

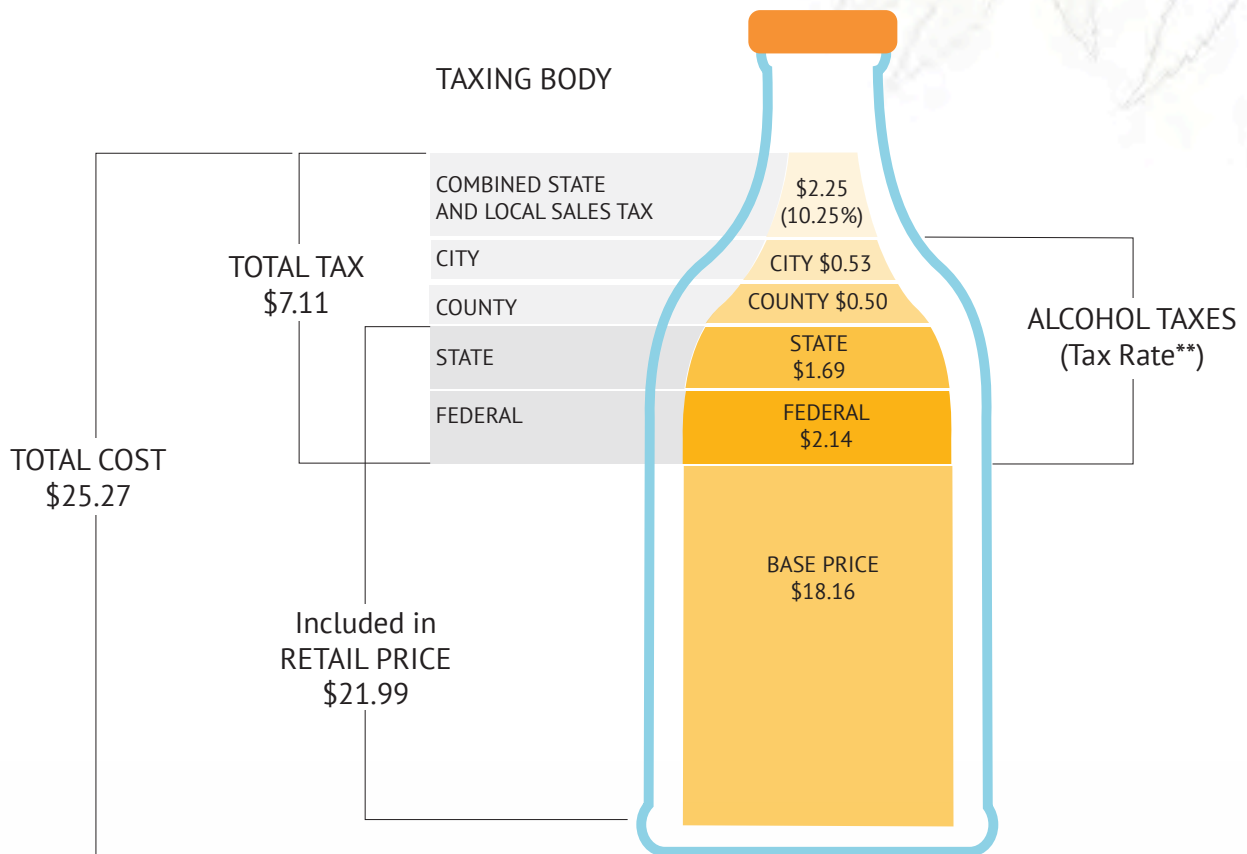


MARIJUANA TAXATION AND BLACK MARKET CROWD-OUT



1. As seen with alcohol prices in Chicago, taxes add costs that raise prices, encouraging consumers to patronize illegal markets.

Chicago Taxes on Alcohol



* The taxes set forth in this chart are for a bottle of spirits and are based on 25.39 ounces per 750 milliliter bottle.

** City, county, state and federal alcohol taxes are levied at a flat rate.

Source: Chicago Municipal Code, Cook County Code of Ordinances, Alcohol and Tobacco Tax and Trade Bureau, Illinois Compiled Statutes, @illinoispolicy

2. Moreover, with the goal of maximizing revenue, state and local taxes raise the per pound prices of legal marijuana far in excess of similar products, risking loss of customers to cheaper black markets.

