

Vermont Legislative Research Service

https://www.uvm.edu/cas/polisci/vermont-legislative-research-service-vlrs



Marijuana Revenue Projections

Marijuana is the common name for the dried leaves of the plant known as Cannabis sativa. The plant has psychoactive, or mind-altering, traits.² Delta-9-tetrahydrocannabinol (THC) gives marijuana its psychoactive effect. THC occurs in a non-psychoactive form (called THC-A) in the Cannabis plant; but through the process of drying the plant it becomes psychoactive.⁴ Marijuana is considered the most consumed illegal substance. Currently, twenty-three of the fifty states have fully legalized marijuana for recreational purposes. Additionally, thirty-eight states have legalized marijuana for medicinal purposes. Legalization refers to the idea of being able to produce, sell, and possess marijuana to some degree. There are many reasons that states have chosen to legalize marijuana, one being to reduce reliance on illicit market production.⁹ Legalization has other benefits as well, such as allowing for testing to be done to ensure a product is safe and reducing over-policing in marginalized communities. ¹⁰

Legalization can also mean more tax revenue for state and city governments. To assess potential revenues, many states will either hire outside analytic firms or use their own fiscal offices to make revenue projections. 11 In the context of marijuana revenue projections, some states, such as

¹ Jonathan Caulkins, Beau Kilmer, Mark Kleiman, Marijuana Legalization: What Everyone Needs to Know (New York: Oxford Press, 2012), 5.

² Caulkins et al., Marijuana Legalization: What Everyone Needs to Know, 6.

³ Caulkins et al., Marijuana Legalization: What Everyone Needs to Know, 7.

⁴ Caulkins et al., Marijuana Legalization: What Everyone Needs to Know, 7.

⁵ Caulkins et al., Marijuana Legalization: What Everyone Needs to Know, 6.

⁶ DISA, "Marijuana Legality by State," DISA Global Solutions, November 29, 2023, https://disa.com/marijuana-

legality-by-state.

7 Johns Hopkins Bloomberg School of Public Health, "The Evidence—and Lack Thereof—About Cannabis," August 25, 2023, https://publichealth.jhu.edu/2023/risks-and-benefits-of-legalized-cannabis.

⁸ Caulkins et al., Marijuana Legalization: What Everyone Needs to Know, 6.

⁹ Caulkins et al., Marijuana Legalization: What Everyone Needs to Know, 6.

¹⁰ Johns Hopkins, "The Evidence—and Lack Thereof—About Cannabis."

¹¹ Elizabeth McNichol, "Improving State Revenue Forecasting: Best Practices for a More Trusted and Reliable Revenue Estimate," Center on Budget and Policy Priorities, September 4, 2014, https://www.cbpp.org/research/improving-state-revenue-forecasting-best-practices-for-a-more-trusted-and-reliablerevenue

Colorado, exceeded their own initial projections. ¹² Other governments, such as New York City and California, have had more disappointing returns. This report will focus on Vermont, California, and New York City as illustrative examples of the accuracy and inaccuracy of legal marijuana revenue projections across the country.

As to why some of these projections were inaccurate, it is challenging to provide a definitive answer. This is because any research on projections is still ongoing. However, the aim of this report is to provide a list of states and cities where revenue projections fell short, and then provide data on how state regulation affected the legal marijuana market. It is important to note that state and city governments only receive revenue from legal, licensed marijuana sellers. Illicit marijuana markets exist everywhere and do not contribute to the state's tax revenue. ¹³

States Revenue Projections

State governments create revenue projections in a variety of ways. As of 2015, thirty-one states and the District of Columbia had their own formal revenue estimating group which managed projections. In eight states, the executive branch was entirely responsible for forecasting revenue for the budget. In eight other states, an independent board or commission. In many of these states, however, different actors from across the state government cooperate on budget forecasting. This approach, called, "consensus forecasting," is utilized in twenty-five states. It involves input from legislative committees, executive agencies, and other organizations. ¹⁴ Vermont utilizes this approach. ¹⁵

