuation visas with mean salaries of 10.87 ($73,135), requests to change employers with mean salaries of 11.01 ($75,245), and requests to change jobs with mean salaries of 10.96 ($75,631).

This dataset also allows for detailed analysis of immigrants' prior human capital investments, which in general are substantial. The H-1B temporary work visa program requires potential immigrant workers to hold a minimum of a bachelor's degree, or equivalent, and as a result, the vast majority of immigrants are college educated and most hold graduate degrees. Only 0.8 percent of potential H-1B immigrant workers hold less than a bachelor's degree, 44.5 percent hold bachelor's degrees, and the remaining 54.7 percent hold graduate degrees.[14] Immigrant workers with graduate degrees include individuals with masters (39.3 percent), doctorates (10.5 percent), and professional degrees (4.9 percent).[15] Further, for this research I have access to the exact titles for each of the aforementioned degrees. Degree titles are aggregated into one or more of 16 broad education categories, these classifications are utilized as controls for this

---

[14] The distribution of applications describing immigrant workers with less than a bachelors' degree are as follows: no high school diploma (0.1 percent of all applications), a high school diploma (0.2 percent), less than one year of college (0.1 percent), one or more years of college but no degree (0.3 percent) and those with associate's degrees (0.2 percent).

[15] Several prior academic studies have suggested educational investments obtained abroad may be less valuable to destination country employers (Friedberg 2000; Mattoo et al. 2008). Evidence from the H-1B Standard Operating Procedures (the U.S. CIS visa decision guidance manual) indicates that government agents too may discount immigrants' prior educational investments if these are obtained aboard. Specifically, the Procedures instruct government agents as follows: "If the beneficiary is educated outside the U.S., determine whether the foreign education is equivalent to a United States degree. Just because the degree says it is a bachelor's degree does not necessarily mean that it is equivalent to a United States bachelor's degree" (U.S. CIS 2010b: 8). Unfortunately, the electronic records retained by the U.S. CIS do not track the country in which an immigrant's highest education is obtained (U.S. CIS 2010a: 21).

study's quantitative analysis and also to evaluate if a given application met the U.S. CIS

evaluation criteria regarding an immigrant's investment in occupation-relevant human capital.[16]

The largest degree classification in this study is engineering, held by 23.8 percent of all

immigrants, followed by computer science and business degrees, which described a further 17.2

and 13.9 percent of all immigrants, respectively.

Each application further includes detailed information on the immigrant worker's occupation,

employer, and industry. Occupation-level information is provided in the form of a three-digit

Dictionary of Occupational Titles (DOT) classification. Immigrant workers described in H-1B

visa applications seek employment in 121 different DOT classifications, with the most common

being "Occupations in Systems Analysis and Programming" (43 percent of all applications),

"Occupations in College and University Education" (6.9 percent) and "Accountants, Auditors,

and Related Occupations" (4 percent). Applications are additionally filed from employers within

a variety of different industries, identified by North American Industry Classification System

(NAICS) codes, which classifies businesses by industry according to similarity in the processes

they utilize to produce goods or services. The most common industries described in applications

are "Custom Computer Programming Services," (24.7 percent of all applications), "Colleges,

Universities and Professional Schools" (9 percent) and "Computer Design and Related Services"

(6 percent).

Information on the day and year in which an application is received by the U.S. CIS are

additionally encoded in this dataset. This timing data allows for the control of macro-level

economic variations between May 2005 and April 2010 that may have affected the review of

---

[16] These degree fields include agriculture, art, business, communications, engineering and technology, education, liberal arts, foreign languages, medicine, mathematics and statistics, natural sciences, psychology, legal professionals, social sciences, computer science, and philosophy, religion and theology.

these applications. The quantity of applications received by the U.S. CIS declined slightly in the

wake of the 2008 financial recession and slowly began to recover thereafter. In federal fiscal

year 2007, 319,908 applications were received by U.S. CIS, while 289,170 and 248,897 were

field in 2008 and 2009, respectfully.

Finally, the aforementioned information on the immigrant, requested occupation, and

employer allow for the control of whether an H-1B visa application meets certain U.S. CIS visa

evaluation criteria (see also 8 CFR 214.2(h), *Matter of Michael Hertz Associates* 19 I&N Dec.

558, Kurzban 2010, or U.S. CIS 2010b for detailed descriptions of U.S. CIS agents' review

criteria). The U.S. H-1B visa evaluation process encompasses three broad areas: job position,

immigrant human capital, and application-level features, which are used to determine if an

immigrant worker is qualified to work in the position described in the application. Approval

criteria include the form and extent of compensation (represented by the natural log of immigrant

salary), whether the application describes a "specialty occupation" requiring a specific course of

study, and theoretical knowledge (which is true of 79.9 percent of applications), whether the

immigrant holds a minimum of a bachelor's degree or equivalent – which is required to qualify

for the vast majority of positions described (99.2 percent), and whether the immigrant's human

capital is relevant to the position sought.[17] Potential grounds for denial include those immigrants

holding liberal arts or business degrees (13.7 percent of applications), and applications filed by

"willful violator" employers – which are organizations that are judged by U.S. CIS to have made

either errors or misrepresentations in prior visa requests (0.2 percent).[18] Additional details on

---

[17] The definition of what job titles can be classified as specialty occupations is vague. However, Federal Statutes have explicitly identified a list of qualifying occupations (see Matter of Michael Hertz Assoc. 19 I&N Dec. 558 (Comm. 1988); 8 CFR 214.2(h)(4)(iii)(A)).

[18] U.S. CIS evaluations additionally include three criteria that were not made available for this analysis: (1) whether the immigrant has full state licensure to practice in the occupation, if such licensure is required to practice (8 CFR 214.2(h)(4)(iii)(C)(2)); (2) whether the immigrant's prior work experience may be sufficient in lieu of necessary

these application review criteria and the application characteristics described above can be found in Table 1.

[Insert Table 1 about here]

To complement these quantitative records, I make use of a key primary source document obtained from the U.S. CIS, the 2010 I-129 H-1B Standard Operating Procedures (effectively, an operations manual). This document establishes explicit sequential instructions that outline and guide the stages of government agents' H-1B visa evaluations. Further, the 2010 Procedures are the most current and up-to-date guidelines for U.S. CIS agents at the time of this writing. When relevant, portions of the H-1B Standard Operating Procedures are quoted in this article. Finally, additional details regarding the H-1B program evaluation criteria were obtained from public immigration statutes and physical U.S. DHS and U.S. CIS interoffice memorandums made available through the U.S. CIS History Office and Library in Washington D.C.

Results

H-1B Visa Approvals and Immigrant Sending Country Characteristics

In this section I evaluate the differential approval or denial of foreign nationals' H-1B temporary work visa applications as determined by agents acting at the direction of the federal government. The dependent variable of this analysis is a dichotomous variable indicating whether a given H-1B visa application is approved by a government agent (1 = approved; 0 = denied). A series of logit regressions evaluate the significance of several key variables in predicting the outcome of this visa evaluation process (for more information about logit models,

---

formal educational investments; and (3) whether the immigrant, as judged by the government agent, can meet the actual requirements of the position as specified by the petitioner and industry documents present in the application. While information sufficient to address these concerns was not made available through this FOIA disclosure, through a unique aspect of this data, unobserved variation along these important application characteristics can be controlled for and are discussed further in the paper's results section.

see Aldrich and Nelson 1984; Castilla 2007: 153). Fully-specified regressions include controls

for immigrant worker-level (job title, annual salary, education level, the natural log of the

immigrant's sending-country GDP per capita, sending country distance, sending country income

inequality, quantity of applications filed within a given year, and world region controls),

employer-level (industry), and U.S. CIS review process-level factors (the month of application

receipt by the U.S. CIS and a vector of dummy variables indicating if the a given application

meets key U.S. CIS evaluation review criteria).

These regressions allow for the testing of this study's first theoretical proposition, that is, the

greater an immigrant's sending-country level of economic development, the higher the likelihood

of initial employment visa approval, all else equal. Model 1 in Table 2 includes controls for key

immigrant worker-, occupation-, and U.S. CIS review process-level factors (for simplicity, not

all controls are reported). Results from Model 1 indicate that immigrant salary and education

level have positive and statistically significant effects on visa approval outcomes. All else equal,

an immigrant worker described in an H-1B application with a one-unit higher natural log salary

is 12.9 percent more likely to receive an initial employment visa approval (significant at the

$p<0.001$ level).[19] Education coefficients show that immigrant workers with less than a

bachelor's degree are generally less likely to receive visa approval than those with a bachelor's

degree (the reference category) (significance levels vary between $p<0.001$ and $p<0.01$), while

those immigrant workers with a graduate education are more likely to receive approvals than

those with bachelor's degrees (significant at the $p<0.001$ level). Immigrant workers with only a

high school diploma are 18.8 percent less likely to receive visa approval than those with a

bachelor's degree, all else equal (significant at the $p<0.05$ level). In contrast, immigrants with a

---

[19] 15.1 percent = 100 x (exp(0.115)-1).

31

doctorate are 93.7 percent more likely to receive visa approval than an immigrant worker with a bachelor's degree, all else equal (significant at the p<0.001 level).

[Insert Table 2 about here]

Model 1 of Table 2 also shows that visa applications failing to meet certain U.S. CIS review criteria are less likely to receive approval. Immigrants that hold non-technical highest degrees, that is, degrees in business or the liberal arts, are 13.5 percent less likely to receive visa approval than those immigrant workers that hold comparable level technical degrees (significant at the p<0.001 level). Similarly, applications filed by employers identified as "willful violators" by the U.S. Department of Labor are 35.9 percent less likely to receive approval than those employers that had not received this designation (p<0.001).

A key finding from this study can be found in Model 2 of Table 2, which introduces a variable for the natural log of visa immigrant sending country GDP per capita. Results from this model show that immigrant GDP per capita is a positive and statistically significant predictor of visa approval (p<0.001), even with key controls for occupation, industry, immigrant education level, U.S. CIS evaluation criteria, and application month of receipt. To offer further support for this finding, Model 3 of Table 2 introduces additional key sending country controls, including distance from the United States, income inequality, H-1B application volume, and world region variables. Even with the inclusion of these additional key controls, immigrant sending country GDP per capita remains a positive and statistically significant predictor of visa approval. Model 3 of Table 2 shows that a one-unit increase in the natural log of sending country GDP per capita for an immigrant results in a 7.3 percent increase in the likelihood of visa approval, all else equal (p<0.001). This finding offers support for this study's first theoretical proposition, that initial employment visa approvals are more likely for foreign nationals from sending countries with

higher levels of economic development. Additional sending country controls show that visa

approval is less likely for immigrants from distant countries (p<0.001), while the effect of

sending country income inequality and application volume are both close to zero and are not

statistically significant. World region controls indicate that immigrants from Europe, Latin

America, and the Middle East are 22.7, 26.1, and 31.8 percent, respectively, less likely to receive

visa approvals than Canadian immigrants, all else equal (p<0.001).

Legal Work Authorization Status and Inequality for Key Employment Events

Here I address this study's second theoretical proposition, which explores if unequal

outcomes might be associated with those specific employment evaluations that confer or extend

legal work authorization status. To address this question, Table 3 contains fully-specified

regression models predicting H-1B approvals with controls identical to those present in Model 3

of Table 2. As presented earlier, Model 1 of Table 3 shows that government agents' approval of

H-1B applications seeking initial employment in the United States are more likely for those

immigrant workers from sending countries with higher GDP per capita and those that are

geographically closer to the United States (significant at the p<0.001 level). For an application

describing initial employment, a one-unit increase in immigrant sending country GDP per capita

results in a 7.3 percent increase in the likelihood of approval (p<0.001). Sending country income

inequality and application volume do not have statistically significant effects on initial

employment visa approval.

[Insert Table 3 about here]

An interesting finding of this paper can be found in Model 2 to Table 3, which contains

regression results for applications seeking continuing employment. Initial employment H-1B

temporary work visas (present in Model 1 of Table 3) are valid for a period of three years, with

33

the option to extend the visa duration for an additional three years through a continuing

employment request. It should be noted that H-1B evaluation criteria for both initial

employment and continuing employment requests are identical. This is a conservative setting in

which to examine unequal visa approval outcomes associated with immigrants' sending country

characteristics because all foreign workers seeking continuing employment are *previously*

approved to work in the same occupation, and at the same employer, described in the

application. Thus, I am able to examine whether previously approved foreign workers with the

same described job, job duties, and employer experience unequal approval outcomes associated

with the economic conditions of their sending country after residing in the United States for a

period of three years. Model 2 of Table 3 shows that immigrant sending country GDP per capita

is a statistically significant predictor of approval outcomes – even among those previously

approved on an H-1B visa. An one-unit increase in sending country GDP per capita corresponds

to a 5 percent increase in the likelihood of approval (p<0.001). World region controls in Model

2 of Table 3 show that Latin American and Middle Eastern immigrants are less likely to receive

continuing employment approvals than Canadians, all else equal (significance varies between the

p<0.001 and p<0.05 level). No other world region is a statistically significant predictor of

approval outcomes.

This finding is consistent with both theoretical explanations of where employment-based

inequality may arise, that is, theories of preference-based inequality and social boundaries. To

parse these competing explanations, I next examine those employment evaluations requesting

changes of job and change of employer that do not confer or extend legal work authorization

status. Before continuing, it should be noted that a U.S. CIS interoffice memorandum pertaining

to the evaluation of continuing employment H-1B visas indicates that "a recent review of CIS

practices has shown that in certain instances, adjudicators have been questioning prior

determinations where there is no material change in the underlying facts as a matter of routine"

(Yates 2004). This memo provides some intuition as to why applications for continuing

employment may be denied, even when these applications describe foreign workers previously

approved to work with the same job, job duties, and employer.

Government agents evaluate visa requests pertaining to a variety of employment events, only

some of which confer three years of legal labor market access (i.e., those requests that grant

initial and continuing employment). Other requests pertain to labor market mobility, that is,

those requests to change jobs or change employers, but if denied, the foreign worker can

continue to work in a previously approved capacity. I argue immigrant requests for initial

employment and continuing employment may be subject to unequal approval outcomes

attributable to sending country attributions, while such bias may not be applied to those

previously-vetted immigrants that have successfully crossed this institutional boundary and

subsequently seek approval to change jobs or employers. To address this proposition, I now

return to Table 3. Model 3 of Table 3 predicts the likelihood of government agent approval for

requests describing previously approved foreign workers interested in changing employers. In

this model, no immigrant sending country characteristics or world regions have statistically

significant effects on approval.

Model 4 of Table 3 predicts H-1B visa requests describing foreign workers seeking to change

jobs within a previously approved employer. Model 4 also shows that no sending country

controls account for these visa approval outcomes. Immigrant sending country GDP per capita,

distance from the United States, and sending country income inequality do not have statistically

significant effects on the likelihood of visa approvals for foreign nationals seeking to transition

between jobs. No world regions controls are statistically significant predictors of visa approval requests to change jobs, with the exception of immigrants originating from Latin America and the Middle East, who are less likely to receive approvals than Canadian immigrants, all else equal (significance varies between $p<0.01$ and $p<0.05$).

Taken together regression results from Table 3 support the study's second theoretical proposition. Results here indicate that immigrant sending country level of economic development is a statistically significant predictor of work visa approvals that mediate U.S. institutional boundaries dictating those foreign workers that are eligible for legal employment. In contrast, those visa reviews pertaining to previously-vetted immigrants with current legal work authorization do not appear to be subject to these sending country attributions when seeking to change jobs or employers.

Alternative Explanations and Robustness Checks

In this section, I explore potential alternative explanations that may account for the unequal outcomes identified in this study. First, while this analysis benefits from the entire population of approved and denied H-1B temporary work visas over a period of five federal fiscal years, I cannot account for the possibility that foreign nationals of select citizenship groups differentially sort into occupations with higher likelihoods of H-1B visa approvals. While detailed occupation-level fixed effects in all of the presented regression models help to minimize this concern, I also examine specific occupations to further address this. I re-run Model 3 of Table 2 for those applications filed within the largest occupation in this dataset, "Systems Analysis and Programming" (job code 030). I again find statistically significant differences by immigrant sending country GDP per capita ($p<0.01$). This robustness check failed to converge using logit regressions for Models 3 and 4 in Table 3 given limited variation in the dependent variable for

these models. This said, linear regressions on the population of "Systems Analysis and Programing" applications with identical controls to those present in Table 3 find consistent results to those discussed in the paper.

Further, it could also be that U.S. CIS agents, conscious of the U.S. cap of approximately 85,000 H-1B initial employment visas issued in a given year during the five federal fiscal years evaluated in this study, may consciously disadvantage immigrants from the largest sending countries in an effort to reduce strain on the quantity of available visas. To account for this possibility, a regression with the same controls as those present in Model 3 of Table 2 is run on the largest population of initial employment H-1B visa requests that are cap-exempt; those applications describing occupations in college and university education (job code 090) in colleges, universities, and professional schools (NAICS code 611310), totaling 44,110 observations. Results from this analysis show that qualified immigrants from higher GDP per capita sending countries are more likely to be granted visa approvals, even when the quantity of available visas is not a consideration ($p < 0.01$).

It could also be that the observed positive correlation between applicant sending country GDP per capita and initial employment approval outcomes may be influenced by the large population of applications describing Indian immigrant workers (53.4 percent of all initial employment requests). Even if this large population of workers is excluded from the sample, logit regression results from Table 2 and linear results from Table 3 are consistent with the findings in the main text. Similarly, results may be being affected by specific bias against workers from the Middle East (see Bakalian and Bozorgmehr 2009: 146 for a discussion).[20] To

[20] For this analysis, Middle Eastern countries include applications describing the following citizenship groups: Bahrain, Cyprus, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, Yemen-Aden and Yemen-Sanaa.

account for this possibility, the main logit regressions from Table 2 and 3 were run excluding the population of applications describing Middle Eastern workers and consistent findings to those present in Table 2 are found. Notably, immigrant worker sending country GDP per capita remains a statistically significant predictor of application approval even in separate regressions predicting visa approvals *among* applications describing Middle Eastern immigrants (20,741 applications, p<0.005).

Variations in approval outcomes by immigrant sending country may also be due to non-random variations in the quality of legal representation used by employers to prepare and file the H-1B applications that are the subject of this quantitative analysis. Each year, the U.S. CIS begins accepting initial employment H-1B visa applications on the first business day of April. The timely receipt of these applications is of great importance as applications received even a few days after the beginning of the filing season may be excluded from consideration if the annual cap of 85,000 visas has been reached. To avoid the risk that an application may not be considered due to a late submission, experienced immigration law firms are recognized to frequently coordinate mass overnight express deliveries of applications to the U.S. CIS. To explore the possibility that law-firm quality may affect evaluation outcomes attributable to sending country characteristics, I rerun the regression models from Table 2, including only initial employment applications received on the first business day of April each year. I find consistent results in which applicants from sending countries with higher levels of economic development are more likely to receive approval outcomes, all else equal (p <0.011).

I also separately examine all applications filed by employers that submit only a single initial employment request during the time period under study, as firms that make use of immigrant labor less frequently may have more limited knowledge of immigration statutes or may be less

likely to use legal support from prominent immigration law firms (Galanter 1974). Even among this population of firms that only rarely file applications, I find that immigrant level of economic development has a positive and statistically significant effect on approval outcomes (p<0.001).

Finally, despite the fact that the U.S. CIS H-1B temporary work visa evaluation criteria do not pertain to the health of the U.S. labor market or the relative availability of U.S. citizen workers in a given occupation, it could be that immigrants from specific sending countries might have been affected differently by the 2008 financial recession. The quantity of initial employment visa requests decreased by 20 percent from the year immediately before, to the year immediately after, September of 2008. Further, after 2008 the limited quantity of 85,000 annual initial employment H-1B visa took much longer to be reached (U.S. CIS 2008, 2009). This implies a lower demand for skilled foreign workers after the recession, which may have affected the perceived value of foreign workers' qualifications post-recession. To account for this possibility, I re-run the analyses present in Table 2 for the twelve months prior to, and immediately after September of 2008. Regression results show a positive and statistically significant coefficient for immigrant sending country GDP per capita both directly before and directly after the start of the 2008 recession; however the magnitude of the coefficient did increase in size in the year following the recession. Taken together, these supplementary analyses provide additional support for the main research propositions pertaining to unequal visa approval outcomes associated with differences in immigrants' sending country level of economic development.

Discussion and Conclusion

The U.S. economy continues to rely on skilled immigrants (NSF 2010), a group that is subject to substantial federal regulation and oversight, but that also has been shown to make

significant U.S. economic contributions (Wadhwa et al. 2007a; Wadhwa et al. 2007b; Kerr and

Lincoln 2010; Hunt 2011). Each year, agents acting at the direction of the U.S. government

mediate and clearly shape a key institutional boundary affecting skilled foreign workers, legal

access to the U.S. labor market either by conferring or withholding work visa authorization. This

review process affects hiring and promotion outcomes at hundreds of thousands of U.S.

employers annually. A variety of scholars have argued that destination country laws and

immigration policies shape foreign nationals' labor market experiences (Higham 1955; Piore

1979; Portes and Zhou 1993; Soysal 1994: 126; Portes 1995: 24; Alba and Nee 2003:53;

Richardson and Lester 2004; Zolberg 2006; Jasso and Rosenzweig 2009; Jasso 2011; Massey

and Sanchez 2010). Yet, we are rarely privy to the subtly of destination country immigration

laws or how such policies affect potential immigrant workers. For the first time in the literature,

this study assesses how the individual-level evaluation of immigrant workers, as assessed by

agents acting at the direction of the federal government, and thereby shapes inequality in skilled

foreign workers' ability to migrate and work through a variety of employment evaluations.

This study empirically examines a unique dataset containing employer-, individual-, and

occupation-level information on all approved and denied H-1B temporary work visas evaluated

by government agents spanning a period of five federal fiscal years. Through the analysis of this

data, never before available outside the U.S. DHS, I assess two theoretical propositions

pertaining to the role of immigrant sending country characteristics in shaping unequal visa

approval outcomes. First, my analysis reveals that visa access – a key prerequisite to working in

the United States for the majority of foreign nationals who legally immigrate for employment

reasons – may vary systematically based on immigrant workers' sending country characteristics.

Specifically, I find that immigrants seeking initial employment visas from sending countries with

higher levels of economic development are more likely to receive approvals, all else equal. Scholars have previously argued that immigrants from sending countries with higher levels of economic development (and thus greater similarity to the United States) tend to receive greater destination country labor market rewards (Chiswick 1978; Borjas 1987; Jasso and Rosenzweig 1990a, 1990b; Tubergen, Mass and Flap 2004). Yet, to my knowledge, no prior study has identified that government agents' visa approval decisions may also disadvantage immigrants from less developed countries seeking entry to work in the United States. Thus, immigrants with the same measured skills but originating from less developed sending countries may not only receive unequal labor market rewards, but may be less likely to be able to participate in destination country labor markets due to statistically significant higher incidence of visa denials.

Further, I find that immigrants from sending countries with lower levels of economic development that have resided in the United States for a three year period on an H-1B visa and are seeking continuing employment within occupations and employers where they were previously approved are also disadvantaged. While scholars have suggested that destination country experience may reduce initial labor market inequalities among immigrants (Chiswick 1978; Borjas 1988:62; Jasso and Rosenzweig 1990a:237-307), this does not appear to affect government agents' assessments of immigrants that have accrued three years of domestic work experience on the H-1B visa. This finding may be due to the fact that government agents charged with visa evaluation do not meet the immigrant worker in person, and thus, they are likely not privy to the specifics of any destination country-specific expertise, language proficiency, or knowledge that cannot be distilled into a submitted visa application.

Given the nature of inequality in this visa approval system, I argue that unequal outcomes may be associated with decisions that allow foreign nationals to traverse a key institutional

41

boundary: legal access to a destination country labor market (for a review of literature examining institutional boundaries, see Lamont and Molnar 2002). I find unequal visa approval outcomes associated with sending country level of economic development in visa reviews that confer the ability to work in the United States (initial employment, and continuing employment). Yet, such inequality is not observed for those visa evaluations that shape labor market mobility (change of job or employer) and do not directly affect the immigrants' legal standing in the destination country. This finding suggests that studies seeking to understand the labor market experiences and economic incorporation of skilled immigrants in the United States should attend to key government decisions that affect the legal status of foreign workers, as these institutional boundaries may be important sources of inequality. If these work authorization decisions remain unobserved, findings may be distorted as government visa approval decisions non-randomly shape the immigrant population at risk of labor market participation.

Future work to further explore the role of destination country government and employers in shaping foreign workers' employment outcomes could build upon the findings identified here in several productive directions. One interesting extension pertains to understanding how government decisions regarding foreign workers' visa status might shape these individuals' careers relative to similar U.S. citizen employees within a single organization. The data requirements for such a study would be substantial, involving the collection of individual-level visa decision outcomes with longitudinal employment data of both U.S. citizens and foreign workers. Yet, such a study would allow for the examination of whether differences in immigrant workers' compensation and career mobility relative to U.S. natives might be shaped by (1) employer willingness to sponsor visa applications, (2) government agent visa approval decisions, or (3) employer-level inequality.

Second, future research may also seek to evaluate government agents' attitudes toward immigrants from specific countries of origin by surveying government agents directly. Such research could examine government agents' approval and denial determinations in a controlled and randomized setting involving fictional visa applications in which immigrant demographic data is manipulated.

Regarding the practical contributions of this research, the unequal visa approval outcomes observed in this uniquely comprehensive dataset raises important questions regarding the fair and efficient administration of federal immigration statutes. Specifically, the empirical findings of this research suggest that discretion afforded to government agents can lead to the inconsistent application of legal mandates. As a result, one potential solution may be to create evaluation criteria that can be more objectively measured. Alternatively, given that immigrant sending country is not a formal review criterion, one solution may be to mask immigrants' observable demographic characteristics (e.g. citizenship) during government agents' review. These applications already do not collect information on immigrants' race or religious orientation. Concealing, or simply not collecting, all immigrant demographic characteristics would likely produce an evaluation process free of the risk that key visa approval outcomes could be shaped by considerations outside of formal U.S. CIS evaluation criteria, such as immigrants' sending country characteristics.

Figure 1: Theoretical Inequality Mechanisms Possibly affecting Immigrant Work Authorization

Specifics of Visa Request	Possible Inequality Mechanisms During Assessment		Evaluation Outcome
Initial Employment (Confers 3 years of "current" work authorization)	Persistent Taste-based Preferences	Bias at Social Boundaries	
Continuing Employment (Confers 3 additional years of "current" work authorization)			Work Visa Approved or Denied
Change of Employer (Immigrants with "current" authorization status may apply)			
Change of Job within Existing Employer (Immigrants with "current" authorization status may apply)			

44

Table 1: Summary Statistics for Key Dependent and Independent Variables

Variable	Mean	Percentage of Observations	Percentage Approved
Dependent Variable			
Application Approved		91.5%	Non-Applicable
Immigrant Sending Country Controls			
Natural Log (Ln) Sending Country GDP Per Capita	7.87		Non-Applicable
Sending Country Distance in Thousands of Miles	6.62		Non-Applicable
Ln Quantity of Sending Country Applications per Year	7.85		Non-Applicable
Sending Country Gini Ratio	0.36		Non-Applicable
U.S. CIS Evaluation Criteria			
Ln Salary	10.67		
Bachelor's Degree or Higher		99.2%	92.8%
Employment in a "Specialty Occupation"		79.9%	93.0%
Highest Education Field Matches Occ. Requirements		64.3%	93.4%
Immigrant's Highest Degree is Non-Technical		13.7%	92.3%
Employer is a "Willful Violator"		0.2%	82.8%
U.S. Federal Fiscal Year of Application Evaluation			
2005		7.8%	91.9%
2006		21.8%	90.9%
2007		22.5%	93.3%
2008		20.3%	92.7%
2009		17.5%	88.3%
2010		10.1%	91.6%
Immigrant Education Level			
No High School Diploma		0.1%	91.3%
High School Diploma		0.2%	89.3%
Less than One Year of College Credit		0.1%	87.5%
One or More Years of College, No Degree		0.3%	90.3%
Associate's Degree		0.2%	88.7%
Bachelor's Degree		44.5%	91.0%
Master's Degree		39.3%	93.4%
Professional Degree		4.9%	95.2%
Doctorate Degree		10.5%	96.6%
Visa Basis of Classification (Employment Request)			
Initial Employment		47.5%	87.7%
Continuation of Employment, Same Employer		32.0%	95.6%
Change of Job in Previously Approved Employment		3.7%	96.2%
Change of Employer		14.2%	93.6%
Observations (Number of Applications)		1,441,332	

Table 2: Logit Models Predicting U.S. CIS H-1B Visa Approval for Initial Employment

	(Model 1)	(Model 2)	(Model 3)
U.S. CIS Evaluation Criteria			
Ln Salary	0.115***	0.115***	0.112***
	(0.002)	(0.002)	(0.002)
Highest Education Field Matches Occ. Requirements	0.087***	0.085***	0.086***
	(0.009)	(0.009)	(0.009)
Immigrant's Highest Degree is Non-Technical	-0.145***	-0.152***	-0.157***
	(0.015)	(0.015)	(0.016)
Employer is a "Willful Violator"	-0.446***	-0.430***	-0.435***
	(0.073)	(0.073)	(0.073)
Immigrant Education Level [Ref: Bachelor's]			
No High School Diploma	0.147	0.158	0.140
	(0.171)	(0.178)	(0.180)
High School Diploma	-0.208*	-0.278**	-0.283**
	(0.095)	(0.097)	(0.101)
Less than One Year of College Credit, No Degree	-0.711***	-0.747***	-0.769***
	(0.161)	(0.165)	(0.169)
One or More Years of College, No Degree	-0.358***	-0.419***	-0.474***
	(0.075)	(0.077)	(0.079)
Associate's Degree	-0.392***	-0.466***	-0.460***
	(0.071)	(0.071)	(0.078)
Master's Degree	0.336***	0.347***	0.339***
	(0.009)	(0.009)	(0.010)
Professional Degree	0.488***	0.478***	0.471***
	(0.040)	(0.040)	(0.041)
Doctorate Degree	0.661***	0.640***	0.627***
	(0.026)	(0.026)	(0.027)
Immigrant Sending Country Controls			
Ln GDP Per Capita		0.085***	0.070***
		(0.004)	(0.007)
Distance from United States (1,000s of miles)			-0.043***
			(8.259)
Income Inequality (Gini Ratio)			0.002
			(0.001)
Ln Application volume			0.005
			(0.004)
Immigrant World Region [Ref: Canada]			
Africa			-0.060
			(0.070)
Asia			-0.130
			(0.067)
Australia and Oceania			0.112
			(0.117)
Europe			-0.257***
			(0.046)
Latin America			-0.303***
			(0.046)
Middle East			-0.383***
			(0.058)
Occupation, Industry, App Month Fixed Effects	Yes	Yes	Yes
Constant	1.377***	0.805***	1.293***
	(0.056)	(0.064)	(0.113)
Observations	663,285	660,806	636,874
Pseudo R-Square	0.07	0.07	0.07

Notes: Standard errors are in parentheses, *** p<0.001, ** p<0.01, * p<0.05 (two-tailed tests). All models include controls for employer-level characteristics (industry sector and the natural log of the quantity of applications filed by a given employer in a given year), occupation-level fixed effects (Dictionary of Occupational Titles job code), and controls at the level of the government agent review process (the month and year in which an application was reviewed, whether the occupation described is

a specialty occupations, whether the immigrant holds a degree in business or the liberal arts, whether the immigrant meets the educational requirements of the profession, and whether the application contained missing or empty fields).