ESTIMATED TAX-INCLUSIVE WHOLESALE MARIJUANA PRODUCTION COSTS

	Tax-Inclusive Wholesale Production Cost (\$564.43 + Tax)	Cost per lb. at Retail Attributable to State-Level Taxes Alone**
Alaska	\$1,364	\$895
California	\$712	\$727
Colorado	\$740	\$526
D.C.*	\$564	\$0
Illinois	\$781	\$1,373-2,299
Maine	\$564	\$847
Massachusetts	\$564	\$998
Michigan	\$564	\$678
Nevada	\$812	\$846
Oregon	\$564	\$340
Vermont*	\$564	\$0
Washington	\$564	\$782

*State has legalized possession of recreational marijuana but has not yet established a regulated, commercial system.

**Includes taxes assessed at both the retail and wholesale levels.



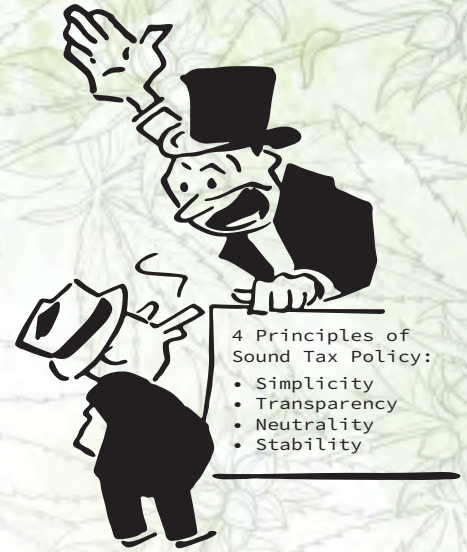
3. Federal taxes and penalties may be several times larger than the total taxes paid by other similar businesses.

EXAMPLE INCOME STATEMENT

Gross Income	100%
Cost of Goods Sold	60%
Gross Margin	40%
Operating Expense	30%
Earnings Before Income Tax	10%
Income Tax Expense (21% * Gross Margin = 40%)	8.4%
Income Tax Penalty (Income Tax Expense – (Earnings Before Income Tax * 21%))	6.3%

*Income Tax Penalty is not a standard income statement line. It is a subcomponent of Income Tax Expense for marijuana companies shown separately here for demonstration purposes. Whereas Income Tax Expense is generally calculated as Earnings Before Income Tax times the applicable tax rates, the calculation for marijuana businesses is Gross Margin times the applicable tax rates.

4. To keep from driving customers to the cheaper black markets, policymakers should start by estimating production costs for producers, which is likely higher for legal growers. Then taxes should be based solely on the states' cost to ensure regulatory compliance, preferably through a simple, transparent, neutral and stable retail tax, as advised by the Principles for Sound Tax Policy.



COST OF PRODUCTION COMPARISON: ILLEGAL VS LEGAL

	Indoor Illegal Grow (Based on Caulkins 1500 ft ² indoor model)	Indoor Legal Grow
Production Intensity (lbs/ft ² /year)	0.42	0.42
Square feet cultivated	10,000	10,000
Annual production (lbs)	4,200	4,200
Costs per pound – Cultivation		
Materials (exclusive of lighting)	\$100	\$100
Lighting	\$75	\$75
Labor	\$40	\$80**
Rent or Depreciation on Building	\$100	\$100
Costs per pound – Harvest		
Harvesting*	\$8	\$16**
Manicuring*	\$130	\$130
Drying/Curing*	\$5	\$10**
Overhead		
Amortization of License*** (\$25,000/ Annual production)	N/A	\$6
Compliance software licensing* (\$500 month*12/Annual production)	N/A	\$1.43
Insurance* (\$25,000 annual policy/Annual production)	N/A	\$6
Testing* (\$200 per 5 lbs)	N/A	\$40
Total Cost Per Pound Before Tax	\$458	\$564.43
Tax Expense		
Cultivation tax		Varies
Retail tax		Varies

*Cost estimates supplied by Lawrence. Manicuring services are available in California at a flat rate per pound by outside vendors. Other costs are estimated based on real-world experience.

**Labor-intensive processes are estimated to cost roughly double for a legal grow because of the time-intensity involved in tagging each plant with RFID tags, logging nutrients given, and logging measurements at various stages of the growing and harvesting cycles.

***Licensing costs vary significantly by jurisdiction. We believe a \$25,000 cultivation license fairly represents the median cost for a 10,000 square foot grow.

For more information, read the full study at: <https://reason.org/policy-study/marijuana-taxation-and-black-market-crowd-out/>