Overall, state revenue forecasts have decreased in accuracy over the last several decades. ¹⁶ This cannot explain the inaccuracy of marijuana revenue projections, however. First, the most common error among revenue projections is an underestimation of revenue. ¹⁷ Second, the trend predates marijuana legalization by more than two decades and is likely tied to the impacts of the Great Recession and the recessions that preceded it. ¹⁸ Because many revenue projections are based on previous empirical data, it is generally more challenging for states to accurately assess the revenue potential of a new tax. ¹⁹ While this may help explain marijuana revenue inaccuracy, such a causation has not been verified or adequately studied by researchers.

¹² John Ingold, "Hickenlooper expects marijuana tax money to exceed prior expectations," *The Denver Post*, February 19, 2014, https://www.denverpost.com/2014/02/19/hickenlooper-expects-marijuana-tax-money-to-exceed-prior-expectations/.

¹³ Bryan Gaston and John Frehse, "The State of the Market for Cannabis," *The National Law Review*, June 30, 2023, https://www.natlawreview.com/article/state-market-cannabis.

¹⁴ Kim Rueben and Megan Randall, "Revenue Forecasting Practices: How States Estimate Future Revenues," Tax Policy Center, November 28, 2017, accessed December 12, 2023, https://www.taxpolicycenter.org/publications/revenue-forecasting-practices/full.

¹⁵ Susan Urahn and Thomas Gais, "States' Revenue Estimating: Cracks in the Crystal Ball," the Pew Center on the States and The Nelson A. Rockefeller Institute of Government, March 2011, 5, accessed December 12, 2023, https://www.pewtrusts.org/~/media/assets/2011/03/01/003_11_ri-states-revenue-estimates-report_v1040711.pdf,

¹⁶ Urahn and Gais, "States' Revenue Estimating," 2.

¹⁷ Urahn and Gais, "States' Revenue Estimating," 2.

¹⁸ Urahn and Gais, "States' Revenue Estimating," 21.

¹⁹ Urahn and Gais, "States' Revenue Estimating," 28.

Vermont

Vermont became the eleventh state in the United States to legalize the recreational use of marijuana in July of 2018. Additionally, Vermont ranks among the highest for marijuana use in the country, particularly in ages twelve to twenty five. In October of 2022, Vermont's retail market officially opened. In testimony to the House Committee on Ways and Means, Ted Barnett, a member of the legislature's Joint Fiscal Office, stated that the retail market contained a six percent sales tax and a fourteen percent excise tax. Seventy percent of the excise tax is allocated to a general fund while thirty percent of this money is put towards substance misuse prevention programming. Revenue from the sales tax is allocated towards afterschool programs.

Prior to legalization, Vermont's Joint Fiscal Office (JFO) estimated that legalization would generate between \$6.5 and \$12.2 million in revenue by 2025. The JFO stated that "the methodology for this model was heavily influenced by models used by the state of Colorado prior to their legalization of recreational cannabis sales in 2014." Specifically, the JFO projected that forty percent of marijuana sales would remain on the black market. ²⁶

In the last three months of 2022, Vermont generated over \$6.1 million in revenue from recreational marijuana sales.²⁷ This greatly exceeded the JFO's initial estimate of between \$130,000 and \$250,000 in fiscal year 2022.²⁸

Vermont experienced a delay in the licensing process for dispensaries which resulted in high demand with limited available supply. According to the Vermont Cannabis Control Board, by early 2023 only 313,000 square feet of the 570,000 licensed cannabis cultivation space was being utilized. Vermont only had between nine and ten legal dispensaries at the start of November of 2022, but by the end of the month, that number had more than doubled.²⁹

Current marijuana revenue projections vary by source. Vermont JFO currently projects approximately \$25 million by fiscal year 2025. ³⁰ There are also concerns that Vermont's 2023 summer flooding will negatively affect production. Some reports suggest that marijuana

3

²⁰ Vermont Department of Health "Marijuana Use in Vermont," August 2021.