Table 3: Logit Models Predicting Visa Approval for Various Employment Requests

	(Approval confers legal work authorization for 3 years)		(Approval doesn't confer legal authorization)	
	(Model 1: Initial Employment)	(Model 2: Continuing Employment)	(Model 3: Change of Employer)	(Model 4: Change of Job)
U.S. CIS Evaluation Criteria				
Ln Salary	0.112***	0.129***	0.132***	0.137***
	(0.002)	(0.003)	(0.008)	(0.004)
Highest Education Field Matches Occ. Requirements	0.086***	0.014	0.058	0.049*
	(0.009)	(0.019)	(0.054)	(0.021)
Immigrant's Highest Degree is Non-Technical	-0.157***	-0.098**	-0.009	-0.094**
	(0.016)	(0.031)	(0.088)	(0.035)
Employer is a "Willful Violator"	-0.435***	-0.808***	-1.889***	-2.124***
	(0.073)	(0.156)	(0.522)	(0.148)
Immigrant Education Level [Ref: Bachelor's]				
No High School Diploma	0.140	0.117	-0.181	0.424
	(0.180)	(0.362)	(1.273)	(0.744)
High School Diploma	-0.283**	-0.171	0.793	-0.230
	(0.101)	(0.187)	(0.750)	(0.328)
Less than One Year of College Credit, No Degree	-0.769***	-0.434	-0.713	-0.075
	(0.169)	(0.292)	(0.798)	(0.613)
One or More Years of College, No Degree	-0.474***	-0.134	0.753	0.135
	(0.079)	(0.133)	(0.628)	(0.271)
Associate's Degree	-0.460***	-0.201	0.960	0.064
	(0.078)	(0.144)	(0.721)	(0.290)
Master's Degree	0.339***	0.052**	0.144**	0.114***
	(0.010)	(0.019)	(0.055)	(0.021)
Professional Degree	0.471***	0.084	-0.174	0.255*
	(0.041)	(0.071)	(0.178)	(0.099)
Doctorate Degree	0.627***	0.111*	0.091	0.226***
	(0.027)	(0.044)	(0.129)	(0.061)
Immigrant Sending Country Controls				
Ln GDP Per Capita	0.070***	0.049***	0.010	0.024
	(0.007)	(0.012)	(0.039)	(0.018)
Distance from United States (1,000s of miles)	-0.043***	-0.033*	-0.017	-0.037
	(8.259)	(13.194)	(40.608)	(19.500)
Income Inequality (Gini Ratio)	0.002	0.003	0.007	-0.003
	(0.001)	(0.002)	(0.007)	(0.003)
Ln Application volume	0.005	0.053***	0.054*	0.007
	(0.004)	(0.007)	(0.021)	(0.009)
Immigrant World Region [Ref: Canada]				
Africa	-0.060	-0.069	-0.231	-0.129
	(0.070)	(0.112)	(0.353)	(0.169)
Asia	-0.130	0.042	-0.218	-0.026
	(0.067)	(0.105)	(0.325)	(0.161)
Australia and Oceania	0.112	0.263	0.071	0.170
	(0.117)	(0.173)	(0.506)	(0.264)
Europe	-0.257***	-0.082	0.026	-0.178
	(0.046)	(0.071)	(0.219)	(0.112)
Latin America	-0.303***	-0.155*	-0.255	-0.240*
	(0.046)	(0.072)	(0.231)	(0.114)
Middle East	-0.383***	-0.362***	-0.505	-0.367**
	(0.058)	(0.093)	(0.283)	(0.140)
Occupation, Industry, App Month Fixed Effects	Yes	Yes	Yes	Yes
Constant	1.293***	1.283***	0.794	1.715***
	(0.113)	(0.206)	(0.559)	(0.291)
Observations	636,874	439,042	50,894	197,059
Pseudo R-Square	0.07	0.04	0.05	0.06

Notes: Standard errors are in parentheses, *** p<0.001, ** p<0.01, * p<0.05 (two-tailed tests). All models include controls for employer-level characteristics (industry sector and the natural log of the quantity of applications filed by a given employer in a given year), occupation-level fixed effects (Dictionary of Occupational Titles job code), and controls at the level of the government agent review process (the month and year in which an application was reviewed, whether the occupation described is a specialty occupations, whether the immigrant holds a degree in business or the liberal arts, whether the immigrant meets the educational requirements of the profession, and whether the application contained missing or empty fields).

List of References

Aigner, Dennis J., and Glen G. Cain. 1977. "Statistical Theories of Discrimination in Labor Markets." *Industrial and Labor Relations Review* 30: 175-87.

Aldrich, John H., and Forrest D. Nelson. 1984. *Linear Probability, Logit, and Probit Models*. Beverly Hills, CA: Sage Publications Inc.

Alba, Richard, and Nee, Victor. 2005. *Remaking the American Mainstream: Assimilation and Contemporary Immigration*. Cambridge, MA: Harvard University Press.

Alba, Richard. 2005. "Bright vs. Blurred Boundaries: Second-Generation Assimilation and Exclusion in France, Germany, and the United States." *Ethnic and Racial Studies* 28(1): 20-49.

Arrow, Kenneth J. 1973. "The Theory of Discrimination." Pp. 3-33 in *Discrimination in Labor Markets*, edited by O. Ashenfelter and A. Rees. Princeton, NJ: Princeton University Press.

Bakalian, Anny, and Medhi Bozorgmehr. 2009. *Backlash 9/11: Middle Eastern and Muslim Americans Respond*. 1st ed. Berkeley and Los Angeles, CA: University of California Press.

Bielby, William T., and James N. Baron. 1986. "Men and Women at Work: Sex Segregation and Statistical Discrimination." *American Journal of Sociology* 91: 759-99.

Borjas, George J. 1987. "Self-Selection and the Earnings of Immigrants." *American Economic Review* 77: 531-53.

Borjas, George J. 1988. *International Differences in the Labor Market Performance of Immigrants*. Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Calavita, Kitty. 1992. "Inside the State: The Bracero Program, Immigration, and the I.N.S." New Orleans, LA: Quid Pro Books.

Calavita, Kitty. 2000. "The Paradoxes of Race, Class, Identity, and 'Passing': Enforcing the Chinese Exclusion Acts, 1882-1910." *Law & Social Inquiry* 25(1):1–40.

Castilla, Emilio J. 2005. "Social Networks and Employee Performance in a Call Center." *American Journal of Sociology* 110(5):1243–1283.

Castilla, Emilio J. 2007. *Dynamic Analysis in the Social Sciences*. 1st ed. Emerald Group Publishing Limited.

Castilla, Emilio J. 2008. "Gender, Race, and Meritocracy in Organizational Careers." *American Journal of Sociology* 113(6): 1479–1526.

Castilla, Emilio J. 2011. "Bringing Managers Back In." *American Sociological Review* 76(5):667-694.

Chiswick, Barry R. 1978. "The Effect of Americanization on the Earnings of Foreign-born Men." *Journal of Political Economy* 86(5): 897-921.

Chiswick, Barry R. 1979. "The Economic Progress of Immigrants: Some Apparently Universal Patterns." Pp. 357-99 in *Contemporary Economic Problems*, edited by W. Fellner. Washington, DC: American Enterprise Institute.

Chiswick, Barry R. 2000. "Are Immigrants Favorably Self-Selected? An Economic Analysis." Pp. 61-76 in Caroline B. Brettell and James F. Hollifield, eds., *Migration Theory: Talking across Disciplines*. New York, NY: Routledge.

Davis, Kenneth C. 1969. *Discretionary Justice*. Baton Rouge, LA: Louisiana State University Press.

Edelman, Lauren B., and Mark C. Suchman. 1997. "The Legal Environments of Organizations." *Annual Review of Sociology* 23: 479-515.

England, P. 1992. *Comparable Worth: Theories and Evidence*. New York, NY: Aldine Transaction Publishers.

"Equal Employment Opportunities." 1964. Title 7 *U.S. Code of Federal Regulations*: 1606.1 and 1606.2. Print.

Fernandez, Roberto M., and Colette Friedrich. 2011. "Gender Sorting at the Application Interface." *Industrial Relations* 50: 591-609.

Fernandez, Roberto M., and M. Lourdes Sosa. 2005. "Gendering the Job: Networks and Recruitment at a Call Center." *American Journal of Sociology* 111: 859-904.

Fernandez, Roberto M., Emilio J. Castilla, and Paul Moore. 2000. "Social Capital at Work: Networks and Employment at a Phone Center." *The American Journal of Sociology* 105(5):1288-1356.

Fernandez, Roberto, and Nancy Weinberg. 1997. "Sifting and Sorting: Personal Contacts and Hiring in a Retail Bank." *American Sociological Review* 62: 883-902.

Freeman, Richard B. 2006. "People Flows in Globalization." *The Journal of Economic Perspectives* 20(2): 145-170.

Friedberg, Rachel M. 2000. "You Can't Take It with You? Immigrant Assimilation and the Portability of Human Capital." *Journal of Labor Economics* 18(2): 221-251.

Galanter, Marc. 1974. "Why the 'Haves' Come Out Ahead: Speculations on the Limits of Legal Change." *Law & Society Review* 9(1): 95–160.

"General Definition of Institution of Higher Education." 2011. Title 1001 *U.S. Code, 2011 Edition:* p. 168.

Gilboy, Janet A. 1991. "Deciding Who Gets In: Decisionmaking by Immigration Inspectors."
Law & Society Review 25(3): 571-599.

Hainmueller, Jens, and Dominik Hangartner. 2013. "Who Gets a Swiss Passport? A Natural
Experiment in Immigrant Discrimination." *American Political Science Review* 107(1): 159-
187.

"Hart-Celler Immigration and Nationality Act" 1965. U.S. House of Representatives 2580; *Pubic
Law*. 89-236; 79 Stat. 911. 89th Congress.

Heckman, James J. 1998. "Detecting Discrimination." *Journal of Economic Perspectives* 12:
101-16.

Higham, J. 1955. *Strangers in the Land: Patterns of American Nativism, 1860-1925*. New
Brunswick, NJ: Rutgers University Press.

Hirschman, Charles and Morrison G. Wong. 1984. "Socioeconomic Gains of Asian Americans,
Blacks, and Hispanics: 1960-1976." *American Journal of Sociology* 90: 584-607.

Hunt, Jennifer. 2011. "Which Immigrants Are Most Innovative and Entrepreneurial? Distinctions
by Entry Visa." *Journal of Labor Economics* 29(3): 417-457.

Jasso, Guillermina. 2011. "Migration and Stratification." *Social Science Research* 40(5): 1292-
1336.

Jasso, Guillermina. 1988. "Whom Shall We Welcome? Elite Judgments of the Criteria for the
Selection of Immigrants." *American Sociological Review* 53(6): 919-932.

Jasso, Guillermina, and Mark R. Rosenzweig. 1990a. "Self-Selection and the Earnings of
Immigrants: Comment." *The American Economic Review* 80(1): 298-304.

Jasso, Guillermina and Mark R. Rosenzweig. 1990b. *The New Chosen People: Immigrants in the
United States*. New York, NY: Russell Sage Foundation.

Jasso, Guillermina, and Mark R. Rosenzweig. 2009. "Selection Criteria and the Skill
Composition of Immigrants." Pp. 153-183 in Jagdish Bhagwati and Gordon Hanson, eds.,
Skilled Immigration Today: Prospects, Problems, and Policies. New York, NY: Oxford
University Press.

Jones, Jeff and Lydia Saad. 2012. "Gallup Poll Social Series: World Affairs." *Gallup*.
http://www.gallup.com/file/poll/152750/Annual_Update%20_Countries_120216%20.pdf

Kapur, Devesh, and John McHale. 2005. *Give Us Your Best and Brightest: The Global Hunt for
Talent and Its Impact on the Developing World*. Washington D.C.: Center for Global
Development.

Kalev, Alexandra, Erin Kelly, and Frank Dobbin. 2006. "Best Practices or Best Guesses? Assessing the Efficacy of Corporate Affirmative Action and Diversity Policies." *American Sociological Review* 71: 589-617.

Kerr, William R., and William F. Lincoln. 2010. "The Supply Side of Innovation: H-1B Visa Reforms and US Ethnic Invention." *Journal of Labor Economics* 28(3): 473-508.

King, Ryan D., Michael Massoglia, and Christopher Uggen. 2012. Employment and Exile: U.S. Criminal Deportations, 1908–2005. *American Journal of Sociology* 117(6): 1786–1825.

Kurzban, Ira J. 2010. *Kurzban's Immigration Law Sourcebook*. 12th ed. American Immigration Lawyers Association.

Lamont, Michele, and Virag Molnár, V. 2002. The Study of Boundaries in the Social Sciences. *Annual Review of Sociology 28*(1): 167-195.

Lee, Tiane L., and Susan T. Fiske. 2006. Not an Outgroup, Not Yet an Ingroup: Immigrants in the Stereotype Content Model. *International Journal of Intercultural Relations 30*(6): 751-768.

Lipset, S. Martin. 1990. *Continental Divide: The Values and Institutions of the United States and Canada*. New York, NY: Routledge, Chapman and Hall, Inc.

Lipsky, Michael. 1976. "Toward a Theory of Street Level Bureaucracy" in Willis D. Hawley (ed.), *Theoretical Perspectives on Urban Politics*. Englewood Cliffs, NJ: Prentice-Hall.

Lipsky, Michael. 1980. *Street-level Bureaucracy: Dilemmas of the Individual in Public Services*. New York, NY: Russell Sage Foundation.

Lowell, B. Lindsay. 2001. "Skilled Temporary and Permanent Immigrants in the United States." *Population Research and Policy Review* 20(1): 33-58.

Massey, Douglas S. and Magaly Sanchez R. 2012. *Brokered Boundaries: Creating Immigrant Identity in Anti-Immigrant Times*. New York, NY: Russell Sage Foundation Publications.

Massey, Douglas S., Joaquin Arango, Graeme Hugo, Ali Kouaouci, Adela Pellegino, and J. Edward Taylor. 1993. "Theories of International Migration: A Review and Appraisal." *Population and Development Review* 19: 431-66.

"Matter of Michael Hertz Associates." 1988. *Interim Decision #3046*, 19 I&N Dec. 558.

Mattoo, Aaditya, Ileana Cristina Neagu, and Çaglar Özden. 2008. "Brain Waste? Educated Immigrants in the US Labor Market." *Journal of Development Economics* 87(2): 255-269.

Menjívar, Cecilia, and Leisy J. Abrego. 2012. "Legal Violence: Immigration Law and the Lives of Central American Immigrants." *American Journal of Sociology* 117(5): 1380-1421.

Menjívar, Cecilia. 2006. "Liminal Legality: Salvadoran and Guatemalan Immigrants' Lives in the United States." *American Journal of Sociology* 111(4): 999-1037.

Mithas, Sunil, and Henry C. Lucas. 2010. "Are Foreign IT Workers Cheaper? U.S. Visa Policies and Compensation of Information Technology Professionals." *Management Science* 56(5): 745-765.

Moore, Thomas S. 2010. "The Locus of Racial Disadvantage in the Labor Market." *American Journal of Sociology* 116(3): 909-42.

Ngai, Mae. 2003. "The Strange Career of the Illegal Alien: Immigration Restriction and Deportation Policy in the United States, 1921-1965." *Law and History Review* 21(1): 69-107.

National Science Foundation. 2010. "Chapter 3. Science and Engineering Labor Force." *Science and Engineering Indicators: 2010*. http://www.nsf.gov/statistics/seind10/pdf/c03.pdf

Neufeld, Donald. 2011. "H-1B Visas: Designing a Program to Meet the Needs of the U.S. Economy and U.S. Workers," written testimony presented for *The Committee on the Judiciary Subcommittee on Immigration Policy and Enforcement, U.S. House of Representatives*. http://judiciary.house.gov/hearings/pdf/Neufeld03312011.pdf

Palloni, Alberto, Douglas S. Massey, Miguel Ceballos, Kristin Espinosa, and Michael Spittel. 2001. "Social Capital and International Migration: A Test Using Information on Family Networks." *The American Journal of Sociology* 106: 1262-98.

Patrick, Michael D. 2012. "The Limits of Discretion." *The Metropolitan Corporate Counsel*. http://www.metrocorpcounsel.com/articles/18394/limits-discretion

Parkin, Frank. 1979. *Marxism and Class Theory: A Bourgeois Critique*. New York: Columbia University Press.

Petersen, Trond, Ishak Saporta, and Marc-David L. Seidel. 2000. "Offering a Job: Meritocracy and Social Networks." *American Journal of Sociology* 106(3):763-816.

Petersen, Trond, and Ishak Saporta. 2004. "The Opportunity Structure for Discrimination." *American Journal of Sociology* 109(4): 852-901.

Phelps, Edmund S. 1972. "The Statistical Theory of Racism and Sexism." *The American Economic Review* 62: 659-61.

Piore, Michael J. 1979. *Birds of Passage: Migrant Labor and Industrial Societies*. New York, NY: Cambridge University Press.

Portes, Alejandro. 1995. *Economic Sociology and the Sociology of Immigration*. New York, NY: Russell Sage Foundation.

Portes, Alejandro, and Min Zhou. 1993. "The New Second Generation; Segmented Assimilation and its Variants." *The Annals of the American Academy of Political and Social Science* 530(1): 74–96.

Ramji-Nogales, Jaya, Andrew I. Schoenholtz, and Philip G. Schrag. 2007. "Refugee Roulette: Disparities in Asylum Adjudication." *Stanford Law Review* 60(2):295–411.

Ramji-Nogales, Jaya, Andrew I. Schoenholtz, and Edward M. Kennedy. 2009. *Refugee Roulette: Disparities in Asylum Adjudication and Proposals for Reform.* New York: New York University Press.

Reskin, Barbara F. 2000. "The Proximate Causes of Employment Discrimination." *Contemporary Sociology* 29(2): 319-328.

Ridgeway, Cecilia L. 1997. "Interaction and the Conservation of Gender Inequality: Considering Employment." *American Sociological Review* 62(2): 218-235.

Rissing, Ben A., and Emilio J. Castilla. 2012. "Off to a Green Start? How State Agents Shape the Employment Outcomes of Foreign Nationals by Citizenship." *Academy of Management Proceedings.*

Richardson, Sue, and Laurence Lester. 2004. "A Comparison of Australian and Canadian Immigration Policies and Labour Market Outcomes." National Institute of Labour Studies, Flinders University.

Soysal, Yasemin N. 1994. *Limits of Citizenship: Migrants and Postnational Membership in Europe.* Chicago, IL: University of Chicago Press.

"Special Requirements for Admission, Extension, and Maintenance of Status." Title 8 *Code of Federal Regulations*, 2012 Edition: Pt. 214.2. Print.

Tomaskovic-Devey, Donald and Kevin Stainback. 2007. "Discrimination and Desegregation: Equal Opportunity Progress in U.S. Private Sector Workplaces since the Civil Rights Act." *The Annals of the American Academy of Political and Social Science* 609: 49-84.

Tubergen, Frank van, Ineke Maas, and Henk Flap. 2004. "The Economic Incorporation of Immigrants in 18 Western Societies: Origin, Destination, and Community Effects." *American Sociological Review* 69(5): 704-727.

U.S. Census Bureau. 2012. *"Table 589. Foreign-Born and Native Born Populations – Employment Status by Selected Characteristics: 2010."* http://www.census.gov/compendia/statab/2012/tables/12s0589.pdf

U.S. Citizenship and Immigration Services. 2008. *"USCIS Reaches FY 2009 H-1B Cap."* http://www.uscis.gov/portal/site/uscis/menuitem.5af9bb95919f35e66f614176543f6d1a/?vgne xtoid=c5b6628090e29110VgnVCM1000004718190aRCRD&vgnextchannel=b56db6f2cae6 3110VgnVCM1000004718190aRCRD

55

U.S. Citizenship and Immigration Services. 2009. "*USCIS Reaches FY 2010 H-1B Cap.*" http://www.uscis.gov/portal/site/uscis/menuitem.5af9bb95919f35e66f614176543f6d1a/?vgne xtoid=153a1638367b5210VgnVCM100000082ca60aRCRD&vgnextchannel=b56db6f2cae63 110VgnVCM1000004718190aRCRD

U.S. Citizenship and Immigration Services. 2010a. "Characteristics of H-1B Specialty Occupation Workers." http://www.uscis.gov/USCIS/Resources/Reports%20and%20Studies/H-1B/h1b-fy-09-characteristics.pdf

U.S. Citizenship and Immigration Services. 2010b. "I-129 H-1B Standard Operating Procedures."

U.S. Government Accountability Office. 2011. "H-1B Visa Program: Multifaceted Challenges Warrant Re-examination of Key Provisions," presented as testimony before the *Subcommittee on Immigration Policy and Enforcement, Committee on the Judiciary, U.S. House of Representatives.* http://www.gao.gov/new.items/d11505T.pdf

U.S. Government Accountability Office. 2012a. "Department of Homeland Security: Preliminary Observations on DHS's Efforts to Improve Employee Morale," presented as testimony before the *Subcommittee on Oversight, Investigations, and Management, Committee on Homeland Security, U.S. House of Representatives.* http://www.gao.gov/assets/590/589517.pdf

U.S. Government Accountability Office. 2012b. "Department of Homeland Security: Taking Further Action to Better Determine Causes of Moral Problems Would Assist in Targeting Action Plans," *Report GAO-12-940 to Congressional Requesters.* http://www.gao.gov/assets/650/648997.pdf

U.S. Immigration and Naturalization Services. 1999. "Information Regarding the H-1B Numerical Limitation for Fiscal Year 1999." *INS Report 1993-99.*

Wadhwa, Vivek, AnnaLee Saxenian, Ben Rissing, and Gary Gereffi. 2007a. "America's New Immigrant Entrepreneurs: Part I." *Kauffman Foundation Immigrant Entrepreneurs Paper Series.* http://www.kauffman.org/uploadedFiles/entrep_immigrants_1_61207.pdf

Wadhwa, Vivek, Guillermina Jasso, Ben Rissing, Gary Gereffi, and Richard B. Freeman. 2007b. "Intellectual Property, the Immigration Backlog, and a Reverse Brain-Drain: America's New Immigrant Entrepreneurs, Part III." *Kauffman Foundation Immigrant Entrepreneurs Paper Series.* http://www.kauffman.org/uploadedFiles/reverse_brain_drain_101807.pdf

Waters, Mary C., and Karl Eschbach. 1995. "Immigration and Ethnic and Racial Inequality in the United States." *Annual Review of Sociology 21*: 419-46.

Weeden, Kim A. 2002. "Why Do Some Occupations Pay More Than Others? Social Closure and Earnings Inequality in the United States." *American Journal of Sociology* 108(1):55-101.

Weber, Max. 1978. *Economy and Society: An Outline of Interpretative Sociology.* Berkeley, CA: University of California Press.

Wilson, James Q. 1980. *The Politics of Regulation*. New York, NY: Basic Books.

Yates, William R. 2004. "Re: The Significance of a Prior CIS Approval of a Nonimmigrant Petition in the Context of a Subsequent Determination Regarding Eligibility for Extension of Petition Validity." *U.S. Citizenship and Immigration Services Interoffice Memorandum.* http://www.uscis.gov/USCIS/Laws/Memoranda/Static_Files_Memoranda/Archives%201998 -2008/2004/readjud_042304.pdf

Zolberg, Aristide R. 2006. *A Nation by Design: Immigration Policy in the Fashioning of America*. Cambridge, MA: Harvard University Press.

Zolberg, Aristide R., and Long Litt Woon. 1999. "Why Islam is like Spanish: Cultural Incorporation in Europe and the United States." *Politics & Society* 27(1): 5-38.

Statistical- or Preference-based Inequality in the Employment of Foreign Nationals

Ben A. Rissing[21]
Massachusetts Institute of Technology

Emilio J. Castilla
Massachusetts Institute of Technology

Abstract

This study contributes to the labor market inequality and organizations literature by investigating the role that government agents play in shaping the employment of immigrants. Using unique data on all applications for immigrant permanent labor certification evaluated by U.S. Department of Labor agents during a period of 40 months, we assess to what extent immigrants of select citizenship groups experience disparities in the labor certification process—one critical stage of the work authorization system leading to the granting of most employment-based green cards. Despite current U.S. legislation that forbids discrimination on the basis of nationality, we find that labor certification approvals differ significantly depending on immigrants' foreign citizenship, even after controlling for key factors. Additionally, because of the U.S. government's unique process of auditing applications, we are in a rare position to empirically distinguish between statistical- and preference-based accounts of labor market inequality in the labor certification process. In support of the statistical account, we find that certification approvals are equally likely for immigrant workers from the vast majority of citizenship groups when agents review audited applications with detailed employment information. This article concludes by discussing the theoretical implications of our results for addressing disparities in the employment of foreign nationals.

A substantial body of research has examined how organizational and legal factors affect inequality in labor markets (see, e.g., Edelman and Suchman 1997; Cohen et al. 1998; Dobbin and Sutton 1998; Kalev et al. 2006). While great progress has been made in documenting the many organizational sources of inequality *inside* firms (for reviews, see, e.g., Petersen and Saporta 2004; Phillips 2005; Castilla 2008; Dencker 2008), less research attention has been paid to how government, as represented by national regulatory agencies and agents acting on its behalf, also potentially affects the employment of individuals.

Historically, an important context in which government agents play a major role in shaping the employment outcomes of individuals is through the implementation of immigration policies. The United States' 1924 quota system, for example, differentially constrained immigration by country-of-origin and was eliminated by the 1965 Hart-Celler Immigration Act. This Act mandated the removal of discriminatory immigration policies on the basis of nationality (in addition to race, sex, place of birth, or place of residence) and resulted in larger immigration flows from Asia and Latin America (Liu 1992; Borjas 1994; Waters and Eschbach 1995). After the 1965 Hart-Celler Immigration Act, employment-based admission into the United States was determined by a preference system based on immigrant skills, abilities, and training.

In the U.S. today, immigration policies such as the critical labor certification process have continued to build upon these equitable foundations: Currently such policies contain no evaluation criteria pertaining to immigrant country-of-origin (see *20 CFR 656.17* and also Title VII of the 1964 Civil Rights Act). Since 1952, U.S. federal agencies have actively regulated the employment of foreign nationals by assessing immigrant credentials and evaluating work visas requested by domestic employers (see the Immigration and Nationality Act of 1952, and the Immigration Act of 1990). Agents acting on behalf of the government are therefore central in

these employment processes because they ultimately make decisions about the hiring and work authorization outcomes for hundreds of thousands of foreign-born individuals each year (Jasso et al. 2010; U.S. Department of Labor 2010; U.S. Citizenship and Immigration Services 2012). Yet, the question of whether (and to what extent) the decisions of government agents actually result in equal labor outcomes regardless of immigrant citizenship remains unanswered.

