August 17, 2022

To the Honorable members of the Dual Use of Cannabis Tax Force:

We are pleased to submit the report from the Permitted Interaction Group Tax Working Group. The recommendations made in this report were reached through compromise and consensus. While each member supports the report as a whole, there were dissenting opinions regarding individual recommendations. Two dissenting opinions are found in the addenda to this report. We are proud of the work we have done together and ask that our recommendations be accepted by Dual Use Tax Force.

Respectfully submitted,

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Getting Too High?

Levels of taxation and potential public revenue from a legalized cannabis market in Hawaii.

For: **Tax Working Group of the Dual Use of Cannabis Task Force**

Author: **Seth Colby, Tax Research and Planning Officer. Department of Taxation**

Date: **August 2022**

Executive Summary

This report investigates potential tax regimes for a dual-use cannabis system in the State of Hawaii and estimates tax revenues. Tax revenues are a function of market operations. As a result, this report had to assess the current cannabis market in Hawaii, develop potential scenarios for a dual-use market, and then model the operations of the market. The report recognizes the great uncertainty in predicting the developments of a non-existent legal market.

There is nearly a decade of experience with adult-use cannabis that can provide important lessons for Hawaii. Recreational states generally experience high prices in the initial phase of market operations followed by a dramatic decline. Legal dispensaries in Hawaii are already competing with a national gray market. Recreational states see higher levels of reported consumption compared to non-recreational states. Most cannabis consumption derives from a small population of heavy users. The Federal government has taken a hands-off approach to the cannabis industry in states that promote well-regulated markets.

The Hawaii current cannabis market, estimated to be worth $240 million, operates in a gray space. Certain sectors like the medical marijuana market are legal and highly regulated while other parts remain illegal but are tolerated and subject to little or no regulation. It is estimated that only 21% of cannabis purchases made in 2021 were made at a legal dispensary. This has created a two-tiered market where the prices in the legal market are much higher than in the gray market. This incentivizes users, even those with a medical card, to make their purchase in the illicit gray market. Decriminalization and other decisions to not vigorously prosecute the illicit production and sale of marijuana have reduced some of the punitive consequences of operating in the gray market. Underutilization of the dispensary program indicates that most card holders purchase marijuana in the gray market. The major reason for the preference for the gray market is price.

This report finds that issues related to market structure and regulation result in high prices that are uncompetitive relative to the gray market. Laws and regulations that limit scale, market size, competition, and specialization create an unfavorable market structure. The cannabis industry already faces higher production costs relative to other industries due to classification of cannabis as a Schedule I drug. This imposes higher Federal corporate taxes on the sector due to the 280E clause and excludes cannabis firms from traditional banking services. The report recommends that these issues be considered if the State decides to legalize recreational use.

This report estimates that the size of a mature cannabis market that includes legal and illegal sales to be $354 million. Economic models developed for this report estimate that the legal price of adult-use cannabis would have to be in the range of $225-$275 per ounce to effectively compete with the gray market. This would imply legal sales worth $172-$273 million and tax revenues of $34-$53 million. Tax revenues and legal market size would be even larger if prices fell below this range. Prices often fall below $200 per ounce in states with mature cannabis markets, so a price point below $200 is reasonable under a favorable regulatory regime. A poorly regulated market would drive consumers to make purchases in the gray market, driving down tax revenues, and keeping most transactions beyond regulatory reach.

The results of the cost-production model suggest that legal firms in Hawaii can effectively compete with the gray market, particularly if the State elects to gradually phase-in the excise tax. The analysis shows that the cost-of-production and mark-up significantly impact the final price of cannabis. Regulation and market structure ought to promote conditions that favor a legal price that can compete with the gray market.

The report concludes with a set of useful economic principles that will contribute to a well-functioning market. These include using a system of carrots and sticks to incentivize desirable market behavior, developing the capacity to be flexible, encouraging healthy competition, allowing innovation, and applying the law in a uniform manner.

Recommendations from Tax Working Group

Recommendation I: The committee recommends that if Hawaii lawmakers decide to proceed with adult-legalization, they should pursue a legal strategy that promotes a cannabis industry that is not subject to burdensome levels of regulation and taxation. The legal and regulatory framework should promote the development of a mature well-functioning market that can effectively compete with the gray market.

Recommendation II: If the State elects to legalize recreational use, a cannabis excise tax should be levied on the final sale of cannabis products. The cannabis excise tax would be in addition to the GET of 4.5%. The excise tax would start out low in the initial phases of the market and increase as the market matures to a rate of 15%. The proposed excise tax rate is 5.0% for the first two years that the recreational market is operational, 10% for years three and four, and 15% in the fifth year of operation and beyond. Excise tax revenues would be divided between the State, which would receive 80% of revenues, and the counties, which would receive 20% of revenues. The county portion of the excise tax would be allocated to the county where the sale is made. This strategy would allow the legal market to compete with the gray market on price in the initial phase of market development. The size of the excise tax would increase as the legal market matures.

Recommendation III: This committee recommends parity in taxation between the medical and cannabis market if and only if the following trigger has been met. The trigger is that the price of cannabis has experienced a percent decline from the price in the medical market prior to recreational legalization that is larger than the cannabis excise tax. If this trigger is not met, medical marijuana patients will not be subject to the cannabis excise tax. This will ensure that affordability for medical patients has increased while closing a potential tax loophole that would allow heavy users to avoid the excise tax.

The following recommendations officially fall outside the purview of the tax working group. However, the recommendations I-III are contingent on a well-functioning market that outcompetes the illicit market, allows businesses to actively compete with one another to meet consumer demand, mitigates public health risks, and promotes a culture of legality. Recommendations IV and V are seen as important for the future health of Hawaii's cannabis industry.

Recommendation IV: This report assumes that the market will be segmented into producers, manufacturers, retailers, and testing facilities. It recommends that limits on the number of licenses issued to producers and manufactures be kept to minimum. This will encourage smaller players currently operating in the gray market to start operating legally. It will minimize the price differential between the legal market and the gray market. And it will promote competitiveness within the industry. Enforcement efforts ought to be effective and deter people from operating in the gray markets. The number of licensed retailers will depend on market demand, community preferences, population density, and geography. The report recommends that the cannabis regulator have some discretion over the number of licenses issued, allowing it to respond to market developments.

Recommendation V: This report finds that a strong independent cannabis agency is most likely to oversee the development and operation of a well-functioning cannabis market. An independent agency is more likely to be able to successfully manage multiple considerations like public-health and market development. Legislation ought to provide the legal framework for the cannabis market while the agency ought to be given powers to develop, modify, and enforce regulations that are more technical in nature. To increase accountability and transparency, it is recommended that major decisions by the agency must be reviewed by an advisory board whose members include: 2 members from the cannabis industry, 1 member from the Department of Health, 1 member from the Department of Public Safety and 3 members appointed by the Governor. At least one board member must represent an island that is not Oahu.

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1. Origin and Scope of Report

This report was produced at the request of the “Tax Working Group,” which is one of five Permitted Interaction Groups (PIG) of the Dual Use of Cannabis Task Force. SLH 2021, Act 169 created the tax force to explore the development of a dual system program of the legalization of cannabis and its impacts on qualifying patients. The Tax Working Group is to identify and make recommendations on the types of tax structures for medical and adult-use cannabis programs, including identification of tax rates for each program.

The Tax Working Group PIG understands that its objective is limited to taxation. As this report shows, the appropriate level of taxation is contingent on market structure and regulatory burden among other things because the behavior of the entire cannabis market affects tax revenues. It is impossible to address the issue of taxation without discussing how different aspects of the Cannabis market impact legal cannabis sales. For this reason, the report discusses issues like market structure, regulatory regimes, and other aspects of a dual use market that affect tax revenues.

While this report makes several recommendations on how to develop a healthy mature well-regulated cannabis market, it acknowledges that specific recommendations must account for a myriad of other factors that are either outside the scope of this report or unknowable at this time. For this reason, this report offers principles that ought to be observed rather than detailed policies that lack important contextual information. This report urges readers to pay close attention to the relationships between the major issues addressed in this report just as much as the actual recommendations. This will assist decision-makers as they navigate the dynamic challenge of developing a new market and helping the cannabis market make an effective transition from illegal to legal.

For example, this report recommends the creation of a competent cannabis agency staffed by knowledgeable professionals that regulates the cannabis legal market. This recommendation is predicated on the assumption that the State of Hawaii has the capacity to create an agency like this in a short amount of time. If this is not possible, then the recommendation to give significant regulatory powers to the agency would need to be reexamined. Giving substantial regulatory responsibility to a low-capacity agency is a recipe for a dysfunctional market. Therefore, it is important to remember the underlying principle driving the recommendation—the government needs to find a way to design an adaptable regulatory regime informed by expertise. It is important to remember the principles underlying each recommendation because some of the assumptions made in this report may not hold.

2. Considering Recreational Adult-use: Potential Objectives

The Dual Use of Cannabis Task Force is tasked with studying the development of a legalized cannabis market in Hawaii. It is important to identify the objectives and goals before assessment can be made. This report lays out three potential objectives for the legalization of adult-use Cannabis.

1) **Regulate and monitor the cannabis market:** Beginning in the 1970's, Federal and state authorities promulgated a policy on the complete prohibition of cannabis in what was part of a larger effort that became to be known as the War on Drugs. Critics say that this policy has: i) not dramatically reduced the incidence of drug use, ii) enriched and strengthened illegal entities engaged in the drug trade, iii) resulted in the mass incarceration of the population for petty crimes, iv) has disproportionately affected disadvantaged communities, and v) prevented government authorities from engaging in nuanced and intelligent regulation. Just as the United States realized the prohibition of alcohol was a policy failure, the costs of the complete prohibition of cannabis outweigh the benefits.

   Legalization is not an endorsement of marijuana but rather an acknowledgement that the best way to minimize risks associated with the drug is through intelligent regulation. The push to legalize the production and sale of marijuana would allow authorities to oversee the industry and end a culture of illegality. Legalization accepts that there are public health risks associated with the use of cannabis, and such risks are not best addressed by an outright ban. Governments permit citizens to engage in risky behaviors like driving automobiles and consuming alcohol and tobacco, but they develop and enforce rules to minimize such risks. Intelligent legalization would help Hawaii accomplish the following:

   - Prevent the distribution of cannabis to minors
   - Prevent the enrichment of criminal enterprises, gangs, and cartels through the sale of cannabis
   - Ensure that cannabis products are free of contaminants and meet public safety standards
   - Allow authorities to better track market developments and address challenges that arise
   - Allow authorities to more effectively mitigate public health risks associated with Cannabis
   - End policies that disproportionately harm disadvantaged communities

2) **Economic Development and Tax Revenues:** Another motivation that is sometimes cited to champion the cause of legalization is economic development. This is the idea that the production, processing, and sale of cannabis can help promote economic growth and produce tax revenue for the State.

3) **Improve Social Equity:** Boosters of legalization sometimes advocate for a regulatory structure that actively promotes economic empowerment of communities that were disproportionately affected by the War on Drugs.

This report will use the first listed objective—the intelligent regulation of the cannabis market—as the primary objective when assessing potential policies. The report recognizes that each objective would require a different strategy. Pursuing all three simultaneously with equal vigor is likely to undermine the efficacy at which one objective is pursued. For this reason, this report evaluates topics such as tax policy, market structure of the medical and recreational markets, and regulations using intelligent regulation and a reduction in illicit market activity as the primary objectives.

The report acknowledges the importance of the other two objectives, but they are used as secondary criteria. In states and countries that have legalized, the economic boom (sometimes known as the "Green Rush") that is anticipated after legalization have often failed to materialize in full. This report shows that the potential market size for cannabis and tax revenues while not inconsequential are relatively modest in comparison with the overall State economy and tax collections. Finally, it is important to remember that the most important achievement that legalization does to promote social equity occurs through the end of enforcement policies that led to the mass incarceration of disadvantaged communities. While some states have launched economic empowerment programs that promote minority-owned cannabis businesses, no program has produced their intended results to date. The best way to support objective two and three is by developing a strategy that creates a well-regulated legal cannabis market that serves recreational and medical users as well as the broader public.

3. Overview of Policy Landscape

There is nearly a decade of experience with adult-use cannabis that can provide important lessons for Hawaii. Recreational states generally experience high prices in the initial phase of market operations followed by a dramatic decline. Legal dispensaries in Hawaii are already competing with a national gray market. Recreational states see higher levels of reported consumption compared to non-recreational states. Most cannabis consumption derives from a small population of heavy users. This is an important aspect of the cannabis market that should be considered when formulating policy. The Federal government has taken a hands-off approach to the cannabis industry in states that promote well-regulated markets.

