

WEIGHING DOWN THE BOOTSTRAPS:

*The Heavy Burden of Occupational Licensing
on Immigrant Entrepreneurs*

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EXECUTIVE SUMMARY

Immigrants to the United States make up an average of 14% of the population yet they make up 22% of all entrepreneurs. As a result, the immigrant entrepreneurship rate — the number of entrepreneurs as a share of the population — tends to be higher than the native-born entrepreneurship rate. While the average rate of native self-employed equaled 240 entrepreneurs per 100,000 people (or 0.24%), the average rate of immigrant entrepreneurs equaled 420 per 100,000 people (0.42%).

Immigrant entrepreneurs tend to be younger than native-born entrepreneurs: 58% of native entrepreneurs are between the ages of 20 and 49 but 72% of immigrant entrepreneurs are under the age of 49. The immigrant entrepreneurs studied in this report tend to be

predominantly Hispanic/Latino, and this group of immigrant entrepreneurs has some of the highest observed rates of entrepreneurship in the data.

They also tend to have lower educational attainment than native-born workers. This latter disadvantage is especially onerous when considered in light of state occupational licensing burdens that often require a specific level of educational attainment that is often higher than the level achieved by many immigrants. Meanwhile, due to the fact that a vastly larger share of immigrant entrepreneurs (over half) work in some of the most heavily licensed occupations, while a majority of native-born entrepreneurs work outside of those occupations, occupational licensing statutes place a disproportionate burden on immigrants trying to start their own businesses.

Using data on immigrant entrepreneurs from the Kauffman Foundation's Index of Entrepreneurial Activity and matching them with measures of occupational licensing burdens from the Institute for Justice, the analysis in this study indicates that states with heavier-than-average licensing burdens have an average immigrant entrepreneurship rate that is nearly 11% lower than average. Those states with lower-than-average occupational licensing burdens have an average rate of immigrant entrepreneurs that is an average of 14% higher.

INTRODUCTION

A growing body of literature over the past three decades has concluded that occupational licensing — believed in the past to be a valuable way of assuring quality of services provided by making state government the gatekeeper into an occupation — has been less successful as a means to protect public health and safety and more successful as a way to keep barriers to entry high for new entrants into an occupation.¹ These barriers to entry have proven to be consequential to those who fall into specific categories of workers, particularly low-income entrepreneurs in service occupations.² Focusing analysis on the groups of people who are harmed most by these licensing

requirements, you discover that many of them have lower educational attainment than what is often required to obtain a government occupational license. Additionally, some people carry an indelible legal mark against them — a criminal record — which in many states forbids them from holding a state license. This in turn can drive them out of the labor market at a critical time and encourage a return to a life of crime and the revolving door of “recidivism” (re-offense and re-imprisonment).³

Meanwhile, much of the focus on immigrant entrepreneurs is on the experience of innovative technology leaders who change the world through start-ups in Silicon Valley. This is certainly a valuable focus, and one that has shown the value of educated high-skilled labor coming from overseas. However, it's also important to consider the other end of the spectrum, the portion of the workforce that is more in-line with the day-to-day experience of most immigrants: entrepreneurship in the services industries. That trend in entrepreneurship — a vital and healthy trend that can be the path out of poverty for many — can be severely hindered by the presence of burdensome occupational licensing laws that keep them from achieving their dream of self-employment.

This study seeks to fill in the gaps of the policy research on the topic of immigrant entrepreneurship by focusing on the half of the immigrant entrepreneur population in the ranks of those who own and operate companies focused on services: the child care providers, the landscapers, and the nail salon owners, just to name a few. Their path to prosperity can be bumpy, or even be put to a premature end, through the heavy hand of occupational licensing laws.

A DEMOGRAPHIC PROFILE OF IMMIGRANT ENTREPRENEURS

Some entrepreneurs were born in the U.S. Others came to this country either as children or as adults. The demographic profile of a group of entrepreneurs born here and those who came here — whether that profile

be along the dimension of age, ethnicity, or education levels — looks quite a bit different. Additionally, the list of industries in which each group tends to work looks a bit different. Any analysis of the labor market outcomes for each of them, which should include an explanation of how laws like occupational licensing statutes affect them, would benefit from knowing the broad demographic contours of entrepreneurs both foreign- and native-born.

