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- CHANGING THE CANNABIS POLICY -

Or

IS THE MOST POWERFUL CANNABIS LAW THE LAW OF SUPPLY AND DEMAND?

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Abstract

Is the most powerful cannabis law the law of supply and demand?

This question is controversial in the whole western world. This paper concludes that the answer to that question is not a clear yes, but that a change in the political approaches is advised.

The UN Conventions call for a prohibitionist approach concerning cannabis. In accordance with that, the member states have implemented different strict prohibition policies. Interestingly, they implemented also grey zones in which it is up to the particular police officers or judges to enforce the cannabis law. This contradiction together with a changed public opinion about cannabis and its dangers should prompt policy makers to reconsider the current cannabis policies.

This paper discuses arguments that come into consideration. Thereby it starts at the assumption that, from an economic viewpoint, a free and unregulated market is preferable. However, a free cannabis market would produce market failures in the shape of externalities and information asymmetries. Furthermore, it would create paternalistic concerns concerning youth and addict protection. As these concerns are of such a quality that they need to be addressed and due to the fact a free market does not address them by itself, the paper goes on to consider the current prohibition approaches. It outlines the ability of the different approaches to effectively address the failures of the free market and the paternalistic concerns. Furthermore, it considers ethical concerns and compliance issues. An assumption is made that an intervention approach is only justified if it effectively addresses the lowest-cost objectives. Using this assumption the paper examines the possibility of implementing a regulation approach. It goes on to elaborate how this approach would address the market failures, paternalistic and ethical concerns and compliance issues.

After comparing the outcomes of the different approaches, this paper concludes that regulation is the preferable approach.

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I INTRODUCTION

Cannabis – a blessing or a curse? This question seems to bother politicians as well as "ordinary Joes" all over the world.

In accordance with the Single Convention on Narcotic Drugs 1961 as amended by the 1972 Protocol amending the Single Convention on Narcotic Drugs 1961[1] (Single Convention) and the UN Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances 1988[2] (Drug Traffic Convention), cannabis and its consumption are more or less strict forbidden in the western world. In 1961 cannabis was, for the first time, added to the list of internationally controlled drugs. The Single Convention unambiguously condemns drug addiction. Article 49 of the Single Convention provides that "the use of cannabis for other than medical and scientific purposes must be discontinued as soon as possible".[3]

As the UN Conventions are not self-executing, parties must pass laws to carry out their provisions. However, not every country complies with the conventions in every detail. For example, although the conventions call for criminal penalties with no exception, there is nevertheless the civil penalty approach in parts of Australia. Futher, although the conventions call for a prohibition of every amount, there are "small-amount-exceptions" for cannabis purchase in many countries.

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[1] Single Convention on Narcotic Drugs 1961 (UN).
[2] Convention on Narcotic Drugs and Psychotropic Substances 1988 (UN).
[3] Single Convention on Narcotic Drugs 1961 (UN), above n 1.

According to the World Drug Report 2005 approximately 161 million people, that is 4% of the world's population, consumed cannabis in 2004[4] (see Fig.1). The amount of cannabis consumption has increased in the last years and cannabis is the most famous illicit drug in the western world (see for example Figs. 2and 3).[5] According to the United Nations, black markets for cannabis exist in 96% of countries[6] and no government has ever been able to eliminate them. History shows that every country has fought a "war on drugs" in some time. Only the drug itself varies. Remarkably, the relationship between societies and drugs seems to be more than ambivalent. Why, for example, is cannabis prohibited in western countries, but alcohol, the most famous licit drug, allowed? With this question in the background, the call for a change of the cannabis policies has arisen in the last few years and some cannabis supporters have raised the regulated alcohol market as a possible solution.

Alcohol is an addictive and intoxicating drug, but nevertheless allowed, even if regulated. It generates profit for farmers, retailers, manufacturers, advertisers and investors. It provides employment and generates tax revenues for society. Beside these positive affects, the patterns of alcohol drinking cause serious problems and costs for society.[7] About 2000 million people drink alcohol in most parts of the world and in 2000 alcohol was responsible for 4 % of the global disease burden[8]. Alcohol is proved to be connected with crime, unsafe sex, accidents and the like. See, for example Figs. 5 and 6 that outline a few of the problems relating to regular heavy drinking and intoxication.

Cannabis is, like alcohol, an intoxicant, consisting of several hemp species. The intoxicant effect is mainly caused through cannabinoids, like $\Delta - 9$ Tetrahydrocannabinol (THC) or Canabidiol (CBD). The Supporters of cannabis state that the intoxication helps to relax and broadens one's mind. In contrast, the adversaries refer to possible negative health effects and to costs for society.

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[4] United Nations Office on Drugs and Crime "World Drug Report 2005" (2005) E.O5.XI.10, p 23.
[5] UNODOC, "World Drug Report 2005", above n 4, 29.
[6] UNODOC, "World Drug Report, 2005", above n 4, 6.
7 WHO, Department of Mental Health and Substance Abuse „Global Status Report on Alcohol 2004" (WHO Geneva, 2004), 35-67.
[8] WHO "Public health problems caused by harmful use of alcohol" (15 May 2005) WHA 58.26, Agenda item 13.14, l.

Although cannabis is an illicit drug, it is said to have an exceptional position in the drug discussion. It is distinguished from "hard drugs" like heroin or cocaine, because it appears to have less dangerous side effects, the sellers are not as brutal and associated with crime, and the consumers are more reasonable.

It is questionable whether cannabis and its effects are comparable to alcohol and whether the alcohol model really would work for a cannabis market. The question is what kind of considerations policy makers should take into account when considering a change in the political approach to the cannabis issue. At the moment, the present discussion is emotive and seems mostly not objectively focused on problem solving. It is characterised by political, social, moral and even religious arguments. The discussion seems to have become stuck and a solution is not in sight. The problem for politicians is that there are no reliable research results in regard to cannabis consumption and its effects. The studies range from cannabis being highly dangerous to not dangerous at all, and few statements are really proved. Furthermore, different studies use different methods and every country has unique conditions. All these facts have to be considered while evaluating available data related to cannabis and its effects.

This research paper applies economic considerations to determine a superior approach to the cannabis question. On the basis that, from an economic viewpoint, a free market should be the starting point, it outlines that the existence of externalities and paternalistic and ethical concerns justify governmental intervention. After that it presents the different manifestations of the present prohibition approach and analyses their ability to address desired policy goals. It turns then to regulation and has a comparable look to the present alcohol market. An overall comparison between the different approaches shows that regulation is the preferable approach.

Therefore, the answer to the question whether the law of supply and demand is the most powerful cannabis law, is not a clear yes. Though regulation seems, at the first sight, not as effective as the prohibition approaches, it is the more flexible approach to address the concerns. It eliminates the black market, creates tax revenues and is in line with present public opinion about cannabis.

Therefore, a political change in the cannabis approach of the UN, and in consequence of the Member States as well, is advised.

II WHY SHOULD POLICY MAKERS ADDRESS THE CANNABIS ISSUE?

A Compliance, Public Opinion and Law Enforcement

There are different reasons why people comply with law. Some comply with law, because they respect it and voluntarily accept governmental rules. Others comply, because they are deterred by effective law enforcement.

The times in which a majority of citizens complied with cannabis law, only because it is law, seem to be gone. Today people challenge governments and their rules. The public opinion about cannabis has changed over the last decades.[9] For instance, Fig. 4 shows the view of members of the Health Committee NZ on the legal status of cannabis in 2003. Most of them preferred legislation/regulation. People compare cannabis and its effects with alcohol and cigarettes. For example, in England most young adults, aged 16-19, believe that cannabis is less harmful than alcohol or that pursuing people for the possession of cannabis should have the lowest of priorities for the allocation of police resource.[10]It seems unfair to send someone to prison only because of possession of cannabis.[11] In New Zealand, for example, there are several petitions, which call for decriminalisation of cannabis. In 1999 alone there were four such petitions: 1999/114 Petition of Susan Dawn Peacock and 6 others, 1999/122 Petition of Fa'agolo Tualima WongKee and 20 others, 1999/157 Petition of Pastor Adam White and 157 others, and 1999/173 Petition of Owen Edgerton and 35,516 others.[12]

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[9] The Economist "Brixton lights up" (2001) 360 The economist Iss 8229; The Economist "Hysteria on Downing Street" (30 March 2000) The Economist < http://www.economist.com> (last accessed 01.10.2005) ; John Carvel "Better education is making us nation of liberals" <http://www.guardian. co.uk> (last accessed 01.10.2005); Nandor Tanczos MP "Time to get real about drug in schools" <http://greens.org.nz> (last accessed 01.10.2005).

[10] The Economist "Hysteria on Downing street", above n 9.

[11] Australian Government, Australian Institute of Health and Welfare "The 2004 National Drug Strategy Household Survey" Drug Statistic Series No.13, 10.

[12] Report of the Health Committee "Inquiry into the public health strategies related to cannabis use and the most appropriate legal status" (presented to the House of Representatives, Wellington, August 2003) 66.

At the present, the dangers of cannabis are questioned and prohibition seems not reasonable any more. As a result the respect for prohibition in general decreases.

Also the regulatory bodies seem to adjust their enforcement to a changed public opinion. The UN chose prohibition as its approach to the cannabis issue, and, in accordance with that, most western countries have taken the same approach. But cannabis legislation and practices are two different things. In fact, most countries have installed a "grey zone" in which it is up to the individual police officers or judges to apply the law. In Germany, for example, it is forbidden to cultivate, possess and buy cannabis, although consumption in small amounts is allowed. Surprisingly, it is possible, according to the highest courts in Germany, to consume cannabis without possessing it. A further contradiction is found in the Netherlands' approach. Although there, cannabis purchase is still forbidden, selling it in small amounts in registered coffee-shops is tolerated. But the coffee-shops themselves are forced to buy their cannabis on the black market ("back-door-problem").[13]

The installed "grey zones" and the "laissez faire" enforcement policy intensify the problem with losing respect for the prohibition laws. There is no real deterrent effect and the differences between regulatory theory and praxis sets untrustworthy double standards.

Both changed public opinion and ineffective law enforcement lead to circumvention of the present prohibition approaches by black market allocation. Therefore, policy makers should reconsider their cannabis approaches to find a reasonable and effective policy.

