The Budgetary Implications of Marijuana Legalization in Massachusetts

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Executive Summary

- Government prohibition of marijuana is the subject of ongoing debate.
- One issue in this debate is the effect of marijuana prohibition on government budgets. Prohibition entails direct enforcement costs, and prohibition prevents taxation of marijuana production and sale.
- This report examines the budgetary implications of legalizing marijuana in Massachusetts.
- The report estimates that legalization would save Massachusetts $120.6 million per year in government expenditure on criminal justice enforcement of prohibition.
- The report also estimates that legalization, if tolerated by federal authorities, would yield tax revenue of at least $16.9 million annually.
- Whether marijuana legalization is a desirable policy depends on many factors other than the budgetary impacts discussed here. But these impacts should be included in a rational debate about marijuana policy.

I. Introduction

Government prohibition of marijuana is the subject of ongoing debate. Advocates of this policy believe prohibition reduces marijuana trafficking and use, thereby discouraging crime, improving productivity and increasing health. Critics of this policy believe prohibition has only modest effects on trafficking and use while contributing to many problems often attributed to marijuana itself.

One issue in this debate is the effect of marijuana prohibition on government budgets. Prohibition entails direct enforcement costs, and prohibition prevents taxation of marijuana production and sale. If marijuana were legal, enforcement costs would be zero and governments could levy taxes on the production and sale of marijuana. Thus, government expenditure would decline and tax revenue would increase. A key question is the magnitude of these budgetary impacts.

This report estimates the expenditure savings and revenue gains that would result from marijuana legalization in Massachusetts. The report is not an overall evaluation of marijuana prohibition; the magnitude of any budgetary impacts does not by itself determine the wisdom of prohibition. But the costs required to enforce prohibition, and the transfers that occur because income generated in the marijuana sector is not taxed, are relevant to rational discussion of this policy.

The policy change analyzed here is more substantial than marijuana decriminalization, under which governments repeal criminal penalties against possession but retain them against trafficking. The budgetary implications of legalization exceed those of decriminalization for three reasons. First, legalization eliminates arrests for trafficking in addition to eliminating arrests for possession. Second, legalization saves prosecutorial, judicial, and incarceration expenses; these are minimal in the case of decriminalization. Third, legalization allows taxation of the marijuana trade, assuming federal policy accommodates this goal.

This report concludes that legalization of marijuana in Massachusetts would produce an annual savings in state and local expenditure of about $120.6 million while generating tax revenue of at least $16.9 million. These estimates necessarily rely on assumptions in cases where appropriate data are not available. But in most instances these assumptions bias the estimated effects downward, so the actual costs savings and revenue gains are plausibly higher than suggested here.

Although this report estimates both the cost savings and the revenue gains from legalization, these components of legalization's budgetary impact need to be interpreted differently. It is possible for a given state to reduce or eliminate enforcement of its own marijuana laws without permission from the federal government. It unlikely, however, that an individual state could tax marijuana unless the federal government also legalized marijuana, since persons producing and selling marijuana would be hesitant to conduct such activity above ground if marijuana were still prohibited under federal law. Thus, the revenue gains are not solely under control of state governments but are nevertheless interesting to consider.

The remainder of the report is organized as follows. Section II addresses the expenditure savings that would occur in Massachusetts as the result of marijuana legalization. Section III analyses the tax revenues that Massachusetts would collect if it legalized marijuana and taxed marijuana similarly to other goods. Section IV concludes.

II. The Savings in Government Expenditure from Marijuana Legalization

The savings in government expenditure that would result from marijuana legalization consists of three main components: a reduction in police resources from elimination of marijuana arrests; a reduction in prosecutorial and judicial resources from elimination of marijuana prosecutions; and a reduction in correctional resources from elimination of marijuana incarcerations. There are other possible savings in government expenditure from legalization, but these are either minor or difficult to estimate with existing data.[1] The omission of these other items biases the estimated savings downward.

To estimate the savings in criminal justice resources, this report uses the following procedure. It estimates the percentage of Massachusetts arrests that occurs for marijuana violations and multiplies this by the budget for police. It estimates the percentage of Massachusetts prosecutions that occurs for marijuana violations and multiplies this by the budget for prosecutors and judges. It estimates the percentage of Massachusetts incarcerations that occurs for marijuana violations and multiplies this by the budget for prisons. It then sums these components to estimate the overall cost savings. Under plausible assumptions, this procedure yields a reasonable estimate of the cost savings from marijuana legalization.[2] This section of the report considers each of these components in turn.

