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**DEPARTMENT OF FINANCE**

**FINANCIAL IMPLICATION OF THE PROHIBITION OF MARIJUANA**

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## **Abstract**

This thesis examines the various financial costs and potential economic gains forfeited due to the prohibition of marijuana and industrial hemp. The cost to enforce marijuana laws comes from monitoring, prosecution, and incarceration of users and sellers. To understand the economic impact, state and federal budgets at the judicial, corrections, and law enforcement levels were analyzed and a percentage of each budget was calculated and attributed to marijuana enforcement. The potential economic gains from legalizing and taxing marijuana were also analyzed by first estimating the current market size of the marijuana industry and then calculating an appropriate tax rate similar to that of tobacco. To understand the potential economic gains from allowing farmers to grow industrial hemp the profitability of an acre of corn and hemp was calculated and a hypothetical situation of converting corn acreage to hemp was analyzed. This thesis shows how 16.9 billion dollars per year is attributed to the prohibition of marijuana.

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## **State Expenditure on Enforcing Marijuana Laws**

Although federal laws put the most pressure on eliminating marijuana use, most expenditure enforcing marijuana laws comes at the state level. In fact, 99% of marijuana arrests are by state or local law enforcement agencies.<sup>10</sup> The large amount of arrest burdens an already over worked system and costs the states 8.2 billion dollars to enforce marijuana laws. The largest costs are incurred by state corrections with 4.4 billion dollars spent locking up convicted criminals. States also incur additional costs on prosecution and law enforcement with states spending 3.5 billion on prosecution, and 4.2 billion on law enforcement.

## **State Judicial Budget**

State judicial budgets cover the costs to process and convict criminals. Nationwide, State Courts face the challenge to hear and try cases in a timely matter as their budgets have been cut in recent years. An example of how the courts are overworked is demonstrated in important cases, such as child and elderly abuse, which can take several months to be heard when the norm used to be within a week. Not only do marijuana convictions slow other cases from being heard, but it costs the states an estimated 3.5 billion dollars.

To calculate the state judicial budget that is spent on convicting marijuana offenders, budgetary information on each state was collected from Sourcebook. Sourcebook provided each state's judicial and legal budget at the state, county, and municipality level. Totaling these figures for each state created a comprehensive budget for convicting all criminals state wide. The budgetary information was last collected in 2005; to update this to 2009 levels it was inflated by 10.44%. The 10.44% was the increase in consumer price index over 4 years according to the Department of Labor.

To calculate the percentage of each state’s judicial budget allocated to convicting marijuana offenders, the proportion of marijuana convictions to all convictions is calculated. Information on a state by state basis of marijuana convictions does not exist. Felony convictions in state courts were used to calculate the proportion to allocate to marijuana offenders.

**Felony Convictions in State Courts**

	Number	Percent
Drug offenses	362,850	33.6
Possession	161,090	14.9
Trafficking	201,760	18.7
Marijuana	22,180	2.1
Other	60,650	5.6
Unspecified	118,930	11.0

\*Source: <http://www.albany.edu/sourcebook/pdf/t5442004.pdf>

The percentage of state felony convictions for all drugs was 33.6%; 14.9% for possession and 18.7% for trafficking. Since this figure includes convictions for all drugs the proportion attributed to marijuana is calculated using trafficking convictions. Of all trafficking convictions, 2.1% was for marijuana, 5.6% other, and 11% unspecified. To calculate the amount of marijuana convictions that are unspecified and for possession, it is assumed that marijuana makes up the same proportion of convictions as those that are specified. To calculate this: 2.1% + 5.6% equals 7.7%, the total known arrest for marijuana or another type of drug. Marijuana then makes up  $2.1\% / 7.7\% = 27\%$  of specified drug convictions. Using 27%, the amount of drug convictions that are for marijuana, multiplied by 33.6%, convictions for all drugs, equals 9.16%. Therefore, of all felony convictions, 9.16% is the estimated percentage of marijuana convictions.

To calculate the total, each state’s judicial budget was multiplied by 9.16%. The total sum of state judicial budget spent on convicting marijuana offenders is 3.5 billion dollars. This information can be found in Appendix A: State Judicial Budget.

## **State Corrections Budget**

Our prison system has been pushed to the max, Senator Jim Webb stated in a March 2009 Parade Magazine article, “In 1984, Japan held a population half the size of ours and was incarcerating 40,000 sentenced offenders, compared with 580,000 in the United States. As shocking as that disparity was, the difference between the countries now is even more astounding--and profoundly disturbing. Since then, Japan's prison population has not quite doubled to 71,000, while ours has quadrupled to 2.3 million.” A culprit for this rise can be attributed to marijuana and other drug offenses, which once accounted for 10% imprisoned in 1984 and has increased to 33% in 2002.<sup>26</sup> Of the drug offenders incarcerated, 60% have never had a history of violence or significant selling activity.<sup>26</sup>

To calculate the state corrections budget that is spent on incarcerating marijuana offenders, corrections budget information on each state was collected from Sourcebook and the percentage to allocate to the marijuana offenders was calculated.

State corrections budget information which includes the cost to run jails and prisons was in 2005 dollar figures and inflated by 10.44% to 2009 levels. To calculate the proportion of this budget attributed to marijuana offenders, statistics provided by the Bureau of Justice were used. These statistics, approximated that 12.7% of state prisoners were serving time for marijuana related offense. Each states corrections budget was multiplied by 12.7% to calculate the portion attributed to marijuana. The combined state corrections budget attributed to marijuana offenders equaled 3.5 billion dollars. This information can be found in Appendix B: State Corrections Budget.