The goal of this article is to address this question by examining a crucial aspect of foreign-born workers' employment, that is, the authorization of their employment status as determined by a required review conducted by agents within the U.S. Department of Labor (henceforth U.S. DoL). In particular, this article identifies and tests two key theoretical propositions in the labor market inequality literature. First, we empirically assess, for the first time, whether any disparities exist among immigrants of different citizenship groups in the critical labor certification stage of the U.S. employment-based permanent residency system, after controlling for key individual-, occupation-, and employer-level factors. We specifically pay attention to new immigrant groups from regions of Asia and Latin America that today account for the largest percentages of legal permanent residents in the United States (see, e.g., Monger and Yankay 2012).

Second, to the extent that unequal outcomes are observed in this labor certification process, our research builds upon prior studies suggesting that employment evaluations made with detailed information may be less subject to individuals' demographic biases (see, e.g., Reskin 2000; Petersen and Saporta 2004). By testing whether any observed inequality in the U.S. labor certification process is present in evaluation scenarios where U.S. DoL agents make decisions with detailed employment-relevant information, our study is well-suited for empirically

distinguishing between two key competing explanations of unequal labor market outcomes (that is, statistical group-level attributions versus explicit group preferences).

According to the statistical theories of labor market inequality, any observed differences in employment outcomes are primarily due to rational decision makers' attributions of group-level characteristics to individuals in scenarios of imperfect information. These theories typically assume that labor market differences arise from true disparities in groups' average workforce productivity, and pre-hire data on potential workers are costly (and/or difficult) to obtain. This explanation is proposed under theories of statistical discrimination (Phelps 1972; Arrow 1973; Aigner and Cain 1977; Bielby and Baron 1986). A similar argument is found in other fields—for example, in the literature on the model minority myth (e.g., Kitano and Sue 1973; Lowe 1996; Ho 2003). In contrast, a second broad theoretical account proposes that unequal outcomes are affected less by information access and more by decision makers' beliefs or stereotypes regarding particular groups. This preference-based explanation is generally proposed, for example, by theories of taste-based discrimination (Becker 1957), status-based characteristics (Ridgeway 1997), and Latino threat (Chavez 2008), among others. While decision makers' access to detailed information appears to be critical for distinguishing between these two competing accounts of the same phenomena, scholars have not had the opportunity to study organizational settings (like ours), where similar employment decisions are reached in scenarios with varying amounts of information (see, e.g., Correll and Benard 2006; Fernandez and Greenberg 2012).

This study advances the labor market inequality and organizations literature by examining the employment decisions made for individuals of different foreign citizenship using a unique dataset describing the entire population of labor certification applications requiring U.S. DoL agent review from June 2008 through September 2011, pertaining to 198,442 immigrant workers from

190 different countries seeking employment in the United States. Our findings are clear-cut:

First, in spite of current U.S. legislation forbidding discrimination on the basis of nationality, we find that labor certification approvals differ significantly depending on immigrants' foreign citizenship, even after controlling for key complicating factors. To our knowledge, this is the first time that this has been tested by using the entire population of U.S. labor certification requests. Secondly, through an analysis of the U.S. DoL's auditing of labor certification applications, we find that government agents' decisions made with detailed employment-relevant information (collected through U.S. DoL audits) are less subject to bias based on immigrant workers' foreign citizenship than similar decisions made with limited employment-relevant information, *ceteris paribus*. Whenever appropriate, our analyses are complemented by interviews with government agents responsible for labor certification decisions during the time period under study.

Employers, Government Agents, and Inequality in Labor Outcomes

A large body of research has documented that employers and their practices play a key role in shaping career outcomes. For example, several studies have explored the many organizational mechanisms that result in the unequal distribution of wages or limited career prospects for women, racial minorities, and non-U.S. citizens (see, e.g., Petersen and Saporta 2004; Fernandez and Sosa 2005; Castilla 2008; Fernandez and Friedrich 2011 for reviews). Similarly, studies of immigrant labor market experiences have almost exclusively focused on employment and compensation outcomes determined by employers' assessments of immigrant workers (Chiswick 1978; Borjas 1988; Friedberg 2000; Tubergen, Mass and Flap 2004; for exceptions, see Rissing 2012; Menjivar and Abrego 2012).

It is also well established that firms are affected by their larger environments (Meyer and Rowan 1977; DiMaggio and Powell 1983), and therefore firm exchanges with key external

actors (including the government and labor market intermediaries) have the potential to influence

individual-level employment outcomes (see, e.g., Fernandez-Mateo 2009). In particular,

scholars have claimed that the implementation of organization-level practices and routines in

response to broad national legislation affects workplace inequality and diversity (see, e.g., Kalev

et al. 2006; Tomaskovic-Devey and Stainback 2007; Hirsh 2009). Parallel to this literature,

immigration research has stressed how destination country institutions, such as immigration and

equal employment opportunity laws, affect foreign workers' labor market outcomes (see, e.g.,

Portes and Zhou 1993; Portes 1995; Alba and Nee 2003; Massey and Sanchez 2010). For

example, in the United States, immigrants seeking to work without necessary visa credentials or

valid work authorization status may be excluded from participating in the formal labor market

(Menjivar and Abrego 2012), at risk of deportation (Ngai 2003; King et al. 2012), and barred

from reentry (see INA § 222(g) and 212(a)(9)(b)).

Despite the critical role of government in the lives and professional experiences of immigrants,

little attention has been paid to studying in-depth how agents acting on behalf of the government

affect the careers of foreign workers. In the United States, government agents frequently assess

immigrant workers and their job opportunities through a variety of employment visa and work

authorization programs in an effort to protect native U.S. workers, maintain national security, and

enforce laws limiting immigrant flows (Hunt 2011; U.S. Citizenship and Immigration Services

2012). Of particular relevance to this study are previous research claims that "severe disagreement

by applicant's region of origin" may exist among U.S. immigration authorities when evaluating the

relative desirability of foreign nationals (Jasso 1988: 919).[22] Similarly, qualitative work has

suggested that U.S. immigration inspectors profile immigrants by nationality when evaluating

---

[22] In this study, immigrant desirability attributes included applicant region of origin, sex, age, schooling, knowledge of English, having a job offer, and pre-existing domestic kinship ties, among others (Jasso 1988: 921).

those seeking admission to the United States (see Gilboy 1991: 586; also Calavita 1992: 172; and Ngai 2003).

In the next section, we develop the theoretical framework of our study. We also present our main propositions regarding the impact of immigrants' foreign citizenship on their U.S. labor certification outcomes.

Immigrant Labor Certification in the United States

In the United States, most immigrants seeking employment-based permanent residency require labor certification, a process involving interactions between government regulatory agencies and employers over the course of several crucial stages. Labor certification is required for the majority of employment-based green cards concerning "professionals with advanced degrees" and "skilled workers, professionals, and unskilled workers." This labor certification process requires the review of an application by U.S. DoL agents, resulting in approval or denial (U.S. CIS 2010). Given existing law that forbids discrimination on the basis of national origin during government immigration decisions[23] and the current labor certification evaluation criteria, which contain *no* provisions surrounding immigrant citizenship, we should expect to observe no differences in labor certification approvals made by these government agents across citizenship groups, *ceteris paribus*. As one U.S. DoL agent stated during an interview, "[citizenship data is] available, but it's not a factor in the evaluation" (ID #1). Another agent even stressed that "all [labor certification] cases are decided on their merits" (ID #4).

The Effect of Foreign Citizenship on Employment Outcomes

While government agents may claim that citizenship is not a factor in their evaluation, there

---

[23] See 8 USC Section 1152. Further anti-discriminatory provisions were included in the Immigration Reform and Control Act of 1986 (Pub. L. No. 99-603, 100 Stat. 3359) and the Immigration Act of 1990 (Pub. L. No. 101-649, 104 Stat. 4978).

are theoretical reasons to expect that labor certification outcomes may potentially depend on the citizenship of the immigrant worker. In particular, there are two broad theoretical accounts that offer partial explanations for unequal labor market outcomes based on workers' observable characteristics such as citizenship, namely, theories of statistical group-level attributions and explicit preferences (see Blank et al. 2004 or Correll and Benard 2006 for reviews).

On the one hand, statistical theories of inequality in labor market outcomes involve rational decision makers' attribution of group-level average performance characteristics to an individual when imperfect employment-relevant information is available at the time of evaluation (Phelps 1972; Arrow 1973; Aigner and Cain 1977; Bielby and Baron 1986; see, e.g., Blank et al. 2004 for a review).[24] During employment decisions such as hiring, decision makers may rely on true aggregate-level data pertaining to the average performance of a specific demographic group of which the evaluated worker is a member. Central to this theoretical account is the notion that rational decision makers lack individual-level information by which to evaluate the candidate worker, and thus consciously or unconsciously turn to observable group-level data to inform their decision.[25] A similar theoretical mechanism is proposed in the model minority myth literature, whereby population-level generalizations regarding an immigrant group's true educational achievements or relative career success may be applied to certain individuals, typically Asian immigrants (see, e.g., Kitano and Sue 1973; Lowe 1996; and Ho 2003). These theories together thus would predict unequal outcomes for different groups of immigrants based on observable demographics in the *absence of detailed individual-level information*.

---

[24] Typically, in this line of research, three major arguments have been made as to whether unequal outcomes are due to 1) true differences in *average* productivity, 2) true difference in productivity *variance*, or 3) measurement tools biasing outcomes towards or against particular groups (see Correll and Benard 2004: 94 for a review). We are explicitly addressing the first of these accounts, and all citations referring to statistical inequality make claims regarding workers' average productivity.

[25] Related research, termed error discrimination, posits that such beliefs regarding average group productivity may emerge erroneously, even when no true productivity differences are present (England 1992: 60).

By contrast, a second theoretical account typically stresses that key outcomes may be explained not through the difficulty of accessing detailed employment information, but instead through preferences and stereotypes regarding particular demographic groups. This argument has been mostly developed by theories of taste-based discrimination in which decision makers dislike individuals belonging to a particular group to such a degree that they are willing to incur some financial cost to avoid interactions (Becker 1957). Status-based theories of inequality also suggest that observable differences, such as immigrant worker citizenship, may inform stereotypes and expectations that affect work-related evaluations (Zelditch 1968; Berger et al. 1977; Ridgeway 1997; Jasso 2001). These preference-based theories suggest that decision makers' beliefs influence the outcomes of particular groups, *irrespective of detailed individual-level information* available during employment decisions.

Specifically relating to new U.S. immigrant groups from Asia and Latin America, studies have shown that non-Hispanic white Americans hold more positive views of immigration when living in proximity to Asians, but more negative views when living near Hispanics (Ha 2010). Similarly, model minority myth studies have argued that among immigrants, Asians are viewed as professionally successful and well-educated (Kitano and Sue 1973; Liu 1992; and Ho 2003). Scholars have reported, for example, that Latin American immigrants are more likely than their Asian counterparts to be employed in unskilled work even after controlling for age, education, and work experience (Mattoo 2007). Public opinion polls and academic studies also find negative stereotypes of Latino immigrants to the United States (see, e.g., Burns and Gimpel 2000; Chavez 2008). Of particular relevance to this research is a study of immigrant group perceptions in the United States showing that Asian immigrants are viewed as highly competent,

Canadian immigrants are viewed as moderately competent, and both Mexican and Latino immigrants are viewed as having low competence (Lee and Fiske 2006).

Taken together, these prior findings in the labor market inequality and immigrant stereotype literatures lead to our first theoretical proposition regarding new immigrant groups from Asia and Latin America. These two world regions currently represent the largest sources of immigrants to the United States: They collectively comprise 81 percent of all labor certification requests in the 40 months of data available for this study. Should similar general attitudes, as described above, shape government agents' evaluations, the prediction is that relative to North American immigrants, *labor certification approvals are more likely for Asian immigrant workers and less likely for Latin American immigrant workers, ceteris paribus.*

This proposition is tested controlling for key variables that could influence the certification of foreign nationals, such as salary, job skill level requirement, occupation, industry, location of job, immigrant class of admission, and month of application review (more detail is provided below).

The Effect of Employment-Relevant Information on Labor Market Outcomes

Support for the first proposition would be consistent with the two main competing explanations accounting for the unequal outcomes involving either 1) statistical group-level attributions, or 2) preferences for particular groups. While both statistical and preference-based explanations offer the same prediction of unequal labor outcomes by immigrant worker citizenship, access to detailed employment-relevant information by decision makers appears to be key for differentiating among them (see, e.g., Blank et al. 2004; Correll and Benard 2006; Fernandez and Greenberg 2012; Rubineau and Kang 2012).

Theories of statistical discrimination predict that access to individual-level information would render aggregate group-level attributions unnecessary—resulting in equal labor market

outcomes regardless of individuals' demographics after controlling for employment-relevant information. In agreement with this theoretical account, prior empirical work has suggested that employment-related evaluations made by decision makers with imperfect information are potentially subject to race or sex bias (Reskin 2000: 325), and that "opportunities to discriminate" are reduced when employment-relevant information becomes available (Petersen and Saporta 2004: 854). Similarly, the literature on the *construction* of status beliefs suggests that information challenging emerging preferences can weaken evaluators' beliefs regarding particular groups (see Ridgeway and Correll 2006). By contrast, theories of preference-based inequality would predict unequal outcomes regardless of the availability of individual-level information, as decision-makers' preferences or work-relevant stereotypes regarding certain groups would remain largely unchanged. As Correll and Bernard succinctly wrote, "While the mechanism underlying statistical discrimination is utility maximization in the face of biased or limited information, the mechanism underlying status discrimination is biased cognitive processes acting on ostensibly accurate performance information" (2006: 99).

In this study, we are in a unique position to leverage the U.S. DoL's audit activity targeting labor certification requests in order to evaluate whether employment-relevant information reduces citizenship biases in labor market outcomes, thereby distinguishing between statistical and preference-based explanations of unequal labor outcomes. Drawing on statistical explanations of labor inequality, the prediction is that government agents' decisions made with detailed employment-relevant information will likely be less subject to bias based on immigrant workers' observable foreign citizenship than similar decisions made with limited information. This leads to our second theoretical proposition, according to the statistical account of inequality, *labor certification approvals are equally likely for immigrant workers regardless of their*

citizenship when reviewed with detailed employment-relevant information, ceteris paribus.

Alternatively, observing significant unequal certification approvals by immigrant worker

citizenship regardless of the availability of detailed employment information would be in

agreement with both statistical (i.e., due to some unmeasured immigrant worker features) and/or

preference-based theoretical explanations of inequality.

Research Setting

We study the card labor certification process in the United States from June 2008 through

September 2011, pertaining to 198,442 immigrant workers from 190 countries seeking

employment authorization for work at one of 68,240 U.S. firms.[26] Since June 2008, applications

have been evaluated by a group of government agents working in one single processing center in

Atlanta, Georgia (U.S. DoL 2010a: 10). We analyze all labor certification requests (whether

approved or denied) evaluated by these agents in Atlanta. Labor certification records were

obtained through the U.S. DoL quarterly and annual disclosure program and pooled across

years.[27] This U.S. DoL review is the first key step in the evaluation of the majority of

employment-based green cards for "professionals with advanced degrees" and "skilled workers,

professionals, and unskilled workers" (that is, EB-2 and EB-3 preference categories; more detail

is provided in Appendix B).[28]

The labor certification process in the United States requires a labor market review conducted

by U.S. DoL agents, who are *randomly* assigned to applications that are evaluated *one at a time*

---

[26] An estimated three percent of these sponsoring employers are individuals filing on behalf of an immigrant worker. Applications filed by individuals comprise approximately one percent of all labor certification applications under study.

[27] For more information on the U.S. DoL Office of Foreign Labor Certification's case disclosure program and available datasets, see: http://www.foreignlaborcert.doleta.gov/quarterlydata.cfm.

[28] In 2008 and 2011, respectively, 71.4 and 74.7 percent of employment-based green cards were granted in EB-2 and EB-3 preference categories, the majority of which require labor certification (Monger and Rytina 2009; Monger and Yankay 2012).

on a *first-in first-out basis* (as stressed in multiple government agent interviews) to determine if

1) a foreign national worker is qualified to work in a given position, 2) their employment has any

adverse consequences for similar U.S. citizen workers, and 3) an employer has sufficiently

advertised for the position. Below we explain the U.S. labor certification process in detail and

describe the data that we analyze in this study.

The Labor Certification Process

In the United States, the evaluation of immigrants seeking employment-based permanent

residency and requiring labor certification involves several key steps, as depicted in Figure 1.

This study focuses on the key first stage, when labor certification decisions are reached by

government agents on behalf of the U.S. DoL (indicated by the shaded boxes in Figure 1). Prior

to submitting a labor certification application, employers provide U.S. DoL agents with details

regarding the requirements of a position. U.S. DoL agents use this information to classify the

position's skill level requirements on a four-point scale (discussed later in the paper) and to

establish an occupation-specific minimum salary that reflects the job's location and skill

requirements, referred to as a "prevailing wage." This stage is citizenship-blind.[29] Upon receipt

of the prevailing wage, an employer must then specify an employee-specific salary at parity with,

or in excess of, the government-mandated minimum.

[Insert Figure 1 about here]

The second stage of this process is central to this study because it involves a review of the

labor certification application performed by U.S. DoL agents, resulting in either approval or

denial. The criteria by which applications are evaluated contain no explicit provisions regarding

---

[29] See Burgess 2005 for explicit legal details of this process, or refer to U.S. Employment and Training
Administration Form 9141. This form can be found online at
http://www.foreignlaborcert.doleta.gov/pdf/ETA_Form_9141.pdf.

immigrant worker citizenship. Moreover, at this stage, no citizenship-specific quotas or separate

graduate-degree green card allocations limit government agents' approval.[30]

Federal filings indicate that between 75 and 181 agents worked within the U.S. DoL during

our period of study in capacities including (but not limited to) the evaluation of labor

certifications (U.S. DoL 2009: 24-5, 2012a: 22).[31] The employment decisions made by these

agents are supposed to be based on the criteria "that there are not sufficient U.S. workers able,

willing, qualified and available to accept the job opportunity in the area of intended employment

and that employment of the foreign worker will not adversely affect the wages and working

conditions of similarly employed U.S. workers" (U.S. DoL Employment and Training

Administration 2009). This labor certification process is intended to evaluate an employer's

hiring efforts and salary, and determine if a given immigrant worker is qualified to work in the

job described in the application. In this regard, much like decision makers in hiring and labor

market studies, these government agents seek to ensure that productive and qualified immigrants

are authorized to work in the United States.

By design, all labor certification applications received by the U.S. DoL describe a "failed job

search" for U.S. citizen workers, and virtually all applications contain salaries at parity with, or

---

[30] No more than seven percent of employment-based green cards can be awarded to any particular citizenship group in a given year. However, citizenship is not an evaluation criterion in the U.S. DoL labor certification review under study in this paper. In practice, the employment-based green card system creates visa processing queues that vary in length by citizenship group (see Jasso et al. 2010 for an expanded discussion). Hypothetically, forward-looking government agents' decisions could be affected by the knowledge that large-volume citizenship groups will have longer visa processing times. This could result in a higher incidence of denials among these large-volume groups in an effort to shorten processing times and ease strain on this system. In practice, these differential processing queues affect immigrants from India, China, Mexico, and the Philippines. However, applications describing immigrant workers from India (the largest group in the dataset) have the highest chances of certification approval (92.1 percent); thus there is little reason to suspect that agents' decisions are affected by such a process. Our interviews also support this.
[31] The U.S. DoL's Office of Foreign Labor Certification employed 75 workers in federal fiscal year 2008, 131 in 2009, 160 in 2010, 189 in 2011, and 181 in 2012. A minority of these staff members may have also been employed in the U.S. DoL's Washington D.C. office, which addresses program administration. We cannot determine what exact portion of these individuals review permanent labor certification requests, as opposed to temporary labor condition requests, or which are employed in support or administrative roles.

in excess of, identified prevailing wages. This system is attestation-based, meaning that the government does not require any documentary evidence to be submitted alongside non-audited certification requests. Thus, these non-audited applications include only attestations regarding the employer, job opportunity and salary, employer recruitment efforts, and the immigrant worker. In the event of an application audit, employers must be prepared to provide detailed (i.e., all) supporting documentation for their certification request. This includes specific materials such as background on the foreign national candidate, justification for the duties and educational requirements of a position, detailed hiring records, and job advertisements. Audits allow government agents in-depth access to employers' hiring records.

To date, the U.S. DoL has elected not to disclose the criteria that trigger an audit, stating "we believe making the process predictable would defeat the purpose of the audit" (quoted in Gonzalez 2005: 15; see also 69 Federal Register at 77359). That said, communications with the U.S. DoL suggest that applications are audited in a "random" and "representative" manner, but "targeted" audits would also be directed at applications with specific deficiencies (Gonzalez 2005: 15; and Cook 2005: 235). When government agents review non-audited applications (87 percent of applications during our period under study), they have limited employment-relevant information at the time they make their certification decisions (see Appendix B: Part II).

This set of audited applications provides a unique feature of this study: We are able to study similar labor market decisions (e.g., labor certifications) reached with varying amounts of employment-relevant information. Two additional key features of this study are worth noting. First, in this research setting, the government agents *never* meet the immigrant worker, and as such immigrants are evaluated based exclusively on their application. Thus, unlike previous quantitative inequality studies of hiring or promotion decisions in organizations, our results are

not weakened by any potential interpersonal dynamics either during the interview process or through individuals' performance on the job that may influence employment outcomes. Second, many immigration and organizational scholars have not had a chance to observe how government work authorization decisions may affect key employment outcomes in the formal economy. We avoid this selection issue by studying the entire population at risk of receiving labor certification, that is, both approved and denied applications (for a parallel discussion of the risks inherent in selection bias when studying career outcomes, see, e.g., Fernandez and Weinberg 1997 and Castilla 2005).

Data

In order to test our first theoretical proposition, we analyze all applications approved or denied between June 2008 and September 2011 in the U.S. DoL Atlanta, Georgia Processing Center, totaling 198,442 different observations. U.S. DoL records in our data enable us to control for detailed immigrant worker-level, employer, and occupation characteristics (described below in detail) when examining labor certification outcomes.

Foreign national workers in this dataset claimed citizenship from 190 distinct countries. Due to this great diversity, and for the sake of simplicity, immigrant worker citizenship countries were aggregated into seven world regions (listed in Appendix Table A1). To minimize any concern regarding world region heterogeneity though, a parallel set of analyses also includes controls for every citizenship group comprising more than one percent of the total sample size. Within these world region and citizenship categories, Canada was selected as the reference category in the main analyses because Canada and the United States have a number of commonalities, including similar GDP growth, levels of unemployment, English language fluency, and geographic proximity (Lipset 1990). Furthermore, recent surveys show that

Americans perceive Canadians favorably (see, e.g., Jones and Saad 2012).

Each application includes information regarding the immigrant worker's salary. The median natural log annual offered wage is 11.19 ($73,000).[32] It also provides information on the immigrant worker class of admission, defined as the type of visa the foreign national held when the labor certification application was submitted. Over the 40 months analyzed in this study, 99 percent of immigrant workers resided in the United States on a temporary basis prior to labor certification filing, specifically on one of 58 distinct visa types. For the purposes of our analyses, this class of admission visa information is aggregated into eight categories based on each visa's function.[33] The majority of immigrant workers previously had one of two types of temporary work visas: dual-intent and non-dual-intent. Dual-intent visas give foreign nationals the freedom to eventually apply for permanent residency and are generally extended to workers with specialty occupations or with unique/internationally recognized skills (including H-1B, L-1, and O-1 visa holders, among others). In contrast, non-dual-intent visas (the E-, R- and B-family of visas, among others) allow only a transient domestic stay and frequently require that a foreign national have no intention to reside domestically on a permanent basis.[34] Eighty five percent of applications describe an immigrant worker that resided on some form of work visa prior to filing, the remainder resided on visa types that usually preclude domestic employment.[35] The full breakdown of the class of admission visa types is included in Appendix Table A2.

---

[32] 18 percent of applications described an offered salary range. For this sample of applications, the bottom of the offered salary range was used in the analyses.

[33] Separate regression models were run including all 58 distinct "class of admission" visas; the results from these models (available upon request) are substantively identical to those reported here.

[34] Non-dual-intent visa holders can still apply for permanent residency, however, a visa spot-check, security screening, or border inspection could cause an individual's visa to be revoked or could bar their re-entry into the country. Conversations with U.S. DoL employees that have program oversight responsibilities indicate that government agents have no statutory mandate to review immigrant workers' visa status when evaluating labor certification applications.

[35] These non-work visas include student (4 percent), tourist (4 percent), and dependent (0.4 percent) visas. A portion

Several additional variables allow us to control for the characteristics of the 68,240

employers that filed applications on behalf of foreign nationals during the period under study.

Our analyses include fixed effects for each of twenty distinct employer industry categories. The

five largest industry categories are: "IT" (31 percent of all applications), "Other Economic

Sector" (15 percent), "Advanced Manufacturing" (12 percent), "Educational Services" (8

percent), and "Finance" (7 percent).[36] A key employer-level control is the firm's annual labor

certification filing activity, ranging from one to 4,711 applications in a given federal fiscal year.

Our analyses also control for variation in the characteristics of foreign nationals' job

opportunities. First, regression models include fixed effects for the 985 different occupation

classifications in the sample, identified at the six-digit Standard Occupation Classification (SOC)

code level. The most frequent of these occupations broadly described computer and

mathematical positions (40 percent of all applications).[37] Another key control is the U.S. DoL-

identified job skill level requirement variable, which can vary from one to four. This measure

captures the minimum education and work experience requirements of a position, in addition to

any supervisory roles. The job skill levels, as with prevailing wage determinations, are reached

through a system that is blind to the citizenship of the immigrant worker (see U.S. Employment

and Training Administration Form 9141). Skill level one, "entry," refers to routine tasks (31

percent of applications), while level two, "qualified," denotes moderately complex tasks with

limited independent judgment (39 percent). Higher skill level positions are less common and

---

of these immigrant workers managed to enter the U.S. without visa authorization or border inspection (4 percent). These workers lacked any prior visa credentials despite residing domestically; not surprisingly, they were substantially disadvantaged during the review.

[36] Alternative specifications of our regression models controlled for industry using fixed effects for each employer's six-digit 2007 NAICS code. These results were consistent with those presented in the paper.

[37] The most frequent occupations include: "Computer Software Engineer: Applications" (12.3 percent of all observations), "Computer Systems Analyst" (7.5 percent), and "Computer Software Engineer: Systems Software" (4.2 percent).

require greater expertise. Individuals in skill level three positions, classified as "experienced," exercise judgment and have supervisory authority (16 percent), while skill level four, "fully competent," positions require independent evaluation of complex problems (14 percent).

Each application record also includes the location of the employment opportunity, allowing us to control for the state in which any given foreign national would be employed. Jobs were distributed across the fifty U.S. states, Washington D.C., and several U.S. territories (California, with 19 percent of all applications, had the most work opportunities). We also control for the timing of each application's review by including a vector of dummy variables for the specific month in which an application's decision was reached. Timing controls capture any fluctuations in the quantity of incoming applications and variations in the U.S. economy. Summary statistics for the key variables are reported in Table 1.

[Insert Table 1 about here]

It should be noted that when evaluating labor certification applications, government agents have access to data on immigrant workers' education level and year of birth. Unfortunately, these variables are not available for this study due to confidentiality reasons. That said, several key controls described in this section allow us to account for some variation in immigrant workers' human capital and employment experience, including data on class of admission (i.e., student or work visa status, among others) and immigrant-specific salary. Additional analyses are presented as robustness checks later in the paper in order to minimize the potential concern of these omitted variables.[38] Also, while government agents do not have access to sex or race data on the immigrant workers, they do have access to their first, middle, and last name during the

---

[38] In particular, using immigrant class of admission data, we analyze the population of immigrant workers that resided on F-1 and J-1 student visas prior to labor certification filing to examine inequality among those immigrant workers that likely hold U.S. undergraduate or graduate degrees.

review. For confidentiality reasons, the name fields are also unavailable for this study (for more detail about these data, see Appendix B: Part II).

In order to test our second proposition, we use a classification process aimed at identifying which applications were audited—using U.S. DoL processing queue and application date information. We identify two clearly distinct populations of labor certification requests, non-audited applications (87 percent of observations, with a 91 percent approval rate, and evaluated on average within 201 days of the creation of an application's electronic record), and audited applications (13 percent of observations with a 57 percent approval rate, and evaluated on average within 731 days of electronic record creation). For additional details pertaining to this classification process, please see Appendix B: Part II.

Finally, whenever possible, our analyses of labor certification requests are complemented by interviews with a stratified sample of 40 government agents making certification decisions during the same time period as the quantitative records under study (according to federal records, between 75 and 181 U.S. DoL agents were employed during our study period in capacities that include the evaluation of labor certification requests; see U.S. DoL 2009: 24-5, 2012a: 22). For additional details, see Appendix B: Part III).

Results

Inequality in the Labor Certification of Foreign Nationals

In this section, we analyze the outcomes of labor certification applications as determined by agents acting on behalf of the government. The dependent variable of this analysis is a dichotomous variable indicating whether any given application was approved by a government agent (1 = approved; 0 = denied). A series of logit regression models reported in Table 2 provide the coefficients for several variables predicting labor certification approval. As explained in the

previous section, all models include fixed effect controls at the level of the occupation (job skill level requirement, SOC code, state of employment), immigrant worker (salary, class of admission), employer (industry, application volume), and government review process (month of evaluation).[39] These models allow for the testing of our study's first proposition, that is, whether approval is more likely for Asian immigrants and less likely for Latin American immigrants than North American immigrants from Canada (the reference category).

