



## Evaluating the revenue and taxation implications of cannabis legalization in South Africa: Insights from Canada and the United States

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**Abstract:** *Purpose:* This study aims to evaluate the impact of cannabis legalization on revenue mobilization and taxation in South Africa by analyzing the experiences of jurisdictions that have legalized cannabis. *Methodology:* A qualitative approach was employed, including a literature review and trend analysis. Data from Canada, California, Colorado, and Washington State, where cannabis has been legalized, were analyzed for 2018-2021. *Results:* The findings demonstrate that cannabis legalization significantly impacts revenue collection and taxation. However, optimal pricing and taxation policies are crucial to capture the illicit market, minimize negative externalities, and ensure industry growth. Legacy growers and previously disadvantaged individuals should be integrated into the legal market. *Theoretical Contribution:* The study contributes to the theoretical framework of Pigouvian taxation by examining its applicability to the cannabis industry and the challenges posed by illicit markets and product substitutability with alcohol and tobacco. *Practical Implications:* The study provides recommendations for South African policymakers on taxation policies, market regulation, and inclusive strategies to ensure a successful and sustainable cannabis industry while maximizing revenue mobilization.

**Keywords:** taxation, cannabis legalization, sustainability, revenue mobilization



## 1. Introduction

A landmark decision taken by the South African Constitutional Court on 18 September 2018 decriminalised the use and cultivation of cannabis in a private space (BusinessTech, 2022). In his State of the Nation address on 10 February 2022, South African President Cyril Ramaphosa indicated that the hemp and cannabis sector could create more than 130,000 new jobs (Government, 2022). The Government plans to move forward to industrialise the sector. However, The Cannabis for Private Purposes Bill is yet to be finalised since being tabled in September 2020. In drafting pricing and taxation policies, the South African Government can rely on current data available in countries that have legalised cannabis for recreational and medical use.

In the United States of America (US), cannabis is still illegal at the federal level. However, many US States have legalised cannabis under state law. For instance, in the US States of Colorado and Washington State, cannabis has been fully legalised since 2012 (Marijuana Policy Project, 2020). As noted by Dills, Goffard, Miron, and Partin (2021), state-level cannabis legalisation has had minor societal impacts. However, a notable exception is increased state tax revenues from legalised cannabis sales. The study also investigated if the legalisation of cannabis would impact the alcohol market, and it found that there was no clear relationship between cannabis legalisation and alcohol use. Their findings on tax revenue indicated that Colorado collects almost \$20 million every month from cannabis, while Washington State generates almost \$70 million in tax revenue in its first year of sales. Both California and Canada legalised cannabis for recreational use in 2018. Since the legalisation of cannabis in 2018, California has seen \$4 billion in tax revenue, with \$5.7 billion in sales in 2021. This resulted in 83,607 jobs in total, with the addition of 21,000 jobs in 2021 (Guilhem, 2022). Similarly, Canada has generated nearly \$11 billion in sales since 2018, with the industry contributing \$43.5 billion to Canada's GDP and \$13.3 billion to Ontario's GDP, with \$15.1 billion in government state coffers (Deloitte, 2021).

Revenue collection and taxation are vital motivators for the legalisation of cannabis. However, cannabis revenue policies and taxation are somewhat tricky to navigate. Oglesby (2022) noted that "what is the proper tax burden, and would it be as much as the market will bear to offset negative externalities?". Following this study, a well-regulated cannabis production structure need not produce significant environmental or other negative externalities. Furthering this claim, Leff (2021) indicates that governments should aim to capture as much of the cannabis legalisation premium as possible without driving consumers into the illicit market, whilst Boesen (2020) notes that the tax should target the externality and ensure it is outpacing the illicit market. Rotfleisch (2018) notes that producers of cannabis for medical purposes in Canada are taxed on their income, similar to other businesses. This was not changed after legalisation. In addition to the business tax, Canada levies a tax in the form of excise tax and goods and services tax. Per the Canada Revenue Agency, an excise duty is levied on non-medical cannabis sales, whilst all edibles, extracts and topicals will be subject to excise tax at a rate of 1c/milligram of total Tetrahydrocannabinol (THC).

