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TURNING SHACKLES INTO BOOTSTRAPS

Why Occupational Licensing Reform Is the Missing Piece of Criminal Justice Reform

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EXECUTIVE SUMMARY

THE THREE YEARS FOLLOWING RELEASE FROM PRISON is the window in which ex-prisoners are mostly likely to re-offend. Successful entry into the labor force has been shown to greatly increase the chances that a prisoner will not recidivate. Yet government-imposed barriers to reintegration into the labor force — particularly occupational licensing requirements — can be among the most pernicious barriers faced by ex-prisoners seeking to enter the workforce.

Occupational licensing barriers often require higher levels of skill and educational attainment than many ex-prisoners have upon release. Additionally, many states have "good character" provisions that prohibit ex-prisoners from ever receiving an occupational license. Other states have very weak restrictions on whether a licensing board can reject at their discretion an applicant for a license based mainly on the existence of a criminal record. Combining these occupational licensing barriers helps illustrate the higher-than-average hurdle faced by former

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prisoners that isn't fully taken into account in conventional measures of occupational licensing burdens.

This study is the first of its kind to explore the relationship between three-year recidivism rates for new crimes and relate it to occupational licensing burdens by combining data from the Institute for Justice, the Pew Center on the States, and the National Employment Law Project. This study estimates that between 1997 and 2007 the states with the heaviest occupational licensing burdens saw an average increase in the three-year, new-crime recidivism rate of over 9%. Conversely, the states that had the lowest burdens and no such character provisions saw an average decline in that recidivism rate of nearly 2.5%.

Even among states that have no "good character" restrictions, occupational licensing burdens still matter greatly. The states that had high occupational licensing burdens also saw increases in their three-year, new-crime recidivism rate while those that had low licensing burdens saw declines. This relationship was statistically significant even after controlling for variables such as the growth in the overall crime rate and the employment climate of a state.

Reintegration of released prisoners back into the workforce will be crucial to the eventual success of any criminal justice reform effort. Licensing reform should be included as an important component of any such reforms.

INTRODUCTION

The revolving door of American's prison systems have proven very costly. The highest rate of "recidivism" (a relapse into crime and often, as a result, a return to incarceration) occurs within the first three years after release — nearly 68% of released prisoners recidivate during this time.[1] Estimates of how much can be saved in state budgets simply by helping these individuals avoid a return to prison reaches an average of at least $15.5 million.[2] This would be even higher for states that maintain a high per-prisoner cost. Meanwhile, the costs to society, the economy, and to the former prisoners themselves — in the form of lost hours of labor, the social cost of higher crime rates, and the lost potential of the individual ex-prisoner — are immeasurable.

A number of states have provided education and job-training as a means to decrease relapses into crime.[3] The impetus behind these programs is that those leaving prison have much lower levels of education and workplace skills than the average worker. (While only about half of all workers have no more than a high school degree, the number is over 80% for ex-convicts — and a large share of those are GEDs earned while incarcerated.[4]) Indeed, gainful employment is the surest way to reduce the probability of recidivism.[5] The recidivism rate for those employed after release from prison (19%) is substantially smaller than it is for those unemployed after release (32%).[6]

However, there are often government-imposed barriers to acquiring gainful employment. The foremost barrier to entry for ex-prisoners are state licensing requirements in jobs that they are the most likely to fill — what are usually termed low-skill occupations. The skills and education requirements imposed by the occupational licensing statutes may be difficult for ex-prisoners to overcome.

For ex-prisoners however, there is an additional barrier not faced by other license applicants. Occupational licensing statutes in a number of states have blanket prohibitions on the mere awarding of licenses to those with a criminal record. Even states that do not have these explicit "good character" provisions in their licensing laws may nonetheless have very minimal restrictions on the ability of licensing boards to reject a license

application based largely or mainly on the criminal history of an application.[7] In that sense, a related purpose of this study is also to inform the current policy discussion on criminal justice reform and suggest that reappraisal of government-imposed barriers to entry to the labor market must be included in any realistic attempt at successful justice reform.

