

The Public-Health Case for Legalizing Marijuana

Mark A. R. Kleiman

AMERICANS HAVE BEEN CHANGING THEIR MINDS about marijuana. In 1969, only 12% supported legalizing cannabis use; today, that figure is well over 60%. Support has trended steeply upward since 2000, reaching a majority for the first time in 2013, one year after Colorado and Washington voters approved ballot initiatives legalizing the sale of cannabis for use by any adult (as opposed to sale only with a medical recommendation). Support isn't growing only among Democrats and independents: In 2017, for the first time, a slim majority of Republicans supported legalizing marijuana.

Despite these shifts, cannabis continues to be illegal at the federal level, and the arguments about that have not changed much in recent years. The case typically offered in favor of some kind of national legalization is that marijuana is relatively low-risk and, for many users, a source of harmless pleasure. Proponents of legalization further argue that illicit drug markets pose greater risks than do their legal, regulated counterparts, and that law-enforcement actions meant to curtail the production, sale, possession, or use of marijuana have racially disparate effects even when they're not subjectively racially motivated.

Meanwhile, a common case against nationwide legalization is that it could greatly increase the prevalence of Cannabis Use Disorder and the use of cannabis by minors, especially if marijuana were to be commercialized on terms similar to alcohol. ("Regulate cannabis like wine" is among the slogans of the legalization movement, and most of the state-level legalization measures so far are variations on the alcoholic-beverage

MARK A. R. KLEIMAN is a Professor of Public Policy at the NYU Marron Institute of Urban Management, where he leads the Crime and Justice program.

control system.) Others argue that we simply don't know enough about marijuana's potential risks to justify legalizing it nationwide.

All these arguments, however, miss two crucial points. First, as a practical matter, cannabis prohibition is no longer enforceable. The black market is too large to successfully repress. The choice we now face is not whether to make cannabis available, but whether its production and use should be legal and overt or illegal and at least somewhat covert. Second, because cannabis is compact and therefore easy to smuggle, a state-by-state solution is unworkable in the long run. States with tighter restrictions or higher taxes on marijuana will be flooded with products from states with looser restrictions and lower taxes. The serious question is not whether to legalize cannabis, but how.

Of course, if cannabis were in fact "natural, harmless, and non-addictive," as some proponents of legalization describe it, we would not need to worry much about protecting people from it. But it is increasingly clear that this is not the case, and a national strategy for regulation seems more likely to protect public health than a state-by-state process. While the fact that cannabis can indeed be harmful might seem to bolster the case for continued prohibition, the prospects for reversing current trends — of putting the genie back in the bottle by effectively re-prohibiting cannabis — are remote, for operational reasons as well as political ones.

John Kenneth Galbraith once said that politics consists in choosing between the disastrous and the unpalatable. The case of cannabis, an illicit market with sales of almost \$50 billion per year, and half a million annual arrests, is fairly disastrous and unlikely to get better. The unpalatable solution is clear: Congress should proceed at once to legalize the sale of cannabis — at least in states that choose to make it legal under state law — for recreational as well as "medical" use.

THE MARIJUANA DEBATE

The plant species from which marijuana and hemp are derived is native to Central Asia, but has been in the New World about as long as Europeans have. The Spanish brought it to Central and South America in the 1500s, and it was being grown in Virginia within three years of the founding of the colony. Its psychoactivity was known in the Middle East hundreds of years ago; the "hashish eater" is one of the stock characters in the *Arabian Nights*. But its primary New World uses were industrial,

as a source of food, fuel, and fiber, especially rope and sailcloth. In that application, both the plant and the fiber were known as “hemp”: Shakespeare’s Puck refers to the poorly clad peasants putting on a play as “hempen homespuns,” and a “hempen necktie” is a noose. But for reasons having to do with climate or genetics or both, Mexican hemp had a much higher tetrahydrocannabinol (THC, the principal psychoactive ingredient in cannabis) content than the hemp grown further north. Mexicans learned to get high by smoking it, and the practice migrated north along with Mexican workers.