## **State Police Budget**

There were 829,627 arrests for marijuana in 2007 according to the FBI Uniform Crime Reports. Of all the marijuana arrests, 89 percent were for possession; not for sale or manufacturing. Of all drug arrests, marijuana account for 44 percent. The significant number of arrests reveals that law enforcement officials continuously deal with marijuana related incidences.

State police budget information, which includes the costs of state and local law enforcement, was provided by Sourcebook. This information, like previous budget data, was in 2005 dollar figures and inflated by 10.44% to 2009 levels. To allocate the proportion of this budget attributed to marijuana offenders, a percentage of arrests was calculated. Each state tracks arrest data for different crimes at the county level. This data was obtained from University of Virginia Library and condensed into two sections. The first section includes total arrest for all crimes, and the second totals arrest for marijuana possession and sale/manufacturing at the state level. To allocate the percentage of the police budget that is attributed to enforcing marijuana laws, each state's police budget was multiplied by the prospective percentage of marijuana arrests to total arrest. The portion of marijuana arrest to total arrest varies by state with the highest in Massachusetts where 8.6% of all arrest are for marijuana to the lowest in Montana where only 1.9% of arrest were for marijuana. Florida and Illinois does not report marijuana arrest data. A weighted average of all 50 states based on population was calculated to be 5.1%.

Of the 82 billion dollar state police budget, an estimated 4.2 billion dollars is spent on enforcing marijuana laws. The percentage of marijuana arrest and police budget for each state can be found in Appendix C and Appendix D.

## Federal Expenditure Enforcing Marijuana Laws

The federal government enforces marijuana prohibition through multiple agencies. The total funding information by amount and agency is available to the public and found in on page 6. Based on the information provided by the White House Drug Policy, the Customs and Border Protection received the most federal funding an estimated 2.1 billion dollars. This data does not include the entire budget of each agency or department, but instead the amount of federal money spent by each agency to fight the war on drugs. Therefore, to calculate the cost of enforcing marijuana laws by the government, this total was multiplied by the percent arrests for marijuana by the Drug Enforcement Agency. Sourcebook of criminal justice statistics reports that 20.9% of DEA arrests are for marijuana, a good indicator of the amount of money spent on marijuana compared to other illegal drugs. To calculate marijuana costs, 20.9% was multiplied by the total budget provided by the white house drug policy of 14 billion. Of the 14 billion dollar federal budget spent on enforcing drug laws, an estimated 2.9 billion is attributed to preventing marijuana use and enforcing marijuana laws.

This budget is a conservative estimate and contains only those expenditures aimed at reducing drug use, rather than those associated with the consequences of drug use.<sup>2</sup>

### Federal Cost of Marijuana Enforcement (thousands)

Federal Spending	\$14,114,400
Percent of DEA Arrests for Marijuana	0.209
Total	\$2,949,910



## Drug Control Funding by Agency FY 2007-FY 2009

(Budget Authority in Millions)

	FY 2007 Final	FY 2008 Enacted	FY 2009 Request
<b>Department of Defense</b>	1,329.8	1,177.4	1,060.5
<b>Department of Education</b>	495.0	431.6	218.1
<b>Department of Health and Human Services</b>			
Centers for Medicare & Medicaid Services	–	45.0	265.0
Indian Health Service	148.2	173.2	162.0
National Institute on Drug Abuse	1,000.0	1,000.7	1,001.7
Substance Abuse and Mental Health Services Administration	2,443.2	2,445.8	2,370.6
<b>Total HHS</b>	3,591.4	3,664.8	3,799.3
<b>Department of Homeland Security</b>			
Office of Counternarcotics Enforcement	2.5	2.7	4.0
Customs and Border Protection	1,968.5	2,130.9	2,191.9
Immigration and Customs Enforcement	422.8	412.3	428.9
U.S. Coast Guard	1,080.9	1,004.3	1,071.0
<b>Total DHS</b>	3,474.8	3,550.1	3,695.8
<b>Department of the Interior</b>			
Bureau of Indian Affairs	2.6	6.3	6.3
<b>Total DOI</b>	2.6	6.3	6.3
<b>Department of Justice</b>			
Bureau of Prisons	65.1	67.2	69.2
Drug Enforcement Administration	1,969.1	2,105.3	2,181.0
Interagency Crime and Drug Enforcement	497.9	497.9	531.6
Office of Justice Programs	245.5	222.8	114.2
<b>Total DOJ</b>	2,777.7	2,893.2	2,896.0
<b>ONDCP</b>			
Counterdrug Technology Assessment Center	20.0	1.0	5.0
High Intensity Drug Trafficking Area Program	224.7	230.0	200.0
Other Federal Drug Control Programs	193.0	164.3	189.7
<i>Drug-Free Communities (non-add)</i>	79.2	90.0	80.0
<i>National Youth Anti-Drug Media Campaign (non-add)</i>	99.0	60.0	100.0
Salaries and Expenses	26.8	26.4	26.8
<b>Total ONDCP</b>	464.4	421.7	421.5
<b>Small Business Administration</b>	1.0	1.0	1.0
<b>Department of State</b>			
Bureau of International Narcotics and Law Enforcement	1,055.7	640.8	1,173.2
United States Agency International Development	239.0	361.4	315.8
<b>Total State</b>	1,294.7	1,002.2	1,489.0
<b>Department of Transportation</b>			
National Highway Traffic Safety Administration	2.9	2.7	2.7
<b>Department of Treasury</b>			
Internal Revenue Service	55.6	57.3	59.2
<b>Department of Veterans Affairs</b>			
Veterans Health Administration	354.1	447.2	465.0
<b>Total</b>	\$13,844.0	\$13,655.4	\$14,114.4

