THE PROS AND CONS OF CANNABIS TAXES

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ABSTRACT

While 19 states have enacted a tax on recreational marijuana, there is no standard cannabis tax in the US the way there is an alcohol tax, cigarette tax, and gas tax. Instead, governments use three different types of cannabis taxes: a percentage-of-price tax, a weight-based tax, and a potency-based tax. Different states use different taxes and some states levy multiple taxes. Additionally, some state and local governments levy their general sales tax on the purchase of marijuana. This report is a guide for policymakers, journalists, and engaged community members hoping to better understand cannabis tax debates. It details each state's cannabis tax system, provides data on cannabis tax revenue, explains the pros and cons of different cannabis taxes, and discusses the various goals of those taxes.

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INTRODUCTION

In November 2012, voters in Colorado and Washington supported ballot measures that legalized the sale of recreational cannabis in their states. From the start, advocates promoted taxes as a major selling point for marijuana legalization, arguing that this new source of revenue could help fund government services.

A decade later, 19 states have enacted some type of tax on recreational cannabis, but different states use different taxes, and some states levy multiple taxes.[1] As cannabis tax expert Pat Oglesby summarized, state and local governments "are running tax experiments, with dozens of iterations and variations" (Oglesby 2022).In that sense, there is no standard state and local cannabis tax in the US the way there is an alcohol tax, cigarette tax, and gas tax. Although the rates for those three traditional excise taxes vary, each tax operates roughly the same way in all 50 states and the District of Columbia. In contrast, there are three types of cannabis taxes: a percentage-of-price tax (i.e., an ad valorem tax), a weight-based tax, and a potency-based tax.

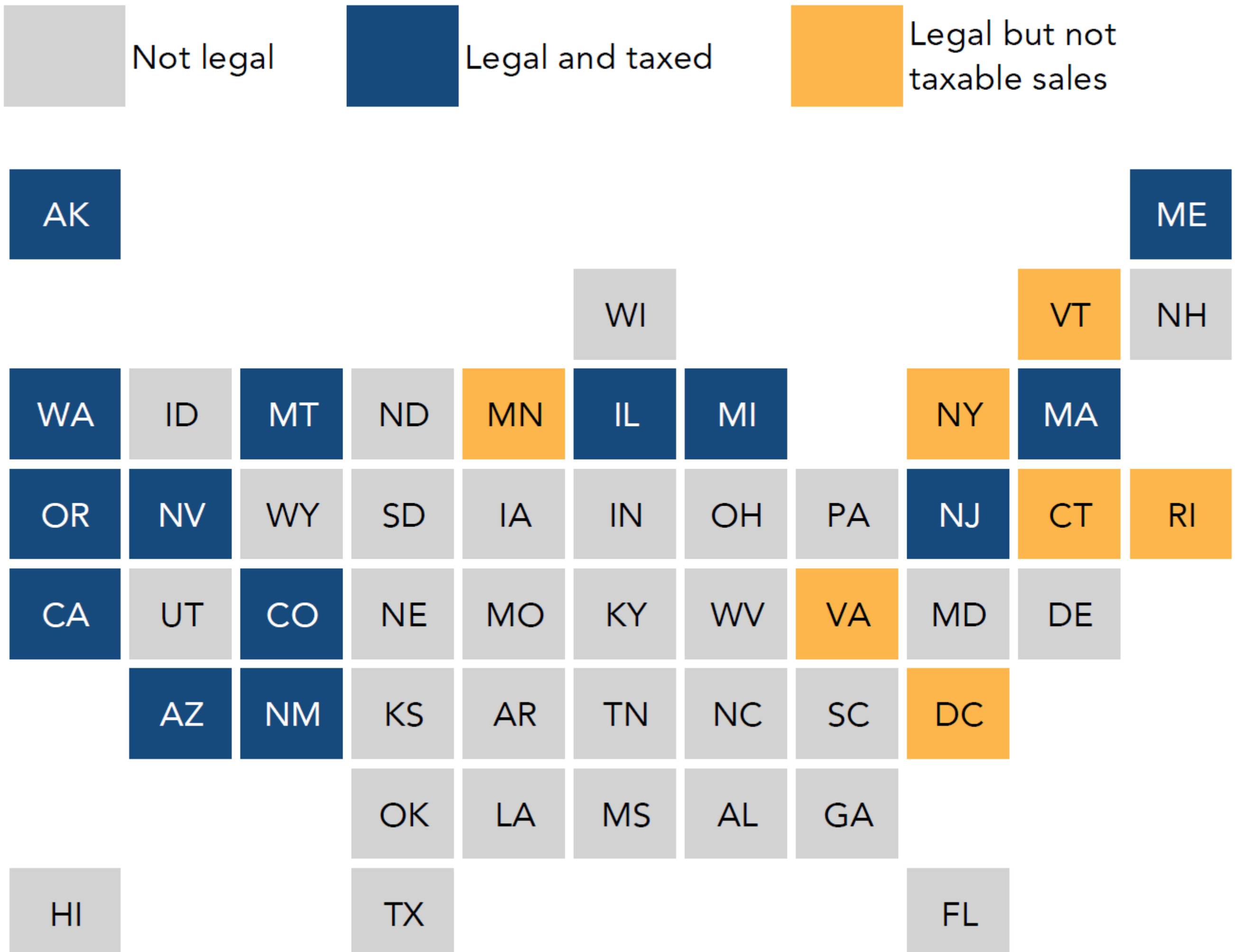
Additionally, some state and local governments levy their general sales tax on the purchase of marijuana. A general sales tax is not a cannabis tax because it is levied on all eligible purchases (e.g., books and clothing), but it is included in this report because it interacts with cannabis taxes and affects the purchase price paid by the consumer. (Note: This report uses cannabis and marijuana interchangeably. See box 1 on terminology.) Hypothetically, a state or local government could also directly sell marijuana to consumers in the same way that some governments operate liquor stores. Provinces in Canada operate such stores, but no state uses them as of September 2022.

This report is a guide for policymakers, journalists, and engaged community members hoping to better understand cannabis tax debates. It details each state's cannabis tax system, provides data on cannabis tax revenue, explains the pros and cons of different cannabis taxes, and discusses the various goals of those taxes. The underlying goal of marijuana legalization is reducing illegal sales, whereas the main goals of cannabis taxes are raising revenue, addressing the negative consequences of cannabis use not reflected in the purchase price (i.e., externalities), and discouraging the use highly potent products. The challenge of taxing marijuana is achieving those latter goals without creating an overly onerous or complex tax system that jeopardizes the underlying goal of legalization.

Because this report focuses on taxes, it omits several important aspects of cannabis policy that are critical to achieving an efficient legal cannabis market. For example, licensing rules and other government restrictions on the formation and operation of marijuana businesses might affect a state's legal market more than its tax choices. The report also focuses exclusively on state and local excise taxes on marijuana and not the significant federal and state income and business tax challenges facing companies that sell a drug still prohibited under federal law (Congressional Research Service 2021).

FIGURE 1

States Where Recreational Cannabis Is Legal and Taxed



Source: State government websites.
Note: Connecticut, New York, Rhode Island, Vermont, and Virginia have enacted cannabis taxes, and possession is legal, but taxable sales have not yet begun. The District of Columbia legalized recreational cannabis in 2014, but Congress prevents it from regulating and taxing legal sales. Minnesota allows consumers to purchase some edible products infused with tetrahydrocannabinol (THC), but the state does not levy a cannabis tax.

After nearly a decade of legal sales, we can draw some important conclusions about the various state and local taxes on cannabis. But most state marijuana markets and tax systems have existed for only a year or two, and many have operated exclusively without competition from neighboring states. As such, policymakers should learn from the experiences of other states, but also continuously monitor their own state's market and be prepared to reform cannabis tax policy as needed. Specifically, looming changes, including the possibility of major federal cannabis law reforms, could radically change how cannabis is sold and taxed in states and localities across the US. Ultimately, the best option on cannabis taxes is to stay informed and flexible.

BOX 1

Terminology

Cannabis and marijuana. The Merriam-Webster dictionary definition of cannabis is "the psychoactive dried flower buds, leaves, or preparations (such as hashish) or chemicals (such as tetrahydrocannabinol) that are derived from the cannabis plant," while the dictionary's definition of marijuana is "the psychoactive dried resinous flower buds and leaves of the female hemp or cannabis plant that contain high levels of tetrahydrocannabinol and are smoked, vaped, or ingested (as in baked goods) especially for their intoxicating effect." Some policymakers and advocates use cannabis instead of marijuana because the latter's origins are Spanish, and some believe the drug's opponents purposefully used the term to make it sound foreign and dangerous to white Americans. However, others disagree with that historical analysis, and many policymakers (including proponents of legalization) use marijuana in their rhetoric and legislation. This report uses both terms interchangeably.

Cannabinoids, tetrahydrocannabinol (THC), and cannabidiol (CBD). Cannabinoids are chemical compounds found in the cannabis plant. More than 100 cannabinoids have been identified in cannabis. THC is the primary psychoactive cannabinoid. However, other cannabinoids may affect a cannabis user. For example, CBD is a cannabis compound that has been found to reduce anxiety and pain but to not be intoxicating. CBD-infused products can be purchased in most states, but they are not subject to cannabis taxes.

Flower or bud. These are the fluffy clusters that female marijuana plants produce. The flower or bud (different states use different terminology) is the most popular and typically the most expensive part of the plant because it contains the highest concentration of THC and other cannabinoids that produce a high.

Quantities and measurements. One gram of flower or bud is typically the smallest quantity a consumer can purchase at a retail store. One gram is a few bunches of the flower, can fit in the palm of a person's hand, and provides a few uses of the drug if smoked. An ounce, which is roughly 28 grams, is a bag of cannabis that a user can smoke 50 to 100 times, depending on the smoking delivery system. Most states that tax cannabis based on the plant's weight use ounces as their tax base.

Leaves or trim. These terms are used as a catch-all category for the nonflower parts of the cannabis plant that are left after cultivating the flowers. Leaves or trim are not ideal for smoking but can be used to manufacture edibles and concentrates.

Edibles, concentrates, and vaping. An edible is any food product infused with cannabinoids—specifically THC. Popular types of edibles include chocolates, gummies, and lozenges. A concentrate is a cannabis-infused product, possibly an oil or a resin, that is defined by its extremely high level of THC. Cannabis can also be consumed via a vaping device that heats a THC-infused liquid cartridge (or tank) that produces an aerosol, which the user inhales.

Cultivator, distributor, and retailer. The cultivator, or producer, grows the marijuana. The distributor buys the marijuana from the cultivator and sells it to the retailer. The retailer sells marijuana products to customers. Different state and local cannabis taxes are levied at different points in the supply chain. Some cannabis businesses both grow and sell the drug directly to consumers.

Sources: "Cannabis (Marijuana) and Cannabinoids: What You Need to Know," US Department of Health and Human Services, accessed May 1, 2022; "The Mysterious History of 'Marijuana,'" NPR, July 22, 2013; "State Medical Cannabis Laws," NCSL, accessed August 1, 2022; and various articles on Leafly.com.

THE STATE OF STATE AND LOCAL CANNABIS TAXES

As of September 2022, 19 states have enacted a cannabis tax. This count includes five states—Connecticut, New York, Rhode Island, Vermont, and Virginia—that have not yet begun taxable sales.

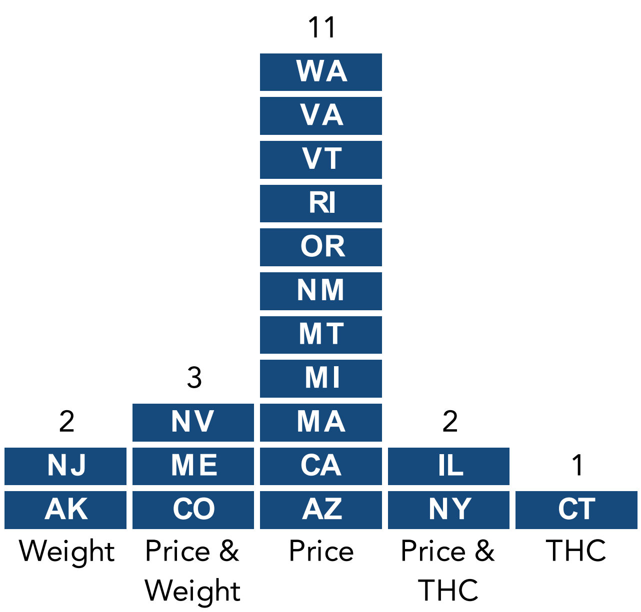
Recreational marijuana possession is also legal in the District of Columbia and Minnesota, but neither government levies a cannabis tax. In 2014, voters in the District of Columbia approved the legalization of recreational cannabis, but Congress prevents the District from regulating and taxing legal transactions.[2] In 2022, Minnesota approved the legal sales of some THC-infused edible products, but the legislation did not create a cannabis tax.[3]

The 19 states with cannabis taxes use three types of taxes: a percentage-of-price tax, a weight-based tax, and a potency-based tax. Some state governments levy more than one of these excise taxes on cannabis (figure 2).

FIGURE 2

State Governments Using Each Type of Cannabis Tax

Local cannabis excise taxes are not included



Source: State government websites.
Note: Connecticut, New York, Rhode Island, Vermont, and Virginia have enacted taxes but have not yet begun taxable sales.