The Police Budget due to Marijuana Prohibition

The first main cost of marijuana prohibition is the portion of the police budget devoted to marijuana arrests. Table 1 calculates the fraction of arrests in Massachusetts due to marijuana prohibition. Line 1 gives the total number of arrests for the year 2000.[3] Line 2 gives the number of arrests for marijuana sale/manufacturing violations. Line 3 gives the number of arrests for marijuana possession violations. Lines 4 and 5 give the ratio of Line 2 to Line 1 and Line 3 to Line 1; these are the percentages of arrests for sale/manufacture and possession of marijuana, respectively.

The information in Lines 4 and 5 is what is required in the subsequent calculations, with one modification. Some arrests for marijuana violations, especially those for possession, occur because the arrestee is under suspicion for a non-drug crime but possesses drugs that are discovered by police during a routine search. This means an arrest for marijuana possession is recorded, along with an arrest on the other charge. If marijuana possession is not a criminal offense, the suspects in such cases will still be arrested on the charge that led to the search, and

[1] For example, under current rules regarding parole and probation, a positive urine test for marijuana can send a parolee or probationer to prison, regardless of the original offense. These rules would likely be relaxed under legalization, implying additional reductions in government expenditure.

[2] The key assumption is that the technology is constant-returns to scale, so that average costs equal marginal costs. This equivalence is not necessarily accurate in the short-run or for very small communities but is likely a good approximation overall.

[3] This report generally relies on data for 2000 since that is the last year for which relatively complete information is available. After estimating expenditure and revenue for 2000, the report adjusts these figures for inflation between 2000 and 2002.

police resources will be used to approximately the same extent as when marijuana possession is criminal.[4]

In determining which arrests represent a cost of marijuana prohibition, therefore, it is appropriate to count only those that are "stand-alone," meaning those in which a marijuana violation rather than some other charge is the reason for the arrest. This issue arises mainly for possession rather than trafficking. There are few hard data on the fraction of "stand-alone" possession arrests, but the information in Miron (2002) and Reuter, Hirschfield and Davies (2001) suggests it is between 33% and 85%. Since the 33% figure is the one for Massachusetts, this report assumes that one-third of possession arrests are due solely to marijuana possession rather than being incidental to some other crime. Thus, the resources utilized in making these arrests would be available for other purposes if marijuana possession were legal. Line 6 of Table 1 therefore indicates that 1.87% (=5.60%/3) is the fraction of possession arrests attributable to marijuana prohibition.

The first portion of Table 2 uses this information to calculate the Police Budget due to marijuana prohibition.[5] Line 1 gives the total expenditure in 2000 on police. Line 2 repeats the percent of arrests for sale/manufacturing of marijuana from Line 4 of Table 1. Line 3 gives the product of Line 1 and Line 2, which is the amount spent on arrests for violation of marijuana trafficking laws. Line 4 repeats Line 6 from Table 1 on the percentage of arrests for marijuana possession, while Line 5 gives the product of Line 1 and Line 4, which is the amount spent on arrests for violation of marijuana possession laws. Line 6 gives the sum of Line 3 and Line 5; this is the amount spent on arrests for violation of marijuana offenses. For 2000, the amount is $40.3 million in Massachusetts.

The Judicial and Legal Budget due to Marijuana Prohibition

The second main cost of marijuana prohibition is the portion of the prosecutorial and judicial budget devoted to marijuana prosecutions. A reasonable indicator of this percentage is the fraction of felony convictions in state courts for marijuana offenses. Data on this percentage are not readily available on a state-by-state basis, so this report uses the national percentage. Data on the percentage of possession convictions attributable to marijuana are also not available, so this report assumes it equals the percentage for trafficking convictions.