## Federal Funding and Drug Use

The United States Government has taken the lead to deter drug use. The largest shift in policy came under the Regan Administration when President Ronald Regan declared the war on drugs and signed the Anti-Drug Abuse Act in October 1986. This bill provided 1.7 billion dollars in appropriations and created mandatory minimum sentences for drug users. Since then there has been significant funding increases of multiple agencies at the federal level. The table below shows the funding increases starting one year before the Anti-Drug Abuse Act was enacted. Data on marijuana use was also collected through surveys done by the National Institute on Drug Abuse. The surveys asked high school seniors if they smoked marijuana in the past month, these results can be found in the table below.

Year	Federal Funding <sup>1</sup>	Marijuana Use <sup>2</sup>
1985	\$ 2,750	25.70%
1986	\$ 2,881	23.40%
1987	\$ 4,792	21.00%
1988	\$ 4,707	18.00%
1989	\$ 6,663	16.70%
1990	\$ 9,758	14.00%
1991	\$ 10,957	13.80%
1992	\$ 11,910	11.90%
1993	\$ 12,171	15.50%
1994	\$ 12,181	19.00%
1995	\$ 13,251	21.20%
1996	\$ 13,454	21.90%
1997	\$ 15,158	23.70%
1998	\$ 15,976	22.80%

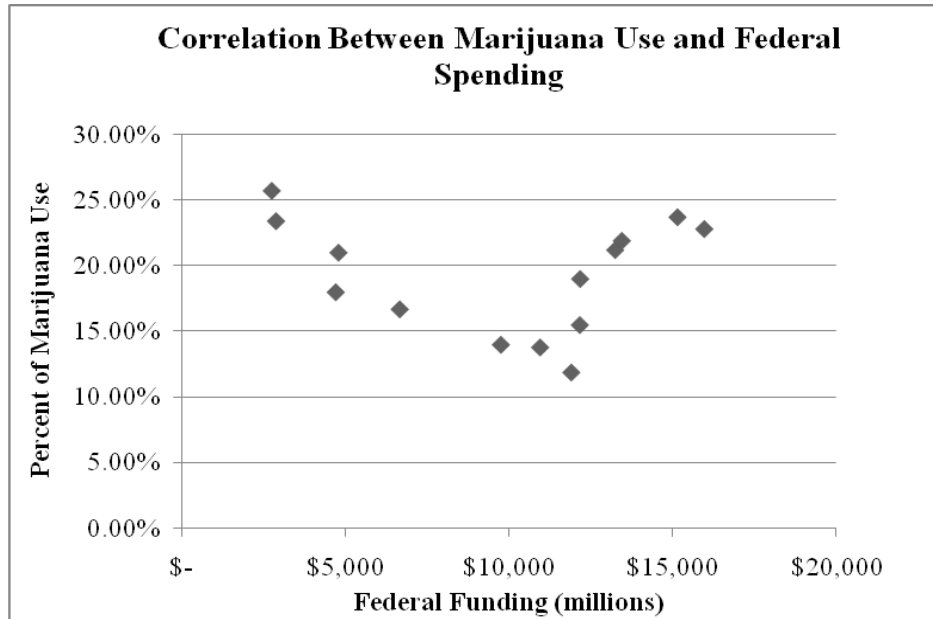
(Billions)

1 <http://www.ncjrs.gov/htm/tables.htm>

2 <http://www.whitehousedrugpolicy.gov/publications/factsht/druguse/>

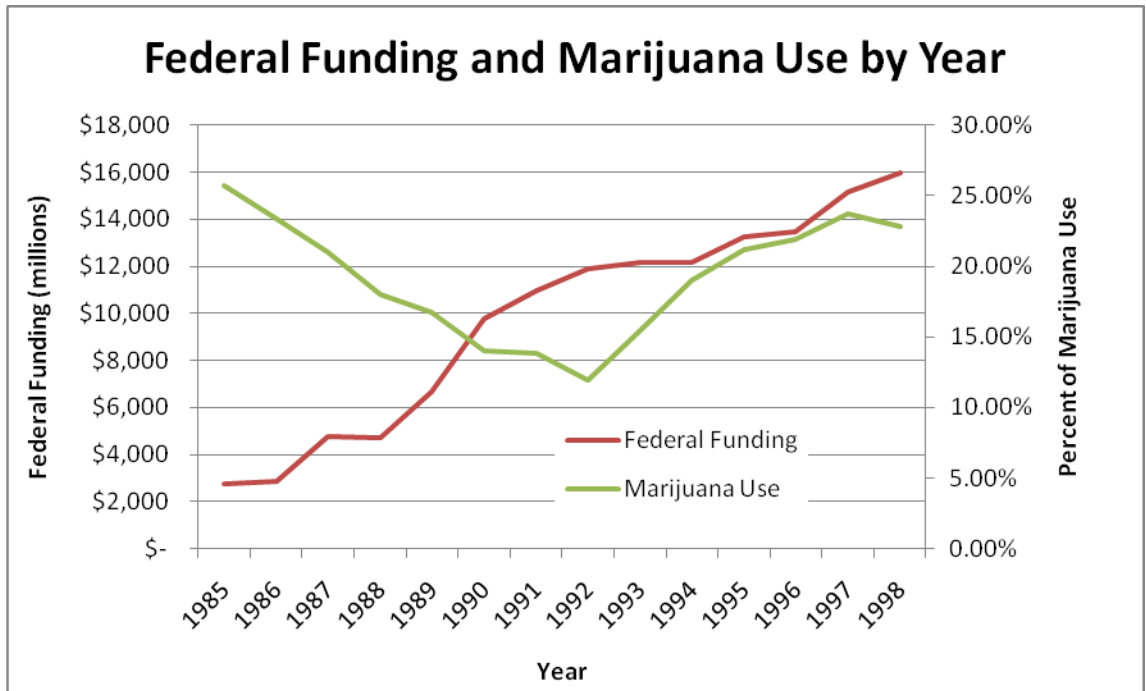
With the large increases in federal funding an effective program would result in a negative correlation between monies spent and marijuana use. In 1985 25.70% of high school seniors reported they used marijuana, in 1998 the number dropped only slightly to 22.80%.