The percentage-of-price tax is the most popular tax on cannabis. Eleven states solely use this type of tax and five states use it in addition to another tax. And local governments that levy a cannabis tax almost exclusively use a percentage-of-price tax, including localities in the three states (Alaska, Connecticut, and New Jersey) that do not use a state-level percentage-of-price tax.[4]

A percentage-of-price cannabis tax typically works like a general sales tax in that the tax is calculated as a percentage of the retail price, it is paid by consumers in addition to their purchase at checkout, and it is remitted to the government by the retailer. (Gross receipts taxes are used by governments in California, Illinois, and New Jersey. These are significantly different taxes for both businesses and consumers. See the section in this report on these taxes for more information.)

However, like other excise taxes, a cannabis tax rate is typically higher than the government's general sales tax rate. State cannabis tax rates range from 10 percent in Michigan, Nevada, and Rhode Island to 37 percent in Washington. Local cannabis taxes are typically capped by the state and set between 2 percent and 5 percent.

Five state governments use a weight-based tax on marijuana. In all five states the cultivator is responsible for paying the tax after selling its product to a distributor or retailer. However, it is assumed that the tax is then incorporated into the purchase price and thus largely passed on to the consumer. The specific calculation of these taxes varies across states and prevents a simple comparison of tax rates.

TABLE 1

State and Local Taxes on Cannabis in Each State

2022

State	Percentage-of-price		Weight-based	Potency-based	General sales tax	
	State	Local			State	Local
Alaska		✓	✓			✓
Arizona	✓				✓	✓
California	✓	✓			✓	✓
Colorado	✓		✓			✓
Connecticut		✓		✓	✓	
Illinois	✓	✓		✓	✓	✓
Maine	✓		✓			
Massachusetts	✓	✓			✓	
Michigan	✓				✓	
Montana	✓	✓				
Nevada	✓		✓		✓	✓
New Jersey		✓	✓		✓	
New Mexico	✓				✓	✓
New York	✓	✓		✓		
Oregon	✓	✓				
Rhode Island	✓	✓			✓	
Vermont	✓				✓	✓
Virginia	✓	✓			✓	✓
Washington	✓				✓	✓

Source: State government websites.
Note: Connecticut, New York, Rhode Island, Vermont, and Virginia have enacted taxes but have not yet begun taxable sales.

Connecticut, Illinois, and New York levy a potency-based tax on cannabis. All three states' taxes are based on the product's THC level because that is the primary psychoactive compound in cannabis. The Illinois tax is a percentage of the retail price, with a higher tax rate on more potent products, while the taxes in Connecticut and New York are per-unit taxes based on the milligrams of THC in the product.

In addition, state or local governments in 15 states levy a general sales tax on the purchase of marijuana. Cannabis purchases are exempt from the general sales tax in Maine and New York. In Colorado, cannabis purchases are exempt from the state's general sales tax but eligible for local government general sales taxes. Alaska does not have a state general sales tax but some local governments use the tax and they can levy it on cannabis. Governments in Montana and Oregon do not levy a general sales tax.

See appendix A for a detailed description of each state's cannabis tax system.

COMPARING STATE AND LOCAL TAXES ON CANNABIS

Because different states use different types of taxes, it is impossible to perform a simple comparison of tax rates across states. For example, what is higher, a 20 percent tax on the retail price or a $10 per ounce tax? The wide variation in the cost of cannabis across states further complicates comparisons. A consumer likely will not notice that the tax rate in State A is lower than in State B if the retail price of cannabis in State A is significantly higher than in State B.

That said, if we apply each state's tax system on the same hypothetical, untaxed purchase, we can get an idea of the relatively low- and high-tax states. Our hypothetical customer purchases an ounce of cannabis flower with a THC level of 20 percent. In every state, the untaxed cost of this purchase is $100. The quantity, THC level, and cost were all chosen for simplicity.

An ounce is a significant amount of marijuana flower. A customer is more likely to purchase a smaller amount, such as a gram (there are roughly 28 grams in an ounce) or an eighth of an ounce (roughly 3.5 grams), but most states with weight-based taxes use ounces as their tax base. A THC level of 20 percent (or 200 milligrams of THC per gram of cannabis) is within the range of average THC levels for marijuana flower.[5] As part of their tax calculations, Colorado and Nevada publish an average price of cannabis sold during wholesale transactions before tax is applied.[6] In July 2022, the average price for an ounce of cannabis flower was roughly $44 in Colorado and $130 in Nevada. Thus, $100 was chosen because it falls between those totals and is a round number. However, the actual cost of an ounce of marijuana at a retail store is almost certainly higher in most states and possibly significantly higher in states with newer markets.

As for our tax calculations, we incorporated any wholesale tax into the purchase price before applying any retail taxes. For simplicity, we assumed the entire wholesale tax is passed on to the consumer. Calculations include all state and local cannabis taxes and all state and local general sales taxes. (See methodology in appendix C for more information.) For example, Maine levies a weight-based tax (wholesale) and a percentage-of-price tax (retail). There are no local cannabis taxes or general sales taxes on cannabis in Maine. Thus, our calculation for the total tax on $100 of untaxed flower in Maine was as follows:

Weight-based tax (for one ounce) + retail tax (retail price x rate) = tax on cannabis
$20.94 + ($120.94 x 10%) = $33.03

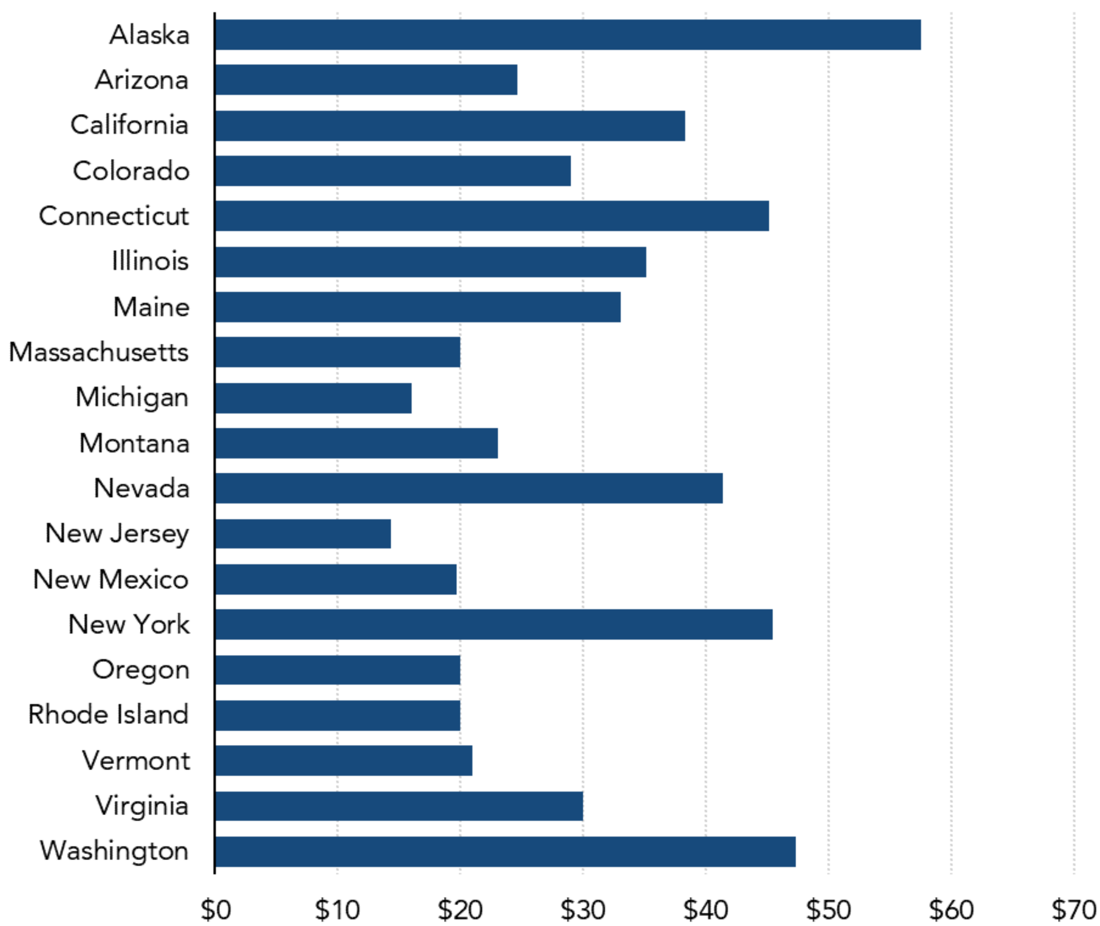
In contrast, Massachusetts does not levy any wholesale taxes. Thus, we applied all its taxes (10.75 percent state excise tax, 3 percent local excise tax, and 6.25 percent general sales tax) on the $100 of untaxed cannabis and summed them ($10.75 + $3.00 + $6.25) to $20.00 of estimated tax.

In our simple calculations (figure 3), Alaska had the highest estimated tax payment with $57.50 on our $100 purchase of untaxed cannabis flower. Alaska's $50-per-ounce tax exceeds all other weight-based tax rates and the remainder was a local percentage-of-price excise tax (Anchorage).

FIGURE 3

Total Tax Paid on the Hypothetical Purchase of an Ounce of Cannabis Flower

The assumed untaxed price for an ounce is $100 in each state



Source: Authors' calculations.
Note: Includes all state and local excise and general sales taxes. See methodology (appendix C) for assumptions.

The next-highest estimated tax payment was Washington's $47.25. All of Washington's taxes (excise and general sales) are percentage-of-price taxes on the retail purchase, and the state's combined tax rate is the highest among states that use percentage-of-price taxes. However, while comprehensive data are not available, a 2019 study by a cannabis data firm found Washington had the least expensive cannabis products when compared with California, Colorado, and Nevada.[7] Similarly, a report produced by the state's Liquor and Cannabis Board also noted the cost of marijuana in the state had fallen significantly since legalization (WSLCB 2019). Thus, while the tax in Washington might be relatively high in our hypothetical, where the cost of cannabis is the same in every state, the actual tax paid by consumers in Washington may be lower than what consumers pay for a similar purchase in states with more expensive cannabis products.

New Jersey had the lowest tax burden ($14.32) in our calculations. New Jersey purposefully established a low tax rate for its weight-based tax to help businesses attract customers when legal sales began in April 2022. However, local governments in New Jersey are allowed to levy a gross receipts tax on cannabis businesses. It is hard to calculate the burden of this tax because it can affect multiple businesses in the supply chain (cultivator, distributor, and retailer). Thus, our calculations may underestimate the actual tax burden on New Jersey consumers.

The next-lowest state was Michigan at $16.00 of estimated tax paid. That is a far more reliable calculation because the state only levies a 10 percent state excise tax and a 6 percent state general sales tax on the purchase price. However, the cost of cannabis in Michigan would also affect what the consumer ultimately pays in that state.

CANNABIS TAX REVENUE COLLECTIONS

Eleven states collected cannabis tax revenue in all 12 months of fiscal year 2022 (i.e., July 2021 to June 2022), with revenue ranging from $28.9 million in Alaska to $774.4 million in California (table 2). Those totals do not include local cannabis taxes (which are not uniformly reported) or collections from state and local general sales taxes (which are not always broken out of a government's total reported general sales tax revenue).

TABLE 2

State Tax Revenue from Cannabis Excise Taxes, FY 2022

State	Total (millions)	Per capita	Share of state tax revenue
Alaska	$28.9	$39	1.2%
Arizona	$132.8	$18	0.6%
California	$774.4	$20	0.3%
Colorado	$353.7	$61	1.7%
Illinois	$466.8	$37	0.8%
Maine	$18.2	$13	0.3%
Massachusetts	$156.7	$22	0.4%
Michigan	$163.5	$16	0.4%
Nevada	$152.3	$48	1.7%
Oregon	$170.6	$40	1.0%
Washington	$517.0	$67	1.5%

Source: State tax websites or direct contact with the state tax department and US Census Bureau.
Notes: Totals do not include local excise tax revenue or revenue from general sales taxes. Michigan's 2022 fiscal year ran from October 2021 to September 2022, but we used its revenue data from July 2021 to June 2022 for consistency. State population totals were from July 2021. Total state tax revenue collections were calculated using the Census Quarterly Summary of State and Local Government Tax Revenue and accessed on September 15, 2022.

On a per capita basis in fiscal year 2022, Washington ($67), Colorado ($61), and Nevada ($48) collected the most cannabis tax revenue.[8] Among states with 12 months of collections, Maine ($13) collected the least per capita cannabis tax revenue. (Montana, New Mexico, and New Jersey collected cannabis tax revenue in fiscal year 2022 but not for the full fiscal year.) As a percentage of total state tax collections that fiscal year, state cannabis tax revenue ranged from 0.3 percent in California and Maine to 1.7 percent in Colorado and Nevada. Cannabis tax collections provided at least 1 percent of total state tax revenue in Alaska, Colorado, Nevada, Oregon, and Washington in fiscal year 2022.

Although we do not have comprehensive data on local cannabis tax revenue and revenue from general sales taxes on marijuana purchases, the limited data suggest governments are collecting considerable additional revenue from these taxes. For example, in Oregon, the state government levies a 17 percent cannabis tax on the retail price and local governments can additionally levy a 3 percent tax. In fiscal year 2022, the state collected $171 million from its tax and local governments collected an additional $27 million.[9] Meanwhile, in Massachusetts in fiscal year 2022, the state's cannabis excise tax (10.75 percent) provided $157 million, while its general sales tax (6.25 percent) produced another $92 million for the state.

Looking at collections over time, 2022 was the first fiscal year that any state saw an annual *decline* in nominal cannabis tax revenue. In fact, among the nine states that collected cannabis tax revenue for all 12 months in fiscal year 2021, five collected less revenue in 2022: California, Colorado, Nevada, Oregon, and Washington. Additionally, collections were essentially flat in Alaska. Notably, these six states have the longest history of legal and taxable marijuana sales.

