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High Tax States: Options for Gleaning Revenue from Legal Cannabis

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INTRODUCTION

"Sin taxes" have a long history in alcohol and tobacco policy.[1] The need to generate revenues in the wake of harsh economic circumstances was reportedly an important motivation not only for repealing national alcohol prohibition in 1933, but also for states rolling back earlier, state-level prohibitions after fiscal crunches brought on by the Civil War and the Panic of 1893.[2] Revenue arguments have also figured prominently in the liberalization of state gambling laws, and alcohol and tobacco taxes are widely recognized as powerful tools for advancing public health interests, even apart from their fiscal benefits.[3]

In keeping with this tradition, potential tax rates and revenues have been a prominent theme in discussions about legalizing marijuana.[4] State agencies have produced fiscal impact analyses—some featuring fairly large projected revenue numbers—to inform voters about

1 *See* DAVID T. COURTWRIGHT, FORCES OF HABIT: DRUGS AND THE MAKING OF THE MODERN WORLD 155–56 (2001).

2 Emily Greene Owens, *Are Underground Markets Really More Violent? Evidence from Early 20th Century America*, 13 AM. L. & ECON. REV. 1, 4–5 (2011).

3 Frank J. Chaloupka et al., *Tobacco Taxes as a Tobacco Control Strategy*, 21 TOBACCO CONTROL 172, 179 (2012); Alexander C. Wagenaar et al., *Effects of Alcohol Tax and Price Policies on Morbidity and Mortality: A Systematic Review*, 100 AM. J. PUB. HEALTH 2270, 2277 (2010).

4 We primarily use the informal "marijuana" rather than the scientific term "cannabis" because the most active movements to regulate and tax are in North America, where "marijuana" is the more common term. *See, e.g.*, KENNETH W. CLEMENTS, & XUEYAN ZHAO, ECONOMICS AND MARIJUANA: CONSUMPTION, PRICING AND LEGALISATION (2009), *available at* http://assets.cambridge.org/97805218/84952/frontmatter/9780521884952_frontmatter.pdf; JEFFREY A. MIRON & KATHERINE WALDOCK, THE BUDGETARY IMPACT OF ENDING DRUG PROHIBITION (2010), *available at* http://www.cato.org/sites/cato.org/files/pubs/pdf/DrugProhibitionWP.pdf; Michael R. Caputo & Brian J. Ostrom, *Potential Tax Revenue from a Regulated Marijuana Market: A Meaningful Revenue Source*, 53 AM. J. ECON. & SOC. 475 (1994); Jon Gettman, *Lost Taxes and Other Costs of Marijuana Laws*, BULL. CANNABIS REFORM, Oct. 2007, at 1 *available at* http://www.drugscience.org/Archive/bcr4/Lost%20Taxes%20and%20Other%20Costs%20of%20Marijuana%20Laws.pdf; Jeffrey A. Miron, *The Effect of Drug Prohibition on Drug Prices: Evidence from the Markets for Cocaine and Heroin*, 85 REV. ECON. & STAT. 522 (2003); Dale Gieringer, *Benefits of Marijuana Legalization in California*, CAL. NORML (Oct. 2009), http://canorml.org/background/CA_legalization2.html.

For good reviews of broader legalization issues, see MARK A. R. KLEIMAN, MARIJUANA: COSTS OF ABUSE, COSTS OF CONTROL (Contributions in Criminology and Penology No. 22, 1989); ROBERT J. MACCOUN & PETER REUTER, DRUG WAR HERESIES: LEARNING FROM OTHER VICES, TIMES, AND PLACES (2001); and ROBIN ROOM ET AL., CANNABIS POLICY: MOVING BEYOND THE STALEMATE (2010).

proposed laws and ballot initiatives to legalize marijuana.[5] Most discussion has focused on revenue estimation, analysis of likely post-legalization prices compared to current illicit prices, and the questions of evasion through "gray" and "black" markets.[6] This Article seeks to broaden the revenue discussion about marijuana legalization with respect to policy goals, types of taxes, and components of revenue. However, this Article does not attempt a societal benefit-cost analysis. Nor does it reach any ultimate conclusion about whether legalization is desirable on balance.

This analysis is particularly timely because in November 2012, voters in two U.S. states, Colorado and Washington, approved propositions legalizing commercial production and distribution of non-medical marijuana for profit,[7] and other states may follow suit. Legislators in Rhode Island and Hawaii introduced bills to legalize marijuana in 2013,[8] and activists are already planning ballot initiatives for upcoming elections. There are also proposals to legalize marijuana at the federal level, but these appear to be unlikely to pass in the near future.[9] So at least for a time, all marijuana-related activity is likely to remain prohibited by the federal Controlled Substances Act.[10]

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5 *See, e.g.*, CAL. STATE BD. OF EQUALIZATION, STAFF LEGISLATIVE BILL ANALYSIS: AB 390 (2009), *available at* http://www.boe.ca.gov/legdiv/pdf/ab0390-1dw-revisedrev.pdf (analyzing AB 390, a bill introduced on February 23, 2009, which would impose a fee on marijuana sales); WASH. STATE OFFICE OF FIN. MGMT., I-502 WORKSHEET (2012), *available at* http://www.ofm.wa.gov/initiatives/2012/I-502_Worksheet.pdf (detailing the financial impact of Washington's Initiative 502, which would regulate the production and distribution of marijuana).

6 "Black" markets involve purely illicit production and distribution: for example, ordinary drug trafficking, sale of forbidden sexual services, or counterfeit goods. In "gray" markets, product is diverted from legal channels, often for tax or regulatory arbitrage, as when cigarettes bought on Native American reservations or in low-tax states are resold in high-tax states or alcohol purchased legally by adults is illegally resold to minors.

7 Keith Coffman & Nicole Neroulias, *Colorado, Washington First States to Legalize Recreational Pot*, REUTERS (Nov. 7, 2012, 4:43 AM), http://www.reuters.com/article/2012/11/07/us-usa-marijuana-legalization-idUSBRE8A602D20121107.

8 Marijuana Regulation, Control, and Taxation Act, H. 2013-5274, Jan. Sess., at 1 (R.I. 2013), *available at* http://webserver.rilin.state.ri.us/BillText/BillText13/HouseText13/H5274.pdf; H. 27-699, Reg. Sess., at 1 (Haw. 2013), *available at* http://www.capitol.hawaii.gov/session2013/bills/HB699_.pdf.

9 Raju Chebium, *Bills Take Aim at Federal Marijuana Ban*, USA TODAY (Mar. 14, 2013, 10:32 PM), http://www.usatoday.com/story/news/politics/2013/03/14/marijuana-legalization-congress/1988131/.

10 Comprehensive Drug Abuse Prevention and Control Act of 1970, Pub. L. No. 91-513, 84 Stat. 1236 (1970) (codified at 21 U.S.C.A. §§ 801–971 (West, Westlaw through 2013 legislation)). A publicly available online version of this Act is available at *Controlled*

Agencies in both Washington and Colorado now face the unprecedented task of designing regulatory regimes for legal marijuana, or perhaps more accurately "quasi-legal" marijuana given the ongoing federal prohibition. Since the consequences of state-level legalization will depend on these states' policies, how they are enforced, and the federal response, federal officials designing that response may want to consider tax-related issues. For example, if federal enforcement shuts down Colorado and Washington's "regulate-and-tax" approach, other states might respond by passing "repeal-only" forms of legalization,[11] which could exacerbate post-legalization increases in marijuana use and abuse through their absence of regulations and taxes.[12]

However, the movement of public opinion with respect to marijuana might ultimately lead to national-level legalization, or at least make passive acceptance by the federal government a politically feasible response to state measures. Meanwhile, other countries, notably Uruguay, have already entertained serious discussions about legalizing marijuana at the national level.[13]

This Article is divided into two Parts. Part I addresses excise taxes,[14] and Part II addresses other ways a legalized industry could produce government revenue. In both Parts the goal is to identify conceptual issues and provide a framework for thinking about revenues. However, the goal is not to provide specific revenue estimates, which naturally depend on the particulars of the law and impossible-to-predict-at-present aspects of the federal response to these laws.[15]

Substances Act, U.S. FOOD & DRUG ADMIN., http://www.fda.gov/regulatoryinformation/legislation/ucm148726.htm (last updated June 11, 2009).