Federal policy

At the federal level, marijuana remains on the list of Schedule I controlled substances under the Controlled Substances Act. The classification is reserved for substances that have a high level of addictive potential and no accepted medicinal value. In October 2009, the Obama administration sent a memo to federal prosecutors urging them not to prosecute people who had been distributing medical marijuana in accordance with state law. In August 2013, the United States Department of Justice announced an update to their marijuana policy. The Department deferred the right to challenge the legalization laws of Colorado and Washington. A memo drafted by Deputy Attorney General James Cole outlined the priorities for federal enforcement of marijuana prohibition under the Controlled Substances Act. The priorities are as follows:

- Prevent the distribution of marijuana to minors

- Prevent the revenue from marijuana sale from going to criminal enterprises, gangs, and cartels
- Prevent the distribution of marijuana to other states from states where it is legal
- Prevent state-authorized marijuana activity from being used as a cover or pretext for the trafficking of other illegal drugs or other illegal activity
- Prevent violence and the use of firearms in the cultivation and distribution of marijuana
- Prevent drugged driving and the exacerbation of other adverse health consequences of marijuana use
- Prevent the growing of marijuana on public lands and the attendant public safety and environmental dangers posed by marijuana production on public lands
- Prevent marijuana possession or use on federal property

The memo went on to say that states which enforced their medical and/or recreational marijuana policies to protect against the list of harms above would not attract federal enforcement action. If states failed to control marijuana production, processing, sale, and use in a way consistent with the above guidelines, then federal action could be brought. The memo states that federal authorities still retain the authority to challenge the regulatory structure itself or enforce criminal prosecutions of individuals. As states consider loosening restrictions on recreational or medical marijuana, the likelihood of federal involvement will be reduced if controls can be put in place to prevent negative outcomes.

Trends and experience in recreational states

Recreational use of Marijuana is legal in 19 states, Washington, D.C, and Guam. The first state to legalize recreational use was Colorado through a 2012 ballot initiative. It opened its first retail outlets in January 2014. Washington state and Oregon opened recreational markets soon after. There are many lessons to be learned from the legalization efforts made by different states as they have adopted different approaches to regulation and taxation. These lessons are included in the different sections of this report.

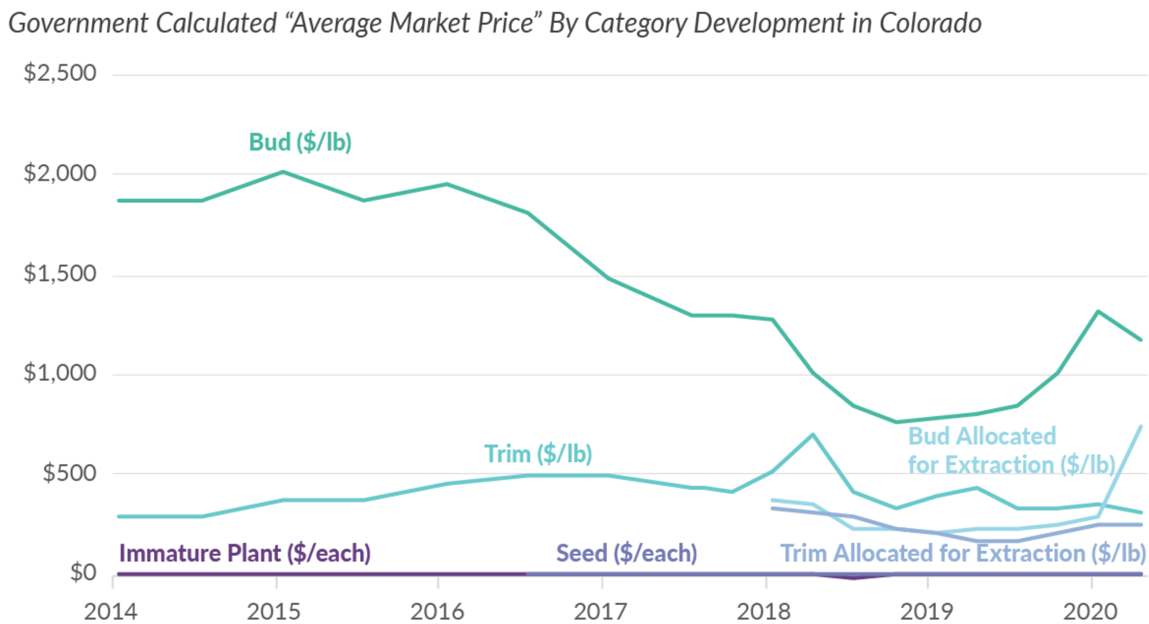
In all cases, the sale of recreational marijuana is available only to individuals of 21 years or older through retailers that are licensed and regulated by the state. Legislation normally allows individuals to possess up to a certain amount of product. It also allows individuals to cultivate and grow several plants for personal use.

U.S. states and territories that have legalized recreational marijuana:

- Colorado
- Washington
- Alaska
- Oregon
- Washington, D.C.
- California
- Maine
- Massachusetts
- Nevada
- Michigan
- Vermont
- Guam
- Illinois
- Arizona
- Montana
- New Jersey
- New York
- Virginia
- New Mexico
- Connecticut
- Rhode Island

States that establish recreational markets usually experience high prices at the beginning with prices falling dramatically as the market matures. In the beginning phase of the legalization process, demand usually outstrips supply. It takes months and sometimes years for production facilities to come on board and produce the large quantities demanded by recreational users. States that have medical marijuana programs in place prior to the legalization allowed existing medical marijuana dispensaries to sell their product to recreational users while additional retailers go through the licensing process and come on board. Prices of recreational marijuana are elevated in the beginning phase, but they come down dramatically as more producers enter the market. In the case of Colorado, the price of cannabis declined by more than 50%, falling from $2,000 a pound in 2015 to less than $1,000 in 2019 (see Figure 1).

Figure 1: The Price of Marijuana Declines Significantly After Legalization: the experience of Colorado



Note: Average Market Rates utilized for calculating wholesale levy on recreational marijuana in Colorado.
Source: Colorado Department of Revenue, "Current & Prior Retail Marijuana Average Market Rates (Median Market Prices)," April 2020, https://www.colorado.gov/pacific/sites/default/files/AMR_PriorRates_Apr2020.pdf.

The market for cannabis flower behaves like other agricultural markets. Cannabis is a plant that is relatively easy to grow. It is called "weed" for a reason. In economics, most agricultural good markets are typified by perfect competition. This means that most producers sell a good that is commoditized and not well differentiated. In such markets, producers are price-takers, meaning they must accept the prevailing price in the market. Producers generate profits by producing the good at a low cost. Cannabis has traditionally been a profitable crop primarily due to its illegality. Once production and sale are legalized, the fundamental dynamics of the cannabis market suggest that prices for mid-grade cannabis flower will come down precipitously. This is what has occurred in states that have legalized. Producers have been forced to take a lower price than they were expecting. As the price has come down, producers have focused on growing higher-grade cannabis, which is not as easy to produce, and manufacturing value-added products to increase their profit margins. This market evolution is typical of agricultural goods.

Local medical marijuana producers are already competing in a national cannabis market. Even though it is illegal to transport cannabis across state lines due to Federal law, there is a thriving gray cannabis market. According to people working in the industry, most illicit cannabis sold in Hawaii comes from California. Illicit California cannabis is cheap and of relatively good quality. This implies that there is already a national market for cannabis. Local producers, be they legal medical dispensaries, semi-legal cannabis cooperatives, or illegal producers, are already competing in a national market that operates like many agricultural goods markets. Consumers are very price conscious and will opt for illegal product if it is cheaper. The illegal product is often produced outside of the State. This market dynamic will not go away even if Hawaii opts to legalize adult-use.

Reported marijuana use increases in states that have legal recreational use. The social norms regarding cannabis have changed across the country over the last decade. According to the Substance Abuse and Mental Health Services Administration (SAMHSA), the percentage of the US population 18 years old and over that reported using marijuana in the past year increased from 12.2% in 2013 to 18.3% in 2020, an increase of 6.1%. The increase in reported use is 3.0% higher in states that have recreational programs. Table 1 shows the increase in reported use for states that had a functioning operational market prior to 2020 compared to other states.[1] The states with functioning recreational markets increased by 8.7% for the timeframe in question versus 5.6% for non-recreational states.

The difference in the increase in reported usage between recreational and non-recreational usage is smaller than the overall increase that occurred throughout the country. While the increase is higher in states that have legalized, the increase of 3.0% is smaller than 5.6% increase in reported use in non-recreational states. This implies that changing norms have a bigger impact on use than its legal status. It is unknown whether the increase in reported usage pertains to an actual increase in use or if survey respondents feel more comfortable reporting that they have used the substance once that it is legal. One would expect that an increase in the ease-of-access would be correlated to an increase in usage rates however.

Table 1: Average Increase in Reported Marijuana Use Between 2013 and 2020

	2012-13	2019-20	Difference
States with Recreational Cannabis	16.9%	25.4%	8.7%
States without Recreational Cannabis	11.8%	17.4%	5.6%
Difference	5.1%	8.0%	3.0%
Total U.S.	12.2%	18.3%	6.1%
Hawaii	13.2%	15.4%	2.2%

Source: National Survey on Drug Use and Health (SAMHSA)

[1] The states that had a functioning recreational market are Colorado, Washington, Alaska, Oregon, California, Maine, Nevada, Michigan, and Massachusetts. This was compared to the rest of the states.

Heavy users of cannabis are responsible for most of the cannabis spending. Most of the uptick in user rates that results from legalization is composed of "casual users." These are individuals that occasionally partake in the substance. While most users are casual, they make up the minority of consumption and spending. The majority cannabis consumption derives from heavy users. These are individuals that consume cannabis on a daily or near daily basis. The fact that a smaller number of heavy users account for a large majority of consumption is present in the alcohol market as well. According to one estimate, heavy users comprise just one-third of total users but represent three-quarters of cannabis spending.[2] Researchers estimated that in Colorado just 22.1 percent of users accounted for 71.1% of cannabis consumption in the State.[3] This segmented nature of the market between heavy-users and casual-users of cannabis ought to be considered as the State formulates its policy approach.

4. Current State of Hawaii Cannabis Market

The Hawaii cannabis market currently operates in a gray space. Certain sectors like the medical marijuana market are legal and highly regulated while other parts remain illegal but are tolerated and subject to little or no regulation. This has created a two-tiered market where prices in the legal market are much higher than in the gray market. This incentivizes users to make their purchase in the illicit gray market. Decriminalization and other decisions to not vigorously prosecute the illicit production and sale of marijuana have reduced some of the punitive consequences of operating in the gray market. Underutilization of the dispensary program suggests that most card holders purchase marijuana in the gray market. The major reason for the preference for the gray market is price.

Hawaii currently tolerates a gray market worth hundreds of millions of dollars. A gray market is distinguished from a black market due to its higher levels of social acceptance and ambiguous legal treatment. In a black market, the possession and sale of a product is clearly illegal and legal enforcement is strong. In a gray market, the legal classification is more ambiguous and enforcement measures are not consistently applied. Decisions made at the Federal and state level have resulted in a gray market for cannabis in Hawaii. Such decisions include:

1) Reduction in Enforcement Efforts
    a. In 2013, U.S. Department of Justice issued the Cole Memo which reduces the scope of Federal enforcement efforts in states that have legalized medical marijuana and adult-use (Cole memo).
2) Legalization of Medical Marijuana Sales
    a. In 2000, Hawaii passed Act 228, allowing 329 cardholders to grow their own cannabis or appoint a caretaker to do so, becoming the 8th state to legalize medical cannabis and the first to do so through an act of the State legislature.

[2] Steven Davenport and Jonathan P. Caulkins. "Evolution of the United States marijuana market in the decade of liberalization before full legalization." Journal of Drug Issues, 46(4):411–427 (2016).
[3] Adam Orens, Miles Light, Brian Lewandowski, Jacob Rowberry and Clinton Saloga. "Market Size and Demand for Marijuana in Colorado 2017 Market Update," Marijuana Policy Group LLC, August 2018. https://www.colorado.gov/pacific/sites/default/files/MED%20Demand%20and%20Market%20%20Study%20%2008208.pdf.

b. In 2015, Hawaii enacted legislation that establishes a dispensary program that allows people with a medical marijuana card to legally purchase marijuana to allow the consumption. The system allows individuals to grow up to 10 plants on behalf of a cardholder, allowing for the growth of cannabis coops that do not abide by the same regulation imposed on dispensaries.

3) Decriminalization of Possession of Marijuana
    a. Act 273 Session Laws of Hawaii 2019 decriminalized the possession of three grams or less of marijuana and established that the possession of that amount is a violation punishable by a monetary fine of $130 starting Jan 1, 2020.