Currently, countries have opted to levy cannabis tax in the form of an excise tax. Excise taxes are levied mostly on high-volume daily consumables. Its main objective is to ensure a constant stream of revenue with a secondary objective of discouraging overconsumption of products that are deemed harmful (Cannabis Act, 2018). Studies have noted that excise tax is a far more suitable taxation for cannabis. However, research shows that excise tax is based on THC rather than a percentage of market basis, which might be more feasible (Mark Kleiman, 2019). The potency tax was further analysed by researchers Hansen Miller, Seo, & Weber (2020), who determined that a potency tax on cannabis may not necessarily increase the revenue as earned by an ad valorem tax but would reduce the level of THC consumed, thereby affecting the negative externality and reducing the social impact. Governments have also to consider tax benefits for businesses entering the industry.

As cannabis is currently illegal at a federal level in the US, this has affected the market. Cannabis businesses would fare better if they had access to banking, tax deductions or interstate trading, as this would assist in driving down cannabis pricing (Boesen, 2020). High taxes would work as a preventative measure for minors and non-users of cannabis but would significantly affect the competitiveness of the market and likely leakage to the illicit market. At the same time, a tax that is too low could allow for the conversion of users from the illicit market but increase consumption in youth and vulnerable groups (Boesen, 2020).

The study "The Tax Consequences of Legal Cannabis" by Ian Irvine and Light (2020) examines the total tax revenue consequences of legalised recreational cannabis in Canada. This study considered the demand responses in the alcohol and tobacco markets against the cannabis market. Canada is considered a high-sin tax economy, and the demand for cannabis would erode the excise taxes earned in the alcohol and tobacco markets. Based on the demand side of the market, the study notes that after legalisation, as total expenditure increases, users are willing to pay a higher price for the legal product. The study also found that cannabis has a substitutability relationship with both

alcohol and tobacco. Their findings indicate that for total tax revenues, the legalisation of cannabis could reduce the tax revenues in both the alcohol and tobacco markets. It also revealed that, on an income front, taxes from employment and corporate profits should suffice to offset losses. However, policymakers should be aware that tax countries' legalisation in high sin may not always mean significant increases in tax revenues.

The Bureau of Business and Economic Research (2020) conducted a study titled "An Assessment of The Market and Tax Revenue Potential of Recreational Cannabis in Montana", where the researchers attempted to quantify the potential size of the recreational cannabis market in Montana and determine the potential tax revenue that could be collected if cannabis was legalised. Researchers undertook a survey-based approach to the use and incidence of services for resident and non-resident users. They found that a 20 percent tax levied on legalized cannabis sales could collect between \$43.4 and \$52.0 million per year in revenues to the state in 2022-2026. Retail prices of approximately \$270 per ounce would result in total sales of approximately \$290 million per year.

As the Marijuana Policy Project (2022) noted at the end of 2022, all US States that have legalised cannabis have reported a total of over \$15.1 billion in tax revenue from recreational cannabis sales since 2014. States that have legalised recreational cannabis have collectively generated more than \$3.7 billion in tax revenue in 2021. The MPP's CEO noted that these numbers were a further indicator that the end of cannabis prohibition offers tremendous benefits for state governments.