TABLE 3

State Cannabis Excise Taxes Collections, FY 2021 and FY 2022

Nominal dollars

State	FY 2021 (millions)	FY 2022 (millions)	Percentage Change
Alaska	$28.9	$28.9	0.0%
California	$822.0	$774.4	-5.8%
Colorado	$410.6	$353.7	-13.9%
Illinois	$317.1	$466.8	47.2%
Massachusetts	$112.4	$156.7	39.4%
Michigan	$90.1	$163.5	81.5%
Nevada	$157.8	$152.3	-3.5%
Oregon	$178.3	$170.6	-4.3%
Washington	$554.5	$517.0	-6.8%

Source: State tax websites or direct contact with the state tax departments.
Notes: FY = fiscal year; totals do not include local excise tax revenue or revenue from general sales taxes. Arizona and Maine collected cannabis tax revenue in fiscal year 2021 but not for all 12 months. Alaska's revenue declined by 0.01%.

At this point, definitive reasons for this one-time drop in cannabis tax revenue are unclear. In particular, all aspects of state and local finance were affected by the COVID-19 pandemic and the federal government's response to it in fiscal years 2021 and 2022. Specifically, for cannabis tax revenue, collections may have spiked in 2021 when consumers had disposable income (i.e., stimulus checks and reduced spending options) and a desire to substitute marijuana purchases for more public activities like going to a bar or restaurant. If true, the 2022 cannabis tax collections in these states could merely represent a return to more normal consumption patterns.

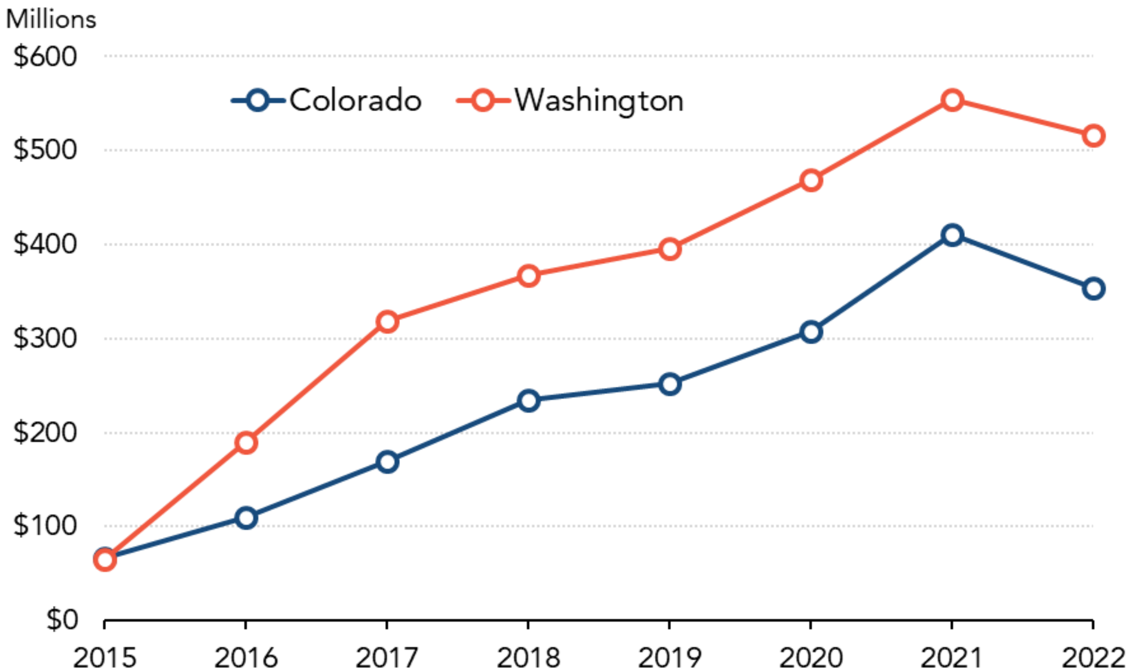
But we also know the price of cannabis declined in some of these states.[10] Price decline is a marker of a successful market—that is, the legal marijuana retailers are successfully meeting consumer demand—but lower prices can contribute to lower tax collections. As such, the states with relatively new legal cannabis taxes could possibly experience similar volatility in their annual cannabis tax collections as their markets evolve.

That said, Colorado and Washington—the two states with the longest history of taxing cannabis—show a mostly steady increase in tax collections over time (figure 4). In the first full year of state tax collections (fiscal year 2015 for both states), Colorado and Washington each collected roughly $66 million in cannabis tax revenue (in nominal dollars). Collections then increased 50 percent or more for both states in the second and third year of collections, reaching $170 million in Colorado and $319 million in Washington in fiscal year 2017. Over the next four years, annual growth continued (if at lower levels), and in fiscal year 2021 Colorado reported $411 million and Washington reported $555 million. In fiscal year 2022, collections fell to $354 million in Colorado and $517 million in Washington.

FIGURE 4

Cannabis Tax Collections in Colorado and Washington, FY 2015–2022

Totals do not include revenue from general sales tax collections



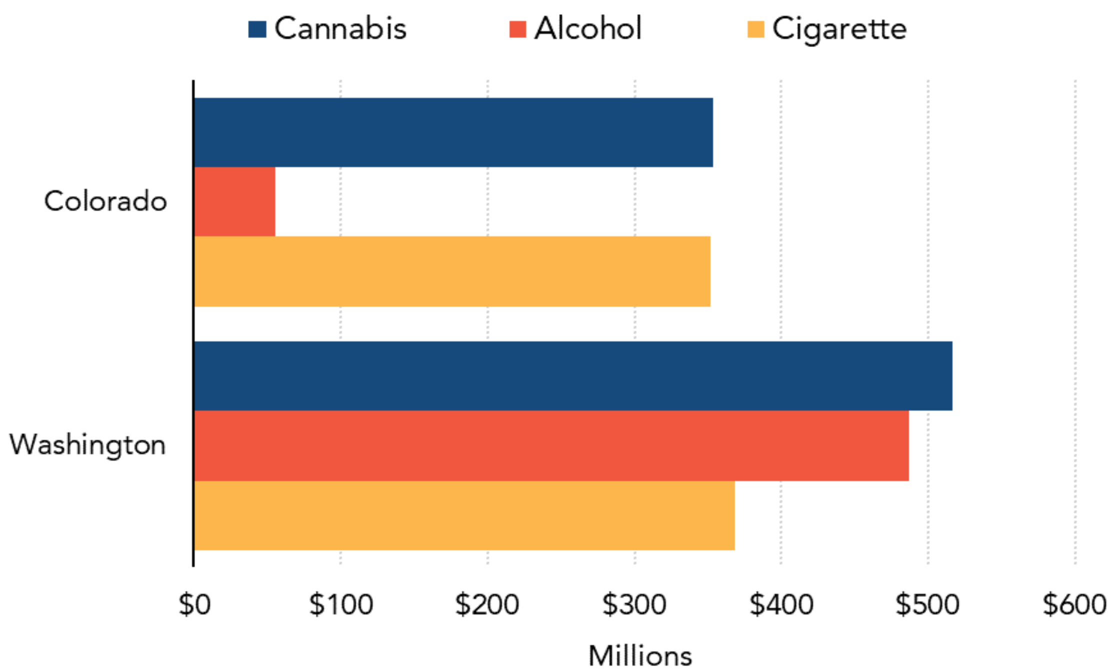
Source: Colorado Department of Revenue and Washington State Liquor and Cannabis Board.
Notes: FY = fiscal year; nominal dollars and fiscal years. Only the state government levies a cannabis excise tax in both states.

And, even with the recent revenue decline, Colorado and Washington both collected more from state cannabis taxes than state alcohol and cigarette taxes in fiscal year 2022 (figure 5). Neither state collects much if any revenue from local excise taxes on alcohol and cigarettes. (Colorado's cigarette tax collections in 2022 were up significantly after a voter-approved rate increase took effect.[11] In 2021, the state collected nearly twice as much cannabis tax revenue as cigarette tax revenue.) Among all 11 states that collected cannabis tax revenue for the entire 2022 fiscal year, eight collected more revenue from cannabis taxes than alcohol taxes, while Colorado, Nevada, and Washington collected more from cannabis taxes than cigarette taxes.

FIGURE 5

State "Sin" Tax Collections in Colorado and Washington

FY 2022



Source: State tax websites or direct contact with the state tax department and US Census Bureau.
Notes: FY = fiscal year; local taxes are not included. Some local governments in Colorado collect cigarette and alcohol tax revenue but the totals are relatively small. Local governments in both states do not collect cannabis tax revenue.

Broadly speaking, the experience of Colorado and Washington demonstrate that a state can collect a significant amount of revenue from marijuana taxes and that collection should mostly increase over time. However, they also show that various factors can affect a state's cannabis tax collections—making it a possibly volatile revenue source.

THE PROS AND CONS OF VARIOUS CANNABIS TAXES

This section further explains how various cannabis taxes work (i.e., who pays the tax and who remits the tax to the government), analyzes the pros and cons of each type of tax, and provides reforms and alternatives that could possibly achieve policy goals. When analyzing the pros and cons of each cannabis tax, we are largely judging the tax on its ability to (1) effectively raise revenue (for broad government services or programs that specifically address negative externalities from cannabis use) and (2) discourage the use of highly potent products, while simultaneously examining (3) if the tax could negatively affect the state's legal cannabis market.

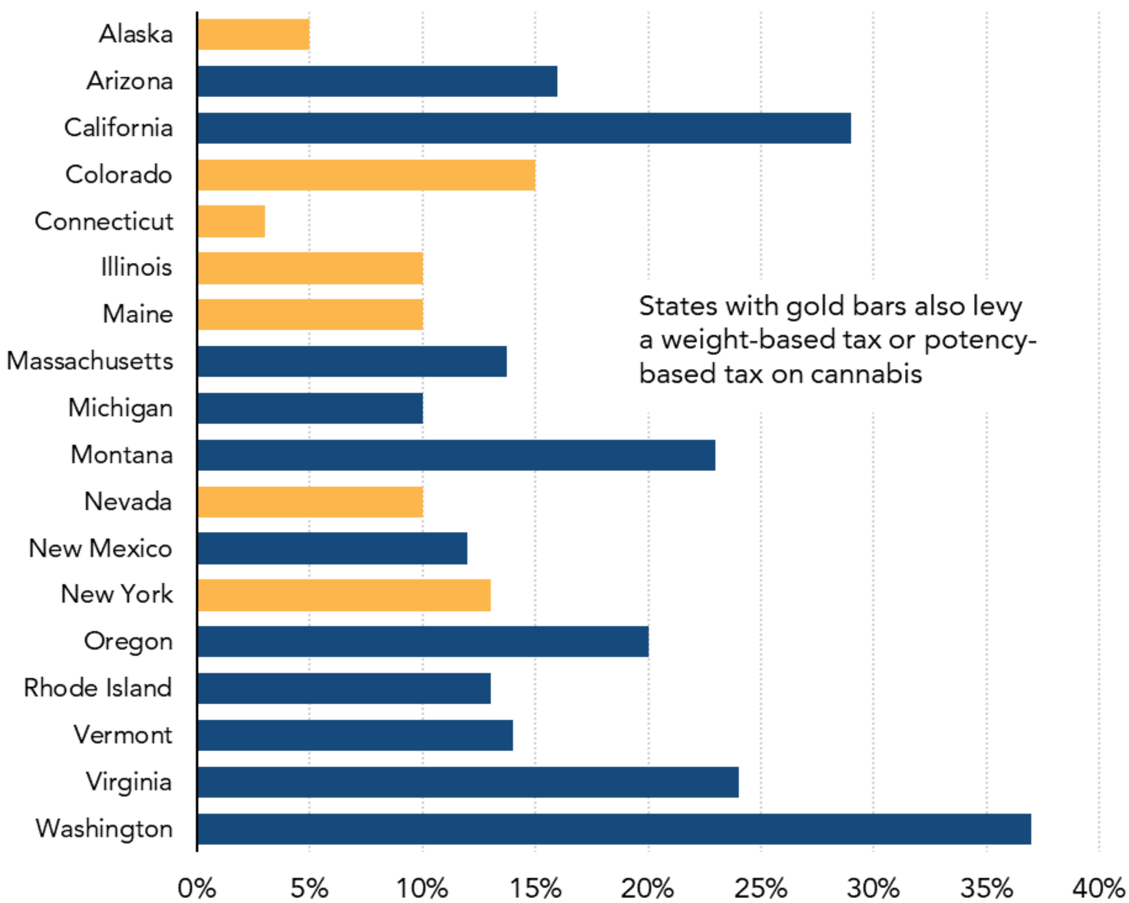
PERCENTAGE-OF-PRICE TAXES

Either the state or its local governments levy a percentage-of-price tax in every state with a cannabis tax. In most states, the tax is calculated as a share of the final retail price, is paid by the consumer at checkout, and remitted by the retailer to the government. As with other excise taxes, a cannabis percentage-of-price tax rate is typically higher than the government's general sales tax rate (figure 6).

FIGURE 6

Percentage-of-Price Cannabis Tax Rates

Combined state and local excise tax rates; does not include general sales tax rates



Source: State tax and revenue websites.

