

# Ensuring the High Road in Cannabis

Legalization offers a chance to make the cannabis industry a model of good jobs—if workers are given a voice

**Report** • By [David Cooper](#) and [Sebastian Hickey](#) • September 20, 2021

**What this report finds:** There are many potential paths for cannabis workers under broader cannabis legalization likely to come. Under the low road scenario outlined in this report, cannabis workers are subject to the same harmful practices inflicted on nonunionized workers in agriculture and other industries with parallels to cannabis: low wages, few workplace benefits, unprotected statuses as contract workers, and erratic scheduling. Under the high road scenario, unionization ensures that cannabis jobs are good jobs. Cannabis workers in the high road scenario could make an estimated \$2,810 to \$8,690 more per year than under the low road scenario.

**Why it matters:** Many proposals for federal legalization have rightly noted the need to prioritize revenues, investments, and opportunities from a newly legalized industry for communities of color harmed most by the war on drugs. But if policymakers do not include measures protecting job quality in cannabis, workers—particularly workers of color—will suffer.

**What we can do about it:** Protecting workers' collective bargaining rights in any broader legalization of cannabis

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is the best way to ensure cannabis jobs are good jobs. State and federal lawmakers should follow the lead of states that require or encourage the use of labor peace agreements (LPAs) when issuing cannabis business licenses. These agreements help protect workers' collective bargaining rights, allowing them to choose—without employer interference—whether they want to form a union.

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## Introduction, summary, and key findings

Federal legalization of the cannabis industry appears likely to happen within the next few years. Since California's authorization of medical marijuana use in 1996, public support for cannabis legalization has steadily grown, with more than two-thirds of Americans now supportive of legalization (Brenan 2020). A majority of states allow some form of cannabis use, and several decriminalization and industry-supportive bills have gained bipartisan support in Congress. In July, the majority leader in the U.S. Senate released a discussion draft legalization bill, and in late 2020 the House of Representatives passed a legalization bill with strong social equity provisions. Although the industry has been taking shape for years in many states, this change in federal legal status for cannabis will be a watershed moment. Forecasters expect rapid growth, with the potential for large numbers of new cannabis jobs and businesses to be formed.

As the authors of federal legalization legislation have noted, legalizing and regulating cannabis also presents a tremendous opportunity to shape the contours of the industry from its early days: Specifically, establishing structures within the industry can help repair the harm caused by the criminalization of communities of color, predominantly Black and Latinx communities, in the war on drugs.<sup>1</sup> Several recent federal cannabis legalization bills include provisions for the reinvestment of new federal revenues from cannabis into services and supports for communities most harmed by the war on drugs, and measures to support entrepreneurship in the industry by individuals previously convicted for cannabis-related offenses.

While many policy discussions around cannabis have rightly noted the need to channel investment and entrepreneurial opportunities in this new industry to the communities harmed by the war on drugs, very little has been said about ensuring that jobs in the cannabis industry are good jobs.<sup>2</sup> Ensuring equitable access to business licenses and proper supports for entrepreneurs is essential, *but insufficient*. No matter how many business owners of color the industry creates, there will be many multiples more rank-and-file workers in the industry. Policies must be put in place at the outset to ensure that cannabis employees share equitably in the growth of the industry, with good-paying, safe,

family- and community-sustaining jobs. Moreover, as with any new business, the needs and best practices for training, workplace safety, and efficient operations will all be evolving as the industry matures. Success will require that workers have a voice in informing that evolution.

The risks of inaction are high: Without proper structures and safeguards in place at the outset, cannabis could end up looking like many other U.S. industries—dominated by strictly profit-maximizing firms that treat workers as expendable cogs or simply another cost to be minimized, employing myriad strategies to keep wages low and undermine worker power.<sup>3</sup> As cannabis is legalized, lawmakers have a unique opportunity to decide whether the industry will be allowed to take this low-road path, or whether guardrails and incentives will make cannabis an industry of high-quality careers and worker-driven success.

In this report we describe what is at stake in this policy choice, quantifying, to the extent possible, the potential outcomes of allowing the cannabis industry to adopt low-road practices common in other industries versus putting in place high-road structures—specifically, supporting workers’ ability to organize—that ensure not only better pay and benefits, but higher standards (safety, etc.) and job quality.

Key findings from this report show that unionization is key to ensuring that the emerging cannabis industry provides safe, good-paying, and community-sustaining jobs:

- **The best means of ensuring that workers in cannabis have a voice on the job and can share in the rewards of a newly legalized industry is to safeguard and strengthen the fundamental rights of workers to organize collectively in a union.** Existing unionized cannabis businesses in states with legal cannabis provide examples of how formalizing workers’ rights and participation in company decision-making has led to both business success and more remunerative jobs for those in the industry.
- **Labor peace agreements, which prevent union-busting by employers in exchange for workers’ pledge not to strike, have shown to be a viable means of protecting workers’ organizing rights in the six states with statutes encouraging or requiring the adoption of LPAs for licensed cannabis businesses.** Formalizing workers’ collective bargaining rights with broader adoption of LPA language in statutes would help ensure high-road business practices for the cannabis industry. Failing to formalize those rights would put cannabis workers at risk of declining job quality and the same low-road employment practices common in existing industries.
- **Cannabis cultivation workers could, on average, make an estimated \$7,030 more in annual wages under a high-road scenario than under a low-road scenario.** Cannabis cultivation workers who are union members have negotiated strong wage floors, regularly scheduled wage increases, and a slew of workplace benefits that are largely absent in most farmworker jobs, which are largely nonunionized. Under a high-road scenario, they retain those rights. But under a low-road scenario, they become more like workers in agriculture, who are often contract workers paid per piece by

outsourcing firms, and who are subject to wage theft, unpaid overtime, subminimum wages, and other abusive wage and hour practices, in part because the federal labor laws and administrative structures that are supposed to protect them are in desperate need of reform.

- **Cannabis processing workers could, on average, make an estimated \$8,690 more in annual wages under a high-road scenario than under a low-road scenario.** Unionized workers in traditional manufacturing jobs similar to cannabis processing and extraction roles have wages, on average, 23.6%–28.0% higher than similar nonunion workers. For the average full-time, nonunion worker in these jobs, this implies an earnings increase of nearly \$8,700 from unionization. Furthermore, manufacturing jobs generally provide greater access to workplace benefits than jobs in other occupations—a legacy, in part, of unions’ ability to set standards in manufacturing industries.
- **Cannabis retail workers could, on average, make an estimated \$2,810 more in annual wages under a high-road scenario than under a low-road scenario.** Most traditional retail jobs pay very low wages and offer few benefits. The exception to that rule occurs where employers have intentionally adopted high road strategies, where states or localities have adopted strong job quality standards, or where retail workers are unionized. Unionized retail workers in jobs similar to cannabis retail jobs are paid wages, on average, 7.6%–10.7% higher than similar nonunionized retail workers. This equates to about a \$2,800 annual pay difference for the average nonunion retail worker.
- **Cannabis workers of color would likely get an even bigger wage boost from unionization than cannabis workers who are white.** The union wage premium for workers of color in cannabis “proxy” processing and retail jobs is even larger than the union premium overall. Union workers of color in processing jobs earn wages, on average, 26.4%–32.4% higher than wages of similar nonunion staff. Union workers of color in retail are paid, on average, 10.8%–13.5% more than similar nonunion retail employees. As such, unions offer a powerful mechanism for promoting greater racial equity within cannabis.
- **Acting early to safeguard cannabis workers’ organizing rights could help counteract any wage declines as the industry becomes less stigmatized and as formerly incarcerated individuals enter the industry.** A significant risk in failing to act early in the process of legalization is the prospect that any current wage premium being paid by cannabis employers to overcome stigma around cannabis could diminish with federal legalization, leading to lower, not higher, wages in the sector. At the same time, the stigma of past incarceration likely will still hinder labor market bargaining power for individuals released from the criminal justice system as part of federal legalization legislation. Unions provide an effective structure to counteract both phenomena—protecting any wage premiums that currently exist and providing pathways into the industry for previously incarcerated individuals in a way that ensures equitable treatment.

# A brief history of cannabis policy federally and in the states

Regulation and criminalization of cannabis in the United States is inextricably linked to racist and anti-immigrant sentiment. Although cannabis products had been consumed in this country since the 19th century, Mexican immigrants in the 1910s and 1920s were most likely the first to popularize smoking of the plant (Campos 2018; Thompson 2013). Smoking cannabis also became popular in jazz culture throughout the 1920s and 1930s. Fears about the drug and the people smoking it were stoked through sensationalized news coverage that fabricated connections between the drug, mental illness, and acts of violence. Fear of cannabis led 26 states to ban cannabis between 1914 and 1925. At the federal level, the Uniform State Narcotics Act of 1932 and Marijuana Tax Act of 1937 effectively criminalized cannabis (Siff 2014). The wave of criminalization continued in the 1950s through the introduction of mandatory sentences for drug offenses, including cannabis (Lamb 2015).

Beginning in the 1960s, the counterculture movement and other cultural changes significantly changed the demographics of cannabis consumption. For the first time, large numbers of white middle-class people began smoking and consuming cannabis (Siff 2014). Simultaneously, a growing body of evidence showed that cannabis criminalization was costly and ineffective at reducing consumption. These evolving views on cannabis led 10 states to decriminalize small amounts of cannabis possession throughout the 1970s, and in that decade, Congress repealed most of the mandatory penalties that had been created in the 1950s.<sup>4</sup>

However, anti-cannabis views remained widespread and had a powerful champion in President Richard Nixon. As part of his “law and order” political strategy and a personal belief that drugs were contributing to social decay, Nixon sought to criminalize drug use by Black people and left-leaning whites (Hodge 2021; Lopez 2014). The war on drugs saw cannabis codified as a Schedule I drug by the Controlled Substance Act of 1970, which meant that cannabis was considered to have no accepted medical use and a high potential for abuse and addiction. This restrictive classification was maintained despite the conclusion by Nixon’s own administration that the drug did not warrant criminalization. In a 1972 report, the National Commission on Marihuana and Drug Abuse—commonly known as the “Shafer Commission” for its chairman, former Pennsylvania Republican Gov. Raymond Shafer—which Nixon had convened, concluded that cannabis should be decriminalized (Downs 2016). Nixon ignored the commission’s recommendations. Nixon’s war on drugs also significantly increased the role of law enforcement in cannabis enforcement by introducing no-knock warrants and creating the Drug Enforcement Administration (DEA) (Kelly and Balko 2020; Downs 2016).

During the Reagan and Bush administrations, the drug war transformed both in scale and level of hysteria. The criminalization of cannabis helped motivate and facilitate the creation of the system of mass incarceration that characterizes the U.S. criminal justice system and has done immeasurable harm to communities of color. Fueled by racist narratives of who

drug users are and their criminality, lawmakers in the 1980s dramatically increased the penalties for drug use and possession, and offered law enforcement increased funding designed to incentivize more drug arrests. The Comprehensive Crime Control Act of 1984 and Anti-Drug Abuse Act of 1986 created a regime of mandatory minimums and “three strikes” rules for drug offenses that vastly increased the number of people incarcerated for drug charges. These laws, in combination with police targeting of communities of color, led to an unprecedented increase in the number of Black and Latinx Americans who were in prison. Cannabis arrests continued to increase during the 1990s under both the Bush and Clinton presidencies (King and Mauer 2006). The damage caused by the war on drugs is incalculable. It has seen millions of people, mostly men from communities of color, subjected to a criminal justice system that violates their rights and causes deep psychological, economic, and physical harm.