A definition of an entrepreneur that can be applied across the entire dataset is an essential first step. The Kauffman Foundation describes “entrepreneurs” as all individuals between ages 20 and 64 who own a business as their main job (i.e., 15 or more usual hours worked per week).⁴ The data published by the Kauffman Foundation come from the Census Bureau and, therefore, include plenty of information of this sort to allow researchers to learn more about entrepreneurs and their overall demographic profile.

Immigrant status is one of many demographic factors that can be explored. The Kauffman data allows for the filtering of survey respondents by whether they were born in the U.S. or another country and also whether they are self-employed entrepreneurs.

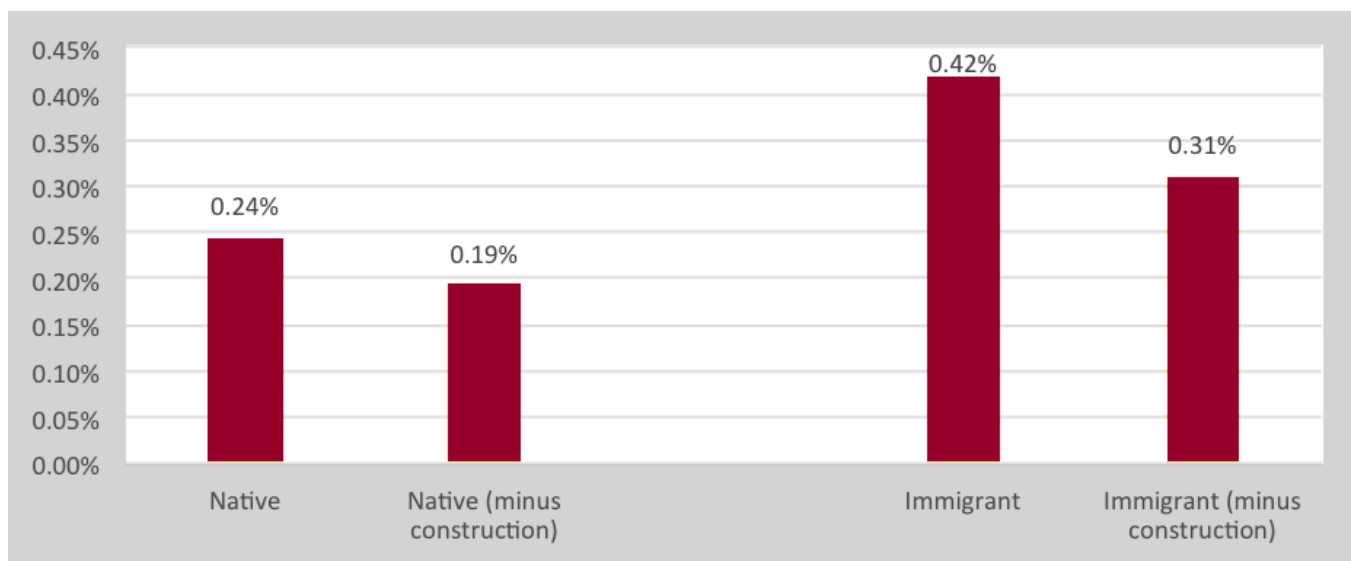
As far back as 1996 (the first year for which the Kauffman data are available), immigrants have been more heavily represented in the ranks of entrepreneurs than their share of the total population might indicate. The same is true for the period that is considered in this study (2011-2012). Immigrants make up an average of 14% of the population for 2011 and 2012. Yet they make up 22% of all entrepreneurs.⁵

As a result, the immigrant entrepreneurship rate — the number of entrepreneurs as a share of the population — tends to be higher than the native-born entrepreneurship rate. While the average rate of native self-employed equaled 240 entrepreneurs per 100,000 people (or 0.24%), the average rate of immigrant entrepreneurs equaled 420 per 100,000 people (0.42%). (See chart.)

As we’ll see later, there are several industries and occupational categories in which immigrant entrepreneurs tend to start their businesses. For now, it’s useful to note that the construction industry is by far the largest, accounting for 25% of all immigrant entrepreneurs.⁶ Because so many of those within construction are self-employed as contractors, it’s fair to point out that the overall entrepreneurship rate could be skewed by the presence of

CHART I

Entrepreneurship Rate (2011-2012)



Source: Author’s calculations based on data from the Kauffman Index of Entrepreneurial Activity.

an unusually high concentration of self-employed workers of this sort.