OCCUPATIONAL LICENSING AS A BARRIER TO RE-INTEGRATION INTO THE WORKFORCE

Released prisoners returning to society are overwhelmingly male (over 90%) and the vast majority of them have lower levels of education and little to no job skills when compared to the general population as noted in Table 1. While 85% of the general male population (18 years and older) have achieved a high school diploma and/or completed some sort of college (including B.A. degrees or higher), a smaller percentage (around 77%) of those in prison have achieved no more than a high school education (and most of those are GEDs, likely earned while in prison).[8] If we assume that the population leaving prison has the same or similar levels of educational attainment, then we can view this as also descriptive of the general population of ex-prisoners seeking to enter the labor force.

Males with low-levels of education and formal job experience are exactly the sort of people that occupational licensing harms the most.[9] Many states have occupational licensing laws that require some minimum level of educational attainment. For instance, seven states require a high school degree to get a license to be an auctioneer and fourteen require it to get a barber's license.[10] Such restrictions would be an immediate barrier to nearly half of the ex-prisoner population.

TABLE 1

Highest Level of Educational Attainment of Prisoners and the General Population, 2009 (Males, 18 years and older)

	General Population	Prison Population
Some high school	15%	40%
High school graduate	29%	37%
Some college or more	56%	22%

Note: High school graduate includes GED completion
Source: U.S. Census Bureau and the Bureau of Justice Statistics.

The most advanced attempt to measure the occupational licensing burden on occupations that are generally populated by those in the lower-income quartiles (generally seen as a proxy for low-skilled laborers and which would appropriately include the population with which this study is concerned) was published in 2012 by the Institute for Justice (IJ).[11] Starting with aggregate data from the Bureau of Labor Statistics and the Department of Labor, IJ excluded from their list of observations those occupational categories that were most heavily represented by workers with above-average income and higher levels of educational attainment (such as doctors and lawyers), leaving only occupational categories that were most heavily composed of middle- and low-income earners. That left 102 specific occupational categories out of a total of nearly 800.

Then the authors compiled occupational licensing data for all 50 states — ranging from whether a state licenses the occupation or not, the fees charged to obtain a license, and education and experience requirements. Finally, they assigned scores to the states and ranked them based on the comparative heaviness of the licensing burden. So, for instance, a state that requires a bachelor's degree, three months of experience, and a $250 fee to obtain a license to work in a specific occupation would be scored as having a heavier licensing burden than a state that did not have any education or experience requirements and only a $50 fee.

These requirements are also a high barrier to ex-prisoners. Heaping time-consuming training requirements and high fees on ex-prisoners hoping to get into the labor force could be a prohibitive functional barrier. While it's certainly possible for those exiting prison to obtain new skills that can serve them well in the workforce, it's

an open question whether all the milestones required for approval of an occupational license are even relevant to the success of someone in a chosen profession. Additionally, looking at the probability of re-offense in the three years following the release from prison, it's clear that the "opportunity cost" of returning to crime during that three-year window is likely quite a bit higher than the perceived benefit of excessive fees and training required to obtain a license.

While the IJ study is an important tool for measuring the substantial differences between states in terms of the barriers to entry facing ex-prisoners looking for work, lack of skills and educational attainment among that population are merely one reason to think these barriers to entry are prohibitive. There are other barriers that are specific to those with criminal records that are nearly impossible to overcome. For instance, the American Bar Association has cataloged an estimated 32,000 state laws specific to occupational licenses and business licenses that included provisions regarding the consideration of criminal records. Among them are automatic exclusions for those with a criminal record, which make up one-third of the laws cataloged.[12] These coupled with the licensing burdens facing ex-prisoners in most states provide the incentive for ex-prisoners to return to a life of crime rather than to pursue formal employment.