B Economic Considerations as Basis

Economic considerations are a helpful tool by reconsidering the current approaches, because they allow an objective analysis. In economic terms, the question is whether the possible approaches are efficient. Pareto efficiency, as one

[13] Ministry of Health *Drug Policy in the Netherlands – Basic Principles and Enforcement in Practice* (International Publication Series Health, Welfare and Sports, No 18 September 2003) 19.

way to define efficiency, states that a policy change is efficient when it is impossible to make any one better off, without, at the same time, making some one else worse off.[14] In regard to the different ways to influence a cannabis market, there would always somebody be worse off: sellers and purchasers, supporters or adversaries, because their preferences might be not met. Because of that strict requirement, Pareto efficiency is not practicable to judge the different approaches. Although Kaldor-Hick efficiency is also controversial, because not every argument can be measured in monetary terms, it is more practicable to compare the outcomes of the regulatory approaches in question.[15] Accordingly, efficiency is achieved if those who gain benefits could theoretically compensate those who are worse off.[16] In other words, it requires a cost-benefit analysis.

A change in the current systems may be justified by reference to market failures and broader social and ethical concerns. Decisive is whether the possible approaches effectively address the desired goals and whether the benefits of a change outweighing its costs.

III THE FREE MARKET: IS INTERVENTION NECESSARY?

While deciding policy issues, policy makers should increase the welfare of society and meet public interest.[17] It is necessary to determine whether a change in the political system is able to meet this goal. In drug discussions, externalities and paternalism considerations play a decisive role and need to be considered. It is important to outline the economic as well as the non economic goals in detail.

A Economic Goals

1 Increase welfare through allocative efficiency

Modern economics relies on the assumption that a general equilibrium established under the conditions of a perfect competition in a free market is

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[14] Trebilcock, Michael *The Limits of Freedom of Contract* (MIT Press, 1995), 7.
[15] Ogus, A *Regulation: Legal Form and Economic Theory* (Claredon Press 2004), 25.
[16] Ogus, above n 15, 24.
[17] Ogus, above n 15, 29.

socially optimal (Invisible Hand Theorem).[18] Supply and demand would regulate the market outcomes to an equilibrium price. Neo-classical economists believe that two parties only enter in a voluntary transaction, if both feel that the exchange is likely to make them better off.[19] Otherwise, they would not have entered into it. As a result of the individual search to maximise one's utility, the social welfare itself increases.[20] Classical libertarians, too, prefer a free voluntary market, because in their view every individual should be free to do what he/ she wants to do. Therefore, the starting point for economic considerations in regard to the cannabis issue should also be the assumption that a free voluntary market is preferable.

2 *Structure of a free cannabis market*

At the moment, there is no free market for cannabis in the western world, therefore, one can only speculate about what a perfect free cannabis market would look like. In free cannabis markets, seller and purchaser would only enter in a contract, if both think that their preferences would be reflected in the contract. The purchasers would look for a reasonable price that would reflect the gain they hope to achieve. The sellers would only sell for a price that would cover their expenses and leave a reasonable profit. Supply and demand would lead to an equilibrium price, and, hence, to an increase of social welfare. The market participants would be better off.

3 *Theory and praxis*

This theoretical approach is questioned. Economists argue that a perfect competitive market is not likely to exist in practice.[21] There might exist market failures, which need to be considered. Because of such failures, it is almost impossible to have a perfect "bilaterally voluntary and informed transaction"[22] as required for a welfare enhancing transaction.

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[18] Robert Cooter and Thomas Ulen *Law and Economics* (4ed, Pearson Addison Wesley, Boston, 2004) 45.
[19] Trebilcock, above n 14, 7.
[20] Ogus, above n 15, 16.
[21] Trebilcock, above n 14, 7.
[22] Trebilcock, above n 14, 7.

A change of the cannabis approach into a total free market without regulation can, therefore, only be advised if there are no undesirable outcomes that are not corrected by the market itself and that are of such a quality that they justify a special form of intervention. As this paper starts on the assumption that, from an economic viewpoint, a free market is preferable, it assumes that an intervention model should be chosen, which best addresses the desired goals with least costs, but has fewest influences on the market itself. This is consistent with the assumption that not every kind of concern justifies every kind of intervention.

4 Market failures

As there is to date no total free market approach to cannabis, the question whether market failures would exist in such am market is a matter of theory. It seems that the failures of a free alcohol market are at least comparable, if not more serious. Generally market failures can arise from monopolies, externalities, information asymmetries and public goods.[23] As cannabis and alcohol can never be a public good, the other sources of market failure are discussed.

a - Monopoly -

A market situation is called a monopoly if there is only one provider of a kind of product. Such a market is characterised by a lack of competition. In regard to a possible cannabis market a monopoly is not expected. Even in the current black market structure there are many sellers and buyers. The sellers provide several "cannabis brands" and different products, depending on the different consumption forms. There is no reason to suspect a collusion of suppliers in a licit market, nor would cannabis create a natural monopoly. If one also considers the regulated alcohol market, one can see that there are lot of providers, which implement a broad variety of brands and products in the market place.This situation is transferable to the cannabis market.

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[23] Cooter and Ulen, above 18, 44 – 47.

b -Externalities-

More important in relation to cannabis consumption is the possible existence of externalities. Externalities are defined as the effect that a voluntary action of one or more people imposes on a third party without their consent.[24] Typically these effects are not expressed in the charged price. Thus this price does not reflect the real social costs. In case of negative effects/cost, this leads to a production of more units of the particular commodity than is socially desirable. However, there is almost no transaction that does not impose costs on others.[25] The problem is to define the point, at which the effects of an externality justifies intervention.

- crime rate-

The drug related crime rate imposes costs on society, particularly the tax payers. While considering this point, one has to be aware that present research results indeed show a high crime rate related to cannabis. Nevertheless, it is often not clear what kind of crime is contained in such studies. One has to distinguish between several manifestations of crime and to ask whether they are externalities of a free cannabis market as such. First, there is crime related to the black market. This kind of crime, however, would not be an externality caused by a free market approach, because it would not create a black market. Second, the crime rate related only to the breach of special cannabis law, like prohibition statutes, would not exist neither, because such law would also not exist any more.[26] The most controversial crime manifestation is crime committed by "stoned" consumers. But cannabis is not proven to be the cause of crimes like property damage or personal injury, although some criminal might be high while they commit their crimes.[27] In contrast, the crime rate connected with alcohol is high.[28] Because alcohol makes people lose their inhibitions, alcohol is connected with personal injury, rape and

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[24] Ogus, above n 15, 35- 38.
[25] Trebilcock, above n 14, 58.
[26] See also: Report of the Health Committee, above n 12, 66.
[27] Report of the Health Committee, above n 12, 19.
[28] Nina Rehn and Robin Room and Griffith Edwards "Alcohol in the European Region, - consumption, harm and policies" (WHO, Regional Office for Europe, 2001), 22.

property injury.[29] Thirdly, the cannabis price in a free market would be determined by supply and demand. Thus, it is not expected that the cannabis price would be unaffordable high. A look to the present black market prices of cannabis shows that even now the prices are relatively low in comparison to those of other drugs (see Fig.7) Therefore, the rate of crime committed to get money to afford the cannabis such as theft, burglary and robbery, would not exceed the rate related to other normal commodities. To underline this assumption one can have a look to the alcohol issue. In fact, it is unlikely that someone commits crimes such as burglary, robbery and so on to be able to afford alcohol as commodity. Though, crimes like theft of alcohol are common. It is unlikely that this would be different for cannabis in a free market. An extraordinarily high crime rate is, therefore, not anticipated.

- health hazards -

One further important issue to consider is the possible negative health effects of cannabis consumption. On the surface, this seems rather to be a paternalistic question, than an externality question, because possible health effects affect the consumer in the first place. Nevertheless, negative health effects lead to health costs and if the consumer does not pay treatment costs by him or herself, these costs are shifted to society as a whole.[30] If there is a public health care system, as in most western countries, tax payers are affected by the additional treatment costs.

Alcohol is proved to be connected with several serious diseases. These diseases cause costs for society, particularly tax payers. If one compares the two disease burdens (see Fig. 8), one can see that the health care costs of alcohol outweigh the costs created by illicit drugs all together. The accident rate imposes additional costs on third parties, too. Fig. 9 sets out a list of possible accidents in connection with alcohol. These accidents not only injure the alcohol consumers as such, but also third parties.

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[29] Susan E. Martin and Christopher D Maxwell "Trends in alcohol use, cocaine use and crime: 1989-1998" (2004) Journal of Drug Issues < http://www2.criminology.fsu.edu> (last accessed 01.10.2005).

[30] Adam Wagstaff and Alan Maynard *Economic Aspects of the Illicit Drug Market and Drug Enforcement Policies in the United Kingdom* (HMSO BOOKS, London 1988), 12-22.

A problem in determining the negative health effects of cannabis consumption is that there are no reliable research results. In addition there has been a call for cannabis to be used as medical treatment.[31] There are as many different studies as opinions and nothing has been proved. Negative effects of cannabis consumption in question are, for example, schizophrenia and paranoia, but whether cannabis really leads to serious psychological long term effects is not entirely clear.[32]A negative effect on the brain and mental functions has also not been proved. However, there are studies that show that harmful acute and chronic effects of cannabis are associated with frequent and heavier cannabis consumption.[33] Potential chronic effects can include harm to the central nervous system (neurotoxicity, impaired cognitive functioning and cognitive decline), possible psychosis and damage to the respiratory, immune and cardiovascular systems.[34] Most studies conclude that, at least, heavy consumption and abuse lead to negative health effects. According to the United Nations approximately 14% of the drug related treatment admissions in Europe and 29,7 % in the Oceania region were cannabis related (see Figs.9 and 10).

Furthermore, one of the main consumption forms of cannabis is smoking. It is evident that the smoke of cannabis joints contains a higher concentration of carcinogenic ingredients that tobacco does.[35] This can cause lung cancer and other smoking related diseases and thus lead to health and treatment costs for society. Admittedly, the consumption rate of cannabis joints may be not as high as that of cigarettes. Whereas it might be "normal" to smoke one package of cigarettes a day, smoking the same amount of cannabis is not common. This lower consumption rate, however, is outweighed by a higher concentration of dangerous ingredients.

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[31] See for example: Joy Janet *Marijuana and Medicine: Assessing the Base* (National Academy Press, Washington D.C., 1999).

[32]Peter Cohen and Hendrien Kaal *The Irrelevance of Drug Policy: Patterns and Careers of experienced cannabis uses in populations of Amsterdam, San Francisco, and Bremen* (CEDRO, Amsterdam, 2001) 75.

[33] Report of the Health Committee, above n 12, 15-19.

[34] Report of the Health Committee, above n 12, 15-19.

[35] <http//:www.thegooddrugsguide.com> (last accessed 20.07.05).