As a result, cannabis used as a psychoactive came to be called by its name in Mexican Spanish slang: *marijuana*. Its use became associated with Mexican immigrants and with African-Americans, especially around the jazz culture, a fact eagerly exploited by politicians looking for something to scare voters with. California banned the drug in 1913, and various states followed suit over the next two decades. Then Harry Anslinger, who briefly worked in the Bureau of Prohibition and was appointed head of the newly created Federal Bureau of Narcotics in 1930, spotted an opportunity to keep his agents busy (and to act out his horror of “drugs” and his racial and cultural prejudices) and pushed for what became the Marihuana Tax Act of 1937, effectively prohibiting cannabis under the guise of a then-prohibitive \$100-per-ounce tax. He later advocated for the inclusion of cannabis in the international drug-control treaties. The drug wasn’t formally prohibited federally until the Boggs Act of 1951; the Controlled Substances Act of 1970—often thought of as the beginning of the Nixon administration’s “war on drugs”—actually substantially reduced the penalties for cannabis under the Boggs Act.

Cannabis use remained a fairly marginal phenomenon until the early-to-mid 1960s, when, for reasons not entirely clear, it exploded on college campuses. By the early 1970s, it had a firm foothold in high schools. The median age at first use fell from 19 (suggesting an association with leaving high school for college or work) to 15 or 16. Marijuana, as it was then called by almost everyone, became a central symptom of the culture wars of the period, and as the harsh penalties even for simple possession imposed by many states hit more and more people—and people of higher status than previously—demand for “decriminalization” grew. In the context of drug policy, that word doesn’t mean quite what it says: It doesn’t mean removing a drug from

the criminal code (that's "legalization") but rather exempting mere possession for personal use from the risk of arrest and punishing it with fines that don't create criminal records. Oddly, there's no conventional term for the abolition of all user penalties while continuing to forbid production and sale.

The movement for decriminalization gained steam through most of the 1970s. The Carter White House, in its first two years, supported it, with Carter himself saying that "[p]enalties against possession of a drug should not be more damaging to an individual than the use of the drug itself; and where they are, they should be changed. Nowhere is this more clear than in the laws against possession of marijuana in private for personal use." In the minds of cannabis activists—led by the National Organization for the Reform of Marijuana Laws (NORML)—"decrim" was understood as a step on the way to full legalization. Academics such as John Kaplan at Stanford Law School and Norman Zinberg and Lester Grinspoon of Harvard Medical School wrote influential books arguing for liberalizing the laws. Public opinion was increasingly favorable, with support for legalization of cannabis use reaching 30% in 1978. (Logically, there should be some people who support legalization while still opposing commercial production and sale, but polls asking both questions get almost identical answers.) About a dozen states formally decriminalized, and actual enforcement against marijuana users slackened considerably even where possession remained technically criminal.

But the tide swiftly turned. In 1979, the University of Michigan's annual survey of high-school seniors (called "Monitoring the Future") found that more than one in 10 high-school seniors self-reported daily or near-daily cannabis use. The "parents' movement"—a loose network of community-based organizations, encouraged by officials of the Drug Enforcement Administration and the National Institute on Drug Abuse (who justified their support for the parents' groups as part of their congressionally mandated mission to prevent drug abuse)—eagerly publicized that finding. When Peter Bourne, President Carter's pro-legalization drug-policy adviser, was forced to resign over a minor scandal, he was replaced by the much more hawkish Lee Dogoloff. That was pretty much the end for the project of liberalization; Nancy Reagan's "Just Say No" crusade, the massive advertising campaign mounted chiefly by the Partnership for a Drug-Free America, and then the crack epidemic just put the final nails in its coffin.

After more than a decade of hardening anti-drug attitudes (which didn't distinguish very sharply between cannabis and cocaine), the worm turned again around 1992, which marked a trough in both self-reported cannabis use and support for less stringent laws.

The "medical marijuana" movement both rode that wave and helped to drive it. While there's no serious doubt that some of the hundreds of compounds in cannabis are therapeutically helpful, and no good reason to believe that purified material outperforms the full range of chemicals in the plant, federal law—and the barriers to getting cannabis for medical research—has helped keep scientific knowledge of cannabis therapeutics in a state of some confusion. But that didn't stop medical-marijuana proponents from making strong claims. Cleverly, they focused on "compassionate access" for people suffering from cancer and HIV/AIDS, for whom the anti-nausea effects of cannabis could be life-changing or even life-saving. (The subsequent introduction of a more effective anti-emetic reduced the importance of that benefit but did not eliminate it.) As one legalization strategist said to me around 1995 (I'm quoting from memory, so it's likely I haven't reproduced his words verbatim), "The only thing that scares Americans more than 'drugs' is cancer. We're going to make them choose between cancer and pot, and they're going to vote for pot."

