

---

## CANNABIS LEGALIZATION AND SOCIAL EQUITY: SOME OPPORTUNITIES, PUZZLES, AND TRADE-OFFS<sup>†</sup>

BEAU KILMER\*, JONATHAN P. CAULKINS\*\*, MICHELLE KILBORN\*\*\*,  
MICHELLE PRIEST\*\*\*\* & KRISTIN M. WARREN\*\*\*\*\*

### ABSTRACT

*Cannabis prohibition has created disparate harms—especially for Black, Indigenous, and People of Color (“BIPOC”)—largely through arrest disparities for possession and their downstream effects. Addressing inequities is increasingly featured in discussions to legalize cannabis supply and adult possession for nonmedical purposes. While there is little disagreement that these inequities exist, those hoping to use cannabis policy to respond to them have proposed multiple options that each come with their own set of potential benefits and costs. This Essay describes some of these opportunities as well as some major puzzles and trade-offs surrounding the use of cannabis policy to advance social equity. Additionally, it offers insights into the number of people who could benefit from various social equity efforts related to cannabis policy. In particular, sealing or expunging cannabis possession convictions could affect many more BIPOC—possibly close to two orders of magnitude more—than prioritizing these individuals for entrepreneurship or employment opportunities in the cannabis industry. These options are not mutually exclusive, but decision makers should consider the possibility of federal legalization and what it will mean for small cannabis businesses when developing cannabis equity programs.*

---

<sup>†</sup> This Essay is based on research that was supported by the Commonwealth of Virginia’s Joint Legislative Audit and Review Commission (“JLARC”). We are thankful for the comments we received from JLARC and the insights provided by decision makers and others working in the social equity field as part of that project. We would also like to thank James Anderson, Steven Davenport, Erin Kilmer Neel, and the editors of the *Boston University Law Review* for feedback on an earlier draft. The views presented here only reflect those of the authors.

\* McCauley Chair in Drug Policy Innovation, RAND; Director, RAND Drug Policy Research Center.

\*\* H. Guyford Stever University Professor of Operations Research and Public Policy, Carnegie Mellon University’s Heinz College.

\*\*\* Independent Researcher, Edmonton, Alberta, Canada.

\*\*\*\* Assistant Policy Researcher, RAND.

\*\*\*\*\* Associate Engineer, RAND.

## CONTENTS

INTRODUCTION.....	1005
I. SOME OPPORTUNITIES FOR ADDRESSING INEQUITIES WITH CANNABIS POLICY REFORM.....	1009
A. <i>Arrests and Penalties</i> .....	1010
B. <i>Addressing Previous Cannabis Offenses</i> .....	1011
C. <i>Licensing Preferences</i> .....	1012
D. <i>Diversity in the Cannabis Workforce</i> .....	1015
E. <i>Government Revenues</i> .....	1017
F. <i>Health</i> .....	1020
II. THINKING ABOUT THE SCALE OF THOSE WHO COULD BENEFIT FROM VARIOUS CANNABIS EQUITY PROGRAMS.....	1025
III. PUZZLES AND TRADE-OFFS.....	1031
A. <i>If the Target Group or Area Is Too Large, Finite Resources     Get Spread Thin, and There Is a Higher Risk of Helping     Those Who Do Not Need It</i> .....	1031
B. <i>Defining Beneficiaries by Race or Ethnicity Could Lead     to Legal Challenges</i> .....	1032
C. <i>Increased Enforcement Against the Illegal Market Could     Help Equity Licensees</i> .....	1034
D. <i>Legalization Could Reduce Employment in the Cannabis     Industry</i> .....	1035
E. <i>Increasing the Number of Licensees in an Area Could     Depress Prices and Profits as Well as Increase Availability     of Cannabis in That Community</i> .....	1035
F. <i>Federal Legalization Would Reduce Adult Cannabis     Arrests, but It Could Put Some Equity Licensees Out of     Business</i> .....	1037
G. <i>Compared to the Profit-Maximizing Approach, a State-Store     Model Could Generate More Government Revenue to     Address Inequities and Fewer Health Harms in DACs</i> .....	1038
CONCLUSION.....	1040

## INTRODUCTION

Cannabis prohibition has contributed to social inequities—especially for Black, Indigenous, and People of Color (“BIPOC”)—largely through disparities in arrests and convictions for possession and resulting downstream effects of having a criminal record.<sup>1</sup> There are multiple contributors to racial/ethnic disparities in police contacts, ranging from enforcement strategies,<sup>2</sup> to racial bias among certain police officers,<sup>3</sup> to differences in cannabis purchasing patterns.<sup>4</sup>

The disparities are mostly not specific to cannabis; disparities also exist with respect to other drug and nondrug crimes. Indeed, the extent of imprisonment that is disproportionate relative to population is substantially greater for violent crimes, particularly robbery and murder.<sup>5</sup> What is special about cannabis is the growing sense that criminal sanctions are not appropriate in the first place, particularly for possession of quantities suitable for personal consumption.

---

<sup>1</sup> See, e.g., ACLU, A TALE OF TWO COUNTRIES: RACIALLY TARGETED ARRESTS IN THE ERA OF MARIJUANA REFORM 29 (2020), [https://www.aclu.org/sites/default/files/field\\_document/tale\\_of\\_two\\_countries\\_racially\\_targeted\\_arrests\\_in\\_the\\_era\\_of\\_marijuana\\_reform\\_revised\\_7.1.20\\_0.pdf](https://www.aclu.org/sites/default/files/field_document/tale_of_two_countries_racially_targeted_arrests_in_the_era_of_marijuana_reform_revised_7.1.20_0.pdf) [<https://perma.cc/BT9W-MT24>]; Martin Y. Iguchi, James Bell, Rajeev N. Ramchand & Terry Fain, *How Criminal System Racial Disparities May Translate into Health Disparities*, J. HEALTH CARE FOR POOR & UNDERSERVED, Nov. 2005, at 48, 48-49.

<sup>2</sup> Andrew Golub, Bruce D. Johnson & Eloise Dunlap, *The Race/Ethnicity Disparity in Misdemeanor Marijuana Arrests in New York City*, 6 CRIMINOLOGY & PUB. POL’Y 131, 135-36 (2007); Bernard E. Harcourt & Jens Ludwig, *Reefer Madness: Broken Windows Policing and Misdemeanor Marijuana Arrests in New York City, 1989–2000*, 6 CRIMINOLOGY & PUB. POL’Y 165, 165, 176 (2007).

<sup>3</sup> See, e.g., Greg Ridgeway & John M. MacDonald, *Doubly Robust Internal Benchmarking and False Discovery Rates for Detecting Racial Bias in Police Stops*, 104 J. AM. STAT. ASS’N 661, 667 (2009) (“After using a doubly robust benchmark construction to compare the racial distribution of the stops of 2,756 officers, we found five officers who appeared to be stopping a significantly larger fraction of black pedestrians and 10 officers stopping an excessive fraction of Hispanic pedestrians when compared with stops other officers made at the same times and places.”). Those fifteen are just 0.5% of the officers in the sample.

<sup>4</sup> Rachel M. Burns, Jonathan P. Caulkins, Susan S. Everingham & Beau Kilmer, *Statistics on Cannabis Users Skew Perceptions of Cannabis Use*, 4 FRONTIERS PSYCHIATRY, no. 138, 2013, at 1, 4 (“Non-Hispanic blacks represent 13% of past-year cannabis users vs. 23% of drug arrests reported by those users, but they report making 24% of the buys. Thus, some of their higher arrest rate may be a consequence of their purchase patterns.”); Rajeev Ramchand, Rosalie Liccardo Pacula & Martin Y. Iguchi, *Racial Differences in Marijuana-Users’ Risk of Arrest in the United States*, 84 DRUG & ALCOHOL DEPENDENCE 264, 269 (2006) (“[T]here are racial differences in the acquisition patterns for marijuana . . .”).

<sup>5</sup> E. ANN CARSON, U.S. DEP’T OF JUST., NCJ No. 255115, PRISONERS IN 2019, at 20-23 (2020), <https://www.bjs.gov/content/pub/pdf/p19.pdf> [<https://perma.cc/3WAN-VG99>] (demonstrating that Black and Hispanic individuals have higher rates of imprisonment for violent crimes).

There is a plethora of literature documenting how arrests and convictions can create long-lasting impediments to various life outcomes. Once someone becomes involved with the criminal justice system, they can continue to be negatively impacted via additional profiling and arrests, and this is especially true for young men of color.<sup>6</sup> Convictions in particular can reduce employment options, disqualify applicants from government assistance programs, and lead to the revocation or suspension of professional licenses.<sup>7</sup> Authors have discussed a range of additional consequences such as reduced income for future generations, deportation, barriers to adoption and child custody, and the inability to vote in some places.<sup>8</sup> There are also additional sanctions that are specific to being convicted for a drug offense.<sup>9</sup> All these consequences are known determinants of health and can affect individual and community health outcomes.<sup>10</sup>

Discussions about how cannabis legalization can be used to influence social equity outcomes have become more prominent and more detailed in recent years.<sup>11</sup> When Colorado and Washington passed ballot initiatives legalizing cannabis in 2012, to the extent that social equity figured into the debate at all,

---

<sup>6</sup> AKIVA M. LIBERMAN & JOCELYN FONTAINE, URB. INST., REDUCING HARMS TO BOYS AND YOUNG MEN OF COLOR FROM CRIMINAL JUSTICE SYSTEM INVOLVEMENT 3 (2015), <https://www.urban.org/sites/default/files/publication/39551/2000095-Reducing-Harms-to-Boys-and-Young-Men-of-Color-from-Criminal-Justice-System-Involvement.pdf> [https://perma.cc/A4P3-34HX].

<sup>7</sup> See J.J. Prescott & Sonja B. Starr, *Expungement of Criminal Convictions: An Empirical Study*, 133 HARV. L. REV. 2460, 2468-71 (2020).

<sup>8</sup> PABLO A. MITNIK & DAVID B. GRUSKY, PEW CHARITABLE TRS. & RUSSELL SAGE FOUND., ECONOMIC MOBILITY IN THE UNITED STATES 5 (2015), [https://www.pewtrusts.org/-/media/assets/2015/07/fsm-irs-report\\_artfinal.pdf](https://www.pewtrusts.org/-/media/assets/2015/07/fsm-irs-report_artfinal.pdf) [https://perma.cc/EUX2-9V6T]; Deborah M. Ahrens, *Retroactive Legality: Marijuana Convictions and Restorative Justice in an Era of Criminal Justice Reform*, 110 J. CRIM. L. & CRIMINOLOGY 379, 424 (2020); Mathew Swinburne & Kathleen Hoke, *State Efforts to Create an Inclusive Marijuana Industry in the Shadow of the Unjust War on Drugs*, 15 J. BUS. & TECH. L. 235, 253 (2020).

<sup>9</sup> Marah A. Curtis, Sarah Garlington & Lisa S. Schottenfeld, *Alcohol, Drug, and Criminal History Restrictions in Public Housing*, 15 CITYSCAPE, no. 3, 2013, at 37, 38; Brittany T. Martin & Sarah K.S. Shannon, *State Variation in the Drug Felony Lifetime Ban on Temporary Assistance for Needy Families: Why the Modified Ban Matters*, 22 PUNISHMENT & SOC'Y 439, 441 (2020); Lahny R. Silva, *Collateral Damage: A Public Housing Consequence of the "War on Drugs,"* 5 U.C. IRVINE L. REV. 783, 799 (2015); Chesterfield Polkey, *Most States Have Ended SNAP Ban for Convicted Drug Felons*, NAT'L CONF. OF STATE LEGISLATURES: THE NSCL BLOG, <https://www.ncsl.org/blog/2019/07/30/most-states-have-ended-snap-ban-for-convicted-drug-felons.aspx> [https://perma.cc/D8QA-WZZ5] (last visited Apr. 13, 2021).

<sup>10</sup> *About Social Determinants of Health (SDOH)*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/socialdeterminants/about.html> [https://perma.cc/2WSG-W9S2] (last updated Mar. 10, 2021) ("Resources that enhance quality of life can have a significant influence on population health outcomes. Examples of these resources include safe and affordable housing, access to education, [and] public safety . . .").

<sup>11</sup> Beau Kilmer & Erin Kilmer Neel, *Being Thoughtful About Cannabis Legalization and Social Equity*, 19 WORLD PSYCHIATRY 194, 194 (2020).

much of the focus was on minimizing disproportionate arrests and incarceration. Over time, states and localities began to include provisions for expunging some past cannabis offenses from criminal records. More recently, discussions about cannabis and social equity have expanded to encompass the allocation of cannabis tax revenues, business ownership, and employment in the newly legal industry.

There are many options for legalizing supply, but figuring out the “right” approach is not straightforward. Much depends on the amount and types of cannabis supplied, who supplies it, the regulations instituted, and how those regulations are enforced. It also depends on which outcomes the decision makers prioritize. Indeed, this complexity may help explain why there can be disagreement among similarly focused organizations about the potential effects of legalization on social equity outcomes. For example, while the NAACP supports cannabis legalization,<sup>12</sup> the Illinois NAACP chapter is opposed.<sup>13</sup> In fact, the latter teamed with a national antilegalization group on a “#DecriminalizeDon’tLegalize” campaign, which argues that “[t]his new addiction industry is already targeting communities of color like its predecessors Big Tobacco and the liquor industry have always done.”<sup>14</sup>

It is also noteworthy that in the United States, where the commercial model for cannabis supply dominates in legalization states, the head of one of the leading organizations advocating for the legalization of cannabis—Drug Policy Alliance—noted on a cannabis and social equity panel that “when we have the conversation about regulation, it’s how do we expand the frame about what that actually means, and that we must actually disentangle regulation from commercialization because commercialization is a violent, violent act . . . .”<sup>15</sup>

Thus, there is tension. Legalization for nonmedical purposes may create new sources of disproportionate harm even as it alleviates some inequities associated with cannabis prohibition. The potential equity benefits range from reduced criminal justice interactions to increased economic opportunities in the newly legalized industry to targeted spending of tax revenues. The potential equity costs primarily pertain to health, broadly construed to include mental and

---

<sup>12</sup> NAACP, RESOLUTIONS RATIFIED BY THE NATIONAL BOARD OF DIRECTORS AT ITS OCTOBER 2019 BOARD OF DIRECTORS MEETING 12-13 (2019), <https://www.naacp.org/wp-content/uploads/2020/01/2019-Resolutions.pdf> [<https://perma.cc/FB9U-SH94>].

<sup>13</sup> Teresa Haley, *Legalizing Weed Won’t Eliminate Risk of Discrimination*, CRAIN’S CHI. BUS. (Nov. 25, 2019, 3:40 PM), <https://www.chicagobusiness.com/forum-ideas-cannabis/legalizing-weed-wont-eliminate-risk-discrimination> [<https://perma.cc/7RB4-D8HL>].

<sup>14</sup> #DecriminalizeDon’tLegalize, SMART APPROACHES TO MARIJUANA, <https://learnaboutsam.org/decriminalizedontlegalize/> (last visited Apr. 13, 2021).

