WHY IS THE CANNABIS MARKET BIGGER THAN WE THOUGHT?

Israel lost between 6-11 billion NIS in tax revenue since 2014

Prepared by Dean Noy, Corinne Parenti and Rebekah Fine
Jerusalem Institute for Market Studies

Executive Summary

- The original impact studies in Israel and Colorado, only consider the raw flower of cannabis as the base for tax revenue. Researchers in 2013 in the U.S. and Israel, never envision the enormous changes that the cannabis industry will go through after legalization.

- In 2014, Colorado collected $67 million; in 2019, the total tax revenue was more than $302 million. From 2014 to 2019, Colorado tax authorities received $1.2 billion from the cannabis trade.

- Colorado's cannabis industry directly created 19 thousand full-time jobs, contributing 5.4 percent of all employment growth in Colorado since January 2014.

- From the U.S. experience, Israel can learn that the states that adopted a lower rate of taxation saw higher than expected revenue; heavy taxers like California saw less income than expected. It is important to remember that a too punitive tax rate might damper consumers' demand and reduce business opportunities, job creation, not entirely discourage the black market, and in fact, lower the total tax revenue.

- Assuming a tax rate of 30% and a rate of growth similar to the one experienced in Colorado, Israel already lost 10.2 billion NIS in tax revenue from delaying legalization.

- If cannabis became legal in 2020, under the same assumptions, Israel's tax revenue for the next five years would reach 17.8 billion NIS.

Introduction

In 2013 and 2018, the Jerusalem Institute for Market Studies (JIMS) estimated the potential tax revenue if Israel was to adopt the full legalization of cannabis. The methodology followed in those studies was similar to the one used by impact studies in Colorado and subsequently in other U.S. States.

While Israel hasn't legalized yet, Colorado and 11 other U.S. States did. It is now possible to look at data collected by Colorado since 2014; the year cannabis became, for the first time, legal in one of the American states. Actual data allow for refining and correcting the estimates made for Israel previously.

Before legalization, Colorado expected $47 million in tax revenue; in 2019, five years after legalization, the tax revenue already reached more than six times this amount with an income of $302 million.

Why did the original impact studies under-estimated the actual tax collection by 6 folds?

The original impact studies in Israel and Colorado, only consider the raw flower of cannabis as the base for tax revenue. Researchers in 2013 in the U.S. and Israel, never envision the enormous changes that the cannabis industry will go through after legalization. Six years after cannabis became legal, the sector has gone through drastic changes.

Sources:

1) גליזציה של קנאביס,יוסף תגר

https://www.jims-israel.org/individual-freedom

2)לגליזציה של מריחואנה: סקר דעת קהל, הניסיון של מדינות אחרות והערכת ההשפעה התקציבית

https://www.jims-israel.org/individual-freedom

3) "Amendment 64 would produce $60 million in new revenue and savings for Colorado," Christopher Stiffler, Colorado Center on Law and Policy, August 2012,

http://www.cclponline.org/postfiles/amendment_64_analysis_final.pdf

Businesses offer new goods and services based on cannabis, but with a higher added value. Those products are much more sophisticated and costly than the raw flower. Since Colorado collects part of its taxes as a percentage of the consumer price, higher-value products imply more tax revenue. As an analogy to the more familiar wine market, the raw flower of cannabis is the equivalent of the grape, and the chocolates, candies, and other cannabis-based products are the wine. Taxing the wine brings much higher revenues than imposing taxes on the grapes; the same is true for the cannabis industry. The official data collected in Colorado can now be used to re-estimate the potential economic impact and market changes expected after legalization in Israel.

What really happened in Colorado and should have happened in Israel?

Higher than expected tax revenue

After legalization, Colorado set two kinds of taxes on cannabis, an excise tax on the raw flower and a retail tax on consumer goods of 15%. The retail tax is a consumer tax collected with VAT payments; the excise tax is a producer tax. In 2014, the state of Colorado received $67 million in taxes, in 2019, it was more than $302 million, more than six times the pre-legalization estimate of $47 million and 4.5 times the tax revenue levied during the first year after legalization in 2014.