Insanely, the "drug warriors" chose to fight the battle on ground chosen by the opposition, instead of calling for a vigorous program of research about whether marijuana has medical value, which could have kicked the can down the road for a decade. Given the true-believer nature of the campaign for a "drug-free America," even those who understood the folly of flatly opposing what looked like a chance to help cancer patients didn't dare say so, for fear of being thought "soft" by others committed to the anti-drug cause.

The first great victory for medical marijuana was California's Proposition 215, passed in 1996. On its face, all that law did was allow patients with medical recommendations to possess cannabis or grow their own, or to have their "primary caregiver" do so on their behalf. Proponents of the proposition rejected as base slander the opposition's claim that medical marijuana was merely a stalking-horse for full legalization, but Dennis Peron, the chief organizer for the proposition, celebrated its victory on election night by lighting up a huge spliff for the television cameras, taking a deep drag, and announcing that "all marijuana use is medical."

The primary-caregiver exemption was exploited by creating what were effectively commercial dealing operations, with suppliers claiming to be primary caregivers for dozens or even hundreds of “patients.” Eventually, that was formalized legislatively by the creation of “dispensaries”—in effect, retail stores—which theoretically operated as “collectives” but actually, in many cases, were for-profit businesses. A minority of physicians more or less openly sold “recommendations” without paying much attention to whatever complaint the patient was supposed to have; one survey of dispensary customers found that fewer than 3% had an AIDS or cancer diagnosis.

You might have thought that California’s voters would have been outraged once they noticed they’d been hoodwinked into creating full legalization through the back door. But in fact, the voters seem to have looked around, noticed that they’d more or less legalized cannabis use and sale and that the sky had not fallen as a result, and changed their views about non-medical cannabis use. And that seems to have happened not only in California, but elsewhere. The precise causal links are hard to trace, since attitudes toward cannabis were already softening by 1996, but it certainly appears that the largely fraudulent medical-marijuana campaign worked like a charm. Attitudes toward cannabis became more favorable in every demographic group, in every age cohort, at every point on the ideological spectrum, and in every region. Support for full legalization went from being a fringe position in the mid-1990s to being the majority position today.

But law-enforcement agencies and prosecutors’ offices continued to be strongly anti-pot, partly for ideological reasons and partly for operational and bureaucratic ones. (Cannabis prohibition facilitates pretextual searches and arrests, and cannabis enforcement yields funds in the form of forfeitures of dealers’ assets and federal funding for drug task forces.) Legislators, even those whose constituents leaned in favor of legalization, were largely unwilling to risk the political consequences of hostility from police unions and elected sheriffs and prosecutors. As a result, Proposition 215 was only the first of a long series of voter initiatives by which the legalization process advanced. To date, the normal legislative process has not produced full legalization in any state, though that is likely to change this year.

As appalling as the legislative process can be, at least committee hearings bring a certain degree of expertise to bear on the question at

hand and provide some incentive to deal with objections by refining the proposal being offered. The actual text of a bill is usually written by professional legislative staff members, experienced in creating language that fits in with existing laws and gives reasonably clear guidance to the executive branch and the courts. By contrast, the text of an initiative is usually drawn up by activists with the advice of pollsters. Given the need to persuade voters, most of whom are unlikely to give a ballot proposition more than a few minutes' thought, simplicity is at a premium and nuance at a discount. And since the text can't be changed once the papers are drawn up and signature-gathering started, the initiative process has no place for improving a proposed law in the face of criticism.

The American public is familiar with only one legal intoxicant: alcohol. Most voters are satisfied with the current alcohol-control regime, consisting in most places of a for-profit industry with licensing for producers and sellers, age restrictions on buyers, and modest taxation. Arguably, that satisfaction is misplaced: Alcohol is responsible for about 88,000 early deaths per year (from disease, suicide, accident, and homicide) and a large share of all criminal violence, especially domestic violence. But the rhetorical advantages of saying "Let's regulate cannabis like alcohol" are overwhelming: It quickly communicates the message that legalization leads to something familiar rather than something strange. Partly as a result, and despite the fact that the range of alternatives to cannabis prohibition is wide (with alcohol-style controls being about the most extreme form of liberalization imaginable), existing state-level cannabis-legalization regimes all more or less follow the alcohol model. With that now the established practice, there seems to be little chance that newly legalizing states—even those where the new law goes through the normal legislative process—will come up with anything very different, especially with interstate smuggling putting a practical limit on how tough a state-level regime can be without getting swamped with imports, and with growers and retailers likely to exert substantial influence over the development of state-level regulatory systems.