<sup>15</sup> Transform Drug Policy Foundation, *Social Justice Must Be at the Forefront of Cannabis Law Reform*, YOUTUBE, at 20:58 (June 5, 2020), <https://www.youtube.com/watch?v=Qy6PJlCmTXQ> (statement of Kassandra Frederique, Exec. Dir., Drug Pol’y All.).

behavioral as well as physical health.<sup>16</sup> It is often argued that cannabis is less dangerous than alcohol,<sup>17</sup> but that is not saying much since roughly 100,000 Americans die from alcohol-related causes each year.<sup>18</sup> Although moderate cannabis use is usually unproblematic, daily and near-daily use can pose multiple health risks,<sup>19</sup> and most sales are to daily and near-daily users.<sup>20</sup> The social equity concern is that a for-profit legal cannabis industry will concentrate marketing and sales in vulnerable populations, as the alcohol and tobacco industries have done.<sup>21</sup>

This Essay focuses on the opportunities, puzzles, and trade-offs associated with using cannabis legalization to address inequities. It should be of interest to decision makers in states that have legalized cannabis as well as those considering alternatives to cannabis prohibition. Part I describes various ways cannabis policy can influence these inequities—for better or worse—by focusing on policy levers in six areas: arrests and penalties, addressing previous cannabis offenses, licensing preferences, fostering diversity in the cannabis workforce, government revenues, and health. Emerging insights about the effects of these levers are also discussed. Of course, the number of people

---

<sup>16</sup> Wayne Hall, Daniel Stjepanović, Jonathan Caulkins, Michael Lynskey, Jani Leung, Gabrielle Campbell & Louisa Degenhardt, *Public Health Implications of Legalising the Production and Sale of Cannabis for Medicinal and Recreational Use*, 394 LANCET 1580, 1585 (2019).

<sup>17</sup> Dirk W. Lachenmeier & Jürgen Rehm, *Comparative Risk Assessment of Alcohol, Tobacco, Cannabis and Other Illicit Drugs Using the Margin of Exposure Approach*, 5 SCI. REPS., no. 8126, 2015, at 1, 5-6.

<sup>18</sup> Marissa B. Esser, Adam Sher, Yong Liu, Timothy S. Naimi, Timothy Stockwell, Mandy Stahre, Dafna Kanny, Michael Landen, Richard Saitz & Robert D. Brewer, *Deaths and Years of Potential Life Lost from Excessive Alcohol Use — United States, 2011–2015*, 69 MORBIDITY & MORTALITY WKLY. REP. 981, 985 (2020), <https://www.cdc.gov/mmwr/volumes/69/wr/pdfs/mm6939a6-H.pdf> [<https://perma.cc/7GKL-VMK2>]; *Alcohol and Public Health: Alcohol-Related Disease Impact (ARDI)*, CTRS. FOR DISEASE CONTROL & PREVENTION, [https://nccd.cdc.gov/DPH\\_ARDI/Default/Report.aspx?T=AAM&P=1A04A664-0244-42C1-91DE-316F3AF6B447&R=B885BD06-13DF-45CD-8DD8-AA6B178C4ECE&M=32B5FFE7-81D2-43C5-A892-9B9B3C4246C7&F=&D=](https://nccd.cdc.gov/DPH_ARDI/Default/Report.aspx?T=AAM&P=1A04A664-0244-42C1-91DE-316F3AF6B447&R=B885BD06-13DF-45CD-8DD8-AA6B178C4ECE&M=32B5FFE7-81D2-43C5-A892-9B9B3C4246C7&F=&D=) [<https://perma.cc/WS6A-WTDR>] (last visited Apr. 13, 2021).

<sup>19</sup> Wayne Hall & Louisa Degenhardt, *The Adverse Health Effects of Chronic Cannabis Use*, 6 DRUG TESTING & ANALYSIS 39, 39 (2014).

<sup>20</sup> B. KILMER, S. EVERINGHAM, J. CAULKINS, G. MIDGETTE, R. PACULA, P. REUTER, R. BURNS, B. HAN & R. LUNDBERG, RAND CORP., WHAT AMERICA’S USERS SPEND ON ILLEGAL DRUGS: 2000-2010, at 18 (2014), [https://obamawhitehouse.archives.gov/sites/default/files/ondcp/policy-and-research/wausid\\_results\\_report.pdf](https://obamawhitehouse.archives.gov/sites/default/files/ondcp/policy-and-research/wausid_results_report.pdf) [<https://perma.cc/LV36-V5PT>] (“It is the daily/near-daily users who account for most of the consumption [of cannabis] . . .”).

<sup>21</sup> Sonya A. Grier & Shiriki Kumanyika, *Targeted Marketing and Public Health*, 31 ANN. REV. PUB. HEALTH 349, 363 (2010) (noting that low-income populations, because of their status as vulnerable populations, must be considered when evaluating public health considerations and targeted marketing).

affected will depend on the policies being pursued, and Part II offers a case study of Virginia that focuses on how many people from communities disproportionately affected by cannabis prohibition could benefit from expungement as well as from entrepreneurship and employment opportunities in a state-legal cannabis industry. Part III describes seven puzzles and trade-offs confronting those seeking to develop cannabis equity programs.

#### I. SOME OPPORTUNITIES FOR ADDRESSING INEQUITIES WITH CANNABIS POLICY REFORM

There are multiple definitions of social equity; some use it as an umbrella term for all types of equity—e.g., race, gender, environmental, health—while others argue that it is just one type of equity that needs to be considered alongside others. For this Essay, we take the umbrella approach.

Equity, as used here, is very different from the concept of equality. While equality generally focuses on ensuring that everyone has access to the same resources, we consider equity as accounting for different starting points and the unique needs of different populations as a result of long-standing systemic and legislated barriers to opportunities to access those resources.<sup>22</sup>

Several authors have attempted to categorize the available cannabis policy options in terms of social equity.<sup>23</sup> Building on these previous efforts, we offer a framework focused on policy levers in six areas: arrests and penalties, addressing previous cannabis offenses, licensing preferences, fostering diversity in the cannabis workforce, government revenues, and health. While our discussion of these six areas is not exhaustive, we highlight some of the major choices available and examine some emerging insights about how they are playing out in jurisdictions that have legalized cannabis.

---

<sup>22</sup> This definition is inspired by RACE FORWARD, RACE REPORTING GUIDE 27 (2015), [https://www.raceforward.org/sites/default/files/Race%20Reporting%20Guide%20by%20Race%20Forward\\_V1.1.pdf](https://www.raceforward.org/sites/default/files/Race%20Reporting%20Guide%20by%20Race%20Forward_V1.1.pdf) [<https://perma.cc/D56M-DHY6>] (“Equity means fairness and justice and focuses on outcomes that are most appropriate for a given group, recognizing different challenges, needs, and histories.”). *See also* KAREN RIDEOUT, B.C. CTR. FOR DISEASE CONTROL, FIVE THINGS TO KNOW ABOUT EQUITY IN ENVIRONMENTAL PUBLIC HEALTH 2 (2016), [http://www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/EH/BC\\_CDC\\_primer\\_1.pdf](http://www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/EH/BC_CDC_primer_1.pdf) [<https://perma.cc/3D4K-6DQA>] (defining health equity as when everyone has a fair opportunity to achieve their full health potential without social, economic, or environmental barriers).

<sup>23</sup> *See, e.g.*, MAKADA HENRY-NICKIE & JOHN HUDAK, BROOKINGS INST., IT IS TIME FOR A CANNABIS OPPORTUNITY AGENDA 1, 4 (2020), [https://www.brookings.edu/wp-content/uploads/2020/03/Big-Ideas\\_HenryNickieHudak\\_CannabisOpportunityAgenda.pdf](https://www.brookings.edu/wp-content/uploads/2020/03/Big-Ideas_HenryNickieHudak_CannabisOpportunityAgenda.pdf) [<https://perma.cc/G352-BKMY>]; Bryon Adinoff & Amanda Reiman, *Implementing Social Justice in the Transition from Illicit to Legal Cannabis*, 45 AM. J. DRUG & ALCOHOL ABUSE 673, 681 (2019); Christopher Nani, *Social Equity Assessment Tool for the Cannabis Industry*, OHIO ST. J. CRIM. L. (forthcoming) (manuscript at 8), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3312114](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3312114) [<https://perma.cc/X3DU-JCPS>].

A. *Arrests and Penalties*

*Choices.* Legalizing cannabis for adults dramatically reduces cannabis arrests and convictions for adults, but it will not eliminate all police contact related to cannabis. Public consumption, intoxication, and driving under the influence will still lead to police contact, as will supply to minors and other unlicensed distribution. Important decisions will have to be made about the sanctions for these offenses and the extent to which they will be enforced. Decision makers will also have to consider what cannabis legalization means for drug testing in contexts that permit testing (e.g., those subject to probation or parole supervision).

*Emerging insights.* Overall, arrests and convictions for cannabis offenses declined sharply in the states that have legalized possession and supply for adults, but legalization—particularly of supply—is not necessary to produce large declines. Andrew Plunk and colleagues examined cannabis possession arrests in thirty-eight states between 2000 and 2016, including four that had legalized possession and supply for adults and seven that had only decriminalized the possession of cannabis and found that

[t]he adult arrest rate decreased by 131.28 (95% CI, 106.23-154.21) per 100 000 population after the implementation of decriminalization and 168.50 (95% CI, 158.64-229.65) per 100 000 population after the implementation of legalization. The arrest rate for youth decreased by 60 (95% CI, 42-75) per 100 000 population after decriminalization but did not significantly change after legalization in a state (7 per 100 000 population; 95% CI, -15 to 30).<sup>24</sup>

The reductions, however, may be greatest for groups that were already at a lower risk. Caislin Firth and colleagues evaluated data from Washington and concluded that

[m]arijuana arrest rates among both African American and White adults decreased significantly with legalization of possession, and stayed at a dramatically lower rate after the marijuana retail market opened. However, relative disparities in marijuana arrest rates for African Americans increased for those of legal age, and remained unchanged for younger adults.<sup>25</sup>

Of course, changes in subgroup arrest patterns can vary across jurisdictions. Examining juvenile cannabis arrest data for Oregon from January 2012 to September 2018, Firth and colleagues in a different article concluded that

---

<sup>24</sup> Andrew D. Plunk, Stephanie L. Peglow, Paul T. Harrell & Richard A. Grucza, *Youth and Adult Arrests for Cannabis Possession After Decriminalization and Legalization of Cannabis*, 173 JAMA PEDIATRICS 763, 763 (2019).

<sup>25</sup> Caislin L. Firth, Julie E. Maher, Julia A. Dilley, Adam Darnell & Nicholas P. Lovrich, *Did Marijuana Legalization in Washington State Reduce Racial Disparities in Adult Marijuana Arrests?*, 54 SUBSTANCE USE & MISUSE 1582, 1582 (2019).



“[a]dult cannabis legalization in Oregon was associated with increased juvenile cannabis allegations; increases are not explained by changes in underage cannabis use. Relative disparities decreased for black youth but remained unchanged for American Indian/Alaska Native youth.”<sup>26</sup>

B. *Addressing Previous Cannabis Offenses*

*Choices.* A crucial question is whether to address the ongoing harms of prior records for cannabis offenses by sealing or expungement.<sup>27</sup> The number of people benefitting from sealing or expungement depends not only on which offenses are covered (e.g., possession versus any cannabis conviction) but also on whether this is automatically done by the state for everyone or if it will require each individual to petition for relief. The petitioning process can require time and expense (especially if a lawyer is needed) that create barriers that will disproportionately fall on people with lower incomes. A related set of questions is in regard to whether to commute sentences for those currently incarcerated (which will mostly involve those arrested for production or sales) or under community supervision for cannabis-related offenses.

*Emerging insights.* Adult-use legalization states and Washington, D.C. have taken different approaches to the sealing or expungement of previous cannabis offenses. Chris Nani argues that most jurisdictions that allow cannabis convictions to be sealed or expunged have generally followed five guidelines. Specifically, the cannabis conviction must have (1) been nonviolent, (2) not included any element of diversion (e.g., illegal supply), (3) involved only small quantities of cannabis, regardless of form, (4) not occurred contemporaneously or in close timing to a disqualifying offense, such as a violent crime, and (5) occurred before legalization.<sup>28</sup> The majority of jurisdictions require individuals to petition the court for relief instead of doing so automatically.<sup>29</sup>

State governors can also pardon individuals who have been convicted of a crime. The day before legalization went into effect in Illinois, the governor

---

<sup>26</sup> Caislin L. Firth, Anjum Hajat, Julia A. Dilley, Margaret Braun & Julie E. Maher, *Implications of Cannabis Legalization on Juvenile Justice Outcomes and Racial Disparities*, 58 AM. J. PREVENTIVE MED. 562, 562-63 (2020) (“Allegations include all cannabis-related offenses that are referred by law enforcement to juvenile departments before adjudication and disposition (before appearing in court and sentencing).”).

<sup>27</sup> The terms “sealing” and “expungement” are sometimes used almost interchangeably, and we do not draw out distinctions here, but they can differ, with particulars varying by state. See Prescott & Starr, *supra* note 7, at 2472.

<sup>28</sup> Chris Nani, *Cannabis Convictions*, in UNDERSTANDING SOCIAL EQUITY 36, 37 (Chris Nani ed., 2020), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3622268](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3622268) [<https://perma.cc/R5R8-PCB5>].

<sup>29</sup> HARVEY SLADE, TRANSFORM DRUG POL’Y FOUND., ALTERED STATES: CANNABIS REGULATION IN THE US 18-20 (James Nicholls & Steve Rolles eds., 2020), <https://transformdrugs.org/assets/files/PDFs/altered-states-fulltext-2020.pdf> [<https://perma.cc/JWB9-AZCU>].

granted pardons to more than 11,000 individuals who had been convicted of possessing less than thirty grams of cannabis; this pardon effectively expunged the offense from their criminal records.<sup>30</sup> There are tens of thousands of other individuals in the state who are eligible for pardons, and many are expected to have their offenses automatically expunged in the upcoming years.<sup>31</sup> The governor of Washington used his executive power to pardon cannabis misdemeanor possession convictions between 1998-2012.<sup>32</sup>

We are unaware of empirical analyses that evaluate the consequences of pardoning, sealing, or expunging cannabis offenses specifically, but a review of the empirical literature about how clearing criminal records generally can affect employment concluded that

the record clearing intervention delivers on its promise. People with criminal records seek the unmarking remedy after a period of declining earnings, in spite of active labor market participation. During or immediately after the intervention, average employment rates and earnings appear to rise, though the staying power of such increases is still unclear.<sup>33</sup>

### C. *Licensing Preferences*

*Choices.* Those creating legalization regimes get to choose the type or class of organization that can supply cannabis. It could be home producers, co-ops, nonprofits, government entities, or, as has been passed in eighteen states, for-profit companies. That creates opportunities for lucky or smart entrepreneurs to get rich and so raises the question of who will get those licenses. States can take various actions to give preferential treatment to applicants and licensees from communities that have been disproportionately affected by cannabis prohibition, and take additional actions to reduce barriers for these individuals (e.g., trainings, fee waivers/reductions, legal support, loans, or grants), depending on how eligibility is defined. There are some limits because normally preference programs must be specifically designed to redress past discrimination within that industry. Yet, no matter how severe the disparate impacts of cannabis *prohibition* were, they did not arise because of disparate treatment within the modern legal cannabis industry, since that industry did not exist prior to legalization.