11 A "repeal-only" approach would mean simply ending state-level marijuana prohibition, as New York ended its version of the Volstead Act in 1923. By contrast, under a "regulate-and-tax" approach, the state tries to substitute regulations and taxes for prohibition. Ironically, "regulate-and-tax" is more vulnerable to federal intervention than the more radical "repeal-only."

12 Jonathan P. Caulkins et al., *Marijuana Legalization: Lessons from the 2012 State Proposals*, WORLD MED. & HEALTH POL'Y, Dec. 2012, at 4, 18–19.

13 Jonathan Gilbert, *Uruguay Takes 'War on Drugs' in New Direction: The State as Dealer*, CHRISTIAN SCI. MONITOR (Sept. 19, 2012), http://www.csmonitor.com/World/Americas/2012/0919/Uruguay-takes-war-on-drugs-in-new-direction-The-state-as-dealer.

14 An excise tax is a tax that is paid when a specific good or service is purchased (e.g., alcohol, gasoline, etc.).

15 For example, this Article neither addresses nor speculates about the enforcement of section 280E of the Internal Revenue Code, which "disallows deductions incurred in the trade or business of trafficking in controlled substances that federal law or the law of any state in which the taxpayer conducts the business prohibits." Letter from Andrew J. Keyso,

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EXCISE TAXES

A. Standard Analysis of Potential Revenue

A relatively simple analysis of excise-tax revenues[16] starts with some estimate of national consumption, scales that down to the state level (often using state-specific prevalence estimates from the National Survey on Drug Use and Health[17]), guesses at a post-legalization price, adjusts current consumption levels based on an estimated price-elasticity of demand,[18] and computes a price-decline-driven expansion in consumption. Consumption estimates may or may not then be bumped up further to reflect non-price effects of legalization on use.[19]

More sophisticated approaches consider the possibility that the elasticity over a large legalization-induced price change might not match the elasticity measured over the relatively small price changes under prohibition that underpin empirical estimates.[20] An analysis might also adjust for untaxed sales and use because of home growing, gray-market tax evasion, untaxed medical-marijuana purchases, and/or black-market purchases.[21] For example, minors, forbidden to buy marijuana under current and most proposed legalization schemes, account for a substantial share of total purchases.[22] Under

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Deputy Assoc. Chief Counsel, Internal Revenue Serv., to Fortney Pete Stark, U.S. House of Representatives (Dec. 16, 2010), *available at* http://www.irs.gov/pub/irs-wd/11-0005.pdf (on file with the Internal Revenue Service).

16 *See, e.g.*, CHRISTOPHER STIFFLER, COLO. CTR. ON LAW & POLICY, AMENDMENT 64 WOULD PRODUCE $60 MILLION IN NEW REVENUE AND SAVINGS FOR COLORADO (2012), *available at* http://www.cclponline.org/postfiles/amendment_64_analysis_final.pdf.

17 *State Estimates of Substance Use and Mental Disorders from the 2010–2011 NSDUHs: Table of Contents*, SUBSTANCE ABUSE & MENTAL HEALTH SERVICES ADMIN., samhsa.gov/data/NSDUH/2k11State/NSDUHsaeTOC2011.htm (last visited Apr. 8, 2013).

18 The price elasticity of demand is a concept in economics that describes how responsive the quantity purchased of a good or service is to its price.

19 *See* Robert J. MacCoun, *Estimating the Non-Price Effects of Legalization on Cannabis Consumption* 8 (RAND, Working Paper No. WR-767-RC, 2010), *available at* http://www.rand.org/content/dam/rand/pubs/working_papers/2010/RAND_WR767.pdf.

20 *See, e.g.*, BEAU KILMER ET AL., ALTERED STATE? ASSESSING HOW MARIJUANA LEGALIZATION IN CALIFORNIA COULD INFLUENCE MARIJUANA CONSUMPTION AND PUBLIC BUDGETS 27–31 (2010), *available at* http://www.rand.org/content/dam/rand/pubs/occasional_papers/2010/RAND_OP315.pdf.

21 *Id.* at 15–16, 29, 48.

22 The rate is likely on the order of thirty percent, based on our analysis of data from *National Survey on Drug Use and Health, 2011*, SUBSTANCE ABUSE & MENTAL HEALTH

legalization, minors might be supplied by illegal growers (or untaxed diversion from legal production) or—like minors obtaining alcohol—by repurchase from adult customers of the legal supply system. The relative frequency of those two phenomena will have an important impact on revenues.

The quantity and spending estimates are multiplied by the relevant tax rates. Specific excise taxes are assessed per unit weight (e.g., fifty dollars per ounce). Ad valorem taxes are assessed as a percentage of the selling price, like most familiar sales taxes. Adding in estimated sales-tax receipts then produces a final revenue estimate.

Some published estimates start with unrealistic estimates of current consumption, neglect to consider the possibility that prices will decline, or fail to adjust for changes in the mix of types of cannabis used.[23] Currently, Mexican commercial-grade marijuana accounts for a considerable share of the market by weight, but higher potency product might dominate after legalization.[24] So the number of ounces consumed per hour of intoxication might fall considerably, perhaps by a factor of two; this would have sharp consequences for specific (but not ad valorem) excise-tax revenues.[25]

Few estimates account for product proliferation or bundling; they imagine that most marijuana will continue to be sold loose or in joints. But if marijuana were priced as a loss-leader[26] in a bundle with other goods or services, that might erode retail-level excise-tax revenues. For example, if a marijuana "bar" set low, per-joint prices and derived most of its revenue from a cover or entertainment charge, then there would be less excise-tax revenues.[27]

SERVICES ADMIN., http://www.icpsr.umich.edu/icpsrweb/SAMHDA/studies/34481 (last visited Apr. 9, 2013).

23 For example, the Washington State Department of Revenue assumes an average of two grams consumed per day of use and that prices will remain around twelve dollars per gram. WASH. STATE OFFICE OF FIN. MGMT., *Individual State Agency Fiscal Note: Request 078-3*, *in* FISCAL NOTE PACKAGE FOR I-502: AN ACT RELATING TO MARIJUANA 26–27, *available at* http://www.ofm.wa.gov/initiatives/2012/I-502.pdf (located on pages 3–4 of Request 078-3).

24 KILMER ET AL., *supra* note 20, at 21; BEAU KILMER ET AL., REDUCING DRUG TRAFFICKING REVENUES AND VIOLENCE IN MEXICO: WOULD LEGALIZING MARIJUANA IN CALIFORNIA HELP? 22–24 (2010), *available at* http://www.rand.org/content/dam/rand/pubs/occasional_papers/2010/RAND_OP325.pdf.

25 *Id.* at 20–21.

26 "Loss leader" is a term of art in retail that refers to a product sold at less than cost in order to attract customers to buy other products sold at a profit.

27 Apparently "cabaret taxes" from World War II set a precedent for taxing all goods sold by a particular type of specialized establishment, suggesting a way around this issue, but not without possible other concerns. *Cf.*, Eric Felten, Op-Ed, *How the Taxman Cleared*

B. The Revenue Potential of a Legal Marijuana Market

Nationwide legalization could presumably generate significant tax revenues *if* the legalization were designed with that objective in mind.[28] Marijuana users currently spend on the order of $30 billion per year on marijuana.[29] Production costs if professional farmers were allowed to grow marijuana would be quite small.[30] Yields are likely to be somewhere in the vicinity of 500 to 1,000 pounds per acre of high-potency marijuana or its equivalent.[31] This implies that less than 10,000 acres could supply as much intoxicating power as the entire current illicit market, at a cost of perhaps $5,000 to $20,000 per acre.[32] That suggests total post-legalization production costs for "generic" high-potency marijuana on the order of $100 million, or something like $20 per pound, which is about one percent of the current amount paid to illicit marijuana growers in the United States.[33]

Presumably there would be niche markets for hand-grown, specialty, and organic varieties of marijuana. Likewise, there would be processing and distribution costs, but these costs would likely be low. For example, tobacco-processing costs are less than one dollar per pound, and the total weight of the material is small (about 5,000 tons), so the physical costs of packaging and transporting would not be large. By comparison Americans consume about 7,000,000 tons of fresh and processed apples each year.

