

# **Marijuana Legalization: Lessons from the 2012 State Proposals**

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## **Abstract**

On November 6, 2012, citizens in three U.S. states will vote on whether to legalize production, distribution, possession, and sale of marijuana for general—not just medical—use. Legalization is typically imagined as an up or down, binary choice. However, a comparison of seventeen legalization proposals actively discussed in various U.S. states in 2012 reveals differences that would have important consequences for price, availability, arrest-risk, use, and, hence, health. This paper divides the proposals into three broad categories and assesses their political feasibility. It then addresses the implications of state-level legalization, and possible federal responses to it, for retail price, tax revenues, and spillover effects in other states where marijuana would remain illegal.

## **Introduction**

On November 6, 2012, citizens in three states will vote on whether to legalize production, distribution and sale of marijuana for general—not just medical—use. Although federal prohibition would continue, this step would still be unprecedented; no developed polity in the modern era has legalized marijuana.<sup>1</sup> National polls presently show a nearly 50/50 split in public support for legalization (Newport 2011) with generally greater support in states with current legalization proposals.

There is ample literature on marijuana legalization in the abstract (e.g., Kleiman 1989; Caputo and Ostrum 1994; MacCoun and Reuter 2001; Rolles

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<sup>1</sup> In the Netherlands, use, retail sale of up to 5 grams and personal cultivation are effectively legal. However, production, wholesale, and commercial processing remain entirely illegal.

2010; Room et al. 2010). This article complements such prior work by analyzing the specific proposals in play in 2012 and the possible consequences of state-level legalization in the face of ongoing federal prohibition. This analysis suggests that legalization in just one state could have a significant impact on price and use nationwide. Legalization in just one state might not be stable either; it could create conditions that would make other states more likely to follow. Thus, marijuana legalization is salient for all states, not just those considering changes this year.

This analysis examines how state-level marijuana legalization could affect marijuana use, which presumably translates into effects on use-related outcomes. It does not attempt to model the use-to-outcomes link itself. For example, we do not discuss how long-term marijuana use might influence cognitive functioning or lung health. This is analogous to trying to understand how a policy change might affect cigarette smoking prevalence without delving into how cigarettes affect health outcomes.

## **Synopsis of Standard Marijuana Legalization Analysis<sup>2</sup>**

The marijuana legalization debate is often couched in terms of core values. For example, libertarians might argue that adults should be free to consume anything they like, even if that consumption is harmful. Various religions oppose such logic, condemning many intoxicants as intrinsically immoral.

However, legalization can also be considered on consequentialist grounds. Kleiman (1992) observes the basic tradeoff is between amounts of use-related harms on one hand, and amounts of black market-related harms on the other. Prohibition reduces availability and use. (Even marijuana—by far the most widely consumed illegal drug—is used much less commonly than two legal drugs: tobacco and alcohol). However, illegality cannot eliminate use, and the remaining illicit use tends to be riskier. Illegal markets also generate their own harms, including crime, violence, corruption, and the societal costs of efforts to suppress them.

A liberal<sup>3</sup> society generally presumes that adult consumers look after their own welfare, so government interference with the free market's invisible hand necessarily makes society worse off, absent market failures. For psychoactive drugs, externalities and dependence complicate that calculus.

Negative externalities are harms that use imposes on nonusers. Some substances generate harms primarily for the users; notwithstanding valid concerns

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<sup>2</sup> This section summarizes broad outlines of the standard analysis of marijuana legalization. We claim no original contribution, but seek merely to place the subsequent discussion in context.

<sup>3</sup> The classical term "liberal" means to favor markets largely free from government intervention.

about secondhand smoke, cigarette smokers themselves suffer most of the health consequences of tobacco. In contrast, drunk drivers kill and injure many innocent people. Marijuana use is generally seen to be more like tobacco in this regard; whatever the harms, they primarily affect users, not second or third parties.

Dependence raises the possibility of *internalities*. As defined in behavioral economics (Hernstein et al. 1993), internalities are harms that users inflict on themselves without fully considering them before consumption. Standard economics overlooks this possibility with its devotion to consumer sovereignty, but internalities are a contributing motive behind many public health interventions.

The debate on marijuana's physical and mental health effects has lasted decades without consensus. The main concerns pertain to impaired driving, cancer, respiratory problems like emphysema, and mental health problems like schizophrenia. Insofar as consensus has been reached, it is that there are adverse health effects, but they are smaller than corresponding risks for other substances, notably alcohol.

The greater concern is *behavioral toxicity*. For example, marijuana use is correlated with greater school dropout rates and reduced labor productivity, raising concern that the association could be partially causal.

Behavioral toxicity includes risk of dependence. Relatively few people become dependent on marijuana. Indeed, 40–50% of those who have ever tried marijuana report fewer than twelve days of total lifetime use. Nevertheless, about 4.4 million people in the US currently meet the clinical definition for marijuana abuse or dependence (roughly one-quarter of past-month users). The conventional view is that marijuana dependence is qualitatively different—and less debilitating—than dependence on some other substances (Room et al. 2010). However, hundreds of thousands of people seek marijuana treatment each year, and frequent users are exposed to a disproportionate share of the traditional forms of toxicity. Those who report using more than weekly in the last year account for 90% of all reported days of use,<sup>4</sup> and about half of them meet the criteria for abuse or dependence (Caulkins et al. 2012).

Some legalization advocates may disagree, but given the combined behavioral and physical toxicity of marijuana use, we believe a consumption increase would certainly merit public health concern.

Crime is another prominent feature in legalization debates, but is much less central for marijuana since the U.S. has not experienced substantial violent

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<sup>4</sup> Days-of-use is a measure of quantity consumed. Survey respondents can answer with reasonable reliability how many days they used in the last week, month, or year, but have difficulty answering in terms of quantity (weight) consumed. Because of the skewed distribution of use—the minority of frequent users consume most of the drugs—it is important to use some measure of intensity of use, rather than looking only at past-year or past-month prevalence.

crime around the illegal sale of marijuana. Like any intoxicant, marijuana can affect behavior, potentially leading users to take undue risks. But, unlike alcohol use, marijuana use is not associated with an increase in aggression according to several studies (e.g. White 1998). Likewise, while dependent heroin users may spend three-quarters of all their income buying heroin (Roddy et al. 2011), marijuana purchases rarely dominate a user's budget, so its use is less associated with robbery and other income-generating crimes.

There is also the question of whether marijuana legalization could reduce the horrific drug violence in Mexico. The U.S. government had published an estimate that 60% of Mexican drug trafficking organizations' profits came from marijuana, but later retracted it. Kilmer et al. (2012) argue the true portion is closer to 20%.

The scientific debate continues as to whether marijuana use has long-term cognitive effects, but some studies deem subtle effects at least probable (e.g., Hall 1994). Effects on youth matter because important cognitive areas guiding personality development, decision-making, and problem-solving are still maturing during adolescence (Thompson 2001). Psychoactive chemicals may harm the maturation process. It is worth noting also that younger marijuana users are more likely than those who delay initiation until adulthood to eventually become dependent.

Links with use and abuse of other drugs, including via the so-called gateway effect, are also prominent themes in legalization debates. Concern has ebbed somewhat about the classical version of the gateway theory, namely that youthful experimentation with marijuana *causes* increased risk of subsequent abuse of other drugs. Observational studies show that marijuana use almost universally predates harder drug use, but this phenomenon is now recognized as an association, not an indication of causality (e.g., Morral et al. 2002). Precocious marijuana use may be merely indicative of a person who is more disposed to partake in riskier behavior or engage in substance abuse (Caulkins et al. 2012).

Indeed, legalization advocates sometimes argue that legalizing marijuana will eliminate another "gateway" effect. Consumption of illegal marijuana necessitates interaction with and exposure to drug dealers who may also be willing and able to supply other drugs. If we legalize marijuana, so the argument goes, we eliminate that gateway effect.

Different frequencies of marijuana use during adolescence could carry various unique risks. The possibility of youthful *experimentation* with marijuana (indicated, say, by lifetime prevalence) causing subsequent problems is distinct from the possibility of adolescent marijuana *dependence* causing (not just being associated with) subsequent problems. This is less studied, but not unimportant. Household surveys estimate that the number of youth (under age 18) who meet clinical criteria for marijuana abuse or dependence (SAMHSA 2012) approaches

one million, and it is generally believed that surveys underestimate problematic use. So if legalization caused an across-the-board increase in use, the number of additional youth who would meet these criteria for abuse or dependence could not be assumed to be small.