After all, the negative effects of heavy consumption, abuse and smoking cannabis lead to costs for society. If one has a look at the costs created by the treatment of smoking related disease and at those created by the treatment of alcohol addicts (detoxication, rehabilitation and so on) one can assume that the costs related to cannabis abuse might be of a comparable level. Sellers would have no incentives to address these costs in a free cannabis market.

- productivity loss -

Another externality often mentioned in relation to cannabis, and alcohol as well, is decreased productivity of the consumers for society. It is said that cannabis can cause listlessness and behavioural changes that might lead to problems in schools and workplaces. There are no reliable and definitive research results showing the total costs for society. It seems that the figures are not as high as they are for alcohol. Alcohol is proven to cause serious problems in social groups like families, schools, and workplaces.[36] However, cannabis and alcohol do not target a totally congruent consumer group. Whereas alcohol is consumed in all age levels, cannabis is more a youth drug, although some older people also consume it.[37] Additionally, most cannabis consumers reduce their consumption or even stop to consume when they grew older.[38] In contrast, alcohol users tend to keep their drinking behaviour or even extend it.[39] Alcoholism often leads to unemployment or non-productive time, because of alcohol related diseases. Problem drinkers tend to neglect their children or wives /husbands.[40] This can lead to behaviour and school problems of their children, for example. Although, cannabis might be responsible for productivity decrease of young people as well, it is not likely to lead to unemployment or family problems comparable to the serious ones caused by alcohol.

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[36] WHO, Department of Mental Health and Substance Abuse Global Status Report on Alcohol 2004" above n 7, 59.
[37] Australian Government, Australian Institute of Health and Welfare "The 2004 National Drug Strategy Household Survey" above n 11, 17, 25.
[38] Australian Government, Australian Institute of Health and Welfare "The 2004 National Drug Strategy Household Survey" above n 11, 25.
[39] Australian Government, Australian Institute of Health and Welfare "The 2004National Drug Strategy Household Survey" above n 11, 17.
[40] WHO, Department of Mental Health and Substance Abuse Global Status Report on Alcohol 2004" above 7, 60.

Ultimately, a free cannabis market creates externalities. Health hazards and less productivity shift costs to third parties. The lower productivity is not the decisive factor and would certainly not justify intervention. The question is whether the health care costs are of such a quality that they justify intervention. Considering the comparable dangerousness of cigarettes and, additional, the expected long term health hazards by over consumption, the health costs for society are likely to be enormous. Furthermore, society achieves no ex ante or ex post compensation for these costs.[41] There are no positive externalities to balance them. Besides, it is not expected that the free market itself would implement features to address these externalities.

c -Information asymmetries-

Another form of market failure is the existence of information asymmetries. One of the main assumptions in regard to allocative efficiency is that the market participants have adequate information about the product, possible decisions and their consequences.[42] Only if this is the case are the individual preferences correctly reflected in the transaction. In this regard a free cannabis market and a free alcohol market face the same problems.

In a free cannabis market sellers could advertise and in this way provide information about the product. Purchasers would have the opportunity for comparison shopping and word of mouth advertising would spread information. Besides, prices would serve as information carriers. Then again, it is unlikely that in a free market the sellers would point to the negative health effects. Moreover, it would be preferable for them to hide the possible health hazards. However, because of the more liberal environment there would be the possibility for a more open discussion about cannabis and its effects. This is likely to improve the knowledge about cannabis is general.

In a totally free alcohol market, consumers would have generally more information about alcohol and its effects. This is, among other things, because alcohol is traditionally intimately connected with the western culture. But, to what

[41] Ogus, above n 15, 36.
[42] Ogus, above n 15, 38, 39.

extent people really would be aware of the health hazards connected with alcohol and whether they would have information about the particular commodity is questionable. Although it is desirable for sellers to describe and advertise their products, they have no incentive to point out dangerous ingredients or effects of the particular product, for example the ingredients of Absinth or the effect of Alcopops. Nevertheless, there are no information duties implemented in the present regulated alcohol market. Interestingly, the situation seems to be different in regard to tobacco. There labelling duties concerning the possible negative effects of smoking tobacco are implemented in the market place.

Given that a joint contains even higher concentrations of carcinogenic ingredients and cannabis consumers might be not aware of the possible negative health effects, information asymmetries exist. It is not likely that the principles of the free market would correct this market failure itself. Although not every information asymmetry would justify an intervention, because perfect information does not exist in real world transactions, the lack of information about serious health effects justifies intervention.[43]

B Paternalistic Concerns

1 Paternalism

Policy makers also have to consider paternalistic concerns.

Behaviour of people is difficult to predict and it is often not as theories want it to be. People often underestimate the possibility to experience negative events such as accidents or serious illness. This bounded rationality concept questions the idea of a rational and fully informed consumer who only enters into a contract if this is welfare enhancing for them.[44] Furthermore, people often suffer from bounded willpower.[45] They take actions they know to be in conflict with

[43] Ogus, above n 15, 38.
[44] C.Jolls, C.R. Sunstein and R.Thaler "A Behavioural Approach to Law and economics" (1998) 50 Stanford Law Review 1471, 1477.
[45] Joll, Sunstein and Thaler, above n 44, 1479.

their own long term interests. Such "behavioural anomalies" might call for paternalistic intervention.

In simple terms paternalism means that preferences and choices of individuals are overridden by the decisions of society.[46] Paternalistic intervention could be justified by reasons of welfare, good, happiness, needs, interest or values of the particular individual being affected. However, paternalism considerations clash with the basic assumption of a free and voluntary market in which individual preferences are the decisive factor. Consequently, they are controversial. The most extreme positions are "soft" and "hard paternalism". Whereas "soft paternalism" allows an intervention only if the choice in question is not voluntary and has harmful effects, "hard paternalism" allows intervention even if the particular choice is voluntary.[47]

There are other views that paternalism is justified in regard to negative temptations which are difficult to resist by individuals, for example alcohol and drug consumption.[48]The supporters of this view state that individuals would prefer to delegate choices in such situations, and therefore utility would be maximised if the individuals consent in advance to being deprived of the temptation.[49] This view assumes therefore that the decisive individual preference is the delegation. The problem is that such preferences can only be assumed. And, the present debate in regard to a change in the cannabis policy in particular makes it obvious that many individuals do not prefer the superior decisions of the policy makers. They would prefer to consume cannabis even if this could have negative health effects for them. Another view even surrenders the assumption that individual preferences are superior.[50] This is criticised as renunciation of basic rights of freedom and authoritarianism.[51]

Ogus states: "paternalist regulation, therefore, has to proceed by applying uniform control on certain activities where it is assumed that many individuals

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[46] Trebilcock, above 14 ,149.
[47] Trebilcock above n 14, 149.
[48] Ogus, above n 15, 52.
[49] Ogus, above n 15, 52.
[50] Ogus above n 15, 53.
[51] Ogus above n 15, 53.

make unwise decisions".[52] In regard to the possible negative health effect for cannabis consumers it is said that negative effects of consumption in moderation are not proven. Only the health hazard of abuse, over consumption and smoking are for certain. Many decisions in life are unwise in some views. Many commodities are unhealthy if consumed in excess, as seen by alcohol and tobacco. But nobody, for example, would regulate the cake market only because some individuals have fatty livers or overweight. Why should it then be justified to override individual preferences for cannabis consumption? In contrast to the cake example, cannabis is nevertheless an addictive drug, and drugs have an exceptional position in contrast to other normal commodities. In the case of cannabis consumption, there are serious health effects in question and only if consumers have enough information to fully estimate these effects and are able to adjust decisions to these estimations on a voluntary basis, can their choices be said to reflect their real preferences.[53] Considering this matter two consumer groups might prompt to paternalistic concerns: Addicts and young people.

2 Addiction

Voluntary choices might be prevented by possible addiction.[54] Addicts do not act reasonable in regard to their drug. Their decisions do not reflect the choice they would have preferred if they were not addicted. In contrast to hard drugs, cannabis is not highly addictive; nevertheless 9% of the users became addicted.[55] Having regard to the annual prevalence of cannabis abuse of the population in different countries it is obvious that the number of addicts might be big (see Fig. 12). For example, given that in 2004 13, 9 % of the population of Australia consumes cannabis and 9% of them became addicted, this would lead to approximately 1,3 % cannabis addicts in Australia. Concerning this number, the addict problem justifies intervention.

Dependence is also a big problem in relation to alcohol and there paternalistic intervention is acknowledged. For instance, according to WHO, in

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[52] Ogus, above n 15, 53.
[53] Trebilcock, above n 14, 151.
[54] Trebilcock above n 14, 149; The Economist "Stumbling in the Dark" (26 July 2001) The Economist < http://www.economist.com> (last accessed 01.10.2005).
[55] Janet Joy above n 31, 95.

2002 7.7% of the adults in the USA, and in 2000 3.8% of the adults in Germany were dependent on alcohol.[56]

3 Young people

Another argument which might lead to paternalistic concerns is the rationality issue. Some consumer groups might underestimate the risks of the long term effects of consuming cannabis. The age range of cannabis consumers in the USA shows that the main consumers in 2000-2004 were young people (see Fig.13). This figure is representative for most other countries.[57] The question is whether young people are able to fully estimate the effects of cannabis consumption, and even if they do so, whether they adjust their choices to that estimation. A comparable situation exists for alcohol. Surveys, undertaken by the WHO, show that the amount of alcohol misbehaviour and binge drinking has risen in the last few years.[58] In New Zealand for example, about 20% of all 14 to 17 year olds are drinkers, and 48% of all 14to 17 year olds engage in regular binge drinking.[59] Most young people consume alcohol at parties together with others. Some of them only drink to get drunk[60] and it is more than questionable whether 14 to 17 year olds are able to conceive all the dangers connected with alcohol misbehaviour. For most young people alcohol as well as cannabis is a party and relaxing drug. They use it together with others to have fun and to be "cool". This might be a result of too little information or a casual approach. Young people tend to discount future risks. There might be young people who might recognise the dangers, but who want to be accepted by a particular group and therefore consume because of peer pressure. As a result the choices of this consumer group are not fully voluntary. As protection of the weak, particularly youth protection, is one of the tasks for a policy maker, interventions is justified in a free cannabis market for paternalistic reasons.

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[56] WHO, Department of Mental Health and Substance Abuse „Global Status Report on Alcohol 2004" above n 7, 30.

[57] Susanne Borchers- Tempel and Birgitta Kolte "Cannabis consumption in Amsterdam, Bremen and San Francisco: A three city comparison of long term cannabis consumption" (2002) Journal of Drug Issues < http://www2.criminology.fsu.edu> (last accessed 01.10.2005).

[58] WHO, Department of Mental Health and Substance Abuse „Global Status Report on Alcohol 2004", above n 7, 31.