In sum, customers value marijuana in the tens of *billions* of dollars, and modern industrial farming and distribution can supply that demand for hundreds of *millions* of dollars. Zeros matter; effectively, most of the $30 billion or so consumers are willing to pay is available to be captured as profits and/or taxes—but only if competitive pressure does not drive prices down. Since the quantity of marijuana

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the Dance Floor, WALL ST. J. (Mar. 17, 2013, 6:09 PM), http://online.wsj.com/article/SB10001424127887323628804578348050712410108.html?mod=hp_opinion.

28 Pat Oglesby, *Gangs, Ganjapreneurs, or Government: Marijuana Revenue Up for Grabs*, 66 ST. TAX NOTES 255, 263 (2012), *available at* http://ssrn.com/abstract=2165864.

29 BEAU KILMER ET AL., WHAT AMERICA'S USERS SPEND ON ILLICIT DRUGS: 2000–2010 (forthcoming 2013) (on file with authors).

30 JONATHAN P. CAULKINS ET AL., MARIJUANA LEGALIZATION: WHAT EVERYONE NEEDS TO KNOW 160 (2012).

31 *Id.* at 161.

32 *Id.*

33 *Id.*

consumers are willing to buy falls less-than-proportionally as price increases, then lower prices lead to lower total revenues.[34]

C. Government Monopoly: Consequences and Barriers

One way to extract those revenues would be to make the production and sale of marijuana a government monopoly. While, in theory, one can always design a tax system that reproduces whatever production volume and retail prices one would like to see from a government monopoly, practical difficulties—operational and political—would complicate matters.

To maintain current marijuana prices, the tax's value-to-weight ratio would have to be enormous compared to other excise taxes. In round terms, there is a $2,000 gap between the current wholesale illicit price of a pound of high-potency marijuana and its production cost after national legalization, but a hypothetical $2,000 per pound marijuana tax would equal, on a weight-equivalent basis, an $88 tax on a pack of cigarettes.[35] Much lower taxes have generated a multi-billion-dollar market in tax-evading cigarettes in high-tax states.[36] Such high taxes would invite evasion through gray-market diversion or black-market illicit production.[37] The value of taxes on marijuana that could be carried in a duffel bag would approximate the median family income; a passenger car could carry marijuana with $1 million worth of taxes. There are currently about 40,000 people in prison with marijuana convictions, many of whom have other concurrent

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34 Craig A. Gallet, *Can Price Get the Monkey Off Our Back? A Meta-analysis of Illicit Drug Demand*, 22 HEALTH ECON. (forthcoming 2013); Rosalie Liccardo Pacula, *Examining the Impact of Marijuana Legalization on Marijuana Consumption: Insights from the Economics Literature* 2, 11, 17–18 (RAND, Working Paper No. WR-770-RC, 2010), *available at* http://www.rand.org/content/dam/rand/pubs/working_papers/2010/RAND_WR770.pdf. These studies summarize estimates of the price elasticity of marijuana under prohibition. However, the effect of higher prices on consumption in an illegal market might not be the same as the effect of higher prices on consumption post-legalization. Indeed, one could speculate that the price elasticity of demand would be different once those who are currently deterred from breaking the law have "access" to the market. We do not know if this will be the case, but it provides a good reminder about the uncertainty associated with using data collected under prohibition to project what might happen once the activity is legal.

35 $2,000 per pound * 20 grams per pack / 453.6 grams per pound = $88 per pack.

36 *See* U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-11-313, ILLICIT TOBACCO: VARIOUS SCHEMES ARE USED TO EVADE TAXES AND FEES 14 app. 1 (2011), *available at* http://www.gao.gov/new.items/d11313.pdf.

37 There is such diversion from legal production of opium for pharmaceutical sales. Letizia Paoli et al., *The Global Diversion of Pharmaceutical Drugs—India: The Third Largest Illicit Opium Producer?*, 104 ADDICTION 347, 349 (2009).

convictions.[38] This effort consumes low-single-digit billions of dollars per year of enforcement resources. Thus, some fraction—perhaps a substantial one—of the revenues derived from marijuana taxation might have to be spent protecting those revenues from illicit competition.

Complicating matters, home production is easier for marijuana than for many other products subject to excise taxes. At current retail prices, a house fully given over to marijuana production could produce approximately $2 million worth of marijuana per year.[39] Even if one stays within grow-your-own allowances, one could still grow a lot. For example, Alaska's right-to-privacy protects anyone growing fewer than twenty-five plants in a private residence.[40] For-profit distribution is illegal and could remain so even if licensed cultivation were legal; however, diverting the yield from growing twenty-four plants at a time could readily support a middle-class lifestyle if the taxed retail price remained near current levels. Where fewer plants are allowed, an enterprising individual could aggregate the production of five to ten friends, each of whom stays under the limit on plants and square footage, if the regulations are written that way. Entry into this kind of home production would be relatively easy since the information needed to operate growing is already well established and virtually free to access from books and online sources.

A government monopoly could ease some, but not all, of these problems. For example, if only the government is allowed to grow marijuana, then anything else that is produced would clearly be illegal. Enforcement would be easier if possession of a marijuana plant or a quantity of marijuana exceeding personal-consumption amounts were prima facie evidence of criminal wrongdoing (something that could not be presumed if private citizens or businesses were allowed to produce). Likewise, if public officials ran all production and distribution facilities, then the risk of gray-market activity might be substantially reduced. Moreover, a public agency running the marijuana trade might restrict its marketing efforts in deference to public-health concerns, whereas the commercial free-speech doctrine could limit the government's ability to force private

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38 CAULKINS ET AL., *supra* note 30, at 50.

39 546 pounds * 16 ounces * $250 ounce = $2.2 million. *See* JONATHAN P. CAULKINS, ESTIMATED COST OF PRODUCTION FOR LEGALIZED CANNABIS 7 (2010), *available at* http://www.rand.org/content/dam/rand/pubs/working_papers/2010/RAND_WR764.pdf.

40 *See* Ravin v. State, 537 P.2d 494, 504 (Alaska 1975).

industry to do the same. A government-owned industry might also lack the lobbying power and incentives of a private industry, since a private industry would likely have a strong lobbying force for lower taxes and weaker regulations.[41]

There are thus strong arguments for public monopoly and reasons to be concerned that states starting a private-industry model might get locked into an inferior production model, since that new industry could be expected to resist any attempt to convert the system to one of public supply.[42] Alas, although government monopolies have been discussed—in Uruguay[43] or for retail stores in Oregon's 2012 ballot initiative[44]—this could be a non-starter from a state-level perspective as long as the Controlled Substances Act remains in force.

Public monopolies also create their own set of problems. They might be deficient in customer service and in product selection and innovation—an important consideration in a newly legal market, where a high rate of innovation could be expected. If the monopoly were only on distribution and retail sale, there would be the risk of producers using influence and even bribery to promote their products; this, too, has been an issue in the alcohol trade.[45]

Moreover, though a public monopoly might be more restrained in its marketing than a private industry, such a result is not guaranteed. State lotteries, for example, have been notably focused on revenue maximization rather than the prevention of compulsive gambling, and

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41 Since the industry would be economically dependent on the consumption of very heavy users, any successful attempt to prevent or treat "problem" marijuana use would constitute a threat to the industry's well-being. The success of the alcoholic-beverage industries in keeping regulation weak and taxes low in real terms, in the face of strong public-interest arguments for higher taxes and tighter regulations, *see* PHILIP J. COOK, PAYING THE TAB: THE COSTS AND BENEFITS OF ALCOHOL CONTROL 9–10 (2007), suggests the risks. These and similar considerations leave us skeptical of revenue estimates that casually brush aside concerns about possible gray-market tax evasion. *See, e.g.*, Michael R. Caputo & Brian J. Ostrum, *Potential Tax Revenue from a Regulated Marijuana Market: A Meaningful Revenue Source*, 53 AM. J. ECON. & SOC. 475 (1994); Gary S. Becker et al., *The Market for Illegal Goods: The Case of Drugs*, 114 J. POL. ECON. 38 (2006); *see also* WASH. STATE OFFICE OF FIN. MGMT., *supra* note 5.