Interestingly though, most of the recent increase in US marijuana consumption has been among adults. The total number of past-year use-days reported by adults has doubled, whereas under-18 use has barely budged. If these trends stem from liberalization (e.g., proliferation of medical dispensaries) and they continue after legalization, then perhaps legalization's larger effect could be delaying the average age at which recreational use ceases, rather than reducing the age of first use.

A final health outcome worth flagging is the effect legalization will have on alcohol abuse, since aggregate alcohol-related harms dwarf marijuana-related harms, according to current estimates (Harwood et al. 2000; ONDCP 2004). How marijuana legalization might alter alcohol-related social harms is as yet unknown. If marijuana substitutes for alcohol, then reductions in crime and other alcohol-related harms could prove to be marijuana legalization's greatest benefit. But if marijuana acts as a complement to alcohol, even modest increases in alcohol-related harms could more than offset any marijuana-related benefits of legalizing (Caulkins et al. 2012).<sup>5</sup> If consuming both together intensifies certain effects, the harms that those effects generate could become accentuated, and lead to an increase in their respective social costs. For example, several studies have found that tandem use of alcohol and marijuana exacerbates driving impairment (e.g., Robbe 1998), so greater tandem use would lead to more impaired driving accidents. (Despite decades of research on cross-price elasticities of demand and poly-drug abuse, it remains unclear whether marijuana is, on net, a substitute or a complement for alcohol or other drugs).

Of late, fiscal outcomes have also figured prominently in the legalization debate because of the potential for increased tax revenue and decreased enforcement costs<sup>6</sup> (though both are often overstated). These outcomes are not a direct concern for public health, but they merit extended discussion because of the

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<sup>5</sup> Parallel reasoning could apply to tobacco and "hard" drugs.

<sup>6</sup> Harvard economist Jeff Miron (2010) estimated that enforcing marijuana prohibition costs the US \$13.7B, with California's share being \$1.87B. However, the estimate rests on a number of dubious assumptions, such as that marijuana-related prison costs can be computed by pro-rating total drug-related prison costs across drugs in proportion to the number of sales/manufacturing arrests by drug. Other estimates for California are an order of magnitude lower (Gieringer 2009a, b at \$204M; Caulkins and Kilmer, forthcoming at \$150M for enforcing marijuana laws against those 21 and older). Miron (2012) himself subsequently observed that the magnitude of the cost savings is sometimes overstated by advocates, calling claims of a huge budgetary windfall problematic.

pivotal role they may play with regard to voter support and potential passage. Taxes matter also because they raise price, which can discourage use.

## **Legalization Proposals in the U.S. in 2012**

Marijuana legalization is often conceived of as a binary choice, but that oversimplifies the issues. As of March 2012, ten US states were considering 17 proposals to legalize marijuana, including 14 voter initiatives and 3 legislative bills (in New Hampshire, Massachusetts, and Washington). These proposals are not at all alike; the details of each would have far different implications.

These proposals are in addition to the comparable number of proposals to create or extend medical marijuana regimes. They go well beyond decriminalization, which is typically defined as imposing civil rather than criminal penalties for possession of small amounts (Pacula et al. 2005). (Decriminalizing marijuana is not a radical step; more than a dozen US states have already done it, some as early as the 1970s.<sup>7</sup>) These 17 proposals would legalize commercial cultivation, processing, distribution, sale and possession of larger amounts—some just for those with licenses, others for all adults.

This elementary fact is obvious when reading the proposals, but is nonetheless not widely appreciated. Even the venerable *New York Times* described Colorado's Regulate Marijuana like Alcohol Act as "a ballot proposal to *legalize possession of marijuana in small amounts* in Colorado..." [emphasis added] (Johnson January 26<sup>th</sup>, 2011). Again, on February 27<sup>th</sup>, the *Times* reported that "[a] voter initiative that *would legalize the possession of marijuana* by adults for recreational use qualified for [Colorado's] November ballot... Moves to *decriminalize* marijuana face opposition from the federal government..." [emphasis added] (Reuters 2011).

Those are fair characterizations of Section 3 of Colorado's proposition, which addresses personal use, but it is as if the reporters stopped reading at that point and were oblivious to Sections 4 (on "Lawful operation of marijuana-related facilities") and 5 (on regulation).

## **Political Viability**

Passage of any one of the proposals is distinctly possible, but not equally likely; indeed, many have no realistic prospects of passing. As of this writing, three of

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<sup>7</sup> Alaska, the most liberal state in terms of current marijuana laws, allows residents to possess up to 4 ounces and cultivate up to 25 plants for personal use.

the voter initiatives had gathered enough signatures to make the ballot: Colorado's Regulate Marijuana like Alcohol Act (henceforth shortened to "CO-RLA" for Colorado Regulate like Alcohol), Washington State Initiative 502 (WA I-502), and the Oregon Cannabis Tax Act (OCTA); they are the focus below.

Recent polls have support for legalization in Colorado hovering around 50%, with polls showing increasing support between June and August 2012 (Public Policy Polling). Support for legalization in Washington is also close to 50%, with the proportion of undecided voters as high as 7% (J. Martin 2012).

Oregon already legalized medical marijuana, though in recent years proposals to provide for medical marijuana dispensaries have been voted down. Given the demographics and political leanings of Oregon's voters (according to Gallup, 26.4% liberal and 33.6% moderate in 2011), one might guess that OCTA has a reasonable chance of passing.

California is noteworthy for not having a proposal on the ballot even though its Proposition 19 dominated legalization discussions in 2010 (Kilmer et al. 2010a; 2010b). Proposition 19 gained 46.5% of the vote, with exit polls revealing that an additional 6% of voters chose to vote against it even though they favored marijuana legalization generally (Caulkins et al. 2012).

Supporters in California circulated several legalization initiatives for signatures, but were unable to coalesce around any one, and no initiative gathered the requisite 504,760 signatures by the March 26, 2012 deadline. California's Regulate Marijuana like Wine proposal (CA-RMLW) made the most progress towards that goal, so we include it in parts of the analysis below.

Propositions are an exercise in direct democracy. However, getting on the ballot depends on more than the intrinsic popularity of a measure. Attracting the attention of a few well-heeled donors can be critical, particularly in a large state. This year's events in California are telling in this regard. In a last-ditch effort to rally support behind a single initiative, advocates held a February summit that they dubbed "Cannadome," which carried an "all enter, one leaves" message. Proponents of the three most prominent proposals—Regulate Marijuana Like Wine, the Repeal Cannabis Penalties Act, and the Cannabis Hemp and Health Initiative—issued a statement of unity that said:

We invite any freedom loving American with some serious assets to take a look at all three of our initiatives. Choose the one that you are willing to finance. The other two initiatives will support the one you choose 100% to ensure a victory in 2012. (M. Martin 2012)

The Cannadome appeal failed, but it highlights the disproportionate influence a few people with “serious assets” can have in determining whether, and what form of, legalization even makes it to the ballot.

### The Proposals’ Salient Characteristics

The details of legalization proposals are important. Among the key distinctions to make with respect to the 2012 proposals is between the categories of: (1) *Repeal Only*, (2) *Repeal & Regulate*, or (3) *Repeal & Delegate*. Table I classifies the 17 proposals into these categories.

**Table I: Categories of the 2012 Proposals**

<i>Repeal Only</i>	<i>Repeal &amp; Regulate</i>	<i>Repeal &amp; Delegate</i>
<ul style="list-style-type: none"> <li>• CA Cannabis Hemp and Health Initiative</li> <li>• MI Constitutional Amendment To End Marihuana Prohibition</li> <li>• MT Proposal</li> <li>• OR Initiative Proposal 24</li> </ul>	<ul style="list-style-type: none"> <li>• CA Regulate Marijuana Like Wine Act</li> <li>• CO Regulate Marijuana Like Alcohol Act</li> <li>• WA State Initiative 502</li> <li>• MA Bill H-1371</li> <li>• WA HB 1550</li> </ul>	<ul style="list-style-type: none"> <li>• CA Repeal Cannabis Prohibition Act</li> <li>• MO Constitutional Amendment to Art. IV</li> <li>• OR Cannabis Tax Act</li> <li>• NE Initiative, Prop XIX</li> <li>• NH HB 1705</li> </ul>

*Repeal Only* proposals simply repeal the state’s prohibition against marijuana—except perhaps for use by minors or while operating a vehicle. These proposals can be quite short; the proposed Constitutional Amendment to End Marihuana Prohibition in Michigan is only 88 words.<sup>8</sup>

*Repeal & Regulate* proposals not only repeal state prohibition, they also design a framework for the state to regulate the legal marijuana market. These proposals can be quite detailed. For example, WA I-502 runs 62 pages (Holcomb 2012). Typical provisions include designating the market regulator, establishing taxation and fee structures, detailing the licensing process, and setting limits on personal possession amounts. Some declare a regulatory scheme modeled after alcohol or tobacco; some discuss workplace use rules, driving under the influence regulations, and/or specify penalties for violations of the regulatory framework.