Construction workers can be subtracted from the mix. Yet, after doing so, the overall pattern does not change much. Both the native and immigrant entrepreneurship rate does fall. The native entrepreneurship rates in non-construction fields is 0.19%. For immigrants, the rate is still higher at 0.31%. (See chart.)

AGE

The conventional image of successful entrepreneurs today tends to be a young person, possibly a college dropout, taking a risk on a new business or innovation. There’s often plenty of reality behind that image. But most entrepreneurs are in traditional industries and can run the gamut in age and educational attainment. The survey results in the Kauffman dataset, which tracks entrepreneurs between the ages of 20 and 64, can help us see which narrative is closest to the truth.

Most entrepreneurs are under the age of 50: 58% of native entrepreneurs are between the ages of 20 and 49, for instance. However, more immigrant entrepreneurs tend to be even younger than native-born entrepreneurs: about 72% of immigrant entrepreneurs are under the age of 49.

Breaking this down by more discrete age ranges illuminates a unique pattern. (See Table 1.) In all age cohorts, the immigrant entrepreneurship rate is substantially higher than the native-born rate. Some age ranges

exhibit a larger spread between the two than others: between the ages of 30 and 50, for instance, the average overall native entrepreneurship rate is a little over half the rate of immigrant entrepreneurship.

Separating construction jobs from the calculation doesn’t change these results much either. While the difference between the immigrant entrepreneurship rate and the native entrepreneurship rate between the ages of 30 and 50 is no longer double, it’s still large. Additionally, except for ages 20 to 29, every immigrant age cohort has a higher non-construction entrepreneurship rate than the native-born. In that younger cohort, the native and immigrant entrepreneurship rates are the same. They diverge quickly for every older age cohort.

RACE AND ETHNICITY

Hispanics and Latinos (grouped together for statistical purposes) are the second largest group of immigrants in the U.S., representing nearly a third of all immigrants. White immigrants are the largest share. (See Table 2.)

Moreover, Hispanics/Latinos make up a much larger share of the total immigrant entrepreneur population - over three times as large — than their share in the general population. Even when you compare the overall immigrant population to the immigrant entrepreneur population, you still see a larger share of entrepreneurs who are Hispanic/Latino. The same can be said for white immigrants, but the differential between immigrant population

TABLE 1
Entrepreneurship Rate

Age	Native (non-construction)		Immigrant (non-construction)	
	Native	Immigrant	Native	Immigrant
20-29	0.18%	0.14%	0.24%	0.14%
30-39	0.22%	0.17%	0.46%	0.31%
40-49	0.27%	0.20%	0.48%	0.37%
50-59	0.28%	0.22%	0.46%	0.38%
60-64	0.30%	0.25%	0.35%	0.29%

Source: Author’s calculations based on data from the Kauffman Index of Entrepreneurial Activity.

TABLE 2
Population Share by Race/Ethnicity

Race/Ethnicity	Total	Immigrant Population	Immigrant Entrepreneur Population
White only	73%	43%	48%
Black only	9%	6%	4%
Asian only	4%	17%	11%
Hispanic/Latino	11%	31%	36%
Other	3%	2%	2%

Source: Author’s calculations based on data from the Kauffman Index of Entrepreneurial Activity.

share and the immigrant entrepreneur population share for them (10% greater) is still a bit smaller than it is for Hispanics/Latinos (15% greater). (See Table 3.)

Next, consider the entrepreneurship rate (both inclusive and exclusive of construction employment) according to race and ethnicity. In the table, you see that Hispanics/Latinos are the immigrant group with the highest entrepreneurship rate. When construction jobs

TABLE 3
Immigrant Entrepreneurship Rate by Ethnicity

Race/Ethnicity	Total	Minus Construction
White	0.49%	0.34%
Black	0.30%	0.26%
Asian	0.27%	0.26%
Hispanic/Latino	0.52%	0.34%

Source: Author's calculations based on data from the Kauffman Index of Entrepreneurial Activity.

