



Policy Analysis

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Estimated Revenue from 15% Marijuana Sales Tax in Arizona

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The Grand Canyon Institute neither favors nor opposes the effort to legalize the recreational use of marijuana in Arizona.

The Campaign to Regulate Marijuana like Alcohol held a press conference on Wednesday, August 19th declaring that their initiative if passed by voters would raise (at least) \$40 million for public schools through a 15% tax on sales. The initiative allocates 40 percent of revenues to K-12 education, 40 percent to help fund all-day Kindergarten and 20 percent to the Department of Health Services.

No independent analysis has been provided to evaluate this estimate. The Grand Canyon Institute has done so and finds that the revenue projections were conservative as proponents claimed. GCI estimates that, if the initiative were fully phased in now with dispensaries operating as in Colorado, the tax would generate \$64 million, \$25.5 million to K-12 education, \$25.5 million to help fund all-day Kindergarten and \$13 million to the Department of Health Services. If the initiative, were to make the ballot and be passed by voters, GCI expects 2019 to be the first year with a full rollout of retailers and at that point due to inflation and population growth, the expected totals would be \$72 million: with almost \$29 million each to K-12 education and helping fund all-day Kindergarten plus \$14 million to the Dept. of Health Services.

The revenue gains do exceed the \$40 million espoused by proponents of the initiative.

Tax revenues are only one of many factors voters will need to consider. Legalization will lower marijuana possession related arrests and consequently reduce court costs, but many people also have concerns about greater public health and law enforcement consequences from higher marijuana use and whether it would lead to greater under age use. At this time, not enough data is available from states with legal marijuana to sufficiently evaluate claims and concerns.

This tax revenue estimate uses Colorado as the basis for comparison and finds the following relative to Colorado:

- Arizona’s marijuana use (pre-recreational legalization in Colorado) is 75 percent that of Colorado.
- Arizona’s adult population is 24 percent greater than Colorado and likewise the number of out of state visitors to Arizona is similarly larger.¹
- By 2019 due to the growth of states with legal recreational marijuana, tourist use as a portion of the market will be less in Arizona than it is estimated to be in Colorado today.
- The proper tax comparison to use in Colorado is the 10 percent recreational marijuana sales tax, not the 15 percent recreational marijuana excise tax, though Arizona’s sales tax would be 15 percent, not 10.

Arizona’s Marijuana use is 75 percent of Colorado

Using data for the National Survey on Drug Use and Health (NSDUH), GCI aimed to determine the relative marijuana use population in Arizona relative to Colorado. While the legal age to purchase marijuana would be 21, the published data from the survey breaks users at the 18 and 26 year mark. Even though 18+ includes some underage adults, this seemed to be a more appropriate age break to use, since those 18-25 use marijuana more heavily than those age 26+. Market demand for marijuana will be skewed toward heavier users. Consequently, GCI focused on those who said they had used marijuana in the last month as opposed to using it in the last year.

Because NSDUH state samples are smaller and consequently subject to a higher possible error in estimation, NSDUH reports two year averages with its data to improve statistical accuracy.

¹ Adult population is from the 2014 Census Projection for each state, <http://quickfacts.census.gov/qfd/states/04000.html> and <http://quickfacts.census.gov/qfd/states/08000.html>. For 2014 Arizona’s tourism office reports an estimated 40.7 million overnight visitors. For the same period Colorado reports 33.6 million overnight visitors. Arizona’s numbers are 21 percent higher, similar to the population difference. See Arizona Office of Tourism (2015), “Arizona Office of Tourism Releases Record-Breaking Travel and Tourism Industry Statistics,” June 30, <http://www.visitarizona.com/press-room/press-releases/arizona-office-of-tourism-releases-record-breaking-2014-travel-tourism-industry-statistics>. For Colorado, Colorado Tourism Office (2015), “Colorado Visitation and Visitor Spending Set All-Time Records in 2014,” <http://www.colorado.com/news/colorado-tourism-visitation-and-visitor-spending-set-all-time-records-2014>.

Colorado passed Amendment 64 in November 2012 legalizing recreational marijuana. Consequently, the last year looked at was 2011-2012 to avoid overlapping the implementation of the amendment. Colorado also passed Amendment 20 in 2000 that legalized medical marijuana, ten years before Arizona. That means for most of the comparison years Colorado had legalized medical marijuana and Arizona did not. Researchers find that medical marijuana increases past month marijuana use by 1.32 percent for those 21 and over—though found no effect for those age 12-20. Since the NSDUH data includes those 18 and over, Arizona’s use was increased by 1.24 percent for each year to be equivalent to Colorado.² In April 2011, Arizona began accepting application for Medical Marijuana cards and the program gradually rolled out in 2011, taking off significantly in 2012, such that by the end of 2012 there were 35,641 active card holders.³ By July 2015 the number of card holders had grown to 78,830.⁴ GCI assumes at the end of 2012 the program was half way implemented, which means for the last year GCI looks at 2011-2012, GCI presumes the program was one-fourth implemented, so the 1.24 percent adjustment is slightly less for that year (see Table 1).