Even as an ever-growing number of Americans were incarcerated because of cannabis usage, several states pursued avenues toward legalization.<sup>5</sup> In 1996, California became the first state to legalize cannabis for medical use.<sup>6</sup> By the end of 2000, six more states had legalized medical cannabis, and by 2010, the number had grown to 12 states. Colorado was the first state to legalize recreational usage for adults in 2014. As of July 1, 2021, recreational usage is legal in 19 states and in the District of Columbia, as shown in **Figure A**.

There have also been steps in many states to decriminalize possession of cannabis and limit the harm of the war on drugs. Twenty-three states and the District of Columbia have some form of cannabis decriminalization law, meaning that for possessing a small amount of cannabis, a person can only be charged a civil fine but not with prison time. However, these laws vary significantly, both in terms of the amount of cannabis that an individual can possess and in the equity of their implementation. Even in states where decriminalization and legalization have occurred, racial disparities in cannabis arrests persist. In every state that legalized cannabis between 2010 and 2018, Black people are more likely to be arrested for cannabis than white people.<sup>7</sup> Although most states experienced a decrease in cannabis arrest disparities after legalization, some states, such as Maine and Massachusetts, saw their arrest disparities increase (ACLU 2020).

Several states that maintain laws prohibiting cannabis possession and usage have legalized the use of low-THC cannabis products, such as CBD oils.<sup>8</sup> However, many of these laws are still highly restrictive—some make low-THC products solely available to individuals with particular medical conditions; some restrict severely the level of THC allowable in a product; and some allow possession, but not production or purchasing of low-THC products in-state (Sacco et al. 2017).

In sum, the legality and consequences of cannabis use, possession, production, and distribution in the United States today varies enormously across states; notably, it also varies greatly between communities and racial groups, even within states. Cannabis in the United States in 2021 is at once a \$17 billion to \$21 billion industry, where as many as 300,000 workers are employed, and an illicit substance, possession of which can mean years of prison time in some places. In 2019, cannabis possession led to more than



none of the federal cannabis legislative proposals noted here include significant provisions governing employment conditions or workers' rights in the cannabis industry.

## **The Marijuana Opportunity, Reinvestment and Expungement (MORE) Act**

First introduced by then-Sen. Kamala Harris (D-Calif.) and Rep. Jerrold Nadler (D-N.Y.) in 2019 and reintroduced in the House in 2021, the MORE Act would fully legalize cannabis under federal law, removing marijuana and THC from the schedules of controlled substances under the Controlled Substance Act (CSA). The MORE Act would apply retroactively, requiring expungement of all federal convictions and juvenile delinquency adjudications on cannabis-related offenses, and resentencing for people convicted of marijuana-related offenses in connection to other federal crimes. It would also explicitly restore eligibility to all federal programs and benefits that are currently denied to individuals convicted of federal crimes, and prohibit denial of any federal benefit or program to otherwise qualifying businesses operating in the cannabis industry.<sup>9</sup>

The MORE Act would levy a 5% tax on sales of cannabis products and direct the revenues from that tax to support several grant programs:

- the Community Reinvestment Grant Program, which would provide individuals most harmed by the war on drugs with such services as job training, substance abuse treatment, health education, and mentoring
- the Cannabis Opportunity Program, which would provide funding for states to offer low- or no-interest loans to small businesses in the cannabis industry owned by “socially and economically disadvantaged individuals”
- the Equitable Licensing Grant Program, which would support states in implementing equitable cannabis licensing programs that reduce barriers to licensing and employment for individuals harmed by the war on drugs

The act would also direct federal statistical agencies, such as the Bureau of Labor Statistics, to begin collecting data on the cannabis industry.

The MORE Act was passed by the U.S. House of Representatives in December 2020, but no action was taken on the measure in the Senate. The reintroduced version of the bill has yet to receive a vote in either chamber.

## **The Secure and Fair Enforcement (SAFE) Banking Act**

Because of marijuana's status as a Schedule I drug, banks and financial institutions currently cannot provide services to cannabis-related businesses without risking seizure of any proceeds by federal authorities, and potential criminal and civil liability for supporting



business activities currently prohibited under federal law—even if legal under state law.

The SAFE Banking Act, introduced in March 2021 by Sen. Jeff Merkley (D-Ore.) in the Senate and Rep. Ed Perlmutter (D-Colo.) in the House, would allow banks and other financial services institutions to provide services to cannabis-related businesses by prohibiting federal regulators from penalizing a depository institution from providing banking services to a cannabis-related business. The act also specifies that proceeds from cannabis businesses operating lawfully under state law shall not be considered proceeds from unlawful activity—thereby making those funds no longer subject to federal anti-money-laundering laws and not at risk of asset seizure by federal law enforcement agencies.

The SAFE Banking Act has passed in the U.S. House of Representatives three times, most recently in April 2021. The Senate has not yet taken up the measure.

## **The Cannabis Administration and Opportunity Act**

The Cannabis Administration and Opportunity Act discussion draft, released in July 2021 by Senate Majority Leader Chuck Schumer (D-N.Y.), and Sens. Cory Booker (D-N.J.), and Ron Wyden (D-Ore.), would do many of the same things as the MORE Act, including de-scheduling cannabis from the list of controlled substances and making cannabis possession and sale legal under federal law. Under the act, states would still be able to set their own legal status for cannabis, although the law would establish a nationwide minimum age for cannabis possession and set sales restrictions intended to prevent people from trafficking cannabis from one state to another to dodge more restrictive state-level cannabis laws.

Like the MORE Act, the Cannabis Administration and Opportunity Act would expunge federal cannabis conviction records and bar past cannabis-related convictions from impacting immigration status or eligibility for any federal program or benefit.

Also like the MORE Act, the Schumer-Booker-Wyden measure would levy a tax on cannabis sales, and would direct revenues from the tax to fund the same types of community investment and small business supports described in the MORE Act section above. The funding would be aimed at providing new public services, resources, and cannabis business opportunities to individuals and communities harmed by the war on drugs.<sup>10</sup>

# Understanding the opportunity and risk for workers in each segment of the cannabis industry

As more and more states have legalized medical and recreational use of marijuana, the cannabis industry has grown rapidly. According to Barcott, Whitney, and Bailey (2021), the industry's revenue has increased by more than 25% every year since 2017. Despite the economic effects of the pandemic, the cannabis industry grossed between \$17.5 billion and \$21.3 billion in revenue in 2020 (Yakowicz 2021; Lukas 2021). Industry revenue is expected to grow to \$41 billion by 2026 (Yakowicz 2021). In states where cannabis is legal, sales from the industry have raised significant tax revenue. In 2020, California collected \$1.032 billion in cannabis taxes, while Washington collected \$614 million. Colorado, Illinois, Massachusetts, Nevada, and Oregon all also collected more than \$100 million each in taxes. Perhaps the strongest indicator of cannabis's growing economic significance is the number of workers in the industry. In 2020, cannabis provided between 240,000 and 321,000 full-time equivalent (FTE) jobs (Stelton-Holtmeier 2020; Barcott, Whitney, and Bailey 2021). This means that there are roughly as many cannabis workers in states with legal markets as there are professional firefighters (294,520) in the entire United States (BLS-OES 2020).

Cannabis businesses can be segmented into three broad categories: 1) the cultivation of raw material, 2) the processing of that material into goods, and 3) the distribution and sale of those goods to consumers. As more states have legalized use of cannabis, the industry has developed a diversity of products and applications for the cannabis plant, varying from recreational smoking, vaping, and edible products to therapeutic oils, creams, sprays, and patches. For all of these products, the tasks required of cannabis workers is similar to that of workers in other established industries.

In the following sections, we briefly describe each of the major segments of the cannabis industry, the work typically performed in each, and present data on what the quality of jobs in those segments could be following federal legalization under two scenarios. Under the first scenario, the cannabis industry is opened with few safeguards to protect job quality and workers' rights (i.e., the low-road model already employed in many industries today). Under the second scenario, policy is enacted at the outset to ensure workers have adequate protections and bargaining power.

Because of cannabis's classification as a Schedule I drug, official government statistics and data on cannabis businesses and workers do not exist. Thus, in this report, when describing the current cannabis industry, we rely on data from job-posting websites, cannabis industry groups and consultants, and union contracts (collective bargaining agreements or CBAs) at unionized cannabis firms. When assessing job quality under the two hypothetical scenarios for the industry, we consider wages and working conditions in existing legal industries—for which official data *do* exist—that can serve as proxies for a fully legal and mature cannabis industry. For each, we note how the adequacy (or

inadequacy) of worker safeguards and the prevalence of unions have affected wages and job quality within those proxy industries.

## Opportunities and risks in cultivation

Commercial cannabis plants are cultivated at varying scales, although as the industry has grown and consolidated in the states with legal recreational markets, mass cultivation sites have become more common. In some areas, cannabis is cultivated in outdoor “grows”—with the largest concentrations of outdoor grows located in northern California, Oregon, and Washington. More common, however is cultivation in greenhouses and warehouses, as these settings allow for tighter control over growing conditions and make cannabis viable in places where the climate is otherwise not suitable. Commercial indoor grows exist throughout the country in the states that have legalized cannabis cultivation.

Because of cannabis’s use in medicinal and therapeutic applications, commercial growers must maintain strict standards for consistency; even minor changes in growing conditions can change levels of cannabinoids in a plant. This is also why commercial cannabis plants are typically cloned, not planted from seed. Testing by regulators also requires exacting standards, as any product made for consumption must be tested for contaminants, heavy metals, and pesticides (Owens 2019).

The work performed in cannabis grows is similar in many ways to other crop production, but as noted, often with demanding requirements for consistency, strict rules for product quality and safety compliance, as well as chain-of-custody record-keeping on all cannabis materials. Typical cannabis jobs in a cultivation setting include growers, horticulturalists, and cultivation technicians. These workers manage the planting, maintenance, and health of the plants; regulate growing conditions; and oversee the sanitation and upkeep of the cultivation site. Ensuring safe and sanitary conditions is particularly important in greenhouse and indoor grows, both for the quality of the crop and for worker health. Peak cannabis growth requires high humidity levels, which—without proper ventilation and sanitation procedures—can make mold, yeast, and fungi growth a common problem. Exposure, particularly mold exposure, can be a dangerous health risk for cultivation workers (see Otañez and Grewal 2021).

The other most common positions in cannabis cultivation are trimmers and post-harvesters, who hand-trim the cannabis flower from plants, remove excess leaves and prepare the harvested material for curing and processing. Trimming is an entry-level position similar to other crop harvesting roles in that it is primarily repetitive manual labor, requiring dexterity and efficiency, with workers sometimes being paid on a piecemeal basis. Worker health evaluations of cannabis cultivation sites have noted concerns about potential long-term musculoskeletal disorders that could result from extensive periods or tenure in manual cannabis trimming work (Victory et al. 2018).

Cultivation sites will often also dry and cure the harvested cannabis material, depending on its intended use. Dried and cured cannabis flower or “bud” is distributed directly to dispensaries for sale, or to labs, processors, and manufacturers for conversion into some

## Two roads for cannabis cultivation workers under broader legalization

### Low road

As in typical commercial agriculture, workers are paid low wages, often per piece rather than a guaranteed hourly wage. Few, if any, workplace benefits are offered.

Employers use carveouts for agriculture in federal wage and hour (Fair Labor Standards Act) and labor law (National Labor Relations Act) to avoid paying overtime, undermine organizing efforts, and contract out work to farm labor contractors (FLCs).

Businesses exploit unauthorized immigrants and use the flawed H2-B visa system to fill cannabis cultivation jobs with migrant workers who have little bargaining power to demand higher pay or report abuses.

Cannabis cultivation workers in the high-road scenario could, on average, make an estimated **\$7,030** more in annual wages than under the low-road scenario.

### High road

Workers receive adequate, guaranteed hourly wages, because either or both of the following occur, allowing unionized cultivation workers to bargain for wages and benefits: Federal labor law is reformed to provide organizing rights to farmworkers; vertical integration (companies handling all tasks) in cannabis continues, allowing cultivation workers to bargain along with other types of cannabis workers.