TABLE 4
Educational Attainment (by race/ethnicity)*

GENERAL POPULATION					
	Total	White	Black	Asian	Hispanic/Latino
High school or less	40.66%	37.40%	46.37%	27.56%	61.78%
Some college	29.42%	30.08%	32.72%	21.90%	24.11%
College degree	19.87%	21.63%	13.88%	30.82%	10.12%
Graduate degree	10.05%	10.89%	7.03%	19.72%	3.98%
IMMIGRANT POPULATION					
	Total	White	Black	Asian	Hispanic/Latino
High school or less	57.77%	60.10%	44.23%	29.79%	73.84%
Some college	17.52%	17.22%	27.80%	18.50%	14.90%
College degree	15.33%	13.91%	17.64%	30.29%	8.10%
Graduate degree	9.38%	8.77%	10.34%	21.42%	3.16%
IMMIGRANT ENTREPRENEUR POPULATION					
	Total	White	Black	Asian	Hispanic/Latino
High school or less	67.74%	67.84%	52.83%	41.86%	78.72%
Some college	13.77%	13.92%	18.87%	11.63%	13.30%
College degree	12.57%	12.94%	22.64%	24.81%	6.38%
Graduate degree	5.91%	5.29%	5.66%	21.71%	1.60%

* Excludes those respondents employed in construction.

are excluded, Hispanic/Latinos are tied with white immigrants for the highest entrepreneurship rate among all immigrant groups.

EDUCATION

Seeing the levels of educational attainment broken down by both race/ethnicity and by immigrant status can also be instructive. (As a general rule, the survey respondents who were in construction jobs had a generally lower level of educational attainment, so they were excluded from the sample in this comparison.) White and Hispanic immigrants tend to have no more than a high school degree.

All races of immigrant entrepreneurs, however, have generally lower levels of education than the cohort of all immigrants in general. For Hispanic/Latino entrepreneurs, the numbers are especially striking, with nearly 80% of all immigrant entrepreneurs with an educational achievement of no more than a high school diploma. (See Table 4.)

OCCUPATIONS

Immigrants are entrepreneurs in several industries and occupations. However, as mentioned previously, there are a few industries that have a large concentration of immigrant entrepreneurs. Construction is primary among them. Around 25% of all immigrant entrepreneurs are in the construction industry in one form or another.

The next three biggest categories are child care services, beauty services, and landscaping services (for both residential and commercial structures). Those three categories combined account for a slightly larger share of immigrant entrepreneurship than construction, around 28%.

Combined, these occupational categories account for over half of total employment (54%) for immigrant entrepreneurs. The number of occupational categories touched by licensing statutes affects more immigrant entrepreneurs as a share of the whole than it does for native-born entrepreneurs. For example, the percentage of native-born entrepreneurs in those four occupational categories (construction, child care, beauty services, and landscape services) account for 34% of all native-born entrepreneurs compared to the aforementioned 50% of all immigrant entrepreneurs.⁷ So, it's easy to see how, based on the scope of occupational categories that we know are licensed, occupational licensing is more likely to burden them than it might a native-born entrepreneur since most of their entrepreneurial opportunities reside in these specific industries. Indeed, most of the growth in the scope of licensing requirements over the past 50 years have been in service-based industries that employ a disproportionate number of immigrants.

It's also true that these occupations in which immigrant entrepreneurs are concentrated are among the most heavily regulated in terms of the training and education required to obtain those licenses. Considering the levels of educational achievement that most immigrants tend to have, the obtaining of a license in a state with high

occupational licensing requirements could be prohibitive to their prosperity and could mean the difference between them opening a business and not.

THE EFFECT OF OCCUPATIONAL LICENSING BURDENS ON IMMIGRANT ENTREPRENEURS

We've already seen how the burdens of occupational licensing — the requirement that to hold a specific job someone needs to have a license issued by a government and those licenses are often predicated on achieving a certain level of educational attainment or completing a certain number of hours of training — are most likely to fall heaviest on immigrant entrepreneurs (particularly, Hispanics and Latinos) due to the occupations they tend to gravitate toward.

Prior studies have demonstrated that low-income entrepreneurs — which include a large chunk of immigrant entrepreneurs — are adversely impacted by high occupational licensing burdens that put downward pressure on the number of entrepreneurs in a state.⁸ Even after adjusting for other factors that might explain the differences in the entrepreneurship rate among low-income workers in each state, it still appears that high licensing burdens strongly contribute to lower than average rates of entrepreneurship among that group of people.⁹

Based on the demographic profile of the average immigrant entrepreneur — who, on average, tends to have lower rates of educational achievement and tends to be a bit younger than native-born entrepreneurs — we can see how occupational licensing burdens that restrict entry into a field based mainly on educational attainment or hours of training could strongly and disproportionately hinder the entry of immigrant entrepreneurs into those fields.