42 Oglesby, *supra* note 28, at 267.

43 Gilbert, *supra* note 13.

44 Letter from Lydia Plukchi, Compliance Specialist, Office of the Sec'y of State, to All Interested Parties (Jan. 18, 2011), *available at* http://oregonvotes.org/irr/2012/009text.pdf (discussing a proposed Oregon initiative petition).

45 VICTOR J. TREMBLAY & CAROL HORTON TREMBLAY, THE U.S. BREWING INDUSTRY: DATA AND ECONOMIC ANALYSIS 247–48 (2005); *see* COOK, *supra* note 41, at 66, 176.

some of their marketing efforts have been shameless to the point of mendacity.[46]

Thus, although public monopoly has precedents in other areas and a number of apparent advantages over taxation and regulation, it does not seem likely that such a system will be adopted in the U.S. in the near future.

D. The Challenge of Collecting Taxes in a Market-Based System

If a government monopoly is unlikely, that raises the question of how to tax a private industry, which is something more complicated than one might first think (even leaving aside the considerable complication of an ongoing federal prohibition).[47] The tax rates that jurisdictions contemplate vary widely. Proposals from 2012 illustrate the range of possibilities. New Hampshire's Senate Bill 1775 would have set the tax at forty-five dollars per ounce.[48] Missouri's proposal would have limited taxes to no more than one hundred dollars per pound or about six dollars per ounce.[49] One proposition considered in California in 2012 would have imposed no new tax and *repealed* the existing sales and excise taxes on medical marijuana.[50] Three years earlier, California Assemblyman Tom Ammiano introduced a bill with a fifty dollar per ounce rate.[51]

Some places with medical marijuana are currently collecting medical-marijuana-specific levies—for example, the city of Oakland, California.[52] However, it is unclear how much of the medical marijuana consumed in these jurisdictions is subject to these taxes. In any case, taxes do not collect themselves, and the capacity to actually collect the potential revenues is dependent on regime design. If one

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46 CHARLES T. CLOTFELTER & PHILIP J. COOK, SELLING HOPE: STATE LOTTERIES IN AMERICA 210 (1989); Michael Nelson, *The Lottery Gamble*, AM. PROSPECT (Dec. 19, 2001), http://prospect.org/article/lottery-gamble.

47 Mikos describes the additional challenges for tax collection created by an ongoing federal prohibition. *See generally* ROBERT A. MIKOS, STATE TAXATION OF MARIJUANA DISTRIBUTION AND OTHER FEDERAL CRIMES (Vanderbilt Univ. Law Sch., Public Law & Legal Theory Working Paper No. 10-05, Law & Economics Working Paper No. 10-04, 2010), *available at* SSRN: http://ssrn.com/abstract=1549828 (describing the various challenges to collecting taxes on marijuana while it remains illegal under federal law).

48 Caulkins et al., *supra* note 12, at 17.

49 *Id.*

50 Oglesby, *supra* note 28, at 255–56.

51 KILMER ET AL., *supra* note 20, at iii.

52 Daniel B. Wood, *Oakland Voters Approve Marijuana Tax*, CHRISTIAN SCI. MONITOR (July 22, 2009), http://www.csmonitor.com/USA/Society/2009/0722/p02s07-ussc.html.

makes revenue generation the paramount objective, this suggests a variety of provisions (e.g., banning home growing) that might allow fairly substantial revenue collection. But if tax provisions are merely tacked onto a regime design based on other principles (libertarianism, human rights, consumer convenience, etc.), the choice may be between relatively modest aspirations for tax revenues or unrealistic aspirations that are undercut by significant gray markets.[53]

One approach to enforcing the rules would be requiring all producers and distributors to be licensed and then severely limiting the number of licensees. The obvious benefit is that fewer licensees imply fewer companies and sites to monitor and inspect. The more subtle benefit is that artificially restricting the number of licenses can make those licenses valuable. Comparison is often made to New York City taxicab medallions. In one 2008 auction, the *minimum* bid allowed for a corporate medallion was $700,000.[54] If the state regulatory body can take away something valuable via the simple administrative action of license revocation, then powerful incentives to abide by the law are created. Furthermore, the licenses can be worth that much only if the expected revenues to a licensee are even greater; the opportunity cost of being expelled from the industry could thus be an even greater motivation to toe the line. Businesses with millions in annual revenues flowing from scarce licenses are less likely to be tempted by the opportunity to make money illegally than are holders of licenses that are easy to obtain and provide only meager profits to those who follow the rules.

Limiting the number of licensees—giving the licenses scarcity value—raises the question of how to allocate those valuable privileges. The risks of favoritism, or even corruption, cannot be ignored. A solution to that problem would be to conduct an auction among all qualified bidders, thus appropriating the scarcity value to the public fisc. However, such a system would create pressure on every seller to maximize revenues, which means maximizing use by problem users. Any seller who tried to act more responsibly—from a

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53 *See* Jonathan P. Caulkins et al., *Design Considerations for Legalizing Cannabis: Lessons Inspired by Analysis of California's Proposition 19*, 107 ADDICTION 865, 868 (2011); Caulkins et al., *supra* note 12, at 25.

54 MATTHEW W. DAUS, N.Y.C. TAXI & LIMOUSINE COMM'N, INDUSTRY NOTICE 08-04: MINIMUM BID PRICE AND IMPORTANT DATES FOR UPCOMING MEDALLION AUCTION (Apr. 4, 2008), *available at* http://www.nyc.gov/html/tlc/downloads/pdf/industry_notice_08_04.pdf; *Medallion Sales Information*, N.Y.C. TAXI & LIMOUSINE COMM'N, http://www.nyc.gov/html/tlc/medallion/html/home/home.shtml (last visited Apr. 9, 2013).

public-health perspective—could be outbid at the next license auction.

E. What to Tax

Choices about taxation include not only rate setting but also determining what to tax and via what mechanism. As mentioned above, proposals often specify a tax per unit weight, but the two propositions that passed in 2012 expressed taxes as a percent of value (ad valorem); that offers as a considerable advantage automatic indexing for inflation, whereas the real size of weight-based taxes can be eroded over time by inflation.[55]

There are still other options.[56] Massachusetts House Bill 1371 would have taxed THC, not marijuana,[57] a possibility previously mentioned by Robert MacCoun.[58] The rate would have been ten dollars per percentage point of THC per ounce. For example, marijuana that was five percent THC by dry weight would be taxed at fifty dollars per ounce. Thus high-potency sinsemilla (typically ten to eighteen percent THC) would have been taxed at a higher rate per ounce than would commercial-grade marijuana that is only four to six percent THC. Current alcohol taxes follow this approach, albeit coarsely. Distilled spirits (at least twenty-four percent alcohol by volume) are taxed at much higher rates per unit volume than beer (typically less than six percent alcohol).

One could contemplate imposing higher tax rates per unit of THC on products with high concentrations if one believed such products may be more dangerous. On the other hand, if the primary concern were the effects of smoked marijuana on the respiratory system, taxing higher potencies at lower rates could be preferred because it

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55 Pat Oglesby, *Laws to Tax Marijuana*, 59 ST. TAX NOTES 251, 262 (2011), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2214910.

56 Oglesby describes how California localities have pursued a variety of other tax bases, including number of plants (Rancho Cordova), square feet of grow space (Berkeley and Long Beach), and, aimed at energy-intensive indoor grow operations, extraordinary electricity usage ("a 45 percent tax on electricity of residential households that exceed 600 percent of the average residential electrical usage" in Arcata). Interview with Pat Oglesby, Attorney, Ctr. for New Revenue (Mar. 15, 2013).