According to U.S. Department of Justice (2003, Table 1, p.2), in 2000 the percent of felony convictions in state courts due to any type of trafficking was 22.0%. Of this total, 2.7% was due to marijuana, 5.9% was due to other drugs, and 13.4% was unspecified. This report assumes that the fraction of marijuana convictions in the unspecified category equals the fraction for those in which a specific drug is given, or 31% (=2.7/(2.7+5.9)). The report also assumes that the percentage of possession convictions due to marijuana equals this same fraction. These assumptions jointly imply that the percentage of felony convictions due to marijuana equals the

[4] To the extent it takes additional resources to process an arrestee on multiple charges rather than on a single charge, there is still a net utilization of police resources in such cases due to prohibition. In addition, there is typically a lab test to determine the precise content of any drugs seized when there is an arrest on drugs charges, implying utilization of additional resources due to prohibition. A different issue is that in some cases, police stops for non-drug charges that discover drugs and produce an arrest on drugs charges might not lead to any arrest in the absence of the drug charge because of insufficient evidence.

[5] These and the related calculations below are in 2000 dollars. After deriving the total savings in expenditure, the report adjusts for inflation between 2000 and 2002.

fraction of felony convictions due to any drug offense multiplied by the percentage of trafficking violations due to marijuana (31%), or 10.9% (=34.6%*.31).

The second portion of Table 2 uses this information to calculate the Judicial and Legal budget due to marijuana prohibition. Line 7 gives the Judicial and Legal budget. Line 8 gives the percentage of felony convictions due to marijuana prosecutions, as calculated in the paragraph above. Line 9 gives the product of Line 7 and Line 8; this is the Judicial and Legal budget due to marijuana prosecutions. For 2000, the figure is $68.5 million in Massachusetts.

The Corrections Budget Due to Marijuana Prohibition

The third main cost of marijuana prohibition is the portion of the corrections budget devoted to incarcerating marijuana prisoners. A reasonable indicator of this portion is the fraction of prisoners incarcerated for marijuana offenses. In Massachusetts, this portion must be broken down into two separate components: the portion of inmates in Department of Corrections (DOC) facilities and the portion of inmates in county correctional (CC) facilities. DOC facilities house inmates with long stays while CC facilities house inmates with short stays.

Massachusetts Department of Corrections (December 2001, p.18, Table 13) gives the number of prisoners in DOC facilities serving time for drug offenses broken down by category of offense as of January 1, 2001. This report estimates the number of marijuana prisoners by summing the following items:

Possession of Controlled Substance – Class D:[6]	0
Marijuana – Trafficking, 50-100 lbs	2
Marijuana – Trafficking, 100-2,000 lbs	1
Class D – Distribution/Possession w/Intent to Distribute	7
Total	10

This is out of a total of 10,095 persons incarcerated for any offense (p.11, Table 1).[7] This gives 0.1% (=10/10,095) as the percentage of DOC prisoners incarcerated on marijuana charges.

Massachusetts Department of Corrections (September, 2001, p.16, Table 15) gives the number of new commitments to CC facilities broken down by category of offense for 2000.[8] This report estimates the number of marijuana prisoners as equal to the number of admissions for

[6] Class D is the section of the Massachusetts controlled substances schedule corresponding to marijuana.

[7] Several other categories probably include marijuana offenses, but there is no way to determine how many. These categories are Conspiracy to Violate Controlled Substance Act (24), Possession of Controlled Substance – No Class Specified (32), Drug Violation, School/Park (134), and Induce Minors in Sale and Dist of Drugs (4). The total number of prisoners in these four categories is 194, so attributing even a percentage to marijuana violations would increase the number of prisoners held on such charges substantially.

[8] There do not appear to be data on the number of prisoners, as opposed to the number of admissions, for County Correctional facilities. The number of admissions is a good indicator of the fraction of resources devoted to incarcerating marijuana prisoners so long as the average sentence length for these admissions is similar to that for other admissions.

Controlled Substance – Class D. [9] There were 575 admissions in this category out of a grand total of 15,334. This gives 3.7% (=575/15,334) as the percentage of CC prisoners incarcerated on marijuana charges.