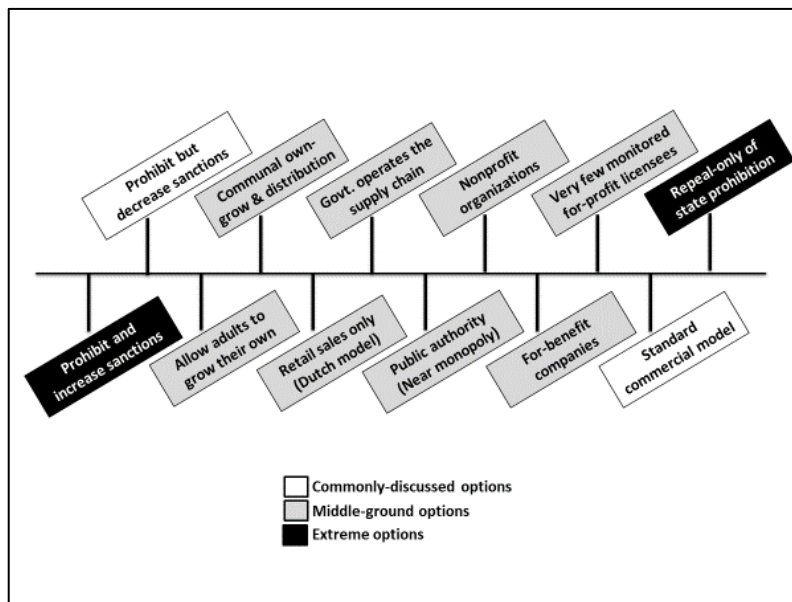
---

<sup>30</sup> Elvia Malagón, *On Eve of Legal Pot, 11,000 Are Pardoned*, CHI. TRIB., Jan. 1, 2020, § 1, at 1.

<sup>31</sup> *Id.*

<sup>32</sup> Ahrens, *supra* note 8, at 408.

<sup>33</sup> Jeffrey Selbin, Justin McCrary & Joshua Epstein, *Unmarked? Criminal Record Clearing and Employment Outcomes*, 108 J. CRIM. L. & CRIMINOLOGY 1, 58 (2018); *see also* Prescott & Starr, *supra* note 7, at 2533-34.

**Figure 1.** Twelve Alternatives to Status Quo Cannabis Supply Prohibition.<sup>34</sup>

*Emerging insights.* All states that have legalized cannabis have adopted a for-profit commercial approach; Washington, D.C. implemented a “grow and give” model that allows individuals 21 years of age and older to grow and give small amounts of cannabis to others who are over 21.<sup>35</sup> The standard commercial model creates a lot of legal business opportunities; one estimate put the total number of cannabis businesses that touch the product (as opposed to ancillary services like cannabis marketing firms) close to 10,000 in 2017.<sup>36</sup>

<sup>34</sup> Figure 1 is reproduced from JONATHAN P. CAULKINS, BEAU KILMER, MARK A.R. KLEIMAN, ROBERT J. MACCOUN, GREGORY MIDGETTE, PAT OGLESBY, ROSALIE LICCARDO PACULA & PETER H. REUTER, RAND CORP., CONSIDERING MARIJUANA LEGALIZATION: INSIGHTS FOR VERMONT AND OTHER JURISDICTIONS 50 fig.4.1 (2015) [hereinafter CAULKINS ET AL., CONSIDERING MARIJUANA LEGALIZATION], [https://www.rand.org/content/dam/rand/pubs/research\\_reports/RR800/RR864/RAND\\_RR864.pdf](https://www.rand.org/content/dam/rand/pubs/research_reports/RR800/RR864/RAND_RR864.pdf) [<https://perma.cc/LPV7-B3D5>].

<sup>35</sup> *Id.* at 53, 117 n.4. Vermont implemented a “grow and give” model in 2018, but in October 2020, the Governor signed a bill to create a commercial industry for nonmedical cannabis supply. S.B. 54, 2019-2020 Sess., Reg. Sess. (Vt. 2020); Bruce Barcott, *Vermont Finally OKs Retail Cannabis Stores, Years After Legalizing*, LEAFLY (Sept. 23, 2020), <https://www.leafly.com/news/politics/vermont-finally-oks-retail-cannabis-stores-years-after-legalizing> [<https://perma.cc/BQ7J-JCRG>].

<sup>36</sup> Aaron Smith, *The U.S. Legal Marijuana Industry Is Booming*, CNN MONEY (Jan. 31, 2018, 4:03 PM), <https://money.cnn.com/2018/01/31/news/marijuana-state-of-the-union/index.html> [<https://perma.cc/SJR5-NJDT>].

Most of those legal cannabis businesses are owned by White people. Marijuana Business Daily conducted a survey of individuals with any ownership stake in a cannabis business and estimated that 81% of cannabis businesses are owned by those who identify as White.<sup>37</sup> Asian, Black, and Hispanic/Latinx people make up 2.4%, 4.3%, and 5.7%, respectively, of cannabis business owners.<sup>38</sup> While this survey did not cover all cannabis businesses and may suffer from selection bias, the share of cannabis businesses owned by White people is consistent with ownership for noncannabis businesses in the United States.<sup>39</sup>

As a result, an increasing number of states and localities are undertaking efforts to define disproportionately affected communities (“DACs”) and increase cannabis business opportunities for members of DACs, especially BIPOC communities. Yet progress in that direction has been slow in some jurisdictions. Illinois was supposed to start issuing social equity licenses by April 30, 2020, but as of December 2020, a piece in the *Chicago Tribune* reported that “[n]ot one social equity license has been issued and there’s still not one licensed cannabis business in the state with a majority owner who is a person of color.”<sup>40</sup>

Massachusetts has arguably the most aggressive social equity program in the country, but of the more than seventy licenses issued to social equity, economic empowerment, and Disadvantaged Business Enterprise applicants, only three had opened up as of July 16, 2020.<sup>41</sup> To help accelerate diversity in the

---

<sup>37</sup> Eli McVey, *Chart: Percentage of Cannabis Business Owners and Founders by Race*, MARIJUANA BUS. DAILY (Sept. 11, 2017), <https://mjbizdaily.com/chart-19-cannabis-businesses-owned-racial-minorities/> [<https://perma.cc/BC7P-PTZX>].

<sup>38</sup> *Id.* 6.7% of survey participants responded “other” when asked about their race. *Id.*

<sup>39</sup> NORA ESPOSITO, U.S. SMALL BUS. ADMIN., SMALL BUSINESS FACTS: SPOTLIGHT ON MINORITY-OWNED EMPLOYER BUSINESSES (2019), <https://cdn.advocacy.sba.gov/wp-content/uploads/2019/05/31131339/Small-Business-Facts-Spotlight-on-Minority-Owned-Employer-Businesses.pdf> [<https://perma.cc/M7X6-ASNW>] (“20 percent of all employer businesses were at least 51 percent owned by minority entrepreneurs . . .”). It is also consistent with the racial/ethnic composition of Canada’s cannabis market. See NAZLEE MAGHSOUDI, INDHU RAMMOHAN, ANDREA BOWRA, RUBY SNIDERMAN, JUSTINE TANGUAY, ZACHARY BOUCK, AYDEN SCHEIM, DAN WERB & AKWASI OWUSU-BEMPAH, CTR. ON DRUG POL’Y EVALUATION, HOW DIVERSE IS CANADA’S LEGAL CANNABIS INDUSTRY? 2 (2020), [https://cdpe.org/wp-content/uploads/dlm\\_uploads/2020/10/How-Diverse-is-Canada%E2%80%99s-Legal-Cannabis-Industry\\_CDPE-UofT-Policy-Brief\\_Final.pdf](https://cdpe.org/wp-content/uploads/dlm_uploads/2020/10/How-Diverse-is-Canada%E2%80%99s-Legal-Cannabis-Industry_CDPE-UofT-Policy-Brief_Final.pdf) [<https://perma.cc/3SL3-UHTT>] (finding that non-White people made up 16% of leaders of licensed cannabis producers and parent companies).

<sup>40</sup> Ross Morreale, Opinion, *Illinois’ Booming Cannabis Business Is Leaving People of Color Behind*, CHI. TRIB., Jan. 4, 2021, § 1, at 15.

<sup>41</sup> Melissa Hanson, *‘We’re Talking About Restorative Justice;’ Marijuana Business Applicants, Advocates Call Out for More Equity in Massachusetts Cannabis Industry*, MASS LIVE (July 16, 2020), <https://www.masslive.com/marijuana/2020/07/were-talking-about-restorative-justice-marijuana-business-applicants-advocates-call-out-for-more-equity-in-massachusetts-cannabis-industry.html> [<https://perma.cc/5EFF-3YV6>].

marketplace, Massachusetts's Cannabis Control Commission voted in May 2020 to allow licenses for delivery services to be exclusively issued for the next two years to social equity and economic empowerment applicants.<sup>42</sup>

The City of Los Angeles has also hit some stumbling blocks with its social equity program, and the city council voted in July 2020 to massively overhaul its approach to increasing diversity in the cannabis industry. Among other measures, the city has focused its definition of DACs (from zip codes to police reporting districts), and for the next round of licenses, social equity applicants must have had a California cannabis arrest or conviction to be eligible.<sup>43</sup> Los Angeles has also taken steps to help prevent predatory investors from buying out equity stakeholders below the fair market value of their shares.<sup>44</sup>

This underscores a key choice point: Does the DAC to be advantaged consist of everyone in a demographic group or neighborhood that experienced high rates of arrest, or just those who were themselves arrested or convicted? The latter is a much more narrowly defined group that suffered the ill effects of prohibition directly. On the other hand, with the exception of the few who were wrongfully convicted, those convicted of cannabis offenses are by definition people found guilty of breaking the law.<sup>45</sup> To the extent that oversight of licensees in regulated industries depends on trust and cooperation, the more common approach is to favor people without criminal records.

#### D. *Diversity in the Cannabis Workforce*

*Choices.* There are relatively few business owners and licensees compared to the number of workers in state-legal cannabis industries; however, some research has shown that BIPOC-owned businesses are more likely to hire BIPOC employees.<sup>46</sup> So, it is possible that license preferences discussed above

---

<sup>42</sup> Melissa Hanson, *Massachusetts Marijuana Delivery License Applications on Track to Launch in May, Reserved for Economic Empowerment and Social Equity Applicants*, MASS LIVE (May 7, 2020), <https://www.masslive.com/marijuana/2020/05/massachusetts-marijuana-delivery-license-applications-on-track-to-launch-in-may-reserved-for-economic-empowerment-and-social-equity-applicants.html> [https://perma.cc/Z62P-7JC9].

<sup>43</sup> Emily Alpert Reyes, *L.A. Revamps Rules for Cannabis*, L.A. TIMES, July 2, 2020, at B3.

<sup>44</sup> John Schroyer, *Divide Opens over L.A. Cannabis Social Equity Licenses, Management Contracts*, MARIJUANA BUS. DAILY (July 22, 2020), <https://mjbizdaily.com/dispute-over-los-angeles-cannabis-social-equity-licenses-management-contracts> [https://perma.cc/ZG4P-SRA4].

<sup>45</sup> This is an important distinction. The injustice of past cannabis arrests and convictions stems from disagreement about the law itself, its sanctions, and disproportionate punishment among different groups; it is not (primarily) injustice in the sense that innocent people were wrongfully convicted.

<sup>46</sup> Timothy Bates, *Utilization of Minority Employees in Small Business: A Comparison of Nonminority and Black-Owned Urban Enterprises*, REV. BLACK POL. ECON., June 1994, at 113, 118 (“While over 93 percent of black business employers rely upon minorities to fill 50 percent or more of their available jobs, nearly 60 percent of the nonminority employers have

could have secondary benefits for promoting diversity in the cannabis industry workforce.

Jurisdictions seeking to increase workforce diversity in the legal cannabis industry could fund and target recruitment or training efforts to individuals in DACs. They could also require or encourage licensees to have equity plans that lay out how they will make efforts to create a diverse workforce.

Another option would be to implement government cannabis stores and use affirmative action policies to increase public employment (and promotion) for groups that have suffered from discrimination in that state. Of course, not all states allow for affirmative action in government hiring (e.g., California banned affirmative action in 1996, and a 2020 ballot initiative to reinstate it did not pass). There is considerable variation in how this is operationalized in places that have allowed it, ranging from “‘hard quotas’ to softer methods of outreach, recruitment, and scrupulous enforcement of antidiscrimination norms.”<sup>47</sup>

*Emerging insights.* There are no federal estimates of the number of people working in the state-legal cannabis industry. One industry source put the 2019 figure of workers “who support the marijuana industry” between 165,000-200,000 full-time equivalents (“FTE”),<sup>48</sup> and another source estimated that legal cannabis supported 211,000 FTE jobs in 2019 and 243,700 jobs as of early 2020.<sup>49</sup>

It is hard to know the characteristics of the employees in these jobs because this information is not systematically collected and reported in most places;

---

no minority employees.”); Thomas D. Boston, *The Role of Black-Owned Businesses in Black Community Development*, in *JOBS AND ECONOMIC DEVELOPMENT IN MINORITY COMMUNITIES* 161, 163 (Paul Ong & Anastasia Loukaitou-Sideris eds., 2006) (“Over three-quarters (76 percent) of all employees in Black-owned firms were Black, while 16 percent were White. By contrast, Blacks comprise 29 percent of the employees in firms owned by Whites.”); Michael A. Stoll, Steven Raphael & Harry J. Holzer, *Why Are Black Employers More Likely than White Employers to Hire Blacks?* 1-2 (Inst. for Rsch. on Poverty, Discussion Paper No. 1236-01, 2001), <https://www.irp.wisc.edu/publications/dps/pdfs/dp123601.pdf> [<https://perma.cc/C6EK-DWB4>] (“We find that establishments where blacks are in charge of hiring are considerably more likely to employ blacks even after controlling for the proportion of applications that are submitted by blacks, establishment spatial location within the metropolitan area, and a large set of observable establishment characteristics.”).

<sup>47</sup> Carol M. Swain, *Affirmative Action: Legislative History, Judicial Interpretations, Public Consensus*, in 1 *AMERICA BECOMING: RACIAL TRENDS AND THEIR CONSEQUENCES* 318, 319 (Neil J. Smelser, William Julius Wilson & Faith Mitchell eds., 2001).

<sup>48</sup> Jenel Stelton-Holtmeier, *US Cannabis Employment Could Climb Nearly 50% in 2020, Surpassing Computer Programmers*, *MARIJUANA BUS. DAILY* (July 28, 2020), <https://mjbizdaily.com/chart-us-cannabis-employment-could-climb-nearly-50-in-2020-surpassing-computer-programmers/> [<https://perma.cc/4MW9-MGWP>].

<sup>49</sup> LEAFLY, *LEAFLY JOBS REPORT 2020*, at 5 (2020), <https://leafly-images.imgix.net/Leafly-2020-Jobs-Report.pdf> [<https://perma.cc/SN6B-9Q7L>].

many insights rely on anecdotes and convenience samples.<sup>50</sup> A notable exception is Massachusetts which reports gender and race/ethnicity information for approved and pending cannabis agents, defined as “board members, directors, executives, managers, employees, and volunteers” of cannabis establishments.<sup>51</sup> As of November 19, 2020, nearly 36% of the approved/pending agents were female.<sup>52</sup> Among those agents who answered the race/ethnicity question,<sup>53</sup> 6.6% identified as Black/African American, 7.5% identified as Hispanic/Latino/Spanish, 80.5% identified as White, and 5.4% identified as another or multiple race/ethnicities.<sup>54</sup>

Those figures suggest that disparities persist when compared to the general population in Massachusetts where, as of July 2019, 51.5% are female, 9.0% are Black/African American, and 12.4% are Hispanic/Latinx.<sup>55</sup> However, a better comparison might be to the demographics of Massachusetts employees, not all residents, or specifically to employees in comparable industries. Additionally, because variation in race/ethnicity is not uniform within states, it might be more useful for monitoring and evaluation purposes to make these comparisons at the local level.