[59] NZ Committee of Inquiry "Inquiry: Should alcopops be taxed higher than other alcoholic beverages to reduce teenage drinking? ", 1 <http:// www.myd.govt.nz>.

[60] WHO, Department of Mental Health and Substance Abuse „Global Status Report on Alcohol 2004", above 7, 32.

In summary, possible addiction and the problem of consumption by young people create paternalistic concerns and justify intervention in a free cannabis market. It is not expected that a free cannabis market would implement protection features in the market place in the absence of governmental intervention.

C Ethical Concerns

Responsible policy concerning drugs also calls for ethical considerations. There are different strict conservative views, which prefer to forbid drugs for different reasons[61]. Some conservatives state that cannabis consumption would lead to an elusory escape of reality. Others consider cannabis as immoral, because it is illegal.[62] This kind of moralistically conservative view fights against a free market or regulation.

In contrast to that, there are the libertarians who call for a drug policy that respects the individual freedom to perform the own preferences.[63] However, also this group is divided in strict liberals and others who recognise that a total free market creates problems[64]. Both, conservatives and liberals have different starting points to approach the cannabis issue, and it is not possible to satisfy both groups at the same time.

The same situation is given with several religious groups. On the one hand, there are strict Christian groups that state that humankind is the image of God and that it is therefore not allowed to use drugs at all.[65] On the other hand, there are groups that call for free cannabis, because they claim to need it for religious experiences.[66] Both groups have supporters and adversaries. If one group is better off, the other is worse off and vice versa. None of the approaches can provide a perfect solution in this regard.

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[61] Mark Thornton "Do economics reach a conclusion" (2004) 1 Econ Journal Watch, 82,91, 94.
[62] The Rt. Hon. Peter Lilley MP "Common Sense on Cannabis: The Conservative Case for Change"(July 2001, The Social Market Foundation London), 8.
[63] BBC News „The drugs debate"<http://news.bbc.co.uk> (last accessed 01.10.2005).
[64] Mark Thornton "Do economics reach a conclusion" (2004) 1 Econ Journal Watch, 82, 88-105.
[65] By Rev. Dale A. Robbins, D.Min." Drugs & the Christian" <http://www.ukcia.org> (last accessed 01.10.2005).
[66] Kyle Littman "New Religious Movements" (May 2001, University of Virginia, USA) <http://www.religiousmovements.lib.virginia.edu>(last accessed 01.10.2005).

One main group fighting against cannabis are "parent interest groups", which fear for their children.[67] This group fights against a free market and regulation. One of the most stated concerns is that a government that "allows" cannabis would send wrong signals to young people.[68] Turning away from prohibition would deny the dangers not only of cannabis, but also of the ones of harder drugs. However, there are counterstatements that prohibition obviously would not work, and that a responsible cannabis approach would acknowledge that fact and use regulatory tools to overcome the problems. Another argument by parent groups is the suspected character of cannabis as a "gateway" for hard drugs. Young people would lose their resentments concerning them. However, there are also counter researches suggesting that the character as a "gateway" is mainly caused either by personal nature of the consumer or by the present legal status of cannabis.[69]

Although all these arguments need to be considered, it is not possible that a political approach satisfies all interests. Some of the demands are contrary and can not be satisfied at the same time. Others are extreme and do not reflect public opinion. However, a free market of cannabis without any regulatory tool would classify cannabis as a normal commodity, even more harmless than alcohol and cigarettes. Cannabis is a drug and should be treated as such, therefore ethical concerns argue against a total free market.

D Further Points to Consider

In theory lower prices, convenient availability, and the diminished social stigma in a free market would encourage consumers to consume.[70] A higher consumption leads to an increase of the consumption related costs, which includes possible externalities, and intensifies the paternalistic concerns.

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[67] BBC News „ Call to legalise cannabis rejected" <http:// news.bbc.co.uk> (last accessed 01.10.2005); see for example: <http://parent.aadc.com> (last accessed 01.10.2005).
[68] Gareth Griffith and Rebekah Jenkin „Cannabis: The Contemporary Debate" Background paper 1994/1, New South Wales Parliament, 2.
[69] Report of the Health Committee, above n 12, 22.
[70] The Economist "Set it free!" (28 July 2001) The Economist < http://www.economist.com> (last accessed 01.10.2005) ; Mert Daryal *Prices, Legalisation and Marijuana Consumption* (Economic Research Centre, Department of Economics, University of Western Australia, 1999), 20 <http://www.*ecom.uwa.edu.au*> *(last accessed 01.10.2005).*

One advantage of a free market is that the current black market would vanish, and as result its related costs. This would lead to a clear isolation of the cannabis market from the market for other drugs, which might diminish a possible effect of cannabis as a gateway drug. Cannabis consumers would not have the status as criminals and there would not be the stigma of delinquency any more.

A free market would provide for legal remedies related to contract law, business law and the like. Transaction costs, information costs and price would be lower.

In addition, one has also to take into account that a free market would require a political change not only for the UN, but also for the member states. Although the main focus would be on abolishing the present prohibition statutes, the UN would have to spend money, time, and manpower to change its conventions and so would have the member states. However, if we assume free cannabis markets, law enforcement costs for special cannabis law would not exist. Costs for breach of contracts or fraud, would not be higher than the one caused by the exchange of other "normal" commodities.

In essence, in a free market the market participants would be better off. Seller and purchaser would regulate the market outcomes with their demand and supply. They could enter in contracts if they think it is preferable for them to do so. On the other hand, society and the tax payers as third party in particular, would be worse off to the extent that the public health system bears the costs.

E Summary

Although the free market would have many advantages for the market participants, it creates failures in shape of externalities and information asymmetries. They are of such a quality that they justify intervention. Also paternalistic and ethical concerns call for this result. It is not expected that a free market would address the externalities or the paternalistic goals concerns. The goal for a responsible cannabis policy should therefore be to address effectively

the outlined concerns. To identify which approach is most effective in doing so, the market outcomes of them are to be measured against the desired policy goals.

IV THE CURRENT POLICIES AND THE BLACK MARKET

This section starts with prohibition in general and goes on to examine the compliance of the different prohibition approaches with the outlined goals.

At present, the western countries apply more or less strict prohibition approaches consistent with the Single Convention. However, approaches range from total prohibition, total prohibition with expediency principle, and prohibition with civil penalties to partial prohibition. The problem with prohibition in general is that it does not mean that there is no market at all. There is a demand for cannabis and, therefore, always someone will supply it. Because of that, prohibition crates a black market. According to the United Nations, such a market exists in 96% of the countries and no country has ever been able to eliminate it. [71]

The US government had similar experiences when it implemented "The Prohibition" into the alcohol market in 1920. Its purpose was to reduce crime and corruption, to solve social problems, to reduce the tax burden created by prisons and poorhouses, and improve health and hygiene in America. Nevertheless, as Fig.13 demonstrates, this approach was not as effective as politicians thought it were. While consumption decreased at the beginning, the consumers shifted to substitutes such as drugs, for instance morphine and, after a while, consumption of alcohol increased again.[72] Moreover, crime rates, and in particular gang wars and corruption were increased. Additionally, the government lost an important source of revenue. This approach did not achieve the desired goals at all and, therefore, The Prohibition was set aside in 1933.

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[71] UODOC *World Drug Report 2005,* above n 4, 27.
[72] Mark Thornton „ Policy Analysis- alcohol prohibition was a failure" <http://www.cato. org>.

A *Prohibition and its Impact on Consumption*

The theoretical goal of prohibition is to eliminate consumption. The question is how effective is it in practice. There are two theoretical effects of prohibition on the consumption range. One theory states that prohibition in particular would attract consumers and therefore encourages them to consume.[73] Young people, for example, would consume cannabis only in order to rebel against authorities. Without the "prohibition as label", cannabis would lose its attractiveness. On the other hand, there are opinions that the fear of punishment and the respect for the law would minimise consumption.[74] Which theory has the most practical effect is not entirely proved. However, it is likely that prohibition really has an effect on demand and on supply. First, it raises the costs for suppliers, because there are additional dangers and discomfort.[75] As a result, the supply curve shifts upwards. Second, there are also additional costs for the customers, for example fear for legal penalties, violence and crime connected with the black market transaction and uncertainty about product quality.[76] Thus, the demand side is also likely to be shifted downwards. In consequence, this leads to a reduction in consumption.[77] The social stigma and the required additional effort to purchase cannabis might have a further consumption reducing effect. Although the public opinion about cannabis is changing, it is likely that also the respect of the present prohibition law contributes to a consumption reduce.

There are no figures, which prove the amount consumption would decrease. However, theory and practice are two different things. The present high consumption rate indicates that prohibition generally is not as effective in decreasing consumption, as many supporters want it to be (see Figs. 1, 3 and 12). On the other hand, there are no statistics about the consumption rate in a free market, which could help to reconstruct the development. However, because this

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[73] Jeffrey Miron and Jeffrey Zwiebel "The Economic Case Against Drug Prohibition"(1995) 9 Journal of Economic Perspectives 175, 176. ; see also for total prohibition: Jonathan P. Caulkins "Zero-Tolerance Policies: Do They Inhibit or Stimulate Illicit drug Consumption?" (1993) 39 Management Science 458,473.

[74] Miron and Zwiebel , above n 73, 177.

[75] Miron and Zwiebel, above n 73, 176.

[76] Miron and Zwiebel, above n 73, 176.

[77] Report of the Health Committee, above n 12, 57.

is not the place to solve the theoretical conflict, this paper assumes that prohibition has a consumption reducing effect.

B Costs Created by a Black Market

There are "black market failures" in the shape of information asymmetries and externalities. First, the information asymmetries are intensified. It is to distinguish between information about possible health hazards and product information, for example ingredients, quality and the like.

Whereas buyers in a free market probably would have only a little information about the negative health effects of cannabis, they would have even less information about that fact in a black market. It is even more unlikely that black market seller would point to possible health hazards, then that sellers in a free market would do so. Further, in such a market the customer has hardly any information about the product quality. There is no way for the consumer to receive the necessary information, if the seller does not want him to have more information about the product. The possibility to shop around is minimised and it is easy for a seller to hide price changes by lowering product quality. Therefore, the information asymmetries are worse than they would be in a free cannabis market. This causes high information costs and the information asymmetries lead to a market failure. A black market does not correct these market failures and its character does not allow implementing special protection features by the government.

A second failure exists in shape of additional externalities. First, there are still health care costs, because the black market supplies cannabis and makes cannabis consumption to some extent possible.[78] Furthermore, there is an increased crime rate in relation to black markets. Because seller and customer are not able to rely on legal protection, they have to find different ways to protect their rights. This leads to violence, corruption and crime and thus to additional costs for society. In addition, the law enforcement costs rise in a black market.