Graphing marijuana use among high school seniors and funding to curb use shows virtually no correlation. The graph below shows the correlation between marijuana use and federal spending.



Running a regression analysis on the data points calculates the R-squared to be .022. This shows that only 2.2% of high school seniors that smoke can be explained by the amount of funding by the federal government.

To get a better understanding of trends in marijuana use and government funding, both variables were graphed with their respective years. When federal funding is graphed it shows how over a 10 year period there has been continued increase in investment to prevent drug use. The graph also shows that although marijuana use did fall among high school seniors it increased to levels close to before any significant funding was in place.



## Lost Tax Revenue

The millions of American's who defy the law and smoke marijuana, they either grow the plant themselves or obtain the drug through the black-market. Consumers who buy marijuana off the black-market face large markups and skip on paying taxes. The outcome of legalizing marijuana would shift the profits away from illegal activity, to legitimate business and provide government with increased tax revenue.

To calculate the possible tax revenue that would be generated if marijuana was legal, an estimated national spending on marijuana and a tax rate similar to cigarettes was calculated.

The amount spent on marijuana by Americans is difficult to calculate because often those surveyed, under and inaccurately report actual use.<sup>17</sup> A study completed by the White House Drug Policy in 2002 estimated that Americans spend 10.5 billion a year on marijuana. As previously stated, this is a generous estimate that underestimates the real market size. To get the figure of 10.5 billion, a survey was conducted by the Institute for Defense Analysis sponsored by

the Office of National Drug Control Policy. The survey asked respondents to identify if they smoke marijuana and how frequently they smoke marijuana. The survey estimated the amount of marijuana consumed during each session. Taking the amount of people who smoke, how frequently they smoke, and the average amount consumed per session provided the amount of marijuana consumed per year by Americans. Data also exists on the average price of marijuana. This study took the average price of marijuana and the estimated amount of marijuana consumed by Americans to get the figure of 10.5 billion.

To calculate the percentage tax that marijuana sales could generate, a tax rate was devised from the current tax rate on cigarettes. Each state has a different tax on a pack of cigarettes, so an average was calculated to be approximately \$1.31 per pack. Also, the federal government charges a tax of \$1.01 per pack. According to [tobaccofreekids.org](http://tobaccofreekids.org), the average cost per pack of cigarettes equals \$5.11. The combined average tax per pack of \$2.32, divided by average cost \$5.11, results in a 45% tax rate.

A 45% tax rate of the 10.5 billion dollars spent on marijuana would provide 4.7 billion dollars in tax revenue. Based on calculations done by Jon Gettman, a gram of marijuana sells for \$7.87, meaning a pound of marijuana is worth approximately \$3,570. Although a 45% tax rate may seem excessive, the cost to grow a pound of marijuana falls well below \$3,570. Because the cost to grow and the selling price differ drastically, this allows room for markup to go to the producer, distributor, and the government. Currently the large markup goes entirely toward funding illegal suppliers.

**Lost Tax Revenue (in Thousands)**

Estimated Yearly Spending on Marijuana	\$10,500,000
Tax Rate	0.452054795
Total	\$4,746,575

## State Tax on Pack of Cigarettes

State	Tax	State	Tax
Alabama	\$0.43	Montana	\$1.70
Alaska	\$2.00	Nebraska	\$0.64
Arizona	\$2.00	Nevada	\$0.80
Arkansas	\$1.15	New Hampshire	\$1.78
California	\$0.87	New Jersey	\$2.70
Colorado	\$0.84	New Mexico	\$0.91
Connecticut	\$2.00	New York	\$2.75
Delaware	\$1.60	North Carolina	\$0.35
District of Columbia	\$2.00	North Dakota	\$0.44
Florida	\$1.34	Ohio	\$1.25
Georgia	\$0.37	Oklahoma	\$1.03
Hawaii	\$2.60	Oregon	\$1.18
Idaho	\$0.57	Pennsylvania	\$1.35
Illinois	\$0.98	Rhode Island	\$3.46
Indiana	\$1.00	South Carolina	\$0.07
Iowa	\$1.36	South Dakota	\$1.53
Kansas	\$0.79	Tennessee	\$0.62
Kentucky	\$0.60	Texas	\$1.41
Louisiana	\$0.36	Utah	\$0.70
Maine	\$2.00	Vermont	\$2.24
Maryland	\$2.00	Virginia	\$0.30
Massachusetts	\$2.51	Washington	\$2.03
Michigan	\$2.00	West Virginia	\$0.55
Minnesota	\$1.56	Wisconsin	\$2.52
Mississippi	\$0.68	Wyoming	\$0.60
Missouri	\$0.17	<b>Average</b>	<b>\$1.31</b>