Decisions made by State and Federal authorities allow for the operation of a large market that operates in a legal gray zone. Any sale or distribution outside of the medical marijuana dispensary program is illegal, yet the State Legislature has decriminalized the possession of up to three grams of marijuana. Thus, the non-medical marijuana market operates in an ambiguous space where it is illegal but tolerated. This unclear status has the potential to erode social trust in the rule of law as authorities take a blind eye to illegal activity. It also creates problems for medical marijuana dispensaries that are complying with the law. The gray market does not have to comply with the regulations and taxes imposed on marijuana dispensaries. As a result, 329 cardholders tend to make their purchases in the gray market where the price of cannabis is cheaper.

The current size of the cannabis market in Hawaii is estimated to be $240 million in 2021, 79% of which are illegal sales.[4] Medical Marijuana dispensaries reported sales of $50 million in that year. This implies that legal dispensary sales represent only 21% of the market (see Figure 2) and that most marijuana purchases are made illegally in the gray market. (See Appendix A for the methodology on the estimate of market size).

The price of one ounce of cannabis flower at a medical marijuana dispensary is about 40%-100% more expensive than an ounce of flower of comparable quality in the gray market. Prices differ by island, but the gray market is considerably less expensive than the dispensaries (see Table 2). Dispensary owners claim that the cost of complying with regulation, taxes, and labor standards increase their cost structure, causing them to charge higher prices for a similar product. Competition also seems to be a factor in the price differential. It is notable that Kauai has the least amount of competition (only one dispensary is approved for operation on the island), and it has the biggest differential between legal and gray market prices. The gray market is expected to flourish if there remains a large price differential between the gray market and the legal market.

[4] The market size for the current cannabis market in Hawaii ($240 million) is smaller than the expected size of the cannabis market where recreational use is legal ($354 million). The difference is due to induced demand from legalization.

Figure 2: Estimate of Legal vs Illegal Sales of Marijuana in Hawaii

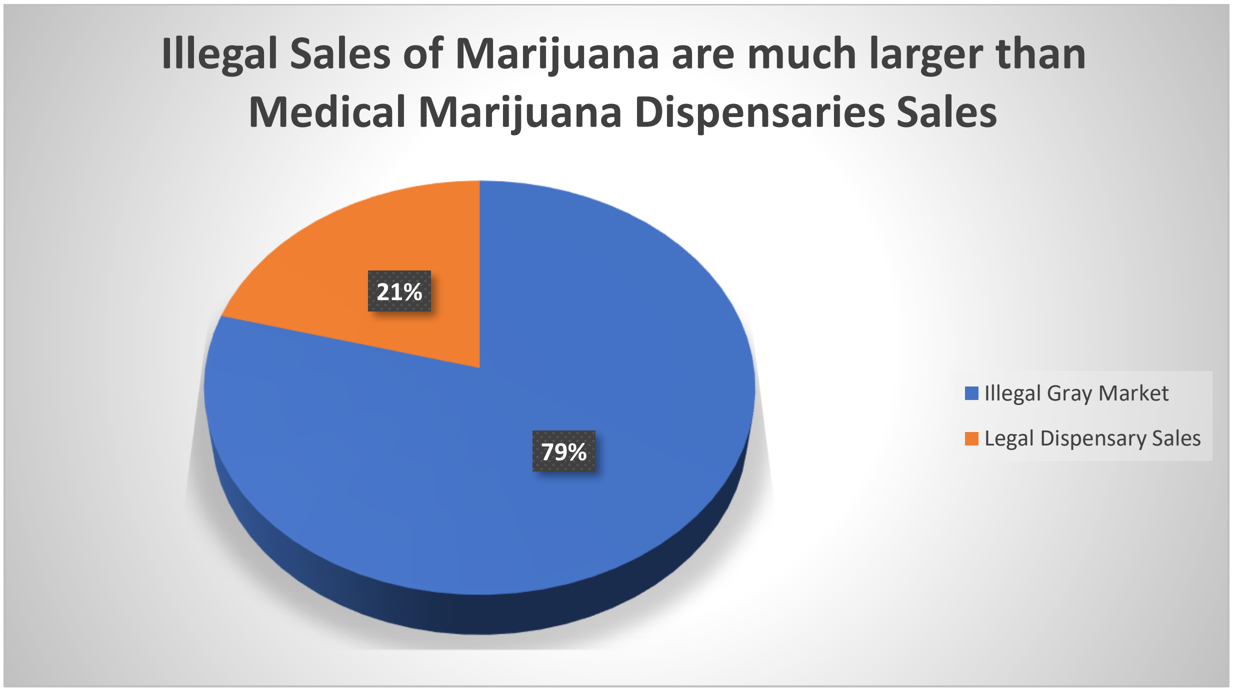


Table 2: Price Differential between medical dispensaries and gray market ($/oz) of medium grade cannabis

Prices/ Oz	**Oahu**	**Maui**	**Big Island**	**Kauai**
Medical	350	350	220	400
Gray Market	250	250	150	200
Price Differential	**40%**	**40%**	**47%**	**100%**

Source: Interviews with market participants

The medical marijuana market continues to grow, but most licensed patients appear to be making their purchases in the gray market. Since the dispensary program was launched in 2017, sales have steadily grown from $18.2 million in 2018 to $50 million in 2022.[5] Yet the percentage of card-holding patients that use dispensaries to make purchases has declined. In 2018, unique patient encounters represented about half of total patients. In January 2021, unique patient encounters only represented one-third of total patients. Even amongst newly registered patients, only 26.5% of newly registered patients made purchases at a dispensary. This indicates that the medical dispensary system is not meeting patient needs and most patients are procuring cannabis from the gray market rather than dispensaries.

Authorities tolerate a system where regulations and laws are applied unevenly across different types of cannabis producers. Medical dispensaries are subject to costly regulations

[5] Brewbaker, Paul. Randy Gonce, Tai Cheng, and Bill Jarvis (2022). "The Status of the Hawaii Cannabis Industry Report." Hawaii Cannabis Industry Association.

when it comes to the production, tracking, manufacturing, and sale of cannabis. Current law allows entities to grow up to ten plants on behalf of each 329 card holder. These entities, which are called cannabis coops, collect cards in a process called "staking" that allows them to legally cultivate large quantities of cannabis. In some cases, the number of plants under cultivation exceeds those of licensed dispensaries. The coops cultivate cannabis on behalf of its member cardholders and sell it back to them. The prices available at the cooperative are usually significantly less than the dispensaries. Part of the reason for the difference in price is the coops do not conform to the same rules imposed on dispensaries. Laws are not uniformly enforced in the medical marijuana market.

5. Three Potential Scenarios for the Cannabis Market in Hawaii

Recommendation: *The committee recommends that if Hawaii lawmakers decide to proceed with adult-legalization, they should pursue a legal strategy that promotes a cannabis industry that is not subject to burdensome levels of regulation and taxation. The legal and regulatory framework should promote the development of mature well-functioning market that can effectively compete with the gray market.*

There are three potential scenarios for the cannabis market in Hawaii.

1) **The status quo: Medical marijuana dispensaries continue to operate while recreational adult-use remains illegal.** This scenario is what is expected if the current legal regime remains in place. If present trends continue, the medical marijuana market will continue to grow as it has done over the last several years, but the growth in gray market sales will be proportionally higher. This is mainly due to the differential between dispensary prices and gray market prices.

2) **Recreational adult-use is legalized. The regulatory and taxation burdens imposed on legal producers are high.** In this scenario, adult-use and medicinal marijuana markets are both legalized, but the cost of compliance with the regulatory and taxation schemes drive-up the cost structure, causing legally purchased product to remain uncompetitive compared to the gray market. In this case, the legal adult-use cannabis market would be small compared to the gray market. People would prefer to make their purchases in the gray market because it is cheaper. The tax revenue in this scenario is expected to be low because people will avoid the legal market. It is possible that the cost of setting up and maintaining a regulatory framework will be higher than tax revenues.

3) **Recreational adult-use is legalized. The regulatory and taxation burdens imposed on legal producers are moderate.** In this scenario, the adult-use and medical marijuana markets can effectively compete with the gray market. The legal entities can offer products at a price point that are competitive with those in the illegal market. This will incentivize illegal producers and sellers to either: i) leave the market entirely or ii) enter the legal market. Since most purchases are made through legal means, the tax revenues will be higher.

This committee recommends that the State and counties pursue a scenario where the legal and regulatory regime facilitates a well-functioning market that outcompetes the gray market, meets the needs of medical and recreational users, and mitigates public

health risks. This approach will increase compliance, generate more tax revenues, and increase the ability of regulators to manage risks associated with sale and consumption of cannabis.

6. Why Does Legal Cannabis Cost More Than Gray Market Cannabis?

This report finds that issues related to market structure and regulation result in high prices that are uncompetitive relative to the gray market. Laws and regulations that limit scale, market size, competition, and specialization create an unfavorable market structure. The cannabis industry already faces higher production costs relative to other industries due to classification of cannabis as a Schedule I drug. This imposes higher Federal corporate taxes on the sector due to the 280E clause and excludes cannabis firms from traditional banking services. The report recommends that these issues be considered if the State decides to legalize recreational use.

One of the central policy objectives of legalization is to reduce the size of the illegal gray market by encouraging producers and buyers to participate in legal markets. On the buyer side, the biggest obstacle to this is cost. Cannabis consumers are price sensitive, meaning that changes in price will result in changes in behavior. It is thus important to understand the sources of why the medical marijuana market is not competitive with the gray market. The following section explores this issue.

Some market participants claim that legal producers will never be competitive with the gray market because they have additional costs like paying taxes and benefits to their employees. This claim is best met with a degree of suspicion. Most legally produced goods can effectively outcompete with illegal producers. This is because legal entities are much more productive than their illegal counterparts. There are usually special circumstances that explain the existence of a large gray market.

Factors that limit competitiveness of legal cannabis

Economies of Scale—In economics, a basic factor influencing the cost of a good is economies of scale. Large manufacturing facilities require greater investment, yet mass production drives down the unit cost. Economies of scale play an important role in agriculture. Large growing sites have lower unit costs. Legal entities can operate at larger scales and make larger capital investments than illegal entities because the larger entities are more likely to draw attention from regulatory authorities.

Current legislation restricts the operational scale of dispensaries. A dispensary can have no more than two production centers, with each production center limited to no more than 3,000 plants. The 2022 Legislature passed SB 2260 that relaxes this production constraint. The new law allows dispensaries to operate three production centers, with each production center limited to no more than 15,000 plants. These quantities may be sufficient for the medical market, but they are probably insufficient for recreational cannabis. Allowing producers to operate at high levels of scale can help bring down costs and pass the savings on to the consumer. Note, there is usually a limit to which scale helps bring down costs. Producers may decide that it is best to produce their product at smaller scales. It is usually better for producers to discover the right size of scale rather than lawmakers that understand little about the production process.

Mandate for Vertical Integration—Legislation mandates that one entity produces, processes, manufactures, and sells medical cannabis. This is known as vertical integration because one entity owns the entire process up and down the value chain. While there are certain circumstances where there is a business case for vertical integration, legislatively mandating that a business be vertically integrated tends to drive up costs and concentrate risks. The mandate keeps businesses from specializing in their comparative advantage. It forces businesses to master all steps of the value chain. It also concentrates risks as a business must manage production risks, manufacturing risks, and retail risks. In most markets, these risks would be distributed, which helps bring down prices. Vertical integration is easier for regulators since they monitor fewer entities, but it does drive up costs and harms market development.

Market Size—It is easier to achieve greater economies of scale and create dynamics that facilitate innovation in larger markets. Currently, the market is reduced because it is only available for 329 card holders who have a legitimate medical condition. Dispensaries can only engage in retail in the county in which they are licensed. This greatly limits market potential and harms competition. A recreational adult-use would allow for a larger market where different size firms can compete with one another across different segments statewide to meet consumer demand.

Lack of Competition—Current legislation created an oligopolistic market on each island. In the case of Kauai, it created a monopoly system since it only allowed for one dispensary company. Not surprisingly, it also has the highest prices of any island. This system greatly limits competition between dispensaries and increases the chances of market collusion. A system that allows entrance of more retailers and producers to operate on the island of their choice would create more competition and bring down prices. Allowing independent wholesalers to operate in the market would increase competition as well.

Heavy Regulatory Burden—Regulation of the production, manufacturing, and sale is essential for a psychoactive plant like cannabis. Getting the right balance of regulation that maintains public health, grants consumer protection, and allows a competitive market is difficult. Currently, there is a heavy regulatory burden placed on dispensaries. Many of the regulations seem to exist to facilitate the job of the regulators at the Department of Health more than protecting consumers. If the State elects to legalize adult-use, the current regulatory system should be re-evaluated. Regulatory complexity favors large incumbent firms that are adept at managing the process. If lawmakers want to promote small businesses in this sector, complex regulation is a significant hurdle to making this a reality.