## **2. Theoretical framework**

Leff (2020) notes two distinct theoretical approaches to determine taxes and which could be applied to transactions: ordinary revenue maximising taxes and Pigouvian taxes. Pigou (1947 and 2017) proposed that there should be a tax on activities and behaviours that could generate negative externalities on society. The Pigouvian tax is intended to tax the manufacturer of goods or services that could create negative externalities for society (Tax Foundation, 2022). These studies argue that societies rather than manufacturers bear the costs of these negative externalities. The purpose of the Pigouvian tax is to redistribute the cost back to the manufacturer to offset the negative externalities. However, Childs and Stevens (2020) note that a Pigouvian tax should reflect the production cost and the expected negative externality. Childs and Stevens (2020) further note that there is a limitation to applying a Pigouvian tax to cannabis. Much like with the sale of tobacco, the effectiveness of a Pigouvian tax is limited by the illicit markets. Pigouvian tax raises the price of the legal product relative to the illicit price, causing consumers to substitute illicit products for legal varieties. Another consideration is that cannabis has a complementary or substitutability relationship with alcohol and tobacco, as noted in Miller and Seo (2019) and Ian Irvine and Light (2020). Despite increasing tax revenues, they have noted that the increase in cannabis sales and revenue starts to cannibalise tax revenues from alcohol and tobacco. The theoretical framework is suitable for this study based on the literature and wide acceptability (see Pigou, 1947; Miller and Seo, 2019; Ian Irvine and Light, 2020).

## **3. Research design**

How does the legalisation of cannabis impact revenue collection and taxation? Following an earlier study, the study employs a qualitative approach in the form of a literature review with a trend analysis across the selected countries and jurisdictions where cannabis has been legalised. The data used in this study consisted of a review of primary data such as legislation and legal documents and secondary data such as peer-reviewed journals, journal articles, published dissertations, and Government documentation and data in the form of grey literature. The research population considers countries that have legalised cannabis for either/both production and sale as well as personal use. Countries where cannabis has not been legalised for either recreational use or medical use have been ignored for this study. The sample was narrowed down to countries that have legalised the commercial sale of cannabis: Malta, Canada, Thailand, Uruguay, and all US subnational jurisdictions (all legal US States) (Woods, 2022). This sample was further reduced due to time constraints and data availability. The study compared the revenue collections and cannabis taxation impacts in Canada and three US States (California, Colorado, and Washington State). It also reviewed the impact of the legalisation of cannabis on revenue collection and taxation for 2018 to 2021 in Canada and three US States. Only data and articles published in English have been used for consistency and convenience. Other languages have been disqualified from use due to the time and cost expected for translation purposes. It is noted that due to the language constraint, there is a likelihood that suitable studies and data could be overlooked. To ensure inclusivity in choosing the

primary studies that would answer the questions posed, the following three sources were utilised: electronic databases, backwards searching and forward searching.

The electronic databases mentioned below were utilised to obtain current and relevant studies for the literature review:

- ScienceDirect
- Government revenue portals (such as Canada Revenue Agency)
- ResearchGate
- SSRN
- EBSCOhost
- Google Scholar
- Google and,
- handpicked journals.

Following Webster & Watson (2002), a backwards search, or 'snowball' approach, was utilised to identify relevant work cited by previously accessed articles and a forward search was conducted to find articles that have since cited the articles reviewed.

Articles for this study's purpose were obtained using the following keywords in Table 1:

<b>Table 1: Keywords</b>	
<b>Expanded Terms</b>	<b>Search Terms</b>
Legalisation	• Cannabis Taxation
Cannabis	• The economic impact of the legalisation of cannabis
Taxation	• Canada cannabis taxation
Revenue collections	• Washington State cannabis taxation
	• California cannabis taxation
	• Colorado cannabis taxation
	• Marijuana taxation
	• The economic impact of legalised marijuana

