

ECONOMIC BENEFITS OF MARIJUANA LEGALIZATION

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ABSTRACT

There is a vast and growing academic literature regarding the economic consequences of prohibition, de-criminalization and legalization of marijuana. Economic theory suggests that de-criminalization and legalization by regulation and taxation is an alternative tool to provide higher tax revenue for governments as well as a way to establish a market of relatively reasonable prices. However, this research is still within the domain of Academia and as such, it has not yet translated into tangible guides to policy. Thus, consumption of marijuana in most countries around the globe is still prohibited and driven to the underground market. This research examines historical data from Prohibition of alcohol in the United States in order to answer the extent to which the overall costs of prohibition outstripped the benefits of forced reduction in consumption. It will also analyze the economic benefits and spillover effects from marijuana legalization in society. As such, the research question will be tackled by drawing upon two main channels for generating revenue for the government, i.e. reduction in government expenditure on marijuana law enforcement and potential revenue from introduction of a marijuana tax. In order to do so, the study will identify the effect of marijuana prohibition/legalization on government budgets—taxing and regulating it à la tobacco or alcohol—as well as its direct costs of enforcement. The conclusions address the policy recommendations regarding a more effective reduction in marijuana consumption through legalization, taxation and education.

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INTRODUCTION

Governments around the world are facing a down shifting fiscal outlook. Public debt of many countries stands over “60% of GDP” and represents highest level of worldwide debt rates since World War II. If nothing will be done about it (projections and trends) this ratio will shift upward with constant trend. Along with that, governments are also troubled with high budget deficits. Aldo many esteemed scholars are expressing their worries about current and future level of government debt, their proposals for expenditure saving and or more rigid tax policy does not have much of a support among political elite. Primarily for this reason some liberal politicians, scalars and private activists have snuggled an out of ordinary approaches for dealing with issue of forthcoming fiscal deficits, such as legalizing marijuana.

The idea of creating a world of legalized drugs is not a new one. Gahlinger (2004) records that problem with marijuana enforcement were first discussed more than hundred years ago. British Indian Hem drugs commission at that time has found that marijuana prohibition was not practical and that it should be taxed to maximum presumably possible scope.

Today’s world is faced with the similar problem. Legalization of marijuana can and would have many positive impacts. Currently there is an open debate on marijuana, with a question about it legalization and awareness for needed changes in prohibition policy. Moreover, research conducted by respectable university professors and scalars indicates that legalization of marijuana by taxation and regulation would generate fiscal

revenue for the governments. However, sometimes it appears that both position and opposition would want to know only the volume of magnitude of the economic benefits from ending prohibition and introducing a new policy for marijuana legalization.

Results of research done by Cato Institute (2012) on this topic imply that “the budgetary implications of legalization are neither trivial nor overwhelming” and outline that “legalization of marijuana cannot untangle all fiscal problems of one country since the budget effects are small in comparison with current deficits of most countries” (Miron and Waldock, 2010). However, economic benefits are more than just statistical mistake, further more ones can find it very attractive and because of it, opposition of marijuana legalization, ones that do not completely comprehend issues about “prohibition vs. legalization” can recognize these positive economic effects as an important factor.

There are a few research studies done by respectful economic research centers focusing on the “pros and cons” of marijuana legalization. At the same time there is extensive and very rich economic literature about the benefits of free market but also the other one pointing and illuminating the hard moral questions we confront in our everyday lives and provokes a debate that’s been missing in our market-driven age: “What is the proper role of markets in a democratic society, and how can we protect the moral and civic goods that markets do not honor and money cannot buy?” (Sandel, 2012).

Last fifty years of restrictive policies towards drugs, quite objectively can be summed up in two words - a complete failure. The number of addicts is still high, the number of prisoners associated with drug use is at record level, and all this despite the great sum

of money spent on prevention and punishment. In our modern society's drug problems are still taboo, surrounded with fear that, as usual comes from ignorance and lack of information. For addicts are seen as some kind of modern lepers.

Prohibition has proven to have little benefit, and comes with a long list of negative side effects: it generates violent, corrupt black markets that increase the spread of HIV and other diseases. It results in civil-liberties violations in the form of warrantless searches, and the unnecessary incarceration of thousands. Governments waste resources on police and prisons, and leave potential tax revenue as profit for illegal traffickers. Advocates of prohibition are outlining that it reduces marijuana distribution and consumption, lowering crime rates, generating higher productivity and providing better health. However, opposition finds that prohibition has very small impact on distribution and consumption of marijuana but that at the same time produces many issues typically correlated to marijuana itself. One of these issues is the estimated benefits of prohibition on budget of one country. Prohibition requires direct costs (criminal prosecution) and misses the opportunity of taxation of marijuana manufacturing and distribution. Therefore, if marijuana would be legalized, costs related to criminal prosecution would be insignificant and governments could collect taxes for manufacturing and distribution of marijuana. Thus, government expenditure would drop down and tax income will increase.

Confusion about drug policy discussions (legalization of marijuana) can easily be mitigated by raising the right question. That question has to be addressed to determinate if current drug prohibition generates results? This thesis will address

question of economic benefits of drug legalization with regards to fiscal revenue of the state and other socio - economic benefits. Drug legalization can provide unconventional but interesting revenue for many economies, especially in terms of tax revenue but also other socio economic benefits. This can be one new way of increasing competitiveness for many countries in this market driven age when many of them are facing constant and unsustainable growth in consumption as open economies with scarcity resources and extremely competitive surrounding.

CHAPTER 1: ANALYTIC FRAMEWORK

Researching and determination of economic and budgetary impact of marijuana legalization requires setting up a numerous presumptions for the very policy change in focus. Same states in US (Colorado) and worldwide (Uruguay) have recently changed their policies regarding this matter and pursue a new chapter in the history of their tax revenue. This shows (theoretically) expenditure cuts and revenue gains that might occur from banning prohibition and introducing new polices about marijuana legalization. In his paper, Caulkinn (2013) states that he is considering policy shift from prohibition to legalization “as more substantial in long run than decriminalization, and that for him meaning repealing criminal penalties against simple possession but retaining them against drug smuggling and selling”.

Total economic and budgetary benefits of legalization of marijuana are much greater them benefits of decriminalization. This can be argued with 3 main reasons. First of all, legalization of marihuana will create situation where there are no criminal arrests for trading of marijuana. Then, legalization of marijuana will create environment where government can cut its expenditures for judicial or prison expenses. In case of decriminalization there are still saving in this area but they are much smaller compared to full legalization. And there is also a benefit of taxation of marijuana. This can happened both at the level of production as well at the level of marihuana trafficking. However, these projections are not to be taken in consideration for granted, because those are just estimated economic and budgetary benefits and can vary from country to

country. Because of it, there are a lot of assumptions in this thesis. This is why; those projections can only be used to determinate level of magnitude of economic and fiscal implications of future legalization of marijuana.

Conceptually, projecting potential tax income from marijuana is everything but not easy. Because tax income offset tax that is raised by unit of tradable marihuana at the free market multiplied the estimated extent of trade on same market. This projected tax income is derived by Caulkins (2013) using model that he introduced in his paper. His model is projecting tradable prices at all levels time's current tax rates and factors. His is estimating the selling prices for the producer, processor and retailer and multiplies by the relevant tax rates, factors in sales taxes and makes various adjustments. The methodology used in this thesis it to analyze data on costs and benefits under current drug policy regulation (prohibition) and potential legalization as alternative (recommended policy – legalization of marijuana). The results of this analysis will be used to predict a potential trend about future economic benefits in regards of fiscal revenue and other socio-economic impacts of this recommended policy.

Results of some previous research are more than optimistic. Jeffrey E. Miron and Katherine Waldock from Cato Institute are just some of the great researchers of our time that deal with this topic. “Jeffrey A. Miron is senior lecturer and director of undergraduate studies at Harvard University and a senior fellow at the Cato Institute. Kate Waldock is a doctoral candidate in economics at the Stern School of Business at New York University” (Cato, 2012).

CHAPTER 2: HYSTORY OF PROHIBIITON

Western policy for psychotropic substances (prohibition) is continuously evolving and this policy is now active for many years. Between different countries there are various differences in how strict they are in enforcing drug laws, however, they are not visible. The Netherlands is special case, with experience with various form of marijuana decriminalization. Even today, a restrictive marijuana policy continues to be part of general drug policy in many countries (Cohen, 1993). Prohibitionist approaches are firmly anchored in Western Europe. In 1989, the French established a bureaucratic body called Helms (European Commission pour la Lutte AntiDrouge - The European Commission on Drugs). Under the auspices of this organization, co-operation of the Governments of Member States of the EEC to improve and complement prohibitionist drug legislation. Pompidou Group, which was initiated by the French in 1991 under the auspices of the Council of Europe, at the regular meetings of government professionals, police officers, customs officers, managers and epidemiologist's still provides support for the same purpose (drug management).

This is why World Health Organization (WHO) has created its European branch with its ongoing activities in area of drug policy and has been focused of deviation from mainstream prohibition to a new ways for drug management (outside the mainstream theory). United Nations continues to support its large bureaucracy on drugs in Europe: Unice in Rome, Vienna UNDCP and the new program for substance abuse of World Health Organization (PSA) in Tenev. Interpol based in Lyon also constantly presses in

the direction of prohibitionist policy and expanding its influence in the East. U.S. Agency for Drugs (DEA - an abbreviation for the Drug Enforcement Agency) has its representatives in all U.S. embassies in Europe. Diplomatic status allows them to form an ideal group pressure on national governments. When the new Eastern European country would express a need in assistance for drug control one of the possibilities would be to visit Western European and North American bureaucratic organization specialized in drug control. However, there, they would often find people who with professional arguments defending "religion" of drug control, which caused so much damage and death, and has many shortcomings. For the Eastern European country would be better not to follow those large bureaucratic organizations whose existence depends on the survival and expansion of prohibition policy and to seek the expertise of the national departments of drug control, where they can find more diverse views on the policy of drug control.