Since the fraction of prisoners incarcerated for marijuana violations differs substantially between DOC and CC facilities, it is necessary to compute the implied budgetary costs separately. This requires an estimate of the fraction of the Corrections budget due to DOC versus CC facilities. For 2000, a reasonable estimate based on recent expenditure patterns is 55% for DOC facilities and 45% for CC facilities.[10]

The third portion of Table 2 calculates the Corrections budget due to marijuana prohibition.[11] Line 10 gives the Corrections budget. Line 11 gives the estimated portion of this budget corresponding to DOC incarcerations; this is 55% of the overall Corrections budget. Lines 12 gives the fraction of DOC prisoners incarcerated for marijuana violations. Line 13 gives the product of Line 11 and Line 12; this is the DOC budget devoted to marijuana prisoners. Lines 14 gives the estimated portion of the Corrections budget corresponding to CC incarcerations; this is 45% of the overall Corrections budget. Lines 15 gives the fraction of CC prisoners incarcerated for marijuana violations. Line 16 gives the product of Line 14 and Line 15; this is the CC budget devoted to marijuana prisoners. Line 17 gives the total of Lines 13 and 16; this is the corrections budget devoted to marijuana prisoners. For 2000, the amount is $13.6 million.

The Overall Budget Due to Marijuana Prohibition

As shown in the last line of Table 2, the total reduction in expenditure that would result from marijuana legalization is $122.4 million for 2000. This is an overstatement of the savings in government expenditure, however, for two reasons.

First, under prohibition some of those convicted for marijuana offenses pay fines to the government, which partially offsets the expenditure required to arrest and convict marijuana offenders. Second, the police sometimes seize assets from those arrested for marijuana violations

[9] Several other categories probably include marijuana offenses, but there is no way to determine how many. These Categories are Possession of a Controlled Substance (50), Possession of a Controlled Substance in a School Zone (69), Conspiracy (28), and Possession w/ Int to Sell (3).

[10] This estimate comes from the governor's budget recommendations for the years 2000 and 2001. For the year 2000, the recommended budget for DOC facilities was $383 million while the recommended budget for CC facilities was $323 million ($162 million for Sheriffs Department and $161 million for CC facilities within the Office of the Secretary of Public Safety budget). This gives 54% (=383/(383+162+161)) as the percent of the Corrections budget attributable to DOC facilities. For the year 2001, the recommended budget for DOC facilities was $414 million while the recommended budget for CC facilities was $331 million ($176 million for Sheriffs Department and $155 million for CC facilities within the Office of the Secretary of Public Safety budget). This gives 56% (=414/(414+176+155)) as the percent of the Corrections budget attributable to DOC facilities. The total for DOC and CC facilities is less than the Corrections total because there are other items not readily apportioned between the two types of facilities. This report assumes these expenditures are proportional to those for DOC and CC facilities.

[11] This report excludes the capital outlays portion of the corrections budget, since the available data do not indicate the average rate of such expenditures. This biases the estimates downward.

(financial accounts, cars, boats, land, houses, and the like), with the proceeds from these seizures used to fund police and prosecutors.[12]

To estimate the amounts of fines and seizures, consider first those arrested for marijuana possession. The vast majority of such persons have only trivial amounts of assets seized, so it is only fines that are relevant. The maximum fine for marijuana possession is $500. Assuming that every arrestee pays the maximum and that the number of arrestees is 8,975 per year, this means legalization would result in the loss of $4.5 million in revenue from fines. This is an upper bound, since some arrestees are found not guilty, and some of those found guilty pay less than the maximum fine.

The persons arrested for marijuana trafficking do sometimes forfeit substantial assets, and these arrestees are subject to higher fines on average. The amount of seizures for all drugs has been approximately $3.5 million per year in recent years (Saltonstall and Rising 1999).[13] Assuming the percentage attributable to marijuana is the same as the fraction of felony convictions due to marijuana of 31% (=2.7/(2.7+5.9), as above), this implies roughly $1.1 million in seizure revenue per year. Allowing for an average fine of $1,000 per trafficking arrest and 1,365 such arrests implies an additional $1.4 million, for a total of $2.5 million in revenue based on trafficking seizures and fines. This figure is an overestimate to the extent some arrestees are not convicted but an underestimate to the extent those convicted pay higher fines than assumed here.

Thus, it is appropriate to subtract $7.0 million (=$4.5+$2.5 million) from the total above, yielding a net expenditure due to prohibition of $115.4 million. Assuming this grew at the rate of inflation between 2000 and 2002, the figure for 2002 is $120.6 million. This is the annual savings in government expenditure that would result from marijuana legalization in Massachusetts.