Notes: California's local tax is a gross receipts tax, but we use the Legislative Analyst's Office (LAO) estimate of the average retail tax burden (14 percent). New Jersey local governments also can levy a gross receipts tax but it is omitted because there is no estimate for the retail tax burden. Illinois's state tax (7 percent) is collected by the cultivator and not the retailer but it is included in this chart because it is only collected on that one transaction. Illinois's local tax rate is capped at 3 percent for municipalities (shown in chart) and 3.75 percent for counties, but both a county and municipality can levy the tax, possibly creating a 6 percent rate for the consumer (the max county rate is 3 percent if a municipality also levies a tax). In Connecticut, only local governments levy a percentage-of-price tax (3 percent).

Governments in California, Illinois, and New Jersey levy a gross receipts tax. This type of tax is calculated as a percentage of the price of cannabis, and thus we included these states in our count of states with a percentage-of-price tax, but a gross receipts tax works differently than a retail tax and has very different pros and cons. Thus, gross receipts taxes are discussed separately at the end of this section.

Pro: Relatively simple to establish and administer

A Vermont government report assessing possible marijuana taxes recommended the state adopt a percentage-of-price tax because it is "the simplest option to allow for a quick and streamlined rollout."[12]

The tax is simple in part because 45 states and the District of Columbia already administer a general sales tax and thus have systems in place to monitor and audit retailers. In fact, in some states with a general sales tax, retailers can simply add cannabis to an existing tax account after successfully obtaining a license to sell marijuana.

And states that do not levy a general sales tax typically use a similar tax, like a hotel tax or rental car tax, that makes a percentage-of-price cannabis tax an appealing option. Indeed, Montana and Oregon do not levy a general sales tax but both use a percentage-of-price cannabis tax. The Oregon legislature even switched from a weight-based tax (included in the ballot measure that legalized marijuana) to a percentage-of-price tax before legal sales began because it decided the percentage-of-price tax was simpler for both businesses and governments.[13]

Ultimately, a percentage-of-price tax means governments do not need to create and fund a new tax administration system for measuring, reporting, and tracking the weight or potency of cannabis. That makes it easy for businesses to comply with the tax and prevents additional compliance costs from being included in the retail price of marijuana.

Con: Creating a relationship between cannabis price and revenue collections

As with any percentage-of-price tax, the retail cost of the item taxed will affect what the government collects in revenue. This is not inherently problematic, but because most states with a cannabis tax dedicate cannabis tax revenue to specific spending programs, a revenue decline could negatively affect those public programs and services.

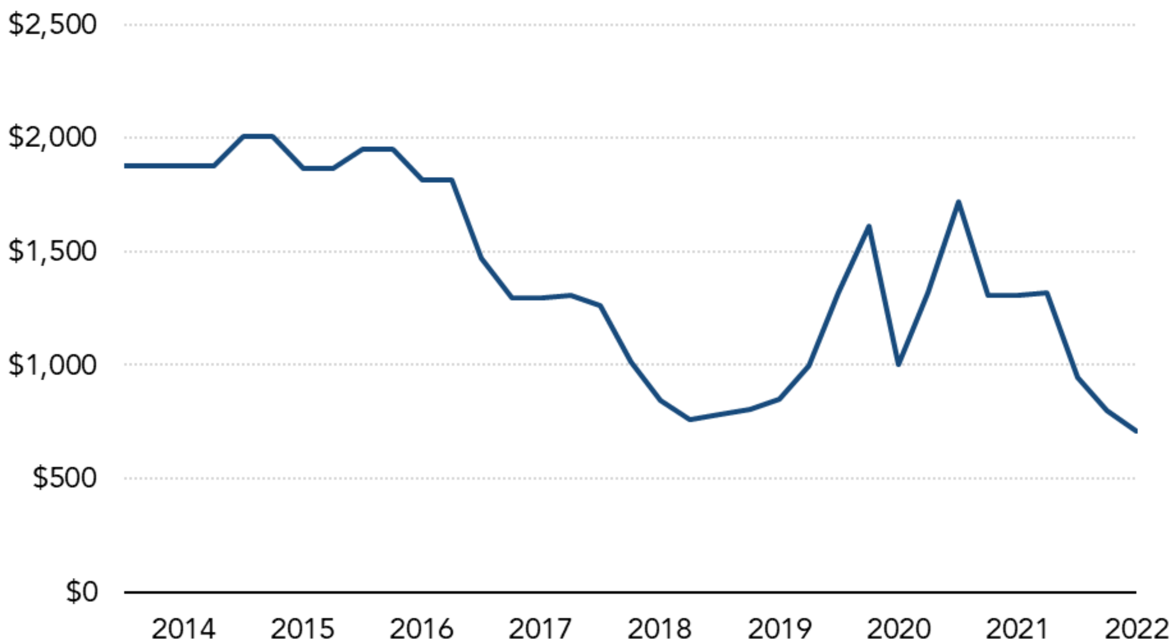
Early evidence shows cannabis prices tend to fall over time. In Colorado, the average wholesale price of a pound of flower (or bud) fell from $1,876 when sales began in January 2014 to $709 in July 2022.[14] Notably, the price of flower in Colorado has not fallen consistently during the past eight years (figure 7). In fact, the price rose from $781 in January 2018 to $1,316 in January 2020 and then climbed higher during the early months of the COVID-19 pandemic. But this price volatility is another concern as it makes forecasting marijuana tax collections difficult.

Fiscal year 2022 was the first year that annual cannabis tax collections fell in California, Colorado, Nevada, Oregon, and Washington, and all use a state percentage-of-price cannabis excise tax. The pandemic and the federal government's response to it possibly momentarily inflated revenue in 2021, but it is also true that cannabis prices fell in some of these states and that in turn negatively affected revenue collections.

FIGURE 7

Average Price of Cannabis Flower in Colorado

Per pound



Source: Colorado Department of Revenue.
Notes: Median market prices were reported twice (January and July) in 2014 and 2015 and quarterly in all other years. "Flower" is called "bud" in the Colorado report.

Possible reforms and alternatives

If maintaining marijuana tax revenue growth is a concern then policymakers could increase the excise tax rate as prices fall. Specifically, legislation could establish a relatively low tax rate for the first few years of sales when the price is relatively high and schedule rate increases in later years when it is assumed a more mature market will engender lower prices.

For example, New Mexico's tax rate was set at 12 percent for its first three years of legal sales, but starting in 2025 the rate will increase one percentage point annually until it reaches 18 percent in 2030.[15] In contrast, in neighboring Arizona, the state's tax rate was set at 16 percent with no scheduled changes. Or, instead of predetermined annual increases, legislation could tie a state's tax rate to the average cannabis market price at a regular interval and thus create an automatic rate increase (or decrease) as prices change.

Alternatively, a government could see a cannabis tax that declines along with market price as beneficial because the relatively smaller tax payment could help legal businesses trying to keep retail prices competitive.

In contrast, a tax based on weight or potency could act as a price floor and make it more challenging for legal cannabis sellers to compete with the black market as prices fall.

GROSS RECEIPTS TAXES ON CANNABIS

The state government of Illinois and local governments in California and New Jersey levy a gross receipts tax on cannabis. A gross receipts tax is a percentage-of-price tax that is levied on the sellers of the product rather than the consumer. That is, businesses pay a percentage of their total sales (i.e., gross receipts) as tax to the government rather than consumers paying a percentage of their purchase at checkout. However, while a retail tax occurs only once, a gross receipts tax can occur multiple times in the supply chain. That is, the cultivator, distributor, and retailer could all have to pay the gross receipts tax. As a result, a gross receipts tax can cause "tax pyramiding," which drives up the ultimate tax payment well beyond its listed rate. It is assumed that the tax is then largely passed onto the consumer in an inflated purchase price.

The state government in Illinois levies a 7 percent tax on a cultivator's gross receipts but critically the tax only applies on the first sale of cannabis.[16] Because only one transaction in the supply chain is taxed, we can assume that Illinois's tax will not have the pyramiding effect of other gross receipts taxes.

In contrast, the local gross receipts taxes in California and New Jersey can be applied on multiple businesses in the supply chain and this will inflate the price paid by consumers. For example, most local tax rates in California are below 8 percent,[17] but a state government report estimated that the average local tax paid by consumers as a share of their final purchase is closer to 14 percent because the taxes build on each other from cultivator to distributor to retailer (Petek 2019). A similar analysis of the New Jersey gross receipts tax is not available, but the tax paid by consumers is certainly higher than the listed 2 percent rate because of tax pyramiding.

In addition, by taxing multiple businesses in the supply chain, gross receipts taxes are far more complex and burdensome to businesses than simpler taxes on the retail purchase.

WEIGHT-BASED TAXES

Five states use a weight-based cannabis tax. In each state the cultivator is responsible for remitting the tax to the government, but the states calculate their taxes differently.

Alaska, Maine, and New Jersey use a per-unit weight-based tax on cannabis. In each state the cultivator weighs the harvested plant to be sold, multiplies that weight by a tax rate, and remits the tax owed to the state after making a sale to a distributor or retailer. Alaska and Maine use different tax rates for different parts of the plant, with flower taxed at the highest rate because it is the most potent part (i.e., contains the highest concentration of THC). Alaska levies a $50-per-ounce tax on flower and $25-per-ounce tax on leaves while

Maine levies roughly a $20-per-ounce tax on flower and a $6-per-ounce tax on leaves. (The state of Maine also levies a percentage-of-price tax whereas the weight-based tax is Alaska's only state tax.)

Meanwhile, New Jersey uses the same tax rate for all parts of the cannabis plant. The state can also change its rate based on the average price of cannabis. When sales began in April 2022, the state's tax rate was set at $1.10 per ounce of cannabis, or 0.33 percent of the average price.[18] But after nine months of legal sales a government board can choose to change the tax rate based on the following price guidelines: the tax rate can go up to $10 per ounce if the average retail price of an ounce of cannabis exceeds $350; up to $30 per ounce if the average price is less than $350 but at least $250; up to $40 per ounce if the average price is less than $250 but at least $200; and up to $60 per ounce if the average price is less than $200. The goal is to help legal sellers compete with the black market by keeping taxes low when prices are high but allowing rate increases as the price drops in the future.

Colorado and Nevada use a different calculation for their weight-based taxes. Both create an artificial cannabis price (based on statewide average wholesale prices), multiply that artificial price by the weight of the cultivator's cannabis plant to be sold, and then levy a tax rate on that product. Different parts of the plant are given different artificial prices in both states. The tax rate is 15 percent in both states but the tax paid by cultivators differs because average prices vary. For example, in July 2022, Colorado's "retail marijuana average market rate" for flower was $709 per pound, so a cultivator selling 100 pounds of flower would pay $10,635 in tax.[19] At the same time, Nevada's "fair market value at wholesale" price for flower was $2,074 per pound, so a cultivator selling 100 pounds of flower would pay $31,110 in tax.[20]

Colorado and Nevada create an artificial price instead of simply levying a tax rate on the weight of the cannabis plant because it helps them tax vertically integrated companies. That is, a business that both cultivates and sells retail cannabis directly to consumers does not actually make a cultivator to distributor or retailer transaction, but with a government-set price the state can create a taxable event as if there was one.

Pros: Cannabis price does not affect tax collections and a record of legal cannabis is created

The weight-based taxes in Alaska and Maine are not affected by the market price of cannabis and thus tax collections in these states could be more stable and predictable than in states that use a percentage-of-price tax. Further, if a weight-based tax rate is indexed to inflation then tax collections should grow over time assuming consumption does not decline (Davis, Hill, and Phillips 2019). That said, Alaska's annual cannabis tax revenue did not increase in fiscal year 2022.

Colorado and Nevada do not benefit from this because price is part of their tax calculations. For example, in fiscal year 2022, annual tax collections in Colorado and Nevada fell by roughly equal shares for both their percentage-of-price tax and weight-based tax. New Jersey's weight-based tax is also affected by prices, but because it is an inverse relationship the state's rules could support tax revenue growth over time.

Administration, and specifically audits of cultivators, is another possible benefit of taxing by weight because the states create a record of what cultivators grow and sell. When a state only taxes retail transactions this record does not exist and there is a chance that cultivators are selling untaxed crops.

In Maine, voters approved a ballot initiative legalizing marijuana that only included a percentage-of-price tax. However, the legislature added a weight-based tax before legal sales began because policymakers wanted a way to monitor cultivators and keep revenue collections stable.[21] Policymakers kept the percentage-of-price tax (at a lower tax rate) and Maine now uses both types of taxes.

Cons: Setting up a new tax system and possibly creating burdens for businesses

If a state wants to tax marijuana by weight it must create, staff, and fund a new division of tax administration to audit the tax. And once implemented, if the weight-based tax does not change with price, it can create a price floor that could harm legal businesses trying to compete with black market sellers.

Five states successfully created and maintain weight-based taxes, but these two obstacles are large enough that most states with legal cannabis have decided against the tax. Further, California and Oregon repealed their weight-based taxes.

In June 2022, California eliminated its weight-based tax and shifted the point of collection for its percentage-of-price tax from distributors to retailers.[22] (Under the old system, the distributor was responsible for remitting both state cannabis taxes.) When calling for these reforms, Governor Gavin Newsom said the changes would "greatly simplify the [state's] tax structure, remove unnecessary administrative burdens and costs, … and stabilize the cannabis market with policies that are more transparent and can better adjust to market changes."[23]

Possible reforms and alternatives

A state concerned with establishing and staffing a new administration system for a weight-based tax could originally levy a percentage-of-price tax on legal cannabis sales and then use the resulting revenue and time to add a weight-based tax later. Using both types of taxes also could help the state adapt to future cannabis price changes and federal reforms.