All across Europe there are rising voices of scholars in the area of drug management critical of the current policy and to the consequences of this policy for drug consumers, drug addicts, government institutions, prisons and corruption, the organized and no organized crime (Cohen, 1993). Group of representatives of many world large cities have signed resolution, which is critical to prohibition policy of drug management because such policies incapacitated ideas from which they were originally initiated. The resolution requested the decriminalization of drug use and impunity. One of the main findings of the resolution: "The criminalization of not only hampers the provision of assistance and therapy, but also emergency police and judicial apparatus to the tasks

that they are unable to meet". Individual experts in government bodies are becoming increasingly interested in prohibitionist policy of drug control. However, the new democratic governments in Eastern European countries are signatories to the initiative too little account of the Frankfurt resolution (or individual opponents of prohibition or smaller units of national governments).

My hypothesis is that the development of drug policy is very important part of the implementation of policies that are currently important in this region. Currently, the dominant policy objective and motive to change the political system in Eastern Europe to establish a different political system than it was the previous communist. The general objectives are based on market economics, multi-party democracy and parliamentarianism. Drug use and drug addiction in the previous communist system practically did not come on the agenda of political debate, but when they were, it was insignificant object wrapped in a veil of taboo. These countries would like to breath with taboos from the past. These counties from Eastern Europe in the past has not developed institutions and theories concerning drug use. As a result, they lost their own models for policy in this area.

This is probably not the only reason why one country eagerly searches for solutions to Western models. Important is the need for political support and "materials". Since the value of economic aid from Western Europe is based on the criteria of the International Monetary Fund (IMF), countries that want to qualify for the aid (drug management) has to follow main agenda of Western prohibition policy. There is a strong interest of Western countries for the Eastern states to adopt their policy of controlled drugs. This

interest is not derived from in-depth analysis and evaluation of the possibility of control over drugs, but based on quite other political priorities. Nevertheless, it is likely that the effect of this policy of drug control - by itself - is immaterial. For the East this is probably a parallel interest expressed in the fear of rising crime. So far, the economic situation in Eastern countries did not allow for acceptable levels of well-being of the population. The development of the black economy threatened the existence of the formal economy.

CHAPTER 3: CRITICAL REVIEW OF THE PROHIBITIVE SYSTEM

Prohibition of production, distribution, trade and limited consumption of drugs is now widely accepted internationally and incorporated in numerous UN documents. Efforts to establish a global mechanism of social control of drugs is present throughout the twentieth century. Opium and its alkaloids have remained at the center of the control effort. Because it was observed that no country can alone cope with this problem, for this reason, establishment and strengthening of the prohibition of drugs is inextricably linked with the growth of the political institutions of the international community. Between 1912 and 1988 many countries concluded different multilateral agreements on limiting production, control of traffic, especially the illegal international trade and the prevention of drug use. Prohibitive drug control system shortly after its establishment has shown important and very big weakness (Brecher, 1988). There is, first of all a need to redefine the meaning of addiction. Instead of treating drug consumption as a bad habit or weakness of will or at worst moral deficits, which is characterized by a nineteenth-century notion on drug issue, under the influence of a new moral paradigm drug use placed outside the law is equated with crime, mental illness and moral degeneration (Rouse & Johnson, 1991). The criminalization of drug use is directly reflected in the social status of addicts and occasional consumers. Attacked by law they are forced to choose between rejection of their habits and opportunities to join subculture criminals. For many it was an end of the use of any illegal drugs. Some have turned to social safer use of those drugs, which were culturally structured. Some nonetheless continued with the current habits and fit in the criminal network. Prohibition in any case, failed to deter

people from using drugs (Offergeld & Souris, 1987) and (Xiberras, 1989). On the contrary, despite the various measures in the field of combating and preventing this phenomenon is still growing. Since early 60's until today, the use of drugs has grown into a global phenomenon and has taken on the characteristics of a dramatic pandemic. Prohibition of drugs has turned into a particularly attractive and lucrative commodity of high profitability, which has a decisive influence on the establishment and rapid growth of organized crime. Because of its pursuit of quick and easy profits, criminals recognized business with illegal drugs as an ideal field for their own actions. Moreover because of the total marginal areas of criminal activity, marijuana trafficking is not only very attractive but it has grown into the most important activity of the modern international organized crime (Arlacchi, 1986), (Catanzaro 1988), (Kelly, 1986), (Robertson, 1977), (Williams & Florez, 1994). Drug production (growing psychotropic plants, their processing and laboratory extraction of active ingredients), the organization of distribution and trade represent jobs that make huge profits (Cooper, 1990), (Stares, 1996). Therefore, highly profitable drug industry has become the most profitable single planetary illegal economic activity. The estimates of profit drug industry is usually taken as the best estimate at \$ 500 billion per year or about 16,000 Euros per day, which for comparison equals annual profit of the entire global textile industry (Encode, 2001), (ODCCP UN- Global Trends, 2012), (World Drug Report, 2012). Drugs therefore become very important for the global economy and it is not hard to capture a picture how the highly developed countries of the center as well as those who are poor in the periphery and semi-periphery of the world system are part of it. Capital accumulated in the affairs of the drug should not be left out of sight because it is handled mostly in

"cash" money. Depending on the assessment of profitability, the capital can turn at any moment into legal financial flows or at the very least invest in other illegal activities? Estimates of the size of the capital realized in the drug industry that fails to "cleanse " and invest in legitimate economic flows are between 50 and 70 percent (OECD, 1990), (UN ECOSOC, 1995). Ensuring the legality of capital accumulated in business with illegal drugs (operation known as "washing" or recycling of money) is one of the financial operations of which all distance themselves, but few manage to resist because it brings high fees, irresistibly attractive not only for certain banks, offshore -state, but equally the most famous and oldest world famous banks (UN report ODCCP - Financial Havens, Banking Secrecy and Money Laundering, 1998). In addition to economic, drugs inevitably penetrate deeply political affairs. This is as true for the dominant producers, and for countries that are predominantly consumers (UNDCP, 2000).

The wide presence and diversity of the phenomenal manifestation of drug use contribute to the transformation of the problem that stands out as multiple significant social issues. In many countries, drug resistant occupy a leading position in the list of political priorities. This applies not only to the U.S. Where there is undoubtedly the largest population of consumers and therefore, the most important drug market, but also for the state of the European Union, the majority of Latin American, African, Far East and post-communist states. With terrorism and illegal trafficking in arms, drugs represent a permanent preoccupation of the international community. Converting drug use in the priority problem of modern society is ensured by the fact that this social phenomenon, firmly embedded in consumer culture is constantly expanding since the end of World

War II to the present. In developed industrial countries, it was initially found a foothold among the marginalized groups (especially racial and ethnic minorities) and youth. During the "turbulent" 60-ties drugs came out of the ghetto for "colored" and moved toward young people to gain entry to all social classes. In underdeveloped and developing countries popularization of drugs had slightly different courses, but almost identical outcome. Therefore this phenomenon first affected offspring social elite, who imitated "Western model" of behavior and lifestyle. This caused an increase in media attention, after which the drug rapidly stretched and anchored among the masses of the poor. Today drug use penetrated into everything, even the most remote parts of the planet (World Drug Report, 2000). No modern state, regardless of the actual level of social development or a form of political rule was spared of drug use. It turns out that the formation, root development and spread of this phenomenon, the existing differences in the type of social system, form of government or the level of social development have relatively little importance. One can of course reflect on solutions that are proposed, the measures taken and implemented as well as the overall effects of social control. Drug use as a social phenomenon in any case is beyond established boundaries of the state. Although for a whole century governments of some countries, many international organizations and in particular, the services and agencies that operate within the UN are trying to shape a valid drug Control Policy, offered solutions not only fail to achieve the expected results but do not meet either of the general acceptance which provokes discussions with more or less vigor steady progress. Designing a proper strategy of social control of drugs must begin a thorough review of prohibitive system. In doing so, it must necessarily take into account the global nature of this phenomenon. First of all,

the production of drugs , psychotropic plant breeding and laboratory processing is taking place mostly in very poor, undeveloped and relatively politically unstable countries - Peru, Bolivia, Colombia, Pakistan , Afghanistan , Myanmar , Iran , Turkey, Lebanon, Morocco (Tuskanov, 1994). Although it may not represent the most important area of the economy of these countries, drugs are certainly an important source of capital flow that can be used for legal intervention in economic activities. The most important markets are located in the United States and the European Union countries in which populations of random, occasional or regular consumers of drugs includes almost one-third of total inhabitants(EMCDDA, 2001). Its global dimension therefore cannot be ignored in analyzing the reasons for high profitability of the drugs. Local characteristics of drug problems undoubtedly have great significance but learning from the experiences of other countries, especially those for a long time trying to "solve the problem" is undoubtedly of great benefit. Careful study of the experiences of others achieved success and in particular their failure is fruitful for shaping proper national strategy.

CHAPTER 4: THE CURRENT CRISIS OF DRUG PROHIBITION

History always teaches as many lessons. This is why turning to alcohol policy, legalization of marijuana as a new policy can be very attractive. Gallup (2013) has conducted survey in America about marijuana. According to their findings 58% of US citizens think that marijuana should be legalized. This result is implicating growth in support of this issue compared to results from 1969 when this same research agency conducted survey about marijuana for the very first time. At that time, only 12% of US citizens were thinking that marijuana should be legalized.

At this moment, 20 States in United States have implemented policies that are regulating marijuana use for medical purposes (Govering, 2014). Advocates of prohibition are outlining that it reduces marijuana distribution and consumption, lowering crime rates, generating higher productivity and providing better health (enhance societal wellbeing). However, opposition finds that prohibition has very small impact on distribution and consumption of marijuana but that at the same time produces many issues typically linked to marijuana itself, such as: respiratory disease and accidental injuries (Gieringer, 1994).