#### E. *Government Revenues*

*Choices.* Legalizing cannabis supply can generate government revenues via taxes and license fees, although the actual revenues tend to be less than what is anticipated (and could be much less under federal legalization).<sup>56</sup> How these revenues are used can have important implications for social equity. For example, will they be used to fund public education campaigns to minimize the

---

<sup>50</sup> For example, a report based on a convenience sample of those working in the Denver cannabis industry in 2020 estimated that 68% percent of employees identified as White, 12% as Hispanic/Latino/Spanish, and 6% as Black; however, the authors urged caution when interpreting these figures because over 26% of study respondents chose not to disclose their race/ethnicity. ANALYTICINSIGHT, CANNABIS BUSINESS AND EMPLOYMENT OPPORTUNITY STUDY 16-17 (2020), [https://www.denvergov.org/content/dam/denvergov/Portals/782/documents/Denver\\_Cannabis\\_Business\\_and\\_Employment\\_Opportunity\\_Study.pdf](https://www.denvergov.org/content/dam/denvergov/Portals/782/documents/Denver_Cannabis_Business_and_Employment_Opportunity_Study.pdf) [<https://perma.cc/XP7K-T5NR>].

<sup>51</sup> MASS. CANNABIS CONTROL COMM’N, GUIDANCE ON MARIJUANA ESTABLISHMENT AGENT REGISTRATION, [https://mass-cannabis-control.com/wp-content/uploads/200825\\_Guidance\\_on\\_Marijuana\\_Establishment\\_Agent\\_Registration.pdf](https://mass-cannabis-control.com/wp-content/uploads/200825_Guidance_on_Marijuana_Establishment_Agent_Registration.pdf) [<https://perma.cc/6DC3-D2B8>] (last visited Apr. 13, 2021).

<sup>52</sup> MASS. CANNABIS CONTROL COMM’N, MONTHLY PUBLIC COMMISSION MEETING: NOVEMBER 2020, at 340 (2020), <http://mass-cannabis-control.com/wp-content/uploads/public-meeting-november-2020.pdf> [<https://perma.cc/4BR2-CX8K>].

<sup>53</sup> *Id.* at 341. 8.9% of the population declined to answer. *Id.*

<sup>54</sup> *See id.*

<sup>55</sup> U.S. CENSUS BUREAU, QUICKFACTS: MASSACHUSETTS, <https://www.census.gov/quickfacts/MA> [<https://perma.cc/K488-D3B7>] (last updated July 1, 2019).

<sup>56</sup> *See infra* Section III.G.

risks and harms of cannabis use? Will the funds be allocated to a general fund to help mitigate the impact of COVID-19, which disproportionately affects BIPOC?<sup>57</sup> Will they be used to fund other health services and schools, potentially targeting disproportionately affected communities? Will they be used to fund training and grant programs (including fee reductions or waivers) for those with limited business experience who want to get involved in the cannabis industry? Will they be used for reparations or restorative justice programs, and, if so, will they be targeted at alleviating the injustices created by cannabis prohibition or racial injustices more generally?

*Emerging insights.* States are generating revenue from cannabis taxes and licensing fees, but those revenues are not enormous. Five years after the licensed stores opened in Colorado and Washington, the annual cannabis tax revenues were roughly \$300 million and \$400 million, respectively.<sup>58</sup> In both states, that works out to about \$50 per resident and accounts for less than 1% of total state expenditures.<sup>59</sup> We caution other jurisdictions to not simply multiply their state populations by \$50 and assume that will be the government revenue five years after the stores open; much depends on tax rates, price trends, and what happens with neighboring states and the federal government.<sup>60</sup>

From 2014 to 2019, Colorado generated \$1 billion in cannabis tax and fee revenues, with more than half of those funds being spent on human services, public health, and the environment, and another 17% on education.<sup>61</sup> For the \$396 million Washington generated in cannabis revenues for the fiscal year 2019, providing health care services accounted for the majority of expenditures.

---

<sup>57</sup> *Risk for COVID-19 Infection, Hospitalization, and Death by Race/Ethnicity*, CTRS. FOR DISEASE CONTROL & PREVENTION, <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html> [https://perma.cc/3EG2-8Q9G] (last updated Mar. 12, 2021) (reporting that Black and Latino persons are more likely to die from COVID-19 than White, non-Hispanic persons).

<sup>58</sup> *Marijuana Tax Reports*, COLO. DEP'T OF REVENUE, <https://cdor.colorado.gov/data-and-reports/marijuana-data/marijuana-tax-reports> [https://perma.cc/AH77-B57T] (last visited Apr. 13, 2021); *Washington Marijuana Revenues, and Health*, WASH. STATE TREASURER: MIKE PELLICCIOTTI, <https://tre.wa.gov/portfolio-item/washington-state-marijuana-revenues-and-health/> [https://perma.cc/32LW-PCHH] (last visited Apr. 13, 2021).

<sup>59</sup> *Total State Expenditures (in Millions)*, KAISER FAM. FOUND., <https://www.kff.org/other/state-indicator/total-state-spending/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D> [https://perma.cc/P6G9-ZRYY] (last visited Apr. 13, 2021).

<sup>60</sup> Beau Kilmer, Opinion, *Gov. Wolf's Push to Legalize Marijuana Is Oversold as Coronavirus Relief*, PHILA. INQUIRER (Aug. 28, 2020), <https://www.inquirer.com/opinion/commentary/marijuana-legalization-tom-wolf-pennsylvania-revenue-coronavirus-20200828.html> [https://perma.cc/SVF2-BWXQ].

<sup>61</sup> Jesse Paul, *Where Does Colorado's Marijuana Tax Money Go? The State Made a Flow Chart to Answer the \$1 Billion Question*, COLO. SUN (June 12, 2019, 2:42 PM), <https://coloradosun.com/2019/06/12/where-does-colorados-marijuana-tax-money-go/> [https://perma.cc/WKX7-FEAN].



- General Fund – \$116.5 million
- Basic Health – \$188.3 million
- Cities, Counties – \$15.0 million
- Education, Prevention – \$9.5 million
- Research – \$0.4 million
- Other – \$49.2 million<sup>62</sup>

Some of the more recent states to legalize have specifically directed their cannabis revenues toward equity efforts. Both Illinois and Massachusetts established their own equity funds that, after the initial state investment, will be financed by cannabis tax revenue. The R3 (Restore. Reinvest. Renew.) program in Illinois receives 25% of net tax revenue from adult-use cannabis sales and was allocated \$10 million in fiscal year 2020 to disperse as grants investing in the revitalization of DACs.<sup>63</sup> California is distributing equity funds as grants to local jurisdictions to “develop and operate local cannabis equity programs that focus on the inclusion and support of individuals in California’s legal cannabis marketplace who are from communities negatively or disproportionately impacted by cannabis criminalization.”<sup>64</sup>

It is too early to rigorously evaluate these efforts, and even after more time has passed, these analyses will still confront some thorny questions. Besides obvious issues such as how to create credible control groups for comparisons, there is also the issue of defining success. For example, would an equity program be successful if \$500,000 of taxpayer dollars were used to increase DAC licensees by 10%? What if it were \$1 million and 5%? There will also be potential spillover effects that will need to be incorporated, such as—on the positive side—the likelihood that concentrating business opportunities in DACs will increase employment of members of DACs in the industry and—on the negative side—that such concentration will increase problematic cannabis use in DACs.

Besides the traditional community reinvestment routes (e.g., green spaces, infrastructure, public education, general job trainings/workforce development), there are also calls to use cannabis tax revenue to make cash payments to members of the relevant DAC. Evanston, Illinois voted to use funds collected from cannabis taxation to fund racial reparations for the enduring effects of

---

<sup>62</sup> *Washington Marijuana Revenues, and Health, supra* note 58.

<sup>63</sup> Press Release, Ill. Crim. Just. Info. Auth., Delivering on Key Equity Goal, Pritzker Admin. Awards \$31.5 Million in First Ever Restore, Reinvest & Renew Program Grants to Orgs Across the State (Jan. 21, 2021), [https://r3.illinois.gov/downloads/01.21.21\\_ICJIA\\_R3\\_Grants\\_Release\\_Final.pdf](https://r3.illinois.gov/downloads/01.21.21_ICJIA_R3_Grants_Release_Final.pdf) [<https://perma.cc/TZ34-9P3W>] (listing previous grant recipients and noting that \$31.5 million is available for grants for fiscal year 2021).

<sup>64</sup> *Local Jurisdiction Equity Grant Funding*, CAL. BUREAU OF CANNABIS CONTROL, [https://bcc.ca.gov/about\\_us/equity\\_grant.html](https://bcc.ca.gov/about_us/equity_grant.html) [<https://perma.cc/2TL3-TX4T>] (last visited Apr. 13, 2021).

slavery and drug prohibition.<sup>65</sup> Utilizing the first \$10 million collected, this reparations program may be the first of its type in the country in hopes of making amends to descendants of enslaved people for the broken promise of their ancestors receiving “40 acres and a mule.”<sup>66</sup>

#### F. Health

*Choices.* The health consequences of legalization will depend on which cannabis products are allowed; how they are advertised; their price, potency, and availability; and how legalization influences the use of other substances such as alcohol, tobacco, and opioids.<sup>67</sup> Legalizing jurisdictions have some ability to influence all these levers, although commercial legalization vests direct control over many of these decisions to profit-maximizing companies that are mostly not concerned with public health or social equity outcomes.<sup>68</sup>

Properly designed education campaigns might influence some of these health outcomes, and they could be targeted at certain groups to help reduce inequities.<sup>69</sup> That said, we still have a lot to learn about the campaigns implemented in jurisdictions that have legalized.<sup>70</sup> Further, efforts to increase

---

<sup>65</sup> Jonah Meadows, *Future Weed Revenue Will Fund Evanston's New Reparations Program*, PATCH (Dec. 3, 2019, 2:43 PM), <https://patch.com/illinois/evanston/evanston-recreational-cannabis-tax-fund-referendum-program> [<https://perma.cc/56SN-EFWW>] (“City staff estimated Evanston will collect at least \$500,000 a year from the tax, which can start being applied in July 2020 . . .”).

<sup>66</sup> *Id.*

<sup>67</sup> JONATHAN P. CAULKINS, ANGELA HAWKEN, BEAU KILMER & MARK A.R. KLEIMAN, *MARIJUANA LEGALIZATION: WHAT EVERYONE NEEDS TO KNOW* 109 (1st ed. 2012) [hereinafter CAULKINS ET AL., *WHAT EVERYONE NEEDS TO KNOW*]; Beau Kilmer, *How Will Cannabis Legalization Affect Health, Safety, and Social Equity Outcomes? It Largely Depends on the 14 Ps*, 45 AM. J. DRUG & ALCOHOL ABUSE 664, 664-72 (2019); Rosalie Liccardo Pacula, Beau Kilmer, Alexander C. Wagenaar, Frank J. Chaloupka & Jonathan P. Caulkins, *Developing Public Health Regulations for Marijuana: Lessons from Alcohol and Tobacco*, 104 AM. J. PUB. HEALTH 1021, 1026 (2014).

<sup>68</sup> While the state could control supply or limit participation to nonprofit organizations, there are other options within the for-profit category. For example, the government could require cannabis-related companies to be benefit corporations or be designated as B-Corps. CAULKINS ET AL., *CONSIDERING MARIJUANA LEGALIZATION*, *supra* note 34, at 66.

<sup>69</sup> Adinoff & Reiman, *supra* note 23, at 681 (describing varied approaches to improving equity, many of which are funded by cannabis-related revenues). For information about Canada’s lower-risk use guidelines, see Benedikt Fischer, Cayley Russell, Pamela Sabioni, Wim van den Brink, Bernard Le Foll, Wayne Hall, Jürgen Rehm & Robin Room, *Lower-Risk Cannabis Use Guidelines: A Comprehensive Update of Evidence and Recommendations*, 107 AM. J. PUB. HEALTH POL’Y e1 (2017), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5508136/pdf/AJPH.2017.303818.pdf> [<https://perma.cc/Q2T6-ZBMZ>].

<sup>70</sup> Kilmer, *supra* note 67, at 666. “After initially stumbling with the ‘Don’t be a Lab Rat’ campaign, the state of Colorado created a folksy ‘Good to Know’ education campaign; early evaluations of the latter suggest it achieved its goals of improving knowledge of the new laws

prices, reduce availability, and decrease public consumption have been more successful than countermarketing campaigns for addressing harms from alcohol.<sup>71</sup>

Another issue deserving serious consideration is the spatial concentration and location of retail establishments in DACs (discussed in more detail in the next section). If preferences for retail licenses are given to those living in DACs and those individuals set up their stores in these communities, this could lead to a concentration of outlets that could plausibly increase health inequities.

*Emerging insights.* For many reasons, there is no scientific consensus on the extent of the health consequences of cannabis legalization.<sup>72</sup> For one, the “natural experiments” created by states recently changing their laws are not very clean or powerful for inferring causal effects. The variation in how legalization is implemented across and within states creates additional empirical challenges. Further, the long-term consequences could be very different from what has been observed to date; indeed, in a very real sense, legalization has not even started in the United States—as of this writing, more or less all cannabis production and distribution is illegal under federal law—so of course evaluations cannot yet measure legalization’s full effects. And even if there was consensus, that does not mean the effects would be similar across all groups (e.g., age, income, race/ethnicity).

---

and the health effects of cannabis.” *Id.* (footnote omitted). However, it is unclear whether it has affected behaviors surrounding cannabis use.

<sup>71</sup> Toben F. Nelson, Ziming Xuan, Thomas F. Babor, Robert D. Brewer, Frank J. Chaloupka, Paul J. Gruenewald, Harold Holder, Michael Klitzner, James F. Mosher, Rebecca L. Ramirez, Robert Reynolds, Traci L. Toomey, Victoria Churchill & Timothy S. Naimi, *Efficacy and the Strength of Evidence of U.S. Alcohol Control Policies*, 45 AM. J. PREVENTIVE MED. 19, 24 (2013).

<sup>72</sup> For overall insight on the emerging evidence on the public health impacts of legalization in the United States, see COMMONWEALTH OF VA. JOINT LEGIS. AUDIT & REV. COMM’N, KEY CONSIDERATIONS FOR MARIJUANA LEGALIZATION (2020) [hereinafter JLARC REPORT], <http://jlarc.virginia.gov/pdfs/reports/Rpt542-6.pdf> [<https://perma.cc/TN2Y-ESMH>]; BRYCE PARDO, BEAU KILMER & ROSALIE LICCARDO PACULA, EUR. MONITORING CTR. FOR DRUGS & DRUG ADDICTION, MONITORING AND EVALUATING CHANGES IN CANNABIS POLICIES: INSIGHTS FROM THE AMERICAS (2020), <https://www.emcdda.europa.eu/system/files/publications/12543/TD0220009ENN.pdf> [<https://perma.cc/JMC2-N9A4>]; Magdalena Cerdá, Christine Mauro, Ava Hamilton, Natalie S. Levy, Julián Santaella-Tenorio, Deborah Hasin, Melanie M. Wall, Katherine M. Keyes & Silvia S. Martins, *Association Between Recreational Marijuana Legalization in the United States and Changes in Marijuana Use and Cannabis Use Disorder from 2008 to 2016*, 77 JAMA PSYCHIATRY 165 (2020); Wayne Hall & Michael Lynskey, *Assessing the Public Health Impacts of Legalizing Recreational Cannabis Use: The US Experience*, 19 WORLD PSYCHIATRY 179 (2020); Julian Santaella-Tenorio, Katherine Wheeler-Martin, Charles J. DiMaggio, Alvaro Castillo-Carniglia, Katherine M. Keyes, Deborah Hasin & Magdalena Cerdá, *Association of Recreational Cannabis Laws in Colorado and Washington State with Changes in Traffic Fatalities, 2005-2017*, 180 JAMA INTERNAL MED. 1061, 1061-68 (2020).