Alternatively, a state could create rules and regulations outside of its tax system for monitoring cannabis products. In fact, states that allow recreational or medical marijuana sales already use "seed-to-sale" tracking systems that monitor cannabis products produced by licensed cultivators.[24] In the past this work was done by third-party contractors, but Washington recently became the first state to develop its own system.[25]

POTENCY-BASED TAXES

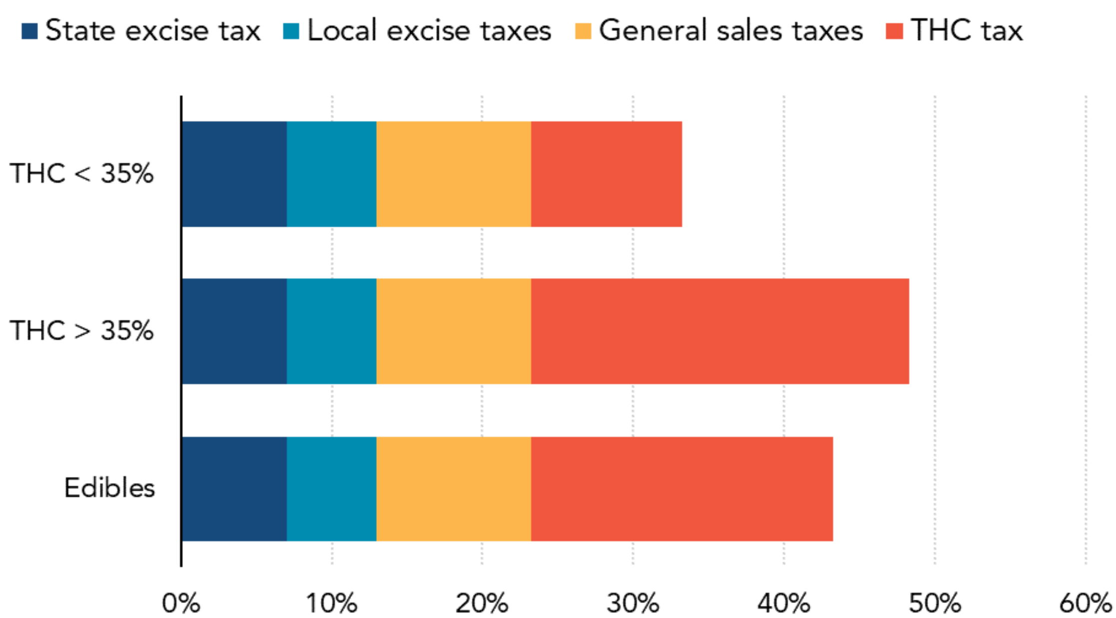
A potency-based tax is calculated based on the cannabis product's level of THC, the primary psychoactive compound in cannabis. This type of tax roughly mirrors state alcohol taxes where higher tax rates are applied to products containing a higher concentration of alcohol (i.e., a state's per gallon alcohol tax rate is higher on liquor than wine and higher on wine than beer).

Illinois was the first state to enact a potency-based tax. The state taxes cannabis products with a THC level above 35 percent at 25 percent of retail price and cannabis products with a THC level below that threshold at 10 percent of retail price. In addition, it taxes all marijuana-infused products (e.g., edibles) at 20 percent of retail price. Illinois's potency-based tax is paid by the customer and remitted by the retailer.

FIGURE 8

Illinois's THC-based Tax Rates

As part of state's overall cannabis tax system



Source: Illinois Department of Revenue.
Note: The "state excise tax" is the tax on cultivators' gross receipts. It is collected by cultivators and built into the purchase price. The listed 7 percent rate is used in the graph for simplicity even though the rate paid by consumers is different. The other taxes are paid by consumers and remitted by retailers. Chicago is used for local tax rates. Edibles include all marijuana-infused products.

Connecticut and New York also recently created potency-based taxes but their taxes are based on milligrams of THC in the marijuana product. Taxable sales have not yet begun in either state. Connecticut's rates are 0.625 cents per milligram of THC in cannabis plant material or flower, 2.75 cents per milligram of THC in edibles, and 0.9 cents per milligram of THC in all other products. Customers will pay Connecticut's tax when they make their purchase and retailers will remit it to the state.

New York's rates are 0.5 cents per milligram of THC in flower, 0.8 cents per milligram of THC in concentrates, and 3.0 cents per milligram of THC in edibles. In New York, distributors are responsible for making tax payments to the state so the tax will be built into the price paid by consumers.

Pros: Incentivizing consumers to purchase less potent cannabis

A percentage-of-price tax or weight-based tax is a blunt instrument for reducing cannabis consumption. A high tax could discourage legal purchases of highly potent products but also push some consumers into the black market, while a low tax rate could help legal sellers compete with illegal sellers but not provide an effective barrier to the use of highly potent products—particularly for younger users.

In fact, these types of taxes might encourage the selling and purchasing of high-THC products. For example, if two products are taxed the same, but one has a higher THC level, a consumer might prioritize the more potent product because it delivers more THC at a lower cost. There is evidence that high-THC products cost more than low-THC products, but this is not universally true, and there is no relationship between THC and weight (Petek 2019). But a potency-based tax specifically steers consumers away from the high-potency cannabis products that ostensibly have the highest risks to consumers (Stuyt 2018) while keeping taxes on other products low enough to keep consumers in the legal market. A recent California report recommended a switch to a potency-based tax because it concluded reducing harm is the best reason to tax cannabis and a potency-based tax is the best tool to achieve that goal (Petek 2019).

Each state with legal cannabis sales already tests for THC levels at labs, which are used for various health and safety checks, and the labs' THC measurements are printed on products labels.[26] That said, most labels currently report THC as a percentage (Illinois's tax base) but not always in milligrams (Connecticut's and New York's tax base).

Cons: Establishing an administrative system and monitoring the testing system

Like a weight-based tax, a potency-based tax requires the state to establish and fund a new administrative system. Further, while labs in every state test cannabis for THC, the method of testing and the government regulation of that testing varies significantly across states (Hansen et al. 2020).

Overall, large-scale cannabis testing is a relatively new industry that has numerous limitations and problems. Lab testing failure and even fraud have been reported.[27] In 2018, the National Cannabis Industry Association, a trade group, published a report with 16 recommendations for cannabis testing policy, covering numerous topics including sample sizes, laboratory accreditation, and records retention policy. Detailing the specific challenges of testing for THC and monitoring labs is beyond the scope of this report, but the challenges have deterred some states from pursing this type of tax. The Vermont report that ultimately recommend a percentage-of-price tax concluded that a potency-based tax "would be [too] complex and expensive to monitor and control."[28] A Washington study similarly concluded that the benefits of a potency-based tax are not yet fully understood but the costs are known and large. However, not harming Washington's current revenue collections was an important part of the study's mission, and it noted that a state creating a new cannabis tax system might face a different cost-benefit calculation.

Possible reforms and alternatives

The testing and monitoring of THC in cannabis products could become simpler and more uniform if Congress reforms federal cannabis laws. Thus, a state could levy an easier to administer percentage-of-price tax instead of or in addition to a potency-based tax until there were advances in testing and labeling. Alternatively, some states limit high-potency products with regulation instead of a tax. For example, Montana does not allow the sale of flower with THC exceeding 35 percent and edibles with more than 10 milligrams of THC per serving.[29]

GENERAL SALES TAXES

Forty-five states and the District of Columbia levy a general sales tax. The tax is calculated as a share of the purchase price, paid by consumers at checkout, and remitted by retailers. The tax is solely a means for governments to raise revenue from economic activity. It is not used to discourage consumption or account for a product's negative externalities. In that sense, a general sales tax levied on a cannabis purchase is not a cannabis tax in the same way that a general sales tax levied on a book purchase is not a book tax. However, a discussion of the general sales tax is included in this report because policymakers debating cannabis taxes should consider how the two taxes will interact with each other and affect their state's marijuana market.

Pros: Additional revenue and a simple tax for local governments

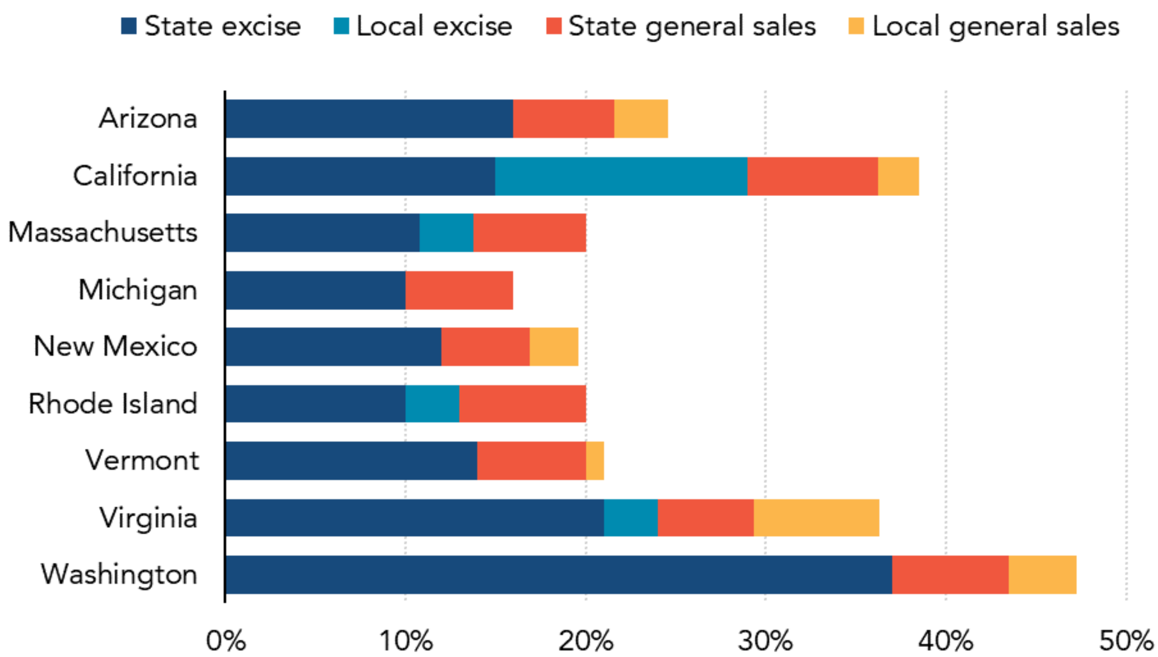
Applying a general sales tax to cannabis purchases can increase the amount of revenue governments collect from marijuana consumption. Further, whereas cannabis tax revenue is often dedicated to specific services, most general sales tax collections go to a government's general fund. For example, most revenue from Nevada's cannabis taxes goes to public education programs but revenue from its general sales tax on marijuana purchases goes to the state's general fund and supports health care, transportation, and numerous other programs.

The general sales tax also is a relatively simple way for local governments to collect revenue from marijuana because the tax and its administration already exist. It is particularly easy if the state also levies a general sales tax on cannabis—but not necessary. Local governments in Alaska and Colorado levy general sales taxes on cannabis purchases even though Colorado's state government exempts marijuana purchases from its tax and Alaska's state government does not levy a general sales tax.

FIGURE 9

Combined Percentage-of-Price Tax Rates on Cannabis

Combined state and local retail excise taxes and general sales taxes



Source: State revenue websites.
Notes: Chart only shows states that levy percentage-of-price taxes for simplicity. Phoenix, Los Angeles, Albuquerque, Burlington, Richmond, and Seattle were used for local tax rates. California's local excise tax is a gross receipts tax, but the LAO estimated (14 percent) for the average retail tax burden was used.

Cons: Possibly contributing to a high level of taxation

If a government levies both an excise tax and a general sales tax on cannabis purchases the combined tax could possibly push the purchase price to a point where some consumers seek out illegal sales. This is not a critique of levying the general sales tax on marijuana purchases. In fact, public finance experts largely agree that a general sales tax should apply to a broad base of consumption and thus include cannabis. But if governments levy both taxes they should be aware of the combined burden (figure 9). For example, in Seattle, Washington, a consumer pays a combined 47.25 percent tax on their retail purchase of cannabis: a 37 percent state excise tax, a 6.5 percent state general sales tax, and a 3.75 percent local general sales tax. If anything, the effect of a general sales tax on the purchase price would be even larger for states that levy their cannabis tax at the wholesale level because the general sales tax would apply to an excise tax-inflated retail price.

Possible reforms and alternatives

Following the same logic that cannabis taxes should start low and rise as the market matures and retail prices fall, governments could initially exempt marijuana purchases from their general sales tax and only make the transaction taxable after a set number of years or when prices fall to a certain level. This could help keep the price paid by consumers relatively low and mitigate black market sales in the first few years of legalization but allow the governments to collect additional revenue from cannabis sales at a later point.

Or a government could permanently exempt marijuana purchases from its general sales tax, as state governments in Colorado, Maine, and New York do. Although a general sales tax is levied on nearly all tangible goods, governments sometimes exempt transactions that are subject to an excise tax. For example, all states levy a motor fuel tax but most states do not levy their general sales tax on gas purchases in part to lower the consumer's tax burden at the pump.[30] Alternatively, a government could levy a general sales tax but not an excise tax. This is how many states treat the purchase of medical marijuana. (See box 2 on medical marijuana taxes.)

GOVERNMENT-RUN DISPENSARIES

Governments operate liquor stores in 22 states, generating revenue through various taxes, fees, price mark-ups, and net profits. No state currently operates a retail cannabis store, but New Mexico, Pennsylvania, and Rhode Island have debated the idea.[31] As with alcohol sales, there could still be private cannabis cultivators and distributors, but the government could control what products are sold and at what price, plus it could decide where stores are located and how those stores advertise.