RECIDIVISM RATES AS A PROXY FOR RE-INTEGRATION INTO THE WORKFORCE

The hypothesis in this study is that the greater the legal restrictions to working in a state, the higher the likelihood that an ex-prisoner will be turned away from entering the labor force and will return to crime. The choice of what activities to pursue depends on the relative costs and benefits. For ex-prisoners who have an unusually difficult experience scaling the barriers to entry into the labor market, returning to crime could be the relatively better alternative. Therefore, the change in the recidivism rate over time in a state may indicate, in part,

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a higher opportunity cost to entering the workforce.

The most common source of national recidivism statistics is the Bureau of Justice Statistics (BJS) division of the U.S. Department of Justice. The most recent study on recidivism was published in 2002 and tracked former prisoners who were released in 1994 over the following three years in 15 states. A little over half of those released offenders (51.8%) were back in prison within that three-year period.13 This is consistent with a later study by the Bureau of Justice Statistics published in 2014.[14] Neither BJS study published breakdowns of the state-level recidivism data but instead published aggregate figures. This makes it impossible to compare states.

As noted earlier, most recidivism occurs within three years. The Pew Center on the States — conducted jointly with the Association of State Correctional Administrators — includes three-year recidivism rates for 33 states from 1999 to 2004.15 These states account for around 90% of all releases from state prisons during this period.

The Pew survey reports two separate recidivism rates — one for new crimes and one for technical violations, such as parole violations. Any connection between legal barriers to entry into the labor force and a return to crime is likely to be seen using the new crime recidivism rate. The definition of "technical violation" can vary greatly between states but the definition of what constitutes a "new crime" is highly consistent. Recidivism rates must be used because there is no direct measure of employment of ex-prisoners.

Other studies have used the Bureau of Justice Statistics "Annual Parole Survey" data to find connections

between recidivism and broad measures of economic freedom.[16] However, the rates that come from the BJS survey are one-year rates. This study, on the other hand, uses the Pew survey instead to account for the fact that someone released from prison may not recidivate within the same year but is more likely to do so (if they are kept out of the labor force) within three years.[17]

HEAVY OCCUPATIONAL LICENSING BURDENS ENCOURAGE GROWTH IN THE RECIDIVISM RATE

The Pew data indicate that the average three-year, "new crime" recidivism rate didn't change much between 1997-2000 and 2004-2007 periods in the overall sample survey: it stayed relatively constant (around 20%) during that time. Yet the individual states in the survey vary greatly in the rate of growth in their new-crime recidivism rate. For instance, the rate of change ranges from 40% growth in Utah to a *decline* in Montana of a roughly equal amount.

The timeframe presented in the Pew study is also useful since it occurs prior to changes in criminal sentencing laws and state-based programs to reduce recidivism that a number of states passed after 2007. That makes this time period a good candidate for isolating the effect that government-imposed barriers to entry would have on the recidivism rate since the analysis won't be confounded by changes in policy during the same period.[18]

Occupational licensing barriers can help explain the difference in these rates. Comparing the average change in the new crime recidivism rate in states with high licensing burdens and those with low occupational licensing burdens can give a broad understanding of how these laws bear on the recidivism rate of a state. This can, by extension, provide some evidence of how occupational licensing laws can diminish a state's ability to reintegrate ex-prisoners into the labor force.

State scores in the Institute for Justice (IJ) study indicate whether they are more or less "free" in terms of occupational licensing.[19] But, we cannot simply compare states with high scores to those with low scores. It is not always similarly easy or difficult for an ex-convict to receive a license than non-convicts even in states with low occupational licensing burdens. As noted above, some states include "good character" requirements in their licensing laws or, even worse, explicitly prohibit occupational licenses going to applicants with a criminal record even if they meet all other requirements to obtain a license. For instance, twenty-nine states allow occupational licensing boards to reject outright the application of someone with a criminal record.[20]

Even if the state licensing board must not automatically reject an ex-convict, there may be little to no restriction in state law to prohibit a licensing board from denying, at their discretion, a license based on the mere presence of a criminal record.[21] A 2016 study from the National Employment Law Project (NELP) has graded the state laws pertaining to the powers of licensing boards when reviewing a license application from someone with a criminal record.[22] Ranging from a grade of "unsatisfactory" to "most effective," the NELP study has essentially quantified the severity of these occupational licensing burdens that specifically target ex-prisoners.