Labor peace agreements, which prevent union-busting by employers in exchange for workers' pledge not to strike, encourage labor organizing. Cultivation workers use their organizing rights to bargain for fair compensation and benefits, fair scheduling, and safe working conditions.

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cannabis-infused products.

## When commercial cannabis cultivation is legalized more broadly, how might industry practices and working conditions evolve?

Reviewing different scenarios, our analysis describes how the policy path taken under broader cannabis legalization could have a dramatic impact on the lives of cannabis cultivation workers, for better or for worse—with the low-road scenario leading to a range of negative outcomes for workers, including an estimated \$7,030 cut in annual wages alone.

### The low-road scenario

Jobs in commercial agriculture today are arguably some of the lowest-quality, worst-

compensated jobs in the United States, despite being extremely difficult and often dangerous. As Costa (2021) describes, the more than 2 million farmworkers essential to maintaining the country's food supply typically earn far lower wages than workers in nonagricultural jobs, and they are subject to significantly higher rates of wage theft and other abuses. The average hourly wage of nonsupervisory farmworkers in 2020 was \$14.62—roughly three-fifths the \$24.67 average wage of nonsupervisory, production workers outside of agriculture, and lower than the average wage of all workers with less than a high school diploma (or equivalent education) in nonagricultural industries. According to the hourly Bureau of Labor Statistics's Occupational Employment Statistics, in May 2020, the median wage for Crop, Nursery, and Greenhouse workers was \$13.78.<sup>11</sup> Importantly, these wage rates are—in many cases—not guaranteed hourly pay rates; many farmworkers are paid per-piece rates (a set amount per crop picked or pruned), and these are the implied hourly equivalent of typical piece-rate earnings over the course of a day. Wages for certain categories of farmworkers and in some parts of the country are even lower, as explained later.

Farmworkers suffer workplace abuse and injury more often than workers in other industries. Cooper and Kroeger (2017) note that nearly 10% of workers in agriculture report being paid less than the minimum wage. Costa, Martin, and Rutledge (2020) explain that the vast majority of federal labor standards investigations of farms detect violations—workers not being paid appropriately or being given inadequate housing. Data from BLS (2020) show that workers in agriculture have above-average rates of workplace injuries. In addition, workers in agriculture rarely have any sort of nonwage benefits common to other industries, such as paid vacations, paid leave, medical insurance, or retirement contributions.

Poor job quality in agriculture today stems from racist policy choices in the early 20th century that have never been corrected. When Congress enacted the Fair Labor Standards Act (FLSA) of 1938—the law that established basic labor standards such as the minimum wage and overtime pay—conservative Southern Democrats agreed to support the legislation only if agriculture and several other industries that were the dominant employers for Black workers were exempted from its protections (Malthuap 2020). Subsequent amendments to the FLSA did expand partial coverage to agriculture workers at larger farms, but the exemptions are still enormous. Most workers in agriculture are still not entitled to overtime, and many are exempt from the minimum wage.

Agricultural laborers were also largely exempted from the worker organizing protections of the National Labor Relations Act (NLRA), which sets the rules for how and which private-sector workers can organize a union.

Today, most farmworkers in the United States are immigrants. Costa (2021) explains that according to the most recent data, half of crop farmworkers are unauthorized immigrants, and another 10% are migrant workers on H-2A agricultural temporary work visas. Unauthorized immigrants have little bargaining power to demand higher pay, better working conditions, or to speak out against abuse—a lack of power owing to the fear that employers will question their immigration status. Moreover, the H-2A visa

program—intended to allow domestic employers to hire “guestworkers” if they anticipate a shortage of U.S. workers to fill temporary or seasonal jobs—has been described by the Southern Poverty Law Center as modern-day indentured servitude (Bauer and Stewart 2013). H-2A workers are prone to mistreatment, have no ability to change employers, and their wages are set by a federal formula at as little as \$11.71 per hour (Costa 2021).

Making matters worse, agricultural employers increasingly staff their farms using farm labor contractors (FLCs)—staffing firms contracted to supply workers typically at rates below what the farms pay to their direct employees. Costa and Martin (2017) find that FLC workers in California were paid 10% less per hour than directly hired farm staff. FLCs undermine worker rights and bargaining power in the same way that contractors, temping, and domestic outsourcing—the so-called “fissuring” of the labor market—suppresses wages and weakens job quality in nonagricultural sectors (see Mishel and Bivens 2021; Weil 2014).

It’s entirely conceivable that in a federally legal cannabis industry, firms might explore how they could employ these practices in cannabis cultivation—employing agriculture loopholes in labor law to avoid overtime and undermine organizing efforts, using guestworker programs and employing FLCs to staff entry-level positions, and contracting out sanitation or other functions to contractors. If lawmakers want the cannabis industry to provide good jobs that offer restorative opportunities to people harmed by the war on drugs, allowing the industry to adopt typical U.S. agriculture labor practices would be counterproductive. Without fixing the glaring loopholes in existing labor law that make agriculture jobs so poor, federally legalizing cannabis cultivation could effectively mean replacing one harmful, racist policy regime—the war on drugs—with another.

### The high-road, equity-promoting scenario

Although much of the work performed in cannabis cultivation is similar to other crop production, job quality in cannabis cultivation—at least for now—is noticeably better than traditional agriculture. **Table 1** reports wage data for a variety of cannabis jobs. According to data from Vangst 2020, a cannabis industry staffing and networking firm, entry-level wages for growers and horticulturalists typically range from \$16 to \$22 per hour, and for trimmers and post-harvesters from \$14.50 to \$16 per hour. Indeed.com reports wage information for various cannabis jobs posted on its site with typical hourly rates for growers ranging from \$15.50 to \$20.00, harvesters from \$14.00 to \$19.00, and trimmers from \$14.00 to \$19.00.<sup>12</sup> These *starting* wage rates are modestly higher than the \$14.62 average wage of all nonsupervisory farmworkers reported previously.

**“Without fixing the glaring loopholes in existing labor law that make agriculture jobs so poor, federally legalizing cannabis cultivation could effectively mean replacing one harmful, racist policy regime—the war on drugs—with another.”**

Table 1

## Starting wages in cannabis jobs are consistent with union-negotiated wage floors

Typical starting hourly wages in cannabis jobs, by industry segment

Occupation	Industry segment	Wages – Vangst	Wages – Indeed.com	Wages – Union contracts
<i>Grower/horticulturalist/cultivation technician</i>	Cultivation	\$16.00–\$22.00	\$15.50–\$20.00	\$15.00–\$21.00
<i>Trimmer/harvester/post-harvester</i>	Cultivation	\$14.50–\$16.00	\$14.00–\$19.00	\$15.00–\$17.00
<i>Extraction technician/lab technician</i>	Processing	\$16.80–\$19.50	\$21.30	\$23.00–\$25.00
<i>Production/processing/manufacturing technician</i>	Processing	\$15.00–\$18.75		\$15.00–\$23.00
<i>Edibles specialist</i>	Processing	\$17.00–\$24.00		
<i>Packager</i>	Processing	\$14.50–\$18.50	\$16.75	\$16.00–\$18.00
<i>Merchandiser/inventory control/warehouse technician</i>	Processing			\$15.00–\$21.00
<i>Budtender/patient care representative/pharmacy technician</i>	Sales	\$14.50–\$17.00	\$15.75	\$15.00–\$21.00
<i>Customer service representative</i>	Sales	\$16.40–\$22.00	\$18.90	
<i>Delivery driver</i>	Sales	\$15.00–\$18.00		\$17.00–\$21.50
<i>Shop host/security</i>	Sales			\$16.00–\$22.00

**Notes:** Indeed.com updates wage data regularly based on job listings posted on its site, so values change regularly. The values listed reflect the approximate range observed in August 2021.

**Sources:** Vangst 2020; Indeed.com 2021; collective bargaining agreements for cannabis unions in California, the District of Columbia, Minnesota, New Jersey, New York, Pennsylvania, and Washington provided by the United Food and Commercial Workers (for agreements that contain starting wage information for 2020 or later).

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One structure that is likely helping to boost wages among cannabis cultivation workers is the growing presence of unions in the industry. Unions tend to raise wages and job quality across a sector, even at nonunionized firms, since nonunion employers must compete with unionized ones to attract and retain staff (McNicholas et al. 2020). Because of the lack of official statistics on the cannabis industry, it is impossible to know how much of the current industry is unionized. However, of the 36 states that have legalized either medical or recreational cannabis, six have language in their cannabis statutes that either encourage

or require the adoption of labor peace agreements (LPAs) for licensed cannabis businesses (the six states are California, Illinois, Pennsylvania, New York, New Jersey, and Virginia). Such agreements stave off labor unrest at covered businesses by stipulating that employers will remain neutral with regard to any union election at the firm, and employees will not engage in any strikes, work stoppages, boycotts, or any other coordinated activity that would interfere with the firm’s business. LPAs tend to increase the success of union elections, as one of the biggest obstacles to organizing campaigns is employer interference (McNicholas et al. 2019).

Unionization in U.S. agriculture jobs is not common, as agriculture laborers are typically exempt from the organizing rights provided in the NLRA. However, unionization is possible for some cannabis workers because much of the cannabis industry is characterized by vertical integration, meaning that the same firm operates every stage of cultivation, processing, distribution, and sales. A single union at a vertically integrated cannabis firm can represent a wide array of workers, from growers performing agricultural tasks to customer service representatives in retail.

Cannabis unions have secured strong wage floors for even the lowest-paid industry jobs, often with automatic annual wage increases and increases based on length of tenure. For example, cannabis unions in Minnesota, New Jersey, New York and Pennsylvania have established wage floors for trimmers, horticulturists, cultivators, and cultivation technicians ranging from \$15 to \$21 an hour—also shown in Table 1.<sup>13</sup> In every cannabis industry job tracked, the union-negotiated wage floor is at least \$3 above the state minimum wage, and in some cases as much as \$8 above the state minimum wage.<sup>14</sup>

In addition, nearly every cannabis collective bargaining agreement (CBA)—the contract between the union and the employer—stipulates annual wage increases ranging from \$1 to \$3 per hour, and some also spell out job ladders with additional wage increases for workers reaching higher classifications in their roles.

**“In every cannabis industry job tracked, the union-negotiated wage floor is at least \$3 above the state minimum wage, and in some cases as much as \$8 above the state minimum wage.”**

The wage levels established in these contracts imply a significant annual earnings premium over traditional U.S. agriculture. Because of the lack of data on cannabis jobs, it is not possible to calculate an average or median wage among current cannabis cultivation workers. However, if we simply compare wages for someone at the midpoint of the range of *starting* salaries in these contracts (\$18.00 per hour) with the average wage of farmworkers in traditional agriculture noted above (\$14.62 per hour), the difference in annual earnings for a regular full-time, year-round worker would be \$7,030.

Cannabis unions have also secured their members an array of benefits they might not receive in a nonunionized workplace, including health insurance, paid sick leave, paid vacation, and retirement benefits.<sup>15</sup> In the overall workforce, unionized workers are much



more likely to have medical benefits, retirement benefits, and paid time off than their nonunion peers (see Table 3 in the next section). Importantly, most union contracts also include commitments by the employer to maintain a safe and healthy workplace and to comply with state and local safety regulations, with mechanisms for workers to report any hazards. Some contracts also include commitments to racial equity in the workplace and participation in certified apprenticeship programs to grow and train a skilled cannabis workforce.

There is clearly a dramatic contrast in job quality between unionized cannabis cultivation workers and traditional U.S. agricultural workers.