From very logical standpoint of view, argumentation of this thesis is implicating that it's time for a debate about current prohibition policy and where it took as. For the purpose of this thesis it is specially important economic effect of marijuana legalization on public budget. Because prohibition requires direct enforcement costs, it is a big burden for

government and conveniently for the tax payers. In addition, because marijuana is prohibited, potential tax for the government from taxing manufacturing and distribution of marijuana is left on the black market in the hands of criminals. In case of legalized marijuana, marijuana laws enforcement expenditures would be very small and governments would generate taxes based on manufacturing and distribution of marijuana. Because of it, in this time of economic crisis and potential long lasting recession, introduction of new drug policies (legalization) can be one of the new drivers for greater tax revenue by legalizing and regulating marijuana.

Economic history in this can recall on 1920s alcohol prohibition in United States. Similar to alcohol after the prohibition era, marijuana can create billions of dollars to the countries by in governmental savings and tax income. Jeffrey Miron and Katherine Waldock in their study estimated that “drug legalization in U.S. would create tax income of \$46.7 billion annually, with \$8.7 billion of this revenue expected to result from the legalization of marijuana”. To generate these numbers, these researchers followed a logical and pragmatic approach. At the beginning they estimated the amount of money that one consumer in United States spends for drugs with prohibition in power (marijuana). After it, they estimated hypothetical retail expenditures per consumer if marijuana would be legalized. At the end, assuming that policy makers will apply similar taxation method for marijuana as for alcohol and tobacco, they calculated an estimate of the tax income for the government under scenario of legalization of marijuana (Miron and Waldock, 2010). These results are implying strong economic benefits of taxation but

it is interesting that one half of this additional fiscal income comes from saving on criminal prosecution expenditure.

CHAPTER 5: DEFINING THE ISSUE

A lot misunderstanding about marijuana legalization can be cleared by researching benefits of legalization. It is important to find out if prohibition of marijuana does “more harm than good” and if legalization will bring any benefits, for the purposes of this thesis, especially economic benefits. Idea behind this thesis is not to research how harmful drugs can be for its users; there are plenty medical research about marijuana and its role in medicine, because if those arguments were conclusive alcoholic beverages and cigarettes would be prohibited as well.

Marijuana legalization has one important advantage over decriminalization. It allows taxation of production and sales of marijuana. If it would be legal but not taxable or regularly taxable as any other good price of marijuana on the free market would be very low. It will be in order of magnitude of 0, 05 to 0, 1 dollars per joint. Understanding that intoxicating potential of one joint of marijuana equals alcohol of 1 to 2 dollars (Netherlands prices of marijuana). This is impaling raise in taxes between \$2, 2 and \$6, 4 billion for one year. In total (in governmental saving and tax revenue) legalization can save about \$8 - \$16 billion. Over this, there are other indirect economic benefits, such as hemp agriculture, marijuana truism and other spinoff industries.

Decriminalization of marijuana is now an open and attractive political issue in many European countries (Germany, Italy, Switzerland, and France) and worldwide (Australia, South America). Decriminalization has big support in many Parliaments and government institutions: Presidential Commission on Marijuana (1973), California Research Advisory

Panel (1990), US National Academy of Sciences (1982), and Canadian Le Dain Commission (1970). However, results of decriminalization of marijuana are prohibited black market that is still not completely regulated or taxed with many open issues (problems of enforcement). Legalization deals with all of these issues. This means that marijuana can be legally distributed and taxes same way as alcohol and tobacco. It can be protected from further commercialization by imposing strict regulations and provision of advertising. At this moment, only Uruguay has fully legalized marijuana. This created window for taxation and distortion of black market, therefore, this thesis will be focused on economic benefits of marijuana legalization. Ostrowski (2014) emphasis that in the absence of data “neither the theoretical danger of illegal drugs nor their actual harmful effects can be a sufficient basis for prohibition. Neither can the bare fact, if proven, that illegal drug use would rise under legalization”. However, opposition to legalization is strongly outlining cost of legalization. Research Triangle Institute (1984) publishes paper on the topic of economic costs of drug prohibition and becomes one of the most cited ones in support of this rigid policy, estimating drug policy in United States at \$60 billion for 1983 without rational arguments in favor or status quo. “It does not mention the terms legalization and decriminalization and makes no attempt to separate the costs attributable to drug use per se from the costs attributable to the illegality of drug use. In fact, the study seems to include some costs of legal drugs in its estimates” (Ostrowski, 2014). One the problems and weak points of this report is that addresses only costs that prohibition did not succeed to prevent. It does not strive to measure the costs prevented or caused by prohibition. Because of all of these unsolved issues (present form of study) it does not provide relevant arguments for the case of legalization of marijuana, impaling

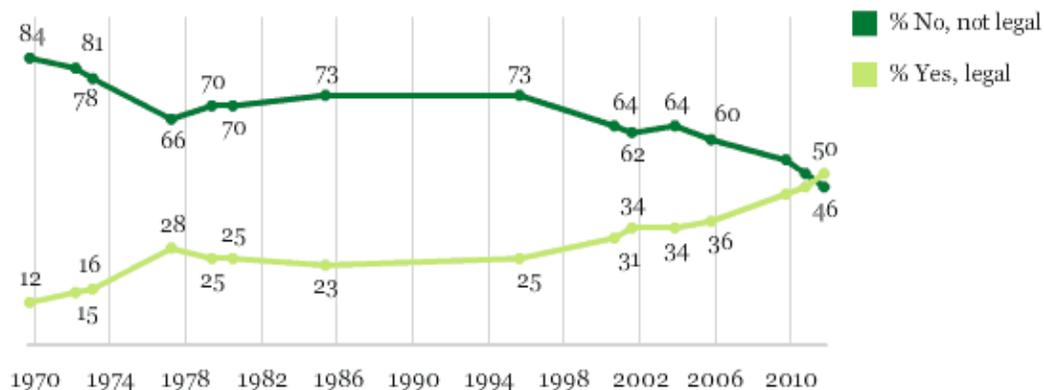
that now it is a fact that prohibitionists face a “daunting task--one that no one has yet accomplished or, apparently, even attempted” (Ostrowski, 2014).

Diagram:1

Support for marijuana legalization (US timeline)

Support for Making Use of Marijuana Legal

Do you think the use of marijuana should be made legal, or not?



GALLUP®

Source:<http://www.gallup.com/poll/165539/first-time-americans-favor-legalizing-marijuana.aspx>

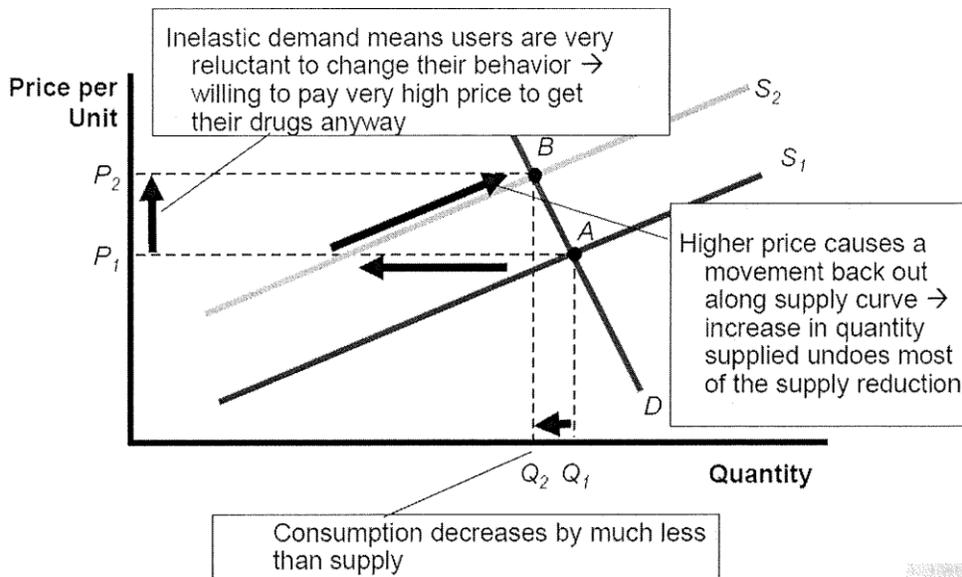
Legalization of marijuana opens issues of best policy implementation. As outlined in many chapters in this thesis, there are several important reasons for legalization of marijuana:

- War with drug related organized crime
- Additional revenue for government
- Unproductively and ineffectivity of prohibition law
- Vast usage of marijuana world wide

Some countries decriminalized small amount of marijuana, however this policy can be good only as preparatory policy for legalization. Other way, in long run it will not make many differences from prohibition. Legalization will create new economic impact for the society by generating tax revenue for the government. There are only two models how to decrease consumption. It applies to all goods. We can either reduce supply or its demand. Criminalization of marijuana affects supply side. But because this policy is confronting market forces (desire for marijuana consumption) it is facing serious attacks and is considered a big failure.