[12] Most seized assets are ultimately forfeited.

[13] This accounts for the proceeds of state seizures and for federal seizures retained by Massachusetts.

III. Tax Revenues from Marijuana Legalization

The second budgetary implication of marijuana legalization is the tax revenue that would result from the legal production and sale of marijuana.

The extent to which marijuana legalization by a state government results in additional revenue depends on how federal authorities treat production and sale. If the federal government continues to enforce federal marijuana prohibition, the production and sale of marijuana in a legalized state would probably not move from the black market into the legal, taxed market. The calculations presented here therefore assume both that Massachusetts legalizes marijuana *and* that the federal government legalizes marijuana, either *de facto* or *de jure*. This means the tax revenue from legalization is more hypothetical than the cost savings discussed above; in particular, Massachusetts cannot obtain this revenue based solely on its own actions.

To estimate the tax revenue from legalization, this report employs the following procedure. First, it estimates current expenditure on marijuana at the national level. Second, it estimates the change in expenditure likely to occur under legalization. Third, it determines what fraction of this expenditure is likely to occur in Massachusetts. Fourth, it estimates the tax revenue that would result from this expenditure based on assumptions about the kinds of taxes that would apply to legalized marijuana. The remainder of this section addresses each of these issues in turn.

Expenditure on Marijuana under Current Prohibition

The first step in determining the tax revenue that would occur under legalization is to estimate current expenditure on marijuana. ONDCP (2001a, Table 1, p.3) estimates that in 2000 U.S. residents spent $10.5 billion on marijuana. This estimate relies on a range of assumptions about the marijuana market, and modification of these assumptions might produce a higher or lower estimate. There is no obvious reason, however, why alternative assumptions would imply a dramatically different estimate of current expenditure on marijuana. This report therefore uses the $10.5 billion figure as the starting point for the revenue estimates presented below.

Expenditure on Marijuana under Legalization

The second step in estimating the tax revenue that would accrue under legalization is to determine how expenditure on marijuana would change as the result of legalization. A simple framework in which to consider various assumptions is the standard supply and demand model. To use this model to assess legalization's impact on marijuana expenditure, it is necessary to state explicitly what effect legalization would have on the demand and supply curves for marijuana.

This report assumes there would be no change in the demand for marijuana.[14] This assumption is potentially too strong, since the penalties for possession potentially deter some persons from consuming marijuana. But any increase in demand from legalization would plausibly come from casual users, whose marijuana use would likely be modest. Any increase in use might also come from decreased consumption of alcohol, tobacco or other goods, so increased tax revenue from legal marijuana would be partially offset by decreased tax revenue from other goods. And there might be a forbidden fruit effect from prohibition that tends to offset

[14] To be explicit, the assumption is that there is no shift in the demand curve. If the supply curve shifts, there will be a change in the quantity demanded in the new equilibrium.

the demand decreasing effects of penalties for possession. Thus, the assumption of no change in demand is plausible, and it likely biases the estimated tax revenue downward.

Under the assumption that demand does not shift due to legalization, any change in the quantity and price would result from changes in supply conditions. There are two main effects that would operate (Miron 2003). On the one hand, marijuana suppliers in a legal market would not incur the costs imposed by prohibition, such as the threat of arrest, incarceration, fines, asset seizure, and the like. This means, other things equal, that costs and therefore prices would be lower under legalization. On the other hand, marijuana suppliers in a legal market would bear the costs of tax and regulatory policies that apply to legal goods but that black market suppliers normally avoid.[15] This implies an offset to the cost reductions resulting from legalization. Further, changes in competition and advertising under legalization can potentially yield higher prices than under prohibition.