[78] UNODC, "World Drug Report 2005", above n 4, 374,376

The black market intensifies, further, the paternalistic concerns for implementing prohibition, because it enables youngsters as well as addicts to purchase cannabis.

C Summary

In conclusion, measured against the desired policy goals it seems that prohibition intensifies the market failures of the free market. The created black market contradicts the goals of prohibition. It enables in particular young people and addicts to purchase their drug and creates further externalities. With the assumed consumption reducing effect, however, it achieves at least a reduction of the consumption related costs.

As the current prohibition approaches to cannabis vary in their strictness, their impact on the black market and the effects are also different.

V THE CURRENT APPROACHES

A Total Prohibition without Any Expediency Principle

Total prohibition without any expediency principle is the strictest approach in relation to cannabis consumption.[79] It is also the most discussed one. According to this approach cultivation, import, sale, possession, distribution and use of any amount of cannabis are totally prohibited. Total prohibition operates in most US states, Sweden, France, England and Wales, although in England and France, alternatives to prosecution, such as cautions or referral, are possible. [80] Nevertheless, in the USA for example, 25 million people aged over 12 consumed cannabis in 2003.[81] Also, England and France are among the countries with the highest cannabis consumption rate in the world (see Figs. 12 and 15[82]).

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[79] Report of the Health Committee, above n 12, 57.
[80] Report of the Health Committee, above n 12, 58.
[81] US Department of Justice, National Drug Intelligence Centre, *National Drug Threat Assessment 2005 Summary Report,* Fig. 8 <www.usdoj.gov> (last accessed 01.10.2005)
[82] Both figures show different percentages, because they use different measuring methods. Nevertheless, their resulted ranking of the countries is nearly the identical.

1 Does it address the failures of a free market?

The first step is to determine whether this approach meets the failures of a free cannabis market: externalities and information asymmetries.

Whether prohibition effectively meets the health care costs shifted to society is questionable. Because total prohibition assumes no consumption and no market at all, it provides no features to particularly address health issues. Health care costs, however, are reduced as result of the assumed consumption reducing effect of prohibition. Nevertheless, the consumption rates under total prohibition are still high and as a result so are the health care costs for society (see Figs.3, 11 and 12). Consequently, it cannot be said that total prohibition is effective in addressing health care costs.

Besides, total prohibition is also unlikely to meet the information asymmetries caused by a free market. The aim of prohibition is to undermine every kind of trade and consumption, therefore this approach itself has naturally no information supply features in the market place. Moreover, as outlined above, the information asymmetries are even intensified, because of the black market.

2 Does it address the paternalistic concerns?

It is questionable whether paternalistic considerations concerning voluntary choices call for a total prohibition. As outlined above, the main consumers of cannabis are young people and the numbers of consumers even under a total prohibition approach is high. Young people are not able to fully estimate the negative effects in depth or to adjust their decisions to this estimation. In a theoretically perfect total prohibition approach, young people would not consume cannabis any more, but the black market still allows them to purchase and consume cannabis. Nevertheless, their number is likely to be smaller than it would be in a total free market.

The problem with addicts who might misjudge the trade off between pleasure and negative effects also exists in a total prohibition approach. Addicts

are not able to choose voluntarily any more, therefore they are likely to consume even under a total prohibition. Although in theory total prohibition is able to address this problem, because without consumption there would be no addiction, this does not work in practice. The black market provides for the possibility to purchase and consume. Whether there might be fewer addicts in a total prohibition approach as in a free market is not proved. However, because the consumption generally might decrease, it is likely that also the number of addicts might decrease. However, the present high consumption level in the total prohibition countries leads to the effect that there are still addicts and that therefore the effectiveness of a total prohibition is questionable.

3 Ethical concerns

As total prohibition is on the strictest end of the intervention scale, it would satisfy the ethical concerns of conservatives, parents groups and Christian groups. However, liberalists, some religious groups and medical cannabis supporters would be worse off.

4 Further points to consider

One disadvantages of a total prohibition approach is the creation of a black market system. Such a market contradicts the theoretical effects of a total prohibition. To fight the black market and its effects causes additional costs. There are costs of law enforcement, as well as for information and education campaigns.

Furthermore, as outlined above, total prohibition faces acceptance and compliance problems. As it is the most extreme prohibition approach, it seems not to keep pace with changed public opinion. The ineffective enforcement contributes to the fact that young people undermine the law.

Aside from these negative effects of the total prohibition approach, one should bear in mind that it is at least likely to decrease the health care cost, youth consumption and addiction by reducing consumption in general.

From an economic point of view, there are providers and consumers that are worse off, because they would prefer to purchase in a free market. Furthermore, there are further costs shifted to third parties, created by the black market. Taxpayers have to pay these costs and are therefore worse off too.

B Total Prohibition with Expediency Principle

Another current intervention type is total prohibition with expediency principl. [83] This means that generally cultivation, trade, purchases and consumption is prohibited, but with exceptions. This kind of intervention, for example, is used in the Netherlands.[84] Although there, cultivation, trade and possession of cannabis are still prohibited, the sale and purchase of small amounts through a system of registered coffee-shops is an exception.[85] Such coffee-shops are tolerated provided they sell no hard drugs, do not sell to under 18s, create no public nuisance, have no more then 500 grams of cannabis on the premises and sell no more than 5 grams at a time.[86] If owners or operators of coffee shops break these rules, they will face administrative procedures, criminal prosecution or both.[87]

1 Does it address the failures of the free market?

The question is whether this approach is able to meet the failures of a free market. Information asymmetries are likely to be less then in a total prohibition approach without expediency principle. There are, nevertheless, asymmetries that are comparable to the ones in the free market. One has to distinguish between the market in which the end-consumer operates and the market in which the coffee-shops purchase. If end-consumers buy in coffee-shops, they probably receive information about the quality of the particular cannabis product, because the seller wants to describe and praise its product. Furthermore, the end-consumers is able

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[83] Report of the Health Committee, above n 12, 58.
[84] Ministry of Health *Drug Policy in the Netherlands – Basic Principles and Enforcement in Practice* (International Publication Series Health, Welfare and Sports, No 18 September 2003), *3.*
[85] Ministry of Health *Drug Policy in the Netherlands,* above n 79, 9.
[86] The Economist "Better Ways: If enforcement doesn`t work, what are the alternatives?"(26 July 28 2001) The Economist< http://www.economist.com> (last accessed 01.10.2005).
[87] Ministry of Health *Drug Policy in the Netherlands,* above n 89, 19.

to comparison shop and, therefore, to compare the commodity. Then again, sellers probably do not point to the possible negative health effects of cannabis consumption, because this would endanger their trade. Therefore, information asymmetries, at least concerning the negative effects, still remain. In contrast to end-consumers, the coffee-shops still have to purchase their cannabis on the black market. In this relationship, information asymmetries might exist too. These asymmetries might later be unintentionally passed to the end-consumer by the coffee shops. In conclusion, this approach is not able fully to correct the information asymmetries of a free market.

Another question is whether this approach addresses the outlined externalities in terms of health care costs. The consumption rate of cannabis in the Netherlands is average in Europe (see for example Figs. 4 and 12). Therefore, the Netherlands government itself concludes that the coffee-shops do not encourage the consumption.[88] In comparison to a free market, it is likely that nearly the same number of consumers would consume, because in consequence nearly everyone has the possibility to consume. Therefore, it is likely that the level of health care costs would be comparable high in both regulatory systems.

Furthermore, by concentrating the cannabis market on special spots, the "coffee shop market" creates additional externalities in shape of falling prices for nearby property.[89]

2 Does it address the paternalistic concerns?

Having regard to paternalism considerations, one has to acknowledge that the problem with involuntary choices of addicts remains in such an approach. They have the unrestrained ability to purchase their cannabis in coffee-shops. Because consumption is nearly unmodified, the numbers of addicts is also the same as in a free market.

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[88] Hoogervorst, Donner and Remkes „Policy on Cannabis" (Parliamentary Document, 2004),3.
[89] BBC News "Decriminalisation: Let's go Dutch?" <http://news.bbc.co.uk> (last accessed 01.10.2005).

However, this approach addresses the youth protection concerns with under 18 restrictions. This would in theory lead to no consumption by young people, but in practice, they use the black market to purchase cannabis. In comparison to a free market on the other hand, it is likely that the number of consuming young people has decreased under prohibition with expediency principle. As outlined above prohibition imposes additional costs on buyers. As this approach is still prohibition, there might be people deterred and might refuse to consume because of respect of that law. Nevertheless, the problem with some young people who underestimate the negative effects or consume only because of peer pressure still exists. In conclusion, this approach does not fully achieve the paternalistic goals.

3 Ethical concerns

To what extent this approach addresses the ethical concerns is questionable. It is theoretically prohibition, but it results in practice in a nearly unrestricted possibility for adults to purchase and consume cannabis. In consequence, conservatives are worse off. In addition, liberals are worse off, because this approach is still prohibition. However, parents might be better off, because young people are, at least theoretically, prohibited to purchase cannabis. Medical cannabis supporters, on the other hand, are partly better off due to the possibility for adults to purchase cannabis.

4 Further points to consider

One of the major advantages of this approach is that it is able to diminish the black market activity and changes the purchasing environment for the end-consumers. The costs, normally connected with such a black market, are minimised. Buyers of small quantities do not have to fear punishment and social stigma any more. Moreover, they can now rely on legal protection to enforce their rights. By separating the cannabis market from the market for hard drugs, the possible character of cannabis as a gateway drug is weakened. On the other hand, coffee-shops still operate in a black market system, because they have to purchase illegally ("back-door-problem"). They have no possibility to rely on legal

remedies.[90] In this context, there is still violence, corruption and crime together with high law enforcement costs. The light of contradiction makes this approach controversial.[91] It seems, nevertheless, that this approach is more in line withthe public opinion than the stricter prohibition approaches. It provides a clear distinction between cannabis and hard drugs without denying the dangers of cannabis.

However, this approach might cause further problems for society: drug tourism and smuggling.[92] The drug tourists are not ordinary tourist. Normally they just drive over the border pop in the next store, buy their cannabis and go back. On the other hand, there might be people attracted by the Netherlands as holiday destination, because of the liberal cannabis environment. This kind of tourist would spend money in the cities. Although "more people" does also mean more noise, nuisance and garbage, they would not be of a level to justify intervention.