²¹ Vermont Department of Health "Marijuana Use in Vermont."

²³ Ted Barnett, Fiscal Analyst for the Joint Financial Office, "Cannabis Revenue Update," Testimony before the House Committee on Ways and Means, Vermont General Assembly, 2023 Session,

²⁴ Barnett, "Cannabis Revenue Update."

²⁵ Barnett, "Cannabis Revenue Update."

²⁶ Vermont Legislative Joint Fiscal Office, "S.54 Fiscal Note," Vermont State Legislature, February 25, 2020, 2-4, https://ljfo.vermont.gov/assets/Publications/Senate-Bills/073eea1494/S.54-Fiscal-Note.pdf,

²⁷ Vermont Cannabis Information, "Vermont Marijuana Business," accessed December 9, 2023, https://vermontstatecannabis.org/business.

²⁸ Vermont Legislative JFO, "S.54 Fiscal Note," 2.

²⁹ Vermont State Cannabis, "Vermont Marijuana Business."

³⁰ Barnett, "Cannabis Revenue Update."

cultivators affected by the flood will yield between fifty and seventy-five percent of what they grew in 2022."³¹

New York City

The 2018 projections by the New York City Comptroller's Office and Bureau of Budget estimated that with a ten percent marijuana state excise tax, combined with the preexisting state four percent sales tax, would generate roughly \$436 million in tax revenue annually for the state, and \$336 million for the city. The Comptroller's Office based its analysis on several factors. They recommended policymakers remain conscious of cross-jurisdictional price competition, as too high a tax in New York would incentivize travel to its neighboring states with relatively cheaper prices. They also warned against lowering taxes below those applied to medical marijuana for fear that cheaper recreational marijuana would undercut and harm the medicinal market. Furthermore, they predicted that costs of operation and production would decrease as the recreational marijuana industry established itself. Pointing to statistics from Washington and Colorado, the Comptroller's office predicted that marijuana users would transition from the illicit market to the legal one once the option was made available.

A 2021 report by James A. Parrott, the Director of Economic and Fiscal Policies at the Center for New York City Affairs at The New School and Michele Mattingly, a consultant in labor market economics, predicted that legalization would generate between \$102 and \$159 million in revenue for the state by 2023. This report was funded by Scotts Miracle-Gro, a company whose product could be used by prospective cannabis growers. The state of the State of Scotts Miracle-Gro, a company whose product could be used by prospective cannabis growers.

Full statewide legalization became a reality in 2021 when New York State passed the Marijuana Regulation and Taxation Act (MRTA). At the time of its passage, many state officials were predicting a rapid expansion of marijuana dispensaries, with some predicting one hundred within New York City by the fall of 2022.³⁶

https://static1.squarespace.com/static/5953059b1b10e384f55aad08/t/60234e4bcbfbfb557933238c/1612926549754/Parrott+Mattingly+NYS+Marijuana+Economic and Revenue Impact Report+Feb+2021final.pdf.

_

³¹ Bob Kinzel, "Control Board to limit new cannabis licenses to protect small growers," Vermont Public, November 8, 2023, https://www.vermontpublic.org/local-news/2023-11-08/control-board-to-limit-new-cannabis-licenses-to-protect-small-growers.

³² Scott Stringer, "Estimated Tax Revenues from Marijuana Legalization in New York," City of New York Office of the Comptroller, May 2018, 1, https://comptroller.nyc.gov/reports/estimated-tax-revenues-from-marijuana-legalization-in-new-york/.

³³ Stringer, "Estimated Tax Revenues from Marijuana Legalization in New York," 3-4.

³⁴ James Parrott and Michele Mattingly, "Economic and Revenue Impact of Marijuana Legalization in NYS A Fresh Look," 5, Report, accessed December 12, 2023,

³⁵ Cannabis Law Report, "New Report: Economic and Revenue Impact of Marijuana Legalization in NYS A Fresh Look," Cannabis Law Report, Accessed December 7, 2023, https://cannabislaw.report/new-report-economic-and-revenue-impact-of-marijuana-legalization-in-nys-a-fresh-look/.