It is thus an empirical question as to how prices under legalization would compare to prices under current prohibition. The best evidence available on this question comes from comparisons of marijuana prices between the U.S. and the Netherlands. Although marijuana is still technically illegal in the Netherlands, the degree of enforcement is substantially below that in the U.S., and the sale of marijuana in coffee shops is officially tolerated. The regime thus approximates *de facto* legalization. Existing data suggest that retail prices in the Netherlands are roughly 50-100 percent of U.S. prices.[16]

The effect of any price decline that occurs due to legalization depends on the elasticity of demand for marijuana. Evidence on this elasticity is limited because appropriate data on marijuana price and consumption are not readily available. Existing estimates, however, suggest an elasticity of at least -0.5 and plausibly at least -1.0 (Nisbet and Vakil 1972).[17]

If the price decline under legalization is minimal, then expenditure will not change regardless of the demand elasticity. If the price decline is noticeable but the demand elasticity is greater than or equal to 1.0 in absolute value, then expenditure will remain constant or increase. If the price decline is noticeable and the demand elasticity is less than one, then expenditure will decline. Since the decline in price is unlikely to exceed 50% and the demand elasticity is likely at least -0.5, the plausible decline in expenditure is at most 25%. Given the estimate of $10.5 billion

[15] The underlying assumption is that the marginal costs of evading tax and regulatory costs is zero for black market suppliers who are already conducting their activities in secret.

[16] MacCoun and Reuter (1997) report gram prices of $2.50-$12.50 in the Netherlands and $1.50 - $15.00 in the U.S. They speculate that the surprisingly high prices in the Netherlands might reflect enforcement aimed at large-scale trafficking. Harrison, Backenheimer, and Inciardi (1995) note that ONDCP data on drug prices in the U.S. are very similar to prices charged in Dutch coffeeshops. ONDCP (2001b) reports a price per gram for small-scale purchases of roughly $9 per gram in the second quarter of 2000, while EMCDDA (2002) suggests a price of 2-8 Euros per gram, which is roughly $6 on average. Various web sites that discuss the coffee shops in Amsterdam suggest prices of $5 - $11 per gram in recent years. These comparisons do not adjust for potency or other dimensions of quality.

[17] The Nisbet and Vakil estimates that use survey data imply price elasticities of -0.365 or -0.51 in the log and linear specifications, respectively, while the purchase data implies price elasticities of -1.013 and -1.51. The estimates based on purchase data are plausibly more reliable. Moreover, as they note, these estimates are likely biased downward by standard simultaneous equations bias. Estimates of the demand for "similar" goods such as alcohol, cocaine, heroin, or tobacco, suggest a similar range of elasticities.

in expenditure on marijuana under current prohibition, this implies expenditure under legalization of at least $7.9 billion.[18]

Expenditure on Marijuana in Massachusetts Under Legalization

The third step in estimating the tax revenue in Massachusetts is to determine the fraction of the expenditure under legalization that would occur in Massachusetts. A simple indicator of this fraction is the Massachusetts share of the U.S. population, which was approximately 2.2% in 2001.[19] This percentage errs on the high side to the extent legalized marijuana production would be concentrated in states other than Massachusetts, but it errs on the low side to the extent per capita consumption in Massachusetts would be higher than in the rest of the country.[20] Assuming expenditure under legalization is proportional to population, the Massachusetts share of the $7.9 billion would be $173.8 million dollars.

Tax Revenue from Legalized Marijuana in Massachusetts

The final step in estimating the tax revenue in Massachusetts from legalization is to determine what tax policies and rates would apply to the additional $173.8 million in expenditure.

There are two main tax policies to consider. The expenditure on marijuana also represents income to the producers and sellers of this marijuana, so state income-tax policies would apply. In 2000, personal income in Massachusetts was $239.7 billion while income tax collections (personal plus corporate) were $10.3 billion; this implies an average income tax rate of 4.3% (=10.3/239.7).[21] Multiplying this rate by $173.8 million implies $7.5 million in income tax revenue from the legal production and sale of marijuana in Massachusetts. The expenditure on marijuana would also be subject to a standard sales tax. The current rate of 5% implies an additional $8.7 million in tax revenue.

Combining these two pieces and adjusting for inflation between 2000 and 2002 implies that Massachusetts would collect $16.9 million annually from marijuana legalization. The amount of tax revenue would be higher if marijuana were subject to sin taxation, such as occurs now for goods like alcohol, tobacco, or gasoline. A state's ability to impose high rates of sin taxation is limited, however, by the possibility of cross-border shopping or the development of a black market. The amount of tax revenue would be lower if substantial home production occurs

[18] This calculation assumes the demand elasticity is constant over the relevant range, which does not hold for all demand curves. So long as the price change is not dramatic, however, it provides a reasonable approximation.