Diagram 2:

Supply and demand



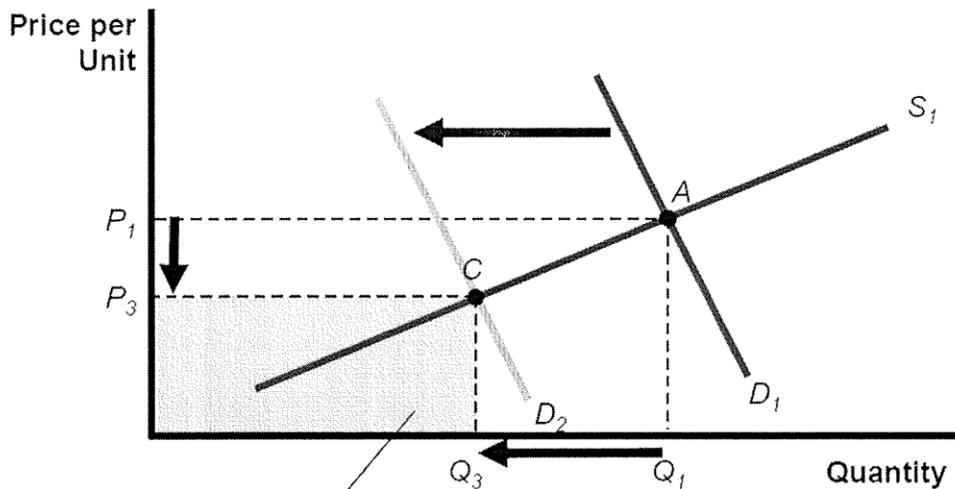
Source:

[http://www.in.gov/legislative/senate_democrats/files/blog/Legalizing%20and%20Taxing%20Commerc
e%20in%20Marijuana-Testimony-Marc%20Bilodeau.pdf](http://www.in.gov/legislative/senate_democrats/files/blog/Legalizing%20and%20Taxing%20Commerc%20in%20Marijuana-Testimony-Marc%20Bilodeau.pdf)

This can be illustrated as pedaling against the water current. In case of marijuana it tell as that no matter how much money government spends on marijuana law enforcement it will dent use of marijuana for very little. Because there is a demand for marijuana and there will always be some third party that will supply it. The more people legal system sends to prison for marijuana trafficking more remunerative this business is. Since expensive drugs are providing high profit margins there are more and more new people coming in this business. This is why there is an increasing number or requests for changes in current provision polices for marijuana.

Diagram 3:

Reduction of demand



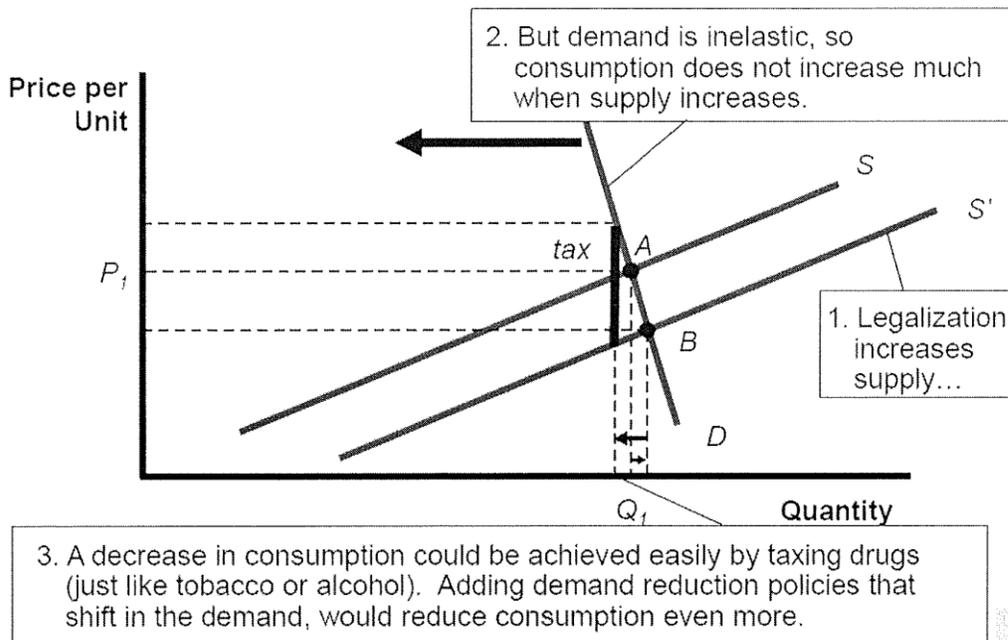
Consumption decreases significantly. Revenue from selling drugs decreases when demand is reduced
 → dealers drop out because less profitable

Source: http://www.in.gov/legislative/senate_democrats/files/blog/Legalizing%20and%20Taxing%20Commerce%20in%20Marijuana-Testimony-Marc%20Bilodeau.pdf

Affecting demand side of function it terms of providing prevention and education for youth does not confront market. So if we apply basic principle of economics that when demand is smaller there is decrease in price, in case of marijuana, that means that by educating youth and decreasing their desire to use marijuana (decrease in demand) there is no need to spend much money on criminal prosecution of marijuana dealers because they will live this business due to lower prices affected by lower demand. However, this is just theoretical policy because this policy would fully rely on desire of you to shift their habits of using marijuana to some other good. This policy by itself is more theoretical framework and will do much good.

Diagram 4:

Reduction of demand combined with legalization and taxation



Source: http://www.in.gov/legislative/senate_democrats/files/blog/Legalizing%20and%20Taxing%20Commerce%20in%20Marijuana-Testimony-Marc%20Bilodeau.pdf

Diagram 4 (affecting demand side of function by prevention plus introduction of

regulation and taxation) is implying that legalization would allow supply to increase since government will stop spending that much money for enforcing marijuana laws. Because of it, price of marijuana would decrease. But because it is already proven that demand for marijuana is not that much sensitive to price it can be concluded that consumption of marijuana will not be affected or it will be for very little. Because marijuana will be taxed same way as tobacco and alcohol, this tax would drive price of marijuana back up and therefore ensure that consumption remains the same. Furthermore, it will be good if government would direct a part of the revenue from marijuana tax to additionally reduce marijuana demand, there is a possibility that consumption can be even lower.

This is why, this thesis recommends legalization by taxation and regulation as a win-win-win policy. This way society will benefit of:

1. lower enforcement costs
2. additional tax income
3. preserving consumption at the current or even lower level

CHAPTER 6: ECONOMICS AND MARIJUANA

The marijuana production, trade and consumption, in general whole industry is interesting for economists from more than one reason. Primarily, even with a problem of unavailability of true and valid data, given numbers are showing that this industry is of big importance and more importantly that has growing trend for decades. This is supported by series of research. According to National Drug Strategy Household Survey (2012) about half of all Americans reported that they used marijuana. This is especially present among larger population of youth. Furthermore, Clements and Daryl (2005) in their paper are finding that spending on marijuana is almost 3/4 of beer trade and almost two times bigger than wine. Even such findings cannot be taken for granted, this is still showing how big this industry is. Standard microeconomic analysis can be implemented on marijuana and in certain way in can be “stress tests” of microeconomic principles in practice. Another reason for looking and researching about marijuana phenomenon lies among its greatest population of users, the youth. Since marijuana is vastly spread among this population, it has fantastic influence on student’s interest for plastic examples. It can be a great example for economic arguing during lectures about some economic equations, for example supply and demand model. It can be greatly implemented into lecture about elasticity, technology in production or economic of scale. Another reason why marijuana is interesting for economists and most important one for this paper is because of its possible impact on public finances. Because marijuana is prohibited, and its production and trade are banned, this business is happening on black

market (under the table), in cash money and does not provide tax revenue for the state. It is interesting that tobacco producers, as one of its several substitutes are raising their voice, calling on fair play and wondering why is marijuana not treated and taxed same way as tobacco. This raises one important question from the macro point of Public finances, if so, how it should be done. Can marijuana and tobacco be treated uniformly? This brings even more important questions, such as potentiality or potential problems for the health of users and its role in creating new no prohibitive policies. Finding one that is balancing between social benefits and that is not very costly from the point of implementation.

At the end, ineffable character of marijuana at the same time is scheming challenging and attractive and promising for research. For researching this industry one has to use not that much typical tools and methods, since due to its provision, marijuana users but also producers are incited to hide. At the same time, because marijuana is highly criminalized, this created area for research such as influence of penalties on marijuana use, question of moral hazard and asymmetry of information of quality of marijuana and others.

CHAPTER 7: ELASTICITY AND ESTIMATED DEMAND

To understanding vast impost, diffusion and price of marihuana after potential decriminalization or legalization, we need to estimate what will happened with its demand equation, meaning what way it will be affected. Because, liberalization of marihuana in terms of prohibition will increase demand for drugs in short-term by shifting demand line upward. Also there is a general impression that drugs are more than available there are serious consequences for possessing it and therefore we can generally say that access to drugs is limited. Because liberalization will cancel potential risk of criminal charges and bring more availability this will undoubtedly drive short-term demand for drugs upward. Present element of social excitement will help this even more. However, it is much harder to estimate what will happen with long-term position of demand for drugs.

To understand phenomenon of marihuana better, it is good to know that even with all criminal laws against use of it, marihuana is widely spread and its users belong to a big population of people from all over the world. US Congress in 2003 stated that “96,9 percent of police officers describe the accessibility of marijuana as highly available and only 1,8 percent describe it as hard to get” (National Drug Threat Assessment 2003). Furthermore (Fuju, 2007) in his paper write that more than a half of public thinks that marihuana is greatly available. It is estimated that almost one tenth of total US population is connected with marihuana at least once a year. (Bates, 2004) writes in his

paper that about 6 percent of US residences are using marihuana every month and that about one half of people tried marihuana. Computing these numbers, ones can conclude that there are about 41 million of people in US that are using marihuana on annual basis. Contrary to alcohol or cigarette users, who are defined as older and long-time consistent users, marihuana users are mush younger (Harrison, 2007).

Many researchers were working on analysis of effects of prohibition as well as potential effects for its legalization. Numerous of their studies are looking for consumption demand function of elasticity for cannabis. Pacula (2001) is his paper highlights that marijuana use is very inelastic, specifically $-0,06$ (demand elasticity in terms of price). This indicates that 1 percent increase in price will affect demand by decline of 0,06 percent Therefore this means that if price will increase by 16,67 percent that demand will decrease by a 1 percent. Almost identical empirical results have done by DeSimone and Farrelly (2003). They shown that price of marijuana is that much relevant for most of marijuana users but they outlined that age is an important factor and that consumption will decrease with higher probability of criminalization of users. During their research, number or criminal cases for marijuana possession has grown and doubled. Their model predicts that demand of marijuana under given circumstances will decrease by 3% if there was not shift in any of independent variables. However, this was proven to be wrong, because in every day live something else was happening. Marijuana use has grown by 13,5% regardless of change in policy of its criminalization toward more restrictive one. Faced with this data, DeSimone and Farrelly finish their paper with comment that "It is clear that there are other variables than just prices or number of

arrested people that need to be take in consideration to determinate shift in drug use”
(DeSimone and Farrelly 2003).