57 The Cannabis Regulation and Taxation Act, H. 187-1371, (Mass. 2011), *available at* http://www.malegislature.gov/Bills/187/House/H01371.

58 However, there would be complications because of the potential imprecision of potency assays. *See* Dale Gieringer & Arno Hazekamp, *How Accurate Is Potency Testing?*, O'SHAUGHNESSY'S, Autumn 2011, at 17, *available at* http://www.scribd.com/doc/66309027/The-Ring-Test-O-Shaughnessy-s-Autumn-2011.

would encourage the use of higher-potency product, which involves inhaling fewer combustion products per hour of intoxication.[59]

Still more complicated schemes could be imagined since marijuana, unlike ethanol, does not have just one psychoactive ingredient.[60] Some have argued that adverse reactions (e.g., anxiety attacks) come not from high THC per se, but rather from high ratios of THC to CBD, and those ratios vary considerably.[61] Caulkins and colleagues note that one California dispensary sells strains of marijuana whose THC to CBD ratio varies from 1:2 to 100:1.[62] This suggests the possibility of using more complicated taxing strategies to nudge the market to less harmful forms of the drug.[63] For example, a state could tax marijuana with a higher THC to CBD ratio at a higher rate. Such ideas would be similar in spirit to Chaloupka's proposal to use differential tax rates to incentivize "smokers" (more broadly, nicotine users) to switch to modes of administration that pose fewer health risks.[64] For example, snus[65] might be taxed at a lower rate than traditional chewing tobacco. Likewise, e-cigarettes could be taxed at a lower rate than traditional cigarettes.

It is clear that tax changes can influence market share between similar products. The U.S. Government Accountability Office report describes this for roll-your-own versus pipe tobacco.[66] Before April 2009, both were taxed at $1.0969 per pound. Then roll-your-own taxes were increased to $24.78 per pound, while pipe tobacco taxes increased to only $2.8311 per pound. Pipe tobacco's share of the combined forms promptly rose from 12.9% to 65%. Other similar tax

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59 While most marijuana consumed today is smoked, there are other methods of delivery—for example, edibles and teas. Vaporizers also allow marijuana to be heated and inhaled without many of the impurities that come from burning and smoking it.

60 *See* JANET ELIZABETH JOY ET AL., MARIJUANA AND MEDICINE: ASSESSING THE SCIENCE BASE 25 (1999).

61 Delta-9 tetrahydrocannabinol, usually referred to as THC, is the primary intoxicating agent in marijuana smoke. *Id.* Cannabidiol (CBD) is another of the dozens of cannabinoid chemicals in the plant, and appears to "buffer" the effects of THC, including anxiety and the risk of panic attacks. *Id.* at 25, 36.

62 CAULKINS ET AL., *supra* note 30, at 157.

63 Since we are still learning about cannabinoids and how they interact, one may want to design a tax regime that can be easily amended to incorporate new insights. *See* Caulkins et al., *supra* note 53, at 868; Caulkins et al., *supra* note 12, at 30–31.

64 Frank J. Chaloupka et al., *Tobacco Taxes as a Tobacco Control Strategy*, 21 TOBACCO CONTROL 172, 174 (2012).

65 Snus is a form of tobacco that is not fire-cured, so it is much less carcinogenic.

66 U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 36, at 13.

changes at the same time knocked small cigars' share of the cigar market from 52.5% down to 11.3%.[67]

However, social engineering by manipulating tax rates could be controversial. It is difficult to analyze and debate publicly the relative risks of different forms of tobacco consumption.[68] Similarly, while junk-food taxes exist (e.g., in Hungary), they have not always been an easy sell politically.[69]

Marijuana-infused beverages and edibles raise additional issues. They may be intrinsically more dangerous because the delay between consumption and onset of effects makes it harder to adjust ("titrate") the dose to achieve only the desired effect.[70] In addition, some edibles (candies, in particular) may be problematic if they are tempting to minors. However, if edibles and beverages were taxed by weight at nominally the same rate, then that might translate into a considerably higher rate per unit of intoxication. For example, a marijuana-infused brownie weighs a lot more than the marijuana it contains. Even on ad valorem grounds, the marijuana-infused brownie or gummy candy might sell for more than the marijuana alone, particularly if it were sold at a café to be consumed on premises.

The challenge of defining equivalent tax rates was raised directly by California's Regulate Marijuana Like Wine Act of 2012, which did not garner enough signatures to make it onto the ballot.[71] That Act stipulated: "State taxes and regulations which may be similar and apply to the grape farming and wine industries . . . shall apply to marijuana."[72] There are so many ways of defining "equivalent" that it is hard to determine what that would have meant in practice, had the provision become law.

Thus, the seemingly technical question of the appropriate basis of cannabis taxation turns out to implicate substantial issues of value

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67 *Id.*

68 Chaloupka et al., *supra* note 64, at 174.

69 Suzanne Daley, *Hungary Tries a Dash of Taxes to Promote Healthier Eating Habits*, N.Y. TIMES (Mar. 2, 2013), http://www.nytimes.com/2013/03/03/world/europe/hungary-experiments-with-food-tax-to-coax-healthier-habits.html?pagewanted=all.

70 Marijuana smokers typically attempt to regulate how "high" they become by smoking some amount, waiting, and then judging whether the dose already taken is sufficient; if not, another "hit" is taken. The slow onset of intoxication when cannabis is administered through the gut rather than the lung complicates this effort.

71 Oglesby, *supra* note 28, at 255–56, 268.

72 *Regulate Marijuana Like Wine: A California Voter Initiative—2012*, INITIATIVE (Sept. 2, 2011), http://regulatemarijuanalikewine.com/regulate-marijuana-like-wine-act-2012/.

because the choice of basis generates incentive effects that will in turn importantly shape the market.

F. Who Would Be Taxed?

Both Colorado's Amendment 64 and Washington's I-502 differentiate among growers, processors/manufacturers, and retail stores.[73] This raises the question of whom to tax? Taxing further up the chain would be simpler since there would likely be fewer producers than stores, and production would be more rooted—literally—to a location.[74]

Taxing growers evades the sticky question of whether to tax marijuana in edibles at a higher or lower rate than plain marijuana by imposing the tax before the form is determined. A downside of simplicity is forfeiting the nuances of fine-grain tax structures that nudge consumers toward less dangerous forms.

There is also the consideration of taxing a product that is illegally diverted to other jurisdictions. We know from tobacco-tax-evasion schemes that diversion occurs at all levels of the distribution chain.[75] For example, many cigarette packages discarded in Chicago, which has high state and local cigarette taxes, bear tax stamps indicating they were purchased out of state.[76] If marijuana "leaks" out of the regulated distribution system after the stage at which taxes are collected, then the home jurisdictions can derive revenue from sales to customers in other jurisdictions. Illegal production will yield no tax revenue in any case. Resale of material aggregated from large numbers of small legal retail ("smurf") purchases will pay full tax wherever the tax is collected. However, if the leakage occurs between (legal, licensed) production and retail sale, then the "exporting" jurisdiction would prefer to assess taxes further up the distribution chain.

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73 COLO. CONST. art. 18, § 16; Washington Initiative 502, No. 63-502, Reg. Sess. (Nov. 6, 2012).

74 Taxing producers and distributors hides the tax from the public, and it could be argued that this would increase political acceptability albeit possibly forfeiting some power to alter consumer behavior. A rational economic analysis might dismiss that argument: the customer ultimately pays the tax, just in the form of higher prices. But appearances might matter. Alcohol and tobacco excise taxes are assessed upstream, and so do not show up on the customer's receipt the way a sales tax does.

75 U.S. GOV'T ACCOUNTABILITY OFFICE, supra note 36, *passim*.

76 David Merriman, *The Micro-Geography of Tax Avoidance: Evidence from Littered Cigarette Packs in Chicago*, AM. ECON. J.: ECON. POL'Y, May 2010, at 61, 62–63.