<sup>8</sup> The text, in its entirety, reads: “For persons who are at least 21 years of age who are not incarcerated, marihuana acquisition, cultivation, manufacture, sale, delivery, transfer, transportation, possession, ingestion, presence in or on the body, religious, medical, industrial, agricultural, commercial or personal use, or possession or use of paraphernalia shall not be prohibited, abridged or penalized in any manner, nor subject to civil forfeiture; provided that no person shall be permitted to operate an aircraft, motor vehicle, motorboat, ORV, snowmobile, train, or other heavy or dangerous equipment or machinery while impaired by marihuana” (Committee for a Safer Michigan 2012).

Most ban marijuana smoking in public areas. Many distinguish home cultivation from commercial production, allowing users to grow a limited number of plants for personal consumption without being licensed, but prohibiting them from selling.

The proposals vary in terms of how carefully the details are thought through. For example, most state that driving under the influence of marijuana would remain illegal, but do not define “under the influence” nor specify the type of test to be administered. (Marijuana is different from alcohol; impairment—as opposed to past use—is difficult to measure accurately, which one referee notes is itself a concern with legalization). WA I-502 is unusually precise in this regard, stating that the THC level determined from a blood test must not exceed 5.0 nanograms per milliliter for those 21 or older, and that minors may not have any marijuana in their system whatsoever. Some who favor legalization generally nonetheless oppose WA I-502 because of the likelihood that medical marijuana users will routinely exceed that threshold.

*Repeal & Delegate* proposals are similar to *Repeal & Regulate* in that they also plan for a state regulatory structure, but they do not themselves specify the regulations. Rather, they delegate that responsibility to the state legislature (Nebraska Proposition XIX), an existing state agency (Department of Revenue for New Hampshire HB 1705; Health and Senior Services in Missouri), or a newly created “Cannabis Commission” (OCTA; CA Repeal Cannabis Prohibition Act). The proposals also vary widely in how well-written they are; some are carefully crafted, but others neglect important issues or are ambiguous in seemingly unintentional ways. For example, Oregon’s IP-24 repeals criminal and civil sanctions for “private personal use, possession or production of marijuana.” It is not immediately obvious whether “private personal” is meant to modify “use” or “use, possession, or production”—a distinction of considerable consequence.

Proposals vary in their response to the reality of continued federal and international prohibition. Massachusetts HB 1371 calls for creation of a Cannabis Control Authority only after *federal* marijuana prohibition is repealed. By contrast, the OCTA specifies that a state agency (the to-be-created Oregon Cannabis Commission) would sell cannabis through state stores. State employees operating these stores would be in direct violation of the federal Controlled Substances Act. The OCTA also defines itself as “a scientific experiment,”<sup>9</sup> perhaps as a nod to the international drug control conventions’ allowing exceptions for experiments.

Some proposals are naïve about the potential power of the commercial interests that would be created.<sup>10</sup> The seven-person Oregon Cannabis Commission

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<sup>9</sup> In particular, “a scientific experiment” by the people of the state of Oregon to lower the misuse of, illicit traffic in, and harm associated with cannabis.”

<sup>10</sup> This is a particular concern of organizations such as But What About the Children.

charged with regulating the cannabis industry would be comprised of five commissioners to be “elected at large by growers and processors” and just two appointed by the Governor. Building a super-majority of industry representatives into the regulatory body of that industry practically guarantees the sort of regulatory capture that has been problematic in diverse industries, dating from railroads under the old Interstate Commerce Commission and arguably including alcohol today.<sup>11</sup>

Table II<sup>12</sup> summarizes key provisions of CO-RLA, OCTA, and WA I-502, which are on the 2012 ballot, and also of CA-RMLW, the California proposal that garnered the most signatures.

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<sup>11</sup> By way of contrast, Massachusetts SB 1371 would have the governor appoint three, and the president of the senate and speaker of the house each appoint two of its seven-member Cannabis Control Authority.

<sup>12</sup> We are indebted to Becca Gillespie for creating this table.

**Table II: Comparison of Three Initiatives<sup>13</sup>**

Policy		CA Regulate MJ Like Wine	CO Regulate MJ Like Alcohol	WA I-502	OR Cannabis Tax Act
<b>Personal Use</b>	Personal possession limit	No limit	1 oz.	1 oz.	Not specified
	Restrictions on personal cultivation (plants allowed)	24+ (mature plants)	6 (3 or fewer mature)	0 (though 15 for registered medical marijuana patients)	Not specified
<b>Regulation</b>	Regulatory body name	Alcohol Beverage Control (ABC)	Department of Revenue	State liquor control board	Oregon Cannabis Commission (OCC)
	Body responsible for quality control	Not specified	Third party with valid license	Independent third party	Independent third party
	Allows for state-run stores	No	No	No	Yes
	Explicitly forbids cooperation with federal law enforcement on marijuana related cases	State is "ordered to protect and defend all provisions of this Act from any and all challenges or litigation, whether by persons, officials, cities, counties, the state or federal governments."	No	No	Attorney General required to "vigorously defend" the act and propose and urge the removal of federal impediments to the act.
<b>Protection of Minors</b>	Penalty to providing marijuana to minors	Up to \$2,500	For over 2 oz: Class 4 Felony, 2-6 years in prison and up to \$2,000.	For 18-20: Class C Felony (Up to 5 years in prison and a \$10,000 fine) For Under 18: Class B Felony (Up to 10 years in prison and a \$10,000 fine)	Sale: Class B Felony (up to \$250,000 fine and/or 10 years in jail) Gratuitous provision: Class A Misdemeanor (up to \$6,250 fine and/or 1 year jail)
	Penalty for possessing marijuana as a minor	Up to \$2,500	For over 2 oz.: Misdemeanor, 3-12 months in prison and \$250-\$1,000 fine.	For first offense, under 40g: Misdemeanor (Up to 90 days in jail and a \$250 fine)	\$250
<b>Taxation</b>	Taxation rate	Similar to wine	15% on retail sales	25% (at each level)	N/A. OCC would set state store prices.
	Revenue use	Not specified	\$40 million to public Schools	Various state agencies	State general fund and various state agencies

<sup>13</sup> CO-RLA and WA I-502 make no changes to current state penalties regarding minors. The descriptions of the penalties above highlights key points but should not be viewed as comprehensive; for a full understanding, direct consultation of the state laws is advised.

CO-RLA and WA I-502 share features. Both limit (unlicensed) personal possession to one ounce and contain provisions concerning impaired driving and sale to minors. Both earmark tax revenues to popular causes. For example, CO-RLA directs that the first \$40 million in revenue the excise tax captures would be directed to a public school capital construction fund.<sup>14</sup> Yet there are salient differences. WA I-502 assigns the State Liquor Control Board to regulate the industry while CO-RLA assigns that function to the Department of Revenue. They also differ with respect to specificity. WA I-502 includes protections such as limiting a licensee's operation to a single, fixed location and imposing a range of restrictions on the operation of retail stores. CO-RLA does not include such protections, but its supporters believe the Department of Revenue has been effective at regulating medical marijuana and that it is reasonable to believe it will be comparably effective in regulating the legal, non-medical industry.

As a *Repeal & Delegate* proposal, OCTA leaves several important provisions, including maximum amounts allowed for personal possession, undetermined. And while it specifies no tax rate, the state-stores would sell non-medical marijuana at a substantial markup over what they paid licensees to produce it, which OCTA anticipates would produce net revenues for the state.

## **Federal Responses and Market Impacts**

The following discussion considers ways the federal government may respond to state legalization, and how these varying responses may lead to different outcomes. Space and data limitations preclude a full benefit-cost analysis, but readers should keep in mind three distinct categories of costs: (1) Costs of regulation and enforcement, (2) Costs associated with marijuana use, including direct health effects and outcomes such as dependence and impaired driving, and (3) Collateral consequences of black markets, which are determined in no small measure by who profits from production and sale— criminals, conventional businesses, or the state itself. A general theme is that the federal response will create tradeoffs among these categories of costs; no option minimizes all three simultaneously. The aim here is just to help readers understand the complexity of the choices, not to suggest what course of action is best.