These licensing burdens, however, are not uniform across states. For starters, not all states license certain occupations. Even those states which license an occupation and maintain experience and educational requirements or fees may not do so to the same degree: some might require

simply a fee for the purposes of registration while others may require hours upon hours of training plus fees.

Of course, not all states have the same percentage of immigrants or immigrant entrepreneurs, either. Could occupational licensing burdens help explain the differences between the states in this regard? It's possible that the number of immigrant entrepreneurs could simply be explained by the sheer number of immigrants in a state's population; you would obviously expect the states with a larger community of immigrants to also have more immigrant entrepreneurs. But the variation between states even after adjusting for immigrant population density might be explained, considering what we've already seen about the fields in which most immigrant entrepreneurs are employed, by the severity of occupational licensing burdens on those occupations.

To test this, we first need a measure of occupational licensing burdens. The most comprehensive measure of a state's occupational licensing burdens comes from the Institute for Justice (IJ).¹⁰ That measure outlines licensing burdens by occupational title and state and includes in their measure of burdens not just whether a state licenses an occupation or not, but also the education/experience requirements and fees. The authors then aggregate these measures of licensing burdens and make them comparable between states.¹¹

Comparing the number of immigrant entrepreneurs in each state is a slightly trickier matter. Some states may have few or no immigrant entrepreneurs in the Kauffman survey while others may have many. To neutralize the effects that immigrant population size might have on the analysis — in other words, to account for the reasonable assumption that states with low immigrant populations will also naturally have a low number of immigrant entrepreneurs — the states analyzed in this paper all have immigrant populations that make up 10% or more of the total population.¹²

There are 14 states that fit that description and are therefore the states analyzed in this study: Arizona, California, Colorado, Connecticut, Florida, Georgia,

Hawaii, Illinois, Massachusetts, Nevada, New Jersey, New Mexico, New York, and Texas.

It is also crucial to make sure that the sample set of entrepreneurs we are looking at would be those that would be most likely to be influenced by the presence or lack of licensing. Construction, as already noted, is the industry with the single-largest concentration of immigrant entrepreneurs. It is certainly a heavily-licensed field in many states but not all.

Looking at construction entrepreneurs on their own, however, yields a curious result: licensing burdens as measured by the Institute for Justice don't seem to have a significant negative impact for most construction-related occupations.¹³ There may be many reasons for this: perhaps economic fundamentals that influence demand for construction services swamp the effect of licensing burdens. This doesn't mean that the construction industry is never influenced by licensing burdens, nor does it mean that sub-sectors within construction (like glaziers or drywall installers) aren't usually negatively influenced. This simply means that, using the data available and the specific timeframe studied, licensing burdens didn't sufficiently explain the state-by-state differences between immigrant entrepreneurship rates in construction.

The next largest chunk of occupational categories was in the service industry — namely, beauty services (which includes nail salons and barbers), landscape workers, and child day care services. Grouped together, they represent not only the next largest group of immigrant entrepreneurs but also the occupational categories that are most commonly touched by state licensing laws. Once the immigrant entrepreneurs in those fields are identified, they can be compared to the aggregate licensing burdens for those occupations in each state.¹⁴

Here you do see substantial impact from occupational licensing laws. Looking at overall averages, states that have heavier-than-average licensing burdens have an average aggregate immigrant entrepreneurship rate in the above-stated occupations that is nearly 11% lower than

average. Those states with the lower-than-average occupational licensing burdens have an average rate of immigrant entrepreneurs in those fields that are an average