To those who are convinced that the alcohol model is much too loose and insufficiently oriented toward protecting public health, the best remaining hope for a tighter system lies in Congress. It's possible (though not at all certain) that, if a national legalization bill were to move sometime in the near future, the balance of forces on Capitol Hill would lead to substantially more restrictive policies, which the

pro-marijuana forces would be willing to accept as the price of ending the current, rather bizarre system in which state officials hand out licenses to commit federal felonies.

Consider, for example, a bill that would legalize cannabis at the federal level in any state that wanted to permit it under state law, but only if all cannabis outlets were publicly run, like the “state stores” that still have monopolies on alcohol retailing in some states. That would represent a substantial step back from the precipice of a virtually free market for a far-from-harmless drug.

THE ECONOMICS OF MARIJUANA

As things stand now, most states allow the use, with a medical recommendation, of some cannabis products forbidden by federal law, though that permission is sometimes restricted to the non-intoxicating chemical cannabidiol. Nine states have passed ballot initiatives to legalize production and sale for non-medical use, and that list continues to grow. New York, New Jersey, Illinois, and Vermont are among the likely next movers. (Vermont already allows production for personal use.)

The federal government, meanwhile, combines formal opposition with practical acquiescence. There’s been no serious move yet toward legalization at the national level, but a number of senators and representatives have proposed a “states’ rights” approach, formalizing federal toleration of state-level legalization. While this strategy might be superficially attractive, and could perhaps draw otherwise-unachievable conservative support for legalization, it is pretty much a non-starter in policy terms. Cannabis is simply too easy to smuggle across state lines. If cannabis is cheap anywhere, it will be available and fairly cheap everywhere.

The same would be true if states were to adopt starkly different tax or regulatory policies, as these would likely generate large price differences in their respective legal cannabis markets. In such cases, cannabis would just be smuggled in, either by individuals driving across state lines to make their purchases (as Pennsylvania and Massachusetts residents have long done by driving to New Jersey and New Hampshire to buy cheaper alcohol) or by commercial smugglers. And the high value-to-bulk ratio of cannabis means that the interstate-smuggling problem would be much worse for pot than it is for alcohol.

In the current landscape, the price of cannabis varies between \$150 and \$450 an ounce, depending on the jurisdiction. It is very cheap in

Oregon and relatively expensive on the East Coast. Even under full legalization, different state policies would likely generate substantial price differentials.

Even a very small difference would be more than enough to support a large illicit market, as the state and local taxation of tobacco has proven. New York State has fairly heavy tobacco taxes, and New York City adds a substantial local tax. Virginia, by contrast, taxes tobacco much more lightly. The result is that a pack of cigarettes that retails for under \$5 in Virginia sells for \$13 in New York City—a difference of \$8 per pack. Due to this price gap in the legal tobacco market, more than half of all cigarettes sold in New York City are contraband: mostly genuine brand-name products purchased in bulk in Virginia and driven 250 miles to New York. There, they are resold for about \$9 per pack by many of the same retailers who sell full-priced, legal cigarettes—mostly convenience stores in low-income neighborhoods.

As it happens, a pack of cigarettes weighs just about one ounce. If a tax differential of \$8 on a pack of cigarettes is unenforceable, a differential of \$50 on an ounce of cannabis would be pretty much hopeless, resulting in a race to the bottom. The same would be true for product regulation: If Massachusetts allows the sale of the solid concentrates used for the dangerous practice of “dabbing” (flash-vaporizing a hefty chunk of concentrate with a blowtorch in order to inhale a huge dose all at once), then for New York to try to forbid it would be a virtual invitation to smuggle. The states with the lowest taxes and the loosest regulations would wind up effectively dictating policy to the rest of the country. That’s precisely the reason the Constitution gives the Congress jurisdiction over interstate commerce.