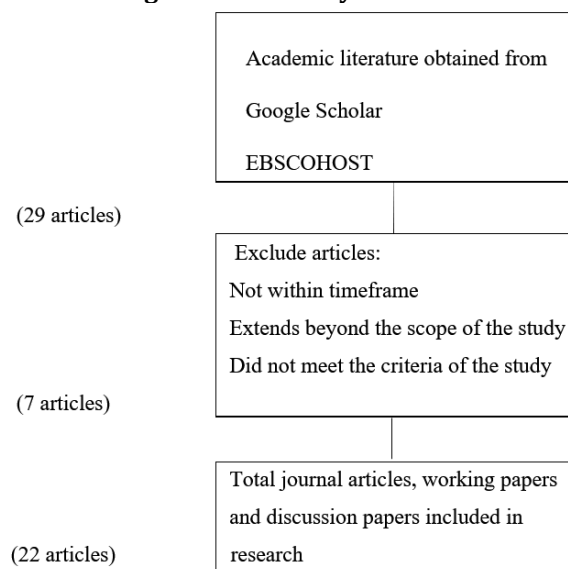
Source: Authors' compilation (2024).

The inclusion and exclusion of studies were based on the research question and objectives, guaranteeing reliability in decision-making and conclusions. Any studies unrelated to the research questions have been excluded. Literature was manually sorted on academic databases and manually reviewed and stored. A total of 29 journal articles and reports were found. The abstracts and introductions were reviewed to confirm if the journal article or report met the objectives of this study. The following inclusion criteria were applied:

- i. Include journal articles and reports which detail the impact of legalisation on revenue, taxation, and taxation policies.
- ii. Articles published within the period 2018-2021 are included.
- iii. Articles and journals were written in the English language.

Out of the 29 journal articles and reports, 7 journal articles and reports were excluded based on the following- information within the report or article did not meet the criteria of this study; the impact is related to a period prior to legalisation or is too old for the time frame required in this study; documentation related to countries which could not be corroborated due to its primary language not being in the English Language; information of the report or article is beyond the scope of this study;

Following these exclusions, only 22 articles and reports remained for further analysis for this study's purpose. Figure 1 below illustrates the summary of results from this assessment.

**Figure 1: Summary of results**

Source: Authors' compilation (2024).

Data was extracted and analysed using the following trends: tax rates, revenue collected, learnings, and shortcomings. This analysis allowed for a comparison to be drawn in the selected jurisdictions to make informed recommendations for South Africa, where cannabis is currently not fully legalised.

#### 4. Results

The results from the review of Canada and the three US states are noted below, with tax rates being summarised in Table 2:

**Table 2: Summary of cannabis tax rates**

Country/state	Excise tax rate	Tax on cultivation	Sales tax
Canada	The higher of: - Flat rate \$ per gram based on figure 1 in 4.3.1 or, -An <i>ad valorem</i> rate of 10%	N/A	Yes, varying rates per Figure 2 in 4.3.2
Colorado	At a rate of 15% on first transfer and 15% on producers based on the average market rate on recreational cannabis, medical exempt	15% sales tax on retail/recreational cannabis	2.9% sales tax on medical cannabis, recreational exempt
California	15% on the average market price with a markup of 75% as at the end of 2022 based on Figure 12 in 4.5.1	Cultivation tax of \$9.25 per ounce of flowers and \$2.75 per ounce of leaves. Tax scrapped in 2022	Yes, varying rates per 4.5.2
Washington	37% on the selling price	N/A	6.5% sales tax on recreational cannabis, medical is exempt based on specific requirements

Source: Compiled by the Authors (2024).

Revenues earned have been summarised in Table 3 below:

**Table 3: Revenues since legalisation**

Country/ US State	Revenue Since Legalisation (Approximate)	State Tax Revenue Since Legalisation (Approximate)
Canada	\$ 11 billion	\$ 15.1 billion
Colorado	\$ 12 billion	\$ 2 billion
California	\$ 15 billion	\$ 3.5 billion
Washington	\$ 5 billion	\$ 3 billion

Source: Tax Foundation (2022).

As noted in Tables 2 and 3 above, Canada levied a flat rate or ad valorem tax rate on producers based on either \$1/gram or 10 percent of their sales price on dried cannabis, whichever is the higher. However, it has been argued that these taxes are affected by market price, which has increased the effective tax rate, driving up prices that could drive consumers to the illicit market. Canada's cannabis industry is flourishing, with the legalisation of recreational cannabis and medical cannabis for commercial sales. Canada's Government utilised excise taxes, a tax levied on consumable products, and its general harmonised sales taxes to generate significant state revenues.