Right now, with the industry still relatively small, unions likely have meaningful influence on sectoral pay and practices, at least in the states

where cannabis unions have significant membership. To help maintain high standards across the industry when it gains federal acceptance, policymakers must ensure that workers at cultivation sites have a fair opportunity to decide whether they would like a union. With their collective bargaining rights safeguarded, workers would either unionize and have more bargaining power to negotiate better compensation, or employers would raise standards preemptively to ward off unionization efforts.

**There is clearly a dramatic contrast in job quality between unionized cannabis cultivation workers and traditional U.S. agricultural workers.**

## **Opportunities and risks in processing (extraction, distillation, infusion, and product manufacturing)**

The cannabis industry today already produces a wide range of products beyond the well-known smokable flower. Cannabis concentrates and oils are produced in various forms for “infusion” in edibles, beverages, or other forms of consumption. Cannabidiol or CBD—a nonintoxicating compound in cannabis thought to have anti-inflammatory, anti-anxiety, and pain-reducing effects—has become a popular ingredient in a wide range of oils, creams, pills, oral sprays, and other therapeutic products. The FDA has also approved one cannabis-derived anti-seizure medication.<sup>16</sup>

To produce this wide range of goods, processing typically involves extracting compounds from the cannabis plant—either the psychoactive compounds, primarily tetrahydrocannabinol (THC), or the nonpsychoactive ones, primarily CBD. This extraction is done in a multitude of ways with varying degrees of complexity, and frequently involves the use of chemical solvents that can be flammable and dangerous. Complex distillation methods are also sometimes employed to further concentrate or refine extracted material. As a result, cannabis extraction requires substantial training and demands strict compliance with process safeguards to produce quality extracts and protect workers’ safety. Workers in this part of the industry typically hold positions such as extraction

technicians, lab technicians, and scientists.

Cannabis processing also includes the production of edibles, with workers in “kitchens” of varying scale using cannabis extracts and oils to manufacture everything from chocolates, gummies, and other foods to cannabis-infused oils and beverages. These workers typically hold positions such as edibles specialists, edibles chefs, and production or manufacturing technicians. Manufacturers sometimes also employ packagers who prepare pre-weighed cannabis containers and pre-rolled joints.

Cannabis products are warehoused and distributed like any other wholesale good, with warehousing jobs such as warehouse technicians and inventory control, wholesale distribution jobs, and delivery and courier staff. These jobs can be somewhat more challenging in cannabis, however, as most states with legal cannabis have strict chain-of-custody requirements for all cannabis material.<sup>17</sup>

## **When commercial cannabis processing is legalized more broadly, how might industry practices and working conditions evolve?**

Reviewing different scenarios, our analysis shows how the policy path taken under broader cannabis legalization could have a significant impact on the lives of cannabis processing workers, for better or for worse—with the low-road scenario leading to a range of negative outcomes for workers, including an estimated \$8,690 cut in annual wages alone.

### **The low-road scenario**

As noted above, cannabis processing involves complicated chemical procedures that require specialized training and skills. As a result, we would expect that cannabis processing jobs are likely to remain relatively better compensated than positions in the industry requiring less specialized knowledge. Nevertheless, there is significant variation in job quality and wage levels across different segments of the broad manufacturing sector with implications for cannabis. Moreover, changing business practices that have weakened job quality in traditional manufacturing offer lessons for how an expanding cannabis processing sector might evolve, and how that evolution could erode the gains in pay and job quality that the nascent unions in cannabis have won for their workers.

Because of the variety of products already being produced by cannabis processors, it is difficult to identify a single segment of traditional manufacturing industries that is directly analogous to cannabis. We examined wage levels from multiple data sources in a wide range of goods-producing industries that share features with cannabis, including tobacco manufacturing, beverage manufacturing, crop production, nonretail bakeries, and specialty food manufacturing. We also looked at pharmaceutical and medicine manufacturing; soap, cleaning compound, and cosmetic manufacturing; and miscellaneous manufacturing.

In the industries that offer the closest parallels to cannabis, there is considerable variation

## Two roads for cannabis processing workers under broader legalization

Low road	High road
Lack of unionization leads to stagnant or declining wages, fewer benefits, and lower job quality.	Unions help workers secure fair compensation and higher job quality. LPAs encourage strong union density, allowing unionized segment to set norms and standards for the industry.
Outsourcing to staffing firms grows, further undermining worker bargaining power, diminishing wages, and complicating enforcement of wage, hour, and safety regulations.	Vocational training and apprenticeship programs for skilled processing roles offer middle-class opportunity to workers without college degrees, and formerly incarcerated individuals.
	Unions contracts standardize equitable pay practices and include diversity-promoting hiring provisions that help erase racial- and gender-based pay and employment gaps.
Cannabis processing workers in the high-road scenario could make, on average, an estimated <b>\$8,690</b> more in annual wages than under the low-road scenario.	

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in typical wages. For example, data from the Bureau of Labor Statistics Occupational Employment Statistics (BLS-OES)—shown in **Table 2**—reveal that hourly median wages for production workers in food manufacturing (\$15.66) are significantly lower than wages in beverage and tobacco product manufacturing (\$19.61) and chemical manufacturing (\$20.86).<sup>18</sup> How closely each specific cannabis product manufacturing role hews to the positions within these traditional manufacturing subsectors will obviously influence pay for those cannabis jobs. It is worth noting, however, that of these industries, only beverage, tobacco, and chemical manufacturing have wages like those in the durable goods manufacturing industries that are often held up as models of good, middle-class jobs.<sup>19</sup> Median wages for several of these durable goods industries are also listed in Table 2.

The occupations within the industries with parallels to cannabis are also diverse. There are analogues to agriculture and food science technicians; chemical technicians; food and tobacco roasting, baking, and drying machine operators and tenders; food batchmakers and processors; packers and packagers; inspectors, testers, sorters, samplers and weighers; and a variety of wholesale, freight, and inventory occupations, among others.

To try to understand how the occupational composition of cannabis might affect wage levels for the processing segment of the industry, we analyzed wage data from the Bureau of Labor Statistics Current Population Survey (BLS-CPS) for the wide range of occupations similar to cannabis roles in the various industries noted above—hereafter referred to as our cannabis processing proxy jobs.<sup>20</sup> As shown in **Figure B**, wages for these jobs are modest at best. Over the period from 2010 to 2019, the median wage of these cannabis processing proxy jobs overall was \$14.32 in 2019 dollars—a level that would have put them

Table 2

## Wages vary considerably across manufacturing industries, with pay in durable goods manufacturing mostly outpacing pay in nondurable goods industries sharing features with cannabis

Average and median hourly wages in various production industries (2019\$)

Industry	Hourly mean wage	Annual mean wage	Annual median wage	Hourly median wage
<i>Durable manufacturing</i>				
Computer and electronic product manufacturing	\$20.29	\$42,194	\$38,530	\$18.30
Electrical equipment, appliance, and component manufacturing	\$19.34	\$40,219	\$38,020	\$18.05
Fabricated metal product manufacturing	\$20.41	\$42,441	\$39,910	\$18.95
Machinery manufacturing	\$21.00	\$43,685	\$41,640	\$19.77
Nonmetallic mineral product manufacturing	\$19.90	\$41,394	\$38,620	\$18.34
Primary metal manufacturing	\$21.10	\$43,883	\$41,380	\$19.65
Transportation equipment manufacturing	\$22.21	\$46,194	\$42,500	\$20.18
<i>Nondurable manufacturing</i>				
Beverage and tobacco product manufacturing	\$21.82	\$45,374	\$41,290	\$19.61
Chemical manufacturing	\$23.38	\$48,634	\$43,930	\$20.86
Food manufacturing	\$17.11	\$35,586	\$32,980	\$15.66

**Notes:** Annual wages calculated by multiplying corresponding hourly wage by 2,080 hours. Values deflated to 2019\$ using the CPI-U for comparability with subsequent figures.

**Source:** May 2020 data from the Bureau of Labor Statistics Occupational Employment Statistics (BLS-OES 2020).

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between the 30th and 36th percentile of all wage-earners in the economy.<sup>21</sup>

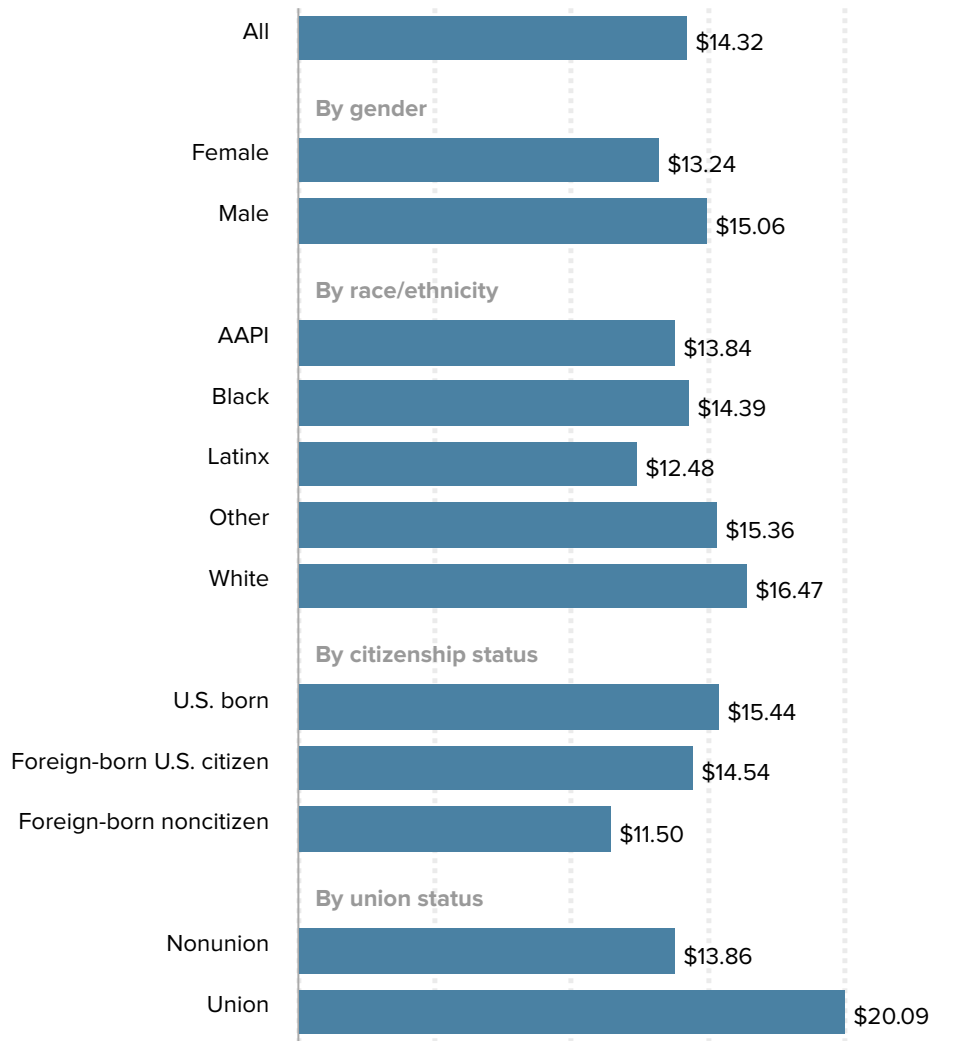
However, the overall median masks considerable variation across demographic groups, with important equity implications for cannabis. In particular, Figure B shows that median wages are noticeably lower than the overall median of \$14.32 for women (\$13.24), Black workers (\$14.39), Latinx workers (\$12.48), Asian American/Pacific Islander (AAPI) workers (\$13.84), and noncitizen immigrant workers (\$11.50), and that all of these groups have lower median wages than do men (\$15.06) and white workers (\$16.47).