\* <http://www.tobaccofreekids.org/research/factsheets/pdf/0097.pdf>

### Total Average Tax per Pack of Cigarettes

	Tax
Federal	\$1.01
State Average	\$1.31
<b>Total</b>	<b>\$2.26</b>

### Average Tax Rate on Cigarettes

Average Price Per Pack	\$5.11
Average Tax Per Pack	\$2.26
<b>Tax Rate</b>	<b>0.44</b>

## **Hemp**

The Marijuana Tax Act of 1937 outlawed marijuana used for psychedelic purposes along with all strains of the cannabis sativa plant. With the new law the industrial hemp industry in the United States slowly disappeared, and was completely gone by the 1950s.<sup>12</sup> To gauge the impact of this law and feasibility of the hemp industry the remainder of this paper calculates the market potential and profitability of the US hemp industry.

Hemp has been grown for thousands of years for its fibers, oils, and food. This non-psychoactive strain of marijuana contains only trace amounts of THC, below .3% compared to an average of 9% found in marijuana used for psychedelic purposes. With THC levels below 1% industrial hemp cannot be used to get high.

## **Hemp Qualities**

The industrial hemp plant has been genetically modified and the plants structure differs drastically from the psychoactive strain. Hemp an annual crop has short life cycle and can reach 15 feet tall within a 3 month grow period. Due to the fast growth, hemp can quickly grow to block out the sun and eliminate the need of any herbicides. Hemp is also a very versatile plant and growth trials done in Illinois showed the plant does not need fertilizer to reach its maximum output potential.<sup>7</sup> Due to genetic modification, hemp can be grown to maximize its biomass yield and or seed production. The yields range from 2.5 to 8.7 tons of dry stem per acre depending on the growing conditions and genetic strain.<sup>7</sup> Pesticides are also not needed for industrial hemp.<sup>7</sup>

The hemp plant yields a variety of industrial products from the plants long bast fibers, woody core fibers, and seeds. The long fibers that surround the core are very strong due to their

length and can be used for multiple purposes. These long fibers were the original reasons for the production of hemp for their use in cordage and paper. The core fibers which are shorter are also used for a variety of products including paper and animal bedding. Both the short and long fibers have anti-mildew and anti-microbial properties which provide an increased benefit over other natural fibers.<sup>15</sup> “The hemp seed is composed of approximately 45 percent oil, 35 percent protein and 10 percent carbohydrates and fiber.”<sup>15</sup> The hemp oil extracted from seeds is over 70% polyunsaturated fat and include omega 3 and 6 fatty acids.<sup>25</sup> Because hemp oil consists of mainly healthy fats, it is used in foods to increase the health benefits over traditional oils.

## World Production

Hemp is legally grown throughout the world; major producers include China, South Korea, and Russia. Many countries that originally outlawed hemp, including Canada and the European Union, have passed new laws allowing farmers to grow the crop. Currently the US imports raw unprocessed hemp, processed hemp, yarn, fabric, and hemp seed oil. The market for hemp is growing, and as a result world production has increased from 50,000 to 90,000 tons between 2000 to 2006.<sup>11</sup> The EU is the major importer of hemp, with 70% of the import market.<sup>24</sup>

### World Market Share: Hemp Fiber and Tow Production

Country	Market Share
China	41.50%
Korea	20.70%
Russia	9.00%
Chile	7.20%
France	7.20%
Turkey	5.40%
Other	8.90%

Source: <http://www.votehemp.com/PDF/hemp98.pdf>



Industrial hemp's ability to be grown in most climates across United States would provide farmers with alternatives to other conventional crops. The profitability of hemp can vary drastically by the market demand and processing potential of raw fiber. Historically, there have been periods of excess supply of hemp that resulted in significant reduction of the market price. Comparing historical prices and demand, a regression can be run to determine the price elasticity of demand. A report done by Vantreese, calculated the elasticity of demand of approximately -1.3 for price decreases, and -.67 for price increases.<sup>23</sup> “This means that a 10% decrease in hemp seed prices will result in a 13% increase in hemp seed demand, while a 10% increase in hemp seed prices would result in a 6.7% decrease in hemp seed demand.”<sup>23</sup>

## **Hemp Profitability**

To analyze the potential profitability of growing hemp, return per acre was calculated for corn, wheat, soybeans, and hemp. To calculate return per acre average yield, price, and cost per acre need to be determined. Government data provided historic yields for each crop and the 2009 market price per bushel of each crop. Multiplying these two figures provided the revenue per acre of each commodity. The cost per acre to grow each crop varies drastically depending on the seed price, fertilizer needs, amount of ground maintenance, and equipment needed to harvest each crop. Cost per acre was calculated by a study done by the Manitoba Agriculture, Food and Rural Initiatives program sponsored by the Manitoba government. Using this data, return per acre can be calculated to compare each commodity. This analysis shows hemp is the most profitable commodity, and has 458% higher return per acre than corn.

### Profitability per Acre

	Corn	Wheat	Soybean	Hemp
Yield/acre <sup>5</sup>	127	45	39	33
Price/bushel <sup>22</sup>	3.59	4.49	9.96	12.50
Revenue/acre	455.93	202.05	388.44	412.5
Cost/acre <sup>3</sup>	419	242	260	243
Return/acre	36.93	-39.95	128.44	169.5

The profitability of hemp will vary, like any grown commodity, by the market price and yield. To gauge how these numbers might be affected by an error in yield or price, a sensitivity analysis was conducted. It is important to note the yield per acre of hemp is relatively stable around 33 bushels, however price per bushel has the greater likelihood of variability. The result of the sensitivity analysis found below shows hemp is profitable in all but the most extreme circumstances.