Based on the findings of the Deloitte (2021) study on Canada's cannabis industry for the period October 2018 to 2021, Canada has seen growth in the following:

- i. The cannabis industry, in the three years of legalisation, generated \$11 billion in sales nationwide
- ii. \$29 million was made in capital expenditures
- iii. The industry has also contributed \$43.5 billion to Canada's GDP and \$13.3 billion to Ontario's GDP, with \$15.1 billion to government state coffers
- iv. Created 151,000 jobs nationally since legalisation and 31,000 jobs in Ontario alone.

In addition, \$15.1bn in Canadian tax revenues has been generated, with \$3bn for Ontario. Ontario's cannabis retailers brought in \$142mn in direct taxes, \$1.2bn in indirect taxes, and \$673mn in other taxes, while consumer purchases contributed \$1.0bn in sales and excise taxes. Figure 2 below summarises the cannabis sales in Canada and Ontario over the period of legalisation, 2018 to 2021.

Licensees disproportionately produce the production of cannabis. Between October 2019 and December 2021, 43.2% of dried cannabis production was derived from 10 standard licence holders, 55.9% from another 307 standard licence holders, and the remaining 0.9% came from 178 micro-licence holders (Canada, 2022). This indicates that dominant players in the industry own a large chunk of the market share. Furthering this finding, it suggests a monopoly of the market.

It has been argued that market price and a static tax floor would raise the effective rate to 20% - 35% for small cultivators, which will affect pricing to consumers and the knock-on effect would be that more consumers enter the illicit market (Siebert, 2022).

The National Post notes that the illicit market is still thriving despite its legalisation. However, it is not the typical expectations of sordid dealings and drug runners but rather due to legacy growers who do not see any benefit in switching and who do not want to endure the time, expense, and red tape around the legal market (Passifume, 2022). This is further reiterated by the policies applied, as Childs and Stevens (2020) research notes. In regulating and formulating tax policies, the Canadian Government has caused legal cannabis pricing to exceed illicit market pricing.

Colorado implements a special sales tax on recreational cannabis at a rate of 15% and an excise tax of 15% on retail transactions. This rate has increased from the initial 10% implemented at the initial legalisation stages. Despite this rate increase, Colorado's rates are lower than those of California and Washington State. Colorado also contributes to social reforms via the General Fund, which funds public education and treatment programs. Since passing legislation in 2012, Colorado has seen \$12bn in cannabis sales (Revenue, 2022). This has dramatically enriched the tax revenues for the state, and during the last six years, the state has seen over \$2bn in state-level taxes and fee revenue. Colorado has seen a significant increase in revenue, partially due to the impact of the COVID-19 pandemic, and saw revenues in 2021 of more than \$2.2 billion, breaking the prior record in 2020 of \$2.19 billion (Revenue, 2022).

California levies a 15% excise tax rate on cannabis with a markup of 80% in 2018-2021, subsequently reduced to 75% in 2022. California had implemented additional taxes through a cultivation tax that focused on taxing the cultivation of flower heads and leaves at a per-ounce cost, a weight-based tax. This tax was officially scrapped in 2022 after lobbying by businesses due to the impact the tax had on the pricing of cannabis and, ultimately, on the market. The funds collected via the excise taxes are allocated to a general fund, which is then reallocated to youth and drug prevention assistance and law enforcement.

California's tax revenue, after accounting for regulatory and research costs, is used to fund many public health projects and is split as follows:

- a. 60% of youth anti-drug programs
- b. 20% to environmental causes
- c. 20% to public safety grants.

In the first year of distribution, \$200mn was directed to these funds, and in the 2021 fiscal year, California allotted \$332.8mn in funding (McGreevy, 2022).