Indeed, one can even imagine smuggling between states in both of which marijuana is legal, as now happens with cigarettes. Suppose the pre-tax retail cost of marijuana after legalization is $100 per ounce, or roughly one-third to one-half of its current value. With Colorado's possible tax of fifteen percent of the wholesale value, the price to the consumer might be about $110.[77] With Washington's three different twenty-five percent levies at various market levels, the price to the consumer could easily be $150 per ounce. Indeed, the Washington State Department of Revenue estimated the price would be double that.[78] Someone who gathered ten pounds in Colorado, drove it to Washington and sold it there could net $6,400,[79] which would more than cover the cost of gas, hotels, and time. Thus the design of tax regimes needs to be mindful of risks and modes of evasion, or the sums actually collected will fall far short of those nominally assessed.

G. Interaction with Medical Marijuana

A particular question concerning what and whom to tax pertains to marijuana sold under medical-marijuana laws. As mentioned earlier, some jurisdictions are already collecting medical-marijuana specific levies (e.g., the city of Oakland, California); yet other laws specifically exempt medical marijuana from taxation (e.g., Colorado's Amendment 64).[80] This raises the question of medical marijuana's market share if both medical and non-medical marijuana are sold side-by-side with comparable legal status.

If medical availability were limited to those with the serious diseases often mentioned by advocates, the medical system would pose only very limited competition for the non-medical market and therefore could be ignored in computing potential tax revenues. Studies of those obtaining medical recommendations in California suggest that only a small proportion have HIV/AIDS, cancer, glaucoma, or other serious diseases.[81] The majority of patients

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[77] Colorado is now considering adding also an ad valorem retail tax, perhaps on the order of twenty-five percent.

[78] *See* WASH. STATE OFFICE OF FIN. MGMT., *supra* note 23, at 27–28.

[79] 10 pounds * 16 ounces per pound * ($150 – $110) per ounce = $6,400.

[80] *See, e.g.*, COLO. CONST. art. 18, § 16.

[81] Helen Nunberg et al., *An Analysis of Applicants Presenting to a Medical Marijuana Specialty Practice in California*, 4 J. DRUG POL'Y ANALYSIS 1, 12 (2011), *available at* http://works.bepress.com/cgi/viewcontent.cgi?article=1022&context=rosalie_pacula; *see* Thomas J. O'Connell & Ché B. Bou-Matar, *Long Term Marijuana Users Seeking Medical Cannabis in California (2001–2007)*, HARM REDUCTION J., Nov. 3, 2007, at 1, 5–6

seeking medical-marijuana recommendations were for hard-to-verify ailments such as lower-back pain, insomnia, and anxiety.[82]

Thus, it is possible that legal availability for non-medical use might "peel off" the bulk of the current medical dispensary buyers. However, if marijuana sold under medical recommendation were untaxed (or taxed at a lower rate than marijuana sold to the general public) and if taxes in the general system were high—as they would have to be in order to maintain anything resembling current prices[83]—then current consumers of medically recommended marijuana (and perhaps additional consumers as well) might choose to get medical recommendations to avoid taxation. That might not make financial sense for low-volume users if the cost of obtaining the recommendation exceeded their tax savings. But it would make good sense for any daily or more-than-daily user, and that group—albeit a minority of all users—consumes the bulk of all marijuana and provides the bulk of all the revenues of the marijuana industry.[84]

Such a pattern of a market dominated by its heavy users is consistent with the existing pattern of alcohol consumption, and there is no reason to doubt that it would change under marijuana legalization. Even a very large number of new casual users would not suffice to change it, because a single, four-gram-per day heavy user consumes more marijuana than a hundred people, each of whom shares a joint a week with another person. Therefore, unless the rules on medical availability are tightened, or unless the tax differential is modest, any estimate of tax revenues needs to take account of competition from the medical marijuana market.

H. What is the "Optimal" Excise Tax?

Any tax structure will have to balance the various sometimes-conflicting goals of legalization, including:

1. Maximizing tax revenues,
2. Battling the black market and violence by those involved in the drug trade,
3. Limiting the increase in marijuana abuse and dependency,

(2007), *available at* http://www.harmreductionjournal.com/content/pdf/1477-7517-4-16.pdf.

82 Nunberg et al., *supra* note 81, at 11–12.

83 See Part I.C for a discussion of this argument.

84 CAULKINS ET AL., *supra* note 30, at 24–25.

4. Minimizing the use of particularly risky and unhealthy forms of marijuana,
5. Limiting gray-market tax evasion, and
6. Minimizing the cost and complication of enforcing the marijuana tax structure.

The different types of taxes outlined above create different incentives for producers and consumers. Markets respond to price incentives, including those created by taxes, as the tobacco examples cited above make clear.[85] For example, one might predict the market to respond to specific excise taxes (i.e., per unit weight taxes) by creating higher potency products, and to ad valorem taxes by selling in bulk or as a loss-leader that induces customers to purchase other goods that are not subject to the marijuana-specific tax.[86] Hence, the relative appeal of the different taxing schemes depends on which of these various goals are judged to be the most important. So the optimal tax depends on the observers' values, but Tables 1 and 2 summarize some "armchair" or deductive analyses of the strengths and weaknesses of the tax choices outlined above.

[85] *See* U.S. GOV'T ACCOUNTABILITY OFFICE, *supra* note 36, *passim*.
[86] KILMER ET AL., *supra* note 20, at 16.

TABLE 1: HYPOTHESIZED CONSEQUENCES OF VARIOUS MARIJUANA TAX STRATEGIES BY TAX TYPE

	By Total Weight	**Ad Valorem**	**By Amount of Intoxicant (e.g., THC, or THC to CBD ratio)**
Production Effects	Favors high value-to-weight production methods (e.g., organic, hand-crafted)	Favors low-cost production methods	Requires quality control and labeling
Marijuana Type Effects	Incentivizes high-potency marijuana	Creates incentives for using marijuana as a loss-leader if imposed at the retail level	Can incentivize less potent and potentially less risky forms of marijuana
Tax Structure Complexity	Simple except for edibles and need to index for inflation	Simple	Complex, particularly if distinguish by type of cannabinoid; testing may not be accurate enough
Examples	CA Ammiano Bill (2009)[87] Proposed Rhode Island Bill (2013)[88]	Colorado Amendment 64 Washington I-502 Hawaii's Bill (2013)[89]	Massachusetts House Bill 1371

[87] *AB 390 Assembly Bill Status*, OFFICIAL CAL. LEGIS. INFO. (Feb. 9, 2010), http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_0351-0400/ab_390_bill_20100209_status.html.

[88] Marijuana Regulation, Control, and Taxation Act, H. 2013-5274, Jan. Sess., at 1 (R.I. 2013), *available at* http://webserver.rilin.state.ri.us/BillText/BillText13 /HouseText13 /H5274.pdf.

[89] H. 27-699, Reg. Sess., at 1 (Haw. 2013), *available at* http://www.capitol.hawaii.gov /session2013/bills/HB699_.pdf.

TABLE 2: HYPOTHESIZED CONSEQUENCES OF VARIOUS MARIJUANA TAX STRATEGIES BY TAX TARGET

	Growers/Producers	**Retailers**
Revenue Effects	Relatively less revenue since marijuana is taxed early in the production chain and does not tax added value of marijuana-infused products	Potentially get to tax value of other products sold in a "bundle" with the marijuana (e.g., marijuana-infused edibles)
Black Market Effects	Fewer taxpayers to monitor	Incentivizes tax evasion between grower/producer and retailer (leakage)
Transparency	Generally hidden from consumer	Tax is transparent to consumer
Marijuana Type Effects	May be harder to tax based on potency	Allows for cannabinoid-based taxation
Tax Structure Complexity	Can be simple	Can be complex, particularly if distinguish by type of cannabinoid
Examples	Colorado Amendment 64 Washington I-502	Washington I-502

II
ADDITIONAL SOURCES OF GOVERNMENT REVENUE

To date, most analysis has emphasized revenues from excise taxes, and sometimes from conventional sales taxes, on sales to consumers in the legalizing jurisdiction. However, there are other potential sources of tax revenue.