Twenty-nine states allow occupational licensing boards to reject outright the application of someone with a criminal record.

Eleven of the states included in this study are what can be called "prohibition states," that is, they either automatically penalize ex-prisoners in the licensing process or have no other legal restrictions on the power of a licensing board to base denial of a license on anything other than the presence of a criminal record, even for non-violent offenders or if the ex-prisoner's conviction

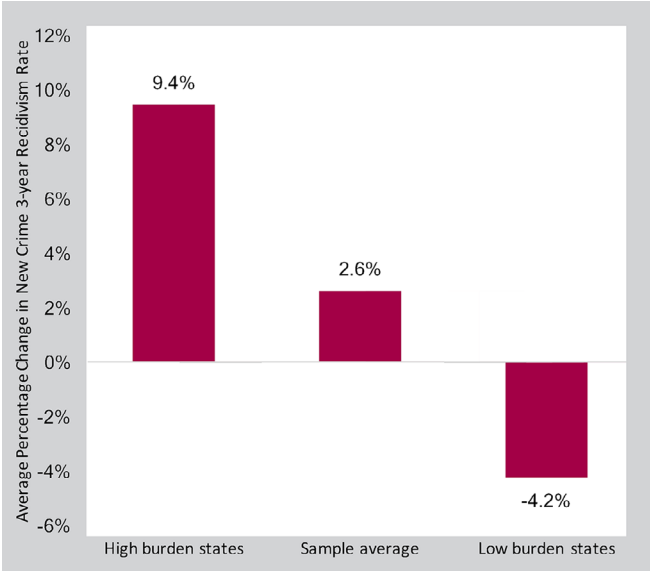
has no material relationship to the license being sought by the ex-prisoner.[23] Because of this extremely high barrier, it's more appropriate to include these "prohibition states" in the high-burden category regardless of the licensing burden faced by the general non-convict population as measured by the Institute for Justice study. A state that mandates or allows a licensing board to reject a candidate based on a criminal record should rightly be viewed as having the heaviest licensing burdens of all — a nearly impossible-to-clear hurdle for former prisoners. Those states have the most inhospitable environment possible and rule-out an essential first-step at reintegrating a prisoner into the workforce.

Incidentally, these "prohibition states" also happen to have lower average licensing burdens based on the scores assigned in the Institute for Justice report — all but four of the eleven "prohibition states" in this study have licensing burdens that are among the nation's lightest as ranked by IJ. While these states may look on paper like they have a low occupational licensing burden, the truth is exactly the opposite for ex-prisoners.

The results of comparing the average change in the new crime recidivism rates between states with low occupational licensing and those with effectively high burdens are seen in Figure 1: the average increase in the new crime recidivism rate during the survey period was larger than average and much larger than the states that do not prohibit occupational licenses to former prisoners or do not have some kind of restrictions on the conditions for which an ex-prisoner may be denied a license. These "prohibition states" experienced a more than 9% increase in the three-year, new crime recidivism rate. This is over 3.5 times the 2.6% average increase for all the states in the survey and substantially more than the 4.2% *decline* in the average new crime recidivism rate in the low burden, non-prohibition states.

Meanwhile, states in which "good character" provisions are largely absent but maintain heavy licensing burdens are still not able to reduce their recidivism rate

FIGURE 1
Average Change in Recidivism Rate by Occupational Licensing Burden Category



Note: "Prohibition states" are included in the high burden category.