Here, we highlight two particular health concerns with cannabis legalization.<sup>73</sup> The first is cannabis potency. There is a myth, enshrined in the phrase “iron law of drug prohibition,”<sup>74</sup> that prohibition increases drug potency and so legalization will reduce it. That may have characterized alcohol prohibition, but cannabis legalization has shown just the opposite.<sup>75</sup> The liberalization of cannabis policy has increased cannabis potency. The average potency of seized cannabis did not exceed 5% THC until the twenty-first century.<sup>76</sup> Today, the average flower potency in state-licensed stores is around 20% THC, and—of perhaps even greater concern—the potency of extract-based products such as dabs can sometimes exceed 80% THC.<sup>77</sup> While some people may adjust their consumption to account for the increased potency, there is little research on titration in response to higher-potency flowers or how greater

---

<sup>73</sup> With respect to health, this Essay does not provide a detailed discussion about the potential medical or other benefits associated with cannabis use. For more on this, see CAULKINS ET AL., *WHAT EVERYONE NEEDS TO KNOW*, *supra* note 67; COMM. ON HEALTH EFFECTS OF MARIJUANA, *BD. ON POPULATION HEALTH, NAT’L ACADS. SCIS., ENG’G & MED. & PUB. HEALTH PRAC., THE HEALTH EFFECTS OF CANNABIS AND CANNABINOIDS* (2017), [https://www.ncbi.nlm.nih.gov/books/NBK423845/pdf/Bookshelf\\_NBK423845.pdf](https://www.ncbi.nlm.nih.gov/books/NBK423845/pdf/Bookshelf_NBK423845.pdf) [<https://perma.cc/J74N-VWW7>]; Donald I. Abrams, *The Therapeutic Effects of Cannabis and Cannabinoids: An Update from the National Academies of Sciences, Engineering and Medicine Report*, 49 *EUR. J. INTERNAL MED.* 7 (2018).

<sup>74</sup> Richard C. Cowan, *How the Narcs Created Crack*, *NAT’L REV.*, Dec. 5, 1986, at 26, 27 (“The iron law of drug prohibition is that the more intense the law enforcement, the more potent the drugs will become.” (emphasis omitted)).

<sup>75</sup> Adinoff & Reiman, *supra* note 23, at 683 (“While cannabis legalization has resulted in the availability of less potent products like cannabidiol (CBD) and non-intoxicating methods of ingestion such as topicals, legalization has also increased availability of more potent cannabis flower as well as highly potent edibles and extracts . . .”).

<sup>76</sup> Mahmoud A. ElSohly, Zlatko Mehmedic, Susan Foster, Chandrani Gon, Suman Chandra & James C. Church, *Changes in Cannabis Potency over the Last 2 Decades (1995–2014): Analysis of Current Data in the United States*, 79 *SOC’Y BIOLOGICAL PSYCHIATRY* 613, 616-17 (2016).

<sup>77</sup> MPG CONSULTING & UNIV. OF COLO. BOULDER LEEDS SCH. OF BUS., 2019 REGULATED MARIJUANA MARKET UPDATE 6-9 (2019) [hereinafter 2019 MARKET UPDATE], <https://www.colorado.gov/pacific/sites/default/files/2019%20Regulated%20Marijuana%20Market%20Update%20Report%20Final.pdf> [<https://perma.cc/8UKR-SYC3>] (providing quantitative analysis of the marijuana market trends and structure in Colorado); Rosanna Smart, Jonathan P. Caulkins, Beau Kilmer, Steven Davenport & Greg Midgette, *Variation in Cannabis Potency and Prices in a Newly Legal Market: Evidence from 30 Million Cannabis Sales in Washington State*, 112 *ADDICTION* 2167, 2172 (2017) (“Washington’s legal cannabis market has trended towards higher-THC products, as flower products with THC concentration more than 20% and extract products with more than 60% THC are now commonplace.”); Steven Davenport, *Price and Product Variation in Washington’s Recreational Cannabis Market*, *INT’L J. DRUG POL’Y* (forthcoming), <https://doi.org/10.1016/j.drugpo.2019.08.004> (describing increases in cannabis potency broken down by type of product).

availability of vapes, dabs, and other extract-based products affects average amounts of THC consumed per day of use—especially in the United States.<sup>78</sup>

While the evidence on the health consequences of the higher potency products is nascent, in part because various restrictions have, until recently, made it very difficult to obtain and study high potency products' effects, a November 2020 review by a working group concluded that

research available to date documents that THC content of cannabis products contributes to adverse health effects in a dose-response manner. This increased risk imposed from using higher potency cannabis products is particularly concerning for young users and those with certain pre-existing mental health conditions. These harms are likely to disproportionately affect marginalized populations (low income, minorities) who choose high potency products because of their lower costs, ease and discrete nature of use, glamorization of its use through social media and advertising, and perception of safety.<sup>79</sup>

Another key concern from a health equity perspective is the possibility of retail stores being concentrated in DACs. High densities of *alcohol* outlets in DACs are a serious and perennial problem. Higher densities of retail cannabis outlets have also been associated with greater rates of use,<sup>80</sup> so it is important to prevent overpopulation of cannabis stores in sensitive areas.<sup>81</sup> Although an argument can be made that one does want to ensure some sufficient concentration of licensed stores in DACs, the problem typically observed to date in other states is not a paucity but a surfeit of retail cannabis stores in neighborhoods with vulnerable populations.<sup>82</sup> That means both that

---

<sup>78</sup> Beau Kilmer, *Recreational Cannabis — Minimizing the Health Risks from Legalization*, 376 NEW ENG. J. MED. 705, 706 (2017).

<sup>79</sup> JOINT UNIV. OF WASH. & WASH. ST. UNIV. WORKGROUP, CANNABIS CONCENTRATION AND HEALTH RISKS: A REPORT FOR THE WASHINGTON STATE PREVENTION RESEARCH SUBCOMMITTEE 4 (2020), <https://pttcnetwork.org/sites/default/files/2020-11/Cannabis%20Concentration%20and%20Health%20Risks%202020-11%20Final%20%281%29.pdf> [https://perma.cc/44LA-D4YE].

<sup>80</sup> Erik M. Everson, Julia A. Dille, Julie E. Maher & Curtis E. Mack, *Post-Legalization Opening of Retail Cannabis Stores and Adult Cannabis Use in Washington State, 2009–2016*, 109 AM. J. PUB. HEALTH 1294, 1297 (2019); Eric R. Pedersen, Caislin L. Firth, Anthony Rodriguez, Regina A. Shih, Rachana Seelam, Lisa Kraus, Michael S. Dunbar, Joan S. Tucker, Beau Kilmer & Elizabeth J. D'Amico, *Examining Associations Between Licensed and Unlicensed Outlet Density and Cannabis Outcomes from Preopening to Postopening of Recreational Cannabis Outlets*, 30 AM. J. ON ADDICTIONS 122 (2021).

<sup>81</sup> Crystal Thomas & Bridget Freisthler, *Examining the Locations of Medical Marijuana Dispensaries in Los Angeles*, 35 DRUG & ALCOHOL REV. 334, 336 (2016).

<sup>82</sup> Solmaz Amiri, Pablo Monsivais, Michael G. McDonell & Ofer Amram, *Availability of Licensed Cannabis Businesses in Relation to Area Deprivation in Washington State: A Spatiotemporal Analysis of Cannabis Business Presence Between 2014 and 2017*, 38 DRUG & ALCOHOL REV. 790, 796-97 (2019); Yuyan Shi, Kristin Meseck & Marta M. Jankowska,

communities with fewer resources (e.g., low-income, unincorporated areas) are burdened by hosting large numbers of stores and that cannabis stores are often concentrated in the same places as are liquor stores and tobacco outlets.

This is not an idle concern. An analysis of the location of medical and recreational cannabis stores in Colorado circa 2015 found that “marijuana stores were more likely to locate in neighborhoods that had a lower proportion of young people, had a higher proportion of racial and ethnic minority population, had a lower household income, had a higher crime rate, or had a greater density of on-premise alcohol outlets.”<sup>83</sup> A similar study of more than 1,100 cannabis retailers—licensed and unlicensed—in California in October 2018 found that “[r]elative to neighborhoods without retailers, neighborhoods with retailers had higher proportions of Hispanics, African Americans, and residents living below the poverty level.”<sup>84</sup>

Another analysis of licensed recreational cannabis stores in Washington examined whether they were more likely to be located in census tracts with higher levels of deprivation—operationalized using the Area Deprivation Index and categorized by least, middle, or most deprived.<sup>85</sup> Examining the period from 2014-2017, Solmaz Amiri and colleagues found that “[t]he density of all licensed cannabis outlets increased over time. Most-deprived areas have an increased likelihood of licensed cannabis outlet density when compared to least-deprived areas. No differences were observed in the likelihood of licensed cannabis outlet density in middle-deprived areas when compared to least-deprived areas.”<sup>86</sup>

A similar study focused on 117 neighborhoods in Portland, Oregon, found evidence that “cannabis retailers are more likely to be located in relatively deprived neighborhoods, suggesting the need to consider spatial equity in cannabis policies to mitigate disproportionate exposure to retailers, particularly if retailer exposure is associated with negative consequences.”<sup>87</sup>

As noted, there is a large literature base examining the effect of alcohol outlet density and location on community-level outcomes,<sup>88</sup> and an emerging one for

---

*Availability of Medical and Recreational Marijuana Stores and Neighborhood Characteristics in Colorado*, J. ADDICTION, Apr. 24, 2016, at 1; Jennifer B. Unger, Robert O. Vos, Jasmine Siyu Wu, Kimberly Hardaway, Ada Y. Li Sarain, Daniel W. Soto, Christopher Rogers & Jane Steinberg, *Locations of Licensed and Unlicensed Cannabis Retailers in California: A Threat to Health Equity?*, PREVENTIVE MED. REPS., July 13, 2020, at 1, 4-6.

<sup>83</sup> Shi, Meseck & Jankowska, *supra* note 82, at 1.

<sup>84</sup> Unger et al., *supra* note 82, at 1.

<sup>85</sup> Amiri et al., *supra* note 82, at 792.

<sup>86</sup> *Id.* at 790.

<sup>87</sup> Caislin L. Firth, Beatriz H. Carlini, Julia A. Dilley, Jon Wakefield & Anjum Hajat, *What About Equity? Neighborhood Deprivation and Cannabis Retailers in Portland, Oregon*, 3 CANNABIS 157, 158 (2020).

<sup>88</sup> See, e.g., NORMAN GIESBRECHT, ASHLEY WETTLAUFER, NICOLE APRIL, MARK ASBRIDGE, SAMANTHA CUKIER, ROBERT MANN, JANET McALLISTER, ANDREW MURIE, CHRIS

cannabis. Linking self-reported cannabis use information with store locations in Washington, Erik Everson and colleagues found that past-month use of cannabis “increased among adults living in areas within 18 miles of a retailer and, especially, within 0.8 miles (odds ratio [OR] = 1.45; 95% confidence interval [CI] = 1.24, 1.69). Frequent use [use on at least 20 of the past 30 days] increased among adults living within 0.8 miles of a retailer (OR = 1.43; 95% CI = 1.15, 1.77).”<sup>89</sup>

A newly published study combined longitudinal data on young adults in Los Angeles County with detailed location information about licensed and unlicensed cannabis retail outlets. Pedersen and colleagues found:

After controlling for demographic factors and cannabis outcomes at a time point prior to their opening . . . , licensed cannabis outlets were [positively] associated with young adults’ cannabis use, heavy use, and intentions [to use], and unlicensed outlets were associated with young adults’ heavy cannabis use and [cannabis use disorder] symptoms.<sup>90</sup>

However, the effect sizes were fairly small.

With these last two studies, questions remain about how much of the association is causal. Did frequency of use increase because stores opened close to where people live, or did the stores strategically locate in places with more frequent users living nearby? Both could be true, or both could be false if there is a common factor driving the association. It is best to consider these studies consistent with the hypothesis that living closer to a cannabis retailer increases the frequency of use, but not as strong evidence.

## II. THINKING ABOUT THE SCALE OF THOSE WHO COULD BENEFIT FROM VARIOUS CANNABIS EQUITY PROGRAMS

A common misunderstanding is that cannabis legalization is a single, well-defined policy. Instead, cannabis legalization should be thought of as a broad category of quite different policies with sometimes starkly different advantages and disadvantages. For example, a government monopoly can choose to protect public health interests in ways that a regulated, for-profit industry generally would not.

---

PAULEY, LAURIE PLAMONDON, TIM STOCKWELL, GERALD THOMAS, KARA THOMPSON & KATE VALLANCE, STRATEGIES TO REDUCE ALCOHOL-RELATED HARMS AND COSTS IN CANADA: A COMPARISON OF PROVINCIAL POLICIES 20 (2013), [http://madd.ca/media/docs/Strategies-to-reduce-alcohol-related-harms-and-costs\\_ENG\\_FINALrevised.pdf](http://madd.ca/media/docs/Strategies-to-reduce-alcohol-related-harms-and-costs_ENG_FINALrevised.pdf) [<https://perma.cc/KX3K-ANC5>]; PANTEHA KHALILI, ALTA. HEALTH SERVS., NEIGHBOURHOOD DEPRIVATION, ALCOHOL CONSUMPTION AND HEALTH AND SOCIAL OUTCOMES 14 (2017), <https://www.albertahealthservices.ca/assets/info/amh/if-amh-amapp-literature-review.pdf> [<https://perma.cc/737G-WH42>].

<sup>89</sup> Everson et al., *supra* note 80, at 1294.

<sup>90</sup> Pedersen et al., *supra* note 80, at 1.

---

---

Cannabis legalization creates economic opportunities for both legal entrepreneurs and employees. Expunging criminal records can improve job prospects for individuals with prior cannabis convictions and does so whether they work in the cannabis industry or elsewhere.<sup>91</sup> All these approaches have value. They can be pursued simultaneously, and they are not in competition. However, it is important to understand the very different numbers of equity beneficiaries involved in each.

The cannabis social equity literature extensively discusses provisions for entrepreneurs, but these policies affect far fewer people than do provisions affecting cannabis industry workers. Those in turn affect far fewer people than does expunging past cannabis criminal records. In other words, one can argue that much of the literature has its priorities backward. In terms of directly helping the most people who have been harmed by cannabis prohibition, expunging records is the most impactful, far-reaching measure. Measures to increase the employment of members of DACs in the new cannabis industry are a distant second, and measures specifically benefitting entrepreneurs are yet further behind.<sup>92</sup>

This is arguably the single most important insight concerning cannabis legalization and social equity. It is a simple function of numbers and scale, so we work through the numbers here; however, the argument concerns orders of magnitude. Getting the figures right to the third significant digit is not what is important; it is the number of zeros in the figure.