### Sensitivity Analysis

		Yield (bushel/acre)		
		20	33	40
Price/bushel	\$ 10.00	-43	87	157
	\$ 12.50	7	169	257
	\$ 15.00	57	252	357

To calculate the loss to the US economy due to hemp being illegal a hypothetical scenario is conducted that assumes 10% of corn acreage is converted to grow hemp. In 2009 80 million acres of corn was planted in the US. Using the return per acre calculated previously for corn and hemp, converting just 10% of farm land used from corn to hemp would produce a gain of 1.06 billion to the US gross domestic product.

**Potential Profit Lost by Criminalizing the Growth of Hemp**

		Acres	Return/acre	Profit	Total Profit
Corn	90%	72	36.93	2659	
Hemp	10%	8	169.5	<u>1356</u>	4015
Corn	100%	80	36.93	<u>2954</u>	<u>2954</u>
					1061

To check if converting 10% of corn acreage to grow industrial hemp is significant, recent data on ethanol is examined. Starting in the late 1990s, a significant portion of the corn crop has been diverted for ethanol use. In 1996 less than 5% of the corn crop was used for ethanol.<sup>22</sup> In 2008, 23% of the corn crop has been diverted for ethanol.<sup>8</sup> Although grain prices have inflated recently, this result shows the flexibility in converting corn acreage to a different commodity.

**Conclusion**

The intentions of prohibiting marijuana may have been in good nature, however, these laws have not significantly curbed use and cost the United State billions of dollars through increased budgets and lost revenue potential.

Enforcing marijuana laws hinders the state’s judicial, corrections, and law enforcement systems. In addition to distracting these agencies from performing their vital duties it cost the states billions each year. Based on budgetary information provided by Sourcebook, a proportion of each state’s budget was attributed to marijuana and totaled 8.2 billion dollars in excess costs to the 50 states and the District of Columbia.

The federal government provides additional support to combat drug use through multiple agencies. Of the 14 billion spent on combating drug use, the Department of Health and Human

Services, Department of Homeland Security, and the Department of Defense receive the most funding for treating drug users, education, and enforcing marijuana laws.

Diverting sales revenue from illegal activities to legitimate sources and taxing profits provides the government with additional revenue and stores with more business. The estimated 10.4 billion dollar marijuana market would provide 4.7 billion dollars in tax revenue. The diversion of money would help limit the potential of dealers and networks of organized crime that rely on the money to sustain their enterprises. Further, by controlling the supply it would make it increasingly difficult for children and young adults under 18 to obtain marijuana. This would undoubtedly make the streets safer, while further reducing the load on law enforcement.

An unintentional consequence of marijuana laws has also affected farmers and the crops they are allowed to grow. Industrial hemp has been grown around the world for thousands of years for its uniquely strong fiber, low maintenance, and high yield. Not allowing farmers to grow this crop limits the profit potential of American farmers and forces the importation of hemp. Changing the law this paper showed that converting just 10% of corn acreage to hemp would provide over 1 billion dollars in additional GDP.

Based on state cost, federal cost, lost tax revenue, and lost potential income from hemp production; the overall yearly financial impact on the government and American businesses is 16.9 billion dollars.

#### **Total Cost of Marijuana Prohibition**

State Costs	\$ 8,209,022,154
Federal Costs	\$ 2,956,096,000
Lost Tax Revenue	\$ 4,746,575,342
Hemp Production	\$ 1,061,000,000
Total	\$ 16,972,693,496

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**Appendix A: State Judicial Budget**  
(in Thousands)

	Judicial Budget 2005	Judicial Budget Inflated 2009	Judicial Budget Spent on Marijuana		Judicial Budget 2005	Judicial Budget Inflated 2009	Judicial Budget Spent on Marijuana
Alabama	336293	371402	34034	Montana	103263	114044	10451
Alaska	153532	169561	15538	Nebraska	141893	156707	14360
Arizona	771212	851727	78049	Nevada	393471	434549	39821
Arkansas	207985	229699	21049	New Hampshire	111330	122953	11267
California	7317119	8081026	740516	New Jersey	1333485	1472701	134953
Colorado	431507	476556	43670	New Mexico	228099	251913	23084
Connecticut	543710	600473	55025	New York	3180072	3512072	321833
Delaware	134792	148864	13641	North Carolina	514426	568132	52062
DC	55840	61670	5651	North Dakota	57137	63102	5782
Florida	2007927	2217555	203209	Ohio	1539382	1700093	155790
Georgia	900890	994943	91173	Oklahoma	267559	295492	27078
Hawaii	244459	269981	24740	Oregon	338286	373603	34236
Idaho	135544	149695	13717	Pennsylvania	1412847	1560348	142985
Illinois	1217029	1344087	123167	Rhode Island	144677	159781	14642
Indiana	389218	429852	39390	South Carolina	244843	270405	24779
Iowa	269343	297462	27258	South Dakota	61383	67791	6212
Kansas	268149	296144	27138	Tennessee	489303	540386	49519
Kentucky	366793	405086	37121	Texas	1818638	2008504	184052
Louisiana	502077	554494	50812	Utah	274603	303272	27791
Maine	94095	103919	9523	Vermont	54837	60562	5550
Maryland	639024	705738	64671	Virginia	639664	706445	64736
Massachusetts	842575	930540	85271	Washington	659477	728326	66741
Michigan	1156615	1277366	117053	West Virginia	180912	199799	18309
Minnesota	573372	633232	58027	Wisconsin	527377	582435	53372
Mississippi	185049	204368	18728	Wyoming	76504	84491	7742
Missouri	428746	473507	43390	<b>Total</b>			<b>3538708</b>