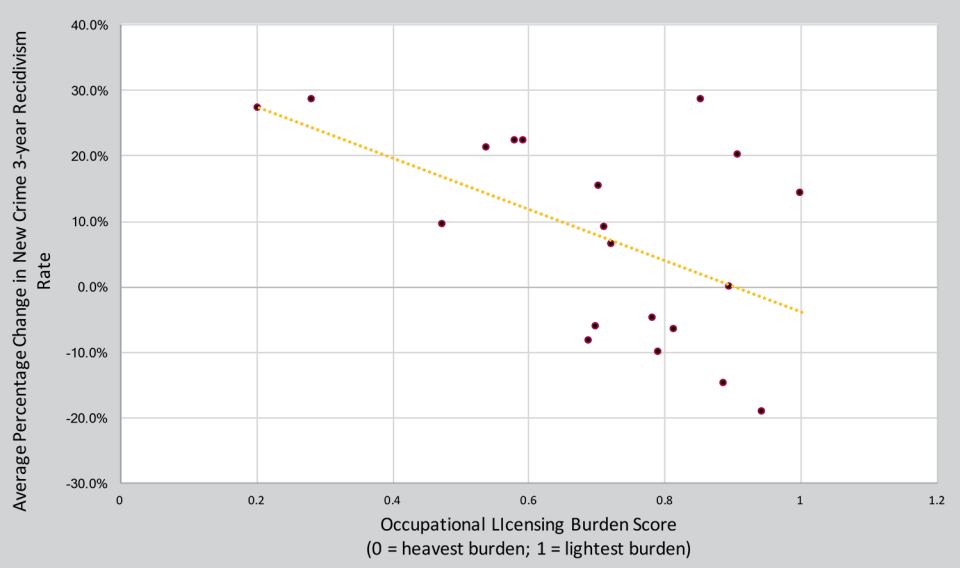
on average. Figure 2 shows the correlation between the occupational licensing scores based on the IJ study and the change in the three-year, new crime recidivism rate in these states. (On a scale of zero to one, the closer to one the state's score is, the lower their occupational licensing burden. To put it another way, the higher their score, the freer the occupational licensing climate.) Although this sample of states does not include the above-mentioned "prohibition states," the slope of the trend line still indicates a strong and clear negative correlation, meaning that a state with a high occupational licensing burden and no "good character" provision would still see general increases in the recidivism rate on average. The policy implication here is that policymakers in states with high-licensing burdens cannot expect to substantially reduce their recidivism rate simply by weeding out these "good character" provisions in their licensing laws. It will require actually lowering the licensing burdens as well.

As an empirical matter, there are at least two other potential factors that can also influence the recidivism rate in a state:

1. It's likely that the labor market climate in a state is also a critical factor in the reduction of the recidivism rate in that state. Regardless of how difficult it is to get an occupational license, if there are fewer jobs to be had the more likely it will be that an ex-prisoner will not be able to find a job (in either a licensed field or otherwise) and might eventually turn back to crime.

FIGURE 2

Heavier Occupational Licensing Burdens Associated with Increases in New-Crime Recidivism



2. The overall change in the crime rate in each state could also help explain the change in the recidivism rate. For instance, if a state is experiencing an overall increase in crime, it might also see growth in the new crime recidivism rate as well.

The results of integrating factors accounting for these influences are explained in the Appendix. The bottom line is that even after accounting for these factors, a low occupational licensing burden still had a statistically significant impact on a state's ability to lower its new crime recidivism rate. In terms of impact, the occupational licensing burden was second only to the overall labor market conditions in significantly influencing movements in the recidivism rate. In other words, where there was growing employment and low occupational licensing barriers, the decline in the new crime recidivism rate was the highest.

CONCLUSION

As more states explore reforming their criminal justice systems, much of the attention is likely to be paid to liberalizing sentencing laws — how and when to incarcerate someone and when probation or alternative means of punishment will suffice. Those reforms are extremely important and overdue. Yet those reforms, while valuable, don't address how best to reintegrate someone into the labor force once they have served their sentence.

Programs that have been aimed at helping ex-prisoners increase their levels of educational achievement can be helpful but these programs only overcome one aspect of re-integration into the labor force. The government-imposed hurdles for ex-prisoners will remain, regardless of education attainment or skill level, if the so-called "good character" provisions remain.