Access to Banking and Finance—Traditional banks are very reluctant to offer basic banking services like managing their accounts and providing financing. The federal government considers cannabis a Schedule I drug under the Federal Controlled Substances Act. Banks that do business with cannabis businesses subject themselves to risks with Federal financial regulatory bodies. Due to a lack of clarity of existing rules, banking institutions run the risk of violating Bank Secrecy Act/Anti-Money Laundering rules.

Most traditional banks will not do business with cannabis businesses. This imposes a significant cost on these businesses because they must conduct most operations in cash, and they do not have access to traditional forms of financing like loans for working capital and expansion. This is an issue that must be resolved at the Federal level. In the meantime, the cost of being unbanked will represent a significant cost for cannabis businesses that are not present in other industries.

Some states have chartered credit unions to service their industry. No such credit union currently exists in Hawaii.

Federal Corporate Taxes (208E)—Federal tax law imposes a uniquely high cost on cannabis businesses. 26 U.S.C. § 280E singles out legal cannabis businesses for a significantly higher income tax burden relative to other types of legal businesses. Section 280E was enacted in 1982 to deny the deduction of business expenses to those selling drugs on Schedules I and II of the Controlled Substances Act. While intended to stop illicit sellers from deducting expenses like guns and yachts used in smuggling operations, the IRS applies it to state-authorized marijuana retailers, punishing taxpayers trying to comply with the law and creating a competitive advantage for the illicit operators that Section 280E was enacted to penalize.

Section 280E states that all cannabis businesses are required to pay income tax on the difference between their revenue and their expenses. The issue is that what is allowable as an expense is defined more narrowly than normal firms. Marijuana businesses are not allowed to deduct “normal” business expenses like advertising, labor, rent, and administration costs. The only expenses they can deduct are “cost of goods sold,” which are costs directly associated with the production of the product. This imposition represents a significant cost for cannabis businesses, particularly those not directly involved in the production process. This incentivizes firms to organize themselves in ways that allow them to claim more costs of goods sold and fewer “normal” business expenses. The restricted definition of expenses creates a situation where a business may owe federal income taxes even if it is running at loss. It is estimated that this provision increases the cost of doing-business by 15-20%. This issue must be resolved at the Federal level, but it must be considered if Hawaii opts to develop a recreational cannabis market. Hawaii passed legislation that allows cannabis businesses to deduct common business expenses on their state income taxes, so this is only an issue with the Federal tax code.

General Taxation—All states that have legalized recreational cannabis apply a special excise tax. In some cases, this is on top of existing sales taxes. Other times, it is in lieu of existing sales taxes. The amount of taxation is a delicate issue, which will be discussed in greater depth in this report. The tax is only levied on legal sales of cannabis. This means if the tax is too high it can make prices in the legal market uncompetitive with those in the gray market, which do not pay taxes. Hawaii will need to strike the right balance on taxation if they want to encourage the use of the legal market.

Table 3: Dynamics of the Hawaii cannabis market results in high prices and makes it uncompetitive relative to the gray market.

Factor	How It Drives Up Costs	Potential Solution for Adult-Use Market
Economies of Scale	Current law restricts the size of production facilities and prohibits companies from achieving economies of scale	SB2260 increases limits on production levels. Authorities must be aware that legal entities can achieve lower cost structure by operating at scale
Mandate for vertical integration	Current law mandates that dispensaries must be producers, manufacturers, and retailers. This arrangement concentrates risk and keeps businesses from focusing on their comparative advantage	Remove the mandate for vertical integration. Allow businesses to discover the best way to organize themselves. Allow wholesales to independently operate in the market and sell to multiple entities.
Market Size	Current law creates four segmented markets for each county	Create one state-wide market by allowing businesses to operate on any island.
Lack of competition	Legislation allows only 8 dispensaries in the State. 3 dispensaries operate on Oahu, 2 operate on Maui and Hawaii county, and 1 operates in Kauai	Increase the number of licenses for producers, manufactures, and retailers to facilitate competition. Allow firms to operate on all islands.
Heavy regulatory burden	Legislation imposes heavy regulatory burden on businesses	Reevaluate current regulations to ensure that they serve consumers rather than regulators.
Access to Banking and Finance	Cannabis businesses do not have access to traditional banking services	Must be addressed at Federal level. Hawaii can charter a credit union that serves Cannabis businesses
Section 280E of Corporate Tax Code	Cannabis businesses cannot deduct normal business expenses, which increases their tax burden	Must be addressed at Federal level
General Taxation	Gray market sellers do not need to pay sales and excise taxes making legal product less competitive	Adopt a taxation regime that is high enough to produce revenues to fund social priorities but low enough to allow legal cannabis to compete with gray market

7.Cannabis Taxation:

When developing a taxation system, it is helpful to keep in mind basic principles of excise taxes. An excise tax is a tax that is imposed on a specific good or service. In the case of a product like alcohol, tobacco, and cannabis, an excise tax is placed to discourage overuse and mitigate undesirable social outcomes. An excise tax is different from a basic sales tax (or a general excise tax (GET) in the case of Hawaii). An excise tax is levied on a specific category of good or service, whereas a sales tax is levied on a broad range of goods and services. Basic tax principles are:

- Tax rates should be low enough to allow legal markets to undercut, or at least gain price parity with, the illicit market.
- Taxes should provide a relatively stable form of revenue
- The tax regime should raise sufficient revenue to meet spending priorities
- The tax regime should be relatively easy to administer in a fair and cost-effective manner

7.1 Three questions regarding the taxation of cannabis

What to tax?

States can elect to levy taxes along different stages of the value chain. Some states apply an excise tax on wholesale rates while other states elect to levy the tax on the final sale. Some states levy tax at more than one part of the value chain. This can produce the undesirable result of tax pyramiding, where the tax rate grows exponentially because there is a tax on a tax. California levies taxes at multiple stages of the value chain at the state and local level. The multilevel tax regime has produced tax rates that range from $677 to $1,441 per pound of flower depending on the jurisdiction. This implies a tax of 80% to 170% on wholesale prices. Not surprisingly, California's cannabis market is in a state of crisis, with most purchases made in the gray market. Taxing wholesale sales presents another problem for vertically integrated firms. They either do not have to pay the wholesale tax, creating a large tax loophole, or the state authorities must calculate a wholesale price that applies to all firms.

What type of tax?

There are three basic types of cannabis excise taxes: *ad valorem* tax, weight/quantity taxes, potency taxes. An *ad-valorem* tax is based on the percentage of the price of a good. This is how a sales tax works in most states. It is the most popular type of cannabis excise tax, particularly those that have legalized later. The advantage of this type of tax is its simplicity to administer and calculate. It also has the benefit of capturing all the value added in the production chain if levied on the final sale. The drawback is that revenues can fluctuate considerably if there is significant price volatility. Most states have opted for ad valorem tax on recreational marijuana levied at the retail level.

Some states like Alaska have opted for a weight-based tax. This is the same approach taken for alcohol taxes, which levy taxes on gallons, and cigarettes, which levy taxes on individual sticks. The advantage to this tax is that revenues tend to be stable in the face of price volatility. The disadvantage to this tax is that it is more complex. Authorities must create different classifications and tax rates for different products. For example, the weight of trim cannot be compared to the weight of flower. Fresh flower weighs more than dried flower, and techniques such as flash freezing further complicate the system. Authorities also have trouble devising new categories in a fast-evolving market.

Another approach is to tax the potency of the product. New York levies a predetermined rate per milligram of the amount of total THC. The rate varies for cannabis flower, concentrated cannabis, and edible products. The rationale is that a higher tax will discourage the consumption of THC, the psychoactive ingredient in cannabis. The problem with this approach is it is very difficult to accurately determine the amount of THC. It requires very precise testing that is expensive. In the case of Hawaii, testing facilities that offer the level of accuracy do not yet exist.

How much to tax?

The question of how much to tax requires a delicate balance. If the tax is too high, legal cannabis products will not be competitive relative to the gray market. This would reduce the size of the legal market as well as tax revenues. On the other hand, the usage of cannabis does impose costs on society in terms of public health and the cost of regulating the industry. Ideally, the tax will more than cover such costs. States that levy *ad valorem* taxes range from 10% in Michigan to 37% in Washington. Sometimes, these tax rates are in addition to other types of weight-based taxes. In some states, cannabis is subjected to the normal sales tax as well.

7.2 Tax type and rate recommendation:

Recommendation: *If the State elects to legalize recreational use, a cannabis excise tax should be levied on the final sale of cannabis products. The cannabis excise tax would be in addition to the GET of 4.5%. The excise tax would start out low in the initial phases of the market and increase as the market matures to a rate of 15%. The proposed excise tax rate is 5.0% for the first two years that the recreational market is operational, 10% for years three and four, and 15% in the fifth year of operation and beyond. Excise tax revenues would be divided between the State, which would receive 80% of revenues, and the counties, which would receive 20% of revenues. The county portion of the excise tax would be allocated to the county where the sale is made. This strategy would allow the legal market to compete with the gray market on price in the initial phase of market development. The size of the excise tax would increase as the legal market matures.*

This commission recommends an *ad valorem* cannabis excise tax on final sales in addition to the GET. After reviewing the potential tax types, the experience with other states, and unique dynamics of Hawaii's cannabis market, the commission recommends that the State adopt an *ad valorem* excise tax on the final sale of all cannabis products, where one rate will apply to all products. The advantages of this approach are the following: 1) It is relatively simple to administer. 2) It captures all value-added in a product. A common trend in legalized markets is that value-added products like edibles and oils comprise a larger part of the market over time. Raw flower tends to decline as a percentage of the market. A tax on the final price of the product provides flexibility in the market where products and tastes are constantly changing. 3) It avoids problems of tax pyramiding. 4) It does not favor vertically integrated firms. If the tax were levied at the wholesale rate, then the tax system would provide a loophole for vertical integration. This would pose a significant challenge in Hawaii since existing dispensaries are vertically integrated by law.

The commission recommends starting off with a lower excise rate to help legal producers compete with the gray market and gradually increase the final rate to 15% as the market matures. The excise rate would be in addition to the GET rate of 4.5%, implying a total tax of

19.5%.[6] The final rate would place Hawaii in the middle of the range for states on the effective tax rates on cannabis (see Figure 3). This tiered strategy is designed to encourage the development of a legal market that outcompetes gray market sales while also providing ample tax revenues over the long-term. Keeping taxes low in the initial phase of the roll out will promote market development and increase tax revenues in the long-term. New Mexico has elected to use a phased-in approach to increasing taxation.

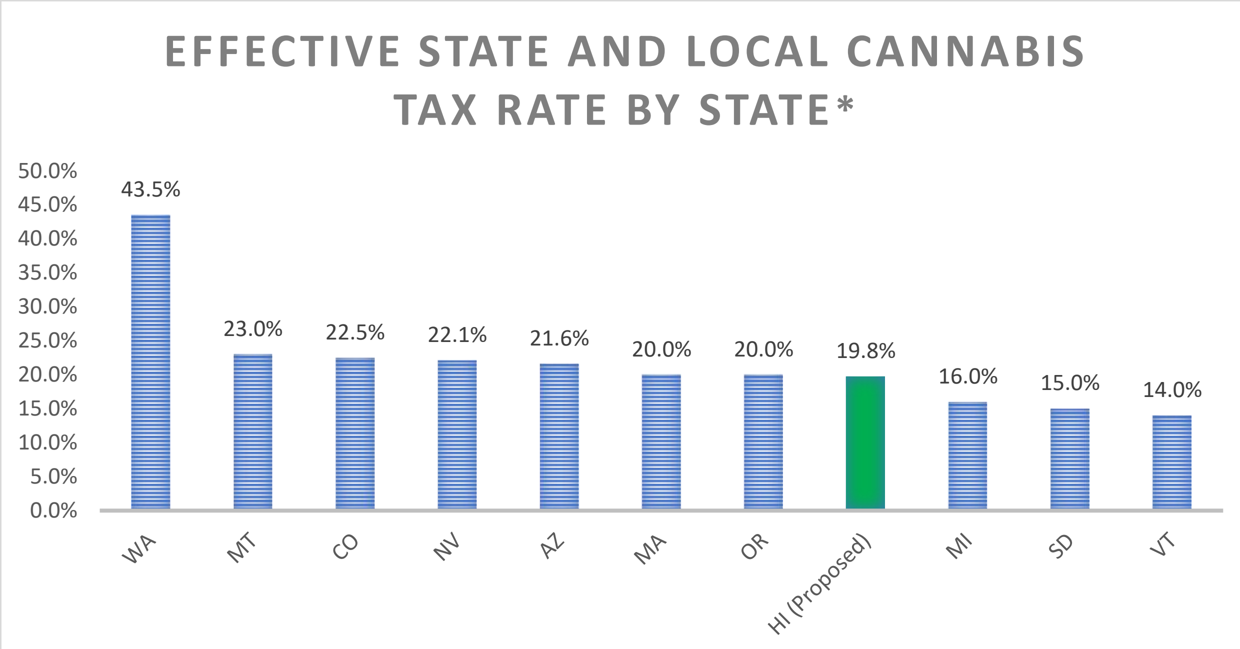
Having a lower tax rate in the initial phases of legalization would help legal producers to compete with illicit sales. The rate should increase once the legal market is established and competitive. Once consumers become accustomed to purchasing products through legal means and local producers mature in their capacities, the danger of consumers switching back to the gray market diminishes. Experience in states that have legalized suggest that it takes about five years for the legal market to mature and become established. For this reason, it is recommended that the final and highest rate go into effect in the fifth year of the operation of a legal recreational market. The commission recognizes that the counties will bear some of the costs of regulating the cannabis market and recommends that they receive a portion of excise tax proceeds. Table 4 provides a schedule of recommended tax regime over time.