A. Licensing Fees

Most proposals to regulate the marijuana industry include some form of licensing of producers, manufacturers, and stores, with associated licensing fees. Fees are typically modest, perhaps intended to cover only the administrative cost of processing the applications and other costs of maintaining a regulatory regime. For example, Washington I-502's fee is $1,000 per year for a producer.[90] If I-502's

[90] Washington Initiative 502, No. 63-502, Reg. Sess. (Nov. 6, 2012).

three-tiered excise-tax structure ended up producing tax revenue of fifty dollars per ounce, that means the producers' license fee would vanish into irrelevance by comparison if production volumes were in the thousands, or even hundreds, of pounds per licensee.

This does not imply that fee revenue has to be negligible, especially in a big state. In California, the Alcohol Beverage Commission is funded through license fees and has an annual budget of about $50 million.[91] Also, as was noted above in Part I, section D, states could limit the number of licenses enough to drive up their market value, and then auction them to the highest bidder—a scheme that has a variety of benefits to the public, but not to the producers.

B. Drug Tourists

If one jurisdiction legalizes and others do not, drug tourism can develop in which users in the "dry" state visit a "wet" state to purchase marijuana. This has been an issue in the Netherlands and in discussions in the United States.[92] Indeed, some Dutch localities, interested in drug-tourism revenues, are planning to fight a national ban on the sale of marijuana to tourists.[93]

It is perhaps worth distinguishing three categories of drug tourists: day-trippers, destination tourists, and what might be called "tip-the-scalers." The first, day-trippers, are those who take short excursions for the purpose of purchasing marijuana. Of all the states, Colorado and Washington are among the worst positioned to take advantage of this sort of tourism because relatively few people reside within 250 miles of their borders. As shown in Figure 1, day-tripping might be much more significant if a state on the eastern seaboard, such as Connecticut or Maryland, legalized marijuana.

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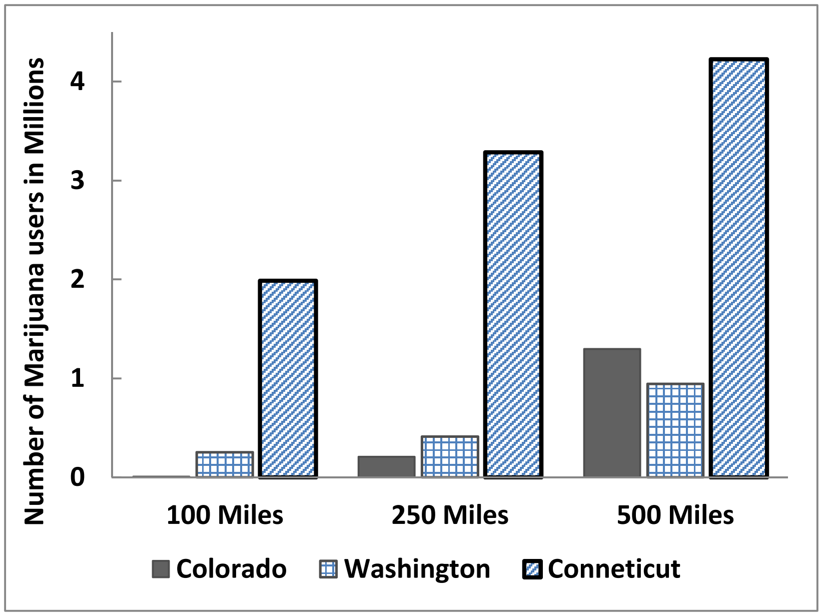
91 *Department of Alcoholic Beverage Control*, ALLGOV.COM, http://www.allgov.com/usa/ca/departments/business-transportation-and-housing-agency/department-of-alcoholic-beverage-control?agencyid=49 (last visited Apr. 11, 2013).

92 David Jolly, *Amsterdam Shops Selling Marijuana to Stay Open*, N.Y. TIMES (Nov. 1, 2012), http://www.nytimes.com/2012/11/02/world/europe/amsterdam-mayor-says-cannabis-coffee-shops-will-remain-open.html?_r=0; BARBARA BROHL & JACK FINLAW, TASK FORCE REPORT ON THE IMPLEMENTATION OF AMENDMENT 64: REGULATION OF MARIJUANA IN COLORADO 50 (2013), *available at* http://www.colorado.gov/cms/forms/dor-tax/A64TaskForceFinalReport.pdf.

93 Jolly, *supra* note 92; Paul Ames, *Haze Clears Over Dutch Cannabis Law*, GLOBALPOST (Jan. 13, 2013), http://www.globalpost.com/dispatch/news/regions/europe/benelux/130110/netherlands-amsterdam-cannabis-law-coffee-shops-marijuana.

FIGURE 1: ESTIMATED NUMBER OF MARIJUANA USERS WITHIN A 100-, 250-, AND 500-MILE RADIUS OF COLORADO, WASHINGTON, AND CONNECTICUT[94]



The second are destination tourists who organize a trip around marijuana activities, but those activities go beyond the practical aspects of purchasing product. Seattle's Hempfest draws hundreds of thousands of people, not just for product sales, but also for an array of vendors, music, and activities. Similarly, for example, people visit Napa Valley's wineries for an overall experience and not just to obtain better deals on wine.

The third involves people who take a trip motivated by another objective, but for which the legalizing state beats out a competitor state—that is, tips the scale—because legal marijuana is viewed as an amenity. For example, suppose snowboarders from the East Coast travel to Vail, Colorado instead of Park City, Utah because they could

94 These data is derived from substate estimates of past month users from the National Survey on Drug Use and Health, 2008–2010. *2008–2010 NSDUH Substate Estimates of Substance Use and Mental Disorders*, SUBSTANCE ABUSE & MENTAL HEALTH SERVICES ADMIN., http://www.samhsa.gov/data/NSDUH/substate2k10/toc.aspx (last visited Apr. 9, 2013). This chart does not account for the possibility that legalization might increase marijuana initiation in neighboring states due to price decreases or a change in social norms. *See* KILMER ET AL., *supra* note 20, at 15.

obtain marijuana legally in Vail. Under any of these scenarios, the state will capture tax revenues and other economic benefits from tourists' spending on other goods and services, such as gasoline, restaurant meals, and lodging, in addition to taxes collected on the marijuana purchases.

The importance of drug tourism will depend partially on the prevalence of these three different types of drug tourists. The Colorado Tourism Office reports that the tax revenues per tourist dollar spent vary due to differing local tax rates and types, but the average is about 5.5% per tourist.[95] Hence, if a drug tourist spent $300 on meals, lodging, and other expenses for every $100 worth of marijuana purchased, the sales tax revenue on those ancillary purchases could exceed the excise plus sales-tax revenue from the marijuana sale.[96] For Colorado tourists, per-visit spending varies from $1,000 for skiers down to $48 for day-trippers, with an average of $370.[97]

Likewise, the importance of drug tourism depends on the number of tourists. Washington state and Colorado together have roughly six percent of the nation's current marijuana users,[98] so if even a modest share of users elsewhere obtained their marijuana directly or indirectly via drug tourism, the volume of sales via drug tourism might be significant compared to the volume of sales to in-state residents.

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95 *See* Callie Jones, *Associate Director of Colorado Tourism Office John Ricks: Colorado Is Open for Business*, J. ADVOCATE (June 28, 2012), http://www.journal-advocate.com/sterling-local_news/ci_20964993/colorado-office-tourism-john-ricks-rotary-club; *see also* LONGWOODS INT'L, COLORADO TRAVEL YEAR 2011: ONLINE REPORT—JUNE, 2012 (2012), *available at* http://www.colorado.com/sites/colorado.com/files/ColoradoLongwoodsReport2011_3.pdf (prepared for the Colorado Tourism Office).

96 If the wholesale price is two-thirds of the retail price, then Colorado's fifteen percent wholesale excise tax is equivalent to a ten percent retail tax. So the total effective tax on retail marijuana sales would be about 15.5% versus 5.5% on non-marijuana purchases.