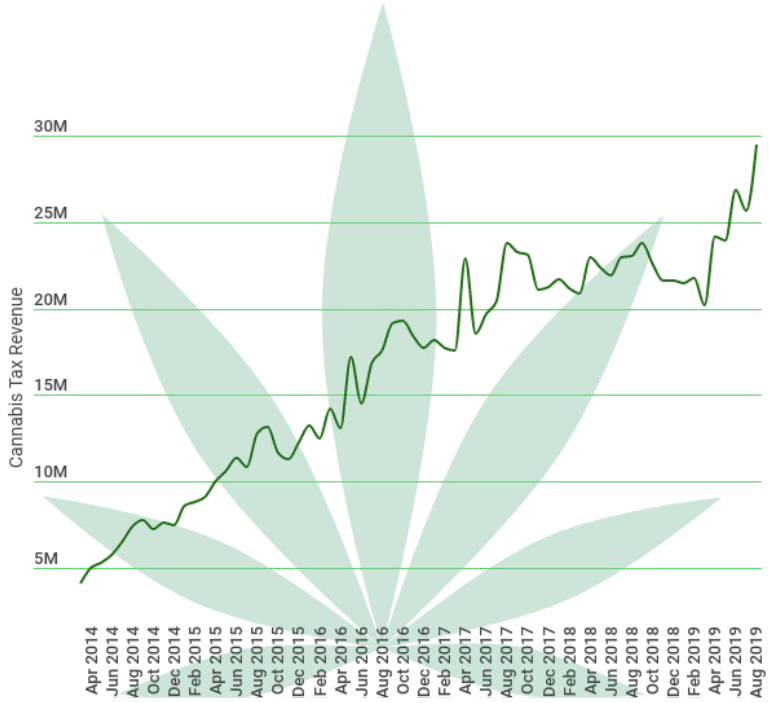
In 2014, the state of Colorado received $67 million in taxes, in 2019, it was more than $302 million

The excise tax was originally 10% and was changed to 15% in August 2017

Source: https://www.colorado.gov/pacific/revenue/colorado-marijuana-tax-data

Graph 1: Cannabis Tax Revenue in Colorado.

Monthly - 2014-2019



Absence of negative social effect

Legalization was a net benefit to Colorado because it came without bringing negative social changes. According to a report published by the Marijuana Health Monitoring and Research Program at the Colorado Department of Public Health and Environment, the number of recreational users among the adult population was relatively stable after legalization. Among the youth, the proportion of Colorado high school students reporting ever using Marijuana in their lifetime remained statistically unchanged between 2005 and 2017. JIMS' paper written by Rebekah Sauer Fine and Maya Dwek in 2015 offers a complete discussion of the social effects of legalization.

Source: https://www.colorado.gov/pacific/revenue/colorado-marijuana-tax-data

https://cdpsdocs.state.co.us/ors/docs/reports/2018-SB13-283_Rpt.pdf

"אי-הפללה של השימוש בקנאביס במדינת ישראל" מאיה דואק ורבקה סאור, 2015

https://www.jims-israel.org/individual-freedom

Booming Cannabis industry

Legalization allowed a large number of new businesses and individuals to enter the space, creating a healthy competitive market. As of February 2020, Colorado has 40,168 employee licenses and more than 1,712 business owner licenses. In 2019, there were 25.5 retail cannabis stores for 100,000 residents, compared to 15.8 Starbucks and 5.1 McDonalds.

According to estimates from the Marijuana Policy Group, Colorado's cannabis industry directly created about 19,518 full-time jobs. In addition to direct employment, the sector also created new opportunities in other areas. Ancillary jobs include security guards, construction and HVAC specialists, consulting, legal, and advisory services, and other business services.