[19] See http://quickfacts.census.gov/qfd/states/25000.html/

[20] According Wright (2002, Table A.3, p.80), the number of past-month marijuana users in Massachusetts was 463 thousand while the number in the U.S. was 10,675 thousand (averaged over 1999 and 2000). This suggests 4.3% (=463/10,675) of the marijuana consumption occurred in Massachusetts.

[21] *Statistical Abstract of the United States 2003*, Table 642, p.425, and Table 429, p.281. The average rate differs from the marginal rate even though the tax is proportional because some income is not taxed.

under legalization.[22] There is little question that such production would occur, just as home production of alcohol occurs today. The evidence suggests, however, that the magnitude of such production would be minimal. In particular, alcohol production switched mostly from the black market to the licit market after repeal of prohibition in 1933.

[22] Whether such production is illicit depends on the details of a legalization law. Plausibly, growing small amounts for personal use would not be subject to taxation or regulation, just as growing small amounts of vegetables or herbs is not subject to taxation or regulation.

IV. Discussion

The estimates derived above suggest that legalization of marijuana would have a substantial impact on government budgets in Massachusetts. The repeal of marijuana laws combined with the elimination of enforcement activities would save Massachusetts governments roughly $120.6 million in expenditure annually. And assuming the federal government tolerated the legal production and sale of marijuana in Massachusetts, the state would collect at least $16.9 million in additional taxes each year.

These estimates rely on a number of assumptions. Overall, the assumptions imply estimates of the expenditure reductions and revenue gains that are probably smaller than what would occur in practice. The estimates are also lower than related estimates in the literature.[23]

Whether marijuana legalization is desirable depends on many factors other than the budgetary impacts discussed here. But these impacts should be included in a rational debate about marijuana policy.

[23] Caputo and Ostrom (1994) provide an estimate of the tax revenue from marijuana legalization equal to $2.55 - $9.09 billion in 1991. This is for the entire country and includes both state and federal taxation. Multiplying the lower end of this range by 2.2% to compute the Massachusetts share based on population, and assuming that state taxes are 33% of total tax revenue, yields an estimate of $18.7 million. Adjusting for inflation makes this $24.7 million in 2002 as compared to the $16.9 million estimated above.

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Table 1: Arrests for Violation of Marijuana Prohibition, Massachusetts, 2000

1.	Total Arrests	160,342
2.	Arrests for Sale/Manufacture of Marijuana	1,365
3.	Arrests for Possession of Marijuana	8,975
4.	% of Total Arrests, Sale/Manufacturing of Marijuana	0.85
5.	% of Total Arrests for Possession of Marijuana	5.60
6.	% of Total Arrests for Possession of Marijuana, /3	1.87

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Sources:

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Table 2: Calculating Expenditure on Drug Prohibition, Massachusetts, 2000

		Massachusetts	
1.	Police Budget, Total	$1,479	(millions)
2.	% of Arrests, Sale/Manufacturing of Marijuana	0.85	
3.	Police Budget, Sale/Manufacturing, Marijuana	$12.6	(millions)
4.	% of Arrests, Possession of Marijuana, /3	1.87	
5.	Police Budget, Possession, Marijuana, /3	$27.7	(millions)
6.	Police Budget, Marijuana Violations	$40.3	(millions)
7.	Judicial and Legal Budget, Total	$628	(millions)
8.	% of Felony Convictions for Marijuana	10.9	
9.	Judicial and Legal Budget, Marijuana	$68.5	(millions)
10.	Corrections Budget, Total	$795	(millions)
11.	Corrections Budget, DOC Facilities	$437.3	(millions)
12.	% of DOC Prisoners on Marijuana Charges	0.1	
13.	Corrections Budget, DOC, Marijuana	$0.4	(millions)
14.	Corrections Budget, CC Facilities	$357.8	(millions)
15.	% of CC Prisoners on Marijuana Charges	3.7	
16.	Corrections Budget, CC, Marijuana	$13.2	(millions)
17.	Corrections Budget, Marijuana Violations	$13.6	(millions)
18.	Total Marijuana Enforcement Budget	$122.4	(millions)

Sources:

U.S. Census Bureau, accessed at http://www.census.gov/govs/estimate/00sl22ma.html on July 30, 2003.