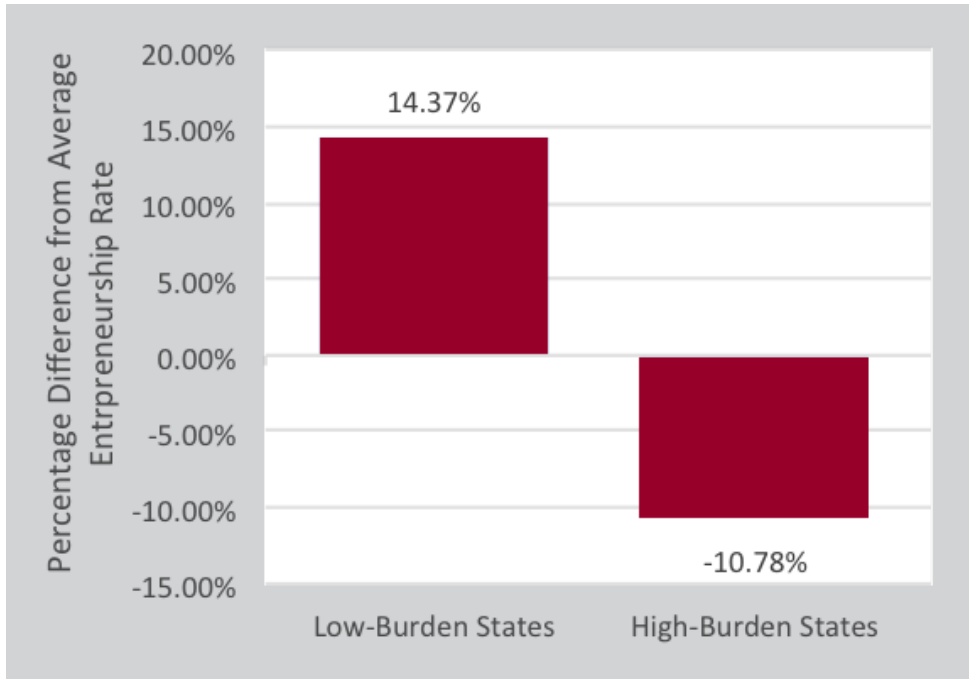
of 14% higher. (See Chart 2.) To put it another way, the average immigrant entrepreneurship rate of all the states studied was 0.14%, for the low-burden states it was

0.16%, and for the high-burden states it was 0.12%. The spread between the high-burden states and the low-burden states amounts to an average of 400 extra immigrant entrepreneurs per 1,000,000 people.

Another way to analyze this is to look at the burden “score” assigned to each state and correlate it to the aggregate immigrant entrepreneurship rate in these occupations. In this case, the scores are “normalized” so that high-burden states have a high score (i.e., near 1) and low-burden states have a low score (i.e., closer to zero). These scores are like golf scores: you always want a lower one.

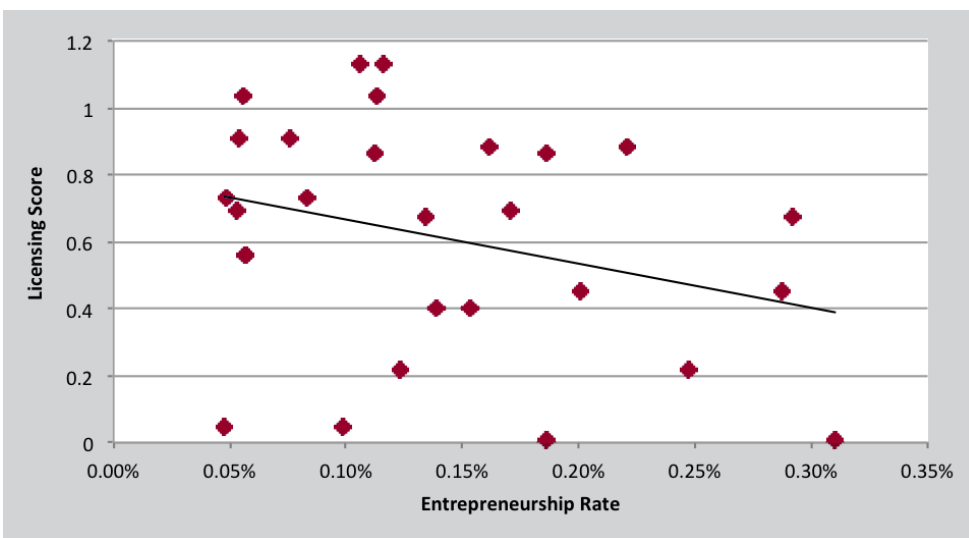
In the scatterplot chart, the burden scores appear on the vertical axis and the entrepreneurship rate appears on the horizontal axis. (See Chart 3.) The trend line indicates the direction of the correlation. In this case, you can see that it’s negative, meaning that a heavier occupational licensing burden generally indicates a lower rate of immigrant entrepreneurship.