Although smuggling is more a problem for the neighbouring states, it is likely to intensify the cannabis problem in the Netherlands too. Smuggles increase the demand for cannabis in the black market. This leads to intensified problems with crime, corruption and the like caused by the increased black market. Smugglers are especially attracted by the Netherlands, because of the whole "cannabis environment" is changed to purchase. To transport cannabis is easier. Moreover, the cannabis prices are lower, because of the lower transaction costs. Therefore, more smugglers are attracted by the Netherlands than by countries with a total prohibition approach. In a UN wide free market, there would be no reason for smuggling any more.

From an economic point of view, seller and consumers may be better off, because they are able to trade in a "quasi licit market". On the other hand, there are still consumers who would prefer to buy more than the possible 5 grams or sellers that would prefer to be able to advertise, sign contracts, and borrow money

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[90] The Economist "Better Ways: If enforcement doesn't work, what are the alternatives?"(26 July 28 2001) The Economist< http://www.economist.com> (last accessed 01.10.2005).
[91] The Economist "Better Ways: If enforcement doesn't work, what are the alternatives?"(26 July 28 2001) The Economist< http://www.economist.com> (last accessed 01.10.2005).
[92] BBC News "Decriminalisation: Let's go Dutch?" <http://news.bbc.co.uk> (last accessed 01.10.2005).

and so on. Therefore, there remain market participants who are worse off. Additionally, there are still externalities that make third parties worse off.

C Prohibition with Civil Penalties

A further approach to the cannabis issue is prohibition with civil penalties for minor offences. [93] In such a system, everything in regard to cannabis is still prohibited, but the way in which the cannabis law is enforced is changed. Instead of criminal penalties, there would be civil penalties. However, anyone who denies guilt or does not pay the fine will still have to be prosecuted. Such system has been in place in Australia, for example.[94] In 1987 South Australia and in 1992 the Australian Capital Territory introduced expiation notice schemes. Under these schemes, a person found committing a minor offence relating to cannabis is given what amounts to an "on-the-spot" notice. If the prescribed penalty is paid within the prescribed time then no court appearance is required and no conviction is entered. If the person receiving the expiation notice fails to respond to it, however, normal court processes follow.

1 Does it address the failures of the free market?

The question is whether the more liberal penalty approach leads to a consumption increase. If one has a look at the consumption range in Figs. 12 and 15, one can see that Australia is among the countries with the highest consumption rate.[95] The US, England and Wales have comparable numbers of cannabis user, although they apply a total prohibition approach without expediency principle. [96] It seems therefore that prohibition with civil penalties has a similar effect on consumption, although the fear of civil penalties might not have the same deterrent effect as the one of criminal punishment.

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[93] Drug Policy Forum Trust „Alternative Systems of Cannabis Control in New Zealand" (Discussion Paper, Wellington July 1997) 10.
[94] Drug Policy Forum Trust above n 93, 10.
[95] See also: Australian Institute of Health and Welfare"The 2004 National Drug Strategy Household Survey", above n 11, 3.
[96] See also: Australian Institute of Health and Welfare "The 2004 National Drug Strategy Household Survey", above n 11,3.

Health care costs are also not drastically decreased in this approach, because people sill consume. They might be lower than in a free market, because, as outlined above, a free market might lead to a consumption increase. Therefore, this approach meets partly the shifted costs to third parties.

Information asymmetries remain. Prohibition with civil penalties is nevertheless prohibition and provides consequently no information about cannabis as commodity in the particular transaction or its possible negative effects.

2 Does it address the paternalistic concerns?

As the idea behind every prohibition is to prevent everything in regard to cannabis, this approach seems to be efficient in regard to paternalistic considerations, although it does not address them with particular features. However, almost one in five teenagers in Australia had used cannabis in the last 12 months.[97] 156,000 male teenagers and 141,200 female teenagers were recent marijuana/cannabis users. These numbers show that in Australia many young people still consume cannabis and it is likely that this is the same in other countries with a civil penalty approach. As outlined above, young people underestimate the dangers, or are influenced by peer pressure, so that their choices are not fully voluntary. A similar situation exists in relation to addicts. Because the number of cannabis users has not drastically decreased, the number of addicts also has not. Nevertheless, the number is less than in a free market approach.

3 Ethical concerns

This approach is met by similar ethical concerns as total prohibition without expediency principle. Conservatives, parents and Christian groups might be better off, because this approach is prohibition. Nevertheless, some members of these groups might be worse off because they would prefer criminal punishment. Liberals, some religious groups and medical cannabis supporters are worse off.

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[97] Australian Institute of Health and Welfare "The 2004 National Drug Strategy Household Survey", above n 11,26.

The big disadvantage of this approach is, as by the other prohibition approaches as well, the creation of a black market and its additional costs for society. Changing only the type of law enforcement might have no effect on the black market allocation. However, the changed punishment influences the dealing environment. Purchasers as well as sellers might be more reasonable and not that associated to crime, because a civil penalty has another quality than a criminal penalty. It is likely that consumers are encouraged to consume, because the costs for purchasing cannabis are lower than in a total prohibition approach. On the other hand, it is unlikely that the consumption increase is as high as it would be in a total free market, because penalties are still possible.

There is still a need for administrative staff, law making and enforcement, because the civil penalties also have to be enforced. In addition, if fines are not paid, the prosecution that follows in such a case may lead to even more costs in result. Furthermore, the problem of "net widening" exists, because offenders, which in another regime only received a warning, now are burdened with a fine.[98] For example in 2003 to 2004, cannabis was responsible for 72 % of drug arrests in Australia.[99] Although the law enforcement costs might be lower than in a total prohibition without expediency principle, they are still high. [100]

To what extent this approach is the line of the public opinion is not clear. There is still the purchasing in the black market to circumvent the law. Cannabis, however, is forbidden even if not to the same level than hard drugs. It seems that this approach might be more with line of pubic opinion than total prohibition. Nevertheless it is controversial.

From an economic point of view, low-level offenders might be better off, because they are no longer burdened with a criminal record. This is an advantage in comparison to the other prohibition approaches. In comparison to a free market

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[98] Report of the Health Committee, above n 12, 62, 63.
[99] Australian Government, Australian Institute of Health and Welfare "Statistic of drug use in Australia 2004" above n 11,76,77
[100] Drug Policy Forum Trust above n 93, 11.

allocation, the consumers will be worse off, because they would prefer to purchase their cannabis without any burden. In addition, providers are worse off, because they are still forced to operate in a black market system. Furthermore, there are still the additional costs of the black market itself that affect third parties.

D Partial Prohibition

In partial prohibition systems cultivation, possession, and use up to a specified amount would be allowed for adults for personal use.[101] Professional cultivation and sale for profit, however, would still be prohibited; therefore, there would still be no licit market system for cannabis. This approach are used for example in Spain and Alaska.[102]

1 Does it address the failures of a free market?

Whether or not partial prohibition has an effect on health care costs for society is not clear. There are no research results concerning this matter. As this approach explicitly allows the personal cultivation and use for adults, it is not expected that the consumption level is lower than it would be in a free market. In such a system, the adult consumer has theoretically two ways to get his /her cannabis: by growing it by oneself or by purchasing it on the black market. However, because growing one's own cannabis is allowed, there is no need for costly purchasing for the adult user any more. Therefore, it is likely that the cannabis consumption rate by adults is the similar as it would be in a free market approach. Although there are no figures about how many consumers would grow their own cannabis, if one is too lazy or cannot grow one's own cannabis, it is still possible to purchase cannabis on the black market. Therefore, the consumption level by adults and the related health costs are likely to be similar as those in a free market.

Conversely, underage consumers have still to purchase their cannabis in the black market. For them the situation is theoretically the same as under a total prohibition. In fact, it is expected that they also have an easier excess to cannabis.

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[101] Drug Policy Forum Trust, above 93, 11.
[102] Report of the Health Committee, above n 12, 63; Drug Policy Forum Trust above n 93, 13.

For example, what happens in a "two adult with one underage household" if the parents decide to grow their own cannabis? Who controls whether only the adults consume it? In summary, it is likely that the consumption is higher than it would be in a total prohibition, but not as high as in a total free market, because the prohibition for underage people might partly have effect.

This approach is unlikely to address the information asymmetries. It is still a kind of prohibition, that it self provides no particular information features. If one grows one's own cannabis, one can be sure about the product quality, but in this case, cannabis is not part of a market exchange at all. Information asymmetries still exist to the extent to that adults and underage people, nevertheless, purchase on a black market. Therefore, this approach is unlikely to meet effectively all asymmetry problems.

2 Does it address the paternalistic concerns?

This approach is not able to address effectively the paternalistic concerns. Consumption and everything else concerning cannabis is prohibited for underage people. Nevertheless, many underage still consume cannabis, even if the number might be reduced. Therefore, the approach only partly meets the desired goal of youth protection. The same situation applies to addiction prevention. There might be fewer addicts, nevertheless there are some. As result, the approach meets only partly this goal as well.

3 Ethical concerns

The supporters of cannabis might partly be better off. Medical use and consumption are at least for adults who grow their own cannabis possible. However, liberals are still not fully satisfied. Conservatives, parents and Christian groups might criticize this approach too.

4 *Further points to consider*

The question is to what extent partial prohibition influence the existence of a black market would. The decisive factor is how many users would in fact decide to grow their own cannabis or would supply cannabis to friends without profit. Using this approach in Alaska a black market remained.[103] However, it is questionable whether can be generalised. In Alaska the growing conditions for cannabis are generally bad, so that many consumer might have not been able to grow their own cannabis.[104] The consumption rates in Spain, for example, are also not helpful. Although the Figs.12 and 15 show that the consumption is at an average level in comparison to other countries, they do not show the origin of the cannabis, thus they cannot help to determine the black market activity.

In Praxis, there is still demand by underage people and by adults who are not able or not willing to grow their own cannabis. Thus, someone will supply cannabis to him or her. Together with the black market, the related problems and externalities exist as well. It is, therefore, likely that a black market would still exist, even if to a reduced extend.

To what extent costs for law enforcement are reduced is not proved. There is still a cannabis law to enforce. This might be even more costly than total prohibition, because the law itself seems to be more complicated. It seems difficult in practice to establish whether adults only cultivate for their own consumption and whether they give "cannabis- gifts" to friends or whether they sell it. It is difficult to prevent young people from having access to homegrown cannabis. On the other hand, because of the fact that adults are allowed to consume and cultivate cannabis, the number of defenders might be lower. In consequence, law enforcement costs might be lower than in a total prohibition approach, but higher than in a free cannabis market.

To what extent this approach is in line with public opinion is not clear. As it does not allow purchasing cannabis on a licit market, it still stigmatizes

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[103] Drug Policy Forum Trust above n 93, 13.
[104] Drug Policy Forum Trust above n 93, 13.

cannabis as dangerous. However, it distinguishes it from hard drugs by allowing, at least, growing one's own cannabis.