Table 4: Proposed Taxation Rates for Cannabis in Hawaii

	Year 1-2 of Legalized Market	**Year 3-4 of Legalized Market**	**Year 5+ of Legalized Market**
General Excise Tax Rate	4.5%	4.5%	4.5%
Cannabis Excise Tax Rate	4.0% state 1.0% county	8.0% state 2.0% county	12.0% state 3.0% county
Total Tax Rate	9.5%	14.5%	19.5%

[6] The GET rate used in this report is the retail of 4.5%. 4.0% of which goes to the state general fund and 0.5% represents the county surcharge. Every county except for Maui levies a county surcharge of 0.5%. A person making a retail cannabis purchase on Maui would pay no county surcharge and be subject to a 4.0% retail rate rather than 4.5%. The GET wholesale rate of 0.5% would be levied on all wholesale transactions as it occurs across all industries. This implies that the seller of cannabis in a wholesale transaction would be responsible for paying the 0.5% wholesale rate. The compounding effect of the wholesale rate is taken into account when calculating Hawaii's effective tax rate shared in Figure 3.

Figure 3: Effective tax rates of states that levy a tax as a percentage of price only



*The effective tax rate is a combination of excise taxes levied at the wholesale level, retail level, and local level as well as standard sales taxes. The estimation assumes that goods taxed at the wholesale levy will be marked up 100%. The effective tax levied at the wholesale rate is half the nominal rate using this assumption.

7.3 Tax treatment of medical cannabis

Recommendation: *This committee recommends parity in taxation between the medical and cannabis market if and only if the following trigger has been met. The trigger is that the price of cannabis has experienced a percent decline from the price in the medical market prior to recreational legalization that is larger than the cannabis excise tax. If this trigger is not met, medical marijuana patients will not be subject to the cannabis excise tax. This will ensure that affordability for medical patients has increased while closing a potential tax loophole that would allow heavy users to avoid the excise tax.*

Before this report discusses taxation, it is important to consider the rationale for the legalization of medical cannabis. Medical cannabis is not a prescription drug. A prescription is issued by a licensed physician for a specific medicine at a specific dose of a limited amount. For this reason, medical marijuana is not eligible for the GET exemption on prescription drugs. A 329 medical marijuana card is granted to patients by a certified medical authority for eligible conditions. The card allows the patient to purchase an array of products and quantities without the close supervision of a physician. The legalization of a medical market acknowledged that there are legitimate medical uses for cannabis and the State should provide a pathway for patients to access cannabis products in a legal and safe manner. Thus, the most important elements of the medical marijuana market are legal reliable access at an affordable cost.

A functioning recreational market will provide medical marijuana patients with reliable access at a considerably lower cost than currently exists in the existing dispensary market. The price of marijuana tends to fall dramatically as the recreational market matures, sometimes the price comes down by more than 50%. Cannabis should become more affordable to patients after legalization. This information is important to keep in mind when considering the issue of taxing medical cannabis. If affordability and access are the main concerns of patients, then a recreational market will supply a product that is cheaper than the current market. In fact, prices are expected to drop by more than 15%, which more than offsets suggested excise tax of 15% in year five of a mature market. Patients already pay GET of 4.5% on their purchases, so this would not represent a new tax.

The report recommends that 329 card holders receive the same tax treatment as recreational users if the average price of cannabis has declined by more than the size of the excise tax. If the prevailing price of recreational cannabis has not declined more than the size of the excise tax from the average price of cannabis in the medical marijuana market prior to the legalization of recreational use, then medical patients would not be subjected to the cannabis excise tax. The fall in the price of cannabis by the size of the excise tax would act as a trigger that would impose the excise tax on all cannabis purchases. This will ensure that patients will have access to product that is cheaper than the current legal medical market.

The logic for this recommendation is as follows: Medical cannabis is primarily about access and affordability. Medical cannabis is not like a traditional prescription medicine (which is exempt from GET). Medical cannabis is treated like other over-the counter drugs, which means it gets no special tax treatment in Hawaii's tax code. The goal is then to preserve the access and affordability of cannabis to 329 cardholders. The rationale usually offered for why 329 cardholders should not pay the excise tax is affordability, but this is not an issue if prices come down as expected. In mature recreational markets, the price of cannabis usually declines by 50%. Since prices come down in a recreational market (50%) more than the proposed excise tax (15%), patients would still be paying less than the pre-legalization price even accounting for the added burden of the excise tax. Affordability increases for patients, which is the primary concern.

If 329 cardholders did not have to pay the excise tax, this would represent a tax loophole in which heavy users could avoid paying the excise tax. It is relatively easy to get a 329 card. The fee for the card ($33 per year) is low compared to savings of not paying the excise tax for a heavy user. The incentive for heavy users to avoid the excise tax by getting a 329 card to avoid paying the 15% excise tax is very large. Heavy users often spend hundreds and even thousands of dollars a month on cannabis products. Since heavy users comprise most of cannabis purchases (approximately 70%), they would pay most of the excise tax. If most heavy users could get a 329 card, most of the potential tax revenues would be forgone. The potential tax loophole is a major issue that must be addressed. The proposed solution is to levy taxes equally in adult-use and medical markets, which would close the loophole and increase affordability for medical patients. The trigger mechanism ensures that medical marijuana patients would have access to product that is more affordable than what they are currently paying. Since affordability is the major concern, the trigger mechanism addresses the affordability issue and the loophole at the same time.

An example of the price trigger:

The trigger is that the average price must fall by more than the excise tax which is 5% in years 1-2, 10% in years 3-4, and 15% and year five and beyond. Assume the average price of medical marijuana is $300/oz prior to legalization of recreational use. If the average price of cannabis is $290/oz in year one, then 329 cardholders would be exempt from the 5% excise tax in the following year. This is because the price only fell by 3.33%, which is less than the 5% cannabis excise tax. If the average price in year 2 is $240, then this would put the trigger into effect. 329 cardholders would have to pay the excise tax starting in year three. This is because the price fell by 20%, which is more than the excise tax of 5% in year two and 10% in year three. Determination of when the trigger would occur on an annual basis and would be determined by cannabis agency. The cannabis agency would track the average price in the market throughout the year. 329 cardholders would be exempt from paying the excise tax in the initial stages of the recreational market. Medical marijuana patients pay the cannabis excise tax only if the requirements of the trigger are met. If the requirements are never met in the recreational market, then 329 cardholders will never be liable for paying the cannabis excise tax.

The medical marijuana market should continue if the State elects to legalize recreational use. Regulations should be put in place to ensure that patients get priority in access relative to recreational users. If a cannabis shortage occurs in the recreational market, medical patients can be ensured that they will still have access. Medical cards would allow patients to purchase larger quantities of cannabis product at potentially higher potencies. A card would also allow persons under 21 to have access to medical cannabis.

7.4 Taxes or fees?

This committee recommends that taxes, rather than fees, be the primary source for generating public revenue related to cannabis. Governments impose tax on certain market transactions to generate revenue for social programs. The other way that governments can generate revenue is through fees. Fees are typically charged for a specific service that the government is providing. For example, a license fee is meant to cover the cost of processing and reviewing an application or inspection costs. Traditionally, a fee is not meant to generate revenues in excess of the underlying costs.

Risks emerge when governments depend on fees to generate general revenue. These include: 1) The government agency becomes dependent on fees and may engage in behaviors meant to boost fees rather than protect the public. 2) High fees favor well-capitalized incumbent firms and discourage new entrants. And 3) a culture of dependence on certain companies may emerge if a government agency is overly reliant on fees paid by a few firms. Taxes offer a more transparent way of collecting public revenues. Regulators overseeing the cannabis industry will certainly charge fees for certain services, but risks emerge when regulators become overly reliant on fees to generate public funds.

7.5 Estimated Revenue and Distribution

The expected revenues collected from the taxation of cannabis is meaningful but not transformative in terms of state tax collections. Tax revenues from the GET and the cannabis excise tax are expected to range from $36-$51 million in year five of recreational use (see Table 6 in Section 8 for estimated market size and tax revenues). This represents approximately 0.5% of total tax collections. It is about the same amount of taxation that derives from Hawaii’s liquor tax. Cannabis tax revenues often roughly match liquor tax revenues in states with mature recreational markets.[7] Revenue from cannabis sales is expected to be significantly lower in year 1-4 of recreational use because: i) the market will be smaller during the incipient stages of growth and ii) the proposed excise tax rate will be lower in the initial phase.

The report review does not make an official recommendation on distribution of revenues from a cannabis excise tax. It does recommend that revenues from the GET on the sale of cannabis remain in the general fund. Distributions to the general fund will help pay for the cost of cannabis regulation. Legalized states distribute cannabis tax revenue in various percentages to the state general fund, schools, drug-treatment, education, and restorative justice programs. Table 4 provides a sample breakdown of distributions of tax revenues. It is important to remember that distributions are expected to be relatively modest in the initial years of legalization.

While this may make political sense to earmark cannabis revenues for specific uses, it is not necessarily effective budget policy. For one, budgetary money is fungible. Lawmakers can easily shift general revenues away from earmarked funds, leaving the overall amount of money spent left unchanged. The use of special funds deprives lawmakers of the authority to distribute funds to the most pressing needs of the state. Special funds have a history of mixed results in Hawaii as oversight of such funds has been spotty and accountability scarce. Special fund money often sits in the accounts without being spent. If lawmakers elect to distribute cannabis tax revenues to special funds, it is recommended that considerable attention be paid to the accountability and oversight of these special funds.

Table 5: Example of potential distribution of revenues from the taxation of cannabis

		Prospective Distribution of Cannabis Revenue				
		Estimated Legal Sales in Year Five		$225 million		
Collection	**Distribution**	**Fund**	**Year 1-2**	**Year 3-4**	**Year 5+**	**Estimate Rev in Year 5**
GET	100%	State General Fund	4.0%	4.0%	4.0%	$9.0
County Surcharge	100%	County	0.5%	0.5%	0.5%	$1.1
sub-total			**4.5%**	**4.5%**	**4.5%**	**$10.1**
Cannabis Excise Tax						
	20%	County	1%	2%	3%	$6.8
	20%	School Repair and Construction	1%	2%	3%	$6.8
	20%	Public Health Programs	1%	2%	3%	$6.8
	20%	Economic Empowerment	1%	2%	3%	$6.8
	20%	General Fund	1%	2%	3%	$6.8
sub-total	**100%**		**5%**	**10%**	**15%**	**$33.8**
Total			**9.5%**	**14.5%**	**19.5%**	**$43.9**

8. Modeling Prices and Impact on the Legal Sales

Economic models estimate that the legal price of adult-use cannabis would have to be in the range of $225-$275 to effectively compete with the gray market. This would imply legal sales

[7] ITEP (2019), *Taxing Cannabis.* https://itep.org/taxing-cannabis

worth $172-$273 million and tax revenues of $34-$53 million. Tax revenues and legal market size would be even larger if prices fell below this range. Prices often fall below $200 an ounce in states with mature cannabis markets.

This section models the Hawaii cannabis market and estimates the price of legal cannabis that would be required to effectively compete with the gray market. The academic literature on cannabis suggests that consumers are price sensitive. This means that a small change in price will have a significant impact on consumer behavior. There are two sensitivities of concern. The first is how prices affect overall demand for cannabis. In economics, this is known as the elasticity of demand. The other sensitivity is how price differentials between the legal market and the gray market affect demand in those two respective markets. This is known as the cross-price elasticity of demand. This report uses the cross-price elasticity of demand to calculate the price point at which a large majority of sales would occur in the legal market.