[Insert Table 2 about here]

Model 1 (Table 2) includes two key independent variables for employers' offered wages and the job skill level requirement, in addition to occupation, industry, work location, and application month of review controls (for simplicity, not all controls are reported in the table). Of all variables included in Model 1, the natural log of the annual offered wage is the best predictor of labor certification approval. Model 1 also suggests that U.S. DoL agents are *less* likely to certify employment positions as the job skill level requirement increases, even after controlling for occupation, location of work, and salary. All else equal, a foreign national seeking employment in a position requiring a "qualified" worker is 9.3 percent less likely to be approved than if the position had been classified as "entry-level." Similarly, a foreign national seeking employment in a position requiring an "experienced" or "fully competent" worker is 22 and 31.9 percent less likely, respectively, to receive labor certification approval than a foreign national seeking employment in an entry-level position (all significant at the 0.001 level, or p<0.001 henceforth).[40]

This observed negative relationship between government agent approval and job skill level requirement is consistent with the U.S. DoL's review guidelines—because higher job skill level

---

[39] Additional models further controlled for other aspects of the U.S. DoL review process including occupational education requirements and occupation-specific unemployment rates (available upon request). The results are substantively similar to those reported in the main tables: Occupation fixed-effects were included in the final models in lieu of these controls.

[40] -9.3% = 100% x [exp(-0.098) – 1]; -22% = 100% x [exp(-0.249) – 1]; -31.9% = 100% x [exp(-0.384) – 1].

requirements reflect increasingly stringent pre-requisites regarding prior work experience, education, special skills, supervisory authority, and language expertise in order to satisfy the demands of a particular job in the United States (see, e.g., Appendix B of the 2009 Employment and Training Administration Prevailing Wage Determination Policy Guidance: 23).[41] One government agent indicated that job skill level requirement information was useful because "you could say [when] the foreign worker is not qualified for the job: [The credentials of the foreign worker] don't match the skill set level that [the U.S. DoL has established] for the position" (ID #17). Our results support this view, as we find higher denial rates associated with immigrant workers seeking employment in jobs with higher skill requirements.

Model 2 in Table 2 introduces the main foreign national world region variables and shows that certain foreign national workers originating from specific world regions are considerably more (or less) likely to receive labor certification approval as a result of the U.S. DoL review process compared to the Canadian reference category, *ceteris paribus*. To address concerns regarding heterogeneity within world regions, Model 3 of Table 2 includes variables for all citizenship groups that constitute one percent or more of the total sample size—using this rule, 80 percent of all immigrant workers are represented using their exact citizenship as it appears on the labor certification application.[42] Model 3 of Table 2 shows that immigrant worker citizenship variables have consistent signs when compared to their associated world region variable as presented in Model 2. These world region and citizenship effects remain significant

---

[41] Further, this negative job skill level requirement pattern is observed even when taking into account additional U.S. labor market controls. Applications evaluated prior to the December 2007 financial recession also show consistent negative job skill level requirement trends, as do regressions that additionally control for occupation- and year-specific U.S. unemployment rates.

[42] For simplicity, given the small sample sizes associated with each of the citizenship groups (less than one percent of all applications) for the remaining 20 percent, these citizenships are aggregated into the "other" fields by world region. Similar models were estimated including each citizenship group, and our results did not substantively change (available upon request).

even after the inclusion of key individual-level controls for immigrant workers' class of admission, as shown in Models 4 and 5 of Table 2. In particular, regarding our first theoretical proposition, results show some substantive contrast between Asian and Latin American regions when compared to the Canadian reference category. As seen in Model 4, Asian immigrants are 13.3 percent more likely to receive labor certification than their Canadian counterparts ($p<0.01$). Latin American immigrants, by contrast, are 23 percent less likely to receive certification than Canadians ($p<0.001$). Immigrant workers originating from Africa and the Middle East are 21.1 and 16.9 percent less likely to receive labor certification than Canadians ($p<0.01$).[43]

Model 5 of Table 2 shows substantively similar results when including immigrant worker citizenship in addition to key individual-level controls for immigrant workers' class of admission. In Model 5, all citizenship groups within Asia are as likely or more likely to be granted labor certification approval when compared with the Canadian reference category. In particular, immigrant workers from India, South Korea, and Taiwan are 18.4, 21.4 and 21.4 percent more likely to receive certification than Canadians, respectively (significance varies between $p<0.001$ and $p<0.1$). By contrast, all Latin American citizenship groups in Model 5 are less likely to be granted labor certification approval when compared with the Canadian reference category (significance varies between $p<0.001$ and $p<0.01$). The most disadvantaged group is Mexican immigrants, who are 35.1 percent less likely to receive certification than Canadian immigrants ($p<0.001$). Immigrants from Brazil, Colombia, Ecuador, Venezuela, and other Latin American citizenship categories are 22, 20.9, 24.2, 18, and 15.8 percent less likely than

---

[43] We do not further address Middle Eastern immigrant workers in this study's main text due to the small sample size associated with immigrants from this world region (3.1 percent of all applications). Interested readers may refer to Bakalian and Bozorgmehr (2009: 146), for example, for a discussion of inequality and public perceptions of Middle Eastern immigrants in the United States. Further, see Marcus (2010) for a study of inequality affecting Israelis in the United States. Additional analyses predicting labor certification outcomes for specific Middle Eastern citizenship groups are available upon request.

Canadians to receive labor certification, respectively (again, significance varies between p<0.001 and p<0.1). These citizenship effects remain significant even controlling for salary, job skill level requirement, occupation, industry, work location, and month of application review.

Models 4 and 5 in Table 2 add controls for foreign nationals' class of admission, which provides some information on these immigrant workers' prior employment experience and human capital (visa coefficients are substantively similar across Models 4 and 5). Model 5 shows that not surprisingly, those immigrant workers that bypassed visa inspection or entered the country illegally are 53.2 percent less likely to receive labor certification relative to those residing on dual-intent work visas at the time of filing (p<0.001). Foreign nationals on student, tourist, or dependent visas at the time of filing are 24.7, 18.3 and 22.9 percent less likely to receive certification (significance levels vary between p<0.001 and p<0.1), while those on non-dual-intent work visas at the time of filing are 35.5 percent less likely to receive certification than individuals on dual-intent work visas at the time of filing (p<0.001).

In sum, we find strong support for our first theoretical proposition even after controlling for key factors. As can be seen in Model 4 of Table 2, immigrants from Asia are more likely, and immigrants from Latin America are less likely, to receive labor certification than Canadian immigrants. Similarly, in Model 5, which contains citizenship variables, all Asian citizenship groups are as likely, if not more so, to receive approval as Canadians. In contrast, all Latin American citizenship groups are less likely to receive labor certification approvals relative to Canadian immigrants.

Alternative Key Explanations

So far we have shown that the labor certification outcomes of foreign nationals vary by citizenship with particular attention to the effects of new immigrant groups from Asia and Latin

America. In this section, we address potential alternative explanations that may account for the inequality results of this study.

First, it is important to note that this dataset comprises the *entire* population of labor certification decisions made by government agents working for the U.S. DoL over a 40-month period. As such, the relative magnitudes of coefficients are more meaningful indicators than the coefficients' statistical significance. Model 5 of Table 2 shows that citizenship coefficients from Latin America are consistently large and negative, while Asian citizenship groups are either large and positive or close to zero, indicating parity with the Canadian reference category. The descriptive statistics in Table 1 also show great disparity in the proportion of certifications for immigrant workers from Asia and Latin America, thus providing further evidence that the observed differences in the regressions that include key controls are not the result of a statistical artifact.

Second, although our study benefits from analyzing the entire population of labor certification requests, we cannot account for the possibility that foreign nationals of select citizenship groups differentially sort themselves into specific occupations, employers, and/or geographic locations with higher likelihoods of receiving labor certification approvals. While the inclusion of immigrant worker-, employer-, and occupation-level variables in the models helps minimize this concern (that is, the non-random sorting into distinct employment opportunities), we also ran specific models to address it. Of particular interest are the estimated models equivalent to those presented in Model 3 (Table 2) for the population of foreign nationals seeking labor certification within the occupation of "Restaurant Cook" in the hospitality industry (3,829 applications, with an approval rate of 65 percent). This occupation was selected precisely because within it, the population of immigrant workers from the world regions of Asia and Latin America are the most closely balanced, such that each group composed 37 and 56 percent of the

occupation's total observations, respectively. Because few Canadian individuals applied for labor certification within this occupation, we did not use this group as the reference category; instead we used the largest world region group within this occupation, that is, immigrant workers from Latin America. A regression analysis on this population, with controls identical to that presented in Model 4 of Table 2, shows that "Restaurant Cook" immigrant workers from Asia are 42 percent more likely to receive labor certification approval than Latin American immigrants, all else equal ($p<0.1$). This, once again, provides support for our first proposition.

Third, in order to address occupation heterogeneity concern, we examine the largest occupation in this dataset: Computer Software Engineers (identified by SOC codes 151031 and 151032; totaling 44,441 applications with an approval rate of 92.25 percent). In a regression analysis limited to the sub-sample of Computer Software Engineers, and consistent with our first proposition, we still find statistically significant differences in certification outcomes across certain citizenship groups, including strong negative coefficients for applications from Africa, the Philippines, Brazil, Colombia, Venezuela, and other Regions of Latin America, relative to Canadians (significance levels vary between $p<0.001$ and $p<0.1$).

Fourth, because denials may also be attributable to particularly negligent employers or organizations that intentionally violate immigration laws, we re-ran our models excluding the small number of employers that were identified as program violators by the U.S. DoL during the time period under analysis and subsequently debarred from participating in the Permanent Labor Certification Program as per 20 CFR 656.31(f) (208 applications in our sample; see U.S. DoL 2010b for a partial list of debarred employers). Our regression findings remain consistent when these applications are excluded from analysis (results are available upon request).

Additionally, in order to address occupation and employer heterogeneity and assess whether different certification outcomes are obtained by individuals of certain citizenships who apply for the same job with the same employer, we also examine certification outcomes for a *single* occupation within a *single* employer hiring within *one* local labor market. The largest employer was a major U.S. software firm that sought to employ a large quantity of "experienced" computer software engineers specializing in systems software within a single state (2,199 applications, with an approval rate of 73.5 percent). The logit regression model predicting labor certification approval for non-audited applications reveals statistically significant positive coefficients associated with immigrant workers from the Asia world region (significant at the $p<0.05$ level).[44] Even in this conservative case within our data, we find evidence of unequal certification outcomes by citizenship, *ceteris paribus*.

As previously discussed, one aspect of this U.S. DoL labor certification process pertains to the evaluation of the immigrant worker's human capital. Unfortunately, we do not have access to the data on evaluated immigrant workers' education level. In order to mitigate this concern, once again, our analysis controls for immigrant class of admission (i.e., type of visa, which is typically significantly associated with the level of education and work experience of the immigrant worker, see, e.g., Hunt 2011). Additionally, in order to further examine this potentially important source of variation, we analyzed the sample of immigrant workers with an F-1 student visa class of admission (6,363 applications, with an approval rate of 85.4 percent), as this group of immigrant workers very likely studied at a four-year U.S. college or university before labor certification filing. A logit regression predicting approval among applications describing immigrant workers residing on F-1 student visas shows that workers from the Latin American world region are 45.4

---

[44] This logit regression included the same controls included in Model 3 of Table 2.

percent less likely to receive approval than Europeans (as very few Canadian workers are in this F-1 group), all else equal (p<0.05). In contrast, Asian immigrant workers are 61.8 percent more likely to receive approvals than Europeans, all else equal (p<0.05). Furthermore, we ran a logit regression for the population of 762 applications from immigrant workers residing on a J-1 visa (with an approval rate of 86.6 percent), generally used by students with certain types of graduate funding, completing medical residency, or postdoctoral fellows (see Hunt 2011: 423). Relative to European workers (since again there were very few Canadian workers in this J-1 visa group), Latin American immigrants were 94.5 percent less likely to be approved, all else equal (p<0.001). We find no statistically significant differences between Asian and European immigrant workers among those with a J-1 class of admission.[45] Even with some controls for educational investment, we find unequal outcomes associated with immigrant worker citizenship, *ceteris paribus* (results are available upon request).

Overall, these additional models help to increase confidence in our results, showing some systematic unequal patterns in the granting of labor certification approvals among specific groups of foreign nationals, most notably those from Asia and Latin America.

Statistical or Preference-based Inequality in the Labor Certification of Foreign Nationals?

We now turn to testing our second theoretical proposition, concerning the role of employment-relevant information in the labor certification process. By leveraging data from the U.S. DoL audit process, we are in a unique position to study similar labor certification decisions made by government agents under two different scenarios, involving either 1) *limited* or 2) *detailed* employment-relevant information. The first scenario refers to non-audited applications or "clean

---

[45] For the regressions on the population of applications describing immigrant workers with a J-1 class of admission, identical controls are used to those of Model 2 in Table 2; however, due to the small number of observations, we control for occupation using four-digit SOC codes in lieu of the six-digit codes used in the full model.

cases," which are attestation-based, meaning that the government does not require employers to submit any documentary evidence with their certification requests. The second scenario describes audited applications, in which an employer must be prepared to provide detailed documentation about the background on the immigrant worker, hiring records, job advertisements, and specifics on the duties and educational requirements of a position. Results of our analyses of labor certification outcomes under audited and non-audited scenarios appear in Table 3 below.

[Insert Table 3 about here]

Models 1 and 2 of Table 3 predict labor certification outcomes using *all* applications and a full set of controls (identical to those included in Models 4 and 5 of Table 2). Once again, in support of our first proposition, these regressions show statistically significant coefficients for immigrant workers from Asia and Latin America relative to the Canadian reference group when controlling for immigrant world region (Model 1) or citizenship (Model 2). Next, we model the approval outcomes of those applications that are evaluated with limited (Models 3 and 4 under the Non-Audited Applications heading) and detailed (Models 5 and 6 under the Audited Applications heading) employment-relevant information.

Models 3 and 4 include identical controls but predict certification outcomes only for *non-audited* applications evaluated with limited employment-relevant information (87 percent of applications, with a certification rate of 91 percent). These models show that in the absence of the U.S. DoL audit process, Asian immigrants are more likely to be approved and Latin American immigrants are less likely to be approved, relative to the Canadian immigrants, *ceteris paribus.*

One key finding of this study is presented in columns 5 and 6 of Table 3, where logit models predict labor certification outcomes *only* for applications identified as receiving an audit by the U.S. DoL (13 percent of applications, with a 56 percent approval rate). In the case of these

audited applications (that is, the decision scenario with detailed employment-relevant information), we find the coefficients for world region variables (Model 5) and the vast majority of the coefficients for citizenship variables on the approval of certification (Model 6) to be small and statistically insignificant. Particularly relevant to this study, the strong negative effects associated with immigrant workers from Mexico, Brazil, Ecuador, and other Latin American citizenship groups observed in non-audited labor certification decisions (Table 3, Model 4) are not statistically significant predictors of approval outcomes in audited evaluations (Table 3, Model 6). Concerning Asian immigrant workers, the positive effects associated with immigrants from China, Taiwan, and India estimated in non-audited certification decisions (Table 3, Model 4) are similarly not statistically significant predictors of approval outcomes in audited evaluations (Table 3, Model 6). These results thus provide strong support for the statistical theoretical account of labor market inequality.

It is important to note that the relative equality we observe among audited labor certification applications is primarily attributable not to a reduction in bias against select disadvantaged groups (Latin American immigrants in our setting), but to a reduction in favoritism targeting advantaged groups (Asian immigrants in our setting). As an attestation program, government agents must assume that employers are truthful in the information they provide, resulting in generally high approval rates for non-audited applications—it is here within our data that Asian immigrant workers appear to be favored in the certification process. That said, among audited applications, detailed hiring information is provided, and program compliance is generally found to be low, resulting in high denial rates irrespective of immigrant worker citizenship. These consistently high denial rates among audited cases, irrespective of immigrant citizenship, thus lead to statistically insignificant citizenship coefficients predicting approvals in our models.

87

Of the 19 citizenship categories in Model 6, only two Asian citizenships are statistically

significant: Japan and South Korea (significance varies from the $p<0.001$ to $p<0.01$). In order to

further investigate these two specific significant coefficients, we turned to our interviews with

government agents who evaluated audited applications during our period of study. From our

interviews, we learned that the persistent positive coefficient for South Korean immigrant workers

during audited evaluations may be partly due to the legal representation that South Korean

immigrants receive when preparing their applications. For example, one government agent stated

that South Koreans are "not lightweights," but rather "they had attorneys who were very good...

it was clear to me that these groups of attorneys either [previously] worked for the Department of

Labor or they had persons who had actually [previously] written the documentation—so there's

probably cases where they would know it probably just as good [sic] or better than the federal

workers" (ID #13). In contrast to South Korean immigrant workers, fewer audited labor

certification requests describe Japanese immigrants (only 505 observations, comprising two

percent of all audited applications). This makes it unlikely that any agent we interviewed may

have evaluated more than a handful of applications from Japanese workers during their

employment at the DoL. However, when asked about specific citizenship groups during our

interviews, those agents did not voice any impressions of Japanese immigrants.

The significant positive coefficients for South Korean and Japanese immigrant workers seem

to support statistical and/or preference-based mechanisms acting in concert—given our study's

application data, we are unable to conclude whether these findings are due to decision makers'

preferences or some unmeasured factors in our dataset. As discussed in theories of the model

minority myth (Kitano and Sue 1973; Lowe 1996; Ho 2003), select Asian demographic groups

(in this setting South Korean and Japanese) may experience favoritism due to broadly held

beliefs regarding the relative performance of these citizenship groups. Along these lines, for

instance, in its 2009 report detailing the labor certification program, the U.S. DoL specifically

discussed South Korean and Canadian immigrant workers, stating "South Korea and Canada are

full [OECD] members and described as 'high-income' countries" (U.S. DoL Employment and

Training Administration Office of Foreign Labor Certification 2010: 20). Such public

statements could potentially affect the decisions of government agents.

In summary, and in support of statistical theories of inequality, we find no difference in

certification outcomes by immigrant workers' world region, and no differences by immigrant

workers' citizenship in audit scenarios where government agents' decisions are reached using

detailed employment-relevant information (with the two exceptions above described).

Additional Analyses of the Role of Employment-Relevant Information in Labor Certification

As discussed earlier, the likelihood of labor certification approval varies dramatically

between the audited and non-audited scenarios (56 versus 91 percent). While the U.S. DoL has

stated that application audits are random, they may also be audited through "targeted" sampling

(Gonzalez 2005: 15; Cook 2005: 235). If applications describing immigrant workers from select

citizenship groups are audited at differential rates, this could explain in part the disparities in

certification outcomes observed in our full models.

As a key robustness check, we re-estimate our main models in Table 3 controlling for the

potential differences in the likelihood that any given application itself may be audited by the U.S.

DoL. In other words, we estimate the coefficients of the main labor certification approval

models (Models 5 and 6 in Table 3) correcting for the possibility of selection bias (that is, the

likelihood that applications may be differentially audited depending on the immigrant worker's

foreign citizenship). These new estimated models, predicting approval rates contingent on

applications being audited, assume a linear probability equation of labor certification approval (where the dependent variable still indicates whether any given labor certification application is approved by a government agent, 1 = approved or 0 = denied). However, the main equation is now estimated correcting for an audit selection equation (see Gronau 1974; Lewis 1974; Heckman 1976; King 2008 to learn more about these models).

[Insert Table 4 about here]

Table 4 reports the Heckman specification of the linear probability model predicting labor certification approval. The main equation results are substantively similar to those reported in the previous Table 3 (that is, Models 5 and 6). To further test our second proposition regarding the significance of citizenship as a predictor of labor certification outcomes during audited scenarios, we ran a χ^2 test of significance for the seven world regions (Table 4, Model 1) and for the 19 citizenship categories (Table 4, Model 2). While the χ^2 test shows that the world region is not significant (6.60), the χ^2 test of significance for the 19 citizenship categories is significant (because of the significance of the Korean and Japanese applications in our model). These results provide support for our second proposition that, consistent with statistical theories of inequality, labor certification approvals are equally likely across the seven world regions only when detailed employment-relevant information is available to government agents when making their labor certification decisions, *ceteris paribus*.

The selection equations of our Heckman models reported in Table 4 are of particular interest: They assess which application characteristics are associated with government agent decisions to audit an application and obtain additional employment-relevant information (see Reskin 2000: 323 for a parallel discussion). In the context of labor certifications, while applications are randomly audited, they may also be deliberately selected for audit by government agents. As a result, the

selection equation helps to account for any biases or preferences that government agents may express toward particular citizenship groups through selective auditing. As we learned from a number of interviews with U.S. DoL agents, one team of government agents reviews applications with limited information and identifies applications to receive selective audits, while a second team only reviews audited applications. These teams are physically separated and the U.S. DoL actively discourages cross-team communications; this unique setting feature thus allows us to explore the role of employment-relevant information in labor certification decisions.

In examining the coefficients of this selection equation, Asian immigrant workers are in general less likely to be selected for audit, while Latin American immigrants are more likely, relative to Canadians. Our selection models therefore support that detailed employment-relevant information is more likely to be sought out for those immigrant workers belonging to citizenship groups with higher denial rates during evaluations made with limited information (that is, Latin American immigrants; see Models 3 and 4 of Table 3). Similarly, applications pertaining to immigrant workers from advantaged citizenship groups in evaluations with limited information are generally less subject to requests for additional information (that is, Asian immigrants).

Why These Unequal Labor Certification Outcomes?

Within the limits of our non-experimental study design of audited versus non-audited applications by U.S. DoL agents, the results of our analyses provide support in favor of statistical theories of inequality in the labor certification process. We now complement our findings using qualitative evidence collected from a stratified sample of government agents who made certification decisions during the period under study (for details, see Appendix B: Part III).

In our interviews, government agents repeatedly stressed that citizenship is not a criteria for evaluating labor certification requests. The immigrant worker's foreign citizenship is a field that

agents are instructed to disregard when evaluating applications during training (which lasts

between three and a half days to four weeks, as we learned from our interviews). One agent

recalled that "we were specifically told not to really pay attention to [citizenship]... I think

everything else on the application was specific to what the [immigrant worker's] job was" (ID

#9). Another agent stated that "all [labor certification] cases are decided on their merits" (ID #4).

Yet, and in support for our first theoretical proposition, agents also expressed that application

reviews could be influenced specifically by the citizenship of the immigrant worker. One agent

assigned to the analysis of non-audited cases stated: "If the country [of the immigrant worker]

was friendly to America, if they were an ally of America, they were likely to be approved, and if

they were less of an ally, like maybe Middle Eastern countries, we kind of took, I know I

personally did it and maybe this is my personal prejudice but I think a lot of us did the same thing,

like maybe Middle Eastern countries we kind of like slowed down and kind of really made sure of

what was going through, [we] really looked at the application" (ID #40).

This agent also added that applications describing particular sending countries could be

advantaged in the labor certification process: "I did not give you an example [of a friendly

country]. Say like any European country, even Asian countries, I mean just any like, you know, if

someone came from Europe, that's friendly to America. Even African countries, like you know

friendly. I guess some were like in the Middle East... that's kind of what would raise eyebrows.

And I think that, and not because the Department of Labor told us to, I think it was natural, us

being Americans, our instinctive, kind of wanting to protect other Americans" (ID #40).

Government agents have access to detailed employment information *only* in the sub-set of

applications that receive audits by the U.S. DoL, a process that one agent referred to as "looking

behind the curtain." This individual went on to say: "We only see [hiring documentation] if we

look behind the curtain. And so the problem is, like I just said, is that when we look behind the curtain, we find that the denial rate is much higher and the compliance is much lower, while when we look just at the form, there is not that much to go on" (ID #1). A second agent echoed these concerns regarding information availability and compliance issues, stating "it's an attestation program, so there are certain things you can check them on, but there's other things where you've just got to take them by their word. You know? And you can look at something and think this is total bullshit, you know? [laughter]" (ID #8).

Our analyses of audited applications show that labor certification decisions made with detailed employment-relevant information are less subject to unequal outcomes by immigrant worker citizenship (our second proposition). Our interviews also support this finding: Government agents generally feel more comfortable with their decisions when making evaluations of audited labor certification requests, which include detailed employment information. As one agent (ID #12) with experience evaluating audited and non-audited applications put it, "I felt way more confident in the audit process than I did in [the non-audited] review... you hope in good faith that employers post these ads and they do it correctly, but there is nothing in the [non-audited] review that ensures it." This agent added, "in the [non-audit] review, you really don't look at anything... you don't have all the detail to go on, or to rely on," while a second agent suggested that "doing [non-audited] reviews took a bit of an adjustment because I didn't have as much information, so it just made me more comfortable doing audit when I had all the documentation to back up my decisions" (ID #9).

Discussion and Conclusion

Annually, tens of thousands of foreign nationals seek employment-based permanent residency in the United States (U.S. CIS 2010). In this study, we examine in-depth the labor certification

process, the first critical stage for the majority employment-based green cards. While the labor certification review contains no evaluation criteria pertaining to immigrant worker citizenship, our study addresses, for the first time, the question of whether the decisions of U.S. DoL agents may be affected by foreign citizenship.

We analyze a dataset containing individual-, occupation-, and employer-level information for the population of labor certification applications reviewed by government agents between June 2008 and September 2011. In so doing, our study tests two key theoretical propositions in the labor market inequality and organizations literatures concerning the approval of applications describing immigrant workers of select citizenship. First, our analyses reveal that labor decisions reached by government agents significantly differ depending on immigrants' citizenship group, all else being equal. Specifically, we find higher chances of labor certification approval for immigrant workers from Asia and lower chances for immigrants from Latin American countries when compared with the Canadian reference category, *ceteris paribus*. To our knowledge, this is the first time that this has been tested using the entire population of U.S. labor certification requests.

Second, because of the unique U.S. DoL's process of auditing applications, we were in a rare research position to empirically distinguish between statistical and preference-based accounts of labor market inequality in the labor certification process. In support of the statistical account, we find that government agents' decisions reached using detailed employment-relevant information (collected through U.S. DoL audits) are not affected by immigrant worker citizenship, *ceteris paribus*, with the exception of two citizenship groups: South Koreans and Japanese immigrants. Furthermore, our audit models show that government agents are generally less likely to select applications describing Asian immigrant workers for audit, while applications describing Latin

94

American immigrants are more likely, relative to Canadians. We argue that these findings are largely consistent with statistical explanations of labor market inequality—e.g., statistical discrimination (Phelps 1972; Arrow 1973; Aigner and Cain 1977) and the model minority myth (Kitano and Sue 1973; Lowe 1996; Ho 2003), among others. Additionally, the lack of significant differences in application approvals across immigrant citizenship groups when decisions are reached with detailed information offers an interesting case of a "reverse spotlight." Through audits, government agents are acting in a way to improve compliance among employers; and as a result, agents themselves seem to be making more equitable labor certification decisions.

Beyond the contributions to labor market inequality and organization theories, our research advances the broader literature on the economic and social incorporation of immigrants. A variety of immigration studies have shown differences in the labor market performance of immigrants depending on their origin and destination countries (see, for instance, Tubergen, Mass and Flap 2004), human capital investment (Friedberg 2000), and economic assimilation through the acquisition of destination country work experience (Chiswick 1978; Borjas 1988; Jasso and Rosenzweig 1990). Although the topic of immigration has drawn great attention among scholars and practitioners, the question of how government-level selection processes affect foreign nationals remains less understood (Kerr and Kerr 2008). This study takes a first step toward remedying this by examining to what extent the decisions of government agents result in unequal labor certification outcomes depending on immigrant citizenship. Our findings are consistent with prior studies suggesting that immigration authorities may exhibit inherent biases toward foreign nationals of specific citizenships (Jasso 1988; Gilboy 1991; Calavita 1992: 172; Ngai 2003). As such, certain immigrants may experience unique structural conditions quite distinct from those affecting U.S. citizen minorities.

Finally, previous studies that seek to explain individuals' migration decisions have afforded

great agency to the prospective migrant, whose decision to travel to, or remain in, a host-country

might be based on demographic, social, and economic considerations (Massey et al. 1993, 1994).

Our study contributes to this body of work by directing research attention to the crucial role of

broader institutional actors in shaping migration decisions, particularly government agents. Our

results suggest that foreign nationals' immigration and work outcomes are also affected by

governmental processes such as the labor certification decisions studied here.

Beyond this work's theoretical contribution, our findings also have implications for practice.

They are especially relevant in light of the ongoing immigration policy debates in the U.S. House

of Representatives and Senate (e.g., two bills to increase the fairness by which employment-

based green cards are awarded are actively under consideration).[46] In particular, the finding of

unequal labor certification outcomes by immigrant worker citizenship under scenarios of limited

employment-relevant information raises concerns about the fair and efficient *current*

administration of federal immigration statutes. Our study suggests that a labor certification

evaluation process in which all applications (rather than 13 percent) were to be audited and

evaluated with detailed employment-relevant information would likely produce more equitable

outcomes for foreign national workers belonging to any citizenship group. Should the audit of

all applications be unfeasible given administrative costs and documentation burdens, we also see

value in masking immigrant workers' demographic characteristics (e.g. citizenship). The same

way that current labor certification applications do not collect information on immigrants' sex,

race, or religion, we think that concealing (or even avoiding the collection of) immigrant

---

[46] Media coverage of these policy concerns includes articles featured in newspapers—see, e.g., Constable (2012) and Chebium (2012).

demographics would potentially result in a more equitable evaluation process that minimizes the risk that key labor outcomes are shaped by conscious or unconscious (citizenship) biases.