97 LONGWOODS INT'L, *supra* note 95, at 25–26.

98 SUBSTANCE ABUSE & MENTAL HEALTH SERVICES ADMIN., U.S. DEP'T OF HEALTH & HUMAN SERVS., STATE ESTIMATES OF SUBSTANCE USE AND MENTAL DISORDERS FROM THE 2009–2010 NATIONAL SURVEYS ON DRUG USE AND HEALTH, app. A.9, app. B.3 (2012), *available at* http://www.samhsa.gov/data/NSDUH/2k10State/NSDUHsae2010/NSDUHsaeCover2010.pdf. For 2009–2010 combined: Colorado: 465,600 past-month users (11.29% * 4,124,003); Washington: 491,506 (8.86% * 5,547,471); Nation: 17,108,963 (6.77% * 252,717,320); Washington and Colorado compared with the Nation: (465,600 + 491,506) / 17,108,963 = 5.6%.

C. FICA and Income Taxes on "New" Jobs

Another part of the marijuana industry that becomes taxable under legalization is the salaries of workers, who (unlike workers in illicit industries) pay income and payroll taxes. How important that is depends on the share of wages in total costs. In many industries, labor costs predominate. If that were true also for the new marijuana industry, payroll taxes might be roughly comparable to excise-tax revenues in Colorado. To see why, suppose, for example, the proportion of the retail sales price that comes from paying wages is the same as the wholesale price as a proportion of retail. Then, suppose that wholesale prices are two-thirds of retail prices, and two-thirds of the marijuana industry's cost structure comes from wages. Since the FICA rate is 15.3%, counting the employer's half,[99] it would produce essentially the same revenue as a fifteen percent excise tax on the wholesale value. Ironically, that would be revenue to the federal government, not to the state that legalized. That said, states could also collect income taxes on marijuana-industry wages; for example, 4.63% in Colorado.

D. Hosting Support Industry

Even if most of the marijuana industry's cost structure will come from labor, it will also purchase capital equipment (e.g., grow lights), materials (e.g., growing medium), utilities (e.g., electricity), and professional services (e.g., legal counsel). Many of those purchases will generate sales-tax revenue, and they may also sustain a local ancillary industry, just as auto-assembly plants sustain a supply chain of parts suppliers.

Furthermore, what the marijuana industry spends locally on wages and equipment becomes income for others in the state, which triggers additional spending. Economic development studies discuss this additional spending in terms of a "multiplier effect" of hosting an industry. For example, Gazel explains this effect for casino gambling.[100] In this context, the marijuana industry creates an initial round of economic activity through the purchase of equipment,

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[99] *FICA and SECA Tax Rates*, U.S. SOC. SECURITY ADMIN., http://www.ssa.gov/oact/progdata/taxRates.html (last updated Mar. 8, 2012).

[100] *See generally* Ricardo Gazel, *The Economic Impacts of Casino Gambling at the State and Local Level*s, 556 ANNALS AM. ACAD. POL. & SOC. SCI. 66 (1998) (suggesting that monopolistic oligopolistic market structures cause economic losses in states that allow casinos).

materials, utilities, and professional services ("direct effects"). Those businesses in turn buy the goods and services they need, creating another round of spending, and so on ("indirect effects"). Further, as incomes of regional employees in these industries rise, household spending increases ("induced effects"). To the extent that these expenditures stay in a legalizing state and do not "leak" out, each dollar spent on the marijuana industry will have an additional impact on the economy and revenues as spending ripples through the economy.

E. Consumer Cost Savings

If legalizing marijuana drives down prices, then marijuana spending may decline as well, since demand for marijuana may be sufficiently price inelastic[101] so as to offset non-price factors through which legalization might promote greater use.[102] If so, legalization could act a bit like a technological innovation that increases consumer welfare and frees money up for other uses.

Suppose that, for the sake of argument, before legalization, consumers were spending $30 billion on marijuana and paying no sales tax on those expenditures. Suppose further that after legalization, use went up but prices fell enough to reduce spending to $20 billion. The discussion above in Part I considered the potential sales tax revenue on the $20 billion, but what of the residual $10 billion? Unless total personal income shrinks (via some macroeconomic contraction from increased production efficiency displacing workers), it seems plausible that some of that $10 billion might be spent on other goods and services that would be taxed.

F. Alcohol Tax Revenue

Whether or not marijuana legalization turns out to be a net good or a net bad for society may depend on how it influences the consumption of alcohol.[103] While heavy marijuana use can impose costs on users, their intimates, and society, these costs generally pale

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[101] Total demand elasticity may be on the order of -0.5. Gallet, *supra* note 34, at 3; Pacula, *supra* note 34, at 5. Pacula's review suggests a participation elasticity close to -0.3 and a total demand elasticity close to -0.5 (good information on total demand elasticity for marijuana does not exist; the latter was calculated using the ratio of total demand elasticity to participation elasticity for alcohol and tobacco). Gallet's meta-analysis also suggests a participation elasticity close to -0.3.

[102] *See* KILMER ET AL., *supra* note 20, at 16.

[103] CAULKINS ET AL., *supra* note 30, at 134.

in comparison to the social costs associated with heavy drinking. However, there is no scientific consensus about whether marijuana and alcohol are economic substitutes or complements.[104] And even if there were, it is not clear whether that research would be applicable in a post-legalization environment. If marijuana legalization leads to a significant increase in marijuana consumption, this could affect alcohol consumption, which in turn would affect the tax revenues from alcohol.[105] A comprehensive revenue analysis would need to consider this and other indirect effects mediated through changes in consumption of other goods.

CONCLUSION

Various jurisdictions have decided to legalize large-scale production and distribution of marijuana or are contemplating that action. The potential for tax revenues is a perennial consideration, but the discussions have yet to fully grapple with the implications of potential price declines, gaps in prices between jurisdictions, and the ability of markets to adapt in response to such price signals. The discussion above suggests that jurisdictions legalizing marijuana face a few fundamental choices. First, will production and distribution be controlled by a government monopoly? That scenario offers compelling advantages in terms of potential government revenue and protection of public health, but seems unlikely in the United States, where legalization is being pioneered by states acting in defiance of an ongoing federal prohibition by means of extra-legislative ballot initiatives.

Second, if production and distribution will be the province of a regulated private industry, will tax rates be set high enough to offset the anticipated sharp declines in production cost? If taxes are left at modest levels (say less than fifty percent of the new, lower retail price or less than twenty-five dollars per ounce), then it is possible that tax evasion will be no more than a nuisance. But if this is the case, tax revenues are not likely to reach the aspirations of some who promote legalization. Indeed, revenues from associated taxes, such as FICA and state income taxes on workers' wages and sales taxes on drug tourists' purchases of things other than marijuana, that have received much less attention, could be comparably important.

104 KILMER ET AL., *supra* note 20, at 42–43.

105 One could also make a similar argument about tobacco.

On the other hand, if taxes are set high enough to prevent substantial price declines (say $100 per ounce or more), then the overall legalization regime might need to be designed around the objective of thwarting tax evasion. If the regime is not designed this way, those nominally high taxes may prove uncollectable and legalization will end up converting a black market into a gray market, rather than eradicating illegal markets altogether.

This Article has attempted to broaden discussions of the revenue implications of marijuana legalization, but by no means has exhausted the range of potential implications. For example, there might be effects on productivity and employment in either direction—negative effects if consumption and abuse of marijuana increased or positive if falling marijuana arrests led to fewer people's resumes being tarnished by a criminal record. There could likewise be positive or negative effects if marijuana legalization affected abuse of other substances that are in turn related to labor market outcomes.

In summary, jurisdictions seeking to generate revenue from legal marijuana confront a number of difficult choices. These decisions will not only influence state budgets, but also illegal revenues as well as the amount and types of marijuana that are consumed. Given how little we know about the effects of different cannabinoids and how legalization will actually play out, especially with respect to alcohol consumption and the federal response, at this point it may make sense to think of revenue regimes for legal marijuana as learning experiments rather than permanent fixtures and, as Oglesby argues, to design nimbleness into marijuana tax systems.[106]

[106] Oglesby, *supra* note 55, at 262.