Researchers from the University of Oregon have produced a cross-price elasticity estimate based on their study of a tax policy change that occurred in Washington State.[8] Prior to 2015, Washington had assessed cannabis taxes at each stage of production, but in 2015 it consolidated these taxes into a single excise tax on retail sales of 37%. The change affected market prices of legal cannabis products relative to competing illegal products, allowing researchers to calculate a cross-price elasticity of -0.85. This means that a 1% increase in the legal price relative to the gray market price would reduce demand in the legal market by 0.85%. This report acknowledges that this is an estimate, so it assumes that real cross-price elasticity is between -0.80 and -0.90.

The model suggests that the price of legal cannabis must be between $225 to $275 an ounce if most of the purchases are to occur in the legal market. This range resembles the prices found in states with well-regulated recreational use markets. Oregon, Colorado, Michigan, and Arizona regularly have prices lower than $200 an ounce. The first section of Table 6 shows the expected size of the gray market for a range of prices in the legal market for mid-grade product for a range of cross-price elasticities. The model assumes that the price of one ounce of cannabis in the gray market is $175. This falls within the range of gray market prices found in Hawaii as reported by market participants. The first section of Table 6 shows if the cross-price elasticity is -0.75 and the average legal price as $200, then 11% of purchases are expected to be made in the gray market. If the legal price is $375 and the cross-price elasticity remains at -0.75, then 86% of the purchases will be made in the gray market. According to the model, if the price of recreational cannabis was $175 an ounce, all purchases would be made in the legal market.

If the legal price of cannabis were to be in the range of $225-$275, then only 23%-51% of the purchases would be made in the gray market, using a cross-price elasticity of -0.85 (see table 6). The range is marked by the regions shaded in blue in the table. The middle section of Table 6 models how the size of legal cannabis reacts to price. In a $354.2 million market, a legal price between $225 and $275 is expected to result in $172 to $273 of legal sales. In a mature

[8] Benjamin Hansen et al. "The Legal Market for Marijuana: Evidence on Tax Incidence, and the Elasticity of Demand from Washington State." July 2017. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_ id=3006807.

market with an excise rate of 15% plus a 4.5% GET, tax revenues are estimated to be between $34 and $53 million.

Experience in other states suggests that it takes about five years for a cannabis market to fully mature. Market sales and tax revenues are reduced in the interim as the market develops. Table 7 provides estimates for tax revenues for different stages of the market assuming the price of legal cannabis is $250/oz and the cross-price elasticity is -0.85. It predicts that tax revenues will be $4.8 million in years 1-2, $19.2 in years 3-4, and $43.9 million in year five of a functioning market. The tax revenues would be less if the price of legal cannabis were higher than $250 per ounce. Revenues would be higher if legal cannabis was less than $250 an ounce. The dynamics of a recreational market in Hawaii are unknown, so it is impossible to predict with certainty the prevailing price. However, it is useful to model the potential ranges of prices and tax revenues raised.

Table 6: The impact of price on decisions by consumers to purchase cannabis in the legal price. Prices are for one ounce of mid-grade flower.

Elasticity and Market Size

Gray Market as a Percentage of Total Cannabis Market

Assumed Gray Market Price $175

Elasticity	Price/ Oz	$175	$200	$225	$250	$275	$300	$325	$350	$375
-0.60		0.0%	9%	17%	26%	34%	43%	51%	60%	69%
-0.65		0.0%	9%	19%	28%	37%	46%	56%	65%	74%
-0.70		0.0%	10%	20%	30%	40%	50%	60%	70%	80%
-0.75		0.0%	11%	21%	32%	43%	54%	64%	75%	86%
-0.80		0.0%	11%	23%	34%	46%	57%	69%	80%	91%
-0.85		0.0%	12%	24%	36%	49%	61%	73%	85%	97%
-0.90		0.0%	13%	26%	39%	51%	64%	77%	90%	103%
-0.95		0.0%	14%	27%	41%	54%	68%	81%	95%	109%

Size of Legal Cannabis Market (millions)

Assumed HI Cannabis Market Size -Med and Rec (million) 354.2

Elasticity	Price	$ 175	$ 200	$ 225	$ 250	$ 275	$ 300	$ 325	$ 350	$ 375
-0.60		354	324	293	263	233	202	172	142	111
-0.65		354	321	288	256	223	190	157	124	91
-0.70		354	319	283	248	212	177	142	106	71
-0.75		354	316	278	240	202	164	126	89	51
-0.80		354	314	273	233	192	152	111	71	30
-0.85		354	311	268	225	182	139	96	53	10
-0.90		354	309	263	218	172	126	81	35	(10)
-0.95		354	306	258	210	162	114	66	18	(30)

Tax Revenues (millions)

Assumed Tax Rate 19.5% GET 4.50% Excise 15%

Elasticity	Price	$ 175	$ 200	$ 225	$ 250	$ 275	$ 300	$ 325	$ 350	$ 375
-0.60		69	63	57	51	45	39	34	28	22
-0.65		69	63	56	50	43	37	31	24	18
-0.70		69	62	55	48	41	35	28	21	14
-0.75		69	62	54	47	39	32	25	17	10
-0.80		69	61	53	45	37	30	22	14	6
-0.85		69	61	52	44	36	27	19	10	2
-0.90		69	60	51	42	34	25	16	7	(2)
-0.95		69	60	50	41	32	22	13	3	(6)

Table: 7: Tax revenue estimates at different stages of market development

	Years of Market Operation		
	1-2Y	3-4Y	5+
Market Growth*	158%	70%	17%
Market Size	51	132	225
Tax Rate	9.5%	14.5%	19.5%
Expected Tax Rev	**4.9**	**19.2**	**43.9**

*Based on ITEP (2019), *Taxing Cannabis.* https://itep.org/taxing cannabis

9. Modeling Costs of Production

The results of the cost-production model suggest that legal firms in Hawaii can effectively compete with the gray market, particularly if the State elects to gradually phase-in the excise tax. The analysis shows that the cost of production and mark-up significantly impact the final price of cannabis. Regulation and market structure ought to promote conditions that favor a legal price that can compete with the gray market.

Table 8 provides scenarios for the final price of cannabis under different assumptions regarding costs of production, mark-ups at different stages of the value-chain, and tax rates. Variables like cost of production and required mark-ups by industry represent best guesses. The rates are likely to vary by firm. Questions regarding regulation and market structure will also affect these variables. Table 8 provides modeled prices that highlight different elements that influence the industry's ability to supply cannabis in an industry that encourages legal behaviors.

Table 8 shows a cascading system of mark-ups as one ounce of marijuana is produced, processed, and sold. The cost of production is the cost of the component parts to produce one ounce of flower. The producer margin is the profit margin that is required to incentivize a firm to operate in the market. This degree of profit margin is standard in many consumer industries. The processor mark-up and the retailer mark-up do not represent profits, but rather relative increase in price that occurs when going from one stage of the production chain to another. Mark-ups often range between 60% and 110% depending on the industry. The Federal tax 280E imposition represents the additional costs to a cannabis business because the IRS does not allow them to deduct normal business expenses. The GET and the HI excise tax rate represents the tax rate.

The model reveals that the cost of production and amount of a producer mark-up have significant impacts on the final price. Scenario 1 calculates prices in the initial phase of the market launch when the excise rate is 5%. Reports from industry participants suggest that the cost of producing one ounce of mid-grade flower in the medical marijuana market is around $50. This coincides with industry estimates in states that have or had medical industries but no recreational markets. Under this cost structure, high mark-ups (those of 100%) results in a price per ounce of $303. This would result in low participation in the legal market according to Table

5. Scenario 1.B shows that prices in the range of $225-$275 are possible if markups remain on the lower side (75%) and the excise tax is 5%. Scenarios 2.A and 2.B show that a legal price between $200 and $250 are possible with a 15% excise tax only if the cost of production comes down. This reflects a realistic scenario that matches the experience of other states that have legalized. As the industry matures, the cost of production comes down

Market structure and regulatory burden can have sizable effects on the cost of production and production-stage mark-ups. High regulatory costs can drive up the cost of production. An industry that does not incentivize an adequate level of competition can lead to higher mark-ups. To make the industry competitive and promote legal purchases, it is important to create a system with sensible regulation and that has a competitive market structure. The analysis presented in this section suggests that legal cannabis can effectively displace the gray market under the right conditions.

Table 8: Price estimates for differing levels of cost of production, mark-ups, and tax rates

Scenario 1: Final Prices per Ounce in Role Out Phase of Legalization (5% excise tax)

Scenario 1.A: Higher levels of profit margin **$ per ounce**

Cost of Production	Producer Margin	Processor Markup	Retailer Markeup	Federal Tax 280 E Imposition	GET	HI MJ Ex	Final Price
	15%	100%	100%	20%	5%	5%	
$35	$40	$81	$161	$193	$202	$212	**$212**
	15%	100%	100%	20%	5%	5%	
$40	$46	$92	$184	$221	$231	$242	**$242**
	15%	100%	100%	20%	5%	5%	
$45	$52	$104	$207	$248	$260	$273	**$273**
	15%	100%	100%	20%	5%	5%	
$50	$58	$115	$230	$276	$288	$303	**$303**
	15%	100%	100%	20%	5%	5%	
$55	$63	$127	$253	$304	$317	$333	**$333**

Scenario 1.B: Lower levels of profit margin **$ per ounce**

Cost of Production	Producer Margin	Processor Markup	Retailer Markeup	Federal Tax 280 E Imposition	GET	HI MJ Ex	Final Price
	15%	75%	75%	20%	5%	5%	
$35	$40	$70	$123	$148	$155	$162	**$162**
	15%	75%	75%	20%	5%	5%	
$40	$46	$81	$141	$169	$177	$185	**$185**
	15%	75%	75%	20%	5%	5%	
$45	$52	$91	$158	$190	$199	$209	**$209**
	15%	75%	75%	20%	5%	5%	
$50	$58	$101	$176	$211	$221	$232	**$232**
	15%	75%	75%	20%	5%	5%	
$55	$63	$111	$194	$232	$243	$255	**$255**

Scenario 2: Final Prices Per Ounce in Mature Phase of Legalization (15% excise tax)

Scenario 1.A: Higher levels of profit margin **$ per ounce**

Cost of Production	Producer Margin	Processor Markup	Retailer Markeup	Federal Tax 280 E Imposition	GET	HI MJ Ex	Final Price
	15%	100%	100%	20%	5%	15%	
$35	$40	$81	$161	$193	$202	$232	**$232**
	15%	100%	100%	20%	5%	15%	
$40	$46	$92	$184	$221	$231	$265	**$265**
	15%	100%	100%	20%	5%	15%	
$45	$52	$104	$207	$248	$260	$299	**$299**
	15%	100%	100%	20%	5%	15%	
$50	$58	$115	$230	$276	$288	$332	**$332**
	15%	100%	100%	20%	5%	15%	
$55	$63	$127	$253	$304	$317	$365	**$365**

Scenario 1.B: Lower levels of profit margin **$ per ounce**

Cost of Production	Producer Margin	Processor Markup	Retailer Markeup	Federal Tax 280 E Imposition	GET	HI MJ Ex	Final Price
	15%	75%	75%	20%	5%	15%	
$35	$40	$70	$123	$148	$155	$178	**$178**
	15%	75%	75%	20%	5%	15%	
$40	$46	$81	$141	$169	$177	$203	**$203**
	15%	75%	75%	20%	5%	15%	
$45	$52	$91	$158	$190	$199	$229	**$229**
	15%	75%	75%	20%	5%	15%	
$50	$58	$101	$176	$211	$221	$254	**$254**
	15%	75%	75%	20%	5%	15%	
$55	$63	$111	$194	$232	$243	$279	**$279**

10. Market Structure and Licenses

Recommendation: *This report assumes that the market will be segmented into producers, manufacturers, retailers, and testing facilities. It recommends that limits on the number of licenses issued to producers and manufactures be kept to minimum. This will encourage smaller players currently operating in the gray market to start operating legally. It will minimize the price differential between the legal market and the gray market. And it will promote competitiveness within the industry. Enforcement efforts ought to be effective and deter people from operating in the gray markets. The number of licensed retailers will depend on market demand, community preferences, population density, and geography. The report recommends that the cannabis regulator have some discretion over the number of licenses issued, allowing it to respond to market developments.*

It is important to be able to easily track the product and quickly identify sources of risk throughout the production process. This is usually accomplished through a seed-to-sale software program that allows producers and regulators to follow all cannabis products from production to sale. It ensures that all cannabis sold legally is provided by a fully licensed seller. Many such software programs are on the market. It will be up to the new cannabis regulator to assess what type of software best fits the State's needs.