Directions for Future Research

Within the limits of this study's design, our findings provide evidence of how government agents shape the employment outcomes of foreign nationals by citizenship. We believe our work could be expanded in several productive research directions. One extension consists of directly testing how government agents make their decisions through the use of experimental, audit studies and survey designs with fictional labor certification applications while manipulating certain immigrant worker characteristics including foreign citizenship. Such study designs would further explore the question of how government agents' demographics, in relation to those of the foreign nationals they evaluate, shape unequal outcomes under controlled conditions (for similar experimental approaches, in the case of managerial decisions, see, e.g., Castilla and Benard 2010; Maas and Torres-González 2011).

We also think there is promise in examining how government agents evaluate immigrant workers with the same measured skills but from different employers and from different origin countries (for comparable studies about the value of immigrants' human capital in the U.S. labor market, see, e.g., Chiswick 1978, 1979; Borjas 1987, 1988; Jasso and Rosenzweig 1990). Along similar lines, given the importance of visa status to foreign nationals in the United States, such research could explore how government agents' decisions may also be differentially shaped by certain employer-side processes, including the choice of work visas and salary offers.

While we study labor certifications leading to employment-based green card requests, immigrants may still work in the United States on a variety of other temporary and permanent

visas.[47] In this regard, future research should continue studying government decisions

surrounding other employment and non-employment based visa applications (see for instance,

Jasso 1988 and Rissing 2012). Ideally, these studies will be carried out in settings where

additional immigrant demographics, such as sex or race, may also be accessed. Furthermore, we

see merit in the continued study of immigrant labor market experiences among those not legally

authorized to work in the United States (for a recent example, see Menjívar and Abrego 2012).

Such studies stress the prevalence of illegal immigrant employment in informal economies.

They also suggest that labor market disparities emerge from institutional and legal boundaries

such as visa access and work authorization.

Our hope is that future research continues to examine in-depth how organizational and legal

factors affect the labor outcomes of immigrants, using detailed data akin to that analyzed here.

---

[47] We also see value in studying other preference categories of green card applications. As stated earlier in the paper, labor certification is required for EB-2 and EB-3 preference categories, comprising 74.7 percent of all issued employment-based green cards in 2011 (Monger and Yankay 2012; see also U.S. CIS 2010 for a discussion of exceptions).

Table 1: Summary Statistics for Dependent and Key Independent Variables

Variable	Mean	Percentage of Observations	Percentage Approved
Dependent Variable			
Application Approved		86.2%	Non-Applicable
Audit Status			
Application Audited		13.0%	57.1%
Annual Compensation			
ln Annual Offered Wage	11.09		
U.S. Federal Fiscal Year of Application Evaluation			
2008		7.4%	78.4%
2009		17.6%	84.6%
2010		39.7%	89.3%
2011		35.4%	85.2%
Job Skill Level			
Level 1: 'Entry'		31.7%	85.8%
Level 2: 'Qualified'		38.7%	88.5%
Level 3: 'Experienced'		15.7%	86.1%
Level 4: 'Fully Competent'		14.3%	85.9%
Class of Admission			
None - Visa Bypassed		4.3%	54.3%
Dependent Visa		0.4%	82.0%
No Visa - Not in U.S.		1.0%	83.7%
Other Visa Type		0.5%	74.1%
Student Visa		4.0%	85.5%
Tourism Visa		4.0%	76.9%
Work Visa - Dual Intent		80.9%	92.0%
Work Visa - Non Dual Intent		5.0%	78.0%
Citizenship			
Asia			
China		5.9%	90.7%
India		41.0%	92.3%
Japan		1.3%	88.7%
Pakistan		1.6%	87.7%
Philippines		4.6%	81.3%
South Korea		6.1%	87.8%
Taiwan		1.6%	91.6%
Other Asian Citizenships		4.1%	87.5%
Latin America			
Brazil		1.3%	77.6%
Columbia		1.1%	80.1%
Ecuador		1.5%	55.7%
Mexico		6.2%	59.0%
Venezuela		1.0%	84.2%
Other Latin American Citizenships		4.0%	71.8%
Rest of World			
Africa		1.8%	84.0%
Australia and Oceania		0.5%	86.6%
Canada		4.9%	89.7%
Europe: United Kingdom		1.7%	88.4%
Europe: Other European Citizenships		6.5%	86.5%
Middle East		3.1%	85.2%

Observations (Number of Applications)   198,442

Table 2: Logit Models Predicting Government Agent's Labor Certification Approval

	Model 1	Model 2	Model 3	Model 4	Model 5
Annual Offered Compensation					
ln Annual Offered Wage	1.130***	1.144***	1.141***	1.158***	1.152***
	(0.044)	(0.044)	(0.045)	(0.049)	(0.049)
Job Skill Level Requirement [Ref: Level 1 - 'Entry']					
Level 2: 'Qualified'	-0.098***	-0.110***	-0.110***	-0.028	-0.032
	(0.022)	(0.022)	(0.022)	(0.024)	(0.024)
Level 3: 'Experienced'	-0.249***	-0.256***	-0.261***	-0.298***	-0.304***
	(0.030)	(0.030)	(0.030)	(0.033)	(0.033)
Level 4: 'Fully Competent'	-0.384***	-0.403***	-0.411***	-0.359***	-0.363***
	(0.034)	(0.034)	(0.034)	(0.038)	(0.038)
World Region and Citizenship [Ref: Canada]					
Asia (66.2% of All Apps)		0.231***		0.125**	
		(0.041)		(0.044)	
China (5.9% of All Apps)			0.160**		0.013
			(0.053)		(0.058)
India (41% of All Apps)			0.270***		0.169***
			(0.043)		(0.046)
Japan (1.3% of All Apps)			0.258**		0.107
			(0.079)		(0.086)
Pakistan (1.6% of All Apps)			-0.020		-0.005
			(0.073)		(0.084)
Philippines (4.6% of All Apps)			0.097*		0.012
			(0.057)		(0.063)
South Korea (6.1% of All Apps)			0.329***		0.194***
			(0.052)		(0.058)
Taiwan (1.6% of All Apps)			0.300***		0.194*
			(0.083)		(0.088)
Other Asian Citizenships (4.1% of All Apps)			0.066		0.039
			(0.055)		(0.061)
Latin America (15.1% of All Apps)		-0.257***		-0.262***	
		(0.045)		(0.050)	
Brazil (1.3% of All Apps)			-0.093		-0.248**
			(0.071)		(0.081)
Colombia (1.1% of All Apps)			-0.162*		-0.235**
			(0.076)		(0.084)
Ecuador (1.5% of All Apps)			-0.602***		-0.277***
			(0.063)		(0.082)
Mexico (6.2% of All Apps)			-0.379***		-0.432***
			(0.050)		(0.060)
Venezuela (1.0% of All Apps)			-0.092		-0.198*
			(0.083)		(0.091)
Other Latin American Citizenships (4.0% of All Apps)			-0.175***		-0.172**
			(0.052)		(0.059)
Rest of World					
Africa (1.8% of All Apps)		-0.190**	-0.197**	-0.237**	-0.239**
		(0.068)	(0.068)	(0.074)	(0.074)
Australia and Oceania (0.5% of All Apps)		-0.127	-0.131	-0.086	-0.087
		(0.110)	(0.110)	(0.116)	(0.116)
Europe (8.2% of All Apps)		0.046		-0.074	
		(0.047)		(0.051)	
United Kingdom (1.7% of All Apps)			-0.019		-0.134*
			(0.072)		(0.078)
Other European Citizenships (6.5% of All Apps)			0.041		-0.060
			(0.049)		(0.054)
Middle East (3.1% of All Apps)		-0.244***	-0.260***	-0.185**	-0.185**
		(0.057)	(0.057)	(0.065)	(0.065)
Class of Admission [Ref: Work Visa- Dual Intent]					

Visa Bypassed				-0.816***	-0.761***
				(0.050)	(0.053)
Dependent Visa				-0.229*	-0.260*
				(0.115)	(0.116)
No Visa - Not in U.S.				0.032	0.047
				(0.082)	(0.082)
Other Visa Type				-0.315**	-0.310**
				(0.099)	(0.100)
Student Visa				-0.275***	-0.283***
				(0.043)	(0.043)
Tourism Visa				-0.202***	-0.202***
				(0.046)	(0.046)
Work Visa - Non Dual Intent				-0.445***	-0.439***
				(0.039)	(0.039)
Occupation Fixed Effects	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
Work Location Fixed Effects	Yes	Yes	Yes	Yes	Yes
Application Month of Review Fixed Effects	Yes	Yes	Yes	Yes	Yes
Constant	-9.445***	-9.785***	-9.760***	-9.782***	-9.727***
	(0.488)	(0.493)	(0.495)	(0.546)	(0.546)
Observations	186,338	186,319	186,319	168,522	168,522
Pseudo R-Square	0.19	0.19	0.19	0.18	0.18

Notes: Standard errors are in parentheses. Significance levels are: *** $p<0.001$, ** $p<0.01$, * $p<0.1$ (two-tailed tests). All models include controls for employer-level characteristics (economic sector and the natural log of the quantity of applications filed by a given employer in a given year), occupation-level fixed effects (six digit SOC code, state of employment), and controls at the level of the government agent review process (month of review). A series of dummy variables were included to control for whether the offered wage was below, at parity with, or in excess of, the prevailing wage; additional controls account for the representation of the offered wage (hourly, weekly, bi-weekly, monthly, or annually).

Table 3: Logit Models Predicting Government Agent's Labor Certification Approval in Audited and Non-Audited Scenarios

	All Applications		Non-Audited Apps.		Audited Apps.	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Annual Offered Compensation						
ln Annual Offered Wage	1.158***	1.152***	0.998***	0.990***	0.336***	0.339***
	(0.049)	(0.049)	(0.063)	(0.063)	(0.091)	(0.091)
Job Skill Level Req. [Ref: Level 1 - 'Entry']						
Level 2: 'Qualified'	-0.028	-0.032	0.121***	0.116***	0.039	0.031
	(0.024)	(0.024)	(0.032)	(0.032)	(0.049)	(0.049)
Level 3: 'Experienced'	-0.298***	-0.304***	-0.138**	-0.142**	0.114*	0.101
	(0.033)	(0.033)	(0.043)	(0.043)	(0.063)	(0.063)
Level 4: 'Fully Competent'	-0.359***	-0.363***	-0.151**	-0.150**	0.063	0.049
	(0.038)	(0.038)	(0.049)	(0.049)	(0.073)	(0.074)
World Region and Citizenship [Ref: Canada]						
Asia (66.2% of All Apps)	0.125**		0.119*		0.061	
	(0.044)		(0.060)		(0.083)	
China (5.9% of All Apps)		0.013		0.178*		-0.026
		(0.058)		(0.082)		(0.108)
India (41% of All Apps)		0.169***		0.136*		0.018
		(0.046)		(0.063)		(0.087)
Japan (1.3% of All Apps)		0.107		0.090		0.581***
		(0.086)		(0.113)		(0.153)
Pakistan (1.6% of All Apps)		-0.005		-0.083		0.037
		(0.084)		(0.108)		(0.166)
Philippines (4.6% of All Apps)		0.012		0.005		0.011
		(0.063)		(0.082)		(0.127)
South Korea (6.1% of All Apps)		0.194***		0.130*		0.317**
		(0.058)		(0.076)		(0.114)
Taiwan (1.6% of All Apps)		0.194*		0.330**		-0.227
		(0.088)		(0.119)		(0.170)
Other Asian Citizenships (4.1% of All Apps)		0.039		0.082		-0.085
		(0.061)		(0.082)		(0.116)
Latin America (15.1% of All Apps)	-0.262***		-0.281***		-0.125	
	(0.050)		(0.067)		(0.097)	
Brazil (1.3% of All Apps)		-0.248**		-0.224*		-0.143
		(0.081)		(0.106)		(0.160)
Colombia (1.1% of All Apps)		-0.235**		-0.155		-0.065
		(0.084)		(0.113)		(0.157)
Ecuador (1.5% of All Apps)		-0.277***		-0.285**		-0.259
		(0.082)		(0.105)		(0.159)
Mexico (6.2% of All Apps)		-0.432***		-0.498***		-0.189
		(0.060)		(0.078)		(0.121)
Venezuela (1.0% of All Apps)		-0.198*		-0.153		-0.167
		(0.091)		(0.121)		(0.171)
Other Latin American Citizenships (4.0% of All Apps)		-0.172**		-0.197*		-0.038
		(0.059)		(0.078)		(0.113)
Rest of World						
Africa (1.8% of All Apps)	-0.237**	-0.239**	-0.200*	-0.199*	-0.218	-0.218
	(0.074)	(0.074)	(0.099)	(0.099)	(0.142)	(0.142)
Australia and Oceania (0.5% of All Apps)	-0.086	-0.087	-0.154	-0.158	0.148	0.162

102

	(0.116)	(0.116)	(0.156)	(0.155)	(0.223)	(0.223)
Europe (8.2% of All Apps)	-0.074		-0.068		0.011	
	(0.051)		(0.069)		(0.096)	
United Kingdom (1.7% of All Apps)		-0.134*		-0.213*		0.180
		(0.078)		(0.101)		(0.146)
Other European Citizenships (6.5% of All Apps)		-0.060		-0.027		-0.019
		(0.054)		(0.073)		(0.101)
Middle East (3.1% of All Apps)	-0.185**	-0.185**	-0.131	-0.127	-0.189	-0.183
	(0.065)	(0.065)	(0.088)	(0.088)	(0.124)	(0.124)
Class of Admission [Ref: Work Visa - Dual						
Visa Bypassed	-0.816***	-0.761***	-0.941***	-0.860***	-0.657***	-0.614***
	(0.050)	(0.053)	(0.062)	(0.065)	(0.110)	(0.115)
Dependent Visa	-0.229*	-0.260*	-0.057	-0.076	-0.369	-0.436*
	(0.115)	(0.116)	(0.150)	(0.152)	(0.227)	(0.229)
No Visa - Not in U.S.	0.032	0.047	0.291**	0.282*	-0.445**	-0.419**
	(0.082)	(0.082)	(0.111)	(0.111)	(0.160)	(0.161)
Other Visa Type	-0.315**	-0.310**	-0.376**	-0.368**	-0.063	-0.069
	(0.099)	(0.100)	(0.121)	(0.121)	(0.203)	(0.203)
Student Visa	-0.275***	-0.283***	-0.181**	-0.195***	-0.364***	-0.391***
	(0.043)	(0.043)	(0.056)	(0.057)	(0.087)	(0.088)
Tourism Visa	-0.202***	-0.202***	-0.163**	-0.160**	-0.371***	-0.384***
	(0.046)	(0.046)	(0.058)	(0.059)	(0.095)	(0.096)
Work Visa - Non Dual Intent	-0.445***	-0.439***	-0.463***	-0.446***	-0.499***	-0.534***
	(0.039)	(0.039)	(0.050)	(0.050)	(0.078)	(0.079)
Occupation Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Work Location Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Application Month of Review Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Constant	-9.782***	-9.727***	-8.563***	-8.485***	-2.505*	-2.492*
	(0.546)	(0.546)	(0.701)	(0.701)	(1.076)	(1.080)
Observations	168,522	168,522	148,051	148,051	19,707	19,707
Pseudo R-Square	0.18	0.18	0.21	0.21	0.16	0.16

Notes: Standard errors are in parentheses. Significance levels are: *** p<0.001, ** p<0.01, * p<0.1 (two-tailed tests). All models include controls for employer-level characteristics (economic sector and the natural log of the quantity of applications filed by a given employer in a given year), occupation-level fixed effects (six digit SOC code, state of employment), and controls at the level of the government agent review process (month of review). A series of dummy variables were included to control for whether the offered wage was below, at parity with, or in excess of, the prevailing wage; additional controls account for the representation of the offered wage (hourly, weekly, bi-weekly, monthly, or annually).

Table 4: Two-Stage Heckman Models Predicting Government Agent's Labor Certification Approval Conditional upon Application Audit

	World Region Model		Citizenship Model	
	Main Equation: Approval	*Selection Equation:* Audit	*Main Equation:* Approval	*Selection Equation:* Audit
World Region and Citizenship [Ref: Canada]				
Asia (66.2% of All Apps)	-0.008	-0.105***		
	(0.016)	(0.021)		
China (5.9% of All Apps)			0.000	0.012
			(0.021)	(0.027)
India (41% of All Apps)			-0.024	-0.168***
			(0.017)	(0.022)
Japan (1.3% of All Apps)			0.148***	0.240***
			(0.029)	(0.040)
Pakistan (1.6% of All Apps)			-0.007	-0.061
			(0.032)	(0.041)
Philippines (4.6% of All Apps)			-0.015	-0.081*
			(0.025)	(0.033)
South Korea (6.1% of All Apps)			0.041*	-0.102***
			(0.022)	(0.029)
Taiwan (1.6% of All Apps)			-0.077*	-0.142***
			(0.034)	(0.042)
Other Asian Citizenships (4.1% of All Apps)			-0.026	-0.037
			(0.023)	(0.030)
Latin America (15.1% of All Apps)	-0.014	0.055*		
	(0.019)	(0.025)		
Brazil (1.3% of All Apps)			-0.017	0.035
			(0.032)	(0.043)
Colombia (1.1% of All Apps)			0.014	0.147***
			(0.031)	(0.043)
Ecuador (1.5% of All Apps)			-0.041	0.084*
			(0.033)	(0.047)
Mexico (6.2% of All Apps)			-0.020	0.075*
			(0.024)	(0.032)
Venezuela (1.0% of All Apps)			-0.027	0.056
			(0.034)	(0.047)
Other Latin American Citizenships (4.0% of All Apps)			-0.003	0.037
			(0.022)	(0.030)
Rest of World				
Africa (1.8% of All Apps)	-0.028	0.071*	-0.028	0.074*
	(0.029)	(0.038)	(0.028)	(0.038)
Australia and Oceania (0.5% of All Apps)	0.057	0.097*	0.058	0.099*
	(0.043)	(0.058)	(0.043)	(0.058)
Europe (8.2% of All Apps)	0.006	0.030		
	(0.019)	(0.025)		
United Kingdom (1.7% of All Apps)			0.045	0.074*
			(0.028)	(0.037)
Other European Citizenships (6.5% of All Apps)			-0.001	0.028
			(0.020)	(0.026)
Middle East (3.1% of All Apps)	-0.031	0.038	-0.029	0.043
	(0.024)	(0.032)	(0.024)	(0.032)
Salary, Job Skill, and Class of Admission Fixed Effects	Yes	Yes	Yes	Yes
Occupation Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Work Location Fixed Effects	Yes	Yes	Yes	Yes
Application Month of Review Fixed Effects	Yes	Yes	Yes	Yes
Constant	0.583**	3.998***	0.548*	3.940***
	(0.219)	(0.275)	(0.219)	(0.276)
Lambda		0.272***		0.261***

	(0.032)	(0.032)
Rho	0.547	0.531
Observations	177,002	177,002
Significance of World Region χ^2 (6) in the main equation	6.60 (n.s.)	
Significance of Citizenship χ^2 (19) in the main equation		68.64***

Notes: Standard errors are in parentheses. Significance levels are: *** p<0.001, ** p<0.01, * p<0.1 (two-tailed tests). The Heckman models reported in this table are the linear probability models. For brevity, only world region and citizenship variables are included in the above table. The main equations in Models 1 and 2 include controls identical to those present in Models 1 and 2 of Table 3, with the exception of two variables controlling for the natural log of the quantity of applications filed by a given employer and the natural log of applications filed in a given year. These two variables, in addition to all other controls in the main equations of Model 1 and Model 2 (also described below), are included in the selection equation. All models include controls for key characteristics of the immigrant worker (class of admission), employer (economic sector), occupation (natural log of the offered salary, job skill level requirement, six digit SOC code, state of employment), and government agent review process (month of review). A series of dummy variables were included to control for whether the offered wage was below, at parity with, or in excess of, the prevailing wage; additional controls account for the representation of the offered wage (hourly, weekly, bi-weekly, monthly, or annually).

Figure 1: The U.S. Department of Labor (DoL) Employment-Based Labor Certification Process under Study
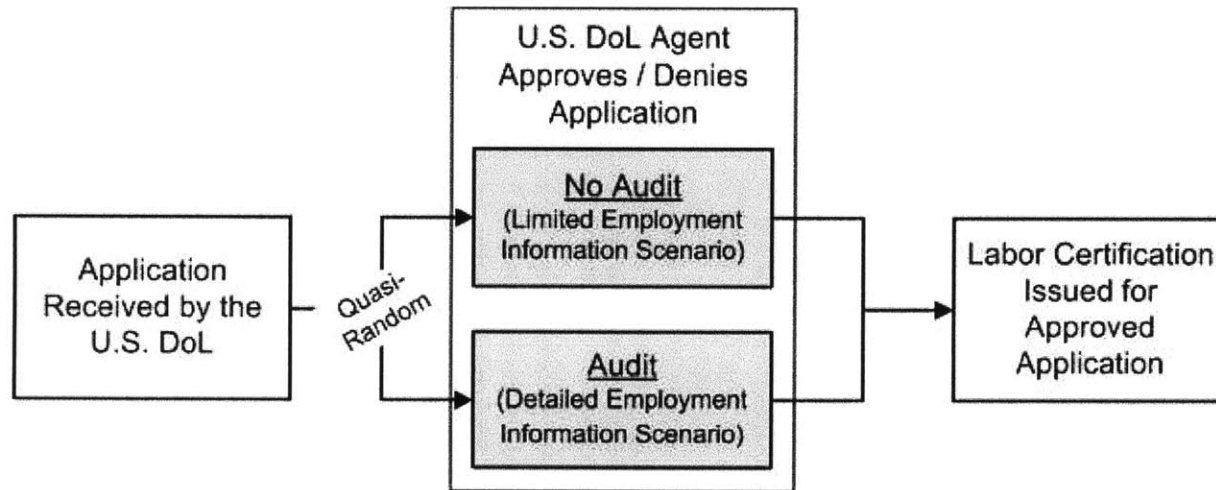
* Note: This figure illustrates the key labor certification steps pertaining to EB-2 and EB-3 employment-based green card requests processed in the United States (see Appendix B: Part I; for more information, including exceptions, see also Burgess 2005; Cook 2005; Jasso et al. 2010; U.S. CIS 2010).

Appendix A: Additional Data Tables

Table A1: World Region and Citizenship Groupings

World Region Group	Citizenship Group	Number of Apps	Percent of Total	Percent Approved
Africa	Africa [including the following specific countries: Algeria, Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Democratic Republic of Congo, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Lesotho, Liberia, Libya, Madagascar, Malawi, Mali, Mauritania, Mauritius, Morocco, Mozambique, Namibia, Niger, Nigeria, Republic of Congo, Rwanda, Senegal, Seychelles, Sierra Leone, Solomon Islands, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, and Zimbabwe]	3,458	1.8%	84.0%
Asia	China [China, Hong Kong, and Macau]	11,768	6.0%	90.7%
	India	81,543	41.0%	92.3%
	Japan	2,620	1.3%	88.7%
	Pakistan	3,131	1.6%	87.7%
	Philippines	9,243	4.6%	81.3%
	South Korea	11,781	6.1%	87.9%
	Taiwan	3,078	1.6%	91.6%
	Asia: Other [Afghanistan, Armenia, Azerbaijan, Bangladesh, Bhutan, Brunei, Burma (Myanmar) , Cambodia, Georgia, Indonesia, Kazakhstan, Kyrgyzstan, Laos, Malaysia, Maldives, Mongolia, Nepal, North Korea, Russia,* Singapore, Soviet Union,* Sri Lanka, Tajikistan, Thailand, Turkmenistan, Uzbekistan, and Vietnam]	8,085	4.1%	87.5%
Australia and Oceania	Australia and Oceania [Australia, Fiji, Marshall Islands, Micronesia, New Zealand, Samoa, Tonga, and Vanuatu]	1,080	0.5%	86.6%
Canada	Canada	9,686	5.0%	89.8%
Europe	Europe: United Kingdom	3,412	1.7%	88.4%
	Europe: Other [Albania, Andorra, Austria, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Czechoslovakia, Denmark, Estonia, Finland, France, Germany, Gibraltar, Greece, Hungary, Iceland, Ireland, Italy, Kosovo, Latvia, Lithuania, Luxembourg, Macedonia, Malta, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Serbia and Montenegro, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, and Yugoslavia]	12,846	6.5%	86.5%
Latin America	Brazil	2,536	1.3%	77.6%
	Colombia	2,084	1.1%	80.1%
	Ecuador	3,113	1.5%	55.7%
	Mexico	12,193	6.2%	59.0%
	Venezuela	1,991	1.0%	84.2%
	Latin America: Other [Anguilla, Antigua And Barbuda, Argentina, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, British Virgin Islands, Cayman Islands, Chile, Costa Rica, Dominica, Dominican Republic, El Salvador, Grenada, Guatemala, Guyana Haiti, Honduras, Jamaica, Montserrat, Nicaragua, Panama, Paraguay, Peru, Pitcairn Islands, St Kitts and Nevis, St Lucia St Vincent, Suriname, Trinidad and Tobago, Turks and Caicos Islands, and Uruguay]	8,071	4.0%	71.8%
Middle East	Middle East [Bahrain, Cyprus, Egypt, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Palestine, Qatar, Saudi Arabia, Syria, Turkey, United Arab Emirates, and Yemen]	6,229	3.1%	85.0%
	Total Number of Applications	198,442**		

* All listed citizenship groups appear as listed on the labor certification applications. Russia (occasionally represented as "The Soviet Union" on applications) occupies both regions of Asia and Europe and thus does not neatly fit our citizenship aggregations. As a result of the few labor certification requests that originate from Russia (1,288 observations, or 0.6 percent of the total sample, with an 89.1 percent approval rate), neither the "Asia: Other Asian Citizenship" nor "Europe: Other European

Citizenships" coefficients are affected by the inclusion or exclusion of Russian immigrant workers. As in-excess of three-quarters of Russia lie in Asia, we have elected to retain Russia within the "Asia: Other Asian Citizenships" group.

** In 441 applications (not listed in the above table), the immigrant citizenship field was listed as "United States of America." If this data is truthfully reported, it is unclear what benefit a U.S. citizen would derive from filing for labor certification. Moreover, the U.S. DoL has explicitly stated that they will not certify U.S. workers (U.S. DoL 2009: 21). These applications were included in the analysis as a unique citizenship category. Regression findings are substantially the same whether those applications are included in the analyses or not (available upon request). In a further 53 applications (not included in the above table or this study's analyses), the citizenship field was empty and 98 percent of these applications were denied.

Table A2: Immigrant Worker Class of Admission Visa Groupings

Visa Groupings	Number of Applications	Percent of Total
Dual-Intent Work Visas [H-1, H-1A, H-1B, H-1B1, H-1C, H-B, L-1A, L-1, L-1B, L-2, O-1, O-2, P-1, P-2, P-3]	145,007	80.9%
Non-Dual-Intent Work Visas [B-1, E-1, E-2, E-3, H-2A, H-2B, H-3, H-4, R-1, TN, TN-2, VWB]	8,885	5.0%
Tourism [B-2, VWT]	7,211	4.0%
Student [F-1, J-1, M-1]	7,160	4.0%
Other [A-3, A-1, A-2, C-1, D-1, D-2, G-1, G-2, G-3, G-4, G-5, I, N, OOS, Q, T-1, TPS, U-1, U-3 U-4, Visa waiver]	811	0.5%
No Visa: Not in the United States	1,726	1.0%
Dependent [F-2, J-2, K-1, K-3, M-2, O-3, P-4, R-2, TD, V-1, V-2]	694	0.4%
Inspection Bypassed [EWI, No Visa, Parolee]	7,711	4.3%
No Prior Visa Data Provided	19,237	9.7%
Total Number of Applications	198,442	100.0%

Appendix B: Additional Labor Certification Data/Process Background

The purpose of this appendix is to provide relevant additional information about 1) the immigrant labor certification and employment-based green card processes in the United States, 2) the preparation of the U.S. DoL disclosure data under study, and 3) the collection of U.S. DoL agent interview data. We include this discussion here for those readers who may be interested in these details, while avoiding unnecessary distractions from the key theoretical and empirical contributions in the main text of this study.