CHART 2
States with Heavy Licensing Burdens Have Lower Average Rates of Immigrant Entrepreneurship



Source: Author’s calculations based on data from the Kauffman Index of Entrepreneurial Activity.

CHART 3
High Occupational Licensing Burdens Correlate with Low Rates of Immigrant Entrepreneurship



Note: A high licensing score (near 1) indicates a heavy licensing burden and a low licensing score (near zero) indicates a light licensing burden.

CONCLUSIONS

Consistent employment, particularly self-employment, has been shown to be a critical path out of poverty for many low-income workers and immigrants.¹⁵ Occupational laws in many states, however, can be so burdensome that it actually decreases the likelihood of employment by these workers.

One particular problem — the education-level requirements — can be overcome by reform of the laws when pertaining to immigrant applicants for licenses. Skills and degrees obtained in their home country might be used as suitable evidence for the skills and experience required by licensing boards. Although it may require a bit more effort and due diligence on the part of the licensing boards to verify such credentials, it could open up many doors that are currently shut to immigrant entrepreneurs. While this may more frequently impact high-skilled immigrants in certain fields (like engineering) it's certainly plausible that it may also impact low-skilled entrepreneurs in lower-income occupations.

In the end, however, there is no substitute for over-all reform of state licensing laws. Alternative arrangements can help to achieve the same public health and safety goals that licenses were meant to achieve in the first place, but do so in a way that doesn't give the government — or, more likely, incumbent businesses who have great sway with licensing boards — the power to veto a new entrant into an industry or occupation. A voluntary private certification process is one such route.¹⁶

Based on the evidence that has been presented in numerous studies over the past three decades, the potential economic and welfare gains to be had from occupational licensing reform are substantial. Any economic development strategy for a state should include reforms of occupational licensing laws that can help primarily both consumers and entrepreneurs.

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APPENDIX: TECHNICAL DISCUSSION AND EMPIRICAL RESULTS

Analysts can discover what influence each potentially relevant factor has on the level of immigrant entrepreneurship in a state using ordinary least squares (OLS) linear regression analysis. If the inclusion of control variables in the regression does not change the expected direction of the relationship between the occupational licensing burdens and the immigrant entrepreneurship rate, and that correlation remains statistically significant, then we have some proof that occupational licensing burdens can have a negative effect on the ability of an immigrant to scale that barrier to entry into self-employment and business ownership.

The dependent variable in the regression model is the rate of entrepreneurship identified in the Kauffman Index of Entrepreneurial Activity for all survey respondents who were born in a country other than the U.S. This dependent variable was derived by aggregating the observations of self-employment for 2011 and 2012 in three specific occupational categories: landscape services, beauty services, and child care services. Together these represent nearly 25% of all immigrant entrepreneurs and together they represent the biggest single group of observations outside of construction.

The model also includes the following independent variables:

- a variable (IJ) that indicates the intensity of the occupational licensing burden — on a scale of zero (most liberalized) to one (least liberalized), derived from the raw z-scores in the 2012 Institute for Justice study;
- a control variable (IMMPOP) based on the percentage of immigrants in the total survey population for each state.
- a control variable (UNEMPLOY) based on the average unemployment rate for the period studied (2011-2012), which is a useful control to determine the overall employment climate in a state and control for the potential that some immigrant entrepreneurs may simply be self-employed because there are fewer options for traditional employment (as they would be in a state with a high unemployment rate).

The OLS regression results appear in Table A-1. As expected, the IJ score is negatively associated with the rate of immigrant entrepreneurship and is significant at the 85th percentile. The unemployment rate had the expected positive correlation, but it was not significant. The immigrant population control variable, however, was negatively correlated with the entrepreneurship rate. This seems to indicate that a state with a high population of immigrants might actually have a lower than average immigrant entrepreneurship rate. One explanation for this would be that the selection of the 14 states in the analysis (chosen because immigrants accounted for 10% or more of the population) was already a sufficient control. Because this variable was not statistically significant, it's possible that immigrant population percentage does not have any real explanatory power in magnitudes above a threshold of 10% of the population.