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<sup>14</sup> WA I-502 takes the strategy to heart, earmarking funds for Department of Social and Health Services, the Department of Health, the University of Washington, Washington State University, the state basic health plan trust account, the Washington State Health Care Authority, and the Office of the Superintendent of Public Instruction.

## Arrest Risk

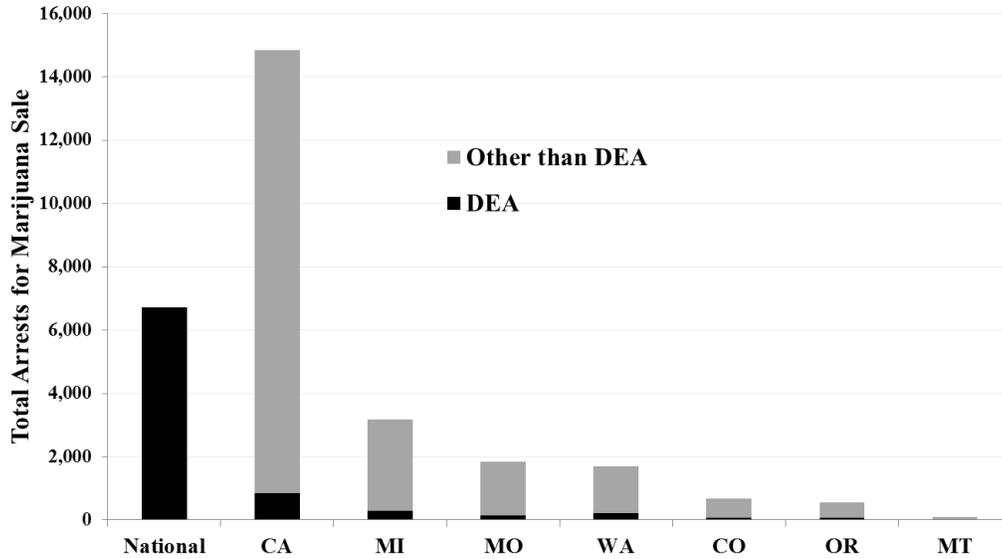
A state may legalize marijuana for adults, perhaps as soon as November 2012, but marijuana would remain illegal at the federal level, and the federal government would probably not stand idly by. The response to medical marijuana is instructive. President Obama flatly rejected legalization at the recent Cartagena summit (Calmes 2012), and some media sources describe the Obama administration as even harsher than George W. Bush was in cracking down on large-scale medical marijuana dispensaries (Dickinson 2012). Nevertheless, the federal government may be reluctant to run roughshod over programs directly endorsed by the voters at the ballot box, and the federal government continues *not* to intervene in state-sanctioned medical marijuana distribution except for large-scale operations and/or those that violate (its reading of) state law.

Furthermore, while federal agents would clearly retain the power to arrest anyone anywhere in the U.S. for any marijuana violation—even possession by someone with a medical marijuana card—it is equally clear that federal agencies lack the resources to fill in for the removal of all state and local enforcement.

In 2010, state and local law enforcement made 97% of the more than 800,000 marijuana sales and possession arrests nationwide (FBI Uniform Crime Report 2012). The majority of those arrests were for possession, and it seems unlikely that the federal government could, or would want to, assume the burden of deterring individual marijuana users.

The situation for sellers is similar, albeit less extreme. State and local agencies account for roughly 90% of marijuana sales and distribution arrests away from the Southwest Border; federal prosecutors often only accept cases involving hundreds of pounds of marijuana, not just one or two pounds, let alone one or two ounces or joints. Figure I shows the total number of marijuana *sales* arrests per state for some states considering legalization, and the share of those arrests made by the Drug Enforcement Administration (DEA). The far-left column shows the total number of marijuana arrests the DEA made nationwide.

**Figure I: Marijuana Sales Arrests by State**



Sources: State totals from drugscience.org; DEA figures from DEA (personal communication).

The figure suggests that if the DEA or other federal enforcement agencies do not reallocate resources, legalization in any given state will lead to a roughly 90% drop in arrests of marijuana sellers in that state, presumably with a greater than 90% drop for lower-level sellers and a less than 90% drop for higher-level distributors.

Second, the DEA’s ability to fill in for “missing” sales arrests varies with the size of the state. State and local enforcement agencies in California make more sales arrests than the DEA does *nationwide*, not just in California. For states like Washington the DEA could apparently make up for the missing marijuana sales arrests, but doing so with existing resources would noticeably reduce enforcement intensity elsewhere. By contrast, Montana in a typical year has fewer than 100 marijuana sales arrests; if Montana were the only state to legalize, it would be entirely possible for the DEA to prevent any reduction in enforcement risk for sellers.

### **Additional Federal Strategies**

Strategic options for the federal response to *Repeal Only* legalization are limited. The main question is how much additional enforcement to allocate to the state. There are many particulars. What kind of enforcement? Should redirected enforcement be solo or cooperate with police in surrounding states? What are the targets? Should it be across the board or with particular intensity at those who

advertise or fail to label accurately? But the question boils down to: How much enforcement?<sup>15</sup>

However, if a state passes a *Repeal & Regulate* form of legalization, the federal government can choose among a complicated set of responses, each carrying its own drawbacks and benefits. Potential options include: sending letters to landlords, banks, and other business owners threatening them with asset seizure for cooperating with illegal activities, preempting parts or all of state laws, and/or seizing tax revenues collected from marijuana commerce. The same general strategies are also relevant to *Repeal & Regulate* proposals, although how the particulars work out depend on future choices of the regulatory body to which authority is delegated.

### Letters

U.S. Attorneys have sent letters informing landlords who rent to medical marijuana dispensaries that their tenants are violating federal law, and threatening to confiscate their property unless they evict their tenants. Landlords typically comply. The cost to the government of inducing such “third party policing” is minimal (Mazerolle and Ransley 2006), so these interventions can be highly cost-effective for the government, albeit limited to instances in which the marijuana dispensary is operating from a fixed storefront.

There are reports of similar letters being sent to banks, warning them to cease doing business with marijuana dispensaries or risk losing their charters, access to FDIC insurance, etc., on the grounds that they are violating federal money-laundering laws (Frichtel 2012).

Of course U.S. Attorneys could also send letters to landlords renting to marijuana sellers in a *Repeal Only* state if those sellers tried to operate flagrantly from a storefront. However, while *Repeal Only* proposals remove all penalties for production, sale, and possession, they impose no positive obligations, such as obtaining a license or operating out of a fixed location. Legal operations under *Repeal Only* proposals could remain covert then, making it hard for attorneys to figure out where to send the letters.

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<sup>15</sup> We simplify. Nothing limits the options for the federal response to marijuana-specific policies. Under the Reagan Administration, states raised their minimum alcohol purchase ages in part in response to the Administration’s threats to withhold a portion of their federal highway dollars. The federal government might similarly withhold highway dollars, or some other funding stream, from states that legalize. Retroactive punishment may or may not be useful; voter propositions can be notoriously hard to repeal. Pre-emptive creation of a “poison pill” before legalization passes might be more effective, but that would require strategic thinking about a possible future “threat”, not just reacting to front-burner issues.

### Preemption

The Preemption Doctrine stems from the supremacy clause of the Constitution (Article VI, clause 2). It holds that federal law trumps state law when there is conflict between the two. The Controlled Substances Act (CSA) is federal law and contains an explicit provision on preemption of state and local laws. Preemption occurs when “there is positive conflict between [the CSA and] state [or local] law so that the two cannot consistently stand together” (21 U.S.C. Section 903).

State and federal laws can be incongruous without meeting the positive conflict test. Medical marijuana provides an instructive example. The U.S. Supreme Court clearly established that federal marijuana law trumps state or local law by upholding the federal government’s right to enforce marijuana prohibition even in states that had legalized medical marijuana (*Gonzales v. Raich* 2005). Nonetheless, *Gonzales v. Raich* does not nullify state medical marijuana laws; those laws continue to function at the state level. Imagine state statutes or regulations require a marijuana dispensary to pay an annual licensing fee; the state can punish dispensaries that do not comply.

We shall not attempt to ascertain exactly how courts would apply preemption to state-level legalization proposals; that analysis is better left to legal scholars. However, a lay reading suggests that the proposals vary in their level of conflict with the CSA. Generally, *Repeal Only* proposals steer clear of conflict since they merely cancel the state’s prohibition. Indeed, New York State repealed its prohibition of alcohol in 1923 despite continued federal prohibition, and other states subsequently followed suit (Caulkins et al. 2012).