Part I. Immigrant Labor Certification and the Employment-Based Green Card

Each year, approximately 140,000 employment-based green cards are allocated to immigrant workers within five preference categories: "priority workers" (EB-1), "professionals with advanced degrees" (EB-2), "skilled workers, professionals, and unskilled workers" (EB-3), "special immigrants" (EB-4), and "investors" (EB-5) (U.S. CIS 2010).[48] For the purpose of this study, we examine the labor certification process, the key first stage in applying for the majority of EB-2 and EB-3 employment-based green cards (for a discussion of exceptions, see Jasso et al. 2010; U.S. CIS 2010).[49]

Labor certification requests are initiated by U.S. employers and include broad information pertaining to a job offer that has been extended to a specific immigrant worker, advertising

---

[48] Further, foreign workers may also be employed in the United States on a variety of other work visa types that do not require labor certification and are thus outside the scope of this study. These include temporary work visas (H-1B, L-1, etc.), temporary visas for study or training (F-1, J-1, H-3, etc.), or select temporary dependent visas (spouses of J-1 and L visa holders). See Hunt (2011) for an analysis of how immigrants vary by entry visa in terms of salary, patenting, and publishing in the United States. Additionally, immigrants may obtain legal U.S. residency and access to the U.S. labor market though family sponsorship visas.

[49] The quantity of employment-based green cards issued within each preference category varies by year. In 2008, 166,511 employment-based green cards were issued and 118,949 of these (or 71.4 percent) were granted in EB-2 and EB-3 preference categories (Monger and Rytina 2009). By contrast, in 2011, 74.7 percent of the 139,339 issued employment-based green cards were granted in EB-2 and EB-3 preference categories (Monger and Yankay 2012).

efforts for the position, and the immigrant worker qualifications. Specifically, the labor certification evaluation is intended to ensure "that there are not sufficient U.S. workers able, willing, qualified and available to accept the job opportunity in the area of intended employment and that employment of the foreign worker will not adversely affect the wages and working conditions of similarly employed U.S. workers" (U.S. DoL Employment and Training Administration 2009; *20 CFR 656.17*).

The aforementioned federal mandate is satisfied in practice through four concrete stages. The first involves an initial labor market search conducted by the employer to ensure that no qualified and willing U.S. citizen employee might be available to fill the firm's open position. The second stage involves the determination of an occupation- and location-specific minimum wage identified by the U.S. DoL Employment and Training Administration. The third stage consists of the selection of an *actual* offered wage by the employer at parity with, or in excess of, the U.S. DoL's minimum wage. The fourth stage involves the final U.S. DoL review of the position and employee characteristics, which can result in approval or denial of the labor certification application. Once these four stages are complete, an approved application may be sent within 180 days to U.S. Citizenship and Immigration Services (U.S. CIS) in conjunction with Form I-140, "Immigrant Petition for Alien Worker." After a successful U.S. CIS review, these applications may then result in the granting of a green card in one to eight years. Processing times are determined by employment-based green card type (e.g. EB-2 or EB-3), priority date, and immigrant worker citizenship (for more detail about this process, see Burgess 2005; Cook 2005; Jasso et al. 2010). It is important to note that the preference categories of labor certification applications (EB-2 or EB-3 designations, which reflect workers' skills and ability) are assigned only *after* the labor certification evaluation is conducted by the U.S. DoL.

As such, the assignment of preference category information is unavailable to government agents at the time of their application review, and consequently this does not affect our results.

Part II. Preparation of the U.S. DoL Disclosure Data under Study

We analyze all approved and denied labor certification requests evaluated by U.S. DoL agents in the Atlanta Processing Center between June 2008 and September 2011. Labor certification records were obtained through the U.S. DoL quarterly and annual disclosure program and pooled across years. We analyze records evaluated after a major U.S. DoL restructuring that occurred in June of 2008, which centralized the evaluation of applications in Atlanta, Georgia.

After pooling years of U.S. DoL records, we cleaned variables for consistency. Salary information in particular required substantial re-coding efforts, as it may be represented as hourly, weekly, monthly, bi-monthly, or annual compensation. All records were converted to an annual salary, assuming an eight hour work day, 40 hour work week, and 52 weeks of employment each year. 260 records contained incorrectly entered wage information (such as a six-figure salary denoted as an hourly wage), these errors were corrected prior to regression analysis, which include controls for those observations with revised salary fields. We also exclude from our analysis 9,454 applications that were withdrawn by employers prior to evaluation by U.S. DoL agents. The dataset further includes 1,008 duplicate applications and three triplicate applications that are evaluated at multiple points in time, totaling 2,022 observations (sometimes with inconsistent approval outcomes). These applications are retained in the statistical analyses we present in this study (this said, results do not change substantively if these applications are excluded from the analyses—available upon request).

Through its disclosure program, the U.S. DoL does not identify which applications are

111

selected for audit. Because the U.S. DoL processes applications on a first-in-first-out basis, and because audited applications take considerably longer to evaluate, we are able to use public U.S. DoL data on the separate processing queues for audited and non-audited applications to differentiate between these populations of applications. Our classification process identifies audited applications using queue and application date information, and thus accounts for variations in audit volume, timing, and targeted audits that may select on key application characteristics. A key clarification here is that *none* of the variables included in this study's statistical analysis or described in the paper are used to identify the population of audited applications. This classification process identifies two clearly distinct populations of labor certification requests, as discussed in the main text.

We refrain from discussing additional specifics regarding our classification process due to the U.S. DoL's desire to prevent abuse and gaming of the labor certification process (also in agreement with the required Human Subjects protocol signed the by author(s) of this study). As stated by the U.S. DoL, "making the audit process predictable would defeat the purpose of the audits and undermine the program's integrity" (U.S. DoL 2012b). Further, and with similar respect to protecting confidentiality, we do not identify employers by name (though this information is publicly available in U.S. DoL disclosure files) so that we do not reveal variation in the frequency of targeted audits directed at specific U.S. employers.

Part III. U.S. DoL Agent Interviews

Government agents responsible for the evaluation of labor certification requests were identified for interview through formal requests of the U.S. DoL, referrals to colleagues, and professional networking websites. Interviews were strictly voluntary and those government

interviewees received no compensation. We developed a sample of 40 interviews, stratified by U.S. DoL role, including those agents who worked in the labor certification non-audit unit (N=10 agents), audit unit (N=10), both the non-audit and audited unit at separate times (N=10), and those in program oversight or supervisory roles (N=10). These agents were interviewed over the phone with a response rate of 25 percent. Conversations, averaging 42 minutes in duration, were semi-structured using interview questions pertaining to application evaluation, U.S. DoL work organization, and agent perceptions regarding key application fields. Interviews were recorded whenever possible (about 80 percent of the time), transcribed, and analyzed using ATLAS.ti.

Whenever possible, demographic and human capital data were collected on those government agents interviewed. Of those interviewed agents in the non-audit unit, 60 percent were female, 67 percent held bachelor's degrees, 33 percent held graduate degrees, mean training was 7 days, and mean job tenure was 9.7 months. Among those interviewed agents in the audit unit, 50 percent were female, 71 percent held bachelor's degrees, 29 percent held graduate degrees, mean training was 12 days, and mean job tenure was 15.1 months. No significant differences were found when comparing education, training duration, sex, and job tenure between those government agents in the audit units and those in the non-audit units (relevant bivariate statistics comparing these two groups of government agents are available upon request).

List of References

Aigner, Dennis J., and Glen G. Cain. 1977. "Statistical Theories of Discrimination in Labor Markets." *Industrial and Labor Relations Review* 30: 175-87.

Arrow, Kenneth J. 1973. "The Theory of Discrimination." Pp. 3-33 in *Discrimination in Labor Markets*, edited by O. Ashenfelter and A. Rees. Princeton, NJ: Princeton University Press.

Alba, Richard D., and Victor G. Nee. 2005. *Remaking the American Mainstream: Assimilation and Contemporary Immigration.* Cambridge, MA: Harvard University Press.

Bakalian, Anny, and Medhi Bozorgmehr. 2009. *Backlash 9/11: Middle Eastern and Muslim Americans Respond.* 1st ed. Berkeley and Los Angeles, CA: University of California Press.

Becker, Gary S. 1957. *The Economics of Discrimination.* 1st ed. Chicago, IL: University Of Chicago Press.

Berger, Joseph, M., Hamit Fisek, Robert Z. Norman, and Morris Zelditch, Jr. 1977. *Status Characteristics and Social Interaction: An Expectation States Approach.* New York, NY: Elsevier.

Bielby, William T., and James N. Baron. 1986. "Men and Women at Work: Sex Segregation and Statistical Discrimination." *American Journal of Sociology* 91: 759-99.

Blank, Rebecca M., Marilyn Dabady, and Constance F. Citro. 2004. *Measuring Racial Discrimination.* Washington, D.C.: The National Academies Press.

Borjas, George J. 1987. "Self-Selection and the Earnings of Immigrants." *American Economic Review* 77: 531-53.

Borjas, George J. 1988. *International Differences in the Labor Market Performance of Immigrants.* Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.

Borjas, George J. 1994. "The Economics of Immigration." *Journal of Economic Literature* 32: 1667-717.

Burgess, Lorna. 2005. "How the PERM Labor Certification Process Evolved." Pp. 1-12 in *The David Stanton Manual on Labor Certification, 3ʳᵈ Edition,* edited by J. Gonzalez and E. Greenfield. Washington, DC: American Immigration Lawyers Association Publications.

Burns, Peter, and James G. Gimpel. 2000. "Economic Insecurity, Prejudicial Stereotypes, and Public Opinion on Immigration Policy." *Political Science Quarterly* 115: 201-25.

Calavita, Kitty. 1992. *Inside the State: The Bracero Program, Immigration, and the I.N.S.* New Orleans, LA: Quid Pro Books.

Castilla, Emilio J. 2005. "Social Networks and Employee Performance in a Call Center." *American Journal of Sociology* 110: 1243-83.

Castilla, Emilio J. 2008. "Gender, Race, and Meritocracy in Organizational Careers." *American Journal of Sociology* 113: 1479-526.

Castilla, Emilio J. and Steve Benard. 2010. "The Paradox of Meritocracy in Organizations." *Administrative Science Quarterly* 55: 543-76.

Chavez, Leo R. 2008. *The Latino Threat: Constructing Immigrants, Citizens, and the Nation.* Stanford, CA: Stanford University Press.

Chebium, Raju. 2012. "High-Tech Foreign Workers Await Fate of Green-Card Bill." *USA Today.* http://www.usatoday.com/news/washington/story/2012-01-27/foreign-high-tech-worker-green-card/52826102/1.

Chiswick, Barry R. 1978. "The Effect of Americanization on the Earnings of Foreign-born Men" *Journal of Political Economy* 86: 897-921.

Chiswick, Barry R. 1979. "The Economic Progress of Immigrants: Some Apparently Universal Patterns." Pp. 357-99 in *Contemporary Economic Problems*, edited by W. Fellner. Washington, DC: American Enterprise Institute.

Cohen, Lisa E., Joseph P. Broschak, and Heather A. Haveman. 1998. "And Then There Were More? The Effects of Organizational Sex Composition on Hiring and Promotion." *American Sociological Review* 63: 711-27.

Constable, Pamela. 2012. "Dispute over Proposed Green Card Law Pits Brightest Immigrants against Each Other." *The Washington Post.* http://www.washingtonpost.com/local/dispute-over-proposed-green-card-law-pits-brightest-immigrants-against-each-other/2012/01/03/gIQANdSKpP_story.html.

Cook, Ryan C. 2005. "PERM Flowchart." Pp. 232-35 in *The David Stanton Manual on Labor Certification, 3rd Edition,* edited by J. Gonzalez and E. Greenfield. Washington, DC: American Immigration Lawyers Association Publications.

Correll, Shelley J. and Stephen Benard. 2006. "Biased Estimators? Comparing Status and Statistical Theories of Gender Discrimination." Pp. 89-116 in Social Psychology of the Workplace (Advances in Group Processes Vol. 23), edited by S. R. Thye and E. J. Lawler. New York, NY: Elsevier Science.

Dencker, John C. 2008. "Corporate Restructuring and Sex Differences in Managerial Promotion." *American Sociological Review* 73: 455-76.

Dobbin, Frank R., and Frank R. Sutton. 1998. "The Strength of a Weak State: The Rights Revolution and the Rise of Human Resources Management Divisions." *American Journal of Sociology* 104: 441-76.

DiMaggio, Paul J., and Walter W. Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." *American Sociological Review* 48: 147-60.

Edelman, Lauren B., and Mark C. Suchman. 1997. "The Legal Environments of Organizations." *Annual Review of Sociology* 23: 479-515.

England, P. 1992. *Comparable Worth: Theories and Evidence*. New York, NY: Aldine Transaction Publishers.

Fernandez, Roberto M., and Jason Greenberg. 2012. "Race, Gender and Statistical Discrimination: Network Hiring in a Low Wage Labor Market." Paper presented at the 2012 Annual Meetings of the Southern Sociological Society in New Orleans, LA.

Fernandez, Roberto M., and Colette Friedrich. 2011. "Gender Sorting at the Application Interface." *Industrial Relations* 50: 591-609.

Fernandez, Roberto M., and Nancy Weinberg. 1997. "Sifting and Sorting: Personal Contacts and Hiring in a Retail Bank." *American Sociological Review* 62: 883-902.

Fernandez, Roberto M., and M. Lourdes Sosa. 2005. "Gendering the Job: Networks and Recruitment at a Call Center." *American Journal of Sociology* 111: 859-904.

Fernandez-Mateo, Isabel. 2009. "Cumulative Gender Disadvantage in Contract Employment." *American Journal of Sociology* 114: 871-923.

Friedberg, Rachel M. 2000. "You Can't Take It with You? Immigrant Assimilation and the Portability of Human Capital." *Journal of Labor Economics* 18: 221-51.

Gilboy, Janet A. 1991. "Deciding Who Gets In: Decision-making by Immigration Inspectors." *Law and Society Review* 25: 571-99.

Gronau, Reuben. 1974. "Wage Comparisons: A Selectivity Bias." *Journal of Political Economy* 82: 1119-44.

Ho, Pensri. 2003. "Performing the 'Oriental': Professionals and the Asian Model Minority Myth." *Journal of Asian American Studies* 6: 149-75.

Ha, Shang E. 2010. "The Consequences of Multiracial Contexts on Public Attitudes toward Immigration." *Political Research Quarterly* 63: 29-42.

Heckman, James J. 1976. "The Common Structure of Statistical Models of Truncation, Sample Selection and Limited Dependent Variables and a Simple Estimator for Such Models." *Annals of Economic and Social Measurement* 5: 475-92.

Jennifer Hunt. 2011. "Which Immigrants Are Most Innovative and Entrepreneurial? Distinctions by Entry Visa." *Journal of Labor Economics* 29: 417-57.

Jasso, Guillermina. 1988. "Whom Shall We Welcome? Elite Judgments of the Criteria for the Selection of Immigrants." *American Sociological Review* 53: 919-32.

Jasso, Guillermina. 2001. "Studying Status: An Integrated Framework." *American Sociological Review* 66: 96-124.

Jasso, Guillermina and Mark R. Rosenzweig. 1990. *The New Chosen People: Immigrants in the United States.* New York, NY: Russell Sage Foundation.

Jasso, Guillermina, Vivek Wadhwa, Gary Gereffi, Ben A. Rissing, and Richard Freeman. 2010. "How Many Highly Skilled Foreign-Born are Waiting in Line for U.S. Legal Permanent Residence?" *International Migration Review* 44: 477-98.

Jones, Jeff and Lydia Saad. 2012. "Gallup Poll Social Series: World Affairs." *GALLOP.* http://www.gallup.com/file/poll/152750/Annual_Update%20_Countries_120216%20.pdf.

Kalev, Alexandra, Erin Kelly, and Frank R. Dobbin. 2006. "Best Practices or Best Guesses? Assessing the Efficacy of Corporate Affirmative Action and Diversity Policies." *American Sociological Review* 71: 589-617.

Kerr, Sari P. and William R. Kerr, 2008. "Economic Impacts of Immigration: A Survey — HBS Working Knowledge." http://hbswk.hbs.edu/item/6022.html.

King, Brayden G. 2008. "A Political Mediation Model of Corporate Response to Social Movement Activism." *Administrative Science Quarterly* 53: 395-421.

King, Ryan. D., Michael Massoglia, and Christopher Uggen. 2012. "Employment and Exile: U.S. Criminal Deportations, 1908–2005." *American Journal of Sociology* 117: 1786-825.

Kitano, Harry H. L., and Stanley Sue. 1973. "The Model Minorities." *Journal of Social Issues* 29: 19.

Lee, Tiane L., and Susan T. Fiske. 2006. "Not an Outgroup, Not Yet an Ingroup: Immigrants in the Stereotype Content Model." *International Journal of Intercultural Relations* 30: 751-68.

Lewis, H. Gregg. 1974. "Comments on Selectivity Biases in Wage Comparisons." *Journal of Political Economy* 82: 1145-57.

Lipset, S. Martin. 1990. *Continental Divide: The Values and Institutions of the United States and Canada.* New York, NY: Routledge, Chapman and Hall, Inc.

Liu, John M. 1992. "The Contours of Asian Professional, Technical and Kindred Work Immigration, 1965-1988." *Sociological Perspectives* 35: 673-704.

Lowe, Lisa. 1996. *Immigrant Acts: On Asian American Cultural Politics.* Durham, NC: Duke University Press.

Maas, Victor S. and Raquel Torres-González. 2011. "Subjective Performance Evaluation and Gender Discrimination." *Journal of Business Ethics* 101: 667–81.

Marcus, Kenneth L. 2010. *Jewish Identity and Civil Rights in America*. 1st ed. New York, NY: Cambridge University Press.

Massey, Douglas S., Luin Goldring, and Jorge Durand. 1994. "Continuities in Transnational Migration: An Analysis of Nineteen Mexican Communities." *American Journal of Sociology* 99: 1492-533.

Massey, Douglas S., Joaquin Arango, Graeme Hugo, Ali Kouaouci, Adela Pellegino, and J. Edward Taylor. 1993. "Theories of International Migration: A Review and Appraisal." *Population and Development Review* 19: 431-66.

Massey, Douglas. S., and Magaly R. Sanchez. 2012. *Brokered Boundaries: Creating Immigrant Identity in Anti-Immigrant Times*. New York, NY: Russell Sage Foundation Publications.

Mattoo, Aaditya, Ileana Cristina Neagu, and Çaglar Özden. 2008. "Brain Waste? Educated Immigrants in the US Labor Market." *Journal of Development Economics* 87: 255-69.

Menjívar, Cecilia, and Leisy J. Abrego. 2012. "Legal Violence: Immigration Law and the Lives of Central American Immigrants." *American Journal of Sociology* 117: 1380-421.

Meyer, John W., and Brian Rowan. 1977. "Institutionalized Organizations: Formal Structure as Myth and Ceremony." *American Journal of Sociology* 83: 340-63.

Monger, Randall, and Nancy Rytina. 2009. "U.S. Legal Permanent Residents: 2008." *Annual Flow Report*. Department of Homeland Security Office of Immigration Statistics Policy Directorate. http://www.dhs.gov/xlibrary/assets/statistics/publications/lpr_fr_2008.pdf

Monger, Randall, and James Yankay. 2012. "U.S. Legal Permanent Residents: 2011." *Annual Flow Report*. Department of Homeland Security Office of Immigration Statistics Policy Directorate. http://www.dhs.gov/xlibrary/assets/statistics/publications/lpr_fr_2011.pdf

Ngai, Mae M. 2003. "The Strange Career of the Illegal Alien: Immigration Restriction and Deportation Policy in the United States, 1921-1965." *Law and History Review* 21: 69-107.

Petersen, Trond, and Ishak Saporta. 2004. "The Opportunity Structure for Discrimination." *American Journal of Sociology* 109: 852-901.

Phillips, Damon J. 2005. "Organizational Genealogies and the Persistence of Gender Inequality: The Case of Silicon Valley Law Firms." *Administrative Science Quarterly* 50: 440-72.

Phelps, Edmund S. 1972. "The Statistical Theory of Racism and Sexism." *The American Economic Review* 62: 659-61.

Portes, Alejandro. 1995. *Economic Sociology and the Sociology of Immigration*. New York, NY: Russell Sage Foundation.

Portes, Alejandro, and Min Zhou. 1993. "The New Second Generation: Segmented Assimilation and its Variants." *The Annals of the American Academy of Political and Social Science* 530: 74-96.

Reskin, Barbara F. 2000. "The Proximate Causes of Employment Discrimination." *Contemporary Sociology* 29: 319-28.

Ridgeway, Cecilia L. 1997. "Interaction and the Conservation of Gender Inequality: Considering Employment." *American Sociological Review* 62: 218-35.

Ridgeway, Cecilia L., and Shelley J. Cornell. 2006. "Consensus and the Creation of Status Beliefs." *Social Forces* 85: 431-53.

Rissing, Ben A. 2012. "How Government Agents Shape the Employment of Skilled Immigrants." *U.S. Department of Labor Employment and Training Administration 2012 Occasional Paper Series (ETA-2012).*

Rose, Linda and Ester Greenfield. 2005. "Prevailing Wages Under PERM: How to 'Do the Right Thing'". Pp. 39-62 in *The David Stanton Manual on Labor Certification, 3rd Edition,* edited by J. Gonzalez and E. Greenfield. Washington, DC: American Immigration Lawyers Association.

Rubineau, Brian, and Yoon Kang. 2012. "Bias in White: A Longitudinal Natural Experiment Measuring Changes in Discrimination." *Management Science.* 58: 660-77.

Tubergen, Frank van, Ineke Maas, and Henk Flap. 2004. "The Economic Incorporation of Immigrants in 18 Western Societies: Origin, Destination, and Community Effects." *American Sociological Review* 69: 704-27.

United States Citizenship and Immigration Services. 2010. *Permanent Workers.* http://www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a/?vgn extoid=cdfd2f8b69583210VgnVCM100000082ca60aRCRD&vgnextchannel=cdfd2f8b6958 3210VgnVCM100000082ca60aRCRD.

United States Citizenship and Immigration Services. 2012. *Data on Employment-Based Benefit Requests.* http://www.uscis.gov/portal/site/uscis/menuitem.eb1d4c2a3e5b9ac89243c6a7543f6d1a/?vgn extoid=04de211f28ff0310VgnVCM100000082ca60aRCRD&vgnextchannel=04de211f28ff0 310VgnVCM100000082ca60aRCRD.

United States Department of Labor, Employment and Training Administration. 2009. *Permanent Labor Certification.* http://www.foreignlaborcert.doleta.gov/perm.cfm.

United States Department of Labor, Employment and Training Administration, 2010a. "The Foreign Labor Certification Report: 2009 Data, Trends and Highlights Across Programs and States." *Office of Foreign Labor Certification Annual Report:* 1-2, 20.

United States Department of Labor, Employment and Training Administration. 2010b. *Program Debarments.* http://www.foreignlaborcert.doleta.gov/pdf/Debarment_List_Revisions.pdf.

United States Department of Labor. 2009. "Foreign Labor Certification." *FY 2010 Department of Labor Budget in Brief.* 24-5. http://www.dol.gov/dol/budget/2010/PDF/bib.pdf.

United States Department of Labor. 2012a. "Foreign Labor Certification." *FY 2013 Department of Labor Budget in Brief.* 28. http://www.dol.gov/dol/budget/2012/PDF/FY2012BIB.pdf.

United States Department of Labor. 2012b. "Audit." *OFLC Frequently Asked Questions and Answers.* http://www.foreignlaborcert.doleta.gov/faqsanswers.cfm.

Waters, Mary C., and Karl Eschbach. 1995. "Immigration and Ethnic and Racial Inequality in the United States." *Annual Review of Sociology 21*: 419-46.

Zelditch, Morris, Jr. 1968. "Status, Social." Pp. 250-57 in *International Encyclopedia of the Social Sciences*, vol. 15, edited by David L. Sills. New York, NY: Macmillan.

The Paradox of Anomic Regulation

Ben A. Rissing[50]
Massachusetts Institute of Technology

Abstract

When does regulation fail to achieve its desired outcome? Scholars have argued that regulation may produce ineffective or inconsistent outcomes due to excessive discretion afforded to government regulators, unclear or symbolic legislative processes, unreasonable and inordinately legalistic laws, and regulatory capture through responsive regulation. In contrast to these arguments, I propose that well-designed and faithfully-enacted regulation may nonetheless fail to achieve desired outcomes when reliant on regulated actors' truthful accounts of their activities. These self-monitoring systems assess actors' accounts using evaluation criteria and verification rules that are not public. This may result in anomic regulation, characterized by perceptions of normlessness and lack of rule, as rule confidentiality and limited feedback constrains the ability of both regulators and regulated actors to improve compliance. Using unique qualitative data from U.S. Department of Labor agents charged with protecting the employment opportunities of U.S. workers in occupations where firms seek to hire immigrant labor, I examine how agents may confidently reach regulatory judgments, yet simultaneously perceive that their legitimate evaluations fail to achieve desired statutory outcomes. I close with a discussion of implications for theory and practice.

When does regulation fail to achieve its desired outcome? Most regulation successfully guides the actions of regulated actors when the rule of law prevails (Ewick and Silbey 1998; Heimer 2012). A continuum of regulatory systems exists to enact these laws and thereby exert social control, induce desirable behavior, and punish violators. On one extreme are compliance systems, which are premonitory and seek to encourage conformity through compelling legal threats (that are virtually never applied) and public warnings (Bardach and Kagan 1982; Ayres and Braithwaite 1992; Gunningham et al. 2006). On the other extreme are deterrence systems, which detect and punish violators. These are designed to impose sufficient inspections and fines to render noncompliance an unattractive strategy (Becker 1968; Tullock 1974; Weil 2005). Self-monitoring regulation exists between these two extremes and incorporates features of both systems. In self-monitoring systems, regulated actors describe their conformity with regulations through submitted testimony regarding their compliance activities, which may result in inspection and sanctioning. Scholars have argued that self-monitoring systems are also growing in scope and frequency as governments and organizations seek to regulate more aspects of social life, subject to cost and efficiency concerns (Power 1994, 1997; Strathern 2000; Houghton et al. 2010).

Scholars have identified a variety of programs in which responsibility for monitoring compliance is entrusted to the regulated actors themselves, including systems assessing equal employment opportunity, environmental pollution, taxation, and federal aid, among many (Flint 1988; Douglas 1992; Bovens 1998; Haufler 2001; Shapiro 2003; Jensen 2006; Bartley 2007; Locke et al. 2012; Locke 2013). Within these regulatory systems, the specific activities of regulated actors are rarely observed (Braithwaite 1984:139). Rather, these actors are evaluated on the basis of self-described summaries of their activities, what may be termed 'accounts' (Scott

122

and Lyman 1968; Orbuch 1997; Polletta et al. 2011:115). A small subsample of all accounts is then verified through the assessment of actors' own supporting documentation, obtained through audits (Power 1997; Strathern 2000; Houhton et al. 2010). Yet, we are rarely privy to the specifics of these widespread self-monitoring and verification systems (Power 1997), or their effectiveness in achieving desired regulatory outcomes.

Significant attention in the literature has been directed to understanding when regulation may fail to achieve its desired outcomes. Scholars have argued that ineffective regulation may be due to excessive discretion afforded to government regulators (Davis 1969; Lipsky 1980; Wilson 1980), symbolic compliance efforts by regulated actors (Edelman 1964, 1977; Kolko 1965, Dobbin 2009), unreasonable and inordinately legalistic laws (Bardach and Kagan 1982), and regulatory capture through responsive regulation (Marvel 1977; Silbey 1984; Hawkins and Thomas 1984). In contrast to these arguments, I examine a setting in which regulation may fail to achieve its desired outcome even in the absence of the aforementioned regulatory barriers attributable to government evaluators, legal language, and regulated actors. I argue that self-monitoring regulatory systems involving well-designed and faithfully-enacted rules may nonetheless fail to achieve desired outcomes because of the law's inherent reliance on regulated actors' accounts of their activities in order to assess compliance. Further, these failures may be most extreme in systems in which evaluation rules are confidential, thus limiting regulated actors' ability to improve compliance.

In this study, I investigate regulatory failure using unique qualitative data from the U.S. DoL Office of Foreign Labor Certification (OFLC), where government agents evaluate the applications of U.S. organizations seeking to permanently employ immigrant workers. Agents examine employers' descriptions of their hiring efforts to assess whether the employment of a

described immigrant may disadvantage comparable U.S. citizen workers, resulting in the approval or denial of the immigrant employment request. Employers have no direct communication with OFLC agents, and their hiring efforts are evaluated based on written testimony. In these assessments, OFLC agents have limited discretion, the public Code of Federal Regulations is reasonable and clear, and responsive regulation to U.S. employers is extremely rare. Rather, in this setting desired regulatory outcomes are limited by the inherent reliance on regulated actors' accounts in order to assess compliance.

Scholars have extensively studied how regulated actors may signal compliance through accounts and claims that nonetheless differ from actual practices (Meyer and Rowan 1977; DiMaggio and Powel 1983; Silbey 1984; Edelman 1992; Kellogg 2009; Huising and Silbey 2011). Neoinstiutionalist scholars have examined how regulated actors may report symbolic processes in response to government regulations and changing industry trends to achieve legitimacy and enhanced survival prospects (DiMaggio and Powel 1983:352; Edelman et al. 1999). Others have studied how actors' accounts and portrayals of their actions may be constructed in a self-protective fashion (Goffman 1959; Van Maanen 1980).

If the accounts of regulated actors are assumed to be truthful, then public knowledge of specific regulatory evaluation criteria may result in manipulation and gaming (Obloj and Sengul 2012). As a result, evaluation rules in many self-monitoring programs are not publicly available. The masking of these rules can produce regulatory systems with limited feedback where both detection and compliance are challenging to achieve, resulting in a loss of faith in a regulatory system and the inability to fully realize desired outcomes.