As a member of the Rhode Island Department of Business Regulation argued during its legalization debate, government-run dispensaries give the state "the best tools, the strictest controls, and the most flexibility."[32] In Canada, which legalized cannabis sales in 2018, some provincial governments operate marijuana dispensaries, but with various degrees of private seller competition: Ontario's government operates retail stores and allows private stores, Alberta's government controls online sales but allows private companies to run retail stores, and British Columbia's government operates stores and online sales but allows private venders to sell cannabis products that can be picked up at government stores.[33]

Pros: Control

Government-run stores give the government control over the supply, quality, potency-testing, marketing, and the price of cannabis.

Cons: Possibly unpopular with consumers and limits business opportunities

As with liquor stores, government control means some businesses or products will be excluded from the legal cannabis market. As a result, consumers may face higher prices and fewer options (Siegel et al. 2013). This could push some consumers to seek out illegal sellers or to purchase legal marijuana in a state with private operators.

In addition, private-owned cannabis retail stores are an opportunity for business and job growth within the state. Specifically, some states have touted cannabis legalization as a way to create economic opportunities for Black- and Latino-owned business.[34] While there is not yet evidence that this has occurred—in fact, whiteowned businesses typically dominate marijuana operations—a government-run operation would preclude opportunities for minority-owned businesses.[35]

There is also some concern that the federal government, while willing to permit private retail sales, might prevent a state from operating a cannabis dispensary as long as the drug remains illegal at the federal level. For example, Utah intended to create a government-run system for its medical marijuana system but abandoned the idea over fears that the federal government might prosecute public employees.[36] No state currently operates a government-run store for medical marijuana.

Possible reforms and alternatives

A state interested in operating a cannabis dispensary might choose to wait for federal law changes until pursuing this option. However, allowing private retailers to operate in the state before then might undercut some of the benefits of a government-run system. Governments can also regulate private cannabis businesses without operating a dispensary by setting limits on the potency of cannabis products, establishing minimum prices for wholesale marijuana units, and controlling where private dispensaries can and cannot operate.[37]

BOX 2

Taxes on Medical Marijuana

In November 1996, California became the first state to allow residents to purchase cannabis for medical use. As of September 2022, 37 states and the District of Columbia allow comprehensive, publicly available medical marijuana programs.

Medical marijuana is typically restricted to patients with a recommendation or referral from a doctor. As a result, there are often significant obstacles to purchasing medical cannabis (e.g., scheduling a doctor appointment, paying application fees, choosing from restricted products) that limit its consumption.

Ten of those 37 states levy an excise tax specifically on medical marijuana. This count includes Montana and New York, which both have an excise tax on medical marijuana separate from their excise tax on recreational cannabis. All medical marijuana taxes are percentage-of-price taxes but some states tax the retail transaction while others tax the cultivator’s or retailer’s gross receipts. Regardless, the tax rates are low, ranging from 4 percent in Missouri to 10 percent in West Virginia.

In addition, both medical and recreational cannabis are subject to the same excise tax in California (15 percent retail excise tax), Illinois (7 percent cannabis cultivation privilege tax), and Nevada (15 percent weight-based tax). All other states with legal cannabis markets exempt medical marijuana from their recreational cannabis taxes.

The combination of low tax rates and a restricted consumer base means states do not collect much revenue from medical marijuana taxes. For example, Pennsylvania levies a 5 percent gross receipts tax on growers and processors, and during its first year of operation the state collected $2 million in revenue. Further, revenue from these taxes and related license fees typically fund the administration and regulation of the medical marijuana program—not broader government programs and services.

Sources: National Conference of State Legislatures, “State Medical Cannabis Laws,” updated July 17, 2022; Bloomberg Tax research platform, accessed May 10, 2022; Sam Ruland, “First Year of PA's Medical Marijuana Sales—Thousands of Patients, Millions of Dollars,” *York Daily Record*, February 22, 2019.

CANNABIS TAX POLICY GOALS AND TRADE-OFFS

State and local governments levy different taxes for different reasons. A general sales tax is applied to a broad base of consumption and used to generate revenue but not to discourage purchases. Special sales taxes on hotels, restaurants, and event tickets are largely a way for governments to collect revenue from nonresidents. A motor fuel tax is not meant (at least in the US) to discourage gas consumption but is considered a "user fee" because the resulting revenue is primarily dedicated to transportation spending. A cigarette tax is purposefully levied to discourage people from purchasing cigarettes and to account for the negative public consequences of smoking, such as increased health care costs.

As state and local policymakers analyze different cannabis taxes, they should think through what they hope their tax system will accomplish. In the following sections we discuss four possible goals for taxing marijuana: raising revenue for broad government services, generating revenue for programs that deal with past drug-enforcement policies, addressing cannabis use externalities, and discouraging the use of highly potent cannabis products.

However, every cannabis tax comes with a significant trade-off: possibly harming the ability of legal businesses to sell marijuana, the underlying goal of legalization. Though it is beyond the scope of this paper to quantify the precise relationship between cannabis tax levels and legal purchases, the relationship between cost and consumer choice is well established.

Related, policymakers should recognize that several factors can drive up the price of legal cannabis even before a tax is levied. These factors include license fees, other regulatory compliance costs, and, because of the federal ban on marijuana, a cannabis business's inability to access financial services (e.g., bank deposits and credit card transactions) and relatively high federal income tax payments (i.e., marijuana businesses cannot take most federal income tax deductions and credits).[38]

Thus, policymakers should be wary of narrowly focusing on any of these tax goals at the expense of creating a functioning legal market. In fact, if promoting legal sales was a state's only goal it could forgo any excise tax on marijuana and only apply the state and local general sales tax.[39] But to date every state with a broad cannabis market has enacted a cannabis excise tax.

Here are four possible reasons to levy a tax.

Raising revenue for broad government services

The ability to create a new revenue stream—and particularly one paid by a small segment of the population—has been central to nearly every state marijuana legalization debate. And cannabis taxes have delivered, producing hundreds of millions of dollars in revenue for government programs and services. Indeed, in some states, cannabis taxes already provide more revenue than other sin taxes, such as cigarette taxes and alcohol taxes.

Most states with a cannabis tax dedicate at least a portion of the resulting revenue for specific programs and services, with many states using the revenue for programs that have no relationship to the drug. For example, Arizona spends one-third of its revenue on community colleges, Colorado spends all of its revenue on public school construction, Michigan uses a majority of its revenue for K-12 public schools and road repair and maintenance, and Washington spends half of its revenue on health care programs. (See appendix B for every state's dedicated spending breakdown).

If raising revenue for public programs and services is the primary goal of a cannabis tax, then any of the three types of taxes could work as long as the rate is set at a relatively high level. Although high taxes can push users to the illegal market or a neighboring state, the tax rate would need to be set extremely high before the loss of customers offset the state's tax collections on legal purchases. For example, California calculated that the state would need to significantly increase its percentage-of-price tax rate (possibly as high as 80 percent) before risking a corresponding drop in revenue (Petek 2019).

However, that same report noted California's numerous and burdensome taxes were discouraging cannabis business creation and growth. That is, the state was raising revenue, and could possibly get more with a higher rate, but it was not collecting as much as it possibly could under a more optimal cannabis tax system that encouraged more business creation and consumption.

In June 2022, California repealed its weight-based cannabis tax in an effort to lower and simplify its taxes. Although a selling point for the weight-based tax is that its revenue collections should not fall as marijuana prices decline over time, California's policymakers decided the state's weight-based tax was onerous and slowing the development of the state's cannabis industry.

Notably, the desire to fund government programs with cannabis tax revenue was itself a central problem as California debated cannabis tax reforms. Specifically, a major complication was maintaining the state's current levels of revenue collection under a different tax system. Although policymakers were disappointed with the state's legal cannabis market and its resulting revenue, numerous state programs—including education, environmental protection, and law enforcement—were reliant on the funds the existing system was producing. As a result, the state had to transfer funds from other revenue sources to those programs as part of its cannabis tax reform legislation to ensure no program saw a drop in funding. The legislation also requires a percentage-of-price tax rate increase if the new cannabis tax system does not deliver enough revenue.[40]

Overall, the more reliant a state becomes on cannabis tax revenue, the harder it may become to reform cannabis taxes as events and markets change.

Generating revenue to address past drug-enforcement policies

Increasingly, states are using revenue from taxes on marijuana to address costs related to the government's past enforcement of drug laws. While cannabis use rates among Black and white populations are similar, Black Americans have been arrested for possession and distribution at rates three to four times higher than white

Americans (ACLU 2020; Bender 2016; Center for Behavioral Health Statistics and Quality 2021; Pearl 2018). These convictions and imprisonments created acute negative costs for those individuals and families, including severely limiting their lifetime earnings (Craigie et al. 2020). The number of adults arrested and incarcerated for cannabis possession and distribution also resulted in direct budgetary costs for state and local governments in the form of police and corrections expenditures (Miron 2018).

According to recent research, the decriminalization of marijuana has had limited effects on reducing racial disparities in arrests for drug prosecution (ACLU 2020; Bender 2016; Gunadi and Shi 2022; Sheehan et al. 2021). But spending cannabis tax revenue on programs designed to alleviate these disparities might help governments address such inequities.

Illinois, Massachusetts, New Jersey, New York, and Virginia all dedicate a portion of their cannabis tax revenue to programs that support economic and workforce development in communities disproportionally harmed by previous drug laws and enforcement. Alaska and Arizona use marijuana tax revenue to support criminal justice reform programs. Montana and New Mexico use funds to help residents expunge past cannabis-related offenses.[41] In addition, Rhode Island transfers all cannabis license fees into a social equity fund designed to support communities harmed by marijuana criminalization.

However, as with using cannabis tax revenue for broader government services, tying these expenditures solely to cannabis tax revenue might make them vulnerable if and when a state's collections decline or slow.

Addressing cannabis use negative externalities

A negative externality is the cost of using a product that is not captured by the retail price. For example, smoking cigarettes causes cancer and other health issues and that drives up the cost of health care for everyone—not just the smoker. A cigarette tax is in part meant to address that externality.

If accounting for the negative externalities of cannabis use is the goal, then any of the cannabis taxes can work. However, determining the right level of tax is challenging.

Taxes most effectively address externalities with a tight "dose and response" relationship (Marron 2015). For example, the number of cigarettes a person smokes (dose) is directly linked to their chances of developing lung cancer (response). There is not a similarly tight dose and response relationship for cannabis use.

To be clear, well-established negative effects of cannabis use exist, including impaired decision-making, dependence or addiction to the drug, and various health problems including increased risk of vascular and respiratory diseases (Cuttler et al. 2021; di Forti et al. 2019; Gruber and Sagar 2017; Hines et al. 2020; Stuyt 2018). But cannabis use also has documented benefits, including alleviating chronic pain and mitigating the negative effects of various diseases (e.g., sclerosis) and medical treatments (e.g., chemotherapy).

Separating medical and recreational cannabis markets is a possible step that policymakers can take to tailor regulations for different users. However, early evidence suggests there are structural racial, ethnic, and socioeconomic barriers to accessing medical marijuana services (Cunningham et al. 2022; Valencia et al. 2017). Thus, assuming the benefits and costs of marijuana use are segregated into the two markets—and taxing as such—could harm many who would benefit from marijuana (medical or recreational).

Ultimately, the effect of the drug will largely depend on the person using it and how the drug is used. As a result, a relatively high tax might discourage users who could safely enjoy (or even benefit from) the drug while a relatively low tax might not address the risks the drug creates for other users.

But there are some government programs that can address marijuana's negative externalities. As such, Alaska, California, Illinois, Montana, New York, Oregon, and Washington use a portion of their cannabis tax revenue to fund programs for substance abuse and drug education and prevention. And there are advantages to spending cannabis tax revenue on such relatively small programs closely tied to the drug's use instead of earmarking funds for larger and broader government programs.

Discourage high-potency cannabis products

One argument against an outright prohibition of legal marijuana sales is that bans push users into the black market. A high percentage-of-price tax or weight-based tax could have the same negative consequence. However, with a potency-based tax, a state could discourage the use of high-potency cannabis without pushing consumers to illegal sellers.

The risks and negative health effects associated with cannabis use are understood to rise with the product's THC levels (Hansen et al. 2020; Stuyt 2018). A potency-based tax can make these products relatively expensive while still allowing for relatively affordable, low-THC options in legal dispensaries.

Ideally, a potency-based cannabis tax should work like other taxes meant to nudge consumers toward moderation and not abstention. For example, a soda tax based solely on the drink's volume does nothing to encourage consumers to buy lower-sugar products or businesses to supply them. But a soda tax based on sugar content encourages consumers and businesses toward a less sugary—and thus less expensive—drink (Francis, Marron, and Rueben 2016). Similarly, a per-milligram cannabis tax (Connecticut and New York) could work better than a tax that operates with a THC percentage cliff (Illinois).

In addition, evidence from other excise taxes shows consumers are more likely to respond to taxes that are built into the listed retail cost of the item rather than levied at checkout (Marron, Gearing, and Iselin 2015). Thus, governments should consider levying the tax during a wholesale transaction so consumers can make a cost calculation in the store.

That said, it is important for policymakers to remember the limitations of current THC testing and labeling when designing these taxes. We do not know how accurate current THC testing is, but we do know that administering a potency-based tax comes with significant costs, and if those costs are pushed onto cannabis businesses and thus legal cannabis prices, the potency-based tax could ultimately harm the state's legal market.

CONCLUSION

After nearly a decade of legal and taxable sales, it is clear that cannabis taxes can generate hundreds of millions of dollars in annual revenue for state and local governments. However, recent revenue declines in five states, each with a distinct cannabis tax system, underscore that revenue growth is not limitless and that various factors can affect what governments collect from year to year.