Colorado has now 40,168 employee licenses and more than 1,712 business owner licenses

As the very first U.S. state to launch a legal cannabis market, Colorado has also benefited from a boost in tourism. Tourism has grown 51% since 2014, reaching 6.5 million visitors in 2016, according to a report from the state's department of revenue. Those tourists accounted for nearly 18 million or 37% of cannabis transactions that year. Cannabis-related travel became a big focus for the state, with cannabis wellness retreats, cooking classes, and private smoking lounges, all eagerly accepting out-of-state high-end visitors.

Source: https://www.colorado.gov/pacific/enforcement/med-resources-and-statistics
Marijuana Policy Group, http://www.mjpolicygroup.com/pubs/MPG%20Impact%20of%20Marijuana%20on%20Colorado-Final.pdf

New tax environment

For the first few years after legalization, the most common business model in the recreational cannabis market was the Dutch "coffee shop model." Those enterprises offer a variety of cannabis flavors, pre-rolled joint, and homemade edibles. The service they provide is very successful, but little value is added to the raw flower. Graph 2 shows that, indeed until, mid- 2017, the producer and retail taxes moved in parallel, indicating that the products sold to consumers didn't much transform the raw flower.

As the market matured, cannabis became an input in the production of higher value-added consumers' products. From July 2017, the tax collected on the retail price started to increase at a much faster rate than the tax levied on the raw flower.

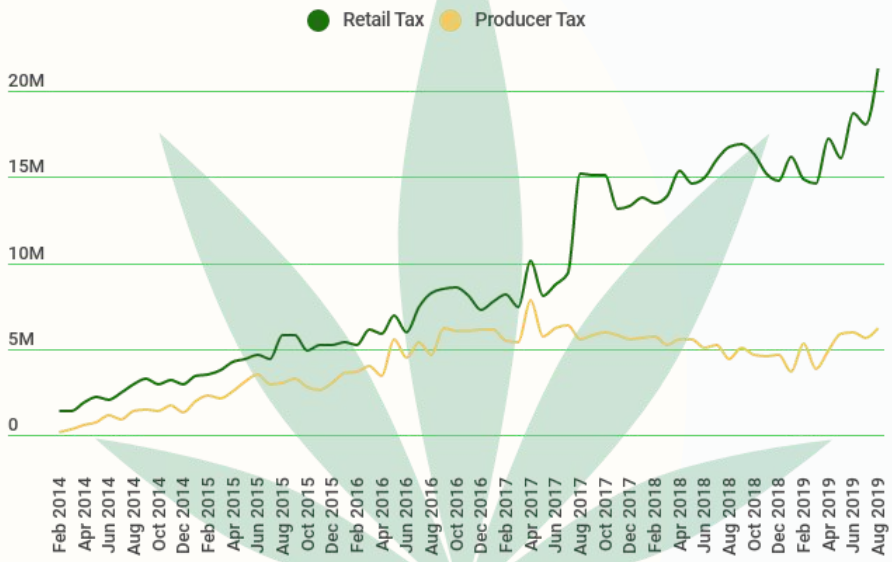
As illustrated in Graph 2, the tax revenue increase wasn't generated by higher demand for fresh flowers but by strong demand for derivatives products and services in the cannabis market that didn't exist before the legalization.

Colorado tax revenue increase was generated by higher demand for goods and services that didn't exists before legalization.

Source: Bank of Texas reporthttps://www.kansascityfed.org/publications/research/rme/articles/2018/rme-1q-2018

Graph 2. Retail and Producer Tax Revenue

Monthly - Colorado - 2014 to 2019



As the market matured, cannabis became an input in the production of higher value-added consumers' products. From July 2017, the tax collected on the retail price started to increase at a much faster rate than the tax levied on the raw flower. As illustrated in Graph 2, the tax revenue increase wasn't generated by higher demand for fresh flowers but by strong demand for derivatives products and services in the cannabis market that didn't exist before the legalization.