From an economic point of view, there is still someone worse off. Consumers and sellers are still not able to purchase on a licit market. Even if adult-consumers are allowed to grow their own cannabis, some might prefer to buy cannabis. There are, in addition, still the externalities and costs caused by the black market allocation.

E Summary

Measured against the goals the prohibition approaches create different outcomes and are of different effectiveness. Although their ability to achieve the goals seems theoretically sufficient, the created black market and its costs contradict the theoretical advantages. However, as prohibition generally is assumed to have a consumption reducing effect, the approaches are at least able to influence the consumption related cost and problems. Theoretically, the most effective approach is total prohibition without any expediency principle. However, this approach creates the most serious problems connected with the black market. Prohibition with expediency principle and partial prohibition are more liberal and scale down the black market related costs. Also prohibition with civil penalties has some effect on the black market, because of the changed punishment approach. Prohibition theoretically addresses the ethical concerns of conservatives, Christians and parents. But in practise, the different kinds of prohibition are only insufficiently able to satisfy these concerns, because they allow consumption and/ or purchasing, and because all of them create a black market. Furthermore, in the changed public opinion the prohibition approaches seem to be more or less inconsistent. All of them require high enforcement costs, but, because they are in line with UN policy, no law changing cost.

VI REGULATION AS ALTERNATIVE APPROACH

A Theory and Praxis

Regulation is the favoured kind of intervention of the adversaries of prohibition, though it has not been adopted in any industrialised country. In such a market, cannabis would be a normal commodity, similar to tobacco and alcohol. The supporters assume that a regulated cannabis market would have a competitive structure. Supply and demand would control the market outcomes. To address the failures of the "free market" and the other goals, it is possible to implement protection features by regulatory intervention. This approach is very flexible and many different regulatory tools are possible. In theory, the market participants would switch to such a regulated market, because their preferences would be met in a more efficient way. They would have the possibility to rely on legal protection and would face less information and transaction costs. The question is whether this theory would work in practice. As the approaches, outlined before, have shown there are often differences between regulatory theory and praxis. It is helpful to have a look to the alcohol market again. The regulatory features are more or less strict in the different countries. In Europe, for example, there is a North-South difference, whereby the northern countries apply stricter regulatory tools as the southern ones.

B Cannabis and Alcohol - Do Regulatory Tools Address the Failures of a Free Cannabis Market?

Because there are no figures and studies regarding the actual market outcomes of a regulated cannabis market, the following is just a theoretical analysis. Since the approach is flexible, it is, in contrast to the prohibition approaches, explicitly possible to implement several protection features to address externalities and paternalistic concerns. To outline possible features in detail, this paper sketches the most important regulatory features of the alcohol market.

Researchers assume that cannabis consumption would increase in a purely free market. This outcome seems also reasonable for a regulated market, because

it is easier to purchase cannabis; costs are reduced on supply and on demand side and the social stigma would be vanished. A higher consumption level in general leads in consequence to higher health care costs shifted to society, more consumption by youth and addiction. The question is therefore what kinds of features are able to counter these outcomes.

1 - Taxes -

First, an implementation of taxes would be possible. They are already implemented on alcohol and cigarettes as "sin taxes". Taxes are the most common regulatory feature for the alcohol markets in every country, while the level of the taxes vary. As a result of the taxes, prices of alcohol rise. This leads to a downwards sloping demand curve.[105] Even heavy and problem drinkers appear to be no exception to this rule.[106] Nevertheless, taxes need to be balanced carefully as otherwise a black market would be created again. This seems to be difficult in regard to cannabis, because of two reasons. First, the licit markets for alcohol and cigarettes have already existed before the taxes were implemented. One started with a low-level tax and than increased the levels. In case of cannabis, this would be different, because of the fact that together with the implementation of the licit market itself also the taxes have to be implemented. Second, as the prices for cannabis are already comparable low on the black market, taxes on cannabis generally must be "low". Thus, taxes should be on a level that does not prevent purchasers from shifting to the licit market. Whether it is reasonable to increase the taxes after a while is another question.

In consequence the tax level in a cannabis market must be carefully balanced because of the characteristics of the implementation and because of the market value of the cannabis itself. Nevertheless, taxes are an attractive policy instrument. Not only can they influence the consumption level, but also they can be used to generate direct revenue and to balance the cannabis related costs.

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[105] Frank Chaloupka, Michael Grossman and Henry Saffer "The Effect of Price on Alcohol Consumption and Alcohol- Relate Problems" (2002) 26 Alcohol Research and Health, 22,32; Gary Becker, Kevin Murphy and Micheal Grossman "The economic Theory of illegal Goods: the Case of Drugs" National Bureau of Economic Research (Cambridge, 2004), 20.

[106] Alcohol and Public Policy Group *Alcohol: No Ordinary Commodity. A summary of the book* (Society for the study of Addiction to Alcohol and Other Drugs, 2003) 1343, 1345.

Whether they work in practice is rather a question of practical design in the different countries than one of the theoretical approach.

2 - Labelling duties and purity requirements -

Even if no yet used in the alcohol market, a second possible regulatory tool, would be the implementation of labelling duties and content requirements similar as in the cigarette market. An obligation to disclose possible negative health hazards might discourage some consumers to consume at all, or at least to reduce their consumption. This would help to reduce health costs. Such discloser duties also address information asymmetries, as they provide for information enabling consumers to make informed choices. Purity requirements that prohibit dangerous or addictive ingredients at all, or limit at least the level of them, would lead to less dangerous product quality and consequently to lower health costs.

3 -Bans-

Another regulatory tool, also common in the alcohol market, is the implementation of alcohol bans for special times and areas. New Zealand and Australia, for instance, have implemented such bans. These bans address the paternalistic concerns in regard to consumption of young people. It is reasonable to ban alcohol as well as cannabis in areas where it, easily attracts young people for example at schools, playgrounds, sport events and so on. Therefore, some kind of cannabis-bans would be a suitable regulatory tool in a regulated market.

4 -Licensing duties-

To encourage the reliability of manufacturers and providers the implementation of licensing duties is possible. Such duties contribute to guarantee information supply, purity requirements and compliance with law. The strictest form of supply regulation in this way is the monopoly-supply of alcohol by the government. In such a market only the state itself can officially provide for alcohol. This was the traditional approach in the Nordic countries of Europe. Recent political development has deregulated the alcohol market, although Russia

and Hungry, for example, still have governmental monopolies at all levels.[107] For cannabis, however, this would not work in practice. This strict kind of regulation would encourage private providers and would again lead to a black market distribution. In contrast, the requirements for licensing would work for cannabis manufactures and providers. This should be carefully designed. As cannabis is relatively easy to grow and to retail, too strict licensing duties might prompt the providers to switch to a black market system again.

5 -Age restrictions-

Age restrictions are an important regulatory tool in the alcohol market. Every western country has implemented age restrictions. The decisive age varies from 16 to 21 years. In addition, the types of alcohol young people are allowed to purchase or to consume vary form country to country depending on the percentage of alcohol. The purpose of such restrictions is to prevent consumption by young people. In this regard, this tool would also be suitable for a cannabis market. The result, however, is more than questionable, as some young people circumvent the law and consume anyway. Furthermore, such restrictions do not only depend on consumer behaviour, also the suppliers have to comply with them. Effective law enforcement is needed so that the suppliers will comply. However, as age restrictions complicate to purchase cannabis by demanding more effort and creating fear of punishment, they are an effective tool.

6 - Restrictions on advertising-

Quite recently, many countries have implemented restrictions on advertising alcohol. It is assumed that alcohol advertising portrays drinking as socially desirable, promotes pro-alcohol attitudes, of recruiting new drinkers and increases consumption among current drinkers.[108] However, the overall impact of advertising on alcohol consumption or alcohol-related harm may be limited and long-term effects are not proven jet.[109] Nevertheless, advertisements, especially

[107] Nina Rehn, above 28, 51.
[108] Nina Rehn, above n 28, 57.
[109] Nina Rehn, above n 28, 57.

in TV or cinema, are a medium to spread not only information, but also to transport life style stereotypes. This affects young people in particular. The same situation would be given in a regulated cannabis market. Therefore, it would be desirable and also suitable to implement advertising restrictions on cannabis.

7 How to deal with addicts?

The problem of possible dependence seems difficult to address, because becoming dependent or addicted has several causes, not all of which are attributable to the drug itself. There are no features that address these concerns in the alcohol market itself, whereas in the cigarette market labelling duties requiring warnings of possible dependence are common. Such labels would, at least, provide consumers with more information and enable them to make choices that are more informed.

Nevertheless, this would not completely satisfy the paternalistic concerns, as paternalism assumes that the government acts on behalf of people that are not able to make the "right choices", which is the case in situation of addiction. It is difficult to identify addicts. There are not definitions or tests that could be used to identify addicts in daily market transactions. Therefore, something like "addict restrictions" comparable to age restrictions is not possible, neither for alcohol nor for cannabis. There are no considerable features that would address addict protection.

C Some Tools Work!

In the end, it is obvious that the alcohol issue is, at least to some extent, comparable to the cannabis issue. Some of the regulatory features already used for alcohol could also work for cannabis. The implementation of such tool requires a chase examination of the different tools and their effects. Another question is whether the market participants would try to circumvent the regulatory law. Although regulatory law also has a deterrent effect, it might not have a similar effect as it has in case of prohibition. Non-compliance would lead to punishment, but this would not have the same quality as under prohibition. This approach

seems to be more in line with public opinion, because it categorises cannabis as comparable to alcohol and tobacco. How consequent regulatory and enforcement bodies would deal with this approach cannot be anticipated.

D Ethical Concerns

The "label of prohibition" and together with it the stigma of cannabis as illicit drug would vanish. Conservatives, Christian groups and parents are worse off with such an approach, although the parental concerns could be addressed by age restrictions. In contrast, liberals, some religious groups and medical cannabis supporters would be better off. Nevertheless, some of them would prefer a total free market.

E Further Points to Consider

The biggest advantage of a regulated cannabis market is unquestionably its impact on the present black market allocation. A black market would have no reason to exist any more;[110] supply and demand could work in a licit basis. Therefore, the black market related costs for society would vanish.

One has to bear in mind that the regulation laws also need enforcement and the regulatory law environment is likely to be extensive. In this regard, one could think about to using the same regulatory and enforcement bodies as already used for the alcohol and tobacco regulation. They already have experience with regulation, the different available regulatory tools and their effects. Nevertheless, additional men power and material is required, which cause additional costs.