CHAPTER 8: DIRECT AND INDIRECT ECONOMIC BENEFITS FROM MARIJUANA LEGALIZATION

Direct economic impact

- Cuts on spending on the costs of prosecution, marijuana law enforcement
- Income from additional taxation (secondary industry related to marijuana legalization)
- Shift in expenditures enforcing new reforms

Budget

Spending on prosecution for production, possession and trafficking of marijuana are not small compared to total spending for all drugs. It is hard to compute expenses related to marijuana because criminal justice budgets are generalized and do not separate expenses for drugs expenditures by categories. Still, there is some available data and professor Myron from Harvard University has been researching this issue and intensively writing about it. Professor Miron argues that legalization of marijuana will reduce public expenditures related to criminal prosecution for marijuana by approximately \$7,7 billion – \$13,7 billion (dollars per year). To further strengthen his position, professor Miron states that his estimates are not theoretical but that can be confirmed empirically. He has adjusted his results for given inflation as well as with growth of expenditures for enforcement of marijuana law over past period (Miron, 2005).

Revenue gains

Tax revenue projections in case of marijuana are not fixed in term of income because they are based on assumptions (no adequate data available) about black market supply of marijuana on its demand after its legalized. Pat Oglesby (2014) in his analysis studies current marijuana tax proposals. In his report he find that marijuana draft of the State of Washington (Initiative 502, 2011), could create about 700 million of dollars in form of tax revenue and that State of Colorado about 200 millions of dollars revenue, outlining that general economic benefits of cannabis legalization are correlated with other factors, such as: level of employment, taxation and correlation between marijuana legalization and alcohol consumption. The magnitude and cost of increased consumption can be projected by supply and demand function, but there is no reliable historical data about marijuana (Initiative 502, 2011).

On the other hand, other authors argue that projections about marijuana demand can be pictured from the consumption habits on marijuana regulated markets and determinate “demand elasticity”. While tax revenue can be estimated and even calculated, national healthcare expenditures related to marijuana consumption are unknown. General opinion is that about 1/5 of all addiction treatment are marijuana users.

Table 1:

Economic Benefits of Legalization by taxation and regulation (in US dollars)

Sales Taxes	2,2 - 6.4 Billion
VAT Taxes	0,2 - 1,3 Billion
Savings in prosecution	6 - 9 Billion
Cannabis Industry	6 - 10 Billion

Source: Dale Gieringer is coordinator of California NORML and co-founder of the California Drug Policy Reform Coalition

Indirect Economic impact

- productivity losses (marijuana dependency)
- productivity gains from higher rate of employment
- value of improvements (socio-economic) mobility
- health care costs
- studying potential of students
- increases in driving accidents (marijuana dependency)

Marijuana legalization supporters argue that there are no strong evidences about impact on marijuana on ones working activities, outlining that this issue is related to individual characteristics and motivation for higher productivity. There is also no proven data about

correlation between accident during work time and number of days off due to marijuana consumption. Statistics shows that criminal cases related to marijuana take half of total 1.531.251 drug prosecution in United States. Professor Evans (2012) states that: "Reducing the number of marijuana-related arrests and incarcerations may cause marginal growth in aggregate productivity as fewer employees who already have jobs will need to miss work for required court appearances, and incarcerated offenders will be able to participate in the job market" (Evans, 2012). Workers with children with one partner in prison are also sensitive group from this point.

Socioeconomic improvements

Unfortunately, evidences are telling as about socioeconomic and racial dissimilarity between ones charged for a marijuana crime and ones that are actually convicted. Easton from Frasier reports that even in case if marijuana would generate only small tax revenue (economic benefits) cannabis legalization advocates are stressing new policy about marijuana would help marginalized communities in terms of decriminalization, happier families (both parents with children) and higher social mobility with smaller collateral damages" (Easton, 2009).

CHAPTER 9: THE TAX REVENUE FROM MARIJUANA LEGALIZATION

There are two steps for estimating tax revenue from marijuana legalization. At first, tax revenues needs to be estimated under new regime of marijuana legalization as well as projection of consumption under existing policies. After it, it is important to focused on future level of consumption and see if it will vary from consumption during prohibition. Estimation can be based on the supply and demand model. The main objective of using this model is to determinate change in supply or demand function of marijuana after legalization. Because demand will not change and move around as a result of legalization, changes in quantity and price will happened as result of changes on supply side of the function. These two effect will operate.

Table 2:

US Federal Drug Prohibition Expenditure (billions of dollars)

	All	Marijuana	Cocaine	Heroin	Other
1. Federal Expenditure(2008)	15.6				
2. Number of DEA arrests(2007)	26,550	5,700	12,104	2,116	6630
3. Percentage of DEA arrests, by Drug	100.00	21.47	45.59	7.97	24.97
4. Federal Expenditure, by Drug	15.60	3.35	7.11	1.24	3.90

Sources: The data on the fraction of DEA arrests by drug are from U.S. Department of Justice, *Federal Drug-Related Arrests, United States, 2003–2008* (Washington: National Drug Intelligence Center, 2009), <http://www.usdoj.gov/ndic/pubs31/31379/appendb.htm#TableB1>. Federal expenditures were originally reported in 2007 dollars and were adjusted for inflation to 2008 dollars with Office of National Drug Control Policy, *National Drug Control Strategy* (Washington: ONDCP, 2009), <http://www.whitehousedrugpolicy.gov/publications/policy/10budget/fy10budget.pdf>.

Table 3:**US Federal Tax Revenues from Drug Legalization (billions of dollars)****Consumer Expenditure on Drugs under Legalization**

	All Drugs	Marijuana	Cocaine	Heroin	Other
1. Consumer Expenditure by Drug, 2000	79.50	13.13	44.13	12.50	9.75
2. Consumer Expenditure by Drug, 2008	121.55	18.15	66.12	21.07	16.21
3. Assumed Percent Decline in Price		50.00	80.00	95.00	95.00
4. Assumed Elasticity		-0.50	-0.50	-0.50	-0.50
5. Percent Decline in Expenditure, Legalization		25.00	40.00	47.50	47.50
6. Consumer Expenditure, Legalization	72.86	13.61	39.67	11.06	8.51
7. Consumer Expenditure, Sin Taxation	91.07	17.01	49.59	13.83	10.64
8. Revenue from Sin Taxation	30.36	5.67	16.53	4.61	3.55
9. Consumer Expenditure Subject to Standard Taxation	54.64	10.21	29.76	8.30	6.38
10. Revenue, Standard Taxation	16.39	3.06	8.93	2.49	1.91
11. Tax Revenue	46.75	8.73	25.46	7.10	5.46
12. Federal Tax Collection	31.17	5.82	16.97	4.73	3.64
13. State Collection	15.58	2.91	8.49	2.37	1.82

Sources: http://www.whitehousedrugpolicy.gov/publications/pdf/american_users_spend_2002.pdf; and <http://www.census.gov/popest/states/NST-ann-est.html>. Consumer expenditures were originally reported in 2000 dollars and were adjusted for inflation to 2008 dollars with <http://www.bls.gov/cpi/home.htm#data> and for increase in drug usage based on estimates from *Monitoring the Future*, 2009, http://monitoringthefuture.org/pubs/monographs/vol2_2008.pdf; Table 418, State and Local Excise Revenue from Alcohol and Tobacco, http://www.census.gov/compendia/statab/cats/state_local_govt_finances_employment.html; Table 457, Federal Excise Tax Revenue from Alcohol and Tobacco, http://www.census.gov/compendia/statab/cats/federal_govt_finances_employment/federal_budget--receipts_outlays_and_debt.html.

As argued in previous chapters, it is assumed that the marijuana demand function will change. Because demand will not change and move around as a result of legalization, changes in quantity and price will happen as result of changes on supply side of the function. These two effect will operate.

In order to project the magnitude of tax revenue for any country as a result of marijuana legalization, taxation model need to be selected. In this thesis, it is presumed that marijuana will be taxed same way as alcohol and tobacco. Because of it, ones legalized,

marijuana would be taxed with so called “sin tax” but also classical income and distribution tax. Experience with tobacco indicates that goods such as tobacco, alcohol and marijuana can tolerate high level “sin tax” without moving part of business to the black market. A very nice example is tobacco in Europe, its price tolerates 70-80 percent of tax.

CHAPTER 10: SOCIO - ECONOMIC COST OF LEGALIZATION

Social cost of marijuana legalization is an important part or policy for marijuana legalization. It is directly correlated with increase or decrease of marijuana consumption after policy change. As outlined in previous chapters, many authors agree that there will be a certain level of increase in consumption but also that it will be minimal. Therefore theoretical framework is suggesting that because use of marijuana will probably stay constant, social cost of marijuana legalization will be acceptable.

However, there is no sufficient data on marijuana use and that is one of the main problem of analysis like this. Because this thesis researching economic benefits of marijuana legalization there will be no discussion about the physiological and mental effects followed by it. Survey about recommendation for marijuana in California located more than two hundred and fifty conditions for marijuana use. California Research Advisory Panel (1990) proposed legalization of cannabis production for individual use as “an objective consideration of marijuana shows that it is responsible for less damage to society and the individual than are alcohol and cigarettes” (CRAP, 1990).

Social costs of marijuana use can be placed in two categories: internal and external costs. Internal costs imply on all direct repercussions of marijuana use where external costs can be measured for society in general (indirect users of marijuana). For example it can be present in form of higher insurance costs. Border between internal and external

costs is in most cases invisible because many effects are affecting both consumers and non-consumers. Many of marijuana consumers are among young population and therefore potential new policy about marijuana legalization needs to take in account age restrictions.