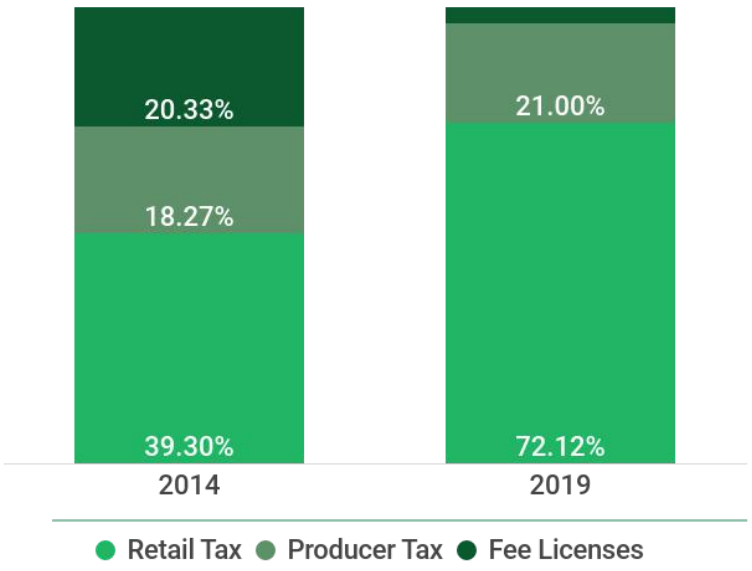
As the market matured, starting in mid-2017, new products began to appear on the market. Candies, chocolate, cosmetics, oil for cooking, workshop, and tasting tours, are just a few examples of the goods and services available to consumers.

Source: https://www.coloradoan.com/story/money/business/2018/06/21/legal-weed-cheaper-colorado-than-its-ever-been-due-increased-supply/722513002/

Those products use the cannabis flower as an input in their production. The enhancement of the raw material adds value to the consumers, and their sale price is much higher than the natural flower component.

As the market entered a more mature phase, three years after legalization, the increase in tax revenue on retail started to shoot up. In contrast, the tax revenue on the producer stayed relatively stable. In 2019, the income from retail tax represented 72% of all tax revenues; in 2014, it was only 39.3%, as shown in Graph 3.

Graph 3. Composition of Tax Revenue by type of Taxes - Colorado - 2014 and 2019



More expensive products generate more tax revenue. Retail grew at an average rate of 50% annually compared to only 20% for the producer tax.

Source: https://smoke.io/vape/@spliff/the-american-cannabis-market-moves-from-flowers-to-flavors-extracts
https://www.cannabisbusinesstimes.com/article/edibles-sales-new-report/

New Market Conditions

The recreational cannabis market is composed of four main products, the flower, concentrates, edibles, and other derivative products (mainly cosmetics and accessories). Although the flower is still the leading consumer's product of choice with 50% of the market, the growth rate in the concentrates and the edibles market is growing at a faster pace.

As reported by the cannabis business times, this trend will continue over the next five years, with flower's share of total spending dropping from 50 percent in 2017 to just 36 % in 2022. Edibles will grow from 12% to 14 percent in that time frame and concentrates from 23 % to 36 %.

Edibles and concentrates are of higher value for customers and tax collectors. They are quickly gaining popularity in the market as the more mature consumers look beyond the fresh flowers.

By 2022, the flower will only represent 36% of the sales in the recreational market, the concentrates and edibles will claim more than 60% of the market.

This new market environment is the reason that retail tax grew at a much faster rate than the producer tax. Those innovative, consumer-driven goods and services were absent in studies written before legalization came into effect, their exclusion led to an under-estimate of tax collection.