Self-monitoring systems may represent a paradox because they rely on the truthful accounts of regulated actors (in effect relying on wider social standards and norms). Yet, to assess these

accounts government agents use confidential evaluation criteria to avoid gaming and manipulation by regulated actors. For both regulated actors and government agents, this disconnect creates a sense of normlessness, or as Dirkhiem describes, anomie, "the lack of rule" (1897). Government agents are rarely privy to the actual activities of regulated actors, and regulated actors are rarely privy to the evaluation criteria by which they are assessed. This study contributes to legal and organizational scholarship by exploring how anomic regulation in self-monitoring systems may limit effectiveness. Understanding the antecedents of anomic regulation is critical, as misreporting and manipulation in self-monitoring regulatory systems are widespread. For example, the U.S. Internal Revenue Service (U.S. IRS) estimates that 17 percent of federal taxes due go unpaid (Rother et al. 1989; IRS 2012); a random audit of H-1B immigrant work visa requests by the U.S. Department of Homeland Security (U.S. DHS) found that 21 percent of applications are fraudulent or contain technical violations (U.S. Government Accountability Office (U.S. GAO) 2011); and the Federal Bureau of Investigation (FBI) estimates that between three and 10 percent of healthcare billings are fraudulent (FBI 2011).

In the following sections of this paper, I first summarize the literature on regulatory failure, this is followed by a discussion of research examining the representation of regulated actors' activities, including literature on accounts and supporting documentation. I then briefly describe the research setting of this study, the U.S. DoL Office of Foreign Labor Certification, and the unique qualitative evidence on how government agents view their regulatory efforts as ineffective despite their legitimate enactment of evaluation and verification rules. Government agents may feel fully confident in their regulatory judgments yet simultaneously believe their evaluations fail to achieve desired statutory outcomes. I close with a discussion of implications for theory and practice.

Causes of Regulatory Failure

Theories of regulatory failure have attributed ineffective regulation to a variety of factors, notably including the structure of legal and regulatory systems, the decisions of government agents, and the actions of regulated actors. First, scholars have argued that regulatory inconsistencies may emerge from unreasonable (Bardach and Kagan 1982) or inordinately legalistic laws (Kagan 2001). Regulations are typically designed to apply uniformly to all regulated actors, yet regulated actors' capacity to comply may vary, as may the risk associated with noncompliance. As a result, when confronted with the mandate to apply unreasonable regulations, some government agents may apply rules in a flexible fashion while others may rigidly adhere to the letter of the law, resulting in the inconsistent application of regulations (Bardach and Kagan 1982).

The aforementioned concern regarding the variable application of regulatory statutes is echoed by scholars who have suggested that unintended regulatory outcomes may be due to excessive latitude granted to government agents in their evaluations. Government agents charged with enforcing legal mandates are frequently granted autonomy and discretion in their decisions, which may result in biased or erratic application of legal directives (Davis 1969, 1972; Wilson 1973, 1980; Lipsky 1976, 1980). Specifically with regards to the evaluation of immigrants, scholars have found that U.S. government agents inspecting the passports of foreign travelers at international airports use broad generalizations to stereotype travelers to speed evaluations and determine which foreign nationals should receive invasive secondary examinations (Gilboy 1991: 586). The discretion granted to these government agents enables them to make important choices; however, these may also result in inconsistency. In the case of

126

Gilboy's work, agents' discretion resulted in all virtually incoming travelers from specific sending countries, occupations, and sex-race combinations receiving detailed entry inspections.

Policy mandates may also be rendered ineffective if government agents are excessively responsive to the demands of regulated actors. In systems involving responsive regulation, regulatory judgments are intended to be shaped by free market industry dynamics and directly attuned to the motivations of regulated actors (Ayres and Braithwaite 1992; see Parker 2012 for a review). However, the enforcement processes in such systems may become co-opted by regulated actors themselves as their business interests or perspectives shape the direction of regulatory investigations through, for instance, the legitimate use of complaint channels (Marvel 1977; Silbey 1984; Hawkins and Thomas 1984).

In contrast to instances where regulation may fail to achieve its desired outcomes due to the variable application of rigid or excessively legalistic laws, the impact of regulation may also be mediated by regulated actors that enact symbolic forms of compliance (Edelman 1964, 1977; Kolko 1965). Scholars have suggested that in response to broad and ambiguous labor and employment laws, regulated organizations may create symbolic compliance structures that over time may be legitimized by regulatory authorities as viable efforts to comply with vague regulatory mandates (Edelman 1992; Edelman et al. 1999; Dobbin 2010). Through such a process, regulated actors may also take active roles in defining and constructing legitimate compliance activities. Yet, and in contrast to the aforementioned explanations of ineffective regulatory programs, little attention has been directed to regulatory inefficiencies shaped by systems' reliance on regulated actors' accounts of their compliance activities.

The Paradox of Anomic Regulation

Anomic regulation, systems characterized by disconnected expectations of evaluation standards among government agents and regulated actors, may emerge when regulatory compliance is based on the assessment of accounts. In self-monitoring systems, government agents frequently rely of regulated actors' self-described summaries of their activities, which have been described elsewhere in the literature as 'accounts' (Scott and Lyman 1968; Lyman and Scott 1970, for reviews see Orbuch 1997 or Polletta et al. 2011). Account-giving is a general action that pervades many aspects of social life, but these claims also play a key role in attestation-based regulatory programs where the size of a regulated population or efficiency concerns may preclude the possibility of widespread review of supporting documentation or direct monitoring. In such systems, regulated actors' submitted accounts are the content subject to regulatory assessment (Blommaert 2001; Duane 2008; Baillot et al. 2009).

Yet, if the claims of regulated actors are regarded as truthful, the criteria by which they are evaluated generally cannot be made publicly available, as this could enable gaming and manipulation. As a result, in systems characterized by anomic regulation, government agents apply confidential evaluation criteria based on public laws and federal statutes. This allows for the assessment of accounts that are regarded as truthful. Yet, these systems risk creating a sense of normlessness or anomie characterized by broad perceptions of a lack of rule held by both government agents and regulated actors. On the one hand, government agents are rarely privy to the actual activities of the regulated actors they assess. On the other hand, regulated actors and their legal representatives receive only limited feedback regarding the antecedence of denial or time- and resource-intensive government inspection. This lack of transparency allows the regulatory apparatus to persist, but it limits regulated actors' capacity to improve their practices

128

in the event of past compliance errors or legitimate denials. Regulated actors may become frustrated with the apparent unpredictability of regulated exchanges and the challenge of instituting meaningful improvements despite past interactions with regulators.

Similarly, anomic regulation may frustrate the government agents charged with administering regulatory mandates. Few aspects of regulated actors' accounts can be assessed if these are regarded as truthful, and as a result, regulatory approval rates for assessments of actors' accounts are generally very high. When audits produce supporting documentation pertaining to regulated actors' accounts, approval rates typically fall sharply. Government agents, aware of these discrepancies, may lose faith in the evaluation rules dictating the assessment of accounts. Thus, government agents can faithfully-enact regulations while simultaneously regarding their legitimate judgments as ineffective. Low audit rates, high agent turnover, and agent random assignment to cases also limits their capacity to learn over time.

As self-monitoring and audit-based programs have grown in scope and frequency (Power 1994, 1997; Strathern 2000; Houhton et al. 2010), the risk of anomic regulation has increased. Large-scale efficiency-based regulation today assesses the truthful claims of hundreds of millions of individuals in the United States annually. Such systems include taxation, Medicare and Medicaid, student financial aid, and immigrant work visas, among many.

In the following section, I summarize the research setting for this study, the U.S. DoL labor certification process. Through an analysis of government agents' decisions and perceptions in this regulatory system, I examine how anomic regulation may result in the failure of regulatory systems to achieve their desired outcomes.

Research Setting

How does the U.S. government protect the employment opportunities of U.S. citizens in occupations where firms seek to hire foreign nationals? Each year, tens of thousands of U.S. organizations attempt to employ foreign workers on a permanent-basis. One setting where the government actively regulates these employment processes is in the majority of employment-based green card requests for "professionals with advanced degrees" and "skilled workers, professionals, and unskilled workers."[51] In these instances, an employer must undergo a labor certification evaluation with the U.S. DoL to assess whether any U.S. citizen workers may have been available for the described work opportunity. Applications to employ a foreign worker can be approved if U.S. DoL agents are convinced that no able, willing, and qualified U.S. workers are available for a described job opportunity, and that the wages and working conditions of similar U.S. workers will not be negatively impacted (U.S. DoL Employment and Training Administration 2009; 20 CFR 656.17). U.S. DoL agents responsible for labor certifications described their evaluations as follows: "my job is to protect the jobs of U.S. workers" (U.S. DoL Agent 1).

To address this mandate, a team of government agents evaluates labor certification applications, resulting in either the approval or denial of an employer's hiring request. Since June of 2005, these applications have been evaluated in one single processing center located in Atlanta, Georgia (U.S. DoL 2010a: 10). Evaluations are conducted by U.S. DoL agents that are *randomly* assigned to applications that are evaluated *one at a time* on a *first-in first-out* basis (as described in multiple interviews). These assessments seek to determine 1) that the immigrant is

---

[51] In 2008 and 2011, respectively, 71.4 and 74.7 percent of employment-based green cards were granted in EB-2 and EB-3 preference categories, the majority of which require labor certification (Monger and Rytina 2009; Monger and Yankay 2012).

qualified for the described position, 2) that the employment of the foreign worker has no adverse consequences for similar U.S. citizen workers, and 3) that sufficient advertising was conducted by the employer so as to identify any potential U.S. citizen workers. The labor certification process is described in detail within the following section.

The Labor Certification Process

To sufficiently document that no willing, qualified and able U.S. citizens are available for a position, a U.S. employer must undergo a series of recruitment steps as required by the U.S. DoL within 180 days of filing of a labor certification application. For nonprofessional jobs, an employer must advertise a job in two Sunday newspapers, a job order must be submitted to a local state workforce agency, and a physical notice of filing announcement must be posted to alert current employees.[52] Professional jobs, broadly defined as those positions requiring a college degree or higher, further require three additional forms of recruitment (see 20 CFR 656.17(e)(1)). These additional forms may be satisfied through an employer's internet site, job fairs, job search websites, private employment agencies, trade or professional organizations, employee referral programs, on-campus recruiting or placement offices, local and ethnic newspapers, or radio/TV advertisements (Gordon 2005).

U.S. DoL agents may also examine several other aspects of employers' hiring efforts. Employers can be subject to a business existence screening. U.S. DoL agents also determine if a foreign worker's listed salary is at least equal to an occupation and location-specific minimum

---

[52] Sunday newspaper advertisements must contain a job description, the name of the employer, instructions for submitting resumes, and indicate the geographic location of work. The required internal posting is intended to spread word at a worksite that an employer is seeking to hire a foreign employee. This regulation can be met by providing a written notice to an employer's bargaining representative, or if no such representative exists, though the posting of a physical internal notice on a bulletin board in the area of intended employment for ten consecutive business days.

established by the U.S. DoL, and evaluate whether the immigrant is qualified to work in the described position.

Applications are most frequently evaluated solely on the basis of employer accounts of their compliance with the aforementioned regulatory requirements detailed in a submitted application. Based on an employer's description of their activities, an application may be approved, denied, or audited to obtain supporting documentation. A small portion of all incoming applications may also be randomly selected for audit (Gonzalez 2005: 15). If audited, an employer must be prepared to submit any or all of the original documentation used in their advertising efforts, including: placed job ads, collected resumes, state workforce agency job orders, physical notice of filing announcements, and background on the qualifications of an identified immigrant worker. Between June 2008 and September 2011, 87 percent of labor certification applications were evaluated on the basis of employers' accounts, while the remaining 13 percent were audited (Rissing and Castilla 2012). This process is summarized in Figure 1 below:

[Insert Figure 1 about here]

Data

I study the decision processes that affect the U.S. DoL's evaluations of labor certification applications. Government agents responsible for the evaluation of labor certification requests were identified for interview through formal requests of the U.S. DoL, referrals to colleagues, and professional networking websites. Interviews were strictly voluntary and government interviewees received no compensation. I developed a sample of 48 interviews of U.S. DoL agents that had been employed with the U.S. Department Office of Foreign Labor Certification (OFLC) Program between June 2008 and September of 2011. Federal records indicate that

132

between 75 and 181 U.S. DoL agents were employed in capacities that include the evaluation of labor certification requests during this period (U.S. DoL 2009: 24-5, 2012a: 22).

Interviews were broadly stratified by U.S. DoL OFLC role, including those agents who worked in the labor certification non-audit unit (N=13 agents), audit unit (N=14), both the non-audit and audited unit at separate times (N=13), and those in program oversight or support roles (N=8). These agents were interviewed over the phone with a response rate of 25 percent. Conversations, averaging 42 minutes in duration, were semi-structured using interview questions pertaining to application evaluation, U.S. DoL work organization, and agent perceptions regarding key application fields. Interviews were recorded whenever possible (about 80 percent of the time), transcribed, and analyzed using ATLAS.ti.

From my interviews, I learned that agents working in the Atlanta, Georgia Processing Center were recruited by the U.S. DoL regionally from either the Atlanta metro area or Washington D.C. Agents were required to hold a minimum of a bachelor's degree, and many had background experience in law, finance, human resource management, and telecommunications, among other fields. U.S. military veterans were also privileged during hiring. A portion of these agents are full-time government employees, particularly those individuals in leadership and oversight roles. This said, during the time period under study many U.S. DoL agents were also hired as short-term contractors through external workforce agencies.

The U.S. DoL uses a competitive bidding process to solicit bids from workforce contracting firms to staff U.S. DoL Program Analyst Positions, which are responsible for labor certification decisions. These agencies typically provide temporary workers to fill these government agent roles for a one-year period, with a possible one-year extension. Contract extension is granted at the discretion of the U.S. DoL and is based primarily on application processing performance

measures. A contract extension may also be denied if a competing workforce agency presents a

lower bid at the end of a contract cycle, in which case the workforce agency and the vast

majority of its contract employees are laid off (through top performers are sometimes given the

opportunity to apply for positions with the new incoming contractor). During my interviews,

U.S. DoL analysts hired as contractors indicated that they were associated with one of several

different contracting agencies. Due to the high voluntary and involuntary turnover associated

with these temporary positions (consistent with contract work described elsewhere in the

literature, see Kalleberg 2000; Kalleberg et al. 2000), the average employment tenure of these

contract workers is limited to about one and a half years (see the discussion surrounding Table 1

below). One U.S. DoL analyst, who was hired as a contractor at the Atlanta Processing Center

after previously being unemployment, remarked:

> "It was actually ironic even, that here we were actually as contractors certifying foreign
> labor, foreign persons to receive [employment] when the majority of us were out of work
> [laughter]" (U.S. DoL Agent 14).

Whenever possible, demographic and human capital data were collected on those

government agents interviewed (see Table 1 below). Of those interviewed agents 65 percent

were female and 52 percent held graduate degrees. Government agents averaged 17.2 months of

employment and reported receiving an average of 17.2 days of initial training. This said,

reported training durations varied by functional role inside the U.S. DoL, with the shortest

training durations (averaging 7.4 days) received by those agents working in the non-audit unit

responsible for routine decisions. Additional detailed background on the characteristics of the

U.S. DoL interviewees can be found in Table 1 below.

[Insert Table 1 about here]

Analysis of qualitative interview records is complemented by analysis of U.S. DoL

documents, passages from which are quoted in the manuscript where appropriate. When

possible, U.S. DoL analysts provided background materials, including the U.S. DoL OFLC

handbooks detailing the "Electronic Code of Federal Regulations: Labor Certification Processes

for Permanent Employment of Aliens in the United States" and "OFLC Frequently Asked

Questions and Answers." Further, through the U.S. DoL Case Disclosure Program, I acquired

quantitative information on all approved and denied labor certification requests evaluated by

U.S. DoL agents in the Atlanta Processing Center between June 2008 and September 2011.

Advertising for Jobs that Employers Don't Want to be Filled?

A counterintuitive aspect of the labor certification process is that participating employers

may advertise jobs in the United States in manners that have the effect of minimizing the

quantity of responding applicants. Today less than one percent of labor certification requests

describe immigrant workers that are residing outside of the United States.[53] Quantitative records

available through the U.S. DoL Case Disclosure program indicate that seventy five percent of

described immigrants are employed on an H-1B temporary work visa (see the first essay of this

dissertation) at the time a sponsoring employer filed their labor certification request.[54] Yet, as

these temporary work visas (which are valid for a maximum of six years) expire, employers

wishing to retain these immigrants on a permanent basis through the labor certification system

must show that no available, willing, qualified, and able U.S. worker can fill the described

position. *This can lead employers to file job advertisements for a position that is currently filled*

---

[53] Ninety nine percent of all labor certification decisions reached between June 2008 and September 2001 pertained to applications in which a described immigrant worker was already residing in the United States (Rissing and Castilla 2012).

[54] The H-1B work visa program does not require U.S. firms to first advertise a job position to U.S. citizens before hiring a foreign national.

by an immigrant worker in such a way that no qualified U.S. applicants respond. One U.S. DoL

agent summarized the conflicting desires of U.S. employers and the intent of the labor

certification regulations as follows:

> "I want to make sure you understand the disconnect between what the law is and what
> employers want. Put yourself in the position of an employer, you've got a foreign worker
> and they're already here, and you want to keep them, how do you keep them here?... If
> you want your green card, and you don't qualify for any [other visa types], the only way
> to get a green card is to file a PERM [(Program Electronic Review Management), the
> system used to receive labor certification requests]. So you're already going into the
> PERM application with a foreign worker in mind, saying 'I need to get this person a
> green card.' Ok, put on my hat. My job is to protect the jobs of U.S. workers; my
> expectation is that an employer is going to look for a U.S. worker... So when you look at
> that, the premise doesn't fit-, it doesn't fit the real-world, and so the employers get kind
> of annoyed with us because we're trying to follow the mission of what our mandate is
> and they are like 'come on, you know what we're trying to do here.' Yeah we do, but
> that's not my problem, we still have to protect the jobs of U.S. workers, and I understand
> that you want this foreign worker, but not at the expense of a job for a U.S. worker" (U.S.
> DoL Agent 1).

This view was shared by another U.S. DoL agent who stated:

> "You know, they're just posting [advertisements] as a CYA-type (Cover Your Ass-type)
> thing, but they already know who the candidate is that they want, which again is going to
> be that foreign national, and I don't know if it's exactly fair to the labor market in their
> hiring practices" (U.S. DoL Agent 27).

If no viable U.S. citizens are identified and a foreign worker is qualified for a described

position, the employer will likely receive labor certification approval. U.S. DoL agents indicate

that employers may decrease the likelihood of identifying U.S. citizens through the specific form

of their advertising efforts, particularly through the use of physical newspaper ads (among other

advertising techniques that may reach limited segments of the labor market). One agent said

"you need to have two newspaper ads to show that you've... look[ed] for Americans to fill the

job. Well, a lot of these jobs that you get are tech jobs, and a lot of tech jobs don't advertise in

newspapers" (U.S. DoL Agent 33). Another agent echoed this concern regarding the apparently

low level of interest by U.S. citizens in jobs advertised as part of the labor certification program, saying:

> "A lot of times we would see [employers] send information in regarding their recruitment and they would send in either [a] small sampling of resumes, and say for an IT professional [an employer] only got 10 resumes, or for someone who might be a Database Administrator, which is ridiculous. In this day and age, if you send a Database Administrator position out you would probably see somewhere in the nature of several hundred to almost 1,000 resumes now or more depending on the location. But in our office they didn't really scrutinize the number of applications that were sent in, they just said whatever" (U.S. DoL Agent 27).

Such concerns complicate evaluations in an attestation-based regulatory system, such as the labor certification process, where regulated actors' claims to the government are trusted and accepted at face value. In such systems, where regulated actors' self-monitoring represents an important step in achieving compliance outcomes, government agencies have developed specific decision processes to assist in their assessment and investigation of these claims.

Evaluations of Accounts and Supporting Documentation in the Labor Certification Process

Created in 1977, the labor certification process originally required that all cases be evaluated with detailed supporting documentation. Beginning in the late 1990s, increased demand for immigrant labor, accelerated economic growth in the U.S. technology sector, and the time requirements associated with a detailed review of supporting documentation in all submitted cases led to a ten-year backlog of applications, totaling 300,630 pending cases by 2005. Thus in March 2005, the old system of evaluation was replaced with a new model to streamline evaluations and more efficiently process cases. Today, a likely staff of less than 75 to 181 analysts (U.S. DoL 2009: 24-5; 2012a: 22), processes tens of thousands of cases a year (67,383 labor certification applications were evaluated in 2011). How does the U.S. DoL evaluate these requests, and thereby seek to ensure that no U.S. citizen workers were available for employment

in the described positions? To accommodate this volume of applications, the U.S. DoL uses an efficiency-based decision process to evaluate cases with varying levels of scrutiny.

> "The largest issue is the statutory challenge to protect U.S. workers. This could be easily done by denying all labor certification requests, but is this ideal? No. There are lots of stakeholders, and issues and expectations regarding immigrant rights. Thus the U.S. DoL works to create a decision-making process. Current regulation is designed to promote efficiency" (U.S. DoL Agent 4).

As of March 28th of 2005, the U.S. DoL has utilized a tiered attestation-based decision process in which labor certification applications are evaluated with varying degrees of scrutiny, today including two primary units: "Analyst Review" and "Audit" (Burgess 2005). Applications are most frequently evaluated through the "Analyst Review" unit, in which determinations are reached solely on the basis of employer accounts provided through a submitted application. Based on an employer's accounts, an application may be approved, denied, or audited to obtain supporting documentation. A small portion of all incoming applications may also be randomly selected for audit (Gonzalez 2005: 15). In the "Audit" unit, applications are assessed using supporting documentation supplied in defense of employer claims and attestations. In the following sections, I examine first U.S. DoL agents' evaluations in each of these decision processes. This is followed by a discussion of how anomic regulation may contribute to poor regulatory outcomes in this setting.

When are Employers taken at their Word? The Evaluation of Accounts in Analyst Review

Quantitative records indicate that the majority (87 percent) of labor certification determinations are reached by government agents in the Analyst Review unit, based on assessments of employer accounts submitted in the U.S. DoL in Form ETA 9089 "Application for Permanent Employment Certification."[55] Evaluations of these applications are attestation-

---

[55] See Gordon 2005 for explicit legal details of this process, or refer to U.S. Employment and Training Administration Form 9089 (http://www.foreignlaborcert.doleta.gov/pdf/9089form.pdf).

based, meaning that government agents must assume that all presented information is correct and truthful – 91 percent of these applications are approved (Rissing and Castilla 2012). U.S. DoL agents in the Analyst Review unit routinely expressed some concern regarding the requirement to regarding employers' attestations as truthful. One agent said "a lot of us tended to be a little wary of whether they were telling the truth" (U.S. DoL Agent 9). This comment was echoed by another agent who offered the following:

> "You're taking people at their word. There would be embellishment... It's like in any other application process were you say under penalty of the law please tell the truth, and you hope that their version of the truth is accurate" (U.S. DoL Agent 22).

Agents tended to approve labor certification applications if employer accounts were internally consistent. Employers provide summary information on their hiring efforts (where ads were placed and when), the position they sought to fill, an identified immigrant worker, and basic company background. Applications with consistent accounts told a story through claims that were reinforcing and provided support for the central attestation that the employer was unable to find a qualified and available U.S. worker. Consistent and supportive claims could include descriptions of job requirements that are well-met by the credentials of the described immigrant worker, advertising efforts that could reach the broadest possible audience as evidence that the employer made sufficient effort to find an available U.S. worker, appropriate compensation, and economic justification as to why U.S. workers may be unavailable, among others. U.S. DoL agents with experience evaluating employer accounts in thousands of applications indicated that if an employer's application was filled out correctly and none of the information was conflicting, then the application would very likely be approved. One agent described their evaluation of employer accounts in the Analyst Review unit as follows:

> "If you reviewed the application and you saw nothing, all the dates were in order, the places they were recruiting from were legitimate, then you were like 'well, I didn't see

anything, so I'm going to go with they said they did it right, I don't see anything to counteract that, or dispute that, so let's go ahead and move on'" (U.S. DoL Agent 9).

In the following section, I describe application assessments within the Audit unit, in which supporting documentation is obtained through audit in order to bolster or refute employer accounts.

Assessments of Employers' Supporting Documents: Evaluations of Audited Material

If audited, an employer is prompted to produce specific documentation in support to one or more of the summary claims made in their application. This verification activity allows a separate group of agents in the "Audit" unit to be discerning in their evaluations. Assessments conducted by the "Audit" unit involve the review of specific supporting documentation in lieu of employer attestations. Rather than providing a list of venues or media where an employer conducted recruitment, employers may be prompted to produce the original advertisements that were circulated in newspapers, trade journals, or magazines. This allows U.S. DoL agents to examine the specific language used in these ads to determine if an employer circulated an advertisement during the necessary time periods (generally on several consecutive Sundays within 180 days of filing a labor certification application), and adequately described job requirements, benefits, and instructions on how to apply. Agents may also request copies of all resumes collected by an employer as a result of their recruitment efforts, allowing agents to review those potential U.S. candidates that were not selected for a position. Further, detailed information on the described immigrant worker's education credentials, professional certifications, and employment experience could allow agents to assess whether they are qualified for the described position.

Quantitative records available through the U.S. DoL Case Disclosure Program indicate that 13 percent of all applications evaluated between June 2008 and September 2011 were selected

for audit, and 57 percent of audited applications are approved. This indicates a much higher

denial rate in the "Audit" unit, where government agents' evaluations are reached based on

supporting documentation in lieu of the attestations that are examined by the "Analyst Review"

team.

Anomic Regulation in the Labor Certification Process

Self-monitoring systems rely on regulated actors' accounts to evaluate regulatory

compliance. To assess these, regulatory programs often use confidential evaluation rules to avoid

gaming and manipulation. This dynamic may create a sense of normlessness or anomie among

both regulators and regulated actors. Well-meaning regulators who faithfully apply evaluation

rules in the assessment of employer accounts may question their own legitimate judgments

because they are conscious of low approval rates among audited applications. Similarly,

regulated actors may have difficulty improving because they are unaware of the specific

evaluation criteria by which they are assessed. This can produce a lack of faith in regulatory

judgments, and a perceived inability to meet compliance objectives due to unpredictable and

opaque evaluation rules.

In this section, I explore anomic regulation in the labor certification process. I describe the

rationale behind government decisions to mask evaluation rules, characteristics of this process

that limit learning and feedback among employers and government agents, and finally a loss of

faith in the legitimate and faithfully executed judgments of government agents. I then rule out

alternatives to anomic regulation that may result in ineffective or inconsistent compliance

outcomes described elsewhere in the literature.

Opaque Evaluation Rules, Legitimate Judgments, and Anomie

The majority of self-monitoring systems that rely on the truthful accounts of regulated actors

to assess compliance outcomes necessitate private evaluation and verification rules. One U.S.

DoL agent indicated that if these rules were transparent, attorneys and U.S. employers would use

this understanding to game the regulatory process. This agent described their concerns as

follows:

> "Now the things that are going to cause an audit for an application, that information was
> confidential, because that's not something that's shared with the general public, because
> you don't want the attorneys and the employers knowing what the Office of Foreign
> Labor Certification is auditing for, what they're looking for, because if they know that,
> they're going to fill out the applications accordingly" (U.S. DoL Agent 7).

A second U.S. DoL agent went so far as to argue that public evaluation criteria would effectively

privatize the immigration process.

> "We also have our integrity footprint, referring to the specific criteria used to evaluate
> applications and trigger audits. These things are confidential. There are business
> opportunities in the answers to these questions. Who gets audited? Who gets supervised
> recruitment? We're entering the fourth branch of the government here. There is a level
> in which the Executive Branch will go through to protect its program. We take this very
> seriously. If we pull the curtain back for that [ie, fully disclose evaluation or audit
> criteria], there is nothing left. We might as well just mail the certifications out... sell
> them at 7-11. We'd privatize immigration, we give away this, and it's all gone, we're
> laid bare" (U.S. DoL Agent 4).

Self-monitoring systems frequently rely on the unpredictability of detection and investigation

tools, such as audits. During interviews, agents clearly described this as an advantage of these

evaluation systems, saying "the criteria was... purposely not included in the regulation in order

to retain the flexibility to change audit criteria... Making the audit process predictable would

defeat the purpose of the audits and undermine program integrity" (U.S. DoL Agent 17). Yet,

the lack of clarity in evaluation rules, and unpredictability of audit triggers can produce

situations where well-meaning employers have little capacity to learn from past mistakes or proactively comply with regulations.

When prompted for clarification regarding evaluation criteria, government agents may elect to provide incomplete information pertaining to the specifics of current decision rules. U.S. DoL OFLC program administrators will attend town hall-style meetings with members from the American Immigration Lawyers Association to field questions. Regarding the responses provided by the government to inquiries regarding evaluation criteria, one agent remarked:

> "there should be clear answers that employers and lawyers can read on the foreign labor certification laws that tells you exactly what it is, but what [U.S. DoL agents] do is, the regulations are very open and the answers that [U.S. DoL agents] give, the frequently asked answers are not particularly clear. So even for the [U.S. DoL] contractors... [we] couldn't read the answers and really get a clear answer of how to answer some of the issues. But technically, there were clear answers. You see what I'm saying? There were very clear answers" (U.S. DoL Agent 20).