Number one internal cost of marijuana use are lung related health problems. This is because most users are smoking marijuana. While these respiratory problems can make insurance rates higher, this is normally an internal cost. Legalization of marijuana can induce smaller cost of respiratory problems from marijuana use because it can better allocate resources and introduce new technologies for production and packaging. Most importantly, more education about it would drive its users to discover new methods of marijuana consumption. Ones that are less damaging. Marijuana can be used without smoking. These alternative ways of use do not cause any respiratory problems. However most people think of marijuana as “gateway drug” and outline that as its number one internal social cost. Because of this theory of “gateway drug” marijuana is banned for a long time (Hall and Lynskey, 2005). Hart (2007) researches issue of marijuana as “gateway drug”. He states that there is no strong correlation between marijuana use and consumption of other drugs. There are many socio benefits of marijuana legalization. Number one social benefits is distortion of black market and regulated access to marijuana. Gettman (2006) stresses that “marijuana is by far the most commonly sold drug in America” estimating that black market of marijuana in United States provides for 4,6 million drug sellers.

Table 4:

External Costs of Use of Tobacco, Alcohol and Marijuana

	Cigarettes (pack of 20)*	Alcohol (1 excess oz)*	Marijuana (1 joint)
Net Health	\$0,15 smoking diseases	\$0,26	\$0,02
Costs	\$0,23 passive smoking		smoking
Accidents		\$0,93	\$0,60
Total	\$0,38	\$1,19	\$0,62

Source: Manning et al., "The Taxes of Sin: Do Smokers and Drinkers Pay Their Way?"

It is not easy to determinate internal costs. (Manning, 2006) conducted a series of research on the topic of health cost of consuming alcohol and tobacco. He concludes his study with finding that health cost of tobacco is about 0,36 dollars cents for disease (second hand smoke). Health costs of cannabis consumption are relevant if cannabis is smoked because in that case it generates second hand smoke, but as argued above, there are many other alternative ways to consume marijuana (less harmful). If marijuana would be extensively taxed, many of these alternative forms of its use may become new standard. When we compare marijuana and tobacco, its shows that one marijuana user inhales 4 times noxious tars as tobacco user. Second hand smoker has about same ration in both cases. But because marijuana does not have any nicotine, second hand smoke from tobacco is much more dangerous that second hand smoke from marijuana.

CHAPTER 11: PRICE AND TAXATION

Cannabis legalization has many supporters and great foundation over prohibition is opportunity to regulate it by taxation (production and distribution). Because, without taxation, free price of legal marijuana will be same as price of any other leafy greens and will be very low. This is why, taxation price of marijuana allows for introduction serious tax rates at still have price that is acceptable for its consumers. This way, marijuana would be treated same way as alcohol.

In order to determinate possible supply of marijuana, we can start from basic idea retail price of marijuana should be close to the price of other natural green levees used in medicine (medicinal herbs) because they production is almost analogue. Closer look to some of these prices can be found at General Nutrition Corporation internet page. For example damiana sells for \$2, 30 and in general medicinal herbs have price between \$1, 25-\$2, 50 (per 30 grams). If we compare good quality cannabis with very good tea (normally about \$3, 0) and adjust it for the value of inflation we can derive its new price that is very close to its price prior to marijuana law enforcement. At that time price of marijuana was about \$0, 30 (per 30 grams). Today, average quality marijuana is sold at price of \$300 (per 30 grams).

Because grams are not practice from the everyday point to view, we can change it to value for one joint and assume that 30 grams of marijuana equals 30 joints. Without any taxes introduced, this means that price of marijuana on free market will be around \$0, 07

contrary to \$7 for one joint which is price that consumers are paying today. This model indicates that price difference changes by factor of one hundred. Because marijuana will under given circumstances be radically cheaper compared to its alternative (alcohol) it will be important but also beneficially to impose big tax on it. Legalizing compared to decriminalizing marijuana is the more effective in term of generating government revenue by taxation. There are several different ways to implement a tax on marijuana. Perfect tax should be assessed on licensed producers and large distributors, same way as for tobacco. Advantage of this tax is simple enforcement, because there are not many third parties involved. This way government can ensure to collect high tax.

CHAPTER 12: TEN REASONS FOR MARIJUANA LEGALIZATION

1. Prohibition did not prove to be effective — marijuana is today globally present. For example, United States prohibited marijuana in 1937 there were not many people who knew what is marijuana. However, in recent survey conducted by U.S. Department of Health about 106 millions of US citizens consumed cannabis at least one during their life time. According to this same survey, marijuana was never that easy accessible as in past decades (U.S. Health, 2010).

2. Prohibition cost tax payers a great amount of money, contrary to marijuana legalization by taxation and regulation taxation that can generate needed budgetary income. Miron (2010) has estimated that turning from prohibition to marijuana legalization would in case of US create estimated 17, 3 billions of dollars in government savings and larger tax revenues.

3. Working on small cases of marijuana dealers (arresting and prosecuting) keeps police away from dealing with other forms of crime. FBI (2010) finds that in large American cities, police officer has about 45.000 hours (per one year) of work related to small marijuana possession.

4. Prohibition of marijuana affects lives of many youth. There is an ongoing number of young people processed through the criminal justice because of small marijuana possession. FBI (2010) finds that in period from 1995 to 2010 there were 12 millions of

cases of marijuana arrests. This number is bigger than number of arrest for all violent crimes. Same report indicated that 88% of total marijuana arrests are for possession of marijuana and not for production or trafficking.

5. Prohibition laws in United States do not apply evenly on white citizen and minorities. Those criminal charges affect lives of this people (employment, credit for apartment or some other forms of State assistance) and conveniently whole society because young people need to carry out economic progress and growth (Gettman, 2012).

6. Provision is present for many decades but there are still no concrete evidences that criminalization of marijuana has reduced its presence or consumption. US National Research Council (2010) states that “cognitive legal risk does not talk much in the volatility of personal drug consumption”. Furthermore, World Health Organization (2008) in its report fined that in Netherlands

Adult person can buy and posses small amount of marijuana but that this did not affected consumption, because this report especially outlines that consumption in Netherlands is below US average. Marijuana in United States is not legal.

7. Prohibition does provide sufficient level of control. Manufacturers and dealers or marijuana are operating on black market that not regulated. Contrary to distribution of similar products (alcohol and tobacco) that need to be licensed, marijuana is not part of it. Because of it, marijuana is distributed in public places without control if it's coming to youth. There is also an issue of production control in terms of potential health hazard

(pesticides and other strong chemical). However if marijuana would be legalized by taxation and regulation, manufacturers and dealers would be licensed.

8. Prohibition generates violence among certain groups. Atlantis (2012) reports that 50.000 people were murdered in Mexican drug cartel. There is also a problem of muggings and other violence for ones that are buying marijuana.

9. Prohibition is causing environmental problems. Since marijuana production is not legal and criminalized, production often happens at location that are ruining environment (wilderness). Legalization of marijuana by taxation and regulation, marijuana distribution would be delegated to certified businesses.

10. Marijuana use is safer than use of alcohol. Contrary to alcohol, there is no medically reported marijuana overdose death. There are about 25.000 alcohol death (per year) in United States (Baudler, 2013).

CHAPTER 13: THE FAILURE OF ALCOHOL PROHIBITION – THE CASE OF UNITED STATES (1920-1933)

The alcohol prohibition in the United States (1920-1933) or "noble experiment" was intended to reduce consumption, crime and the tax burden from prisons, as well as tackle social problems and improve health (Thorton, 1991). However, the evidence from United States in the 1920's and early 1930's demonstrates how the unintended costs of Prohibition outstrip the expected benefits, which suggest that the experiment was a total failure on all counts. We have seen in previous chapters how economic theory predicts the way, shape and form that black markets generate a series of unintended consequences. The evidence from Prohibition in America confirms these results.

Like any censorship law, there was a nugget of true in the expected reduction of alcohol consumption. However, the correlation between prohibition and consumption was substantial only in the early years of censorship. Moreover, as consumption of alcohol became more dangerous in the United States, the American population experienced a consequent increase in crime. What is worse, Prohibition gave birth to an organized structure of crime. Since prisons and the court system became overcrowded with alcohol consumers (now criminals), it led to more dangerous criminals being left out on the streets. The evidence also shows that corruption of public officials skyrocketed like never before. Lastly, alcohol Prohibition removed an important stream of tax revenue and increased significantly the amount of government spending. From the consumer

side, prohibition led many users to switch to harder sources of distilled alcohol, increasing the risk of poisoning and deaths by overdose. Prohibition of alcohol also pushed people to marijuana, and some other more dangerous sources that they needed and could not find during the time of alcohol censorship.

The Law of Prohibition Could Not Capture The Role of The Entrepreneur in The Black Market

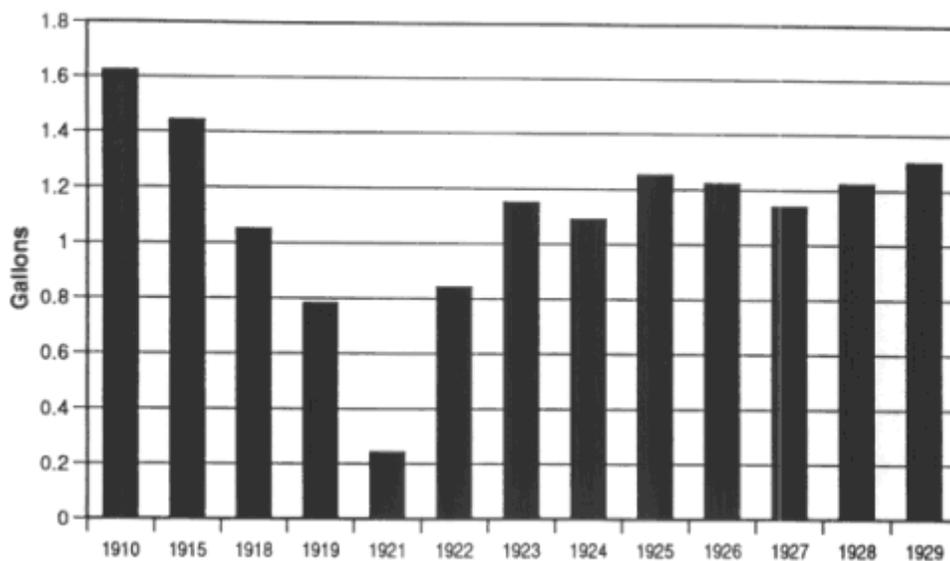
Supporters of Prohibition argue that its positive impact is in function of reducing the quantity demanded. At first glimpse, the evidence seemed to confirm the expected reduction in the quantity consumed. Of course, this shouldn't come as a surprise to any economist, because introducing control over supply should drive its price up affecting volume of consumption—provided of course that alcohol is not a Giffen good and as such, its price elasticity of demand is negative.