Source: https://bdsanalytics.com/wp-content/uploads/2019/06/Concentrates-Exec-Summ.pdf
https://smoke.io/vape/@spliff/the-american-cannabis-market-moves-from-flowers-to-flavors-extracts
https://www.cannabisbusinesstimes.com/article/edibles-sales-new-report/

Israel Lost Tax Revenue - 2014-2019

To calculate the lost income to Israel since 2014, we used the same methodology as the one we used in the 2013 and 2018 papers. In 2014, we had an estimated tax revenue of 950 million NIS, and the tax base was the weight of the raw cannabis sold to consumers. Early studies didn't anticipate the level of innovation, and entrepreneurship legalization will bring. The new flourishing cannabis market for high-end products was unimaginable before legalization took place in Colorado.

In Colorado, tax revenue increased at an average rate of 38% annually. The most significant growth was seen in the earlier years (2015= 92%, 2016=48%) after legalization, and as the market gained maturity from 2017, the average rate of increase stabilized at 16% annually.

Given the Colorado experience, it's is now possible to estimate more accurately the market potential for Israel. This study introduces a growth rate to reflect the rise in consumers' demand for high-end products in the recreational cannabis market. As the starting point to our estimates, we used JIMS' 2014 tax revenue estimates of 950 million NIS. The lost tax revenue to Israel was estimated under a few sets of hypotheses.

In previous studies, we used a tax rate of 52%, similar to other sin taxes on alcohol and tobacco in Israel. However, according to the U.S. experience, the states that adopted a lower rate of taxation saw higher than expected revenue; heavy taxers like California saw less income than expected.

Source: לגליזציה של מריחואנה: סקר דעת קהל, הניסיון של מדינות אחרות והערכת ההשפעה התקציבית, 2013
https://www.jims-israel.org/individual-freedom

It is important to remember that a high tax rate might damper consumers' demand, reduce business opportunities, fail to discourage the black market, and in fact, lower the total tax revenue.

To take into account that Israel might have to lower its tax rate to enjoy full economic growth in the cannabis sector, we run the same estimates using a 30% tax rate like the one used in Colorado. We also assume that Israel will only collect taxes at retail as done currently with the VAT. Taxes levied at retail are more straightforward and less costly to manage and administer. Tax collection on production uses weight or/and measurement of product concentration to calculate the value of the tax base. This process is very cumbersome and lacks uniformity. It is more efficient to let the retail market price dictate the tax base.

States that adopted a lower tax rate saw higher than expected tax revenue, heavy taxers saw less income than expected

Table 1 shows three estimates of tax revenue expected under two tax regimes (52% and 30%). In the case of the 52% tax rate, only calculations using a rate of growth half of the one experienced by Colorado (Column C) were considered. It is doubtful that under such a punitive tax rate, the market will be able to flourish as well as it did in the States with relatively lower taxation. Column D and E show the results using a tax rate of 30% as in Colorado with full growth (Column D) and half the growth (Column E).

Source: לגליזציה של מריחואנה: סקר דעת קהל, הניסיון של מדינות אחרות והערכת ההשפעה התקציבית, 2013
https://www.jims-israel.org/individual-freedom

Table 1. Lost Tax Revenue for Israel After Legalization

2014 to 2019

	Tax Rate 52%	Tax Rate 30%	Tax Rate 30%
	Half Growth Rate	Full Growth Rate	Half Growth Rate
	Column B	Column C	Column D
2020	₪950,000,000	₪570,000,000	₪570,000,000
2021	₪1,391,427,659	₪1,099,713,191	₪834,856,595
2022	₪1,728,551,282	₪1,632,603,698	₪1,037,130,769
2023	₪1,968,558,875	₪2,085,974,433	₪1,181,135,325
2024	₪2,044,801,168	₪2,247,554,030	₪1,226,880,701
	₪2,180,864,535	₪2,546,663,571	₪1,308,518,721
Total			
	₪10,264,203,519	₪10,182,508,923	₪6,158,522,112

By delaying legalization, Israel lost 10.2 billion NIS in tax revenue

Under the scenarios with a low tax rate of 30% that allows businesses to prosper to their full potential, Israel missed 10.2 billion NIS since 2014 in tax revenue. Even if we assume that Israel would have been only half as innovative (which is hard to believe considering the Israel start-up culture), Israel still missed out on 6.16 billion NIS.