Table 1

Marijuana use in last month	(% age 18 and over)				
	2008-2009	2009-2010	2010-2011	2011-2012	Average
Arizona (no MML until 2011)	6.63	6.40	6.93	7.09	
Arizona (MML adjustment)	7.87	7.64	8.17	8.02	7.92
Colorado (with MML)	9.72	11.49	11.05	10.40	10.67
National	6.33	6.71	6.90	7.09	
Ratio AZ(adj):CO	0.81	0.66	0.74	0.77	0.75
MML means Medical Marijuana Legal					
Source: National Survey on Drug Use and Health					

One concern that might be raised is the vast difference in Arizona’s medical marijuana program and Colorado’s in terms of number of registered users. In June 2015 Colorado’s program had 113,585 registered participants.⁵ Given Arizona’s 24 percent larger adult population, Colorado having almost 50 percent more registered medical marijuana users might lead some to conclude the 75 percent adjustment is insufficient.

² Wen, Hefei, Jason M. Hockenberry, and Janet R. Cummings (2015), “The effect of medical marijuana laws on adolescent and adult use of marijuana, alcohol, and other substances,” *Journal of Health Economics*, Vol. 42, July, pp. 64-80, see Table 3.

³ Arizona Dept. of Health Services, *Arizona Medical Marijuana Act, End of the Year Report 2012*, <http://azdhs.gov/documents/licensing/medical-marijuana/reports/2012/arizona-medical-marijuana-end-of-year-report-2012.pdf>.

⁴ Arizona Dept. of Health Services, *Arizona Medical Marijuana Program July 2015 Monthly Report*, <http://azdhs.gov/documents/licensing/medical-marijuana/reports/2015/2015-july-monthly-report.pdf>.

⁵ Colorado Dept. of Public Health and the Environment, *Medical Marijuana Registry Program Statistics June 30, 2015*, https://www.colorado.gov/pacific/sites/default/files/06_2015_MMR_report.pdf.

The reasons for the discrepancy are likely two-fold. One, Colorado's program has been in place much longer, though the registry only began in 2009. Arizona continues to show steady enrollment growth, whereas Colorado's levels have stabilized.⁶ Second, the cost of obtaining a card are dramatically different. In Arizona it costs \$150 to apply for a card and half that amount if you are on the Supplemental Nutrition Assistance Program (Food Stamps). By contrast, in Colorado the cost is only \$15.⁷ Consequently the barriers are higher in Arizona, which would depress the demand for registration cards.

Out of State Visitor demand will decline by 2019

Right now Colorado and Washington are novelty states as the first two states to have legal recreational marijuana. Each new state diminishes that novelty. Oregon, Alaska, and the District of Columbia have already joined them. Six other states, including California and Nevada, may also be voting whether to legalize recreational marijuana at the same time as Arizona.⁸

Currently, pre-tax recreational sales are 57 percent of sales in Colorado for 2015. The Marijuana Policy Group (MPG) separately estimates the demand for marijuana at 121.4 metric tons for residents and 8.9 metric tons for visitors.⁹ Presumably recreational users are more likely than medical marijuana users to purchase higher markup items like edibles and many of the visitors who purchase in Colorado do so in the higher retail cost rural areas of the state as the MPG study found. Consequently though recreational sales in Colorado make up 57 percent of all sales in dollars, in terms of weight of marijuana consumed, the split between recreational and medicinal is probably closer to 50-50.

One limitation in the MPG study was the availability of sales data in early 2014 at the time of the report. While for resort communities the out of state visitor demand may be fairly accurate, for the larger metropolitan area, the data was significantly more limited, relying on a transaction survey from a single retail establishment near Denver. Based on the MPG report, GCI estimates out of state visitor sales are almost 14 percent of the recreational market in Colorado. For Arizona in 2019, GCI presumes the visitor share to be 5 percent as it will likely be

⁶ See monthly reports for the respective states.

⁷ ProCon.org, 23 Legal Medical Marijuana States and D.C.: Laws, Fees and Possession Limits, Details by State, <http://medicalmarijuana.procon.org/view.resource.php?resourceID=000881>.

⁸ Becker, Sam (2015), "7 States on the Verge of Marijuana Legalization," The Cheat Sheet, June 19, <http://www.cheatsheet.com/business/5-states-and-one-city-ready-to-legalize-marijuana.html/?a=viewall>.