In fact, Irving Fisher and Clark Warburton proof about (mild) downslope shift in consumption after Prohibition (Warburton, 1932). This brings us to an important economic analysis prior to checking the evidence. Any decrease in consumption needs four qualifications at least, which might—or might not—undermine any value posited by a prohibitionist regarding the effective reduction in consumption.

First, proportionality should always be an important guide to policy: the decrease was not significant. According to Warburton, the quantity of alcohol consumed dropped about twenty percent during the prewar years 1911-1914 and during 1927-30; but it seriously fell short (80% short) in eliminating its consumption (Warburton, 1932). Second, the

initial short-term drop in consumption was overshadowed by a steady rise over the long run. Per capita annual consumption was already dropping since early 1910 until its lowest point during the (unspoken) depression of 1921, after which it started to pick up again in 1922. Moreover, the illicit production and distribution of alcohol continued to expand all through the iron law of Prohibition, i.e. despite the increasing resource expenditures from enforcement.

Diagram 5: Consumption Per Capita of Alcoholic Beverages - Gallons of Pure Alcohol (1910-1929)



Source: Clark Warburton, *The Economic Results of Prohibition* (New York: Columbia University Press, 1932), pp. 23- 26, 72.

Thirdly, the aforementioned amount of resources dedicated to Prohibition enforcement increased inevitably along with the rise in consumption. According to the Bureau of Prohibition, the annual budget during the 1920's skyrocketed from USD 4.4 million to

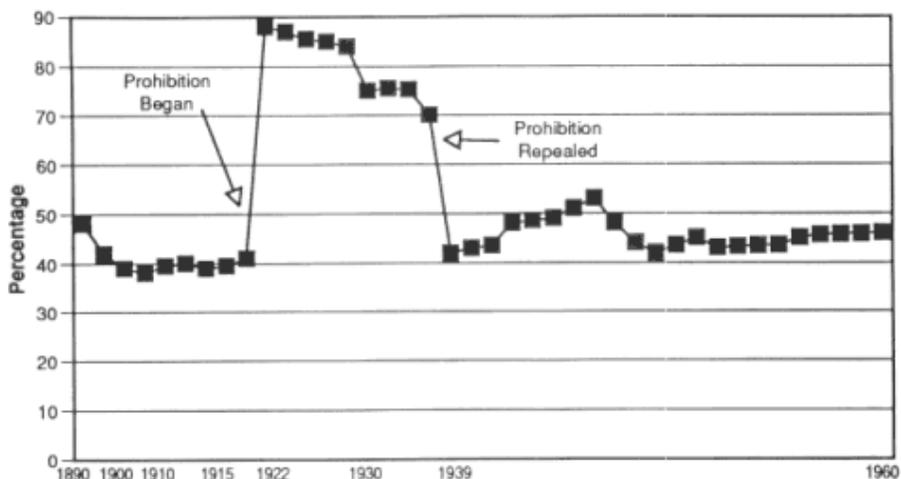
USD 13.4 million, at the same time that Coast Guard spending averaged USD 13 million per year. However, the intensification of resources on enforcement did not translate into a reduction of consumption. Fourth, and most importantly, the (short-run) drop in the demand for banned liquor did not cause Prohibition to be effective. The reason is quite straightforward: The small reduction in consumption is only the intended effect, which does not account for the spillover effects of Prohibition, which are likely to outstrip the little benefits of the consumption reduction. In other words, we ought to ponder all the social consequences of Prohibition, and not just the reduced alcohol consumption. The case of Prohibition in the United States had perverse effects, not only on the production side, but also on distribution, wholesale, retail and all the way down to the individual consumption.

Richard Cowan (1986) coined the term “Iron Law of Prohibition” in order to refer to one of the most infamous unintended consequences of Prohibition on the American people: more concentration, hence more potent, more hardcore, and more harmful alcohol. Cowan’s appreciation in a nutshell indicates that the more forceful the enforcement the more powerful the prohibited substance befalls. This goes perfectly in line with economic theory given the incentives associated to prohibition and also given the risks associated to consumption of the forbidden product. Cowan’s Iron Law shows one of the many costs of enforcement, which, let alone, already outweighs the expected benefits from a (forced) decrease in alcohol consumption.

According to Thornton, the statistics reveal that before Prohibition Americans spent nearly equivalent amounts on both spirits and beer (Thornton, 1991). Yet, after

Prohibition was enforced essentially all production—and the consequent consumption—was among strengthened or “fortified” wines and distilled spirits. The reason is straightforward: since beer was bulkier and illegal, it became harder to contraband and thus, relatively more expensive. Again the important case here is the relative prices and thus, we see a straightforward re-allocation in the structure of production and in the patterns of consumption. In other words, Prohibition set the wheels in motion for a quick shift towards less bulky and more concentrated (thus potent) products. Since avoiding detection is a key element in any underground market, Prohibition worked against the otherwise less harmful—yet bulkier—beer, making it harder to supply. Compact sorts of alcohol got the lead, simply because it reduced the potential costs of detection; again, in line with economic theory. The key economic insight here is, again, the relative prices.

Diagram 6: Total Expenditure on Distilled Spirits as a Percentage of Total Alcohol Sales (1890-1960)



Source: Clark Warburton, *The Economic Result of Prohibition* (New York: Columbia University Press, 1932), pp. 114-15; and *Licensed Beverage Industry, Facts about the Licensed Beverage Industry* (New York: LBI, 1961), pp. 54-55.

Moreover, when scrutinizing the numbers of Fisher, who was a prohibitionist and as such, produced statistics to demonstrate the positive effects of Prohibition, one can also uncover Cowan's Iron Law of Prohibition working at full force. Fisher drew upon retail prices of alcohol to illustrate how Prohibition raised the price and decreased the quantity produced. Be that as it may, Fisher's prices also show an irrefutable fact: while the price of spirit rose by 270 percent, price of brandies did so by 433 percent and most importantly, the price of beer rose over 700 percent (Fisher, 1990). Since Fisher himself provides these numbers, it is very important to highlight the fact that he was oddly blinded to the great significance—and crucial role—of the change in relative prices. Therefore, products characteristics diverged greatly between seemingly identical products, making their effect less predictable. This basically meant an increasing risk of poisoning and death by overdose, without having a legal instance to impute the reputation of bad producers, thus making it quite cost-efficiently for anyone to produce just about anything.

The evidence from Prohibition in the United States goes to show that central planning can neither predict nor coerce behavior. Prohibitionists naïvely expected people to move their consumption of alcohol to the consumption of other products, such as dairy or electronics, or savings or even education. However, the evidence demonstrates that Prohibition does not eliminate the consumption of a good, but simply drives the market of that particular good underground. Economics points out to the adverse effects of black markets; the evidence from Prohibition confirms these results.

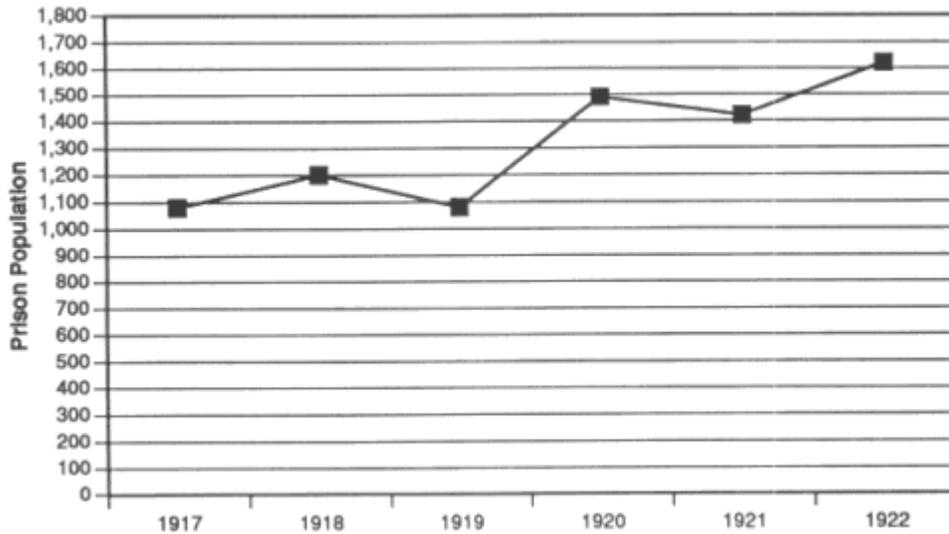
The Law of Prohibition Increased Crime

The raw statistics on crime rates are irrefutable: the sudden increase in the rates of severe crimes correlates positively with enforcement of Prohibition. Charles Hanson Towne mapped thirty major cities, and his results show that the number of crimes for one year increased by 24 percent. He also demonstrates that during the same period the amount of resources spent on police rose over 11 percent, while the number of arrest increased over 100 percent. But this is not all, disagreement among producers in a black market cannot be settled under a court of law, thus they resort to violence. In fact, this study revealed that crimes with thefts and victims rose 9 percent; what is worse, the number of assaults and homicides rose by 13 percent (Towne, 1923). This evidence is easy to understand under economic reasoning, since Prohibition transformed a large number of legal jobs into illegal ones, which in turn created underground violence and diverted resources that could have been spent chasing other serious criminals.