If Congress continues to play a waiting game until half or more of the states have authorized cannabis businesses, these commercial entities will be highly influential in determining national legislation. This could pose a significant problem, as the commercial interest in cannabis is diametrically opposed to the public-health interest, which in this case would involve urging that the drug be used only in moderation. The cannabis industry, like the alcohol industry, depends on people using more of the product than is good for them.

Over the past quarter-century, the population of “current” (past-month) users has more than doubled (to 22 million) and the fraction of those users who report daily or near-daily use has more than tripled (to

about 35%). Those daily or near-daily users account for about 80% of the total cannabis consumed. Between a third and a half of them report the symptoms of Cannabis Use Disorder: They're using more, or more frequently, than they intend to; they've tried to cut back or quit and failed; cannabis use is interfering with their other interests and responsibilities; and it's causing conflict with people they care about.

And while today's cannabis is several times as potent as that of a generation ago, there's little if any evidence that consumers have adjusted by using less of it on any given occasion. Frequent users report using about 1.5 grams (equivalent to three or four joints) per day of use. With increasing prevalence, increasing frequency, and increasing potency, the total amount of THC consumed has likely increased about sixfold since the early 1970s.

This increase in the amount of intoxicant consumed is at least partly attributable to falling prices; adjusted for inflation and potency, the price of cannabis products is now about 10% of its 1992 level. That's partly because the ubiquity of cell phones and the associated shift from street-corner dealing to home delivery has dramatically reduced the costs of selling all illicit drugs at retail. That cost consists primarily of relatively high wages to compensate street dealers for enforcement risk and the risk of robbery, and the new style of dealing has reduced retail dealers' vulnerability to cops and robbers alike. The delivery market is also much less risky and more convenient for consumers. The result is that controlling drug markets through law enforcement—which has always been a tough proposition—has gotten much, much harder.

PUBLIC HEALTH AND THE JUSTICE SYSTEM

While there is not much data separating marijuana offenses from other drug-law violations, it is clear that cannabis isn't a major factor in incarceration. But it is a major factor in arrests, with more than half a million people each year arrested for simple possession. Cannabis users who are young and black or Latino are far more likely to be arrested than their white peers, primarily because they are more likely to live in high-crime areas that (properly) attract more police attention, but partly because they are frequent targets of the "stop-question-frisk" tactics that police departments use primarily to deter gun-carrying, but which also result in a large number of arrests for simple cannabis possession.

Cannabis policy is therefore caught in a vise. Despite the sharp drop in price per hour of intoxication, the industry has expanded to the point that it is by far the largest illicit market in the nation, pulling in roughly \$50 billion in sales each year. The enforcement effort required to keep an illicit market under control is roughly proportional to the size of the market in dollar terms; a \$50 billion market can shrug off a level of law enforcement that would have made an impact on the smaller market of a generation ago.

While the rise in the prevalence of Cannabis Use Disorder might suggest the need for tougher enforcement, the sheer size of the market would make any effective toughening a very expensive proposition in terms of the number of arrests and prosecutions required. Combine that fact with the competing resource demands of enforcement against the harder drugs (especially opioids) and against violent crime, plus the decreasing political tolerance for the intrusiveness of mass arrests and the fiscal and human costs of mass incarceration, and especially for racial disproportion in criminal-justice contacts, and a serious crackdown on cannabis dealing seems beyond the realm of the possible.

Just as the problems with marijuana are becoming clearer, the decades-long campaign to scare potential users about the risks of cannabis—until recently, reasonably successful and effective—has been decisively defeated. Perceived risk among adolescents has been drifting down even as the potency of the product has been going up. The only good news is that, despite that change in attitude, actual use among adolescents hasn't been increasing; the big rise has been in cannabis use by people above the age of 25. Since early initiation of use is a significant risk factor for having drug problems later, preventing a rise in adolescent use remains an important policy objective. That suggests an important design criterion for the post-legalization cannabis-control regime.

LEGALIZATION AND PUBLIC HEALTH

So where do we go from here? What would a public-health-friendly legalization program look like? The goals of such a policy would be the elimination or near-elimination of the illicit market and its replacement with a licit market delivering product of certified purity and known chemical composition, while minimizing the growth in heavy or hazardous use and use by minors. Its means would include taxation or minimum unit pricing (to prevent the otherwise inevitable collapse of

cannabis prices); product regulation; and limits on marketing to prevent the cannabis industry from promoting the misuse of its product the way alcohol sellers encourage heavy drinking.