TABLE A-1

Regression Results (p-level in parentheses)

	Coefficient
INTERCEPT	0.002** (0.047)
IJ	-0.0007* (0.128)
IMMPOP	-0.003 (0.28)
UNEMPLOY	0.006 (0.54)

Observations 28
R-squared 0.13

** Significant at the 90th percentile
* Significant at the 85th percentile

TABLE A-2

States in the OLS Analysis

Arizona
California
Colorado
Connecticut
Florida
Georgia
Hawaii
Illinois
Massachusetts
Nevada
New Jersey
New Mexico
New York
Texas

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ENDNOTES

1 For a review of this literature, see “Occupational Licensing: A Framework for Policymakers,” White House Council of Economic Advisors, July 2015, available at: https://obamawhitehouse.archives.gov/sites/default/files/docs/licensing_report_final_nonembargo.pdf

2 Stephen Slivinski, “Bootstraps Tangled in Red Tape: How State Occupational Licensing Hinders Low-Income Entrepreneurship,” February 23, 2015, available at: https://goldwater-media.s3.amazonaws.com/cms_page_media/2015/3/3/OccLicensing4.pdf

3 Stephen Slivinski “Turning Shackles into Bootstraps: Why Occupational Licensing Reform Is the Missing Piece of Criminal Justice Reform,” Center for the Study of Economic Liberty at Arizona State University, Policy Report No. 2016-01, November 2016, available at: <https://research.wpcarey.asu.edu/economic-liberty/wp-content/uploads/2016/11/CSEL-Policy-Report-2016-01-Turning-Shackles-into-Bootstraps.pdf>

4 Fairlie, Robert W., *The Kauffman Index of Entrepreneurial Activity, 1996-2013* (April 2014). Available at: <https://ssrn.com/abstract=2424834> or <http://dx.doi.org/10.2139/ssrn.2424834>

5 Author’s calculations based on Kauffman Foundation data. This is consistent with the figures reported in Fairlie (ibid).

6 Author’s calculations based on Kauffman Foundation data.

7 Author’s calculations based on Kauffman data.

8 See Federman, Maya N., David E. Harrington, and Kathy J. Krynski. 2006. “The Impact of State Licensing Regulations on Low-Skilled Immigrants: The Case of Vietnamese Manicurists.” *American Economic Review* 96, no. 2: 237-241.

9 Stephen Slivinski, “Bootstraps Tangled in Red Tape: How State Occupational Licensing Hinders Low-Income Entrepreneurship,” February 23, 2015, available at: https://goldwater-media.s3.amazonaws.com/cms_page_media/2015/3/3/OccLicensing4.pdf

10 Dick M. Carpenter, Lisa Knepper, Angela C. Erickson, and John K. Ross, “License to Work: A National Study of Burdens from Occupational Licensing,” May 2012, available at: <http://ij.org/report/license-to-work/>

11 The IJ report does this through the use of z-scores.

12 This also reduces the chances for errors that can occur when looking at small sample sizes. For instance, a state with less than 10% of its population composed of immigrants may indeed have zero immigrant entrepreneurs. On the other hand, they could actually have a few, but those entrepreneurs were not “picked up” by the sample population surveyed. (After all, the survey cannot possibly include every person in a state, so sampling a sub-group of people that represents a smaller share of the population as a whole must be used instead.) To avoid “false negatives” — whereby zero observations of immigrant entrepreneurs are falsely believed to actually be the absence of immigrant entrepreneurs instead of the (more likely) scenario in which the survey simply didn’t find them because of their low numbers — the analysis in this paper focuses on those states for which there was a better chance of a robust set of observations, i.e., those states in which more than 10% of the survey population were immigrants.

13 In statistical terms, the correlation is not significantly negative. This area requires more research before economists can say much with confidence.

14 This is done by taking the individual z-scores in the Institute for Justice study and aggregating them as a new overall statewide score for each state in the analysis. As a result, some states that have a “bad” score in the Institute for Justice study may actually have a “good” score when looking at only the subset of occupations that are most relevant for an analysis of immigrant entrepreneurs.

15 See Slivinski (2015). Also, Douglas Holtz-Eakin, et al. “Horatio Alger Meets the Mobility Tables.” *Small Business Economics*, vol. 14, no. 4, 2000, pp. 243–274.

16 For an in-depth discussion of how this could work, see Byron Schlomach, “Six Reforms to Occupational Licensing Laws to Increase Jobs and Lower Costs,” *Goldwater Institute Policy Report No. 247*, July 2012, available at: https://goldwater-media.s3.amazonaws.com/cms_page_media/2015/2/2/Policy%20Report%20247%20Licensing.pdf; and Slivinski (2015).