Recreational cannabis markets usually require licenses for the different market segments. This makes sense given the public health risks posed by cannabis. Having licenses for different market segments helps the government track and monitor activity in the section. Most states provide licenses for producers, manufacturers, and retailers (see Table 9). This structure allows for wholesale transactions of cannabis between licensed businesses. If a firm is vertically integrated and operates across multiple production stages, a firm is required to acquire a different license for each market segment. In some cases, there may be prohibitions from a firm operating in more than one market segment. For example, conflicts of interest arise if the same company is a producer and owner of a testing facility.

Table 9: Cannabis Market Segments

License	Market Segment
Producer	Businesses engaged in the growing, cultivating, and drying of cannabis flower. Different license types and the associated fees are often required for type of production (indoor, greenhouse, and outdoor) and size of the cultivation. The type of production may be subject to different types of requirements. The size of the license fee often varies with the production facility.
Manufacturer	Businesses that engage in the transformation and advanced processing of cannabis products.
Retail	Businesses that sell cannabis products to the end consumer.
Testing Facility	Businesses that engage in chemical testing of cannabis products

This report recommends that the cannabis market be allowed to structure itself in a way that is competitive with the gray market. The legal industry will have to compete against the gray market, including cheap cannabis shipped from low-cost states like California. Some in the industry argue that the cost of recreational cannabis should be kept artificially high by restricting the number of producers. They argue that the industry requires production restrictions to ensure that the price of cannabis does not bottom out. Policies that try to protect industry profits are often counter-productive and harm the industry's competitiveness in the long-run. There are economic rationales for limiting market competition. They include: i) protecting future profits for risky investments in research & development through legal mechanisms like patents and copyrights; ii) when an area is most efficiently served by one large entity in one market like in the case of a regulated utility company. The characteristics of the cannabis industry meet neither of these requirements.

The government does not restrict the amount of production for tobacco or alcohol—two substances with public health risks. It does not make sense to limit production of cannabis while not limiting the production of tobacco or alcohol. Limiting or restricting market entry of new producers is different from regulating firms to ensure they comply with safety and security protocols. A rationalized regulatory or license regime will ensure that producers comply with the law, produce cannabis in a safe manner, and are held accountable for cannabis that makes its way onto the gray market. Authorities should actively prosecute producers who are not properly licensed and are not in compliance with the law.

Regulatory actions that intentionally restrict market entrants and the amount of production is likely to encourage gray market activity and produce companies that cannot compete on a national level. Placing high regulatory hurdles in front of new producers will encourage them to remain in the gray market. Higher legal prices due to restricted production will incentivize consumers to make purchases in the gray market. A central objective of legalization is reducing the size of the gray market. Restricting the number of producer and manufacturing licenses would be counterproductive in this respect. Furthermore, limiting producers from competition is likely to hurt such producers in the long-term. If cannabis legalization occurs on a large scale, local producers will have to compete nationally. Ensuring that local firms can operate in a competitive market helps their long-term viability.

This report recommends that there be few restrictions on the number of cannabis producers or manufacturers. It also recommends that the regulatory costs to enter the market remain relatively low. This will encourage producers that are currently operating illegally to come into the legal system. It will also allow small-scale producers to participate in the market. Higher regulatory burdens favor large incumbent firms that can afford such costs and disfavors smaller firms. Given the fast-moving nature of the market, this report recommends that the cannabis regulatory agency have some discretion over the number licenses it issues and their requirements.

The report recommends that regulators engage in a vigorous compliance effort that punishes producers, manufacturers, and retailers illegally operating in the gray market. Currently only 21% of cannabis sales in the State occur legally. This is an extremely low level of compliance. Efforts must be taken to penalize operators that refuse to join the legal market. These penalties should rely on fines backed up with the threat of jail time. Smaller infractions would remain civil in nature while flagrant infractions would have higher penalties. Criminal penalties would be used as the last resort and would require a referral from the regulatory authority. Enforcement benefits from a carrot and stick approach. Policy/regulatory carrots encourage market participants to operate legally under the purview of regulators, reducing legal risks and increasing market access. Policy/regulatory sticks dissuade market participants from engaging in illegal behavior through fines and potential jail time. Enforcement efforts should be directed at producers, operators, and retailers rather than consumers.

Restricting the location and number of retailers will help control the dispensing of cannabis to the public. Most states and communities place some restrictions on the number of retailers, banning them from proximity to schools and other places of public interest. Regulators can restrict the number of retailers by limiting the number of retailing licenses or by imposing strict protocols on where a retailer can be located. Deciding how many retailers should be in each county will depend on market demand, community considerations, density of population, and geography. Most states require community approval to open a retail dispensary. Arizona uses a unique metric to determine the number of dispensaries. It allows one dispensary for every ten operational pharmacies in the state. Table 10 shows the number of dispensaries by state, adjusted for population. It finds there is a wide range in the density of dispensaries. Hawaii currently has 12 operational dispensaries. Even if the state opts to have relatively few dispensaries per capita, the table suggests that Hawaii will need 2.5 to 5 times the number of dispensaries than it currently has. It is recommended that the cannabis authority have discretion over the number of dispensaries permitted in the state and counties.

Table 10: Dispensary Numbers in Recreational States

State	Total # of Dispensaries	Dispensaries per million residents
Oklahoma*	2129	539.1
California	1440	36.6
Oregon	1344	321.8
Colorado	572	100.6
Washington	448	59.6
Alaska	220	298.5
Michigan	160	16.0
New Mexico	99	47.2
Arizona	94	13.1
Nevada	70	23.1
Average		**101.9**
Hawaii	12	8.5

*Oklahoma's cannabis market takes an extremely *laissez faire* approach. It is generally considered a failure and not a model to be emulated. It is not included in the average.

11. Regulatory Structure

Recommendation: *This report finds that a strong independent cannabis agency is most likely to oversee the development and operation of a well-functioning cannabis market. An independent agency is more likely to be able to successfully manage multiple considerations like public-health and market development. Legislation ought to provide the legal framework for the cannabis market while the agency ought to be given powers to develop, modify, and enforce regulations that are more technical in nature. To increase accountability and flexibility. It is recommended that major decisions by the agency must be reviewed by an advisory board whose members include: 2 members from the cannabis industry, 1 member from the Department of Health, 1 member from the Department of Public Safety and 3 members appointed by the Governor. At least one board member must represent an island that is not Oahu.*

The regulatory structure that would oversee the development and operation of the cannabis market in Hawaii would significantly affect the market outcomes. The cannabis market is still in its early stages and requires a regulatory system that is responsive to new developments. A well-working cannabis market benefits from regulators that can simultaneously consider the public health concerns, enforcement issues, consumer protection, and the needs of private sector players. This section discusses different options for how to regulate this new industry.

Recreational states have taken two general approaches to regulatory structure: 1) put the responsibility into an existing agency or 2) create a separate independent agency. The states that put the responsibility for cannabis regulation into an existing agency have put them in a statewide liquor commission, the department of revenue, or department of commerce. Some states have divided up regulatory responsibilities between departments. For example, the responsibility for the regulation of the industry falls under the department of commerce while the responsibility for medical cards falls to the department of health. Some states that originally had a distributed system have centralized responsibilities to increase operational efficiencies. This has occurred in states like California and Michigan. Other states have combined all responsibilities in a single independent agency (see Table 11).

Discussions with regulators and market participants in other states revealed that states that created independent boards or agencies to regulate cannabis were more likely to develop well-functioning markets. When multiple agencies have oversight over different parts of the industry, decisions are made slowly, and accountability is harder to achieve as no one entity is ultimately responsible.

There are no existing state agencies that are great fits for cannabis regulation. There is no state-wide alcohol board in Hawaii, which would have been a natural fit. Alcohol commissions operate at the county level. There are problems with pushing the responsibility to regulate and monitor the cannabis to the counties. The cannabis industry is expected to be a state-wide industry. Having four independent regulatory agencies would increase compliance costs and regulatory uncertainty. The Department of Health, which currently oversees the medical industry, does not have the mandate or experience regulating all the necessary aspects of the cannabis market. The Department of Health's primary concern is public health. The Department would, and probably should, subordinate all other regulatory concerns to public health. A survey of states found that most medical marijuana programs are housed in the departments of health, but nearly all recreational programs are managed somewhere else.

This report recommends that Hawaii create an independent agency to regulate cannabis. The cannabis agency should have authority over medical and recreational markets, where it would be responsible for the development and enforcement of policies that impact the usage, production, manufacturing, and sale of cannabis. Having an independent agency that can manage the competing needs of the sector would help the market develop properly. Moreover, it would develop expertise to monitor a specialized market.

The biggest drawback to creating a new cannabis agency is time and money. It takes time to create a new state agency. Hiring personnel, finding a location, creating procedures, and establishing a culture can take months or years, which would delay the opening of a recreational market in Hawaii. There is a legitimate concern that the State of Hawaii does not possess the operational capacity to set-up a technically competent bureau given the restricted time frame. Finding and hiring qualified personnel quickly is another challenge. Additionally, an independent agency would have higher fixed costs because it cannot share the burdens of personnel needed for all departments. This includes IT support, human resources, and procurement specialists. An independent cannabis industry would be amongst the smaller state agencies, so these fixed costs would likely represent a significant portion of the entity's budget.

A cannabis agency that is embedded in an existing department but with higher than usual levels of independence is one way to lower fixed costs. In this approach, the new cannabis agency could utilize the organizational resources of an existing agency. This would include IT, HR, procurement, and budget support. In some cases, the department could leverage their technical expertise to assist the new organization. The department that has the operational expertise that would most assist a cannabis agency is the Department of Taxation or the Department of Commerce and Consumer Affairs. Both entities have experience in licensing, compliance, and enforcement. The Department of Taxation does have experience with criminal investigations, tax collections, and levying fines, which may be of additional help. Recreational states have embedded Cannabis regulation in the department of revenues and the department of commerce. Colorado, which has the oldest recreational market and is generally seen as a successful model, placed responsibility for cannabis regulation within their department of revenue.

This report recommends that the agency be given the power to create, modify, and terminate regulations and fees. Legislators are not experts in the cannabis industry, nor can they possibly foresee all the potential issues that will develop. It is recommended that legislation focus on providing the structure and foundation of a cannabis market that best serve the needs of its residents, rather than legislating regulatory details. This includes the creation of a cannabis agency, and broader issues like legal limits on purchase and possession, market segments, and tax rates. Other issues that require further study like licensing fees, the number of licensees by industry segment type, audit requirements, safety standards regarding the use of chemicals should be determined by the agency itself. The professional expertise of the regulators would allow them to make more informed decisions. Additionally, a cannabis agency with strong powers to amend regulations would make the agency more flexible

It is recommended that major policy decisions be reviewed by an advisory board that provides a vehicle for relevant stakeholders to provide input into the regulatory process. The board would include two people appointed by the cannabis industry, one person selected by the Director of the Department of Health, one person selected by the Director of the Department of Public Safety, and 3 people selected by the Governor. Board members would serve staggered terms, so there was no sudden turnover. At least one board member would represent an island that is not Oahu, ensuring representation from neighbor islands. The Board would meet at a minimum of four times a year to consider and approve the recommendations and policies submitted by the cannabis agency. The advisory board would not have any legal powers over the cannabis agency. Instead, the public board would review and advise on decisions made by the agency. The deliberations and recommendations of the advisory board would be public. The purpose of the board is to provide a transparent vehicle for relevant stakeholders to provide input into the regulatory process.

It is recommended that funding for the new agency comes primarily through the General Fund. This would ensure that the Agency remains accountable to lawmakers. It would also ensure that the Cannabis agency does not become overly reliant on fees from the entities it is responsible for regulating to fund its operations. Licensing and other types of fees should also provide funding for specific services provided by the regulatory agency like processing and inspection costs.

The cost of the regulatory agency will depend on the size and structure of the agency. If it is embedded in a larger department, the cost of the cannabis agency would be lower because it would not have to incur all the fixed costs mentioned above on its own. This report had a difficult time finding the budgets of other regulatory agencies since many were embedded in larger agencies. Factors that will affect the final cost of such an agency include: 1) the number of required personnel, 2) the duties and responsibilities of the agency, 3) the level of operational independence. Given the high cost of operating in Hawaii, a very crude estimate for the cost of the agency is likely to fall between $3-7 million. Presumably fees will offset some of these costs.