Moreover, while removing the "good character" provisions in occupational licensing laws will certainly help labor force reintegration, it will not deliver the biggest impact. Liberalizing the occupational licensing burdens themselves — the skill level required and even the requirement that a license be required at all to work in a chosen occupation — will be the most likely to lead to widespread employment success for former prisoners and anyone with a criminal record.[24]

APPENDIX

Analysts can discover what influence each potentially relevant factor has on the rise or decline in the recidivism rate of a state using ordinary least squares linear regression analysis. If the inclusion of control variables in the regression does not change the expected direction of the relationship between occupational licensing burdens and the recidivism rate, and that correlation remains statistically significant, then we have some proof that occupational licensing burdens can have an effect on a state's ability to decrease their recidivism rate. In other words, it provides proof that high occupational licensing burdens in the real world do indeed make it harder for ex-prisoners to re-enter the workforce and does seem to increase the odds that those ex-prisoners will turn back to crime instead.

The dependent variable in both regression models is the percentage change in the three-year, new crime recidivism rate as reported in the 2011 Pew Center of the States study. All models also include the following independent variables: a variable (IJ) that indicates the intensity of the occupational licensing burden — on a scale of zero (least liberalized) to one (most liberalized), derived from the raw z-scores in the 2012 Institute for Justice study; an independent variable (NELP) based on the scores from the National Employment Law Project (ranging from a 1 for "no overarching law" to 6 for "most effective") to adjust for the intensity of the licensing prohibitions facing ex-prisoners; a control variable (UNEMPLOY) based on the change in the male unemployment rate based on data from the Bureau of Labor Statistics in each state — computed as an average for both the 1999-2002 and the 2004-2007 periods — as a proxy for changes in labor market conditions facing most ex-prisoners; and a control variable (CRIME RATE) that measures the change in the overall crime rate in a state based on data from the Bureau of Justice Statistics. Descriptive statistics for these variables appear in Table A-1.

TABLE A-1
Descriptive Statistics

Variable	Min	Max	Mean	Std. Dev.
RECID	-0.44	0.40	0.04	0.18
IJ	0.20	1.00	0.72	0.20
NELP	1	6	2.68	1.28
UNEMPLOY	-0.28	0.48	0.10	0.18
CRIME RATE	-0.27	0.00	-0.13	0.07

Regression results for the models appear in Table A-2. Results for Model 1 indicate that all the variables have the expected signs. Both low levels of occupational licensing burdens and an improving employment climate do have a positive and statistically significant effect on the ability of a state to reduce its recidivism rate. The NELP score also has the expected sign — it is negatively associated with changes in the new-crime recidivism rate — but it was not statistically significant.

Model 2 excludes the "prohibition" states from the sample and focuses instead on all the remaining states which themselves have between them a wide range of

TABLE A-2
Regression Results (p-level in parentheses)

Variable	Model 1	Model 2
INTERCEPT	0.37*	0.39*
	(0.026)	(0.024)
IJ	-0.41**	-0.46**
	(0.017)	(0.011)
NELP	-0.02	-0.008
	(0.52)	(0.80)
UNEMPLOY	0.19	0.49*
	(0.29)	(0.03)
CRIME RATE	0.01	0.24
	(0.98)	(0.62)
Observations	31	20
R-squared	0.23	0.53

** significant at the 95th percentile*
*** significant at the 99th percentile*

TABLE A-3
States Included in Sample

Alabama	Massachusetts*	Oklahoma
Arizona*	Michigan*	Pennsylvania*
California*	Minnesota*	South Carolina*
Connecticut*	Mississippi	South Dakota*
Georgia	Missouri*	Texas
Idaho	Montana*	Utah
Illinois*	Nebraska	Virginia
Iowa	New Jersey*	Washington*
Kansas*	New York*	Wisconsin*
Kentucky*	North Carolina*	
Louisiana*	Ohio*	

Note: States with an asterisk were included in Models 1 and 2. States with no asterisk were included in Model 1 only.

occupational licensing burdens. The control variables for labor market conditions and the crime rate were included here as well. In this model, the robustness of the results increases. The model also has a higher degree of explanatory power. Again, the connection between changes in the new crime recidivism rate and the level of occupational licensing indicated a negative correlation at a statistically significant level. The NELP score is also negatively correlated, but not statistically significant.