We know that overly complex and burdensome tax systems, like the pre-reform taxes in California, can depress the evolution of legal marijuana markets. However, we also know that some states, like Washington, can create highly effective markets even with relatively high tax rates.

We know that taxes based on weight and potency could possibly help policymakers achieve important goals like producing more consistent tax revenue and discouraging the use of possibly dangerously potent products. However, we also know that these taxes can drive up costs and create significant burdens for legal sellers.

And there are two looming issues that we do not have much—if any—information on at this time:

1. How will competition from neighboring states affect state cannabis markets?
2. How could federal reforms, ranging from allowing marijuana businesses to access banking services to full federal legalization, affect state cannabis markets?

The unknown answers to both questions could significantly affect what state and local governments collect from cannabis taxes.

Ultimately, as new states enact taxes on marijuana and states with existing tax systems consider reforms, policymakers should use existing evidence to make informed choices that align their goals with their taxes. But state and local cannabis tax policy remains anything but simple and predictable. Policymakers across the country should also prepare to monitor, study, and reform these taxes as events develop and we learn more.

ERRATA

This publication was updated on January 18, 2023. In the original version, on page 18, we included Washington state on the list of states that repealed their weight-based taxes on cannabis purchases. The tax repealed in Washington was based on price, not weight, and the language has been corrected.

APPENDIX A: STATE AND LOCAL CANNABIS TAX SYSTEMS

ALASKA

In 2014, 53 percent of Alaska voters approved Ballot Measure 2, which legalized marijuana and implemented a $50-per-ounce weight-based tax.[42]

Alaska's state tax is collected on the first sale of cannabis from a licensed cultivator to a product manufacturing facility or retail store.[43] In 2019, the Alaska Department of Revenue expanded its cannabis product categories and created three new tax rates, keeping the ballot measure's $50-per-ounce rate for "mature flower or bud" but establishing different rates for other parts of the cannabis plant.

TABLE A1

Alaska Cannabis Tax Rates by Product Type

Product category	Original rates (2014–2018)	Current rates
Mature flower or bud	$50 per ounce	$50 per ounce
Immature and abnormal bud	Category created in 2019	$25 per ounce
Trim	Category created in 2019	$15 per ounce
Clone	Category created in 2019	$1 each

Source: Alaska Department of Revenue.

Local governments can also levy an excise tax on cannabis. Some local governments in Alaska levy a percentage-of-price tax and others levy a weight-based tax.

The Alaska state government does not levy a general sales tax, but some local governments do and they can apply the tax to the purchase of cannabis.

Legal sales began in the October 2016.

ARIZONA

In 2020, 60 percent of Arizona voters supported Proposition 207, which legalized cannabis and created a 16 percent excise tax on retail sales.[44]

Arizona's state cannabis tax is paid by consumers and remitted by retailers.

There are no local cannabis taxes in Arizona.

The Arizona state government levies its general sales tax (5.6 percent) on cannabis purchases and local governments can also levy their tax on sales.

Legal sales began in January 2021.

CALIFORNIA

In 2016, 57 percent of California voters approved Proposition 64, which legalized cannabis and created both a weight-based tax and a 15 percent tax on retail sales.

Under the original system, the weight-based tax was paid by cultivators and the percentage-of-price tax was paid by retailers, but both taxes were collected and then remitted to the state government by distributors.

Per the ballot measure, starting in 2020, the state's weight-based tax rates adjusted for inflation annually. California lawmakers passed a one-year moratorium on the inflation adjustments in 2021 because of the pandemic but allowed an increase to take place in 2022.

TABLE A2

California Previous Cannabis Weight-Based Tax Rates by Product Type

Product category	Original tax rates (2016–2019)	2020–2021 tax rates	2022 tax rates (repealed effective July 1, 2022)
Flowers	$9.25 per ounce	$9.65 per ounce	$10.08 per ounce
Leaves	$2.75 per ounce	$2.87 per ounce	$3.00 per ounce
Fresh plant material	$1.29 per ounce	$1.35 per ounce	$1.41 per ounce

Source: "Tax Rates – Special Taxes and Fees," California Department of Tax and Fee Administration, accessed September 7, 2022. https://www.cdtfa.ca.gov/taxes-and-fees/tax-rates-stfd.htm.
Note: The "fresh plant material" category was created in 2018.

In June 2022, the state repealed its weight-based tax and shifted the point of tax collection for its percentage-of-price tax from distributors to retailers. The percentage-of-price tax rate was kept at 15 percent for three years but after that the state is allowed to increase it to as high as 19 percent if revenue collections fall below pre-reform levels.

Local governments in California can also levy an excise tax on cannabis businesses. Some local governments tax a cannabis business on the square footage of its commercial cannabis operations while others levy a gross receipts tax. The latter tax can be applied on the cultivator, distributor, and retailer, which means the tax burden on the customer is possibly well above the listed tax rate. A California government report estimated that the average local rate paid by consumers is equivalent to a 14 percent tax on the retail purchase price of cannabis (Petek 2019).

The California state government levies its general sales tax (7.25 percent) on cannabis purchases and local governments can also levy their tax on sales.

Legal sales began in January 2018.

COLORADO

In 2012, 55 percent of Colorado voters supported Amendment 64, which legalized marijuana and directed the general assembly to create an excise tax with a maximum tax rate of 15 percent. In 2013, voters approved Proposition AA, which established a weight-based tax and a 10 percent tax on retail sales.

In July 2017, the retail excise tax rate was increased from 10 percent to 15 percent.

For the weight-based tax, a cultivator's crop is weighed, multiplied by the "retail marijuana average market rate" price (an average price set by the government), and then that product is multiped by a 15 percent tax rate. The cultivator remits this tax to the state. The retailer collects and remits the percentage-of-price excise tax.

There are no local cannabis taxes in Colorado.

Colorado local governments can levy their general sales tax on cannabis purchases.[45] The state initially applied its general sales tax (2.9 percent) on purchases but has exempted cannabis from the tax since July 2017.

Legal sales began in January 2014.

CONNECTICUT

In 2021, the Connecticut legislature passed SB 1201, which legalized cannabis, created a state excise tax based on potency, and allowed local governments to levy a 3 percent tax on retail sales. All these taxes are collected and remitted by retailers.

The state's potency-based tax is a per-unit tax. For cannabis plant material the tax is 0.625 cents per milligram of THC, for edibles the tax is 2.75 cents per milligram of THC, and for all other products the tax is 0.9 cents per milligram of THC.

TABLE A3

Connecticut Potency-Based Cannabis Tax Rates by Product Type

Product	Tax rate
Cannabis plant material	0.625 cents per milligram of THC
Edibles	2.75 cents per milligram of THC
All other cannabis products	0.9 cents per milligram of THC

Source: Connecticut SB No. 1201, June Special Session, Public Act No. 21-1.

The Connecticut state government levies its general sales tax (6.35 percent) on cannabis purchases. Connecticut's local governments do not levy a general sales tax.

As of September 2022, legal cannabis sales have not yet begun in Connecticut.

ILLINOIS

In 2019, the Illinois legislature passed House Bill 1438, the Cannabis Regulation and Tax Act. Illinois was the first state to legalize cannabis with legislation and not a ballot measure.

The legislation established a 7 percent excise tax on cultivators' gross receipts (cannabis cultivation privilege tax) and a potency-based tax on retail sales (cannabis purchaser excise tax). The cultivation privilege tax is applied on the cultivator's first sale while the purchaser excise tax is collected and remitted by the retailer.

The state's potency-based tax is determined by the level of THC in the product and levied as a percent of the retail sale price. Products with a THC level under 35 percent are taxed at 10 percent of the retail price and products with THC levels above 35 percent are taxed at 25 percent (table A4). All cannabis-infused products (e.g., edibles) are taxed at 20 percent of retail price. The legislation also required cannabis testing facilities to register with the state's department of agriculture.[46]

TABLE A4

Illinois potency-based cannabis tax rates by product type

Product	Tax rate on retail sale
THC < 35%	10%
THC > 35%	25%
All infused products (edibles)	20%

Source: Cannabis Regulation and Tax Act (Illinois).

Local governments can also levy a percentage-of-price excise tax on cannabis. The local tax rate is capped at 3 percent for municipalities and 3.75 percent for counties. However, the county tax is capped at 3 percent when there is also a municipal tax on the purchase. For example, both the city of Chicago and Cook County levy the maximum tax rate, so customers in Chicago pay a 6 percent local excise tax on their purchase.

The Illinois state government levies its general sales tax (6.25 percent) on cannabis purchases and local governments can also levy their tax on sales.

Legal cannabis sales began in January 2020.

MAINE

In 2016, 50.3 percent of Maine voters supported Question 1, which legalized cannabis and created a 10 percent excise tax on retail sales.

The state legislature also enacted LD 1719 in 2018, which created a weight-based tax in addition to the percentage-of-price tax.[47] The weight-based tax is collected by the cultivator and the percentage-of-price tax is collected by the retailer.

TABLE A5

Maine Weight-Based Cannabis Tax Rates by Product Type

Product category	Tax rates
Marijuana flower or mature marijuana plants	$335 per pound
Marijuana trim	$94 per pound
Immature marijuana plant or seedling	$1.50 each
Marijuana seed	$0.30 each

Source: Maine Public Laws 2017 chapter 409.

There are no local cannabis excise taxes in Maine.

Maine's state government exempts cannabis purchase from its general sales tax. Maine's local governments do not levy a general sales tax.

Legal sales began in October 2018 but the state did not begin collecting cannabis tax revenue until November 2020.

MASSACHUSETTS

In 2016, 54 percent of Massachusetts voters approved Question 4, which legalized cannabis and created a 3.75 percent state excise tax and a 2 percent local excise tax on retail marijuana sales.[48] Massachusetts' state and local cannabis tax is paid by consumers and remitted by retailers.

In 2018, the state legislature increased the state's cannabis tax rate to 10.75 percent and allowed localities to levy up to a 3 percent tax on the retail price. It also created the Cannabis Control Commission, which can review tax rates annually.[49] All cannabis excise taxes in Massachusetts are collected by retailers.

The Massachusetts state government levies its general sales tax (6.25 percent) on cannabis purchases. Massachusetts' local governments do not levy a general sales tax.

Legal sales began in November 2018.

MICHIGAN

In 2018, 56 percent of Michigan voters approved Proposal 1, which legalized cannabis and created a 10 percent excise tax excise tax on retail sales.[50] Michigan's state cannabis tax is paid by consumers and remitted by retailers.

There are no local cannabis excise taxes in Michigan.

The Michigan state government levies its general sales tax (6 percent) on cannabis purchases. Michigan's local governments do not levy a general sales tax.

Legal sales began in December 2019.

MONTANA

In 2020, 57 percent of Montana voters approved Initiative 190, which legislated cannabis and proposed a 20 percent excise tax on retail sales. The state legislature formally enacted the 20 percent tax when it later approved HB 701. The percentage-of-price tax is remitted by retailers.

Montana local governments are also allowed to levy a 3 percent excise tax on cannabis purchases.

Montana's state and local cannabis tax is paid by consumers and remitted by retailers.

Montana's state and local governments do not levy a general sales tax.

Legal sales began in January 2022.

NEVADA

In 2016, 54 percent of Nevada voters approved Question 2, which legalized cannabis and created a weight-based tax.[51] To calculate the tax, a cultivator's crop is weighed, multiplied by the "fair market value at wholesale" price (an average price set by the government), and then that product is multiped by the 15 percent tax rate. The cultivator remits the tax to the state.

In 2017, before sales began, the state legislature enacted SB 487, which created an additional 10 percent excise tax that is paid by consumers and collected by retailers.

There are no local cannabis excise taxes in Nevada.

The Nevada state government levies its general sales tax (6.85 percent) on cannabis purchases and local governments can also levy their tax on sales.

Legal sales began in July 2017.

NEW JERSEY

In 2020, 67 percent of New Jersey voters approved Question 1. The ballot measure legalized cannabis, allowed the state to levy its general sales tax on cannabis purchases, and authorized the state legislature to give local governments the power to tax cannabis. The ballot measure did not propose a state cannabis excise tax.

In 2021, the state legislature passed additional legislation that empowered the state's Cannabis Regulatory Commission to impose a weight-based tax, officially called the Social Equity Excise Fee.[52] The tax is collected by cultivators.

The initial rate of the fee was set at 0.33 percent of the average retail price of an ounce of cannabis.[53] When legal sales began in 2022 the tax rate was $1.10 per ounce. After nine months of sales, the state's cannabis commission can choose to change tax rates based on the average cannabis price in New Jersey.

TABLE A6

New Jersey Weight-Based Cannabis Tax Rates by Price

Average retail cannabis price in New Jersey	Allowable tax rate
Less than $200 per ounce	Up to $60 per ounce
$200 to $250 per ounce	Up to $40 per ounce
$250 to $350 per ounce	Up to $30 per ounce
Greater than $350 per ounce	Up to $10 per ounce

Source: N.J.S.A. 54:47F-1.

Local governments in New Jersey can also levy a 2 percent gross receipts tax on cannabis businesses. Because this tax is levied on multiple businesses in the supply chain (cultivator, distributor, and retailer), the tax burden can "pyramid" so that the actual tax paid by the consumer is higher than the listed 2 percent rate.

The New Jersey state government levies its general sales tax (6.625 percent) on cannabis purchases. New Jersey's local governments do not levy a general sales tax.

Legal sales began in April 2022.

NEW MEXICO

In 2021, New Mexico enacted HB 2, which legalized cannabis and created a 12 percent excise tax.[54]

The legislation included one percentage point annual increases to the tax rate starting in July 2025 until the rate reaches 18 percent in July 2030. The tax is paid by consumers and collected by retailers.