As noted, cannabis processing proxy jobs cover a wide range of occupations and, not surprisingly, there is nontrivial

Figure B

## Workers in manufacturing jobs similar to cannabis processing earn modest wages, with significant variation by race and citizenship status

Median wages of proxy cannabis processing and production workers by demographic group (2019\$)



**Notes:** AAPI stands for Asian American/Pacific Islander. Union status refers to workers who are represented by a union contract.

**Source:** EPI analysis of 2010–2019 Current Population Survey ORG data (EPI 2021a).

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variation in wages across the different occupations.<sup>22</sup> Some of this variation in wage levels across demographic groups is a function of the occupational

interventions, there is no reason to expect racial and gender wage dynamics in

Table 3

## Access to workplace benefits varies greatly by occupation, wage level, and union status

Share of workers with access to employer-provided benefits, by benefit type and selected worker characteristics

Group	Paid vacations	Paid holidays	Health insurance	Retirement	Paid sick leave
<i>All private-sector workers</i>	79%	79%	69%	67%	73%
<i>Production occupations</i>	88%	91%	81%	73%	68%
<i>Retail occupations</i>	73%	77%	55%	72%	64%
<i>Private-sector workers in the lowest 25% of wage earners</i>	55%	56%	36%	43%	47%
<i>Private-sector union workers</i>	89%	91%	94%	91%	86%
<i>Private-sector nonunion workers</i>	78%	78%	66%	65%	72%

**Note:** Union workers are those who are represented by a union contract.

**Source:** National Compensation Survey from the Bureau of Labor Statistics (BLS 2019).

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segregation that drives a large portion of gender and racial pay gaps.<sup>23</sup>

Without some intentional equity-promoting interventions, there is no reason to expect racial and gender

wage dynamics in cannabis to be any different than the inequities we see in the broader economy.

cannabis to be any different than the inequities we see in the broader economy.

Traditional manufacturing jobs have been more likely than many other jobs to provide nonwage benefits. **Table 3** shows higher benefit access rates for the broad category of “production occupations,” relative to private-sector workers overall for most common workplace benefits. Unfortunately, data are not available to disaggregate to specific manufacturing industries or occupations, making it impossible to assess whether benefit access rates are similar for cannabis processing proxy jobs.

Lastly, to the extent that manufacturing does generally provide a higher standard of living than many other industries, this feature is not fixed and inevitable. Mishel (2018) explains that traditional manufacturing jobs still exhibit a meaningful compensation premium compared with other industries, but that the premium has shrunk by roughly one quarter since the 1980s. He notes that this decline results, at least in part, from manufacturing companies’ increased use of temporary help and staffing services agencies to outsource traditional manufacturing jobs to lower-paid contract workers. It is impossible to know the extent to which such practices could be applied in cannabis, but as noted in the section on agriculture, such “fissuring”—the outsourcing of jobs to lower-paid contract workers that

degrades wages and job quality more broadly—is increasingly prevalent throughout the economy in the absence of policies or mechanisms to prevent it.

Absent policy choices that proactively bolster and maintain high job quality, wages in cannabis processing could easily trend toward the lower-paying segments of traditional manufacturing—such as food manufacturing—and not the higher-paying ones. The racial and gender inequities already present in cannabis processing proxy jobs could manifest in cannabis, and firms could adopt

fissuring strategies to cut costs and degrade job quality for cannabis processing workers.

**“Fissuring”—the outsourcing of jobs to lower-paid contract workers that degrades wages and job quality more broadly—is increasingly prevalent throughout the economy in the absence of policies or mechanisms to prevent it.**

### The high-road, equity-promoting scenario

As noted, the manufacturing sector is often touted as offering opportunity into the middle class—particularly for workers with less than a four-year college degree—with generally higher wages and job quality than many other industries. One of the reasons why manufacturing has historically offered better jobs than many other sectors has been the strength of manufacturing unions, and their ability to set standards for the industry. As Rhinehart and McNicholas (2020) describe, for decades, unions representing workers at some of the largest auto, appliance, equipment, and component manufacturers negotiated contracts that set standards for workers across much of the sector—at both union and nonunion employers. Although unionization rates in manufacturing have declined, the sector still has higher union density than most other industries and the private sector overall.<sup>24</sup>

The effect of unions on job quality is evident among the cannabis processing proxy jobs we examine in this report. **Table 4** shows that, on average, workers in our cannabis product-manufacturing proxy jobs who are unionized earn between 23.6% and 28.0% more in hourly wages than nonunion workers with similar characteristics in the same positions.<sup>25</sup> Separate regression estimates for workers of color and Hispanic workers, in particular, in these roles show an even stronger union wage-boosting effect. For Black workers in these cannabis processing proxy jobs, unions boost pay by 21.8% to 22.0%; ; for Hispanic workers, by 30.6% to 38.5%; ; and for all workers of color as a group, by 26.4% to 32.4%.

This substantial union wage premium for workers in these proxy jobs suggests that ensuring worker organizing rights in cannabis would help promote and ensure decent, middle-class earnings for industry production workers, particularly for women and workers of color. **Table 5** translates the union wage premium from Table 4 into annual earnings changes, by applying the union wage premium to the average hourly wages of each group of nonunion workers in cannabis product manufacturing proxy jobs.<sup>26</sup>

Table 4

## Unions provide a large wage benefit to manufacturing workers in jobs similar to cannabis processing, particularly Black and Latinx workers

Union premium for proxy cannabis processing and production workers by race and gender

Specification	All	Female	Workers of Color	Black	Latinx
<i>(1) Basic controls</i>	28.0%	26.7%	32.4%	22.0%	38.5%
<i>(2) With additional demographic controls</i>	24.4%	23.2%	27.4%	21.8%	31.7%
<i>(3) Controlling for industry and occupation (no additional demographic controls)</i>	26.5%	23.7%	29.8%	21.9%	35.0%
<i>(4) Controlling for full demographics, industry, and occupation</i>	23.6%	20.8%	26.4%	21.8%	30.6%

**Notes:** The union premium is how much more in wages workers covered by a union contract earn than similar nonunionized workers in cannabis processing proxy jobs. All results p-value < 0.01. For a full discussion of the methodology, see the Appendix.

**Source:** EPI analysis of 2010–2019 Current Population Survey ORG data (EPI 2021a).

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The table shows that if the average nonunion worker were unionized, their hourly pay rate would rise by \$4.18 per hour. For full-time workers, this translates to an increase in annual earnings of nearly \$8,700. The table also reports the annual earnings increase that would occur for the lowest- and highest-paid workers in our cannabis processing proxy jobs, with packers and packagers getting nearly \$7,000 and agricultural and food science technicians receiving more than \$12,600 in additional annual pay. Women working full time in our cannabis product manufacturing proxy jobs would gain nearly \$7,200 in annual earnings if they were unionized. Black workers and Latinx workers in full-time positions would experience pay gains of roughly \$7,000 and \$10,000, respectively.

As previously noted, manufacturing jobs often provide many common nonwage benefits—in large part because of the historical strength of unions in the sector. However, it is worth noting that workers covered by union contracts today—across all occupations and industries—have even higher rates of benefit access than workers in production occupations. Table 3 shows that private-sector union workers have equal or higher benefit access rates than workers in production occupations for every benefit listed. Bivens et al. (2017) also note that union employers contribute more toward employee health care benefits and paid vacations than do nonunion employers.

Unions could also help the industry mitigate and avoid health and safety threats. Cannabis extraction processes often involve the use of dangerous and flammable solvents, including butane, propane, and ethanol. Rainey (2019) reports that explosions at cannabis processing facilities have already occurred in at least 10 different processing facilities in states with legal cannabis industries, with worker injuries resulting in nearly every instance.



Table 5

## Unionization for processing workers helps promote middle-class earnings

Hourly and annual union difference for proxy cannabis processing workers by selected characteristics (\$2019)

	Union hourly wage difference	Average full-time annual wages of nonunion workers	Full-time annual wage difference	Implied average full-time annual wages with a union
<b>All</b>	\$4.18	\$32,790	\$8,686	\$41,476
<b>Occupation<sup>†</sup></b>				
<b>Packers and packagers</b>	\$3.33	\$26,185	\$6,937	\$33,121
<b>Agricultural and food science technicians</b>	\$6.07	\$47,693	\$12,634	\$60,327
<b>Sex</b>				
<b>Female</b>	\$3.46	\$30,290	\$7,190	\$37,480
<b>Race/ethnicity</b>				
<b>Black</b>	\$3.34	\$31,746	\$6,951	\$38,697
<b>Latinx</b>	\$4.81	\$28,598	\$10,005	\$38,603

**Notes:** The union premium is how much more unionized workers earn in wages than similar nonunion workers in cannabis processing proxy jobs. Unionized workers are those workers covered by a union contract. The union premium is calculated using regression specification no. 3 from Table 4. For full methodology, see the Appendix. The full-time premium is estimated assuming workers work 40 hours per week and 52 weeks per year.

<sup>†</sup> Packers and packagers is the occupation with the lowest median wage in the processing proxy group. The agricultural and food science technicians group is the occupation with the highest median wage in the processing proxy group. For a full list of occupations in the processing proxy group, see Appendix Table 2.

**Source:** EPI analysis of Current Population Survey ORG data (EPI 2021a).

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Rainey notes that, thus far, there has been only limited health and safety oversight by regulators, and that many states with legal cannabis industries do not have any health and safety requirements for cannabis processing.

With federal legalization, the industry likely would come under federal Occupational Health and Safety Administration (OSHA) oversight, but it will take time for the agency, and any state health and safety agencies, to develop appropriate guidelines, protocols, and inspection processes. Unions offer an established and effective vehicle for regulators to understand the industry needs and best practices for worker safety, to provide adequate training, and to ensure employer compliance. Bivens et al. (2017) summarize a breadth of research and examples showing that unions have created safer workplaces— encouraging

employer investments in training and giving workers protection from repercussions when they report safety hazards.

Unions also have a strong track record in providing specialized training and apprenticeship programs to develop workers' skills to prepare them for challenging and dangerous jobs, including in manufacturing.<sup>27</sup> As described in a report on apprenticeships (COWS 2018), union apprenticeships also have effectively been used to advance equity in job placement, providing greater opportunities to women and people of color.

Unions' ability to set high job quality standards in much of manufacturing offers an important lesson for cannabis.

Though lawmakers often celebrate manufacturing as a source of well-paying jobs and middle-class opportunity, what they are really celebrating is the labor movement's success in setting and sustaining job-quality norms for broad swaths of the

sector. Similar norms and standards around compensation, apprenticeship and training, and worker health and safety could also be established in cannabis if workers in the industry have ample bargaining power and structures, like unions, to propagate and sustain job-quality gains across the industry.

“Though lawmakers often celebrate manufacturing as a source of well-paying jobs and middle-class opportunity, what they are really celebrating is the labor movement's success in setting and sustaining job-quality norms for broad swaths of the sector.”

## Opportunities and risks in cannabis retail sales

Most legal cannabis products are sold through dispensaries—retailers licensed specifically to sell cannabis and cannabis-related products. The most common nonmanagerial job at dispensaries is the “budtender,” a sales associate that interacts directly with customers to understand their needs and guide their purchasing. In states that only allow medical cannabis or at dispensaries that focus on medicinal cannabis applications, similar jobs may also be called patient care representatives and medical consultants.

Because of the wide array of cannabis strains and products with varying effects, levels of cannabinoids, recommended dosages, applications, and potential risks to users, cannabis sales roles require substantial training and specialized knowledge. In this way, dispensaries have more in common with pharmacies than traditional merchandise retailers. Indeed, some states require that medical cannabis dispensaries either employ or contract with licensed pharmacists (Nathman 2018). Other states have established education and certification requirements even for recreational cannabis dispensary staff. Some states also allow delivery service for registered medical marijuana users, with dispensaries employing couriers and delivery workers.