Moreover, prohibitionist expected that this would reduce the amount of inmates, when in fact it caused the direct opposite, by overcrowding prisons. Diagram 7 shows number of prisoners during prohibition (Towne, 1923).

Diagram 7:

Number of Inmates at Sing Prison: 1917-1922

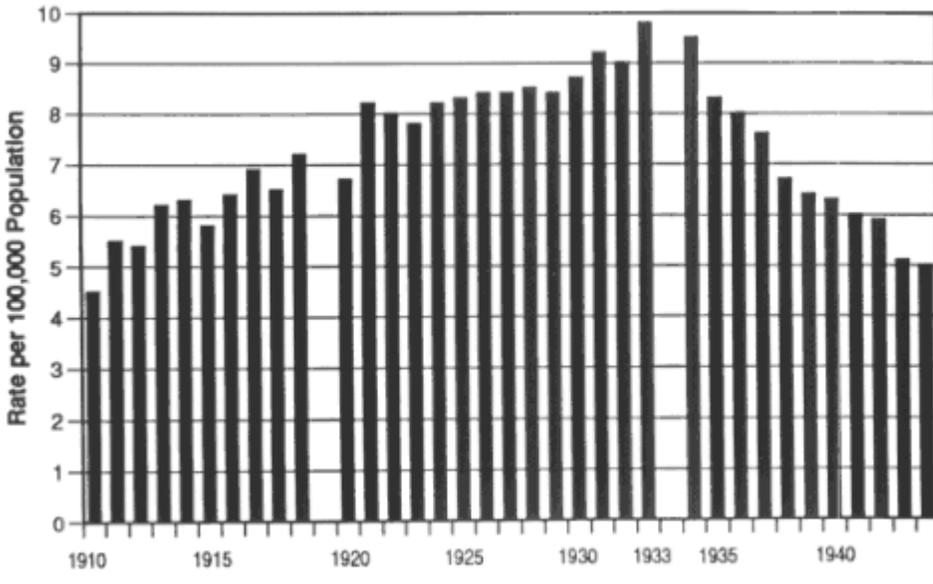


Source: Charles Hanson Towne, *The Rise and Fall of Prohibition* (New York: Macmillan, 1923) p. 162

Accordingly, the evidence from the United States demonstrates that the number of violations related to Prohibition laws, as well as violent crimes continued to escalate all through the dry laws. Diagram 8 illustrates the irrefutable positive correlation between Prohibition and the upsurge of homicide rates, which increased from 6 per 100,000 inhabitants (in the pre enforcement phase) to almost 10 per 100,000 by the end of enforcement in 1933. Moreover, the shocking statistical evidence reveals that the upward trend hit its inflection point and turn downwards by the same time of repeal! As shown in figure 4, the downward trend continued tall through the rest of the 1930s and during the early 1940s.

Diagram 8:

Homicide Rate: 1910-1944



Source: U.S. Bureau of the Census, *Historical Statistics of the United States, Colonial Times to 1970* (Washington: Government Printing Office, 1975), part 1, p. 414.

What Have We Learnt?

The statistical evidence provided by Prohibition in the United States between 1920 and 1933, demonstrates that the dry law failed to bring about the expected benefits and it did little else but driving the whole market underground. The conclusion to be drawn is that if we really wish to reduce the consumption of a substance, prohibition is not the most effective way. In fact, there are other policies available, for example taxation and educational programs, such as Tabaco. The lessons from Prohibition can also shed light on the current war on drugs, a 75-year crusade that is increasingly deemed as an utter failure.

If we look at the statistics, the sole act of repeal in 1933 dramatically reduced organized crime and even corruption by simply bringing back an underground market and making it legal. Moreover, legal jobs increased considerably while the voluntary sector emerged to provide effective organizations, e.g. Alcoholics Anonymous in helping sick people who were once deemed as “criminals” and thus, were reluctant to seek help.

The same lessons could be applied to understanding drug addicts and treat them as sick people, not criminals. This simple distinction can bring enormous societal value and benefits by assisting efficiently the problems of drug abuse, which do not go away by locking people away.

To summarize, the policy maker cannot rely on good intentions. Policies must be evaluated by their results. The evidence from Prohibition in the United States demonstrates that instead of meeting the intended benefits, driving markets underground brings a whole range of unintended consequences, which greatly outstrip the little benefits it intended to provide. Moreover, Prohibition created cartels, bootleggers, organized crime and the waste of government resources in pretending to lock the problem under the rug. The policy prescription is thus, not censorship, but effective taxation and educational programs. Only then can we address an effective reduction of drug consumption.

CHAPTER 14: POLICY RECOMMENDATIONS

Development of drug policy is important part of the implementation of policies that are currently important in region of East Europe. Currently, the dominant policy objective and motive to change the political system in Eastern Europe to establish a different political system than it was the previous communist. The general objectives are based on market economics, multi-party democracy and parliamentarianism. However this policy can be attractive for other countries as well.

The evidence exposed in this study demonstrates that prohibition is not the most effective policy to reduce consumption of a good, but merely drives it underground. Economics points out to a series of adverse consequences from black markets, and the evidence illustrated here confirms these negative effects on society. More importantly, the empiric show that consumption remained steady for most of the dry laws.

Therefore, if the main goal of a government is the effective reduction of marijuana consumption, there are other policies available.

I recommend to governments to impose a tobacco-like policy regime, thus featuring the following characteristics (among others):

- Legal and regulated
- Minimum smoking ages
- Licensed market participation

- High tax rates on production, distribution and sales
- Revenues from Taxes to finance extensive educational campaigns
- Revenues from Taxes to finance rehabilitation and re-insertion programs

These policy options are easy to implement and already available worldwide regarding any other product. But most importantly, these policies could keep the consumption of marijuana relatively low, while avoiding the violence associated with black markets. Thus, legalization of marijuana, alongside taxation, regulation and educational programs are sound proven policies with a win-win outcome. Society will benefit from lower costs of enforcement, additional tax income and more importantly: from a steady consumption at the current—or even lower—levels than they are today, given the experience of other countries, such as Portugal post de-criminalization.

Policy model tobacco and alcohol is a good foundation for development of new policy for marijuana legalization. Combining effect of reduce demand with legalization by taxation and regulation, by taking advantage of the fact that the demand for drugs tends to not be very responsive to price will give best socio-economic benefits. But because it is already proven that demand for marijuana is not too sensitive to price it can be concluded that consumption of marijuana will not be affected or if it does, it will be marginal. If the aforementioned policy recommendations are followed, governments could then effectively direct part of this revenue from marijuana taxation to additionally reduce its demand. As such, the long run consumption function would shift downward even further, thus benefiting society at large.

CONCLUSION

The economic and budgetary benefits of legalization of marijuana are not trivial, however they are also not particularly overwhelming. Therefore, legalization will not put an end to all fiscal problems of one country because the budgetary effects are not very large when compared to current deficits. However, the economic implications are much more than a simple statistical error that could be discarded. This is where the thesis adds value, i.e. by highlighting other policy options, which are indeed available in order to help understand those with reservations regarding prohibition vs. legalization. Moreover, the results of the study go to show that there are important economic benefits and positive spillover effects for the society as a whole. Therefore, legalization is an important variable that ought to be considered in the policy making process. Moreover, bringing an underground sector, to the formal sector will automatically offer thousands of direct and indirect profit and employment opportunities. The liberal party of Canada (2013) in its proposal for policy changes emphasizes that legalization can:

- Control the sale, distribution, promotion and price of marijuana, making it easier for government to prohibit youth access.
- Deliver billions of Dollars in new government revenue, which can be reinvested.
- Expand private sector and academic research.
- Decrease profit for organized crime, creating safer streets and communities – and less opportunity for young people to join gangs.

The direction in which world global drug policy is currently heading is toward more enforcement and tougher penalties. This direction, however, leads inevitably to greater

deadweight losses for society. Now, after more than five decades, prohibition of marijuana has failed to prevent and diminish marijuana consumption, use and abuse. Its consumption has skyrocketed and consequently allowed the “institutionalization” of a large criminal cartel from such ordinary people who are in all other circumstances law-abiding and effective elements of their societies. Even those that were never arrested and maintained to preserve their reputation of good citizens live under pressure of every day risk and therefore, they mistrust their own governments and the police. At the same time, the open issue created by other legal drugs; such as alcohol and tobacco go largely undiminished.

A more effective system of marijuana management needs to combine elements of civil regulation, taxation, and full control. Such a system can be established, but more importantly, successfully implemented in several ways, shapes and forms. First, it would provide and guarantee that currently prohibited goods are of certain quality and of reasonable price, which will either way be under current prices from informal markets. Second, such system of marijuana management would ensure the use of marijuana only above certain age limit with full and detail information about content of purchased good with all impacts on people’s health. Third and lastly, the most important impact of marijuana legalization will be tax revenues and cost-savings from otherwise enforcement of marijuana prohibition. This means that there will be more human resources available to focus on chasing more serious criminals that may otherwise be running free as well as some other complicated crime and health problems related to a lack of visible legal instance to impute the reputation of the quality of producers. This is

where the experience of, e.g. de-criminalization in Portugal or legalization in the Netherlands, demonstrates that total social impact of bringing marijuana to the formal sector is overall positive; furthermore, it has effectively contributed to a substantial and substantive reduction of drug abuse, thus creating greater social welfare.

Every society faces the same consumption patterns and therefore need reasonable and argumentative answers to such urgent issues related to the war on drugs. Whether fashionable or not, marijuana legalization is more than an interesting concept, but an effective economic policy for global markets, because it offers a more effective alternative to reduce both consumption and crime related to the market for drugs. Legalization of marijuana can effectively help lower the current deadweight losses of criminalization on society. Marijuana legalization is not a magical solution to the current drug problem, neither is the absolute solution to all economic and budgetary problems faced by governments today. However, in a time of low economic growth, and alongside the current European sovereign debt crises and the ongoing Great Recession, such economic policy for global markets could shed new light and bring new economic benefits and fiscal revenues to many sluggish economies.

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