\*Source: <http://www.albany.edu/sourcebook/pdf/t162005.pdf>

**Appendix B: State Corrections Budget**  
(in Thousands)

	Corrections 2005	Corrections Inflated to 2009	Corrections Budget for Marijuana Offenders		Corrections 2005	Corrections Inflated to 2009	Corrections Budget for Marijuana Offenders
Alabama	606304	669602	85039	Montana	156399	172727	21936
Alaska	198480	219201	27839	Nebraska	287933	317993	40385
Arizona	1277209	1410550	179140	Nevada	555887	613922	77968
Arkansas	457095	504816	64112	New Hampshire	153666	169709	21553
California	9843888	10871590	1380692	New Jersey	1856275	2050070	260359
Colorado	893489	986769	125320	New Mexico	460455	508527	64583
Connecticut	579995	640546	81349	New York	4879742	5389187	684427
Delaware	218016	240777	30579	North Carolina	1518174	1676671	212937
DC	164376	181537	23055	North Dakota	67204	74220	9426
Florida	3746991	4138177	525548	Ohio	1857907	2051872	260588
Georgia	1848512	2041497	259270	Oklahoma	596834	659143	83711
Hawaii	170434	188227	23905	Oregon	833855	920909	116956
Idaho	250734	276911	35168	Pennsylvania	2859147	3157642	401021
Illinois	1728260	1908690	242404	Rhode Island	176131	194519	24704
Indiana	953691	1053256	133764	South Carolina	578378	638761	81123
Iowa	326747	360859	45829	South Dakota	92330	101969	12950
Kansas	364512	402567	51126	Tennessee	829808	916440	116388
Kentucky	668163	737919	93716	Texas	4278128	4724765	600045
Louisiana	945798	1044539	132656	Utah	419993	463840	58908
Maine	177686	196236	24922	Vermont	96665	106757	13558
Maryland	1460019	1612445	204781	Virginia	1542028	1703016	216283
Massachusetts	1036820	1145064	145423	Washington	1355122	1496597	190068
Michigan	2257742	2493450	316668	West Virginia	242596	267923	34026
Minnesota	717809	792748	100679	Wisconsin	1205599	1331464	169096
Mississippi	358246	395647	50247	Wyoming	237222	261988	33272
Missouri	840718	928489	117918	<b>Total</b>			<b>8307418</b>

\*Source: <http://www.albany.edu/sourcebook/pdf/t162005.pdf>



## Appendix C: State Police Budget Spent on Enforcing Marijuana Laws

(in Thousands)

	Police Budget	Police Budget inflated to 2009	Total Arrests per State	Marijuana Arrests per State	Percent Arrests for Marijuana	Police Budget Spent on Marijuana
Alabama	822770	908667	233923	10272	0.044	39901
Alaska	206207	227735	29170	1002	0.034	7823
Arizona	1532631	1692638	316462	15535	0.049	83091
Arkansas	481336	531587	197405	6504	0.033	17514
California	12289948	13573019	1430399	60111	0.042	570392
Colorado	1188091	1312128	251944	9913	0.039	51627
Connecticut	836912	924286	134644	5691	0.042	39067
Delaware	237639	262449	34452	1540	0.045	11731
DC	414394	457657	4351	49	0.011	5154
Florida**	5635563	6223916	0	0	0.051	315907
Georgia	1727427	1907770	424701	23977	0.056	107705
Hawaii	267943	295916	63019	1272	0.020	5973
Idaho	260742	287963	74614	3053	0.041	11783
Illinois**	3581163	3955036	251220	0	0.051	200746
Indiana	1052019	1161850	262071	14325	0.055	63508
Iowa	533305	588982	118867	6633	0.056	32866
Kansas	582298	643090	83490	3803	0.046	29293
Kentucky	670527	740530	279058	14931	0.054	39622
Louisiana	1059879	1170530	315280	17853	0.057	66282
Maine	216130	238694	55042	3416	0.062	14814
Maryland	1494492	1650517	311825	13632	0.044	72155
Massachusetts	1571230	1735266	160173	13826	0.086	149787
Michigan	2270047	2507040	379657	17708	0.047	116934
Minnesota	1185984	1309801	172392	9308	0.054	70720
Mississippi	515076	568850	195710	9682	0.049	28142

## Appendix D: State Police Budget Spent on Enforcing Marijuana Laws

(in Thousands)

	Police Budget	Police Budget inflated to 2009	Total Arrests per State	Marijuana Arrests per State	Percent Arrests for Marijuana	Police Budget Spent on Marijuana
Missouri	1158883	1279870	347372	18279	0.053	67348
Montana	180901	199787	31773	619	0.019	3892
Nebraska	298621	329797	94515	7925	0.084	27653
Nevada	783325	865104	153458	4784	0.031	26969
New Hampshire	252949	279357	53172	4317	0.081	22681
New Jersey	2834889	3130851	377320	20888	0.055	173320
New Mexico	474801	524370	121636	3343	0.027	14412
New York	7372812	8142534	694747	57504	0.083	673955
North Carolina	1679125	1854426	532873	23061	0.043	80253
North Dakota	99843	110267	27379	910	0.033	3665
Ohio	2633113	2908010	392533	16611	0.042	123060
Oklahoma	626545	691956	166679	11167	0.067	46359
Oregon	909513	1004466	139704	6585	0.047	47346
Pennsylvania	2389763	2639254	497438	22243	0.045	118015
Rhode Island	291386	321807	43342	2462	0.057	18280
South Carolina	745729	823583	219428	10881	0.050	40840
South Dakota	124487	137483	42833	2149	0.050	6898
Tennessee	1175231	1297925	267385	13486	0.050	65463
Texas	4576321	5054089	1052194	51643	0.049	248061
Utah	514238	567924	126232	4609	0.037	20736
Vermont	134392	148423	15940	732	0.046	6816
Virginia	1616525	1785290	296953	14282	0.048	85864
Washington	1288901	1423462	289959	13712	0.047	67315
West Virginia	224055	247446	45729	2089	0.046	11304
Wisconsin	1357664	1499404	442080	17322	0.039	58751
Wyoming	147675	163092	34529	1928	0.056	9107