⁹ Light, Miles K., Adam Orens, Brian Lewandowski, and Todd Pickton (2014), Marijuana Policy Group, for Colorado Department of Revenue, "Market Size and Demand for Marijuana in Colorado," <https://www.colorado.gov/pacific/sites/default/files/Market%20Size%20and%20Demand%20Study%2C%20July%2009%2C%202014%5B1%5D.pdf>.

less of a novelty and out of state visitors typically travel via Phoenix so will have better access to more competitive marijuana markets. The Joint Legislative Budget Committee also presumed out of state visitor demand would be no more than half of Colorado in a 2014 estimate for the impact of proposed recreational marijuana legalization legislation.¹⁰ Consequently, in this estimate, GCI finds that if Colorado had the same portion of out of state visitor demand as we anticipate for Arizona, marijuana sales would be 91 percent of the current estimated Colorado recreational demand for marijuana.¹¹ (see Table 2)

Table 2

Colorado Market Analysis						
	Share of (pre-tax) Sales	Share of Product (est.)	Residential Demand (metric tons)	Visitor Demand (metric tons)	Total Demand (metric tons)	% Visitor Demand
Medical	43%	50%	65.15	0	65.15	0%
Recreational	57%	50%	56.25	8.9	65.15	14%
Total			121.4	8.9	130.3	

Source: Author’s calculations based on Marijuana Policy Group 2014 Market Demand Study for Colorado Dept. of Revenue along with Colorado Dept. of Revenue Marijuana Tax Reports.

The 10 Percent Recreational Marijuana Sales Tax in Colorado is the proper base for comparison

The Colorado Department of Revenue reports monthly on the tax receipts from marijuana sales. They report three taxes on marijuana: Sales Tax Transfer to Marijuana Tax Cash Fund (2.9%), Retail Marijuana Sales Tax (10%), and a Retail Marijuana Excise Tax (15%).¹² The sales tax is imposed on consumer, whereas the excise tax is paid when the product moves from a retail cultivation facility to a retail store.¹³

¹⁰ The Joint Legislative Budget Committee estimates visitor demand in Arizona to be no more than half the demand in Colorado in their estimate of demand in Arizona, “Joint Legislative Budget Committee Staff Memorandum: HB 2558 (Marijuana; Regulation; Taxation), Sept. 10, 2014, <http://www.azleg.gov/jlbc/m-HB2558-Clinco.pdf>. Note HB 2558 would have imposed a \$50 per ounce excise tax.

¹¹ Calculation is $5\%/14\% \times 8.9 = 3.26$ metric tons to equal the adjusted Visitor Demand and adding that to 56.25 (residential demand), then taking a ratio of that sum, 59.51, with 65.15 (total recreational in Colorado now), resulting in 91 percent.

¹² The 2.9 percent tax is the general statewide sales tax. Those numbers show that 57 percent of revenues are more recreational sales as noted in the prior section.

¹³ Colorado Department of Revenue, Excise 23: Excise Tax on Retail Marijuana, <https://www.colorado.gov/pacific/sites/default/files/Excise23.pdf>.

The Arizona initiative describes its tax as “IN ADDITION TO ALL OTHER TAXES, THERE IS LEVIED AND IMPOSED AND THERE SHALL BE COLLECTED BY THE DEPARTMENT A TAX ON ALL MARIJUANA AND MARIJUANA PRODUCTS SOLD TO ANY PERSON OTHER THAN A MARIJUANA ESTABLISHMENT BY A MARIJUANA RETAILER AT A RATE OF FIFTEEN PERCENT OF THE PRICE OF THE MARIJUANA OR MARIJUANA PRODUCT SOLD.”¹⁴

This description is consistent with a sales tax, not an excise tax. So the basis for possible revenues for the state of Arizona would be the 10 percent retail sales tax in Colorado. The revenue as reported in Colorado from January through June 2015 is noted below. 2015 shows a much fuller ramp out of retail establishments than for 2014, and there also seems to be some level of seasonal factors involved with somewhat higher demand in the summer. Total revenue GCI forecasts for 2015 in Colorado for the 10 percent sales tax to be twice the amount through June. See Table 3.

Table 3

Colorado Marijuana tax revenue		
2015	Excise 15%	Sales 10%
January	\$2,349,219	\$3,547,864
February	2,123,091	3,792,120
March	2,587,352	4,282,160
April	3,103,722	4,390,362
May	3,506,230	4,663,848
June	2,933,200	4,394,550
YTD	\$16,602,814	\$25,070,904
2015 estimate	\$33,205,628	\$50,141,808

Source: Colorado Dept. of Revenue, Colorado Marijuana Tax Data

Final Calculation

Colorado 10% Sales Tax Revenue Estimate	Adjustment for lower AZ marijuana use	Adjustment for higher AZ adult population	Adjustment for lower anticipated Visitor demand	Adjustment for 15% sales tax in AZ	Total Estimated Revenue for Arizona
\$50,141,808 x	75% x	124% x	91% x	1.5 =	\$63,644,913

- \$25,457,965 K-12
- \$25,457,965 Kindergarten
- \$12,728,983 DHS

¹⁴ See text of the initiative at under 42-3382. Levy and rates of tax at <https://www.regulatemarijuanainarizona.org/initiative-text/#sthash.n4dy3jAi.dpuf>

If annual population growth is 1.2 percent and annual price inflation is 2 percent, then the following results emerge for 2019.

Total Estimated Revenue for Arizona (2015)	Adjustment for Population Growth	Adjustment for Price Inflation	Total Estimated Revenue for Arizona (2019)
\$63,644,913 x	1.049 x	1.082 =	\$72,258,082

\$28,903,233 K-12
 \$28,903,233 Kindergarten
 \$14,451,616 DHS

As more information becomes available the Grand Canyon Institute may revise this estimate.

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