In conclusion, a low occupational licensing burden had a significant impact on a state's ability to lower its new crime recidivism rate. In terms of impact, the occupational licensing burden was second only to the overall labor market conditions in significantly influencing movements in the recidivism rate.

The author wishes to extend special thanks to Paul Bernert for research assistance on this project.

ENDNOTES

1 Matthew R. Durose, Alexia D. Cooper, and Howard N. Snyder. "Recidivism of Prisoners Released in 30 States in 2005: Patterns from 2005 to 2010." April 22, 2014, Bureau of Justice Statistics, NCJ 244205, available at: http://www.bjs.gov/index.cfm?ty=pbdetail&iid=4986

2 The total estimate of $635 million in budget savings resulting from a 10 percent decrease in the total recidivism rate comes from the Pew Center on the States, "State of Recidivism: The Revolving Door of America's Prisons," April 2011, available at: http://www.pewtrusts.org/en/research-and-analysis/reports/0001/01/01/state-of-recidivism. This estimate is based on data from 41 states, hence the estimate quoted here of $15.5 million on average.

3 For a review of the literature on these programs, see "Offender Reentry: Correctional Statistics, Reintegration into the Community, and Recidivism," by Nathan James, January 12, 2015, Congressional Research Service RL 34287, available at: https://fas.org/sgp/crs/misc/RL34287.pdf

4 Author's calculations based on data from the Bureau of Justice Statistics and "Ex-offenders in the Labor Market," by John Schmitt and Kris Warner, November 2010, Center for Economic Policy and Research, available at: http://cepr.net/documents/publications/ex-offenders-2010-11.pdf

5 Ibid.

6 United States Sentencing Commission, "Measuring Recidivism: The Criminal History Computation of the Federal Sentencing Guidelines," May 2004, p. 29, available at: http://www.ussc.gov/sites/default/files/pdf/research-and-publications/research-publications/2004/200405_Recidivism_Criminal_History.pdf

7 Joshua C. Hall, Kaitlyn Harger, and Dean Stansel. "Economic Freedom and Recidivism: Evidence from U.S. States," International Advances in Economic Research, vol. 21(2), p. 155-165, May 2015, available at: http://be.wvu.edu/phd_economics/pdf/14-34.pdf, found that recidivism rates grow faster in states that have lower economic freedom scores.

8 Stephanie Ewart and Tara Wildhagan, "Educational Characteristics of Prisoners: Data from the ACS," U.S. Census Bureau, SEHSD Working Paper #2011-8, April 2011, available at: http://www.census.gov/people/publications/sehsdworking-papers.html

9 See "Occupational Licensing: A Framework for Policymakers," prepared by the U.S. Department of the Treasury Office of Economic Policy, the President's Council of Economic Advisers, and the U.S. Department of Labor, July 2015, available at: https://www.whitehouse.gov/sites/default/files/docs/licensing_report_final_nonembargo.pdf ; and Stephen Slivinski, "Bootstraps Tangled in Red Tape: How State Occupational Licensing Hinders Low-Income Entrepreneurship," Goldwater Institute Policy Report No. 272, February 23, 2015, available at: http://www.goldwaterinstitute.org/en/work/topics/free-enterprise/entrepreneurship/bootstraps-tangled-in-red-tape/

10 Author's calculations based on data from the Institute for Justice, available at: http://ij.org/report/license-to-work/

11 Dick M. Carpenter II, Lisa Knepper, Angela C. Erickson, and John K. Ross. "License to Work: A National Study of Burdens from Occupational Licensing," Institute for Justice, May 2012, available at: http://ij.org/report/license-to-work/

12 See "The Consideration of Criminal Records in Occupational Licensing," published jointly by the National Employment Law Project and the Council of State Governments, December 2015, available at: https://csgjusticecenter.org/wp-content/uploads/2015/12/TheConsiderationofCriminalRecordsinOccupationalLicensing.pdf