Security roles are also an important part of the cannabis distribution and sales workforce. Because of cannabis' Schedule 1 status under federal law, banks and credit card companies are effectively prohibited from providing traditional financial services to

## Two roads for cannabis retail workers under broader legalization

Low road	High road
Dispensaries adopt typical retail compensation practices, with low pay and few benefits.	Cannabis dispensaries are compelled to provide decent wages and benefits because either or all of the following occur: strong job quality licensing rules are implemented, policymakers enact broad reform of labor standards, or—most easily—policies such as LPAs safeguard union organizing rights.
Cannabis workers are subjected to irregular and unpredictable work schedules, leading to unstable incomes, higher mental stress, and work-life conflict.	Unions ensure that cannabis retailers follow fair scheduling practices and promote full-time work.
Employers rely on increased labor supply from decriminalization and declining cannabis stigma to keep wages low and tolerate high turnover.	Union-based training and certification programs help develop knowledgeable sales staff and ensure compliance with dispensary safety regulations.

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Cannabis retail workers in the high-road scenario would, on average, make an estimated **\$2,810** more in annual wages than under the low-road scenario.

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cannabis businesses. This includes holding deposits and credit card processing of sales. Consequently, nearly all cannabis retailers and delivery services must operate entirely on a cash-only basis. This leaves cannabis businesses facing heightened risk of robbery and theft, both because of the large amounts of cash involved and the fact that there is still a thriving black market for cannabis.

## When retail sale of cannabis is legalized federally, how might industry practices and working conditions evolve?

In developing different scenarios, our analysis shows how the policy path taken under broader cannabis legalization could have a large impact on the lives of cannabis retail workers, for better or for worse—with the low-road scenario leading to a range of negative outcomes for workers, including an estimated \$2,810 cut in annual wages alone.

### The low-road scenario

Like agriculture, the retail sector in the United States features arguably some of the lowest job quality in the U.S. economy. Nonsupervisory retail jobs tend to be very low paying, offer few benefits, and can be subject to inadequate and irregular work schedules that

have harmful consequences on workers' lives and families (Covert 2018.) Of course, not all retail jobs are bad jobs; there is variation in job quality across occupations, employers, and subsectors within retail. There is also variation across geography, as differences in state and local labor laws—such as minimum wage and fair scheduling laws—have a disproportionate effect on conditions in retail. Overall, however, retail jobs tend to be difficult jobs that are often viewed as the most in need of policy-driven reform.

For understanding what the cannabis industry could look like if it adopted practices similar to most U.S. retail, we analyzed data on the subset of retail jobs that are most analogous to sales and distribution jobs in cannabis. (Appendix Table 3 lists the specific proxy retail subsectors and occupations included in our analysis.) **Figure C** reports wage data for these nonsupervisory retail workers, broken out for various demographic groups. Over the period from 2010 to 2019, the median wage of retail jobs similar in function to cannabis retail jobs was just \$10.80 in 2019 dollars. Wages were even lower for Black workers (\$10.35) and immigrant workers (\$10.65) in these retail jobs.

Workers in traditional U.S. retail jobs are also less likely to have access to important workplace benefits. **Figure D** presents data—also available in Table 3—from the Bureau of Labor Statistics National Compensations Survey (NCS) on access to benefits for various groups of workers (BLS 2019). The data show that retail workers, in general, are less likely to have access to paid vacations (73%) than private-sector workers overall (79%). They are less likely to have access to paid sick leave (64% versus 73%), and significantly less likely to have employer-provided health insurance (55% versus 69%).

Importantly, these data describe benefit access for all occupations in retail, including supervisors and high-level managers. It is likely that benefit access for front-line sales representatives is lower. Figure D also reports benefit access for workers in the lowest 25% of wage earners—a category that likely captures most nonsupervisory retail workers.<sup>28</sup> Among these workers, just over half get paid vacation (55%) and paid holidays (56%), only a third (36%) get health insurance, and less than half have access to paid sick leave (47%) or any retirement benefits (43%).

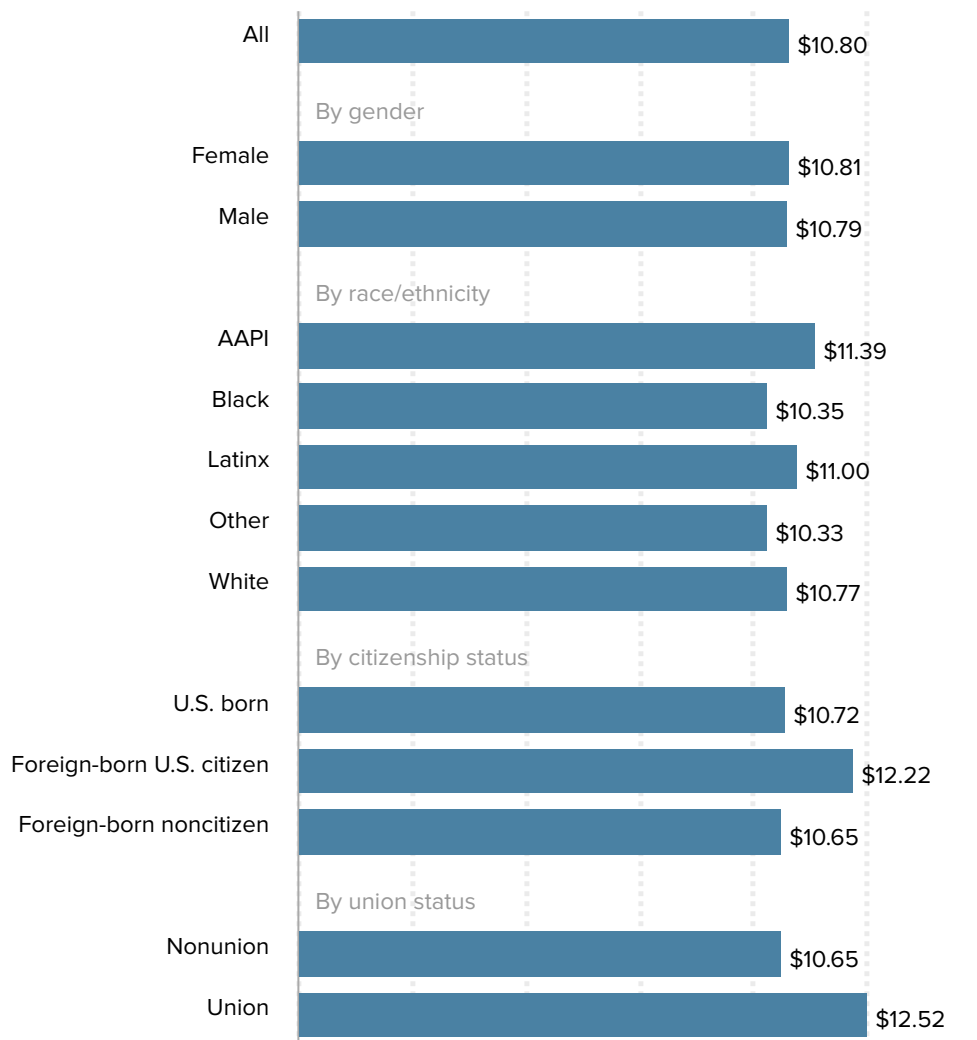
Lastly, as Golden (2015) describes, retail jobs are more likely than jobs in most other industries to be characterized by irregular and unpredictable schedules. The proliferation of “just-in-time” staffing models, in which computer algorithms are employed to predict hourly customer demand, result in workers being called in or sent home on short notice. Many workers who would prefer full-time schedules only receive part-time hours, with shifts changing from week to week. Retail workers are told to be “on call,” ready to come into work on short notice, and thus are unable to make plans with friends or family, schedule child care, take class, or work a side job. Workers subject to these scheduling practices report higher levels of income instability, mental stress, and work-life conflict (Golden 2015).

Irregular schedules are particularly harmful for workers with children. Morsy and Rothstein (2015) explain that children of parents with nonstandard work schedules are more likely to experience developmental problems and have inferior cognitive and behavioral outcomes.

Figure C

## Workers in retail jobs similar to cannabis retail earn low wages, with significant differences by race and citizenship status

Median wages of proxy cannabis sales jobs by demographic group (2019\$)



**Note:** Union workers are those who are represented by a union contract.

**Source:** EPI analysis of 2010–2019 Current Population Survey ORG data (EPI 2021a).

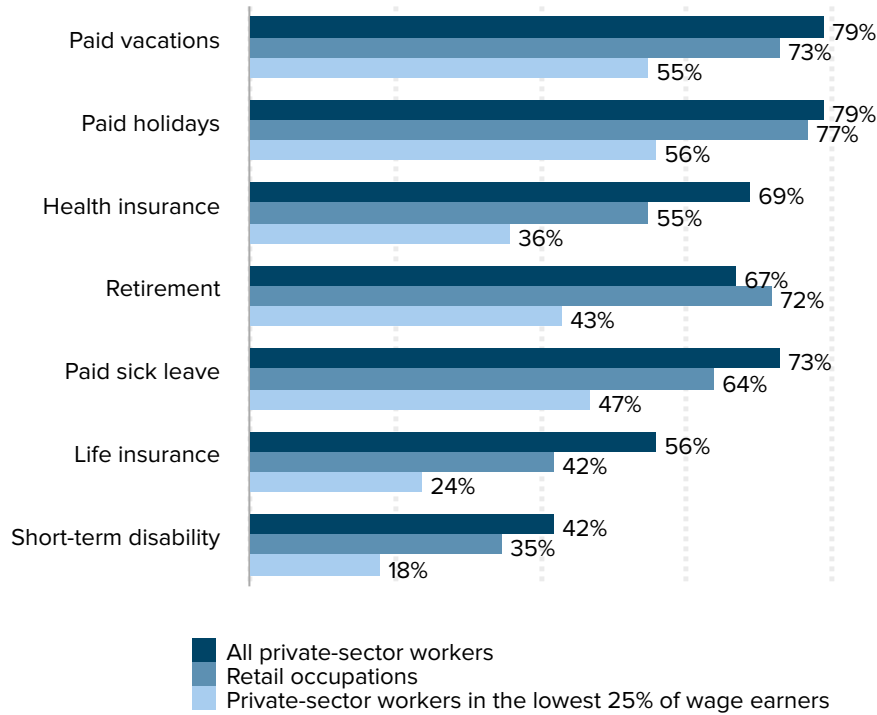
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Were the cannabis industry to be federally authorized, dispensaries would become more common, interstate dispensary companies would grow, and the industry’s sales arm could easily start to look more like many other traditional U.S. retailers. Indeed, it is not far-fetched to think that a Walmart supercenter might someday include a dispensary. When that happens, those cannabis dispensary workers could easily find themselves facing the same economic precarity that is common among many retail workers today.

Figure D

## Retail and low-wage workers are less likely to have employer-provided benefits

Share of workers with access to employer-provided benefits, by benefit type and selected worker group



Source: National Compensation Survey from the Bureau of Labor Statistics (BLS 2019).

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### The high-road, equity-promoting scenario

As noted, not all front-line retail jobs are bad jobs. In some cases, retail employers have adopted high-road practices, or what MIT business professor Zeynep Ton calls the “Good Jobs Strategy.” Ton (2014) explains that some retailers—such as Costco and Trader Joe’s—choose to provide higher than average wages and benefits in order to attract, motivate, and retain high-quality staff. By doing so, these companies cut down on turnover costs, provide higher-quality customer services, and garner a devoted customer base—all of which results in a more profitable business, she explains. While this strategy certainly can and should be adopted by cannabis retailers, it is not guaranteed that most will.