This agent went on to describe how U.S. DoL responses to inquiries regarding evaluation rules were not consistent, and this lack of consistency was because "we didn't want the employers to get the answers" (U.S. DoL Agent 20). This agent continued, saying:

> "If we start giving employers the right answers, then they'll start answering the right answers, and then the importance of our positions are kind of limited or diminished or something. I don't know if that's the best way of thinking, but that is kind of how we felt" (U.S. DoL Agent 20).

Both U.S. employers, legal representatives, and national associations have criticized the unpredictability of labor certification evaluations. Some have argued that "current DoL policies create great uncertainty for employers and immigrants" (NFAP 2008: 7), while immigration lawyers have been critical of changing U.S. DoL requirements saying "the program remains riddled with deficiencies and uncertainties for employers" (EAH 2011). Other employers have sought to avoid the labor certification program, describing the associated labor market assessment as "complex and sometimes unpredictable" (University of Texas at Austin 2013).

Government agents too have limited capacity to learn through repeat interactions with regulated actors due to their reliance on employers' truthful accounts to reach compliance decisions. Agents in the Analyst Review and Audit units are never privy to the actual compliance activities of regulated actors. A further unique challenge within the OFLC is that many of the U.S. DoL analysts are members of a contract staff who may be terminated if their annual contract is not renewed. As a result, the tenure of these analysts is relatively short. Interviewed agents in the Analyst Review unit had an average tenure of 9.3 months, while agents in the Audit unit were employed for an average of 21.3 months (see Table 1). When these contractors are first hired, they frequently receive brief training, lasting in some cases as little as three days. One agent described the process, saying "it was intense because we had to learn a lot of information in a very short period of time" (U.S. DoL Agent 16). When a new contractor is brought in, the vast majority of existing contract analysts are terminated and new hires will learn the evaluation process from the beginning. One analyst recalled "I was barely learning what I was supposed to be doing before they came in and said no no, we have your last day, it's going to be [date]" (U.S. DoL Agent 12). Another agent described this transition saying "they had one [new] contractor who came in and kind of took over everything, and I think they hired two people from our team of [approximately 40] that we had, I think they took two people. And I'm not sure how they reformed and everything like that, but so they had to relearn everything" (U.S. DoL Agent 16). The routine churn of contract analysts in this program constrains their capacity to develop expertise as regulators.

Permanent federal staff members and subject matter experts in the U.S. DoL ease hiring and termination transitions for contract analysts by providing training and responding to analysts' requests for clarifications regarding rules and evaluation procedures. Yet, federal workers rotate

through positions as well, which presents challenges for U.S. DoL contractors. For instance, one agent noted if "you have someone federal, who hasn't been in that position long... they are learning as you are learning, in essence, so the feedback wasn't always there" (U.S. DoL Agent 28).

Conscious of disparity in approval rates between applications reviewed based on accounts (91 percent approval) and supporting documentation (57 percent approval), government agents expressed skepticism in the effectiveness of their legitimate judgments when reaching approval determinations. One agent described this issue saying, in "those [applications] that are investigated we find that there is a much higher denial rate than those that are not investigated. Which basically means that when we look behind the curtain, we find employers are not complying as often as folks would like them to be" (U.S. DoL Agent 1). A second U.S. DoL agent went farther saying that despite great confidence in their ability to faithfully apply regulations (or "regs"), they felt skeptical of employers' claims that they could not successfully identify U.S. workers to fill available jobs.

> "Let me word this correctly, I felt confident in all of my determinations according to what the regs stated. So, I was extremely confident [in] every single application I ever reviewed whether it was audit review or analyst review. That is because it was by the regs. So, in terms of how effective the regs are, that's up for debate. You know, it would take an act of Congress to change it, so, that's Congress, you know?... But was I always confident in my personal citations? Yes. So, I think that's a fair response to the question. Unemployment being the size that it is in this country, in the United States of America, I mean, there's no reason that you can't hire anybody in this country for what they are asking for. There really isn't. Come on, please? So that's, but according to the regs, damn, that's what it is" (Government Agent 24).

Other agents expressed frustration in their ability to detect potential employer violations while relying only on accounts or supporting documentation. The risk of employer manipulation of their advertising efforts is well-described in the following quote from a U.S. DoL agent who

felt uncomfortable with the various strategies that employers may utilize to avoid identifying

potentially willing, able, and qualified U.S. workers:

> "To be honest, the process lends itself to being fair, but there are ways to get around the process. The analysts try to make sure that no qualified U.S. applicants are available for a position. It can be troubling though. Employers state what the job duties for a position are in their application. The requirements stated by the employer can make it difficult for a U.S. worker applying for the position. If the applicant had to learn skills at the employer, it can be harder for other applicants to compete who did not have access to that specific training at the employer. Honestly, if the employer checks all the boxes on the application, their search can still be skewed and biased. Employers can overload job duties and descriptions to limit candidates. They can also post in a newspaper that does not get the same amount of responses. It could be in a newspaper with a smaller circulation pool. In the program, the employer can choose how they advertise, and this makes it difficult for the Analyst to assess the applications" (U.S. DoL Agent 41).

These broad concerns were voiced by many of the interviewed U.S. DoL agents. Other

agents described their reservations, saying "the problem is that it is really really easy to play the

system" (U.S. DoL Agent 43), "these employers are getting away with murder" (U.S. DoL Agent

32), and "you can look at something and think this is total bullshit, you know? [laughter]" (U.S.

DoL Agent 8). Further, in 2013 U.S. House of Representative testimony, the Assistant Inspector

General for Audit with the U.S. DoL described "systematic weaknesses in the self-attestation

system used by employers in support of their labor certification application requests" (Lewis

2013: 5).

The qualitative data presented in this section show evidence of anomic regulation in the labor

certification program. These findings shows that well-designed and faithfully-enacted rules may

nonetheless fail to achieve desired regulatory outcomes if the regulatory apparatus relies on

confidential evaluation rules and on actors' own accounts of compliance activities. Such a

system risks perceptions of illegitimacy among government agents regarding their own

regulatory judgments and ability to adequately assess employer hiring activities. Similarly,

regulated actors themselves may perceive interactions with the regulatory system as unpredictable and uncertain.

Alternative Explanations of Regulatory Failure

Here I explore several alternative explanations advanced in the literature for why regulation may not achieve its desired outcome. First, regulatory systems that are overly responsive to the requests or violations of specific employers risk incorporating their business interests or perspectives into evaluation systems (Marvel 1977; Silbey 1984; Hawkins and Thomas 1984). The U.S. DoL labor certification process does involve some limited responsive regulation, as employers previously identified by the government as "willful violators," or debarred immigration attorneys may be subject to automatic audit or denial of applications One U.S. DoL agents described applications filed by these employers and attorneys saying:

> "well, is there anyone on the planet that doesn't lie? You know? Everyone has told a little
> white lie at some point [laughter], you know? I'm not a person to trust people. So they
> have, I mean it's proof that we can't trust everything that someone says to us on an
> application, because if we could they wouldn't have a list of people that they
> automatically deny their applications, because they are dishonest" (U.S. DoL Agent 35).

This said, very few employers or lawyers are present on these listings. Of the 68,240 U.S. employers that filed applications between June of 2008 and September 2011, between 4 and 9 employers were present on the U.S. DoL debarment lists during these periods (See, for instance, U.S. DoL 2010b). Further, the risk that government agents may be influenced by regulated actors is minimal as they are randomly assigned to cases and at no point are they in direct communication with one another.

Other scholars have expressed concern that regulations may produce inconsistent outcomes due to excessive discretion afforded to government regulators (Davis 1969; Lipsky 1980; Wilson 1978). Yet, U.S. DoL agents have limited discretion in their evaluations, which are reached in a

single Atlanta, Georgia office from the hours of 8:00am to 5:00pm, time periods in which federal staff and subject matter experts may provide oversight and guidance.

Third, regulation may produce inconsistent outcomes if regulators are tasked with applying unreasonable and inordinately legalistic laws in settings where actors have varying capacities to comply (Bardach and Kagan 1982). In the labor certification process, all regulated employers interact with the OFLC by submitting standardized written accounts through the filing of Form ETA 9089 "Application for Permanent Employment Certification" or by submitting supporting documentation in response to audit requests. As U.S. DoL agents must rely on the truthful accounts of regulated actors, they have little information by which to gauge variation in regulated actors' compliance capacities.

Finally, in response to ambiguous laws, regulated organizations may create symbolic compliance structures that regulators recognize and legitimate over time (Edelman 1992; Edelman et al. 1999; Dobbin 2010). Such a process allows regulated actors to become active participants in defining acceptable compliance activities. It is unlikely, however, that such a process may affect labor certification outcomes, as federal statutes clearly define specific hiring efforts, immigrant qualifications, and advertising steps that are necessary to be in compliance with labor certification requirements. Employer's submitted application is also very regimented and requests specific and direct information. This process, thus afforded little leeway to U.S. employers seeking to construct or legitimate symbolic acts of compliance.

Discussion and Conclusion

Each year, a small team of U.S. DoL agents evaluate the labor certification requests of tens of thousands of employers (U.S. DoL 2010). The approval and denial determinations of labor certification requests affect foreign nationals' ability to work in the United States, but these

judgments also seek to protect the employment opportunities of U.S. citizens. Yet, as these evaluations rely on the truthful accounts of regulated actors themselves, less is known about the effectiveness of these regulatory programs.

I analyze unique qualitative data consisting of U.S. DoL agents responsible reaching labor certification judgments between June 2008 and September 2011. In so doing, I find that evaluations in this setting may fail to achieve their desired outcomes due to a process I describe as anomic regulation. Past scholars have suggested that ineffective regulation may be due to government agents' discretionary judgments (Davis 1969; Lipsky 1980; Wilson 1978), regulated actors symbolic compliance efforts (Edelman 1964, 1977; Kolko 1965, Dobbin 2010), unreasonable and inordinately legalistic laws (Bardach and Kagan 1982), and regulatory capture through responsive regulation (Marvel 1977; Silbey 1984; Hawkins and Thomas 1984). In contrast, I argue that self-monitoring regulatory systems involving well-designed and faithfully-enacted rules may nonetheless fail to achieve desired outcomes because of the law's inherent reliance on regulated actors' accounts of their activities in order to assess compliance.

These self-monitoring systems assess actors' truthful accounts using evaluation criteria and verification rules that are not public. This may result in anomic regulation, characterized by perceptions of normlessness and lack of rule, as rule confidentiality and limited feedback constrains the ability of both regulators and regulated actors to improve compliance outcomes. Regulators are rarely privy to the actual activities of regulated actors, and regulated actors are rarely privy to the evaluation criteria by which they are assessed. Anomic regulation can produce a regulatory apparatus that persists through justifications of confidentiality and necessity, yet provides limited means for regulators to improve their capacity to identify violators and regulated actors have limited capacity to improve compliance.

First, this study contributes to the literature by bridging the canonical literature on accounts (Scott and Lyman 1968; Orbuch 1997; Polletta et al. 2011:115) with more modern studies of audit-based regulatory systems used to collect supporting documentation (Power 1994, 1997; Strathern 2000; Houhton et al. 2010). Second, while scholars have described situations in which regulated actors may produce symbolic signals of compliance in an effort to achieve legitimacy or enhanced survival prospects Meyer and Rowan 1977; DiMaggio and Powel 1983; Silbey 1984; Edelman 1992; Kellogg 2009; Huising and Silbey 2011), less academic work has explored how regulators seek to investigate and assess such potentially symbolic accounts. The contrasting approval rates among applications evaluated based on accounts (91 percent approval) and supporting documents (57 percent approval) indicate that government investigations through audit may be effective tools to assess the claims and attestations of regulated actors with greater scrutiny. This said, in the absence of feedback and opportunities to learn, it is unlikely that such investigations may lead to greater compliance outcomes in a regulated population over time.
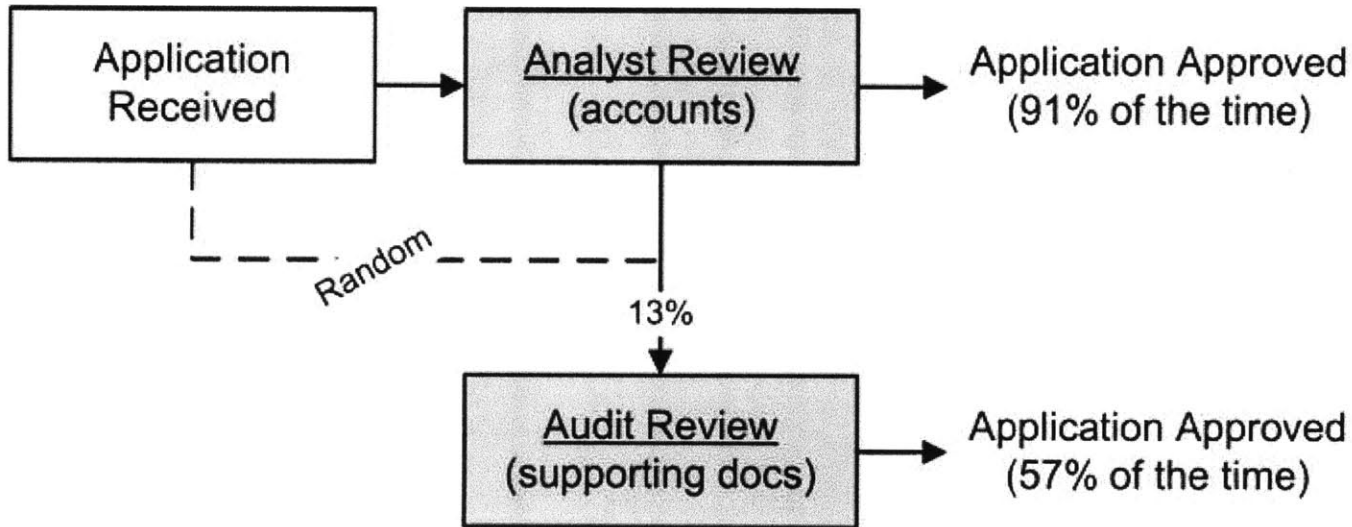
Finally, I contribute to practical and academic studies of self-monitoring systems that rely on regulated actors' accounts. These systems are growing in scope and frequency as both governments and organizations seek to efficiently regulate more aspects of social life. Such widespread U.S. regulatory programs include taxation, Medicare and Medicaid, student financial aid, and immigrant work visa programs. This work stresses the importance of feedback systems or objective evaluation standards as possible means to achieve stronger regulatory compliance outcomes. With specific regards to the labor certification program, regulated employers may be able to reach a broader population of available and qualified U.S. workers through the mandated use internet advertising channels. Similarly, such a system could allow government agents

immediate access to key supporting documents, mainly received resumes, without the necessity

of auditing.

Table 1: Characteristics of Interviewed U.S. DoL Analysts

Job Function	Interviews	Male	Average Days of Training	Bachelor's Degree	Graduate Degree	Average Months Employed	Average Analyst Review Cases a Day		Average Audit Cases a Day	
							Min	Max	Min	Max
Analyst Review	13	38.5%	7.4	70.0%	30.0%	9.3	13.2	22.0		
Audit	14	42.9%	21.0	54.5%	45.5%	21.3			4.7	7.0
Analyst Review & Audit	13	30.8%	28.4	36.4%	63.6%	17.7	22.0	27.0	4.3	6.8
Federal Employee	4	25.0%	Unknown	0.0%	100.0%	47.0				
Support	4	25.0%	8.8	25.0%	75.0%	14.5				
Total	48	35.4%	17.2	47.4%	52.6%	17.2	17.6	25.7	4.4	6.9

Figure 1: U.S. DoL Labor Certification Process

Figure 1: U.S. DoL Labor Certification Process

Application Received → Analyst Review (accounts) → Application Approved (91% of the time)

Random (dashed line)

13% → Audit Review (supporting docs) → Application Approved (57% of the time)

List of References

Ayres, Ian, and John Braithwaite. 1992. *Responsive Regulation: Transcending the Deregulation Debate*. New York, NY: Oxford University Press.

Bardach, Eugene and Robert A. Kagan. 1982. *Going by the Book: The Problem of Regulatory Unreasonableness*. Philadelphia, PA, Temple University Press.

Baillot, Helen, Sharon Cowan, and Vanessa E. Munro. 2009. "Seen but Not Heard? Parallels and Dissonances in the Treatment of Rape Narratives across the Asylum and Criminal Justice Contexts." *Journal of Law and Society*. 36(2): 195-219.

Bartley, Tim. 2007. "Institutional Emergence in an Era of Globalization: The Rise of Transnational Private Regulation of Labor and Environmental Conditions." *The American Journal of Sociology* 113(2):297–351.

Becker, Gary. 1968. "Crime and punishment: An economic approach." *Journal of Political Economy*, 76(2): 169–217.

Bovens, M. 1998. *The Quest for Responsibility: Accountability and Citizenship in Complex Organizations*. Cambridge University Press.

Blommaert I. 2001. Investigating Narrative Inequality: African Asylum Seekers' Stories in Belgium. *Discourse Sociology*. 12(4):413–49

Braithwaite, J. 1984. *Corporate Crime in the Pharmaceutical Industry*. London: Routledge and Kegan Paul.

Burgess, Lorna R. 2005. "How the PERM Labor Certification Process Evolved" Pp. 1-12 in *The David Stanton Manual on Labor Certification, 3rd Edition*, edited by J. Gonzalez and E. Greenfield. Washington, DC: American Immigration Lawyers Association Publications.

Davis, Kenneth C. 1969. *Discretionary Justice*. Baton Rouge, LA: Louisiana State University Press.

Davis, Kenneth C. 1972. *Administrative Law Text*. St. Paul, MN: West Publishing Co.

DiMaggio, Paul J., and Walter W. Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." *American Sociological Review* 48: 147-60.

Durkheim, Emile. 1979. *Suicide*. New York: The Free Press.

Dobbin, Frank. 2009. *Inventing Equal Opportunity*. Princeton University Press.

Douglas, M. 1992. *Risk and Blame: Essays in Cultural Theory*. London: Routledge.

Duane, James. 2008. "Don't Talk to the Police." Regent University of Law Lecture.

Edelman, Murray. 1964. *The Symbolic Uses of Politics*. Urbana, IL: University of Illinois Press.

Edelman, Murray. 1977. *Political Language: Words that Succeed and Policies that Fail*. New York: Academic Press.

Edelman, Lauren B. 1992. "Legal Ambiguity and Symbolic Structures: Organizational Mediation of Civil Rights Law." *The American Journal of Sociology* 97(6):1531–76.

Edelman, Lauren B., Christopher Uggen, and Howard S. Erlanger. 1999. "The Endogeneity of Legal Regulation: Grievance Procedures as Rational Myth." *The American Journal of Sociology* 105(2):406–54.

Elkind Alterman Harston (EAH). 2011. "PERM Labor Certification Program." *EAH Immigration Blog*. Available online at: http://eahimmigrationblog.com/?p=117

Ericson, Richard V., and Kevin D. Haggerty. 2006. *The New Politics of Surveillance and Visibility*. 1st ed. University of Toronto Press, Scholarly Publishing Division.

Ewick, Patricia, and Susan S. Silbey. 1998. *The Common Place of Law: Stories from Everyday Life*. 1st ed. University Of Chicago Press.

Flint, D. 1988. *Philosophy and Principles of Auditing*. London: Macmillian.

Federal Bureau of Investigation (FBI). 2011. "Financial Crimes Report to the Public: Fiscal Years 2010 – 2011." Available at: http://www.fbi.gov/stats-services/publications/financial-crimes-report-2010-2011

Gilboy, Janet A. 1991. "Deciding Who Gets In: Decision-making by Immigration Inspectors." *Law and Society Review* 25: 571-99.

Goffman E. 1959. *The Presentation of Self in Everyday Life*. Garden City, NY: Doubleday-Anchor.

Gordon, Howard W. 2005. "Preparing to File Applications for Labor Certification under PERM." Pp. 79-90 in *The David Stanton Manual on Labor Certification, 3rd Edition*, edited by J. Gonzalez and E. Greenfield. Washington, DC: American Immigration Lawyers Association Publications.

Gonzalez, Jossie. 2005. "Demystifying the PERM Audit." Pp. 13-23 in *The David Stanton Manual on Labor Certification, 3rd Edition*, edited by J. Gonzalez and E. Greenfield. Washington, DC: American Immigration Lawyers Association Publications.

Gunningham, Neil; Kagan, Robert A.; Thornton, Dorothy. 2006. *Shades of Green: Business, Regulation, and Environment*. Stanford, CA, Stanford Law and Politics

Haufler, Virginia. 2001. *A Public Role for the Private Sector : Industry Self-Regulation in a Global Economy*. Carnegie Endowment for International Peace.

Heimer, Carol A. 2012 "Blue Moon Regulation: Why the Have-Nots Occasionally Come Out Ahead" Presented at the Society for the Advancement of Socioeconomics Annual Meeting, Cambridge, MA.

Houghton, Keith, Christine Jubb, Michael Kend, and Juliana Ng. 2011. *The Future of Audit: Keeping Capital Markets Efficient.* ANUE Press.

Huising, Ruthanne, and Susan S. Silbey. 2011. "Governing the Gap: Forging Safe Science through Relational Regulation." *Regulation & Governance* 5(1):14–42.

Internal Revenue Service (IRS). 2012. "Tax Gap for Tax Year 2006." Available at: http://www.irs.gov/pub/newsroom/overview_tax_gap_2006.pdf

Kagan, Robert A. 2001. *Adversarial Legalism: The American Way of Law.* Harvard University Press.

Kolko, G. 1965. *Railroads and Regulation, 1877-1916.* Princeton, NJ: Princeton University Press.

Lewis, Elliot P. 2013. "Written Testiomony of Elliot P. Lewis," presented before the House Committee on Appropriations; Subcommittee on Labor, Health and Human Services, Education and Related Agencies, U.S. House of Representatives. Available at : http://appropriations.house.gov/uploadedfiles/hmtg-113-ap07-wstate-lewise-20130319.pdf

Lipsky, Michael. 1976. "Toward a Theory of Street Level Bureaucracy." Pp. 196-213 in *Theoretical Perspectives on Urban Politics,* edited by Willis D. Hawley and Michael Lipsky. Englewood Cliffs, NJ: Prentice-Hall.

Lipsky, Michael. 1980. *Street-level Bureaucracy: Dilemmas of the Individual in Public Services.* New York, NY: Russell Sage Foundation.

Meyer, John W., and Brian Rowan. 1977. "Institutionalized Organizations: Formal Structure as Myth and Ceremony." *American Journal of Sociology* 83: 340-63.

Hawkins, K. and J. Thomas. 1984. *Enforcing Regulation.* Boston MA: Kluwer-Nijhoff Publishing.

Jasso, Guillermina. 1988. "Whom Shall We Welcome? Elite Judgments of the Criteria for the Selection of Immigrants." *American Sociological Review* 53: 919-32.

Jensen, Michael. 2006. "Should We Stay or Should We Go? Accountability, Status Anxiety, and Client Defections." *Administrative Science Quarterly* 51(1):97–128.

Kalleberg, Arne L. 2000. "Nonstandard Employment Relations: Part-time, Temporary and Contract Work." *Annual Review of Sociology* 26(1):341–65.

Kalleberg, Arne L., Barbara F. Reskin, and Ken Hudson. 2000. "Bad Jobs in America: Standard and Nonstandard Employment Relations and Job Quality in the United States." *American Sociological Review* 65(2):256–78.

Kellogg, Katherine C. 2009. "Operating Room: Relational Spaces and Microinstitutional Change in Surgery." *American Journal of Sociology* 115(3):657–711.

Locke, Richard M. 2013. *The Promise and Limits of Private Power: Promoting Labor Standards in a Global Economy*. 1st ed. Cambridge University Press.

Locke, Richard M., Ben A. Rissing, and Timea Pal. 2012. "Complements or Substitutes? Private Codes, State Regulation and the Enforcement of Labour Standards in Global Supply Chains." *British Journal of Industrial Relations*

Lyman SM, Scott MB. 1970. *A Sociology of the Absurd*. New York: Appleton-Century Crofts.

Lyon, David. 1994. *The Electronic Eye: The Rise of Surveillance Society*. Cambridge, MA: Polity Press.

Lyon, David. 2001. *Surveillance Society: Monitoring Everyday Life*. 1st ed. Philadelphia, PA: Open University Press.

Marvel, H. 1977. "Factory Regulation: A Reinterpretation of Early English Experience." *Journal of Law and Economics,* 20(2): 379–402.

Marx, Gary T. 1988. *Undercover: Police Surveillance in America*. Berkeley: University of California Press.

National Foundation for American Policy (NFAP). 2008. "Certifiable: The Department of Labor's Approach to Labor Certification." Available at: http://www.nfap.com/pdf/080731laborcertification.pdf

Neyland, Daniel. 2006. *Privacy, Surveillance and Public Trust*. Annotated edition. Palgrave Macmillan.

Obloj, Tomasz, and Metin Sengul. 2012. "Incentive Life-cycles Learning and the Division of Value in Firms." *Administrative Science Quarterly* 57(2):305–47.

Orbuch, Terri L. 1997. "People's Accounts Count: The Sociology of Accounts." *Annual Review of Sociology* 23:455–78.

Parker, Christine. 2013. "Twenty Years of Responsive Regulation: An Appreciation and Appraisal." *Regulation & Governance* 7(1):2–13.

Pentland, Brian T., and Paul Carlile. 1996. "Audit the Taxpayer, Not the Return: Tax Auditing as an Expression Game." *Accounting, Organizations and Society* 21(2-3):269–87.

Polletta, Francesca, Pang Ching Bobby Chen, Beth Gharrity Gardner, and Alice Motes. 2011. "The Sociology of Storytelling." *Annual Review of Sociology* 37(1):109–30.

Power, Michael. 1997. *The Audit Society: Rituals of Verification*. Oxford University Press, USA.

Power, Michael. 1994. *The Audit Explosion*. Demos.

Rother, Jeffrey A., John T. Scholz, and Ann D. Witte. 1989. *Taxpayer Compliance An Agenda for Research*. Philadelphia: University of Pennsylvania Press.

Rissing, Ben A., and Emilio J. Castilla. 2012. "Off to a Green Start? How State Agents Shape the Employment of Foreign Nationals by Citizenship." *Academy of Management Proceedings*.

Rushing, William A. 1966. "Organizational Rules and Surveillance: Propositions in Comparative Organizational Analysis." *Administrative Science Quarterly* 10(4):423–43.

Scott, Marvin B., and Stanford M. Lyman. 1968. "Accounts." *American Sociological Review* 33(1):46–62.

Shapiro, Sidney A. 2003. "Outsourcing Government Regulation." *Duke Law Journal* 53(2):389–434.

Silbey, Susan S. 1984. "The Consequences of Responsive Regulation" p. 147-170 in J. Thomas and K. Hawkins (eds.) *Enforcing Regulation*, Boston, The Hague and London: Kluwer Nijhof.

Strathern, Marilyn. 2000. *Audit Cultures: Anthropological Studies in Accountability, Ethics and the Academy*. 1st ed. Routledge.

Tullock, Gordon. 1974. "Does Punishment Deter Crime?" *The Public Interest*. 36:103–111.

United States Department of Labor. 2009. "Foreign Labor Certification." *FY 2010 Department of Labor Budget in Brief*: 24-5. http://www.dol.gov/dol/budget/2010/PDF/bib.pdf.

United States Department of Labor, Employment and Training Administration. 2009. *Permanent Labor Certification*. http://www.foreignlaborcert.doleta.gov/perm.cfm.

United States Department of Labor, Employment and Training Administration, 2010a. "The Foreign Labor Certification Report: 2009 Data, Trends and Highlights Across Programs and States." *Office of Foreign Labor Certification Annual Report*: 1-2, 20.

United States Department of Labor, Employment and Training Administration. 2010b. *Program Debarments*. http://www.foreignlaborcert.doleta.gov/pdf/Debarment_List_Revisions.pdf.

United States Department of Labor. 2012a. "Foreign Labor Certification." *FY 2013 Department of Labor Budget in Brief*: 28. http://www.dol.gov/dol/budget/2012/PDF/FY2012BIB.pdf.

United States Government Accountability Office (U.S. GAO). 2011. "H-1B Visa Program: Reforms are Needed to Minimize the Risks and Costs of Current Program." Report to Congressional Committees. Available at: http://www.gao.gov/assets/320/314501.pdf

University of Texas at Austin. 2013. "University LPR Procedures." Available online at: http://world.utexas.edu/isss/dept/lpr/procedures

Van Maanen, John. 1980. "Beyond Account: The Personal Impact of Police Shootings." *Annals of the American Academy of Political and Social Science* 452:145–56.

Wilson, James Q. 1973. *Political Organizations*. New York, NY: Basic Books.

Wilson, James Q. 1980. *The Politics of Regulation*. New York, NY: Basic Books.

Weil, David. 2005. "Public Enforcement/Private Monitoring: Evaluating a New Approach to Regulating the Minimum Wage." *Industrial and Labor Relations Review*, 58(2): 238–257.