



Published in final edited form as:

Int J Drug Policy. 2020 January ; 75: 102611. doi:10.1016/j.drugpo.2019.102611.

How high: differences in the developments of cannabis markets in two legalized states

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With legal retail cannabis businesses now operational in seven states, market data are valuable for monitoring population consumption patterns. Strong evidence from studies of alcohol and tobacco markets indicate retail outlet access and density, lower prices, and availability of higher-potency products likely contribute to increases in consumption, and potentially associated harms (Berg, Henriksen, Cavazos-Rehg, Haardoerfer, & Freisthler, 2018; Community Preventive Services Task Force, 2015, 2017). However, to date, Washington, one of the first two states to legalize adult use and began retail sales of cannabis in July 2014, is the 2 only state that has published trends in cannabis sales, types of products sold, and the potency of products (Smart, Caulkins, Kilmer, Davenport, & Midgette, 2017). While this has allowed us to learn a lot about the evolution of the legal cannabis market in Washington, we do not yet know whether Washington's experience translates to other legalized states. This paper is the first to examine cannabis market data from Washington alongside that from the state's southern neighbor, Oregon—two states that are similar in regard to legalizing retail sales of cannabis but differ in terms of their regulatory frameworks (e.g., taxation, product restrictions). Differences in the states' regulations of the production, processing, and sale of cannabis (Drug Policy Alliance, 2018) have implications for the development of their cannabis markets and population health outcomes.

Retail market opening and sales

The market opening process varied between the states. Washington's retail outlets opened slowly and early product supply was limited. Washington capped retail licenses by jurisdiction: first at 334 statewide, expanding to 556 in 2016 to allow for incorporation of its previously unregulated medical market. This expansion corresponded with the acceleration in sales beginning in 2016 (Washington State Liquor and Cannabis Board, n.d.). In contrast, Oregon's established cannabis growing capacity (both medical and illicit) assured ample

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The authors do not have any conflicts of interest to declare.

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product availability for the retail market from the very beginning (Oregon Liquor Control Commission, 2019). Oregon allowed for limited retail cannabis sales in existing medical marijuana dispensaries from October 2015–December 2016. This “soft opening” led former medical dispensaries to easily transition into retail cannabis businesses. There is currently no limit on the number of retail licenses allowed in Oregon.

Based on the most recently available retail sales data in both states, legal cannabis markets are booming. The first two years since Washington’s retail market opened (July 2014–June 2016) brought in \$900 million in sales; Oregon’s first two years reported sales in excess of \$1.3 billion (October 2016–September 2018). Sales in the most recent month on record for Washington (October 2017) exceeded \$110 million across 405 reporting retailers (Figure 1b); Oregon’s most recent month (November 2018) saw \$62 million sold across 575 reporting retailers (Figure 1a). In July 2017, Oregon showed lower per capita cannabis sales (\$19 per adult 21+) than in Washington (\$21), despite having twice as many dispensaries per capita (1.5 per 100,000) than Washington (0.74).

Product variety and potency

While total sales are an important measure of market size, variation in sales of certain types of products have implications for understanding consumption behaviors and potential harms from cannabis use. Product “potency” is frequently considered by the amounts of tetrahydrocannabinol (THC, the chemical associated with psychoactive effects) and cannabidiol (CBD) in cannabis products. Potency is measured in milligrams for infused products (e.g., edibles like candy or cookies, and drinks) and in percentage by weight for usable marijuana (e.g., flower) and concentrates or extracts (e.g., liquids like vape juice or oils, and solids like shatter or wax used for dabbing). Use of high potency cannabis concentrate products has been linked to negative consequences like psychosis and emergency department visits (Marx, Chen, Askenazi, & Albanese, 2019; Washington Poison Cener, n.d.).

Purchase limits have been established for certain product types to reduce unintended harms to users. Daily purchasing limits in Washington are restricted to 1 ounce of flower, 7 grams concentrate, 16 ounces of edible, and 72 ounces of topical or beverage. Oregon further restricts daily purchase of concentrates (5 grams) but, unlike Washington, allows adults to home-grow cannabis for non-medical use and purchase cannabis seeds and immature plants.

Patterns in product purchases have shifted over time. From October 2016, extracts and concentrates made up an average of 26% of the Oregon market each month. Consequently, the market share for flower has decreased over time; accounting for less than half of monthly sales by November 2018. Because, unlike Washington, Oregon law permits home-grow of cannabis and gifting cannabis flower between adults this may influence product preference when purchasing from licensed retailers. In Washington, the market share for flower has also declined over time due to increased popularity of extracts and concentrates (Figure 1b).

Prices

The level of taxation in Oregon is currently set at a 17% sales tax with the option for a locally imposed additional 3% sales tax and Washington currently has a 37% sales tax. Differences in taxation between the two states could impact the cannabis markets, customer purchasing patterns and consumer behaviors (including potential for youth use).