³⁶ New York City Independent Budget Office, "How High— And How Soon? Projecting the Growth of the Legal Cannabis Market in New York City," New York City Independent Budget Office, 1, https://www.ibo.nyc.ny.us/iboreports/how-high-and-how-soon-projecting-the-growth-of-the-legal-cannabis-market-in-new-york-city-august-2023.pdf.

As of August 2023, however, only nine dispensaries have opened. This is despite the start granting nearly two hundred licenses since the passage of the MRTA.³⁷ Both city and state officials have revised their revenue projections accordingly. The New York City Office of Management and Budget currently projects that the city will take in \$20 million in 2024, with that figure growing to \$38 million by 2027.³⁸

It is impossible to determine exactly why revenues failed to meet projected estimates. Looking at the current state of the New York marijuana regulatory regime, however, can provide insight into the factors that may affect revenues.

Recreational marijuana in New York City is taxed on multiple levels. First, New York State law imposes a sales tax that retailers must pay when selling to consumers. New York City also imposes its own sales tax. The combination of these two sales taxes amounts to a thirteen percent total sales tax on marijuana within New York City. The MRTA also imposed a THC potency excise tax between distributors and retailers statewide. The rate of excise tax depends on the products sold by the retailer. For instance, "a retailer will pay to a distributor an excise tax of \$0.005/mg of THC for cannabis flower, \$0.008/mg of THC for concentrates, and \$0.03/mg of THC for consumables." The cumulative effect of these taxes on recreational marijuana prices is that legal marijuana products sold by dispensaries are roughly twice the cost of their illicit market counterparts.

Competition with the illicit market extends beyond just prices. Legal sellers have had to contend with a large contingent of illicit "smoke shops" within New York City. There are an estimated 8,000 unlicensed smoke shops within New York City. ⁴³ Based on data from state law enforcement, New York's Independent Budget Office estimated that illegal sales from these stores amounted to as much as \$484 million worth of cannabis products. Had these products been sold legally, they would've amounted to approximately \$19.4 million in revenue for New York City. ⁴⁴

Another factor may simply be timing. While previous projections looked at early legalizers, such as Colorado, and expected similar revenues post-legalization, current projections acknowledge the advantage states like Colorado had as "first-movers." Because Colorado was the first among its neighbors to legalize marijuana, it was able to attract a high volume of out-of-state

³⁷ New York City Independent Budget Office, "How High— And How Soon?" 1.

³⁸ New York City Independent Budget Office, "How High— And How Soon?" 4.

³⁹ Department of Taxation and Finance, "Adult-use cannabis products tax," State of New York, Accessed December 7, 2023, https://www.tax.ny.gov/bus/auc/#distributor.

⁴⁰ New York City Independent Budget Office, "How High— And How Soon?," 1.

⁴¹ Jason Klimek and Kara Cline, "Cannabis Taxes in New York State: How High Is Too High," New York State Society of Certified Public Accountants, April 1, 2022,

 $[\]frac{https://www.nysscpa.org/news/publications/the-tax-stringer/stringer-article-for-authors/cannabis-taxes-in-new-york-state-how-high-is-too-high.}{\\$

⁴² Klimek and Cline, "Cannabis Taxes in New York State."

⁴³ New York City Council, "In Response to Explosion of Unlicensed Smoke Shops in NYC, Council Members, Real Estate Officials Announce New Law Taking Effect to Curb Illegal Stores," New York City Council, August 14, 2023, https://council.nyc.gov/press/2023/08/14/2454/.