13 Patrick A. Langan and David J. Levin, "Recidivism of Prisoners Released in 1994," U.S. Department of Justice, Bureau of Justice Statistics, (2002). Both reports are available online at http://bjs.ojp.usdoj.gov/index.cfm?ty=pbse&sid=44

14 Durose, Cooper, and Snyder (BJS, 2014).

15 Pew Center on the States, "State of Recidivism: The Revolving Door of America's Prisons," April 2011, available at: http://www.pewtrusts.org/en/research-and-analysis/reports/0001/01/01/state-of-recidivism

16 Hall, et. al.

17 It might seem that relying instead on an ex-prisoner employment rate would accomplish this better. However, it is impossible to construct a state-by-state estimate of employment of former prisoners because labor market data of this sort is simply not available. Employment surveys, such as those from the U.S. Bureau of Labor Statistics, do not include questions about a household's or individual's incarceration history. See Schmitt and Warner (Center for Economic and Policy Research, 2010). Even attempts to create such a national measure are built on a series of assumptions and are not broken out on a state-by-state basis. The best attempt at this comes from the study published by the Center for Economic and Policy

Research. That study creates an estimate of the portion of the labor force that is likely to have been incarcerated based on the number of prisoners who have been released and then apply a multiplier to that number. This is of no practical use to understand the differences in the labor market for ex-prisoners at the state-level in particular because there is no state-level estimate of the multiplier. Until a direct survey of the number of ex-prisoners in the workforce exists and those estimates can be broken down on a state-level basis, proxy measures of the labor-market conditions facing ex-prisoners will have to suffice.

18 This study only includes states from the Pew survey that reported new-crime recidivism data for both the base period and the last period in the survey. Oregon was included in the Pew survey but excluded from the sample in this study to avoid skewing the results based on the fact that Oregon had embarked on criminal sentencing reforms and recidivism reduction policy changes during the survey period. Arkansas was excluded from this study due to a change in the definition of how they treat parole cases and re-imprisonment which made the state incompatible with other states in the survey.

19 The IJ study uses z-scores to indicate the overall licensing burden score in their study. The "low" scores in that study indicate lighter occupational licensing burdens and, therefore, the heaviest occupational licensing burdens would appear at the top of the ranking. For the purposes of this study, however, the ranking of these scores have been flipped so that the heaviest licensing burdens fall in the bottom of the distribution, not the top. Therefore, contra the IJ study, when this study notes that a state falls in the "upper half" of occupational licensing scores, it actually means that a state has a lighter-than-average licensing burden.

20 Pew Center on the States, 2011.

21 The exception would be an applicant whose criminal record has been sealed or who has received a "certificate of rehabilitation" from the state. Those certificates, however, are rarely issued in most states, even though all states have the power to issue them.

22 Michelle Natividad Rodriguez and Beth Avery, "Unlicensed and Untapped: Removing Barriers to Occupational Licenses for People with Records," National Employment Law Project, April 2016, available at: http://www.nelp.org/publication/unlicensed-untapped-removing-barriers-state-occupational-licenses/

23 These "prohibition states" are those that received a grade of "no overarching law" or "unsatisfactory" in the "Blanket Ban Prohibition" category of the NELP study.

24 There are a number of ways to do this. Among them are a "sunset process" for occupational licensing regulations. For insight on how such a process could work, see Stephen Slivinski, "Bootstraps Tangled in Red Tape: How State Occupational Licensing Hinders Low-Income Entrepreneurship," Goldwater Institute Policy Report No. 272, February 23, 2015, available at: http://www.goldwaterinstitute.org/en/work/topics/free-enterprise/entrepreneurship/bootstraps-tangled-in-red-tape/ Additional insight on how best to think about the importance of transitioning to the "least restrictive form" of regulation of occupations to protect consumers but not block entry into the labor force, see Thomas A. Kemphill and Dick Carpenter, "Occupations: A Hierarchy of Regulatory Options," *Regulation*, Fall 2016, pp. 20-24, available at: https://object.cato.org/sites/cato.org/files/serials/files/regulation/2016/9/regulation-v39n3-5_0.pdf

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