Sales data include both quantity sold and product prices, and the price of cannabis products varies by potency and product type. Washington has made item-level data with information on price and product weight publicly available, but Oregon has not. However, using Leafly menus from a sample of 10 retailers (five within a Washington urban area (Seattle) and five within Oregon (Portland)) (data collected July 2019), we offer some insights on how prices for cannabis products differ across states. For both states, cannabis products that are high in THC are cheaper than products high in CBD: a 1-gram cartridge of high-THC liquid extract was \$40 to \$48 in both states while the same cartridge of high-CBD extract was \$50 to \$53. The cost of flower and edibles were similar between the two states (\$11 per gram of high THC (26%) flower, \$2-3 per 10 milligram THC edible mint). However, high THC solid extracts (~75% THC) were considerably cheaper in Oregon (\$18 per gram) compared to Washington (\$29 per gram) on average. Consumption of products tends to increase when prices are lower, so the relatively lower prices for high-potency products is a public health concern. Notably, these Leafly menu samples may not represent a true average of costs across retailers in both cities; however, we expect patterns in prices to be similar between stores within the same city.

Conclusion

This paper provides early retail cannabis market performance in two neighboring states with different cannabis regulatory frameworks. Both states are selling increasing numbers of products including high-potency products, from increasing numbers of retail outlets, and at decreasing and generally similar prices. Oregon's relatively faster initial growth, quicker stabilization and current lower prices for concentrates could be related to more established prelegalization medical markets, the state's "soft opening" approach, and lower tax rate. States and other entities may act to control purchasing behaviors by regulating price, product, potency, and other factors that influence consumption such as advertising, delivery and limiting the number, density or location of retail outlets. Careful monitoring of market data, and comparison of findings from different entities, will be important for understanding what approaches are most effective for mitigating negative public health effects related to legalization of retail cannabis sales.

Acknowledgements:

We would like to thank both the Washington state Liquor and Cannabis Board and the Oregon Liquor Control Commission for providing data and review of the manuscript. We would also like to thank Rosalie Pacula, PhD, and Christine Buttorff, PhD, for critical review of the article.

Funding: This work was partially funded by a grant from the National Institute on Drug Abuse (R01DA0045051, "Impact of marijuana legalization on opioid prescribing and poisonings in Colorado") awarded to Rosalie Pacula and a grant from the National Institute on Drug Abuse (R01DA039293, "Marijuana Legalization: Assessing the impact of local regulatory policies") awarded to Julia Dilley.

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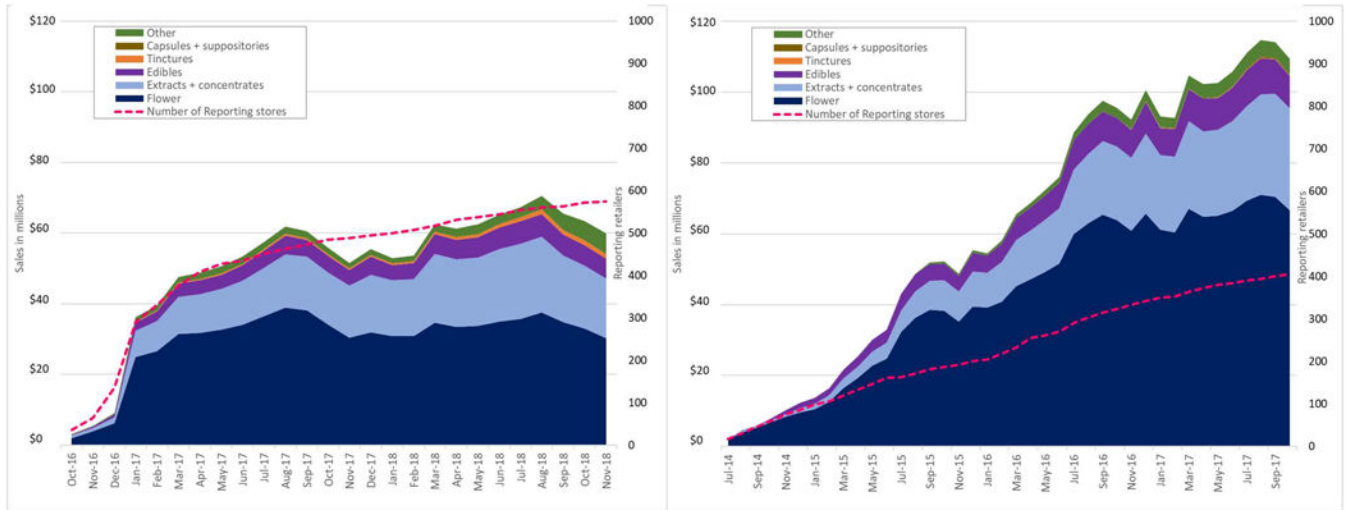


Figure 1.

a. Cannabis retail sales in Oregon b. Cannabis retail sales in Washington

SOURCE: Oregon’s cannabis sales data provided by the Oregon Liquor Control Commission for October 2016–November 2018. Washington’s cannabis sales data were available from July 2014–October 2017 and provided by Washington’s Liquor and Cannabis Board.