The illicit market is currently gaining traction, valued at \$8 billion, with massive unlicensed farms and dispensaries, which are often raided and re-opened days or weeks later (Kary, 2022). The saturation of the market also does not help, as prices have fallen due to the abundance of cannabis supply.

However, in 2019, Long Beach (a county in Los Angeles) reduced its supply chain taxes and increased the hours of operation for cannabis retailers, which resulted in a boost in sales and the county's tax revenue to increase substantially and more than double its cannabis-related jobs from 2019 to 2021 (MJBizdaily, 2022).

Washington State utilises a flat rate of 37%. It is the highest rate, as noted in the sample. However, a flat rate is the easiest to implement and has also on-costed some of the inefficiencies in the US market, such as the inability to apply the provisions of section 280E to cannabis businesses in the US due to it being illegal at the federal level (Supra, 2021). Revenues raised go towards Washington State's general fund, with approximately \$520,000 being granted to the Office of Superintendent of Public Instruction for educational initiatives, with a large portion being donated to the state's Medicaid in 2018 to assist low-income residents. Any excess funds are allocated to a general fund for public health and education initiatives. Since legalisation in 2012, Washington State has seen state tax revenue of more than \$3bn (State, 2022).

Data from the High Peak Strategy Impact Analysis on behalf of the CannaBusiness and Association (2021) shows the following achievements:

- i. In 2020, more than 1,600 unique businesses were holding cannabis licenses in Washington State.
- ii. Washington State has earned over \$5bn dollars in revenue since legalisation.
- iii. These operations employed around 11,330 workers; between 2016 and 2020, employment in cannabis-owned businesses increased by 79%.
- iv. The state-wide economic impact of adult-use cannabis businesses in 2020 included 18,360 jobs and \$2.7bn in business revenues.
- v. In 2020, adult-used cannabis directly generated \$660mn in state excise taxes and state and local sales taxes.
- vi. Between fiscal years 2015 and 2020, cannabis excise tax revenues grew by 152% and a further 18.4% from 2020 to 2021 (The Seattle Medium, 2022).

Whilst the market has been progressive, there have been calls for the reduction in excise taxes in order for businesses to flourish because Washington State's excise tax has been noted as having the highest tax rate at 37%, and when adding other state and local taxes, Washington State's consumers pay an average tax rate of 46.2% (Tax Foundation, 2017). This high tax rate pressurises businesses, their bottom lines, and their on-costs. This may result in consumers turning to illicit markets.

## 5. Summary, conclusions and recommendations

The study demonstrates that cannabis legalisation significantly impacts revenue mobilization and taxation. However, the experiences of jurisdictions like Canada, California, Colorado, and Washington State highlight the importance of careful policy implementation and inclusive strategies.

From a practical perspective, the study recommends that South African policymakers:

- Ensure balanced taxation policies capture the illicit market while fostering industry growth.
- Facilitate the integration of legacy growers and previously disadvantaged individuals into the legal market through incentives and reduced administrative burdens.
- Consider the substitutability relationship between cannabis, alcohol, and tobacco to maximize total revenue.
- Implement robust environmental regulations to mitigate potential resource depletion and ecological impacts.
- Review and update policies and legislation to align with global market changes.

From a scientific perspective, the study contributes to the theoretical framework of Pigouvian taxation by examining its applicability to the cannabis industry. It highlights the challenges posed by illicit markets and product substitutability, suggesting that a sound cannabis tax scheme must plan for uncertainties and evolve with market dynamics.

Overall, the study provides valuable insights and recommendations for South African policymakers navigating the complexities of cannabis legalization and revenue mobilization. It underscores the importance of an evidence-based approach, inclusive strategies, and adaptive policies to ensure a sustainable and socially responsible cannabis industry.

## Declarations

## Ethics approval and consent to participate

Not applicable.

## Consent for publication

Not applicable.

## Availability of data and material

The data are available on request.

## Competing interests

The authors declare no conflict of interest or competing interests.

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