Other retail jobs have been improved by the enactment of strong state and local labor standards. As of July 2021, 11 states and 39 cities and counties have adopted \$15 minimum wages (EPI 2021b). Fourteen states, the District of Columbia, and 22 cities and counties have laws requiring provision of paid sick days (NPWF 2021). Eight states plus the District of Columbia have paid family leave requirements or public programs (NCSL 2020). Six

Table 6

## Female, Black, and Latinx workers in retail jobs similar to cannabis retail sales benefit strongly from unions

Union wage premium for proxy cannabis sales workers by gender and race

Specification	All	Female	Workers of color	Black	Latinx
<b>(1) Basic controls</b>	8.8%	9.0%	12.3%	9.3%	15.4%
<b>(2) With additional demographic controls</b>	7.6%	8.4%	10.8%	9.1%	13.5%
<b>(3) Controlling for industry and occupation (no additional demographic controls)</b>	10.7%	10.2%	13.5%	9.4%	17.4%
<b>(4) Controlling for full demographics, industry, and occupation</b>	9.5%	9.5%	12.1%	9.3%	15.5%

**Notes:** The union premium is how much more in wages workers covered by a union contract earn than similar nonunionized workers in cannabis retail proxy jobs. All results p-value < 0.01. For a full discussion of the methodology, see the Appendix.

**Source:** EPI analysis of 2010–2019 Current Population Survey ORG data (EPI 2021a).

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cities and Oregon have also adopted ‘fair workweek’ policies that curb the use of harmful scheduling practices (Wolfe, Jones, and Cooper 2018; Reyes 2018). However, these policies do not currently exist at the federal level, and absent major federal labor standards reform, it is likely that many states will not take up these worker protections on their own.<sup>29</sup>

As with the industries described in previous sections, unions are the other primary structure that can consistently improve job quality, including in retail. Roughly 12% of workers in the proxy retail jobs that are similar to cannabis retail jobs are union members. As shown previously in Figure C, though the overall median wage for retail workers in these jobs is only \$10.80, the median wage for unionized workers in those same positions is \$12.52—nearly 16% higher.

This difference in medians is driven partially by other characteristics, including the fact that unionized retail workers are more likely to be in states with higher minimum wages. But even controlling for these potential outside factors, the union wage premium in retail is still significant. **Table 6** shows that, on average, union workers in retail earn between 7.6% and 10.7% more than nonunion retail workers with similar characteristics.<sup>30</sup> Separate regression models for women, Black, Hispanic, and workers of color overall show an even stronger wage-boosting effect for these groups. For women in retail, unions boost pay by 8.4% to 10.2%; for Black workers, by 9.1% to 9.4%; for Hispanic workers, by 13.5% to 17.4%; and for all workers of color as a group, by 10.8% to 13.5%.

Once again, this union wage premium implies a meaningful difference in annual earnings for retail workers, with important implications for the cannabis retail workforce. **Table 7** presents the implied union effect on annual earnings for nonunion workers in our cannabis retail proxy positions. It shows that the average nonunion retail worker, working full time

Table 7

## Unionization leads to substantial earnings gains for female, Black, and Latinx retail workers

Hourly and annual union premium for proxy cannabis retail workers by selected characteristics (2019\$)

	Hourly union difference	Average full-time annual wages without union	Full-time annual union difference	Implied average full-time annual wages with union
<b>All</b>	\$1.35	\$26,127	\$2,806	\$28,933
<b>Occupation<sup>†</sup></b>				
<b>Packers and packagers</b>	\$1.15	\$22,261	\$2,390	\$24,652
<b>Health technologists</b>	\$1.72	\$33,273	\$3,573	\$36,846
<b>Gender</b>				
<b>Female</b>	\$1.25	\$25,487	\$2,607	\$28,094
<b>Race/ethnicity</b>				
<b>Black</b>	\$1.11	\$24,569	\$2,319	\$26,888
<b>Latinx</b>	\$2.11	\$25,297	\$4,389	\$29,686

**Notes:** The union premium is how much more unionized workers earn in wages than similar nonunion workers in cannabis retail proxy jobs. Unionized workers are those workers covered by a union contract. The union premium is calculated using regression specification no. 3 from Table 6. For full methodology, see the Appendix. The full-time premium is estimated assuming workers work 40 hours per week and 52 weeks per year.

<sup>†</sup> Packers and packagers is the occupation with the lowest median wage in the retail proxy group. Health technologists is the occupation with the highest median wage in the retail proxy group. For a full list of occupations in the retail proxy group, see Appendix Table 3.

**Source:** EPI analysis of Current Population Survey ORG microdata (EPI 2021a).

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would earn an additional \$2,800 annually if unionized. The table also shows implied annual wage increases for the lowest-paid (packers and packagers) and highest-paid (health technologist) positions in our sample, with annual pay increases ranging from roughly \$2,400 to \$3,600. Nonunion women working full-time in these roles stand to gain \$2,600 from being represented by a union, Black workers would gain \$2,300, and Latinx workers would gain \$4,400. (The packager position exists in both cannabis retail and processing.)

Unions of cannabis workers in Minnesota, New Jersey, New York, Pennsylvania, Washington, and the District of Columbia have already set wage standards for front-line cannabis sales jobs significantly higher than local minimum wages, and higher than in traditional front-line retail jobs. Starting wages for budtenders, patient care representatives, receptionists, and security workers in these unions range from \$15 to \$22 an hour, with most contracts stipulating annual across-the-board wage increases, and higher wage floors for “lead” workers in these roles. As with jobs in cannabis cultivation,



the standards set by union cannabis contracts likely affect broader wage levels in the industry—at least in states where cannabis unions have a meaningful presence. Data from Vangst 2020 and Indeed.com 2021 describe typical budtender wages ranging between \$14.50 and \$17.00 an hour.

As discussed previously, cannabis unions that currently exist have secured a variety of workplace benefits for their members: paid vacations, paid sick days, health insurance, retirement programs, and employee discounts. Most notably for cannabis dispensary workers, cannabis union collective bargaining agreements often include provisions guaranteeing fair scheduling practices—e.g., advance notice of schedules, a guaranteed number of hours paid per shift, guaranteed breaks and time off, additional compensation on holidays or when called in from a day off, and a preference for providing full-time employment for those want it in lieu of hiring additional part-time staff.

As in the other sectors of the cannabis industry, unionization offers a clear means of ensuring high job quality for workers in cannabis retail roles. Encouraging business adoption of “good jobs” models and setting strong labor standards would be helpful, but they are less likely to be achieved and in the case of labor standards, less flexible than simply ensuring that workers at cannabis firms can fairly negotiate with their employers.

## The effect of stigma

To the extent that current cannabis jobs do demonstrate higher job quality than similar jobs in traditional sectors, it should not be assumed that these features will remain when cannabis is legalized throughout the country. In fact, one factor that could be driving higher wages in cannabis now is the lingering stigma around cannabis use and the potential labor market consequences for industry workers who may ultimately move on from cannabis into other industries. Workers considering entering employment at a dispensary or a cultivation site may question how their cannabis work history will affect future career options, particularly as the drug is still illegal under federal law and cannabis work sites—legal under state laws—have been raided by federal law enforcement as recently as last year (Sambides 2020). When cannabis is legalized federally, whatever premium cannabis employers are paying to overcome that stigma could diminish, particularly as cannabis dispensaries and product sales become more commonplace.

Moreover, if federal legalizing legislation also expunges past convictions for cannabis-related offenses and aims to create pathways into the industry for previously incarcerated individuals—as it should—the need for structures to promote and preserve high job quality will become even more important. All else equal, an increase in the supply of potential cannabis workers, spurred by individuals’ release from detention and criminal record expungement, would put downward pressure on cannabis worker wages. And even as the stigma associated with cannabis declines, it would be naive to think that the stigma associated with past incarceration—even for expunged cannabis-related convictions—will easily go away. Individuals entering or reentering the labor force from incarceration have severely diminished bargaining power in the labor market—a reality that will affect their

ability to secure good jobs and decent pay, even in cannabis, without countervailing structures such as a union.<sup>31</sup>

Unions have an established record in helping previously incarcerated individuals overcome stigma and secure good jobs. As described in NELP and In the Public Interest 2016, unions have partnered with in-prison vocational programs and reentry agencies to train and place formerly incarcerated individuals in union apprenticeship programs—largely, though not exclusively, in the building trades.<sup>32</sup> The NELP report goes on to note, “With their long-standing expertise in the workplace and workforce development, and a well-defined infrastructure of local, regional, and national networks, labor unions are perfectly positioned to take small-scale local efforts to connect the formerly incarcerated to high-quality unionized jobs and replicate them nationally.” Indeed, funding from cannabis tax revenues aimed at aiding reentry for formerly incarcerated individuals could be used to set up training, certification, and placement programs with existing unionized cannabis businesses in states with legal markets. Unions are an ideal institution to then scale those programs to other states.

## Conclusion

The recent release of the Cannabis Administration and Opportunity Act discussion draft by Senate Majority Leader Chuck Schumer (D-N.Y.) illustrates the significant momentum growing for a change in federal treatment of cannabis. That legislation, along with other federal and state proposals, would do many good things, rightly aimed at repairing some of the enormous harm caused by the war on drugs. But so far, all of these proposals have a glaring hole: namely, any articulation of standards or structures to ensure that cannabis jobs are good jobs. Their common focus on equitable business licensing and supporting entrepreneurship among people of color is good, but woefully insufficient. The vast majority of individuals who will make their careers in a legal cannabis industry will not be business owners; they will be rank-and-file employees, many of whom could be particularly vulnerable to exploitation in the labor market for having—or at least once having—a criminal record.

Various other proposals to strengthen and reform federal labor law would certainly help. The Raise the Wage Act, which would raise the federal minimum wage to \$15, is long overdue.<sup>33</sup> The Protecting the Right to Organize (PRO) Act would protect workers who want to form a union and simplify the process for them to do so.<sup>34</sup> The Fairness for Farm Workers Act would expand basic overtime and minimum wage protections to farmworkers, finally ending these glaring exemptions in the Fair Labor Standards Act.<sup>35</sup>

But in the absence of wholesale reform of federal labor law, the simplest way for lawmakers to ensure that a newly legalized cannabis industry provides opportunity, safety, and fairly compensated work is to support worker organizing from the outset. The six states that either require or encourage labor peace agreements as part of cannabis business licensing requirements offer a useful model. Simply ensuring that workers have a fair opportunity to consider joining a union, without interference or retribution from their

employers, would go a long way toward giving cannabis workers a voice and a fair stake in the industry’s success.

There are lofty hopes among lawmakers, business owners, investors, and communities for what federal legalization of cannabis could provide in terms of new revenues, profits, jobs, business opportunities, and repair for the tremendous harm caused by the war on drugs. But if the welfare of workers in the industry is not also factored into legalization discussions, then the industry will never truly live up to those hopes.

## Appendix: Cannabis union wage premium methodology

Due to a lack of nationally representative, publicly available data, it is impossible to directly measure the union wage premium—the percent by which the wages of union workers exceed their nonunion counterparts—for cannabis workers. To estimate the premium, we create proxy groups for the different production segments of the cannabis industry. These segments are referred to in the paper as cultivation<sup>36</sup>, processing, and retail sales. For the processing and sales segments, we identified a set of industries and occupations that are similar to the functions and tasks of workers in that segment of the cannabis industry. We then use regression models to estimate a union wage premium for these proxy groups.

This report’s analysis of the union wage premiums uses pooled, inflation-adjusted 2010–2019 microdata from the Outgoing Rotation Group of the Bureau of Labor Statistics (BLS) Current Population Survey, collected and harmonized in EPI (2021a). Our sample omits observations with imputed earnings. BLS wage imputation does not account for union status, meaning that including imputed results unreasonably shrinks an estimation of a union premium (Hirsch and Schumacher 2004).