At the other extreme, certain provisions in some *Repeal & Regulate* proposals conflict so directly that a federal challenge would seem almost certain to prevail. An example mentioned above is OCTA’s mandate that state-run stores sell marijuana. Another is the California Cannabis Hemp & Health Initiative’s stipulation that “Any person who threatens the enjoyment of these provisions is guilty of a misdemeanor.” A provision that would make it illegal for DEA agents to enforce the CSA would presumably be preempted.

Many other provisions might occupy some intermediate ground. For example, some proposals have state agencies setting quality standards; others would have state employees actively engaged in the process of testing quality. The latter requires physically possessing the marijuana. Possession is generally illegal under the CSA, but there is an exception for government employees acting in their official capacities (e.g., to protect local police when they seize illegal drugs). Our guess, and it is only a guess, is that licensing would not be preempted. Licensing is a traditional state function, and licensing market participants might be seen as comparable to issuing medical marijuana cards. Thus far, state courts

have held that medical marijuana laws do not frustrate the purposes of the CSA because there is not “positive conflict.” As Oregon’s Supreme Court ruled:

It is not physically impossible to comply with both the [state medical marijuana law] and the federal Controlled Substances Act. To be sure, the two laws are logically inconsistent; state law authorizes what federal law prohibits. However, a person can comply with both laws by refraining from any use of marijuana (*Emerald Steel Fabricators, Inc. v. Bureau of Labor and Industries* 2010).

Other state courts have ruled against the application of preemption to medical marijuana because regulation of medical practices is a common state function (*County of San Diego v. San Diego NORML* 2008). Federal courts have not yet ruled on the preemption question regarding medical marijuana laws (The court has made clear, e.g., in *Gonzales v. Raich*, that the federal government can enforce federal marijuana laws in states with medical marijuana laws; that is a different question than whether federal law preempts the state’s laws or regulations).

By extension, collecting fees from licensees might also survive; after all, some states already collect such fees from medical marijuana cardholders. It is unclear whether the federal government will preempt taxation. On the one hand, jurisdictions such as the City of Oakland have successfully assessed and collected marijuana-specific taxes on medical marijuana. On the other hand, even if general taxation does not provoke preemption, certain earmarks that further promulgate marijuana activity might. For example, the California Cannabis Hemp & Health Initiative’s earmark that 50% of tax revenues be dedicated to “research, development, and promotion of industrial and medical hemp industries” may be considered to positively conflict with the CSA.

### Seizure of Tax Revenues

The claim that legalization can ease state fiscal woes has been an important attraction, perhaps particularly for median or swing voters (cf., Kilmer et al. 2010a). Many proposals include tax provisions of diverse levels and forms. New Hampshire SB 1775 would set the tax at \$45 per ounce, while Missouri’s would place an upper limit on taxes of no more than \$100 per pound (about \$6 per ounce). Those two taxes differ in amount but both would be assessed per unit weight. Others, including CO-RLA and WA I-502, are expressed as a percent of value (ad valorem). Massachusetts HB 1371 taxes THC rather than marijuana by assessing a tax of \$10 per percentage point of THC per ounce. (For example, marijuana that was 5% THC by dry weight would be taxed at \$50 per ounce).

The tax component of legalization proposals could be fragile. Even if tax clauses are not preempted, the federal government could still seize tax revenue under federal money laundering statutes. The federal government has not done this with respect to medical marijuana taxes yet. The City of Oakland collected \$1.4 million in taxes from marijuana dispensaries in 2011 and the State of Colorado \$5 million (Cooper 2012). But that it has not seized these revenues in the past does not mean it couldn't in the future.

### **Double-Edged Swords**

The aggressiveness with which the federal government responds to a *Repeal & Regulate* legalization scheme would influence many facets of the legal market including changes in price and use, who the suppliers are, the effectiveness of state regulation, and tax revenue collection.

Several variables factor into the prevalence and intensity of marijuana use. For example, users can be deterred by social stigma or fear of future negative effects whether health-related or not. But government exerts two additional restraints on use: enforcement pressure and regulatory structures.

Enforcement pressure increases the cost of illegal marijuana through “structural consequences of product illegality” (Reuter 1983) and the “risks and prices” mechanism (Reuter and Kleiman 1986). “Structural consequences of illegality” are impediments to efficient business operations that the requirement to produce and move products underground imposes on suppliers. The “risks and prices” mechanism refers to the fact that suppliers take risks by providing illegal goods, and expect compensation for taking those risks. Higher prices tend to suppress marijuana consumption (Grossman 2005; Pacula 2010), just as they do consumption of many other goods. (For a thorough explanation, see Caulkins and Reuter 2010).

Regulatory structures can also partially restrain use. This is clearest with respect to taxes, which—if they are successfully collected<sup>16</sup>—drive up retail price and so, push down consumption; that is why the public health community tends to support raising tobacco and alcohol taxes. Some proposals include additional restraints. Massachusetts SB 1371 includes language limiting sales to licensed, enclosed premises, with customers restricted to adults who are not visibly intoxicated. Retailers would be required to post prominent warnings that cannabis consumption may impair driving and cause health problems; vending machine sales would be prohibited; licensees would not be allowed to advertise; and the Commission would have ongoing responsibility for adjusting the laws to prevent

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<sup>16</sup> This is a legitimate concern in itself. See “Tax Collection and Evasion” section of this paper.

abuse and evasion. Furthermore, regulatory structures can also mitigate harm for specific groups, such as protecting minors from the effects of advertising.

At least in theory both federal enforcement and state regulatory structures could help mitigate the legalization-induced increase in use. However, resource-constrained federal enforcement agencies seeking to dismantle a state's legal market may find these regulatory structures and/or regulated suppliers to be among their easiest targets.

Therefore, federal enforcement can be a double-edged sword. Officials would have to decide between intensifying enforcement pressure to soften the price decline and thereby limit the increase in use, or tolerating the legal market so state regulatory structures can curb abuse and misuse.

To be more specific, it would be relatively easy—not easy, but relatively easy—to shut down licensed bricks-and-mortar marijuana stores by sending threatening letters from U.S. Attorneys to landlords, banks, insurers, and other companies that a legitimate retail establishment depends on to operate. But that would push the trade back to unregulated suppliers who—after state and local police have ceased enforcement—could operate with relative impunity for a while, unless the federal government mustered the resources to substitute for state and local enforcement.

Likewise, if state taxation and/or regulations were preempted, but the federal government did not otherwise increase its enforcement efforts, then we might expect a larger price decline than if the federal government did not interfere at all, but a smaller one than if it had interfered more heavily and directly.

Realistically, the regulatory structures contemplated by the 2012 proposals—even by Massachusetts SB 1317—are not very potent when it comes to restraining use. Likewise, there are limits on the extent to which enforcement can drive up prices (Caulkins and Reuter 2010). A scenario in which federal enforcement is lighter than current enforcement, and another in which the federal government significantly increases its level of enforcement, might involve noticeable but not overwhelming differences in levels of use. That is, either scenario might involve roughly comparable increases in consumption compared to the status quo.

However, the federal response could substantially affect who receives the dollars consumers spend on marijuana. If the federal government takes a hands-off approach, in effect respecting the will of the voters in the state that legalizes, then marijuana might—under at least some proposals—be just another product sold from the shelves of convenience stores. Or, marijuana might be sold in dedicated marijuana-only stores, akin to state liquor stores. Either way, the marijuana industry would be legitimate, with profits going to businesspeople similar to those who profit from the sale of other goods, including alcohol or cigarettes.

The federal government could also respond with a slight increase in enforcement, possibly by preventing marijuana businesses from obtaining loans or leasing fixed storefronts. In this scenario, retail might be dominated by smaller-scale entrepreneurs operating with modest capital investment, as do mobile food vendors (“food trucks”), farmers’ market booths, or home delivery services like some dispensaries offer.

With still greater pressure, these smaller-scale licensed vendors might be replaced by unlicensed distributors who are not otherwise criminally involved, perhaps akin to the “\$5 men” who hawk untaxed cigarettes in New York City’s gray market (Shelley et al. 2007).

And with a concerted effort, the federal government could make the structure of the marijuana industry look like marijuana in states without liberal medical marijuana laws, which is to say, it would be an underground activity whose revenues went primarily to professional criminals.

So the federal government’s actions might have a real but modest effect on marijuana use and use-related harms, but a large effect on who receives the profits from selling marijuana and, hence, on the amount of collateral damage the selling creates.

Having touched on the topics of a price decline and consumption increase, the next section discusses these topics more thoroughly.