Source: לגליזציה של מריחואנה: סקר דעת קהל, הניסיון של מדינות אחרות והערכת ההשפעה התקציבית, 2013
https://www.jims-israel.org/individual-freedom

Israel Potential Tax Revenue - 2020-2024

It is not too late for Israel to legalize and create economic growth in the cannabis sector. Even in a criminalized environment, the market for cannabis has changed in Israel between 2014 and today. The number of self-reported users increased as Israel adopted a softer approach to cannabis. According to the Israel drug Authority, 27% of adults 18-65 smoked cannabis in 2018, in 2014, only 14.5% admitted to using recreationally. To forecast the potential tax revenue for Israel, after legalization, we used JIMS' 2018 tax revenue estimates of 2.3 billion NIS as the starting point for 2020, even if the market for cannabis most likely grew between 2018 and 2020.

Table 2 shows three forecasts for tax revenue under two tax regimes (52% and 30%) and two growth rates. Column C show the results using the actual rate of growth experienced by the state of Colorado. Column B and D show forecasts using only half of it.

Under a tax rate of 30% that allows businesses to prosper, Israel will enjoy 17.8 billion NIS extra tax revenue over the next five years.

Source: לגליזציה של מריחואנה: סקר דעת קהל, הניסיון של מדינות אחרות והערכת ההשפעה התקציבית, 2013
https://www.jims-israel.org/individual-freedom

Table 2. Potential Tax Revenue for Israel After Legalization

2020 to 2024

	Tax Rate 52%	Tax Rate 30%	Tax Rate 30%
	Half Growth Rate	Full Growth Rate	Half Growth Rate
	Column B	Column C	Column D
2020	₪2,300,000,000	₪1,326,923,077	₪1,326,923,077
2021	₪3,368,719,595	₪2,560,061,071	₪1,943,492,074
2022	₪4,184,913,631	₪3,800,595,653	₪2,414,373,249
2023	₪4,765,984,644	₪4,856,013,357	₪2,749,606,525
2024	₪4,950,571,249	₪5,232,160,192	₪2,856,098,798
Total	₪19,570,189,119	₪17,775,753,350	₪11,290,493,723

Under the scenario with a low tax rate of 30% (Column C and D) that allows businesses to prosper to their full potential, Israel will enjoy 17.8 billion NIS extra tax revenue over the next five years. Even under the more pessimistic scenario (Column D), where Israel will only enjoy half the actual Colorado growth rate, tax revenue will accumulate over the next five years and will reach 11.3 billion NIS.

We didn't present the scenario with a 52% tax rate and a growth rate similar to the one Colorado experienced. It is very unlikely that under such a punitive tax rate, the market will be able to flourish as well as it did in the States with relatively lower taxation.

Those new tax revenues will improve the government's budget situation and can be used to create fund investments in critical sectors such as infrastructure, education, and health as Colorado and other U.S. states did.

Source: לגליזציה של מריחואנה: סקר דעת קהל, הניסיון של מדינות אחרות והערכת ההשפעה התקציבית, 2013
https://www.jims-israel.org/individual-freedom

Conclusion

Legalizing and taxing recreational cannabis would reduce costs to taxpayers, spur economic activity, create jobs, and shrink the black market. New tax revenues will improve the government's budget situation. This income can fund investments in critical sectors such as infrastructure, education, and health.

It will also give the freedom of enjoying cannabis for recreational activities to millions of normative citizens without turning into criminals.

JIMS recommends using a tax rate of 30% to ensure the best environment for economic growth. A higher tax rate will damper the demand for high-end products and reduce the total tax revenue.

Israel already missed out on 11.2 billion NIS since 2014 by delaying legalization, let's not miss the next 17.8 billion!