Our processing proxy group estimates the union wage premium for cannabis roles such as extraction technicians, production technicians, packagers, and edibles specialists. The sales proxy group represents cannabis workers who are budtenders, customer service representatives, delivery drivers, and security guards. Descriptions of each role are in **Appendix Table 1**.

Our proxy samples for the two cannabis industry segments were constructed using the industry and occupations delineated in **Appendix Tables 2 and 3**. The industry and occupation names used for the proxy groups are derived from the U.S. Census Bureau’s classification of the primary job of the respondent. For each group, we include all workers ages 16 and older who reported being employed at the time of the Current Population Survey with valid wage information. Separate sets of regressions were conducted for each proxy group.

The regression model is based on Allegretto and Mishel’s 2019 analysis of the teacher wage penalty and Morrissey’s 2021 analysis of the public sector pay gap, with some modifications. The dependent variable is the natural log of weekly earnings. The

coefficient of interest is the pay difference for union-represented workers. The analysis controls for age (including a quadratic to capture diminishing returns to experience), the year, state, and educational attainment (less than high school; high school; some college; bachelor's degree; more than a bachelor's degree). The regression also controls for full-time and part-time work status, as well as usual weekly hours worked.

We report results from regression models both with and without controls for race, ethnicity, gender, marital status, and citizenship status. These controls are not included in our preferred estimation of the union wage difference used to calculate implied annual earnings differences. While such demographic characteristics are associated with differences in pay, these differences often reflect labor market discrimination rather than differences in job skills and qualifications. However, because pay differences associated with race, ethnicity, and gender may also reflect unobserved differences in work experience or other job qualifications, some researchers prefer to include these demographic controls as proxies for these unobserved differences. The findings of this report are robust to the inclusion of these demographic characteristics, although the overall union wage premium effect diminishes (see Tables 4 and 6).

Additional regressions estimate the union wage premium for women workers, Black workers, and Latinx workers specifically.

Appendix  
Table 1

## Cannabis occupations and descriptions

Segment	Occupation	Position description
<b>Cultivation</b>	<b><i>Grower/ horticulturalist</i></b>	Responsible for the cleaning, upkeep, and sanitation of the cultivation facility. Similar titles include harvest manager, cultivation technician, and horticulturist.
	<b><i>Trimmer/ post-harvester</i></b>	Responsible for hand trimming flower from plants in a quick and efficient manner while ensuring that the facility produces quality cannabis. This is typically an hourly position.
<b>Processing</b>	<b><i>Extraction technician/ lab technician</i></b>	Responsible for assisting in the production of cannabis oils and extracts through various extraction techniques and processes.
	<b><i>Production technician</i></b>	Responsible for running equipment and performing tasks to produce new products. Similar titles include production associate and warehouse associate.
	<b><i>Edibles specialist</i></b>	Oversees the kitchen and maintains high standards for product development, formulation, dosing, finished product, and cleanliness while managing the production team.
	<b><i>Packagers</i></b>	Responsible for accurate packaging of cannabis into pre-weighed containers and pre-rolled joints.
	<b><i>Inventory control</i></b>	Manages product inventory. Maintains appropriate chain-of-custody documentation on cannabis products and ensures quality of cannabis inventory.
<b>Retail Sales</b>	<b><i>Budtender</i></b>	Assists the customer or patient in the retail or medical purchasing process. This position is often referred to as “sales associate” and is an hourly position.
	<b><i>Customer service representative</i></b>	Resolves product or service problems by mitigating customer issues and maintaining relationships. Similar titles include cannabis delivery dispatcher and customer service agent.
	<b><i>Delivery driver</i></b>	Serves as a mobile budtender, delivering cannabis products from a licensed retailer directly to consumers.
	<b><i>Shop host/security guard</i></b>	Responsible for onsite protection and safety for employees, customers, and assets.

Sources: Vangst 2020 and union contracts provided by United Food and Commercial Workers.

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## Proxy cannabis workers, industries, and occupations

<i>Industries</i>
Alcoholic beverages, merchant wholesalers
Animal food, grain, and oilseed milling
Bakeries, except retail
Beverage manufacturing
Crop production
Drugs, sundries, and chemical and allied products, merchant wholesalers
Groceries and related products, merchant wholesalers
Merchant wholesalers, nondurable goods
Miscellaneous manufacturing, n.e.c
Not-specified food industries and vegetable-preserving and specialty-food manufacturing
Not-specified manufacturing industries
Pharmaceutical and medicine manufacturing
Soap, cleaning compound, and cosmetic manufacturing
Support activities for agriculture and forestry
Tobacco manufacturing
Warehousing and storage
<i>Occupations</i>
Agricultural and food science technicians
Biological technicians
Butchers and other meat, poultry, and fish processing workers
Chemical technicians
Food and tobacco roasting, baking, and drying machine operators and tenders
Food batchmakers
Food processing, n.e.c
Health practitioner support technologists and technicians
Helpers – production workers
Inspectors, testers, sorters, samplers, and weighers
Laborers and freight, stock, and material movers, hand
Packers and packagers, hand
Sales representatives, wholesale and manufacturing
Shipping, receiving, and inventory clerks
Stock clerks and order fillers
Weighers, measurers, checkers, and samplers, record-keeping

**Note:** n.e.c – not elsewhere classified.

**Source:** EPI analysis of NAICS industry codes and Bureau of Labor Statistics Occupational Employment and Wage Statistics occupation codes (BLS-OES 2020).

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## Proxy cannabis retail sales workers, industries, and occupations

### *Industries*

Beer, wine, and liquor stores

Grocery stores

Miscellaneous general merchandise stores

Other direct-selling establishments

Pharmacies and drug stores

Specialty food stores

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### *Occupations*

Cashiers

Counter attendant, cafeteria, food concession, and coffee shop

Customer service representatives

Health practitioner support technologists and technicians

Packers and packagers, hand

Retail salespersons

Stock clerks and order fillers

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**Source:** EPI analysis of NAICS industry codes and Bureau of Labor Statistics Occupational Employment and Wage Statistics occupation codes (BLS-OES 2020).

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# Endnotes

1. For example, see Nadler 2020. As the Drug Policy Alliance (2021) notes, Native Americans have also been unfairly targeted by police.
2. Good examples of calls for channeling investment and entrepreneurship opportunities include Crawford 2021 and Henry-Nickie and Hudak 2020.
3. Mishel and Bivens (2021) provide a good summary of these worker disempowerment strategies and their effects.
4. The 10 states are California, Colorado, Maine, Minnesota, Mississippi, Nebraska, New York, North Carolina, Ohio, and Oregon. Alaska's Supreme Court decriminalized cannabis, but the decision was overturned by the legislature in 1975.
5. King and Mauer (2006) demonstrate that cannabis arrests increased during the 1990s. FBI Uniform Crime Reporting data show that from 1985–2019, marijuana accounted for the largest share of drug arrests, except for in 1988–1994, when it was second to forms of cocaine.
6. In the 1970s and 1980s, 17 states used formal research programs through the FDA called Investigational New Drug applications to create small and limited medical cannabis programs. Each of these programs eventually collapsed due to federal obfuscation and bureaucratic hurdles (Grinspoon 2005).
7. Cannabis laws include a legal limit to the amount of cannabis an individual can possess legally. Possession beyond this limit can still result in arrest even in states where cannabis is fully legalized.
8. THC refers to tetrahydrocannabinol, the primary psychoactive chemical in cannabis that can affect mood and mental activity. CBD refers to cannabidiol, a nonintoxicating compound in cannabis thought to have anti-inflammatory, anti-anxiety, and pain-reducing effects.
9. In many states, individuals convicted of felonies are banned from receiving benefits from a variety of federal and state programs, including the Supplemental Nutrition Assistance Program (SNAP), Temporary Assistance for Needy Families (TANF), and various work training and placement programs. See Thompson and Burnside 2021 for more detail.
10. For more information, see Booker, Wyden, and Schumer 2021.
11. See BLS-OES 2020.
12. Indeed.com reports wage ranges and averages from job postings listed on its site, updating values regularly as postings change. As a result, Table 1 reports the approximate ranges observed in August 2021.
13. Values taken from a dozen collective bargaining agreements at cannabis firms provided to the authors by the United Food and Commercial Workers (UFCW). Wage floors reflect negotiated levels for 2021.
14. Authors' analysis of union contracts cannabis unions in California, the District of Columbia, Minnesota, New Jersey, New York, Pennsylvania, and Washington provided to the authors by the



UFCW, and Economic Policy Institute 2021b.

15. Union contracts from cannabis unions in California, the District of Columbia, Minnesota, New Jersey, New York, Pennsylvania, and Washington provided to the authors by the UFCW all include provisions for paid sick days, paid time off, retirement benefits, and health insurance (or a stipend in lieu of health insurance).
16. The FDA has approved the use of Epidiolex, a CBD-based medication, to treat a rare form of epilepsy. See USFDA 2018.
17. Chain-of-custody requirements refers to state regulations requiring cannabis processors to document the transport, handling, storage, testing, sales, and destruction of all cannabis materials—identifying dates, locations, and the employees having custody of uniquely identifiable cannabis materials at all times.
18. Data are from BLS-OES 2020. Values are deflated from 2020 to 2019 dollars for comparability with the subsequent values from the Current Population Survey Outgoing Rotation Group (CPS-ORG).
19. For example, see Mishel 2018.
20. Authors' calculation using CPS-ORG microdata from EPI 2021a. Details on the specific industry codes and occupation codes are listed in the Appendix.
21. Authors' calculation using CPS-ORG microdata from EPI 2021a.
22. Sample size limitations make it difficult to estimate precise wage values for each individual occupation, but we can say that median wages for these occupations range from \$11.21 for packagers to \$23.38 for agricultural and food science technicians.
23. See Matthews and Wilson 2018 and Hamilton, Austin, and Darity 2011.
24. Data from Hirsch and Macpherson (2021) show that in the late 1970s, almost 40% of manufacturing workers were unionized, compared with about one quarter of the private sector overall. As of 2020, 9.3% of manufacturing workers were represented by a union, compared with only 7.2% of private-sector workers overall.
25. We present these results as the range produced by three different regression model specifications. See the Appendix for details.
26. For these estimates, we use the union premium from model no. 3 in Table 4, our preferred specification, which controls for age, educational attainment, work hours, state, industry, and occupation.
27. See Berth, Dresser, and Ubert 2017.
28. CPS-ORG microdata indicate that in 2019, the 25th percentile wage was roughly \$13.50, and averaged \$12.40 from 2010 to 2019—in both cases, well above the median wage of the non-supervisory retail jobs analyzed in this paper.
29. To this day, five states have no state minimum wage whatsoever and two have minimum wages of only \$5.15; the \$7.25 federal minimum wage applies to most workers in these seven states. Another 13 states have state minimum wages set explicitly to the federal minimum wage of \$7.25. Nearly all of these 20 prohibit local governments from establishing minimum wages higher than

the state or federal minimum. See EPI 2021b and Blair et al. 2020.

30. We present these results as the range produced by three different regression model specifications. See the Appendix for details.
31. See Warner, Kaiser, and Houle 2020, Western 2002, and Randall 2012.
32. See also Antelope Valley Times Staff 2018.
33. See Cooper, Mokhiber, and Zipperer 2021 for details.
34. See McNicholas, Poydock, and Rhinehart 2021 for details.
35. See Grijalva 2021.
36. The tasks and occupations found in the cultivation segment of cannabis are most similar to jobs in agriculture. However, unionization rates are extremely low for most agricultural workers, in large part because agricultural laborers are excluded as employees under the National Labor Relations Act. The low number of unionized agriculture workers makes it difficult to extract meaningful data on the effects of unionization. As a result of this limitation, we did not calculate a separate union wage premium for cannabis cultivation workers.

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