## **Characteristics of a Legal Marijuana Market**

### **Prices in States that Legalize**

It is generally recognized that marijuana prices will fall after legalization because the prices users currently pay are extremely high relative to what it would cost to produce, process, and transport marijuana if these activities were legal. Any resulting price decline would tend to increase both the number of users and the amount users consume (Grossman 2005; Pacula 2010; Kilmer et al. 2010a).

Production costs would be almost negligible with national legalization that allowed true farming of marijuana. Outdoor cultivation can annually yield on the order of 2,000 pounds of dry, high-grade marijuana per acre at a growing cost likely to be on the order of \$2,000 to \$20,000 per year. Thus, even after factoring processing and distribution costs, nationwide legalization could cut retail price to a few dollars or a few tens of dollars per pound, as opposed to wholesale

sinsemilla prices of a several thousand dollars per pound today (Geiringer 2009b; Caulkins et al. 2012).<sup>17</sup>

State-level legalization is more complicated because of uncertainty about the federal response and its effect on the dominant production modality. Kilmer et al. (2010a) developed quantitative business models to project the per-pound cost for growing high-grade marijuana and estimated it to be \$30 for a farm, \$70-\$215 for a greenhouse, and \$200-\$400 for a dedicated 1,500 square foot “grow house.”<sup>18</sup>

Even though production costs are lower for farms and greenhouses, Kilmer et al. guessed that grow houses would dominate because production would still be illegal under federal law. Farms and greenhouses would be too easy for federal enforcement to detect and seize.

We adapted Kilmer et al.’s model to estimate production costs and resulting legal prices in California under CA-RMLW, in Colorado under CO-RLA, and in Washington under WA I-502. (OCTA is excluded from this analysis because it does not specify a tax rate). Our estimates are broadly consistent with those of Kilmer et al. (2010a), but are little lower for grow houses in Colorado (\$175-\$340 per pound) and Washington (\$160-\$330 per pound) than for California because of lower costs of rent and electricity.<sup>19</sup>

The wholesale and retail prices are inflated above these production cost estimates by: (1) the wholesale price markup, (2) the retail price markup, (3) the usual state and local sales tax, and (4) the proposal’s excise tax. For California and Colorado we use Kilmer et al.’s (2010a) 25% wholesale and 33% retail markups, Drenkard’s (2012) average combined state and local sales tax of 8.11% for California and 7.44% for Colorado, and the excise taxes proposed in California and Colorado.<sup>20</sup>

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<sup>17</sup> Though we note that farmgate prices for marijuana have been dropping in the emerald triangle (Brand 2012).

<sup>18</sup> A “grow house” in this context is a residence used strictly for marijuana cultivation. The producers install growing equipment including lights, a watering system, and other components depending on the complexity of the operation.

<sup>19</sup> Kilmer et al. estimated rent in California would cost around \$35,000 per year versus only \$24,000 per year in Colorado and \$26,000 per year in Washington (Zillow Real Estate Market Reports 2012). Likewise, according to the Energy Information Administration, residential electricity costs 14.75 cents per kilowatt-hour in California, but only 11.04 cents in Colorado and 8.04 cents in Washington.

<sup>20</sup> CO-RLA specifies a wholesale excise tax of up to 15% on non-medical marijuana. CA-RMLW merely says that taxes and regulations similar “to the grape farming and wine industries... shall apply to marijuana” without explaining what marijuana tax would be similar to California’s tax of 20 cents per gallon of wine. For this exercise, we consider an excise tax of 20 cents per one-eighth ounce of marijuana, a typical purchase weight, which would tax hours of intoxication at roughly similar rates.

The corresponding estimate for WA I-502 is complicated by its unusual tax structure. WA I-502 imposes a 25% excise tax at each of three points along the supply-chain: first, when the producer sells to the processor; second, when the processor sells to the retailer; and third, when the retailer sells to the consumer. Given this legally required supply-chain and tax structure, we include also a 15% distributor markup as a proxy for the processor markup (Beaman and Johnson 2006), and use Drenkard’s average combined state and local sales tax in Washington of 8.8%.

Table IV shows the resulting estimates for prices in each state, using the midpoints of the grow house production cost estimates. It is important to note that these price estimates would pertain to the new steady-state market conditions. It is not clear how long it would take the industry to expand enough to push prices down to these levels. Prices would not fall overnight; the full decline might well take five or more years.

**Table IV: Long-Run Legal Price Estimates by State**

	California	Colorado	Washington
Wholesale Price	\$375 per pound	\$320 per pound	\$380 per pound
Retail Price	\$560 per pound \$35 per ounce	\$520 per pound \$33 per ounce	\$980 per pound \$60 per ounce

Wholesale prices per pound for (illegal) high-grade forms currently range from \$3,000-\$4,500 in California, \$2,500-\$4,500 in Colorado, and \$2,000-\$5,000 in Washington (Narcotic News 2012). Corresponding retail prices per ounce are typically between \$250 and \$375. Even in Washington, with its price inflated by the compounding tax structure, the “best guesses” of legal prices are much lower than current prices.

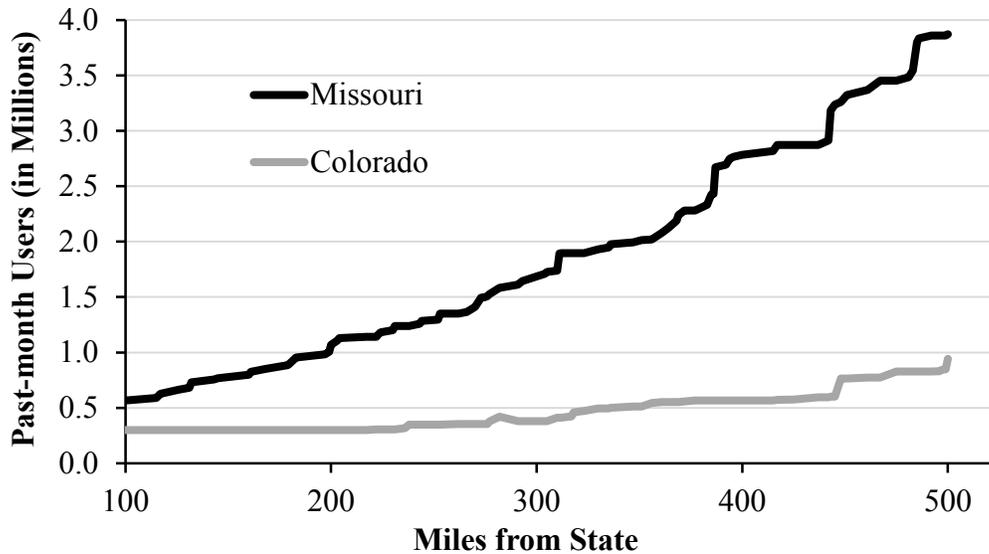
Kilmer et al. (2010a) note it is very hard to bound the magnitude of the resulting price-induced consumption increase because the anticipated price declines go beyond the support of the historical data. Further complicating matters is the fact that consumption also reacts to non-price factors, such as reduced social approbation, more consistent quality, and more convenient access. MacCoun (2010) estimates that non-price factors associated with California’s Proposition 19 might have increased consumption by 5-50% above and beyond that which would stem from price effects alone.

## Effects on Prices in Other States

The price declines and associated effects on consumption would not be limited to the state or states that legalized for two reasons: drug tourism and interstate smuggling.

As the Dutch experience suggests, if a state legalizes, it could receive an influx of drug tourists hoping to take advantage of the opportunity to legally purchase and openly use marijuana. There is no obvious way to project how common this would be, but to give some sense of the potential magnitude, Figure III shows the number of past-month marijuana users that live within a certain distance of the borders of Missouri or Colorado, two states that entertained legalization proposals in 2012 (although only Colorado's proposition made it on the ballot). As an aside, conventional sales taxes on gasoline, hotel rooms, and restaurant meals purchased by drug tourists in the state that legalized could be non-negligible compared with revenues the marijuana sales taxes generate themselves, particularly for CO-RLA which initially caps excise taxes at 15% and exempts medical sales. (One-quarter of Colorado's past-month users possess medical recommendations).