Table 11: Cannabis Regulators by State

State	Regulatory Agency
Colorado	Colorado Department of Revenue
Washington	Liquor and Cannabis Board
Alaska	Alcohol & Marijuana Control Office (Department of Commerce)
Oregon	Oregon Liquor & Cannabis Commission
California	Department of Cannabis Control
Maine	Office of Cannabis Policy
Massachusetts	Cannabis Control Commission
Nevada	Department of Revenue
Michigan	Cannabis Regulatory Agency
Vermont	Cannabis Control Board
Illinois	Multiple Agencies

Arizona	Cannabis Control Division (adult-use) Department of Health (Medical)
Montana	Cannabis Control Division of Department of Revenue
New Jersey	Cannabis Regulatory Commission
New York	Office of Cannabis Management overseen by Cannabis Control Board
Virginia	Cannabis Control Agency
New Mexico	Cannabis Control Division
Connecticut	Department of Consumer Protection

12.Principles for Developing a Functioning Cannabis Market

If Hawaii proceeds with legalization and creates a cannabis market, it is helpful to keep basic economic principles in mind. These include using a system of carrots and sticks to encourage proper market behavior, developing the capacity to be flexible, encouraging healthy competition, allowing innovation, and applying the law in a uniform manner.

The section provides principles that will help Hawaii develop a functioning cannabis market that combat illegality and considers public health concerns. Hawaii has a cannabis market worth hundreds of millions of dollars. Unfortunately, most of this market operates illegally where regulators have little influence. One of the primary objectives to legalization is to encourage the transition from a primarily gray market to a primarily legal market. Market participants operate according to a system of incentives. A good market will reward certain behaviors and punish others.

Use carrots and sticks: This implies that the legal and regulatory structure should encourage illicit producers of cannabis to enter the legal market. This may involve having lower licensing fees and creating regulations to which small producers can feasibly comply. It would also involve the use of fines and mechanisms to discourage people from operating in the gray market. This may involve fining illegal producers over a certain size or taking away the license of participants that do not comply with existing regulations. Applying a lower tax rate in the initial phase of market operations is another example of how a timely incentive can facilitate behavioral change.

Be flexible: This is a relatively new dynamic market. It is important to create a system that is flexible and responsive to change. Creating a strong and capable cannabis agency with a reasonable degree of autonomy is a good step in this direction.

Encourage a sustainable competitive market: A competitive market ensures that many different firms are competing to meet the needs of the consumer. Healthy markets allow the entry and exit of firms. Some companies will fail while others will succeed. Regulatory authorities should be weary of creating a system that protects incumbent firms against competition. Business failure can be a sign of a healthy market. Regulators are interested in a healthy market that supplies goods that consumers demand and that accounts for public health concerns. Regulators should create conditions that facilitate competitive markets at the level of the producer, manufacturer, and retail. Hawaii is a small market where it is easy to create monopolistic dynamics. Regulators should work hard to ensure that no market segment is populated by only one or two firms.

Allow innovation and experimentation: Public health, consumer protection and public safety are the paramount concerns. However, these issues should not be used as a blanket excuse to suffocate innovation and experimentation by businesses in the sector. This includes allowing different business models to exist and compete with another. The medical coop model can serve one market segment while large dispensaries can serve another. This also applies to the approval and review of new products.

Apply the law uniformly and impartially: A functioning market works best when there is a stable level playing field. All producers, manufacturers, and retailers should be subject to the same regulatory standards. It may be necessary to make some accommodation for smaller firms, but the exceptions should be minimized.

Appendix A: Estimation of Market Size

This appendix presents the methodology for the estimates of the potential market size for cannabis in Hawaii. Developing an estimate for a future market that involves clandestine elements is difficult. Calculations require strong assumptions and are subject to great uncertainty. This report uses two types of estimates, averaging the two estimates to provide the final number.

The first estimate involves survey information on drug-use by state. The National Survey on Drug Use and Health is produced by the Substance Abuse and Mental Health Services Administration (SAHMSA). The report uses survey results to calculate cannabis spending by Hawaii residents and domestic and international visitors. The results are adjusted to account for the fact that Cannabis would only be sold to individuals 21 years and over. It segments the domestic and international visitor market. Domestic visitors are assumed to have usage rates equal to the US national average. International visitors mainly come from Asia, which still has strong cultural taboos against the usage of cannabis. This is the reason that the usage rate for international visitors is lower. The estimated usage is adjusted for induced demand that would come from the legal market. The estimate for annual consumption per user comes from the academic literature.[9] Average annual consumption of cannabis is multiplied by total number of users and target market price of $250 to produce an estimate of market size of $279 million.

Market estimate 2 takes the average per capita revenue collected from cannabis sales in states that have mature recreational cannabis markets and multiplies that figure with the number of Hawaii residents. This methodology produces an estimate of $429 million.

The two estimates are averaged together to produce $354, which is the estimated market size for cannabis in Hawaii used in this report.

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[9] Beau Kilmer, Jonathan P. Caulkins, Rosalie Liccardo Pacula, Robert J. MacCoun, Peter H. Reuter, **Altered State?** Assessing How Marijuana Legalization in California Could Influence Marijuana Consumption and Public Budgets. 2010 RAND Corporation

Market Estimate 1: Drug Survey Respondents

	Hawaii	Visitors Domestic	 International
Total Population over 18	1,118,960	143,643	49,995
Adjustment for 18-21 y.o.	6%	6%	6%
Consuming Population	1,051,822	135,024	46,995
Usage	15.2%	15.4%	5.0%
Induced Demand	7.2%	5.40%	5.40%
Users	236,134	28,045	4,887
Ann consumption/ user	4.145	4.145	4.145
Annual consumption (Ounces)	978,776	116,245	20,259
Target Price per Ounce	250	250	250
Market Size (million)	$245	$29	$5
Total Market (million)	**$279**		

Market Estimate 2: Comparison to other legal markets (adult-use)

State	Annual (million)	Pop (million)	Revenue p.c.
California	5,200	39.35	$132
Colorado	2,220	5.69	$390
Nevada	1,003	3.03	$331
Oregon	1,184	4.18	$283
Washington State	1,500	7.512	$200
Est HI Recreational	$379	1.42	$267
Medical Marijuana	50		
Total Market	**$429**		

Average of Estimates	
Estimate 1:	$279
Estimate 2:	$429
Total Cannabis Market	**$354**

Memorandum

August 12, 2022

To: Michelle N. Nakata, Chair
and Members of the Dual Use Cannabis Task Force

From: Ellen Ching,
Member of the Dual Use Cannabis Task Force, Tax Permitted Interaction Group

Re: Dissenting Opinion on Recommendation V.

On August 9, 2022, The Tax Working Group of the Dual Use Cannabis Task Force voted unanimously to adopt Recommendation V. which states, "This report finds that a strong independent cannabis agency is most likely to oversee the development and operation of a well-functioning cannabis market. An independent agency is more likely to be able to successfully manage multiple considerations like public-health and market development. Legislation ought to provide the legal framework for the cannabis market while the agency ought to be given powers to develop, modify, and enforce regulations that are more technical in nature. To increase accountability and flexibility. It is recommended that major decisions by the agency must be reviewed by an oversight board whose members include: 2 members from the cannabis industry, 1 member from the Department of Health, 1 member from the Department of Public Safety and 3 members appointed by the Governor."

Since then, I have reconsidered my vote and submit this dissenting opinion.

This opinion is centered around the recommendation of an independent agency and stems from two statements in this report, "Legalization is not an endorsement of marijuana but rather an acknowledgement that the best way to minimize risks associated with the drug is through intelligent regulation." and "A well-regulated market would have the best chance of competing with the gray [illegal] market and effectively managing public-health risks."

To achieve the goal of a well-regulated market to effectively manage public health risks, the market must be allowed to grow and establish itself. To support this growth, the levels of regulation and taxation must be minimized and the regulatory mechanisms at the same time must be fair, flexible and encourage competition, innovation, and desirable market behavior.

There are many obstacles to moving forward with the legalization of cannabis and the establishment of a dual use system. First and foremost is the passage of a bill to legalize cannabis and the promulgation of the necessary rules and regulations. Equally important, is securing the funding for the costs of the administration and regulation of cannabis.

While the prospect of federal legalization will address many obstacles, it will at the same time open the Hawaii market to an influx of out-of-state capital and corporations. Thus, the current conditions present a unique opportunity to address social inequities through the support of local farmers, individuals and communities who have been harmed.

In an ideal world with the luxury of time and money, a strong independent cannabis agency would be the most beneficial to oversee the development and operation of a cannabis market, however we do not live in an ideal world. Should funding be allocated, it is estimated that it would take at least a year and a half at best to create a new State agency.

The pandemic clearly demonstrated the difficulties that governments face with mobilizing quickly while maintaining flexibility to respond to change. During the pandemic, the State and the Counties received unexpected and sometimes overwhelming amounts of federal and state funding to meet urgent and emerging needs. The Governor and Mayors issued many Emergency Proclamations to support these endeavors. Yet, despite all these efforts, local Departments of Health were not always able to access funds on a timely basis to buy essential supplies consequently County funding and resources were used to immediately fill in the gaps.

The current market on Kauai consists of one license, creating a monopoly and arguably led to a market price that is 100% over the gray or illegal market. Until further notice the Department of Health is not accepting any new license applications. These conditions are counter-intuitive to meeting patient needs, increasing patient access, and displacing the gray or illegal market.[1]

To preserve the time sensitive opportunity and to establish a cost efficient and flexible body, Hawaii should utilize the current Liquor Control Department[2] and Liquor Control Commission[3] model, allow the counties taxing authority like the recent Transient Accommodations Tax (TAT), and adopt regulatory legislation analogous to Hawaii Revised Statutes (HRS) Chapter 281, Intoxicating Liquor.[4]

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[1] Randy Gonce, Tai Cheng, Bill Jarvis, Paul Brewbaker. "2022 Status of the Hawaii Cannabis Industry Report" January 2022 https://irp.cdn-website.com/774e86c9/files/uploaded/HICIA%20Analysis%20of%202022%20Industry%20Report(FINAL).pdf p. 27.

[2] Maui Department of Liquor Control, https://www.mauicounty.gov/667/Liquor-Control
Hawaii Department of Liquor Control, https://www.hawaiicounty.gov/departments/liquor-control
Kauai Department of Liquor Control, https://www.kauai.gov/Liquor

[3] Honolulu Liquor Commission, https://www.honolulu.gov/liq/default.html
Maui Liquor Control Commission, https://www.mauicounty.gov/186/Liquor-Control-Commission
Maui Liquor Control Adjudication Board, https://www.mauicounty.gov/185/Liquor-Control-Adjudication-Board
Hawaii Liquor Control Commission, https://www.kauai.gov/Government/Boards-and-Commissions/Liquor-Control-Commission
Hawaii Liquor Control Adjudication Board, https://records.hawaiicounty.gov/weblink/Browse.aspx?dbid=1&startid=13258
Kauai Liquor Control Commission, https://www.kauai.gov/Government/Boards-and-Commissions/Liquor-Control-Commission

[4] Hawaii Revised Statutes Chapter 281, Intoxicating Liquor, https://www.capitol.hawaii.gov/hrscurrent/vol05_ch0261-0319/HRS0281/HRS_0281-.htm

Memorandum

August 12, 2022

To: Isaac Choy, Chair
and Members of the Dual Use Cannabis Task Force, Tax Permitted Interaction Group

From: Randy gonce,
Member of the Dual Use Cannabis Task Force, Tax Permitted Interaction Group

Re: Dissenting Opinion on Recommendation II.

I am submitting my dissent opinion on Recommendation II that suggests Hawaiʻi should impose a cannabis tax totalling 19.5% at year 5 of Adult Use sales and on. One of the largest stated policy goals of legalization of cannabis and the implementation of an adult use program for states to bring unregulated and untaxed activity into a regulated system. The cannabis industry has existed in Hawaiʻi for generations, it just has never been a regulated, legal, or taxed industry. If the State of Hawaiʻi wants to bring in as much of the illicit and gray market cannabis activity into a legal regulated system as possible, they must set the conditions to allow the market to be able to make the price of cannabis sold to the consumer comparable or even lower than the prices outside the system.

Recommendation II states that the tax rate for Hawaiʻi would include the 4.5% GET and then an additional % on top of that. It would be incrementally increased from a starting tax of 5%, then to 10%, and then to 15% at year 5 and on. States that have a high tax rate on cannabis have not only had challenges controlling the illicit market they have strengthened it. [1]

Thus, my recommendation would be that the total tax rate for Hawaiʻi not exceed 15%. With GET at a standard 4.5%, the maximum cannabis tax the state should impose is 10.5%. Lower is desired if we want the market to continue to compete with the unregulated and untaxed industry that has existed in Hawaiʻi for generations.

[1] Jeremy P. Gove, "COLORADO AND WASHINGTON GOT TOO HIGH: THE ARGUMENT FOR LOWER RECREATIONAL MARIJUANA EXCISE TAXES" https://scholarship.richmond.edu/cgi/viewcontent.cgi?article=1331&context=jolpi p.87 27.