There are no local cannabis excise taxes in New Mexico.

The New Mexico state government levies its general sales tax (5 percent) on cannabis purchases and local governments can also levy their tax on sales.

Legal sales began in April 2022.

NEW YORK

In 2021, New York enacted Senate Bill 854 (Assembly Bill 1248), which legalized cannabis and created both a percentage-of-price excise tax (for state and local governments) and a state potency-based excise tax.

The combined percentage-of-price tax in New York is 13 percent, with a 9 percent state tax and 4 percent local tax. The tax is paid by consumers and collected by retailers.

New York's potency-based tax is a per-unit tax: 0.5 cents per milligram of THC in flower products, 0.8 cents per milligram of THC in concentrates, and 3 cents per milligram of THC in edibles (table A7). The potency-based tax is collected by distributors.

TABLE A7

New York Potency-Based Cannabis Tax Rates by Product Type

Product	Tax rate
Cannabis flower	0.5 cents per milligram of THC
Concentrates	0.8 cents per milligram of THC
Edibles	3.0 cents per milligram of THC

Source: New York Department of Taxation and Finance.

New York's state and local governments exempt cannabis purchases from their general sales taxes.

As of September 2022, legal cannabis sales have not yet begun in New York.

OREGON

In 2014, 56 percent of Oregon voters approved Measure 91, which legalized cannabis and created a weight-based excise tax on cultivators.[55]

However, before legal sales began, the legislature passed HB 2041, which eliminated the weight-based tax and enacted a 17 percent excise tax that is paid by consumers and collected by retailers.[56]

Local governments can also levy a 3 percent cannabis tax on the retail purchase.

Oregon's state and local governments do not levy a general sales tax.

Legal sales began in October 2015.

RHODE ISLAND

In 2022, the Rhode Island legislature passed H. 7593 and S. 2430, which legalized cannabis and created a 10 percent tax on retail sales.

Local governments also can levy a 3 percent tax on the retail purchase.

The state and local excise tax in Rhode Island is paid by consumers and collected by retailers.

The state government levies its general sales tax (7 percent) on cannabis purchases. Local governments do not levy a general sales tax in Rhode Island.

As of September 2022, legal cannabis sales have not yet begun in Rhode Island.

VERMONT

In 2018, the Vermont legislature legalized marijuana possession by passing H. 511.

The legislation did not create a cannabis tax system. In 2020, the legislature enacted S. 54, which created a 14 percent cannabis tax that is collected by retailers. The tax is paid by consumers and collected by retailers.

There are no local cannabis excise taxes in Vermont.

The Vermont state government levies its general sales tax (6 percent) on cannabis purchases and local governments can also levy their tax on sales.

As of September 2022, legal cannabis sales have not yet begun in Vermont.

VIRGINIA

In 2021, the Virginia legislature legalized marijuana possession by passing HB 2312 and SB 1406. The legislation created a 21 percent state tax on cannabis purchases and allowed local governments to levy a 3 percent tax.

The state and local excise tax in Virginia is paid by consumers and collected by retailers.

The Virginia state government levies its general sales tax (5.3 percent) on cannabis purchases and local governments can also levy their tax on sales.

As of September 2022, legal cannabis sales have not yet begun in Virginia.

WASHINGTON

In 2012, 56 percent of Washington voters supported Initiative 502, which legalized cannabis and created a 25 percent tax on each transaction in the supply chain: from cultivators to distributors, from distributors to retailers, and on the final retail purchase.

In 2015, after one year of legal sales, the legislature passed HB 2136, which replaced the previous system with a single 37 percent tax on the final purchase. The current Washington excise tax is paid by consumers and collected by retailers.

There are no local cannabis excise taxes in Washington.

The Washington state government levies its general sales tax (6.5 percent) on cannabis purchases and local governments can also levy their tax on sales.

Legal sales began in July 2014.

APPENDIX B: HOW STATES SPEND CANNABIS TAX REVENUE

Most states that tax cannabis dedicate at least a share of the resulting revenue to specific spending programs. Ballot measures proposing legalization and taxation often include language about how the resulting funds will be spent to appeal to voters who otherwise might be wary of allowing legal sales of marijuana. Legislators pushing cannabis legislation also often dictate how the revenue will be spent for similar purposes. The first states to tax legal marijuana mostly dedicated cannabis tax revenue to traditional government programs such as public education and health care. However, in recent years, states have allocated funds for programs with connections to the marijuana, including drug prevention and treatment services plus programs aimed at assisting groups harmed by previous drug law enforcement. Many states also allocate funds for the regulation and administration of the tax. However, dedicating marijuana revenue toward specific programs could have unintended consequences. Volatility in cannabis tax revenues could negatively affect programs solely or largely funded with the revenue (Dadayan 2019), a risk that is increasingly relevant as markets evolve and prices decline. Table B1 details how each state allocates its revenues.

TABLE B1

Allocation of State Cannabis Excise Tax Revenues

By state and purpose, 2022

State	Share	Purpose
Alaska	50%	Recidivism Reduction Fund (within General Fund)
	25%	Marijuana Education and Treatment Fund (within General Fund)
	25%	General Fund
Arizona	33%	Community colleges (within Smart and Safe Arizona Fund, or SSAF)
	31.4%	Local law enforcement and fire departments (SSAF)
	25.4%	State and local transportation programs (SSAF)
	10%	Public health and criminal justice programs (SSAF)
	0.2%	Arizona Attorney General, enforcement costs (SSAF)
California	As incurred	Regulatory and administrative costs
	60%	Youth education, prevention, early intervention, and treatment account
	20%	Environmental restoration and protection account
	20%	State and local government law enforcement account
Colorado	100%	Public School Capital Construction Assistance Fund
Illinois	As incurred	Administrative costs
	35%	General revenue fund
	25%	Reinvestment program
	20%	Substance abuse prevention and mental health programs
	10%	Budget stabilization fund
	8%	Transfers to local governments
	2%	Drug treatment education campaigns and research
Maine	50%	Public health and safety programs
	50%	Law enforcement training programs
Massachusetts	As incurred	Administrative costs
	Subject to appropriations	Public and behavioral health
		Public safety
		Municipal police training
		Prevention and Wellness Trust Fund

APPENDIX B: HOW STATES SPEND CANNABIS TAX REVENUE

State	Share	Purpose
		Restorative justice, jail diversion, workforce development, and other assistance programs for those impacted by enforcement of marijuana laws
Michigan	35%	K-12 education
	35%	Repair and maintenance of roads and bridges
	15%	Transfers to city governments
	15%	Transfers to county governments
Montana	Subject to appropriations	Conservation
		Substance abuse prevention and treatment
		Veterans' services
		Health care
		Transfers to local governments
		General fund
		Expungement and resentencing of individuals previously convicted of marijuana offenses
Nevada	As incurred	Administrative costs
	Remainder	Education programs
New Jersey	70%	Impact zone reinvestment
	30% or as appropriated	Administrative costs, law enforcement training, further impact zone investments, general fund
New Mexico	2%	Local government transfers
	Subject to appropriations	Regulatory costs, tax administration costs, public safety, and expunging past cannabis-related offenses
	Remainder	General fund
New York	40%	Lottery grants for school districts
	20%	Drug treatment and public education
	40%	Community grants reinvestment fund
Oregon	40%	Schools
	20%	Drug prevention and treatment and mental health programs
	15%	Oregon State Police
	5%	Oregon Health Authority
	20%	Transfers to local governments
Rhode Island	Subject to appropriations	Program administration; revenue collection and enforcement; substance use disorder prevention; education and public awareness campaigns; treatment and recovery support services; public health monitoring, research, data collection and surveillance; law enforcement training and support; and other related uses
Vermont	100%	After-school and summer learning programs
Virginia	40%	Pre-kindergarten programs
	30%	Reinvestment in communities affected by prior drug law enforcement
	25%	Drug prevention and treatment programs
	5%	Public health education programs
Washington	50%	Basic health
	31%	General fund
	13%	Other
	4%	Transfers to local governments
	3%	Drug education and prevention
	Less than 1%	Research

Note: Allocations do not include revenue from general sales tax, local excise taxes, or medical marijuana taxes.

APPENDIX C: METHODOLOGY FOR COMPARING CANNABIS TAXES

Our hypothetical customer purchased an ounce of cannabis flower with a THC level of 20 percent. In every state the untaxed cost of this purchase is $100.

The hypothetical cost of an ounce of cannabis was chosen after consulting Colorado's average market rate for unprocessed retail marijuana (https://tax.colorado.gov/average-market-rate) and Nevada's fair market value at wholesale (https://tax.nv.gov/Forms/MMT/). For July to September 2022, Colorado's average price for flower was $709 per pound, or $44.35 per ounce. For July 2022, Nevada's average price for flower was $2,074 per pound, or $129.63 per ounce. Thus, we choose $100 per ounce because it was a round number that fell in between those two totals. The actual retail cost of an ounce of marijuana is almost certainly higher in most states and possibly considerably higher in states with newer markets.

All state and local cannabis tax rates and state general sales tax rates were applied to the purchase. Each state's tax rates are described in appendix A. However, in California, we used the Legislative Analyst's Office (LAO) calculation that the average local excise tax in California results in a 14 percent tax on the retail price for the state's tax calculation.

In Colorado and Nevada, we multiplied each state's artificial price by one ounce and then multiplied that by the state's tax rate. We then levied these states retail taxes on the tax-inflated purchase price ($106.65 in Colorado and $119.44 in Nevada).

In Illinois, for simplicity, we applied the state's 7 percent gross receipts tax on the $100 of untaxed cannabis. We then levied the state's taxes taxes on a $107 retail purchase. In addition, we used Chicago as the site of the purchase, so both the 3 percent local tax in Chicago and in Cook County were applied to the purchase.

In New Jersey, we multiplied the 2 percent local gross receipts tax on three transactions (cultivator, distributor, and retailer). The final local tax was $6.12 on the $100 of untaxed cannabis. We then added the state's weight-based tax ($1.10) and to get a tax-inflated purchase price ($107.22) and applied the state's general sales to that cost.

We incorporated any wholesale tax into the purchase price before applying retail taxes. For simplicity, we assumed the entire wholesale tax is passed onto the consumer. Thus, we used the following retail prices in states with a wholesale tax:

- Alaska: $150.00
- Colorado: $106.65
- Illinois: $107.00
- Maine: $120.94

- Nevada: $119.44
- New Jersey: $107.22
- New York: $128.65

For example, our calculation for Maine, which uses a weight-based tax and a tax on retail price (but no general sales tax) was

Weight-based tax (for one ounce) + retail tax (retail price x rate) = tax on cannabis
$20.94 + ($120.94 x 10%) = $33.03

In all other states the retail price before tax was $100.

For example, our calculation for Massachusetts, which only uses taxes on retail price, was

State (retail price x rate) + local (retail price x rate) + sales (retail price x rate) = tax on cannabis
($100 x 10.75%) + ($100 x 3%) + ($100 x 6.25%) = $20

The following cities were used for local general sales tax rates:

- Anchorage, Alaska
- Phoenix, Arizona
- Los Angeles, California
- Denver, Colorado
- Chicago, Illinois
- Albuquerque, New Mexico
- Burlington, Vermont
- Richmond, Virginia
- Seattle, Washington

NOTES

[1] In 1996, California became the first state to allow residents to purchase marijuana for medical use. Taxes on medical marijuana are typically low and are not intended to discourage use or raise much revenue. In fact, the limited revenues are mostly used to fund the programs. As such, we do not consider these "cannabis taxes" in this report. See box 2 for a summary of taxes on medical marijuana.

[2] Richard C. Auxier, "How Congress meddles with the District of Columbia: Marijuana edition," *Urban Wire* (blog), Urban Institute, December 17, 2014, https://www.urban.org/urban-wire/how-congress-meddles-district-columbia-marijuana-edition.

[3] Heatther Edelson, "Edelson Statement on THC Law Going into Effect," Minnesota House of Representatives, July 1, 2022, https://www.house.leg.state.mn.us/members/Profile/News/15516/35884.

[4] Some Alaska local governments levy a weight-based tax and some California localities levy a tax based on the business's square footage.

[5] Cheri Sicard, "How to Calculate THC Dosages for Homemade Edibles," *High Times*, February 28, 2017, https://hightimes.com/edibles/how-to-calculate-thc-dosages-for-homemade-edibles%E2%80%A8/.

[6] "Average Market Rate for Unprocessed Retail Marijuana," Colorado Department of Revenue, accessed September 7, 2022, https://tax.colorado.gov/average-market-rate. "Cannabis Forms & Procedures," Nevada Department of Taxation, accessed September 7, 2022, https://tax.nv.gov/Forms/MMT/.

[7] Ben Adlin, "Where's the Cheapest Cannabis? A State-by-State Comparison," Leafly, July 28, 2020, https://www.leafly.com/news/strains-products/wheres-the-cheapest-cost-cannabis-a-state-by-state-comparison.

[8] The Census state population estimates are as of July 1, 2021.

[9] "Tax Payments Received (Monthly)," Oregon Department of Revenue, accessed September 7, 2022, https://www.oregon.gov/dor/programs/gov-research/Pages/research-marijuana.aspx.

[10] The Colorado Department of Revenue provides comprehensive historical data on average cannabis prices and the Washington State Liquor and Cannabis Board has noted a steady drop in the price of cannabis in its reports.

[11] "Cigarette Tax," Colorado Legislative Council Staff, accessed September 15, 2022, https://leg.colorado.gov/agencies/legislative-council-staff/cigarette-tax.

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