**Figure III: Past-Month Users within 500 Miles of Missouri and Colorado**



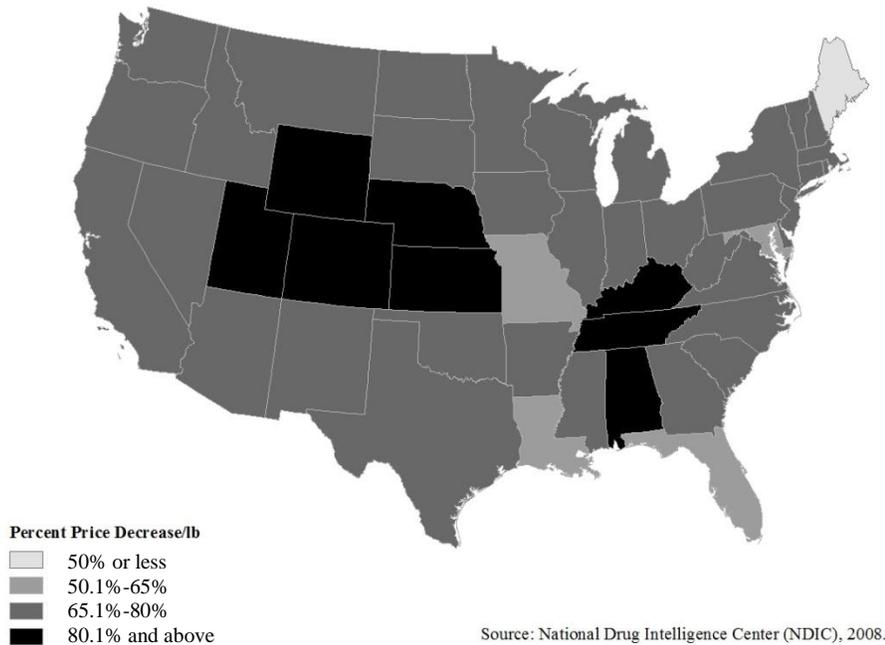
Legalization could also affect prices if marijuana traffickers choose to source marijuana from the state that legalizes, instead of from their current sources in Mexico or elsewhere. Inasmuch as marijuana traffickers are in the business for profit, one might expect them to gravitate to whatever "source zone"

offered product on the most favorable terms. As the previous section suggested, prices in a state that legalized could be quite low. Furthermore, there are obviously no international borders that must be crossed when smuggling marijuana from Colorado or Missouri to any other of the lower 48 states.

Based on seven different datasets, Caulkins and Bond (2012) estimated the wholesale price gradient when trafficking illegal marijuana within the US to be about \$400 per pound per one thousand miles. By adding this cost of illegal transport to the legal price that Kilmer et al. estimated, they found that marijuana produced legally in California and trafficked illegally across state lines could undercut current (quality-adjusted) prices in most other states.

We considered a similar scenario in which Colorado legalizes, using the cost estimates above, and confirmed this basic conclusion. Figure IV illustrates the associated wholesale price decline estimated in each state, which could be substantial across the entire continental US.

**Figure IV: Percent Price Decline by State Due to Spillover**



## Tax Collection and Evasion

Various groups have projected the potential tax revenues flowing from marijuana legalization. A typical, naïve approach multiplies the total value of the current market by the sales and/or excise tax rate. It is important to take such projections

with a very large grain of salt, as we illustrate momentarily. Many proposals allocate tax revenues to various agencies, including those managing treatment services, public health and prevention efforts, and medical research. While such stipulations could theoretically offset some of the damages caused by increased drug use, it may be that in actuality, these agencies receive less funding than would be suggested by these naïve estimates.

Washington State's Office of Financial Management estimated that revenue derived from WA I-502 excise taxes would be about \$450 million over its first full fiscal year (OFM 2012b). Underpinning this estimate is a before-tax retail price of \$12 per gram, equivalent to \$340 per ounce before tax, or \$425 with the 25% excise tax. Even excluding sales taxes, this would be more than \$150 higher than the current price per ounce of high-grade marijuana that users in Washington now report (Price of Weed 2012).

Taxes that raise prices above where the illegal market takes them should lead to concern about the possibility of tax evasion. Since marijuana already has a well-established underground market, evasion could take the form of simply continuing to buy from current sources. Alternately, licensed producers might produce additional quantities at the very low legal-cost-of-production, but divert that excess to the tax-evading gray market. This happens today in India, where poppy farmers licensed to produce for the pharmaceutical market sell excess production to the illegal market (Paoli et al. 2009).

A large enough tax might even negate the convenience of purchasing legal marijuana, and induce some users to grow their own at home legally. WA I-502 does not explicitly permit homegrown nonmedical cannabis though, so opting to grow one's own marijuana there instead of paying for it in stores would constitute illegal activity. However, medical marijuana patients and caregivers can grow up to 15 plants, and 15 plants can produce much more than one person's average annual consumption, even without considering the possibility of multiple plantings per year. Some proposals, like CO-RLA, do permit home growing, so choosing to grow at home in lieu of buying in a store amounts to legal tax avoidance.

CO-RLA provides users with another legal way to avoid paying taxes by exempting medical marijuana purchases from its excise tax. About one-quarter of Colorado's past-month users now have a medical recommendation. If obtaining medical marijuana approval is not difficult, then some additional users may register to obtain medical marijuana rather than purchase taxed non-medical marijuana.

Effective January 1, 2012 Colorado reduced the application fee for registry cards to \$35.<sup>21</sup> So someone who anticipated buying more than

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<sup>21</sup> Patients with a household income that is 185% of the Federal Poverty Level or less, qualify for fee waiver.

$\$35 \div 15\% = \$233$  worth of marijuana a year might find it more economical to obtain a medical marijuana card. Furthermore, inasmuch as it would not be difficult for one person with a card to buy on behalf of others, the breakeven consumption rate is probably better thought of as \$233 worth of marijuana consumed over the year by the individual and/or his or her close friends.

### **Taxing “Exports”**

The previous section stressed threats to potential tax revenues, but the overall message is not pure pessimism so much as caution, bordering on agnosticism. From a budgetary perspective, there are upside scenarios, including collecting income taxes from previously illegal employment.

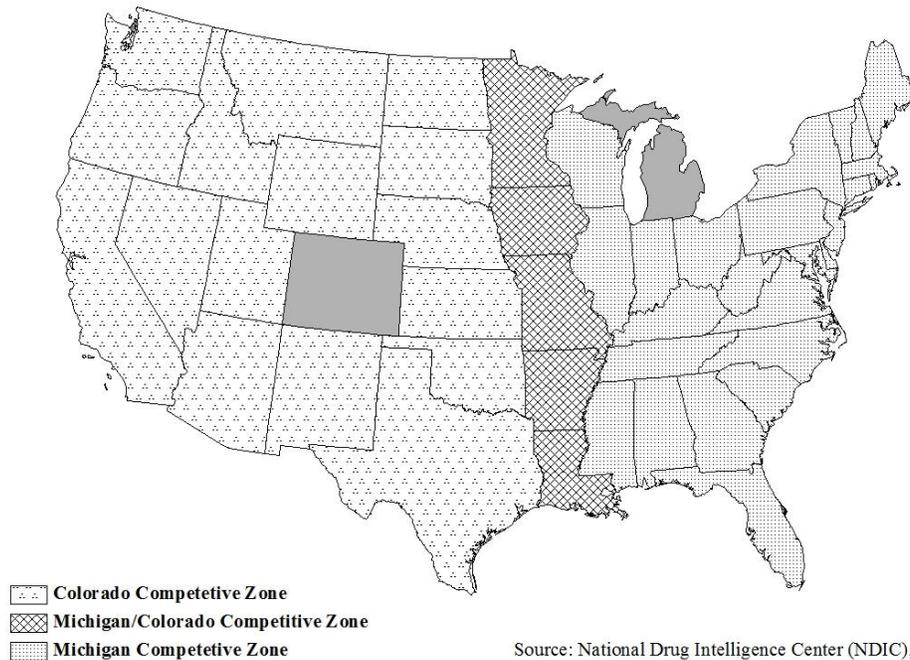
One upside scenario (from the legalizing state’s budgetary perspective) is worth elaborating because of potential effects on incentives for other states to legalize, namely the possibility of taxing sales to residents of *other* states. This is easiest to imagine with drug tourism, as discussed above. However, it may even be possible with respect to marijuana dealers from other states who source their marijuana from the state that legalized. If there were no quantity limits on legal sales, then a marijuana dealer from another state might prefer to purchase legally—even if that meant paying a modest tax—in order to avoid the risk associated with making an illegal purchase.

This scenario—should it come to pass—might be particularly galling to the neighboring states. While the state that legalized would be collecting taxes that could offset any additional health costs associated with greater marijuana use, the surrounding states might face greater consumption (because marijuana will be cheaper) without any compensating tax revenues.