All of this will have to be done in the face of fierce opposition from the for-profit cannabis industry, if there is one. The interests of that industry would point in nearly the opposite direction of the public interest in protecting public health. From the viewpoint of a cannabis company, people struggling with Cannabis Use Disorder don't present a problem; they are a target demographic. And use by minors—a nightmare for parents and teachers—is the dream of a cannabis marketer, because the earlier someone starts the more likely that person is to become a heavy user.

This all suggests that commercial interests might usefully be kept out of cannabis distribution, or at least out of the retailing process. Cannabis could be sold by nonprofits or user cooperatives, or cannabis retailing could be a state monopoly, as liquor distribution used to be in many states. But a “state store” system would be deeply problematic so long as cannabis remains banned at the federal level; states can't legitimately tell their employees to commit federal felonies in the line of duty.

Price is probably the single most important factor to control. Cannabis, even as an illegal drug, is a remarkably cost-effective intoxicant, far cheaper than alcohol. For example, in New York City, where cannabis is still illegal, a gram of fairly high-potency material (say, 15% THC by weight) goes for about \$10. A user can therefore obtain 150 milligrams of THC for \$10, paying about 7 cents per milligram. Getting stoned generally requires around 10 milligrams of THC to reach the user's bloodstream, but the smoking process isn't very efficient; about half the THC in the plant gets burned up in the smoking process or is exhaled before it has been absorbed by the lungs. So a user would need about 20 milligrams of THC in plant material to get stoned, or a little less than \$1.50 worth. For a user without an established tolerance, intoxication typically lasts about three hours. That works out to about 50 cents per stoned hour.

By contrast, a can of mass-market beer in a supermarket costs about a dollar (more, of course, if you want fancy beer, and much more in a bar). It contains about one “standard drink” of alcohol (defined as a little more than half an ounce of pure ethanol). Roughly four of those in one hour will get a typical-sized man up to the .08% blood-alcohol

concentration that counts as legally drunk; an average-sized woman will get there with about three drinks. Metabolism will convert about one drink per hour to carbon dioxide and water. So it costs a typical man drinking beer about \$4 to get drunk—typically for a couple of hours—and staying drunk costs an additional \$1 per hour. That’s at least double the price per hour stoned offered by the illicit cannabis market.

It’s hard to see any social purpose that would be served by making cannabis intoxication cheaper still. Someone who uses cannabis once a week—putting that person well into the upper half of the distribution of cannabis habits—winds up spending about \$10 per month on cannabis, and therefore would have relatively little to gain from a price decrease. The only cannabis users who suffer economically from the money they spend on cannabis are the daily or near-daily smokers, most of whom would probably be better off if they smoked less.

Unfortunately, the natural tendency of legalization will be to greatly decrease cannabis prices, simply because most of the current price reflects the additional costs of illicit activity: the cost of doing things surreptitiously and the additional wages and entrepreneurial returns demanded by people whose jobs carry risks of arrest, incarceration, and illicit-market violence. In the long run, a joint—a little bit of dried plant material in a wrapping, similar to a teabag—is likely to cost roughly what a teabag costs, about 10 cents plus tax. Even after fairly hefty taxes, a retail gram of high-potency cannabis in Washington State now averages at about \$6, and equally potent but less fancy varieties are available for substantially lower prices. RAND Corporation drug-policy analyst Steven Davenport estimates that retail prices in Washington have been falling at about 2% per month since legalization, and there’s no evidence yet that the pace of decline is slowing. Legal prices in Oregon fell from \$10 to \$5 per gram within three years. Distributors in Washington State are now paying growers as little as \$1 per gram. Even after taxes and a hefty retail mark-up, that should eventually lead to consumer prices around \$2 per gram, or something less than 15 cents per stoned hour. (“Bargain bud”—high-potency but sun-grown and coarse-trimmed—is already available at that price in some stores in Washington.)

Taxation to prevent a continued price collapse poses some tricky policy-design problems. *Ad valorem* taxes—that is, taxes collected as a proportion of the retail price—won’t do much to prevent the price collapse, since the taxes will go down along with the market prices; 35% of

peanuts is peanuts. Taxation by the ounce, on the other hand, would encourage more potent products. The potency of cannabis, as measured by its THC content, is already going up, both because the cannabis flower being sold for smoking is getting continually stronger and because the market is shifting from flowers for smoking to concentrates for vaping.