⁴⁴ New York City Independent Budget Office, "How High— And How Soon?," 1.

consumers. In contrast, all of New York's regional neighbors besides Pennsylvania have legal retail marijuana markets. 45

New York's licensing requirements may have also affected revenues. To attempt to correct for historical social inequalities, the MRTA required that early licenses be granted in a manner that "prioritizes social and economic equity applicants." The law's goal was to have "fifty percent [of licenses] awarded to such applicants." In August 2023, a lawsuit against this provision resulted in an injunction that halted all licensing in the state. This injunction continued until November 2023 when the litigants and the state were able to reach a settlement.⁴⁷

California

In January 2019, Governor Gavin Newsom's Office projected \$355 million and \$514 million in cannabis tax revenue for 2019 and 2020 respectively. 48 By May 2019, the Governor's Office revised those projections to \$288 million and \$359 million respectively. 49 Evidently, the legal cannabis market in California faced some growing pains.

Proposition sixty-four is the now effective act in California that legalized the recreational use of cannabis for adults. ⁵⁰ When this act was still being voted on, a projected figure of \$1 billion dollars was made. While it is unclear exactly where this number came from, it became a rally point for proponents of cannabis legalization and commonly accepted as a credible projection. However, the California Legislative Analyst's Office cautioned against this figure in a report on cannabis legalization, noting that while \$1 billion annual revenue was attainable eventually, it would take time for the legal market to develop. ⁵¹

A study done by UC Davis professors concluded that licensing requirements, taxes, and fees created more operating costs for companies in the licensed cannabis market in California than expected.⁵² This creates a barrier to entry for potential new dispensaries and impedes the potential revenue of existing dispensaries. Therefore, a vacuum is created in the market, and the

⁴⁵ New York City IBO, "How High— And How Soon?" 6.

⁴⁶ New York State Legislature, Senate, Committee on Finance, "Marijuana Revenue Taxation Act," 2021-2022 Session, S854-A, 10, https://legislation.nysenate.gov/pdf/bills/2021/S854A.

⁴⁷ Dario Sabaghi, "New York's Regulators Settle Lawsuits Over Legal Marijuana Licensing," *Forbes*, November 28, 2023, https://www.forbes.com/sites/dariosabaghi/2023/11/28/new-yorks-regulators-settle-lawsuits-over-legal-marijuana-licensing/?sh=5807648a2def.

⁴⁸ Scott Rod, "Cannabis Tax Revenue in California Could Be Hundreds of Millions of Dollars Below Projections," CapRadio, May 15, 2019.

⁴⁹ Rod, "Cannabis Tax Revenue in California Could Be Hundreds of Millions of Dollars Below Projections."

⁵⁰ "Proposition 64: The Adult Use of Marijuana Act," Programs, California Courts, last modified August 2022, https://www.courts.ca.gov/prop64.html

⁵¹ "Proposition 64: The Adult Use of Marijuana Act," Programs, California Courts, last modified August 2022, https://www.courts.ca.gov/prop64.html

⁵² Elena Sambucci, Daniel A. Sumner, and Robin Goldstein, "Effect of Taxes and Costly Regulations on the Licensed and Unlicensed Cannabis Markets," paper prepared for the Agricultural and Applied Economics Association Conference, July 2020, https://ageconsearch.umn.edu/record/304602/.

high demand for cannabis is met by unlicensed sellers.⁵³ It is important to note that the activity of unlicensed sellers results in no tax revenue to be had by the state. The operation of illicit cannabis markets is harmful is state tax revenues.

The same study observed that prices at licensed locations were on average twenty-five percent higher than unlicensed locations, pushing consumers away from the licensed market and harming potential revenue.⁵⁴

In an analysis of California's revenue projections, The Institute of Taxation and Economic Policy (ITEP), a non-profit economic policy research organization, examined four possible factors that caused actual revenue to be short of projected. First, ITEP noted that California's projections, especially the infamous \$1 billion projection, were among the most ambitious of any state. It appears that California set themselves up to fail by setting such lofty projections, and this could be the case in other states. ⁵⁵ ITEP discussed how, in comparison, New York issued a more cautious projection which was thus more accurate.