The neighboring states might become more inclined to consider legalization themselves, both to capture the “lost” tax revenues from their own citizens’ consumption and also to “compete” for tax revenues from still other states. Figure V illustrates a scenario where Colorado legalizes first, but Michigan later follows, thereby competing with Colorado for any benefits of “serving” most of the market east of the Mississippi.

The desire to tax “exports” could initiate a “domino effect.” The same can be said for other nontax benefits including job creation, a reduction in criminal justice expenditures, and simply demonstrating that what had previously seemed “unthinkable” might actually be feasible.

**Figure V: Hypothetical Implications of Michigan Responding to Colorado’s Initial Legalization in Order to Compete for Exports to the Eastern U.S.**



Hence, a single state legalizing may not be a stable equilibrium, of the sort that Nevada enjoyed with respect to casino gambling for over 40 years. If the pioneering state discovers that things go rather badly, whether because of higher than expected increases in abuse or because of punitive retaliation by the federal government, that state might reverse its legalization, restoring the status quo. On the other hand, if legalization runs more or less smoothly for the first state, perhaps particularly if it is able to tax exports, then other states might follow suit.

### **Conclusion: Lessons Learned**

Perhaps the only safe conclusions with respect to marijuana legalization are that we live in interesting times, and that the future will make today’s projections appear foolish in retrospect. However, a hedging strategy produces more interesting stock portfolios than discussion sections, so we tentatively offer the following “conclusions”; the quotations around the word “conclusions” are meant

to convey that these statements are plausible and are supported by the analysis above, but they are by no means certainties.

#### State-Level Marijuana Legalization is a Real Possibility

Ten states considered seventeen legalization proposals in 2012 with three voter propositions making it onto the ballot in states where polls suggest there is support from about half the population. It is important to stress that these proposals would not merely decriminalize or allow medical use. They would legalize (with respect to state law) commercial production without quantity limits. This would be unprecedented in a modern industrialized polity.

Even if legalization does not pass this year, the issue will likely return. New proposals will be revised in light of lessons learned from 2012, in the same way that none of this year's proposals devolved regulatory authority to municipalities, one of the criticisms levied against Proposition 19 in 2010.

#### State-Level Legalization Is Not the Same as National Legalization

If a state legalized, federal prohibition would remain. State legalization of marijuana would produce very different outcomes from full national legalization.

#### State-Level Legalization Could Lead to Sharp Price Declines Nationwide

Kilmer et al. (2010a) established this finding with respect to California's Proposition 19 in 2010; parallel analysis of the prominent proposals in 2012 reaches similar conclusions. Production and distribution costs would fall sharply in the state that legalized. Over time, as the industry relocated and expanded, this would push down wholesale and retail prices in the state that legalized. Since smuggling within US borders is not particularly expensive, the price decline would eventually be transmitted throughout the lower 48 states, leading to increases in use in each state.

#### Not All Legalization Proposals are Alike

Other than the basic reality of eliminating state and local enforcement (beyond regulatory compliance) the 17 proposals considered in 2012 were a heterogeneous lot. Commentators and voters might want to read the actual text of a legalization proposal before jumping to conclusions about effects or desirability.

The most salient distinction pertained to whether the proposal would merely end state and local enforcement (*Repeal Only*) or whether it would seek to substitute a regulatory structure, either directly (*Repeal & Regulate*) or by assigning that task to some agency (*Repeal & Delegate*).

### “Repeal-Only” Legalization Would Leave the Federal Government with Few Options

State and local agencies account for most marijuana enforcement. Except in small states, the federal government could not fill in for lost state and local efforts without greatly expanding the size and scope of federal enforcement. And *Repeal Only* proposals would not create a regulatory structure that the federal government could work with, attack, or sway.

### “Repeal & Regulate/Delegate” Schemes Would Put the Federal Government in a Pickle

If the legalizing state tried to tax and tightly regulate the marijuana industry, the federal government could employ a variety of tools to disrupt or dismantle important parts of that regulatory structure.

However, while this might satisfy political demands to take action, it could exacerbate the increase in use by removing regulatory controls and preventing taxes from taking the edge off of the anticipated price decline. Furthermore, the federal response might have more effect on who receives the profits from the marijuana trade—whether they are conventional businesses or professional criminals—than it would on the size of the market or profits.

### Legalization in Just One State May not be Stable

There is great uncertainty about how state-level legalization would turn out. If it turned out well—and perhaps particularly if the state could collect taxes on “exports” to other states—then other states might follow suit.

### Concerns about Precedent Could Create Another Pickle

If legalization were not potentially “contagious,” then a practical (practical in the literal, not political sense) federal response to one state implementing a reasonably designed *Repeal & Regulate* scheme might be to take a light-handed approach by only attempting to intercept smugglers carrying exports to other states.

However, such a lackadaisical response might encourage other states to also legalize, so some federal officials might be in the odd position of promoting actions that would make legalization worse in the first state, in order to “protect” others states from wanting to emulate it.

## Implications for Public Health<sup>22</sup>

It is not possible to project with any precision the impact marijuana legalization will have on consumption (Kilmer et al. 2010a). However, it is a fact that that long-run prices will fall and that users—especially younger users—consume more when prices go down (Pacula 2010). Knowing this can motivate those interested or involved in developing programs and policies that seek to discourage drug abuse and misuse or to manage negative effects of marijuana use.

First, prevention curricula will need to be revised. It is generally accepted that prevention programs should be culturally congruent with the target population, and youth living in a state that has legalized will in a very literal sense be living in a different culture than that for which prevention programs were originally designed. Nevertheless, the increases in use are likely to be larger than what can be offset with prevention programs.

Second, there may be changes in demand for treatment. According to admissions data from the Treatment Episodes Data Set (TEDS), marijuana was the primary substance of abuse for about one-third of instances in which the primary substance was not alcohol. Those 331,000 admissions were divided roughly equally between criminal justice referrals and other sources.<sup>23</sup> Perhaps adult criminal justice referrals (assuming juveniles are still referred) would shrink enough that treatment services would be able to handle an uptick in other referrals brought on by the increase in consumption. It would be Pollyanish or even wishful thinking not to anticipate *some* ramifications for treatment systems.

Third, it would become crucial to develop improved methods for roadside testing of marijuana-impaired driving.

Fourth, there may be both greater opportunity and greater need to investigate harm-reduction mechanisms of consumption. These mechanisms are analogous to broadly supported harm-reduction strategies for alcohol (such as designated driver programs) and HIV transmission for intravenously injected drugs (Babor et al. 2010), and their highly controversial counterparts for tobacco smoking (Stratton et al. 2001). For example, vaporizers do not combust marijuana, so users do not inhale combusted smoke, a potential risk factor for various lung diseases or other illnesses. Also, marijuana can be eaten, which is presumably the least harsh manner of consumption for a user's lungs, but its effects are much stronger when taken this way. When users accidentally ingest too much, they experience an overdose that may be benign on their physical body,

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<sup>22</sup> However tenuous are our conclusions about marijuana legalization, these implications for public health agencies should be taken with at least two more grains of salt. They are offered with the intent of provoking thought, not being anything like a final word on what is to be done.

<sup>23</sup> The state-specific proportions for Colorado, Oregon, and Washington are fairly similar to the proportions for the nation as a whole.

but can be very distressing psychologically. Indeed, these negative experiences can last beyond the time the effects of the drug wear off and even uncover latent psychological problems. In this sense, harm reduction would entail instruction to users about drug administration and dosages.

Fifth, public health advocates may want to participate forcefully in fleshing out details concerning regulation. What matters is not just whether a state legalizes, but also *how* it legalizes. The devil, as they say, is in the details, and important choices concerning signage, public use, location of retail outlets, etc. will be in play as the regulatory regimes are sorted out.

Sixth, measures to help mitigate the increase in youth use may require a particularly forceful advocacy. Most proposals continue to ban use by those under the age of 21, but appear to imagine that ban will itself take care of the issue. Some outside agencies, such as But What About the Children,<sup>24</sup> have begun to draw up criteria for “grading” various legalization proposals’ performance at protecting youth from aggressive marketing by the newly legitimized marijuana industry.

Finally, any policy change of this importance should and will be evaluated. Indeed, WA I-502 earmarks funding for a cost-benefit evaluation by the Washington State Institute for Public Policy. Sketching the evaluation design is beyond the scope of this paper, but given the variation across states’ proposals and the extent of anticipated spillovers across state borders, a panel data analysis that codes each state’s legal status with simple binary variables would be inadequate, as has been the case of similar efforts to evaluate state decriminalization (Pacula et al. 2003).

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<sup>24</sup> <http://www.butwhataboutthechildren.org/>

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