Since what consumers are really buying is intoxication, the right basis for taxation is the amount of intoxicant. The optimum, once the market has settled down, might be something like \$50 per gram of THC, or about \$1 per intoxicating dose. Taxing according to THC content might also slow the rise in potency; indeed, there is an argument for putting even stiffer taxes on very-high-THC, very-low-CBD product to try to nudge consumers into using safer varieties. An alternative or companion policy to taxation would be minimum unit pricing, of the sort now applied to alcohol in Scotland, which prevents sellers from offering bargain-basement cannabis by setting a lower bound on prices — again, defined by THC content.

Measuring the THC content in herbal cannabis — quantitative analysis of a non-homogeneous solid — requires some sophisticated chemistry, and preventing producers and testing labs from gaming the system (as they now do in some of the legal-cannabis states) requires some fancy auditing and sampling, but all those problems are soluble to the (not very fine) level of precision required. The first step toward accurate testing would be to get rid of the system under which testing labs are chosen and paid by producers; that system creates strong incentives to cheat, since a lab that gets a reputation for coming in with lower potency measurements than its competitors is likely to lose business.

Accurate testing is also one way to limit the dangers of legalization, by making it easier for users to manage dosage. More generally, the law should regulate the information to which consumers have access and the conditions under which they make decisions. Forbidding aggressive promotion would be another good step. Ideally, marketing efforts ought to be restricted to the provision of basic facts about the chemical composition of cannabis products and their prices, in much the same way the promotion of new securities is limited to statements of fact. (Such limitation of marketing effort would, however, be difficult in the face of the Supreme Court's wildly permissive "commercial free speech" precedents.) Retailers could also be required to provide appropriate health warnings and harm-reduction advice at the point of sale and online.

Retail sales clerks—so-called “bud-tenders,” now paid the minimum wage plus a sales commission, and thus given strong incentives to encourage overconsumption—could also be licensed, required to have extensive training in pharmacology and in preventing and recognizing Cannabis Use Disorder, and bound to a fiduciary duty to give advice in the interests of the consumer rather than with the goal of maximizing sales. These clerks are involved in every transaction and seem to have considerable influence on consumers, who often treat them as experts. In one survey, 94% of current bud-tenders reported having given advice about which cannabis products were most helpful for various ailments, even though just 20% reported having any medical or scientific training. We don’t generally allow untrained minimum-wage workers to give medical advice. Moreover, financial incentives aside, the job tends to attract people who are themselves heavy users, with a high THC tolerance. Advice they give even in perfectly good faith, based on their own experience and tastes, may be thoroughly inappropriate to the naïve users who are most likely to defer to what they see as expert opinion.

Consumers could also be required, before being allowed to purchase cannabis, to pass a simple test showing they’re aware of the risks and of basic precautions. More radically, they could be required to establish for themselves (and the stores could be required to enforce) a weekly or monthly purchase quota, as a nudge toward temperance. Schools, mass media, and social media could also serve as venues for a new kind of prevention education, designed not to scare people away from cannabis consumption but to help them develop and maintain moderation. There are surely other policy measures that could help balance the importance of providing convenient access for moderate consumers with the recognition that cannabis should be used with caution. But very little of this is politically or operationally feasible under state-by-state legalization.

LOOKING AHEAD

It is precisely because cannabis isn’t harmless—because Cannabis Use Disorder and use by minors are real problems—that we need national legalization now, as a measure to protect public health. The futile, last-ditch resistance being mounted by the champions of prohibition will have substantial public-health costs if its result is a continued process of state-by-state quasi-legalization under inadequate controls and with

regulatory mechanisms ripe for industry capture. National legalization, sooner rather than later, offers the best hope for creating a strategy to minimize the likely disadvantages of legal availability.

Legalization will inevitably make cannabis cheaper and more conveniently available, presenting a benefit to casual users and a risk for heavy users. No set of taxes and regulations can eliminate those risks, but if the will and the wit are there, those risks can be contained in ways they couldn't be under continued prohibition or unrestricted commercialization. The window of opportunity for such policies will not remain open for many more years; the larger the state-legal cannabis markets become, the greater the political power of cannabis vendors. It's time for Congress to bite the bullet and try to craft a cannabis policy that eliminates the illicit market without letting problem use explode.