This Part provides a case study of Virginia, drawing on criminal justice data provided by its Joint Legislative Audit and Review Commission (“JLARC”), but the insights are broadly applicable to other jurisdictions. It assumes that cannabis is still federally prohibited and cannot legally be transported across state lines (we revisit this and what it could mean for addressing equity in Section III.F).

*Numbers of people who can benefit from expunging criminal records.* Based on our analysis of data provided to us by JLARC, from 2010 to 2019, there were about 150,000 arrests and 120,000 convictions for (misdemeanor) cannabis possession in Virginia, with about three-fourths of those being of individuals twenty-one years or older and, hence, pertaining to behavior that would not be prohibited after legalization. Of those 90,000 adult convictions for simple possession, just over 50,000 were BIPOC.

Some nuances complicate the interpretation of these figures. They are events, not individuals; one individual can get arrested and convicted multiple times. On

---

<sup>91</sup> For simplicity in this Part we refer to “expunging,” but the conclusions apply equally to sealing.

<sup>92</sup> One could argue that the benefits of owning a business can exceed the benefits of merely obtaining a job, so provisions for DAC entrepreneurs could produce big wins for a small number of people versus more modest benefits for many more. It is important to remember, though, that many new businesses fail. Thus, giving people the chance to be an entrepreneur is also giving them the chance to lose a large amount of money.

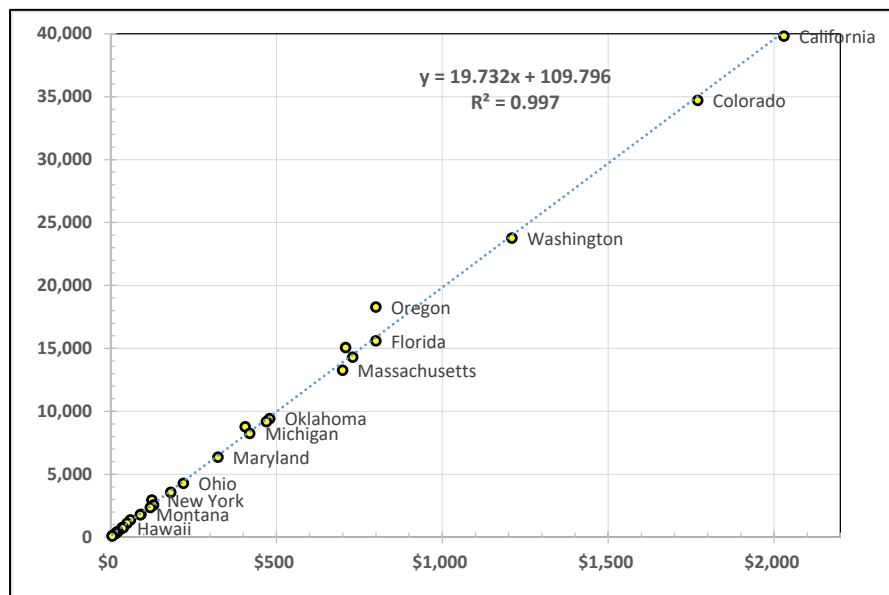


the other hand, many simple possession arrests are not custodial arrests, and those released with a summons may not be fingerprinted and recorded in these data. More fundamentally, these statistics cover only the most recent decade; the total number of people affected over the last forty years is much greater than just the numbers over the last decade.

Considering those factors, in our judgment, it is safe to say that automatically expunging all past criminal records for adult cannabis possession offenses in Virginia would benefit more than 100,000 BIPOC and more than 100,000 others as well.

*Number of jobs in the cannabis industry.* Leafly produces the most-cited estimates of job creation in the cannabis industry. Passing a straight line through a scatterplot of their state-specific job estimates versus annual sales shows that, in round numbers, there are twenty jobs per \$1 million in sales, which is one job for every \$50,000 in sales.<sup>93</sup>

**Figure 2.** Cannabis Jobs and Estimated Annual Sales (\$ millions).<sup>94</sup>



Leafly is not an unbiased source, but three alternate sources suggest that one job per \$50,000 in sales is a reasonable guideline. First, Colorado had \$1.75 billion in sales in 2019 (combined medical and retail)<sup>95</sup> and reports total

<sup>93</sup> This conclusion was reached via the our analyses of Leafly employment and revenue data. See LEAFLY, *supra* note 49, at 8-10.

<sup>94</sup> See *id.*

<sup>95</sup> 2019 MARKET UPDATE, *supra* note 77, at 8.

employment as 34,705, or one job for every \$50,400 in sales.<sup>96</sup> Likewise, Statistics Canada reports that federally licensed medical cannabis producers had \$647 million in sales and 9,200 employees,<sup>97</sup> or one employee for every \$70,000 Canadian in sales, which is close to one job per \$50,000 U.S. at 2020 exchange rates.<sup>98</sup> Last, labor's share of total industry output in the United States averages around 60%,<sup>99</sup> and fully burdened annual labor cost per full-time employee could average roughly \$30,000 for an industry with many lower-skill, lower-wage retail and production jobs.<sup>100</sup>

With the Virginia legislature recently passing a bill to legalize the production and commercial sales of cannabis, its cannabis market might reach roughly \$500 million per year a few years after legalization is implemented.<sup>101</sup> Using that \$50,000 in sales per job estimate, that suggests that the cannabis industry might employ roughly 10,000 people in the short to medium term.<sup>102</sup>

It is hard to know what proportion of these jobs could be steered toward members of DACs, but the number of jobs for DAC members in Virginia's legal cannabis industry could be in the low single thousands.

*Numbers of cannabis entrepreneurs.* The number of independent businesses that the cannabis industry will sustain is in flux and contested. Among midsize states legalizing to date, legalization has typically led to many hundreds or a few thousand new businesses. As with other sectors of the economy, many do not last long and go bankrupt or are bought out by larger firms. The dominant trend in the cannabis industry has been mergers, acquisitions, and consolidations to

---

<sup>96</sup> LEAFLY, *supra* note 49, at 8.

<sup>97</sup> *A Snapshot of Federal Licensed Cannabis Producers, 2018*, STAT. CAN. (Aug. 22, 2019), <https://www150.statcan.gc.ca/n1/daily-quotidien/190822/dq190822c-eng.htm> [<https://perma.cc/H47V-JJEL>].

<sup>98</sup> See *Monthly Exchange Rates*, BANK OF CAN., <https://www.bankofcanada.ca/rates/exchange/monthly-exchange-rates/> [<https://perma.cc/X66G-C8ZY>] (last visited Apr. 13, 2021) (noting currency exchange rates relative to Canadian dollars broken down by month).

<sup>99</sup> Michael D. Giandrea & Shawn Sprague, *Estimating the U.S. Labor Share*, MONTHLY LAB. REV. (Feb. 2017), <https://www.bls.gov/opub/mlr/2017/article/estimating-the-us-labor-share.htm> [<https://perma.cc/VZ4S-JEEE>].

<sup>100</sup> Our calculation is based on the methods in Daron Acemoglu, *When Does Labor Scarcity Encourage Innovation?*, 118 J. POL. ECON. 1037 (2010).

<sup>101</sup> Mona Zhang, *Virginia Joins 15 Other States in Legalizing Marijuana*, POLITICO (Feb. 28, 2021, 10:19 AM), <https://www.politico.com/news/2021/02/27/virginia-legalizes-marijuana-471840> [<https://perma.cc/2E8M-PQJ5>]. Scaling Leafly's estimates for Massachusetts and Washington based on population and past-month marijuana prevalence as measured by the National Survey on Drug Use and Health would suggest figures of \$460 million and \$600 million, respectively. \$500 million is consistent with those figures. See LEAFLY, *supra* note 49, at 8-10.

<sup>102</sup> Longer-term projections are difficult to make, especially given the uncertainty surrounding federal prohibition. Product sales would almost certainly increase. Sales revenue probably would, depending on what happens with prices, but job growth or stagnation would also depend on patterns of labor productivity growth.

take advantage of economies of scale in production, distribution, compliance, and marketing.

The growth in firm size is striking. Before the 2009 Ogden memo,<sup>103</sup> many grow operations kept to ninety-nine plants to stay under the 100-plant threshold that triggered longer sentences. The average size of the 186 firms in Angela Hawken and James Prieger's study sample was just under 1,000 square feet (about double the size of a typical two-car garage).<sup>104</sup> A sample of ten gray-market firms analyzed in 2013 had an average facility size of 3,000 square feet of grow area.<sup>105</sup> Now, a number of Canadian producers have 1 million square foot grow ops (about five times the size of a typical Walmart Superstore).<sup>106</sup>

This transformation from small-scale "artisanal" activity to modern industrial agriculture has dramatically reduced production costs. The wholesale price of high-potency cannabis "in California in 2010 was \$2,000 - \$6,000 per pound . . . , and generally higher in other parts of the U.S."<sup>107</sup> Given inflation, that is equivalent to \$2,325-\$6,975 per pound in 2019 dollars.<sup>108</sup> By November 2019, a number of Canadian producers boasted of production costs below \$1 Canadian per gram, which is equivalent to about \$300 U.S. per pound.<sup>109</sup> These price declines have been driving smaller producers out of business.<sup>110</sup>

The situation with retailers is also in flux. Many start as independent operations, but then are acquired, merge, or consolidate into multistate operators ("MSOs"). This consolidation may be a function of fundamental economic

---

<sup>103</sup> Memorandum from David W. Ogden, Deputy Att'y Gen., DOJ, to Selected U.S. Att'ys (Oct. 19, 2009), <https://www.justice.gov/archives/opa/blog/memorandum-selected-united-state-attorneys-investigations-and-prosecutions-states> [<https://perma.cc/XX8Y-59UT>] (clarifying DOJ guidance for federal prosecutors in states where medical marijuana was legal at the time).

<sup>104</sup> ANGELA HAWKEN & JAMES PRIEGER, BOTEC ANALYSIS CORP., ECONOMIES OF SCALE IN THE PRODUCTION OF CANNABIS 11 (2013), [https://lcb.wa.gov/publications/Marijuana/BOTEC%20reports/5c\\_Economies\\_Scale\\_Production\\_Cannabis\\_Oct-22-2013.pdf](https://lcb.wa.gov/publications/Marijuana/BOTEC%20reports/5c_Economies_Scale_Production_Cannabis_Oct-22-2013.pdf) [<https://perma.cc/5KDW-YAF6>].

<sup>105</sup> Our calculation is based on data in JONATHAN CAULKINS, MATTHEW COHEN & LUIGI ZAMARRA, BOTEC ANALYSIS CORP., ESTIMATING ADEQUATE LICENSED SQUARE FOOTAGE FOR PRODUCTION [hereinafter CAULKINS, COHEN & ZAMARRA, ESTIMATING ADEQUATE LICENSED SQUARE FOOTAGE], [https://lcb.wa.gov/publications/Marijuana/BOTEC%20reports/5a\\_Cannabis\\_Yields-Final.pdf](https://lcb.wa.gov/publications/Marijuana/BOTEC%20reports/5a_Cannabis_Yields-Final.pdf) [<https://perma.cc/6VHL-F8EA>] (last visited Apr. 13, 2021).

<sup>106</sup> Jonathan P. Caulkins, *Radical Technological Breakthroughs in Drugs and Drug Markets: The Cases of Cannabis and Fentanyl*, INT'L J. DRUG POL'Y (forthcoming) [hereinafter Caulkins, *Radical Technological Breakthroughs*] (manuscript at 2).

<sup>107</sup> *Id.*

<sup>108</sup> *See id.*

<sup>109</sup> *See id.*

<sup>110</sup> MARK A.R. KLEIMAN, SAMUEL C. HAMPSHER, STEVEN DAVENPORT, CLARISSA MANNING & LOWRY HEUSSLER, BOTEC ANALYSIS CORP., INTERVIEWS WITH CANNABIS LICENSEES IN WASHINGTON STATE 6-11 (2018), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3437462](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3437462) [<https://perma.cc/3RMA-9E5V>].

drivers, not just the particular regulatory environment, as it is also happening in Canada,<sup>111</sup> where chains outcompeting “Mom and Pop” operations is the norm in retail.<sup>112</sup> Borchardt describes cannabis MSOs’ scale economies as stemming from the ability to pool or share intellectual property, technology and business practices, equipment, employees, and branding.<sup>113</sup> Consolidation could accelerate with national legalization, which would allow multistate supply chains and promotion of national brands.

There is no consensus about how far the consolidation will go. Ryan Stoa offers an enthusiastic argument as to why appellations and other forces may limit consolidation.<sup>114</sup> We tend to be skeptical because in the long run more competitive industry structures tend to prevail in competitive markets.

Considering all of this, one might estimate that the number of licensed cannabis locations in a state the size of Virginia will be on the order of 1,000 (all licensed premises, including producers and distributors, not just retail).<sup>115</sup> At first, the number of businesses may be perhaps half that amount, as some businesses will hold multiple licenses (e.g., Massachusetts’s 835 applications

---

<sup>111</sup> About 40% of stores in Alberta, Canada are owned by just eight companies—even though regulations prevent any one person or entity from holding more than 15% of retail cannabis licenses in the province. *Cannabis Commonly Asked Questions*, ALTA. GAMING, LIQUOR & CANNABIS COMM’N, <https://aglc.ca/cannabis/cannabis-commonly-asked-questions> [<https://perma.cc/458Y-W5J6>] (last visited Apr. 13, 2021); *Cannabis Licensee Search*, ALTA. GAMING, LIQUOR & CANNABIS COMM’N, <https://aglc.ca/cannabis/retail-cannabis/cannabis-licensee-search> [<https://perma.cc/Y8GC-L86M>] (last visited Apr. 13, 2021).

<sup>112</sup> The ascendancy of chain restaurants such as McDonald’s and Starbucks is familiar, and there are other examples, including gas station chains (7-Eleven, Wawa, etc.) replacing independent, owner-operated gas stations.

<sup>113</sup> Debra Borchardt, *The Cannabis Industry’s Top 12 U.S. Multi-State Operators*, GREEN MKT. REP. (Mar. 20, 2019), <https://www.greenmarketreport.com/the-cannabis-industrys-top-12-u-s-multi-state-operators/> [<https://perma.cc/VUE2-48KK>].

<sup>114</sup> See RYAN STOA, CRAFT WEED: FAMILY FARMING AND THE FUTURE OF THE MARIJUANA INDUSTRY 117-34 (2018).

<sup>115</sup> Massachusetts may be a relevant comparator; its population is about 20% lower than that of Virginia, but its past-month marijuana use rates are almost twice as high (14.9% versus 7.9% among adults). SUBSTANCE ABUSE & MENTAL HEALTH SERVS. ADMIN., 2018-2019 NATIONAL SURVEY ON DRUG USE AND HEALTH: MODEL-BASED PREVALENCE ESTIMATES (50 STATES AND THE DISTRICT OF COLUMBIA) 6-7 (2020), <https://www.samhsa.gov/data/sites/default/files/reports/rpt32805/2019NSDUHsaeExcelPercents/2019NSDUHsaeExcelPercents/2019NSDUHsaePercents.pdf> [<https://perma.cc/SDA3-SFCF>]. Massachusetts’s Cannabis Control Commission reports that as of July 2020, it had 835 pending or approved license applications, including 326 for retail. MASS. CANNABIS CONTROL COMM’N, JULY 2020 PUBLIC MEETING PACKET 380 (2020) [hereinafter JULY 2020 CANNABIS CONTROL COMM’N PACKET], <https://mass-cannabis-control.com/wp-content/uploads/july-2020-public-meeting-packet.pdf> [<https://perma.cc/AK2H-8V3F>]. Of those, 20% qualified as a disadvantaged business enterprise for being women owned, veteran owned, minority owned, disability owned, and/or LGBT owned, although many of those have not yet opened. *Id.* at 375.

came from 450 separate business entities).<sup>116</sup> Over time, the number of independent businesses can be expected to drop through the merger and consolidation process.