\*\*Florida and Illinois did not report arrest data, a weighted average was used to calculate percent arrests for marijuana

Source: <http://www.albany.edu/sourcebook/pdf/t162005.pdf>

<http://fisher.lib.virginia.edu/collections/stats/crime/index.html>

**Appendix E: State Expenditure on Marijuana Enforcement**  
(in Thousands)

	Police	Judicial	Corrections		Police	Judicial	Corrections
Alabama	39901	34034	4322	Montana	3892	10451	1327
Alaska	7823	15538	1973	Nebraska	27653	14360	1824
Arizona	83091	78049	9912	Nevada	26969	39821	5057
Arkansas	17514	21049	2673	New Hampshire	22681	11267	1431
California	570392	740516	94046	New Jersey	173320	134953	17139
Colorado	51627	43670	5546	New Mexico	14412	23084	2932
Connecticut	39067	55025	6988	New York	673955	321833	40873
Delaware	11731	13641	1732	North Carolina	80253	52062	6612
DC	5154	5651	718	North Dakota	3665	5782	734
Florida	315907	203209	25807	Ohio	123060	155790	19785
Georgia	107705	91173	11579	Oklahoma	46359	27078	3439
Hawaii	5973	24740	3142	Oregon	47346	34236	4348
Idaho	11783	13717	1742	Pennsylvania	118015	142985	18159
Illinois	200746	123167	15642	Rhode Island	18280	14642	1860
Indiana	63508	39390	5003	South Carolina	40840	24779	3147
Iowa	32866	27258	3462	South Dakota	6898	6212	789
Kansas	29293	27138	3446	Tennessee	65463	49519	6289
Kentucky	39622	37121	4714	Texas	248061	184052	23375
Louisiana	66282	50812	6453	Utah	20736	27791	3529
Maine	14814	9523	1209	Vermont	6816	5550	705
Maryland	72155	64671	8213	Virginia	85864	64736	8221
Massachusetts	149787	85271	10829	Washington	67315	66741	8476
Michigan	116934	117053	14866	West Virginia	11304	18309	2325
Minnesota	70720	58027	7369	Wisconsin	58751	53372	6778
Mississippi	28142	18728	2378	Wyoming	9107	7742	983
Missouri	67348	43390	5511	<b>Total</b>	<b>4220898</b>	<b>3538708</b>	<b>449416 8209022</b>

\*Totals were carried over from chart 1, 2, 3

## Christopher I. Myers

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### Education

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The Pennsylvania State University  
Schreyer Honors College  
Smeal College of Business  
Bachelor of Science in Finance

University Park, PA  
Class of 2010

### Relevant Experience

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#### **Penn State Investment Association**

*Analyst, Consumer Staples Sectors*

University Park, PA  
2009-2009

- Research and analyze stock performance in the consumer staples sector
- Utilize discounted cash flow, industry comparables, and industry trends to analyze equities
- Develop recommendations for the sector, and deliver stock pitches to the executive board of the Nittany Lion Fund, a \$3.2 million portfolio of alumni investments

#### **Waddell & Reed Financial Services**

*Financial Advisor Intern*

York, PA  
2009

- Worked with clients to analyze their financial situation and goals
- Developed financial plans for clients to assist in reaching their financial goals

#### **Penn State EcoCar: Nationwide Collegiate Competition**

*Business Committee*

University Park, PA  
2008

- Created a professional business plan for a newly created “green” car to potentially market to GM
- Collaborated with team members developing organizational goals during weekly meetings

#### **Penn State University**

*Tutor: Accounting, Calculus, and Economics*

York, PA  
2006- 2008

- Trained traditional and adult students to implement new learning techniques
- Completed the College Reading and Learning Association Tutor Certification

#### **Block House Furniture Company**

*Assembly Line Lead*

York, PA  
2002-2007

- Supervised and led a team of six co-workers in assembly line construction
- Promoted based on leadership capabilities, diverse knowledge of positions, and quality control
- Independently worked on new projects analyzing building techniques and reporting back to management

### Leadership

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#### **Penn State Finance Society**

*Events Committee*

University Park, PA  
2008-2009

- Coordinate various events to promote involvement and education within financial industry
- Fundraiser for THON through PS-FS, successfully raising over \$6,000 as a group

#### **Big Brother Big Sister**

*Volunteer Mentor*

York, PA  
2007

- Mentored bi-weekly, provided positive role modeling, and helped children engage in constructive community activities

### Awards

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Evan Pugh Scholar – *Penn State University*

2009

President Sparks Award– *Penn State University*

2008

Soffer Harry Memorial Scholarship

2008

President’s Freshman Award– *Penn State University*

2007

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