The second factor ITEP identified was the small number of retail stores that exist, which prevented consumers from participating in the legal cannabis market. Cannabis retail stores are banned in seventy-six percent of all cities and sixty-nine percent of all counties in California. Additionally, the licensing process for retail stores is difficult and slow. According to US Census Bureau data, California has 0.91 licensed stores per 100,000 residents compared to 14.02 and 9.49 per 100,000 residents for Oregon and Colorado, respectively. 57

Next, ITEP highlighted how restrictive regulation created supply chain shortages. Research on the health effects of consuming cannabis containing pesticides is not well-established, but California has implemented tough restrictions on the use of pesticides in the growing process. Plants are known to fail lab testing regularly, often for contamination from an adjacent field's pesticides. This lack of supply in the market causes high prices and decreased tax revenue for the state. ⁵⁸

Finally, ITEP cited relaxed enforcement of the law against illicit sellers as a primary factor in the low revenues. The California illicit cannabis market is not only enormous, but highly entrenched

⁵³ Sambucci, Sumner, and Goldstein, "Effect of Taxes and Costly Regulations on the Licensed and Unlicensed Cannabis Markets."

⁵⁴ Sambucci, Sumner, and Goldstein, "Effect of Taxes and Costly Regulations on the Licensed and Unlicensed Cannabis Markets."

⁵⁵ Carl Davis, "Why California's Cannabis Market May Not Tell You Much about Legalization in Your State," Institute on Taxation and Economic Policy, August 22, 2019, accessed December 12, 2023, https://itep.org/why-californias-cannabis-market-may-not-tell-you-much-about-legalization-in-your-state/.

⁵⁶ Davis, "Why California's Cannabis Market May Not Tell You Much about Legalization in Your State."

⁵⁷ California Bureau of Cannabis Control, state marijuana programs website, <u>Chart: California licensed recreational marijuana stores fall short (mjbizdaily.com)</u>

⁵⁸ Davis, "Why California's Cannabis Market May Not Tell You Much about Legalization in Your State."

within the state.⁵⁹ The illicit market presents inherent competition to the legal market but also has advantages over the legal market. Without the need to comply with regulations, the production process for illicit sellers is less costly and therefore they are able to offer more competitive prices.⁶⁰ Prior to legalization, despite only consuming 2.5 million pounds of cannabis a year, the state of California produced 15.5 million pounds per year. A historic reliance and tolerance for this illicit market explains the slow growth of the legal market.⁶¹

Conclusion

Recreational marijuana sales can bring in substantial amounts of revenue for state governments. Sales and excise taxes allocate funds that can be utilized by the state. Prior to legalization, it is standard practice for states to project their revenue from legalization. In some cases, these projections have been characterized as inaccurate. New York and California's projections seem to have overestimated revenue relative to actual revenue generated. In the case of Vermont, it appears marijuana revenue projections were lower than actual revenue generated in the first partial year of legalization. While it is impossible to attribute these gaps to any one cause, many have pointed to implementation issues, illicit market competition, high taxes, among other factors.

This report was completed on December 12, 2023, by Elyse Giblin, Wiley Barzelay, and Sebastian D'Amico under the supervision of VLRS Director, Professor Anthony "Jack" Gierzynski in response to a request from Representative Patrick Brennan.

Contact: Professor Anthony "Jack" Gierzynski, 517 Old Mill, The University of Vermont, Burlington, VT 05405, phone 802-656-7973, email agierzyn@uvm.edu.

Disclaimer: The material contained in the report does not reflect the official policy of the University of Vermont.

-

⁵⁹ Davis, "Why California's Cannabis Market May Not Tell You Much about Legalization in Your State."

⁶⁰ Pablo Valdes-Donoso, "Costs of cannabis testing compliance: Assessing mandatory testing in the California cannabis market," *PLOS One* 15, no.4 (April 2020).

⁶¹ Davis, "Why California's Cannabis Market May Not Tell You Much about Legalization in Your State."