Much is uncertain, but it is perhaps reasonable to expect that there may be several hundred cannabis companies based in a state the size of Virginia, thus several hundred local entrepreneurs.

It is not clear what proportion of licenses could be directed toward entrepreneurs from DACs; perhaps set-aside goals could be in the range of 10-30%, although some suggest reserving at least half of licenses to those from DACs.<sup>117</sup> If 10-30% out of several hundred entrepreneurs were from DACs, then several dozen individuals might be helped.

\*\*\*\*\*

By expunging past records of cannabis law violations, a state the size of Virginia could improve the employment prospects of hundreds of thousands of people. Increasing employment of DAC members in the cannabis industry could benefit thousands. Equity programs directed at the owners of cannabis businesses could directly help several dozen. All are helpful, and all can be done simultaneously. But the scale in terms of numbers of direct beneficiaries is sharply different.

### III. PUZZLES AND TRADE-OFFS

We have tremendous respect for those who are currently implementing cannabis policies to address inequities. It is an uphill challenge, particularly as the COVID-19 pandemic is creating huge demands on shrinking government budgets.<sup>118</sup> But there are puzzles and trade-offs concerning these policies that deserve greater attention than they have received to date. This Part surfaces seven issues confronting those designing or contemplating cannabis equity programs.

#### A. *If the Target Group or Area Is Too Large, Finite Resources Get Spread Thin, and There Is a Higher Risk of Helping Those Who Do Not Need It*

Jurisdictions will need to decide which groups qualify as beneficiaries of their social equity programs. It should be relatively easy to identify individuals who were arrested or convicted for particular cannabis offenses; however, states may

---

<sup>116</sup> JULY 2020 CANNABIS CONTROL COMM'N PACKET, *supra* note 115, at 373.

<sup>117</sup> See, e.g., *Become an Equity Applicant or Incubator*, CITY OF OAKLAND, <https://www.oaklandca.gov/topics/become-an-equity-applicant-or-incuabtor> [<https://perma.cc/7WLW-62YQ>] (last visited Apr. 13, 2021).

<sup>118</sup> *How the COVID-19 Pandemic Is Transforming State Budgets*, URB. INST., <https://www.urban.org/policy-centers/cross-center-initiatives/state-and-local-finance-initiative/projects/state-fiscal-pages-covid-edition> [<https://perma.cc/3JNW-QCJS>] (last updated Apr. 9, 2021).

wish to include all who live in designated geographic areas that experienced high arrest rates. That opens the social equity benefits to more individuals but spreads finite resources more thinly.

Furthermore, geographic definitions will be affected by changing demographics and economic trends. For example, in Seattle, Washington, geographic areas where residents were historically harmed by cannabis prohibition have changed so dramatically due to gentrification that equity beneficiaries are particularly difficult to identify and engage.<sup>119</sup> In Massachusetts, a reassessment of communities disproportionately affected by cannabis prohibition is underway. The flexibility to reassess and adjust accordingly has helped policy makers in Massachusetts maintain trust with those their programs intend to benefit despite occasional setbacks and delays.<sup>120</sup>

B. *Defining Beneficiaries by Race or Ethnicity Could Lead to Legal Challenges*

Some government programs, services, or policies that give preferential treatment to individuals from certain racial or ethnic groups can be subject to legal challenges. For example, in 1989, the Supreme Court found that the City of Richmond's minority set-aside programs for municipal contracts were unconstitutional because they failed to demonstrate both a need for remedial action and that other race-neutral remedies were insufficient.<sup>121</sup> Docia Rudley and Donna Hubbard have argued that "[w]hile *Croson* made it clear that race-conscious affirmative action programs, where properly drawn, were permissible, the decision gave little guidance on the characteristics of a properly constructed program."<sup>122</sup>

After the Supreme Court's *Adarand Constructors, Inc. v. Peña*<sup>123</sup> decision, federal programs favoring disadvantaged groups are judged under a strict scrutiny standard.<sup>124</sup> Under that standard, proponents of the program may justify its existence with evidence of past discrimination *within that specific industry*.<sup>125</sup> While it is widely understood that drug policy has been discriminatory in the past, previous abuses by drug law enforcement would not, on its face, have any

---

<sup>119</sup> E-mail from Cherie MacLeod, Cannabis Program Coordinator, Consumer Prot. Div. of the City of Seattle, to Michelle Priest, Assistant Pol'y Researcher, RAND Corp. (Jan. 8, 2021, 12:00 PM) (on file with author).

<sup>120</sup> E-mail from Shaleen Title, Former Comm'r, Massachusetts Cannabis Control Comm'n, to Michelle Priest, Assistant Pol'y Researcher, RAND Corp. (Jan. 8, 2021, 12:03 PM) (on file with author).

<sup>121</sup> *City of Richmond v. J.A. Croson Co.*, 488 U.S. 469, 510-11 (1989).

<sup>122</sup> Docia Rudley & Donna Hubbard, *What a Difference a Decade Makes: Judicial Response to State and Local Minority Business Set-Asides Ten Years After City of Richmond v. J.A. Croson*, 25 S. ILL. U. L.J. 39, 42 (2000) (footnote omitted).

<sup>123</sup> 515 U.S. 200 (1995).

<sup>124</sup> *Id.* at 227.

<sup>125</sup> *Id.*

bearing on whether there was discrimination within the nascent legal cannabis industry. Indeed, the legal cannabis industry could claim that it does not have a history of past discriminatory behavior because the entire industry is new inasmuch as the participants in the legal industry are, by and large, different individuals and organizations than those who participated in the illegal cannabis industry.

The legality of designating a particular number or percentage of cannabis business licenses to certain racial or ethnic groups has been successfully challenged in two Ohio courts.<sup>126</sup> Ohio's medical cannabis law, passed in 2016,<sup>127</sup> required at least 15% of cultivator, processor, laboratory, and retailer licenses be issued to "entities that are owned and controlled by United States citizens who are residents of [Ohio] and are members of one of the following economically disadvantaged groups: Blacks or African Americans, American Indians, Hispanics or Latinos, and Asians."<sup>128</sup> A non-minority-owned company seeking a cannabis production license sued the Ohio Department of Commerce (which issues the cannabis licenses) in state court, bringing an equal protection claim under 42 U.S.C. § 1983 and Article I, Section 2 of the Ohio Constitution.<sup>129</sup> The judge ruled in favor of the company, ordering that the provision be severed and stricken from the law.<sup>130</sup> Subsequently, a non-minority-owned company sued the state because they were denied a retail license, which was instead given to a lower-scoring minority-owned business.<sup>131</sup> The judge ruled that the nonminority business should be issued a license.<sup>132</sup>

Finally, as noted in Section I.D, if a state were to implement a government-controlled wholesale or retail-store model, it could consider using affirmative action policies to promote diversity in the cannabis workforce. One possible justification for this would be the disproportionate effect that cannabis arrests and convictions had on employment opportunities in the public sector for those in DACs. Whether this argument would withstand legal challenges would likely depend on several factors, ranging from the specifics of the program, to cannabis arrest disparities in the jurisdiction, to the judge(s) who hears the case. However, a more important barrier might be withstanding the political challenges of cannabis businesses that would likely oppose establishing a state-store model in the first place.

---

<sup>126</sup> Patrick Cooley, *Courts' Rejection of Minority Set-Asides in Ohio's Cannabis Industry Might Reduce Its Diversity*, COLUMBUS DISPATCH (Nov. 16, 2019, 12:01 AM), <https://www.dispatch.com/news/20191116/courts-rejection-of-minority-set-asides-in-ohios-cannabis-industry-might-reduce-its-diversity> [<https://perma.cc/BSK8-78HJ>].

<sup>127</sup> OHIO REV. CODE ANN. § 3796.09 (West 2021).

<sup>128</sup> *Id.* § 3796.09(C).

<sup>129</sup> *Pharmacann Ohio, LLC v. Williams*, No. 17-CV-010962, 2018 WL 7500067, at \*2 (Ohio Ct. Com. Pl. Nov. 15, 2018).

<sup>130</sup> *Id.* at \*10.

<sup>131</sup> Cooley, *supra* note 126.

<sup>132</sup> *Id.*

C. *Increased Enforcement Against the Illegal Market Could Help Equity Licensees*

Although past drug law enforcement contributed to social inequity, the opposite could be true after legalization. In particular, one way to help equity licensees is to reduce competition from the illegal market by stepping up enforcement against unlicensed actors, although few states have been aggressive about this. However, depending on the makeup of those operating in the illegal market—which varies by jurisdiction—efforts to crack down on illegal actors could have a disproportionate impact.

Of course, arrests, convictions, and incarceration could be de-emphasized relative to product confiscation, fines, asset seizures, or other civil remedies. Jurisdictions could even announce in advance when a large-scale crackdown would take place, giving participants enough time to close down illegal business activity to avoid arrest.<sup>133</sup>

Taking this a step further, San Francisco's cannabis equity program created an amnesty program that

offered supply-chain operators that may have been operating in the illicit market a pathway to enter the legalized market if they came into regulatory compliance. At the same time, the ordinances were designed to restrict the market such that certain equity applicants would have the opportunity to enter the nascent market early.<sup>134</sup>

Giving amnesty and preference to suppliers *actively* operating in the illegal market may not be politically viable outside of very liberal jurisdictions, but it does offer an example of an alternative approach to reducing illegal activity.

---

<sup>133</sup> See MARK A.R. KLEIMAN, WHEN BRUTE FORCE FAILS: HOW TO HAVE LESS CRIME AND LESS PUNISHMENT 41-43 (2009).

<sup>134</sup> CITY & CNTY. OF S.F., OFF. OF THE CONTROLLER, CANNABIS IN SAN FRANCISCO: A REVIEW FOLLOWING ADULT-USE LEGALIZATION 17 (2019), [https://sfcontroller.org/sites/default/files/Documents/Auditing/Cannabis%20in%20San%20Francisco\\_A%20Review%20Following%20Adult-Use%20Legalization\\_FINAL%20REPORT.pdf](https://sfcontroller.org/sites/default/files/Documents/Auditing/Cannabis%20in%20San%20Francisco_A%20Review%20Following%20Adult-Use%20Legalization_FINAL%20REPORT.pdf) [<https://perma.cc/5K9Z-GVR4>]. San Francisco's equity program had three priority groups for receiving cannabis licenses:

Following equity applicants, there are additional groups of individuals that get priority permitting status. The second tier of priority permit processing after equity applicants is equity incubators, which are businesses that offer a certain level of assistance to equity applicants. This can be in the form of rent-free space or technical assistance. Third in priority are previously-existing non-conforming operators (PENCOs), which are businesses that were already operating prior to legalization, but were not in zoning-compliant locations. This third tier also includes a specific group of previously operating businesses that were shut down due to federal enforcement or the threat of federal enforcement. The intent of this third tier of priority is to allow operators that may have been operating in the illicit market an opportunity to enter the regulated legal market, as part of the city's Amnesty Program.

*Id.* at 24 (footnote omitted) (citation omitted).



D. *Legalization Could Reduce Employment in the Cannabis Industry*

Legalization is often described as “creating” jobs, but it is more accurate to say that those jobs are changed and transferred; it is an obvious but often overlooked fact that even before legalization, many people earn livelihoods producing, distributing, and selling cannabis. Indeed, one of the objectives of legalization is to eliminate jobs in the preexisting illegal market.<sup>135</sup>

Legalization may even eliminate more jobs than it creates. Prohibition forces (illegal) businesses to operate in very inefficient ways that require much more labor per customer served.<sup>136</sup> Even though commercial legalization will tend to increase the total quantity of THC purchased,<sup>137</sup> it probably increases labor factor productivity even more. When contrasting modern cannabis farming with illegal cannabis cultivation, the former is far more mechanized.<sup>138</sup> Likewise, grocery store clerks sell far more items per hour than do retail drug sellers.<sup>139</sup>

And legalization probably reduces the number of entrepreneurs to an even greater extent than it reduces employment in cannabis-related activities, as there are far more employees per firm in the legal than in the illegal cannabis industry.<sup>140</sup>

E. *Increasing the Number of Licensees in an Area Could Depress Prices and Profits as Well as Increase Availability of Cannabis in That Community*

Retail and wholesale prices have fallen considerably where legalization has occurred under the for-profit market model.<sup>141</sup> Price per unit of THC has fallen even faster because potencies are higher now than they were in 2010, and price

---

<sup>135</sup> See CAULKINS ET AL., WHAT EVERYONE NEEDS TO KNOW, *supra* note 67, at 83.

<sup>136</sup> THOMAS F. BABOR, JONATHAN CAULKINS, BENEDIKT FISCHER, DAVID FOXCROFT, KEITH HUMPHREYS, MARÍA ELENA MEDINA-MORA, ISIDORE OBOT, JÜRGEN REHM, PETER REUTER, ROBIN ROOM, INGEBORG ROSSOW & JOHN STRANG, *DRUG POLICY AND THE PUBLIC GOOD* 68 (2d ed. 2018).

<sup>137</sup> BEAU KILMER, JONATHAN P. CAULKINS, ROSALIE LICCARDO PACULA, ROBERT J. MACCOUN & PETER H. REUTER, RAND CORP., ALTERED STATE? ASSESSING HOW MARIJUANA LEGALIZATION IN CALIFORNIA COULD INFLUENCE MARIJUANA CONSUMPTION AND PUBLIC BUDGETS 21 (2010), [https://www.rand.org/content/dam/rand/pubs/occasional\\_papers/2010/RAND\\_OP315.pdf](https://www.rand.org/content/dam/rand/pubs/occasional_papers/2010/RAND_OP315.pdf) [<https://perma.cc/5DGG-XLV3>]; Harold Bae & David C.R. Kerr, *Marijuana Use Trends Among College Students in States with and Without Legalization of Recreational Use: Initial and Longer-Term Changes from 2008 to 2018*, 115 *ADDICTION* 1115, 1116 (2019); Cerdá et al., *supra* note 72, at 168-70.

<sup>138</sup> Caulkins, *Radical Technological Breakthroughs*, *supra* note 106 (manuscript at 2).

<sup>139</sup> BABOR ET AL., *supra* note 136, at 68.

<sup>140</sup> See Caulkins, *Radical Technological Breakthroughs*, *supra* note 106 (manuscript at 2).

<sup>141</sup> Jonathan P. Caulkins, Yilun Bao, Steve Davenport, Imane Fahli, Yutian Guo, Krista Kinnard, Mary Najewicz, Lauren Renaud & Beau Kilmer, *Big Data on a Big New Market: Insights from Washington State’s Legal Cannabis Market*, 57 *INT’L J. DRUG POL’Y* 86, 88 (2018); Smart et al., *supra* note 77, at 2172; Davenport, *supra* note 77, at 2.

collapses have also occurred in the hemp/CBD product space.<sup>142</sup> The resulting competitive pressures may be particularly acute in areas with a high concentration of cannabis stores.

Legalization also expands opportunities for professional marketing. Before policy liberalization there were no billboards, cannabis marketing executives, industry associations with lobbyists, or much in the way of brands—these are all fixtures of the contemporary market. The emerging evidence suggests that legalization is associated with an increase in the number of adults who use cannabis in the past month<sup>143</sup> as well as an increase in their frequency of use.<sup>144</sup> While the evidence with respect to youth has mostly found a null or negative relationship for these outcomes so far,<sup>145</sup> one study found that after legalization there was an increase in the number of people aged 12-17 and 26 and older meeting clinical criteria for cannabis use disorder.<sup>146</sup> And as noted in Section I.F, there are growing concerns about the health effects of higher-potency products.

Also as noted in Section I.F, cannabis stores are already concentrating in BIPOC neighborhoods and places with higher levels of deprivation, and high outlet density is associated with adverse outcomes. One way to address this is to grant licenses with the stipulation that only so many cannabis retailers can be concentrated in a geographic area.

---

<sup>142</sup> Suman Chandra, Mohamed M. Radwan, Chandrani G. Majumdar, James C. Church, Tom P. Freeman & Mahmoud A. ElSohly, *New Trends in Cannabis Potency in USA and Europe During the Last Decade (2008–2017)*, 269 EUR. ARCHIVES PSYCHIATRY & CLINICAL NEUROSCIENCE 5, 7 (2019); Mahmoud A. ElSohly, Zlatko Mehmedic, Susan Foster, Chandrani Gon, Suman Chandra & James C. Church, *Changes in Cannabis Potency over the Last 2 Decades (1995–2014): Analysis of Current Data in the United States*, 79 BIOLOGICAL PSYCHIATRY 613, 617 (2016).

<sup>143</sup> Bae & Kerr, *supra* note 137, at 1116; David C.R. Kerr, Harold Bae, Sandi Phibbs & Adam C. Kern, *Changes in Undergraduates' Marijuana, Heavy Alcohol and Cigarette Use Following Legalization of Recreational Marijuana Use in Oregon*, 112 ADDICTION 1992, 2000 (2017); David C.R. Kerr, Harold Bae & Andrew L. Koval, *Oregon Recreational Marijuana Legalization: Changes in Undergraduates' Marijuana Use Rates from 2008 to 2016*, 32 PSYCH. ADDICTIVE BEHAVS. 670, 677 (2018).

<sup>144</sup> Cerdá et al., *supra* note 72, at 168-69; Everson et al., *supra* note 80, at 1297.

<sup>145</sup> See, e.g., D. Mark Anderson, Benjamin Hansen, Daniel I. Rees & Joseph J. Sabia, *Association of Marijuana Laws with Teen Marijuana Use: New Estimates from the Youth Risk Behavior Surveys*, 173 JAMA PEDIATRICS 879, 880 (2019); Cerdá et al., *supra* note 72, at 168-70; Magdalena Cerdá, Melanie Wall, Tianshu Feng, Katherine M. Keyes, Aaron Sarvet, John Schulenberg, Patrick M. O'Malley, Rosalie Liccardo Pacula, Sandro Galea & Deborah S. Hasin, *Association of State Recreational Marijuana Laws with Adolescent Marijuana Use*, 171 JAMA PEDIATRICS 142, 146-48 (2017); Julia A. Dilley, Susan M. Richardson, Beau Kilmer, Rosalie Liccardo Pacula, Mary B. Segawa & Magdalena Cerdá, *Prevalence of Cannabis Use in Youths After Legalization in Washington State*, 173 JAMA PEDIATRICS 192, 193 (2019).

<sup>146</sup> Cerdá et al., *supra* note 72, at 169.

F. *Federal Legalization Would Reduce Adult Cannabis Arrests, but It Could Put Some Equity Licensees Out of Business*

As discussed, legalization has led to massive increases in the average size of the firms producing and distributing cannabis.<sup>147</sup> That trend could be exacerbated by federal legalization, which would allow companies to operate across state lines. Indeed, all the cannabis consumed in the United States could be produced on a few dozen typical farms.<sup>148</sup> There is no reason why cannabis production should not be as concentrated geographically as is the cultivation of some other crops. For that matter, down the road, there is no particular reason why cannabis would need to be produced in the United States at all, when it might be imported. It seems quite possible that labor-intensive aspects of production could be offshored to countries with lower labor costs, leaving only the more mechanized aspects of production to be done in the United States. Of course, these more mechanized aspects could be offshored as well.

Greater efficiency is also easy to imagine in distribution. COVID-19 has accelerated preexisting trends toward online ordering and delivery in the economy generally,<sup>149</sup> and online cannabis shopping might in time provide stiff

---

<sup>147</sup> See *supra* Part II.

<sup>148</sup> The most recent national estimate of cannabis consumption is from 2016: roughly 7,700 metric ton equivalents of flower, or 7.7 billion grams. GREGORY MIDGETTE, STEVEN DAVENPORT, JONATHAN P. CAULKINS & BEAU KILMER, RAND CORP., WHAT AMERICA'S USERS SPEND ON ILLEGAL DRUGS, 2006–2016, at 61 tbl.6.1 (2019), [https://www.rand.org/content/dam/rand/pubs/research\\_reports/RR3100/RR3140/RAND\\_RR3140.pdf](https://www.rand.org/content/dam/rand/pubs/research_reports/RR3100/RR3140/RAND_RR3140.pdf) [<https://perma.cc/V668-C2RP>]. Assuming an outdoor yield of forty grams per square foot per harvest—and only one harvest per year—one would need 192,500,000 square feet, or 4,419 acres (1 acre = 43,560 square feet). CAULKINS, COHEN & ZAMARRA, ESTIMATING ADEQUATE LICENSED SQUARE FOOTAGE, *supra* note 105, at 1. With the U.S. Department of Agriculture (“USDA”) reporting that the average farm size in the United States is 444 acres, this suggests that one could produce all of the cannabis consumed in the United States on roughly ten average-sized farms. NAT'L AGRIC. STAT. SERVS., USDA, FARMS AND LAND IN FARMS: 2019 SUMMARY 4 (2020), [https://www.nass.usda.gov/Publications/Todays\\_Reports/reports/fnl0220.pdf](https://www.nass.usda.gov/Publications/Todays_Reports/reports/fnl0220.pdf) [<https://perma.cc/B4NQ-YUGB>]. Of course, cannabis consumption has increased since 2016, and some crops will not average forty grams per square foot because of weather and pests. SUBSTANCE ABUSE & MENTAL HEALTH SERVS. ADMIN., KEY SUBSTANCE USE AND MENTAL HEALTH INDICATORS IN THE UNITED STATES: RESULTS FROM THE 2018 NATIONAL SURVEY ON DRUG USE AND HEALTH 16 (2019), <https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/NSDUHNationalFindingsReport2018/NSDUHNationalFindingsReport2018.pdf> [<https://perma.cc/H2HY-QV7X>]. But even assuming 15,000 metric tons consumed and thirty grams per square foot, it would still only require twenty-six average-sized farms (15 billion grams / 30 grams per square foot / 43,560 square feet in an acre / 444 acres per farm = 25.9 farms). This assumes that only the buds are used from the plant. Using the rest of the plant for extracts means the number of farms needed would be less given the increasing demand for nonflower products.

<sup>149</sup> Inti Pacheco, *Retailers Learn to Cope with Fewer Stores*, WALL ST. J., Oct. 7, 2020, at B1.

competition to retail stores.<sup>150</sup> Indeed, it is a rather peculiar thing to dedicate stores to just one product; most people buy consumer goods in stores like Walmart or grocery stores that have far lower costs per item sold than do specialty stores.<sup>151</sup>

All three trends (cross-border commerce, offshoring, and expansion of retail options) could drive many existing cannabis companies out of business, including equity license owners.

G. *Compared to the Profit-Maximizing Approach, a State-Store Model Could Generate More Government Revenue to Address Inequities and Fewer Health Harms in DACs*

A state monopoly over retail distribution would offer a jurisdiction the greatest potential cannabis-based revenue that could be used to fund efforts to reduce social inequities. In theory, it makes no difference whether stores are private or owned by the state; the state could, in an ideal world, constantly adjust tax rates to precisely control price. In practice, the world is not like that. However, by being the sole retail seller, the government can control retail prices and reap the full revenue-generating potential that a monopolist would enjoy. A state monopoly on wholesale distribution may offer similar opportunities. Indeed, because legalizing large-scale production via modern agricultural methods drives down production costs dramatically, there is a large gap between customers' willingness to pay and production cost.<sup>152</sup> Absent a government monopoly, large-scale production will generally produce sharp declines in retail prices and/or extensive investment in brand marketing, but it could instead be converted into government revenue via a government monopoly model.<sup>153</sup>

The government monopoly approach is also expected to be less likely to exacerbate health inequities compared to the profit-maximization model.<sup>154</sup> A state monopoly over retail distribution with appropriate restrictions would offer better opportunities to decrease inequities and ensure that harms from regulations and legislative programs are not disproportionate to harms of the substance itself (e.g., by controlling the location and density of retail outlets as well as advertising). Lessons learned from tobacco and alcohol regimes that

---

<sup>150</sup> It only costs Amazon between \$2-\$8 to deliver a package, but brick-and-mortar retail cannabis stores now charge about triple the wholesale price—say \$9 per gram for cannabis that wholesales for \$3 per gram. That means that Amazon's cost per gram is lower than that of retail stores for purchases as small as two grams.

<sup>151</sup> See BABOR ET AL., *supra* note 136, at 68.

<sup>152</sup> CAULKINS, COHEN & ZAMARRA, ESTIMATING ADEQUATE LICENSED SQUARE FOOTAGE, *supra* note 105, at 2.

<sup>153</sup> *Id.* See generally Jonathan P. Caulkins, *Recognizing and Regulating Cannabis as a Temptation Good*, 42 INT'L J. DRUG POL'Y 50 (2017).

<sup>154</sup> CAULKINS ET AL., CONSIDERING MARIJUANA LEGALIZATION, *supra* note 34, at 64.

focused on a commercial for-profit model suggest that harms can be at a maximum when commercialization is at the extreme.<sup>155</sup>

Governors in Rhode Island<sup>156</sup> and Pennsylvania<sup>157</sup> have proposed the state-store model, and Virginia's JLARC discussed it in a 2020 report.<sup>158</sup> While the JLARC report argues that the government-control model would likely be better for public health and reducing diversion, it notes that this approach requires significant upfront expenditures from the state and may take longer to implement.<sup>159</sup> The JLARC report also highlights potential legal challenges from the federal government and neighboring states.

If a state government became involved in marijuana distribution or retail, it would become an active participant in a federally illegal enterprise, instead of just acting as a regulator. While the U.S. Department of Justice has tolerated states that regulate commercial marijuana (and hence enforce restrictions on the substance), it is unclear how the department would respond to a state taking on an expanded role and actually distributing and selling marijuana.

Virginia could also face legal challenges from residents and neighbor states if it implements a government control model. Colorado was sued by two of its neighbor states—Oklahoma and Nebraska—shortly after it established its fully private commercial market. Oklahoma and Nebraska argued that, by legalizing marijuana, Colorado had increased marijuana trafficking in their states and strained state and local police departments. The Supreme Court declined to hear the case, and no similar lawsuits have since been filed. However, if Virginia state government becomes an *active*

---

<sup>155</sup> Brian Emerson & Mark Haden, *Public Health and the Harm Reduction Approach to Illegal Psychoactive Substances*, in 6 INTERNATIONAL ENCYCLOPEDIA OF PUBLIC HEALTH 169, 172 (Stella R. Quah & William C. Cockerham eds., 2d ed. 2017).

<sup>156</sup> Katherine Gregg & Patrick Anderson, *Raimondo Discusses Taxes, Nursing Homes, Legalizing Pot and More*, PROVIDENCE J. (Dec. 15, 2020, 7:58 PM), <https://www.providencejournal.com/story/news/politics/2020/12/15/where-raimondo-stands-taxes-nursing-home-staffing-marijuana/6549015002/> [<https://perma.cc/JQ45-DM9T>].

<sup>157</sup> Bill Lucia, *Pennsylvania Governor Suggests Selling Marijuana Through State-Run Stores*, ROUTE FIFTY (Aug. 25, 2020), <https://www.route-fifty.com/finance/2020/08/pennsylvania-marijuana-state-run-stores/167972/> [<https://perma.cc/D7QK-P4PH>].

<sup>158</sup> JLARC REPORT, *supra* note 72, at 220. Additionally, some of the provinces and territories in Canada have implemented government stores for cannabis. *Policy and Regulations (Cannabis)*, CANADIAN CTR. ON SUBSTANCE USE & ADDICTION, <https://www.ccsa.ca/policy-and-regulations-cannabis> (select “Retail Structure” under “Select a Category”; then select “Sales Model” under “Select a Topic to Update Map”) (last modified Mar. 29, 2021).

<sup>159</sup> JLARC REPORT, *supra* note 72, at 220-21 (“The upfront costs of a government control model are also significantly higher because of the additional functions the state would perform. If the state takes on distribution, it would have to set-up its own warehouse or at least contract with one or a few private distributors.”).

participant in the marijuana industry, its neighbors may be able to make a stronger case that they have been harmed by Virginia's actions.<sup>160</sup>

Although predicting the outcome of political processes is always difficult, interfering with states seeking to implement a more restrictive government control regime would seem inconsistent with the largely hands-off approach that the federal government has taken with states that have implemented for-profit legalization models. While the threat of federal intervention against state stores may have been a legitimate concern in the early years of legalization and after the transition to a more conservative administration, it seems much less likely now that so many states have passed laws to legalize cannabis sales for nonmedical purposes.

#### CONCLUSION

One of the myths about cannabis legalization is that it is a single, well-defined option that either happens or does not. Instead, cannabis legalization is a complex and multifaceted challenge with hundreds of policy decision points, each presenting opportunities to either narrow or widen disparities. And social equity goals must be balanced with many other policy objectives concerning legalization, such as raising tax revenue, protecting youth, minimizing increases in problematic use, and attending to indirect effects on consumption of tobacco, alcohol, and other substances.

Indeed, it is important to keep in mind that cannabis is not a harmless substance.<sup>161</sup> Regardless of how successful social equity programs are on the economic and criminal justice fronts, cannabis use can have health harms that may exacerbate health disparities. Furthermore, the type of legalization regime implemented will affect health and social outcomes within communities. Alcohol and tobacco regimes have taught us that for-profit commercialized models with few restrictions result in greater health and social harms, with DACs being more vulnerable to poor health and social outcomes.

Those seeking to use cannabis policy reform to address social inequities may want to clearly define the populations they wish to help and specific outcomes they seek to achieve. This will make it easier to choose among the various options identified in Part I and address some of the puzzles and trade-offs described in Part III. Complicating these choices is the likelihood that federal legalization will dramatically change the landscape of cannabis in the United States, which could have major implications for small-scale cannabis entrepreneurs and the people they hire.

While not all states are poised to legalize cannabis, those keeping it illegal can still take important steps to address inequities caused by cannabis prohibition. As noted in Part I, just decriminalizing cannabis possession can dramatically reduce arrests for cannabis. The legacy of past arrests and

---

<sup>160</sup> *Id.* at 220.

<sup>161</sup> Hall & Lynskey, *supra* note 72, at 182-83.

convictions can also be mitigated without legalization by expunging or sealing criminal records for prior cannabis convictions. As our case study of Virginia demonstrates, sealing or expunging cannabis possession convictions could affect many more BIPOC—possibly close to two orders of magnitude more—than would prioritizing these individuals for entrepreneurship and employment opportunities in the precarious legal cannabis market.