Additionally, the implementation of this approach requires not only a change in the laws of the UN, but also those of all member states. Already this causes costs for changing the law. These costs are even higher than by the free market approach. Whereas by implementing a free market approach the focus lies on elimination of special laws, by implementing regulation the focus is on the design of special regulatory law. Furthermore, a new approach would have a need for awareness training for both market participants and enforcement stuff.

[110] Miron and Zwiebel, above n 73, 189.

However, it is expected that these one off set-up costs would, over the years, be amortised by the saved expenses and the additionally possible tax revenue.

For the market structure, this approach means that a licit market has to be created. This requires acceptance of this approach in the society and willingness of the market participants to switch to the new market. As this a new approach, there are many unknown variables.

In a more liberal atmosphere, it might be easier to deal with the cannabis issue in a more informal ways, along with the political and the legal approaches. Because cannabis is not interloped into the underground any more, it might be easier to inform and to educate young children or to approach addicts. In addition, addicts might have more incentives to fight their addiction, as it would be easier for them to ask for help.

From an economic point of view it seems possible to create as situation in which at least more sellers and buyers would be better off than in the prohibition approaches. Nevertheless, some consumer groups, for example young people or other market actors who would prefer to purchase in a total free market are worse off. However, because it is possible to implement regulatory tools that are more flexible concerning the desired goals, it seems that society, as a whole might be better off than in a prohibition or a free market approach. However, there are still externalities, and paternalistic and ethical concerns that are not fully erased by this approach.

F Summary

Regulation with its different regulatory tools is able to address directly the market failures and information asymmetries. This makes this approach flexible and theoretically effective. A black market and its related costs would not exist in case of carefully balanced regulatory tools. However, the assumed consumption increasing effect leads to more consumption related costs. Regulation fails to address the ethical concerns of conservatives and Christians. Parents might fight against regulation too, but age restrictions are able to address their concerns. As

today the opinion about cannabis is more liberal, regulation is more in the line of public opinion. However, law enforcement cost will exist, even if they might be lower as those in the prohibition approaches. Additionally, law-changing costs would arise to implement this approach.

VII WHICH IS THE SUPERIOR APPROACH? – A COMPARISON

- Consumption (see Table1) -

If one compares the ability of the different approaches to influence consumption, the prohibition approaches are generally more effective. They increase transaction costs by requiring further effort, creating danger of legal punishment and so on. However, the different prohibition approaches have different effects. Partial prohibition and prohibition with expediency principle are not as effective as prohibition with civil penalties and total prohibition without exception. The civil penalty approach is not as effective as the total prohibition without exception approach. Under a regulation approach, it is expected that the consumption rate will increase, because the barriers caused by prohibition are vanished. Nevertheless, carefully balanced "sin taxes" are able to influence prices to affect supply and demand.

- Health care costs (see Table 1) -

The different levels of consumption have effects on the ability of the approaches to address the created health care costs, as less consumption leads to less treatment costs. In theory, prohibition approaches are therefore more effective. However, the present high consumption rate results in high health care costs, which vary form country to country depending on the approach used. Due to the expected consumption increase, a regulatory approach would have to face higher health care costs. These costs might slightly be decreased by implementing purity requirement or information duties concerning negative health hazards in the market place.

- Information asymmetries (see Table 1) -

As prohibition theoretically assumes no consumption at all, the prohibition approaches do not provide for special information-supply. However, in prohibition with expediency principle end consumers receive, at least, some information in coffee-shops. In partial prohibition, the information asymmetries exist only to the extent to that consumers use nevertheless the black market system. In contrast, regulation allows implementing special features such as discloser duties concerning health hazards, but also in regard to the particular cannabis product. This minimises the information asymmetries more effective than prohibition.

- Paternalistic concerns (see Table 1) -

The prohibition approaches address the paternalistic concerns, but there are differences between the approaches. All approaches forbid consumption by young people. Nevertheless, they face practical difficulties, because young people consume anyway. In partial prohibition and prohibition with expediency principle, addicts face even no restrictions. Total prohibition seems to be most effective, whereas partial prohibition and prohibition with expediency principle seem to be of less effective, because they simplify the access to cannabis for young people. Although regulation theoretically creates a licit market for cannabis, it is able to address the youth concerns with age restriction, bans, advertisement restrictions and the like. However, there is no suitable regulatory tool to address the addict problem. The changed cannabis environment as such might encourage addicts to ask for help and disburden rehabilitation.

- Compliance (see public opinion and enforcement/ Table 2) -

However, it is obvious that all approaches face compliance problems. The willingness of the citizens to voluntarily comply with the prohibition approaches seems to decrease, because public opinion about cannabis is changing. The ineffective enforcement of the present approaches intensifies the compliance

problem. This leads to a circle consisted of changed public opinion, non-compliance and non-enforcement. Whether regulation would be able to break this circle is questionable. It is at least more in the line of public opinion. Respect for a reasonable cannabis regulation law might lead to more voluntary compliance.

- Ethical concerns (see Table 2) -

However, there are still ethical concerns stated by different groups that need to be considered. The discussion above shows that none of the approaches is able to address all ethical concerns at once. Whereas prohibition generally is more in line with conservatives, Christians and parents, regulation meets the interest of liberals, some religious groups and medical cannabis supporters.

- Black markets -

Prohibition leads to black markets, although their effects and costs are different in the different prohibition approaches. Total prohibition without exception has the most serious black market effects. Under prohibition with civil penalties these effects might be less, because of the changed enforcement environment. In partial prohibition and prohibition with exception black markets exist only to some extend, and therefore the effects are not as serious. In contrast, under regulation with carefully implanted regulatory tools, a black market would not exist.

- Costs of enforcement and law changing (see Table 2) -

All intervention approaches require enforcement, while the types of enforcement and the cost levels are different. In addition, it seems that regulation might reduce the required men power and time. In regard to the "law changing costs" is to say that all prohibition approaches are in line with the UN and create therefore no changing costs. Regulation, on the other hand, would require set up costs in all countries and the UN. It is expected that these cost will be amortised by additional revenue.

- Market participants (see Table 3) -

If one considers the conditions for the market participant in the different approaches, it is obvious that their situation would be better under regulation than it is under prohibition. They would have a licit market to purchase in and would only face information and transaction costs comparable to other "normal" commodities. Prices would reflect preferences and serve as information carrier. However, because of the implemented taxes the prices would not be as low as they might be in a total free market, but lower than under prohibition. Nevertheless, some market participants remain worse off, because they would prefer a total free market. In the prohibition approaches, the black market causes higher transaction and information costs, and higher prices. Nevertheless there are differences between the single prohibition approaches For example, sellers in a total prohibition with expediency principle might be partly better off than in the other prohibition approaches, because they are, at least, able to sell to end-consumers under special conditions. On the buyer side, the result is more complicated. In a total prohibition with civil penalties, the buyers are also worse off, because they nevertheless have punishment to fear, even if it is not a criminal record. The same applies for a partial prohibition. In such a system, there would be no market at all, even if "cannabis gifts" to adults were allowed. There might also be consumers who are better off with such an approach, because consumption, at least for adults, and the ability to grow one's own cannabis would be allowed. This is different in a total prohibition with expediency principle. There the buyers are, at least, able to purchase cannabis in coffee shops even under special conditions. This might lead to the result that they are partly better off than in the other prohibition approaches.

- Third parties (see Table 3) -

In regard to third parties, it is to say that although prohibition theoretically seems to address externalities more efficient than regulation does, the benefit is outweigh by the costs the black market creates. Regulation, on the other hand, address externalities more flexible and it allows creating additional revenue to

counter the costs. Therefore, it is expected that the same number of third parties are worse off in both approaches.

In conclusion, after comparing the costs and benefits, regulation seems to be the superior intervention approach. It has the best performance in the outlined cost benefits analysis.

VIII Conclusion

Is the most powerful cannabis law the law of supply and demand? The consideration of the possible approaches, free market, prohibition and regulation comes to the result that the answer to this question is not a clear yes. While a free market approach was the starting point for this paper, it was found to be not preferable, because it has failures in shape of externalities and information asymmetries. Furthermore, it does not address the paternalistic and ethical concerns. The prohibition approaches lead to black markets and are not able to implement goal-oriented tools to address the desired market outcomes. Furthermore, the "laizze faire" enforcement mentality contradicts their theoretically possible advantages. Also in regard to the change in public opinion concerning cannabis, these kinds of approaches are not timely any more, although several moral concerns would be satisfied by prohibition. Regulation is more flexible and allows targeting policy goals with special tools. Additionally, it provides for revenue. On the other hand, it is not clear yet to what extend the enforcement bodies would enforce the regulation law, but this approach would at least be in the line with a "modern understanding" of cannabis.

Regulation is not a call for unrestricted consumption or free purchasing of cannabis, it faces the social reality.

In conclusion, this paper advises a change in the political approaches of the UN and its member states. Nevertheless, while considering the details of regulation, policy makers should be aware of inadequate information, failure to

anticipate important side effects of regulatory instruments, and avoidance behaviour as that might lead to poor policy analysis.[111]

[111] Ogus, above n 15, 56.

APPENDIX

Fig.1 Annual prevalence of cannabis use 2003/2004[1]

Table 8: Annual prevalence of cannabis use, 2003/04 or latest year available

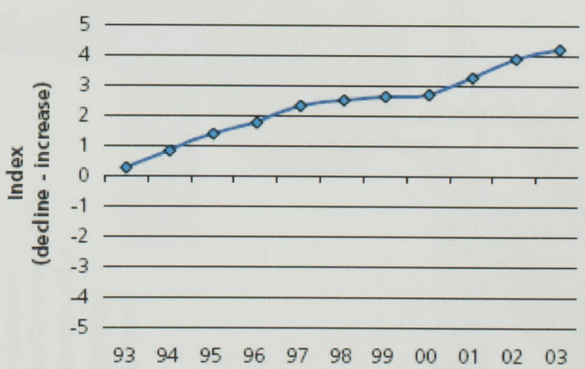
	Cannabis use	
	No. of users	*In % of population age 15-64*
EUROPE	30,400,000	5.6
West & Central Europe	22,900,000	7.3
South-East Europe	2,100,000	2.5
East Europe	5,500,000	3.8
AMERICAS	36,900,000	6.6
North America	28,700,000	10.2
South America	8,200,000	2.9
ASIA	53,300,000	2.2
OCEANIA	3,300,000	15.8
AFRICA	37,000,000	8
GLOBAL	160,900,000	4

Above global average
Around global average
Below global average

Sources: UNODC, Annual Reports Questionnaire Data, Govt. reports, reports of regional bodies, UNODC estimates.

Fig.2 Global Drug Use Trend Index – Cannabis 1999-2003[2]

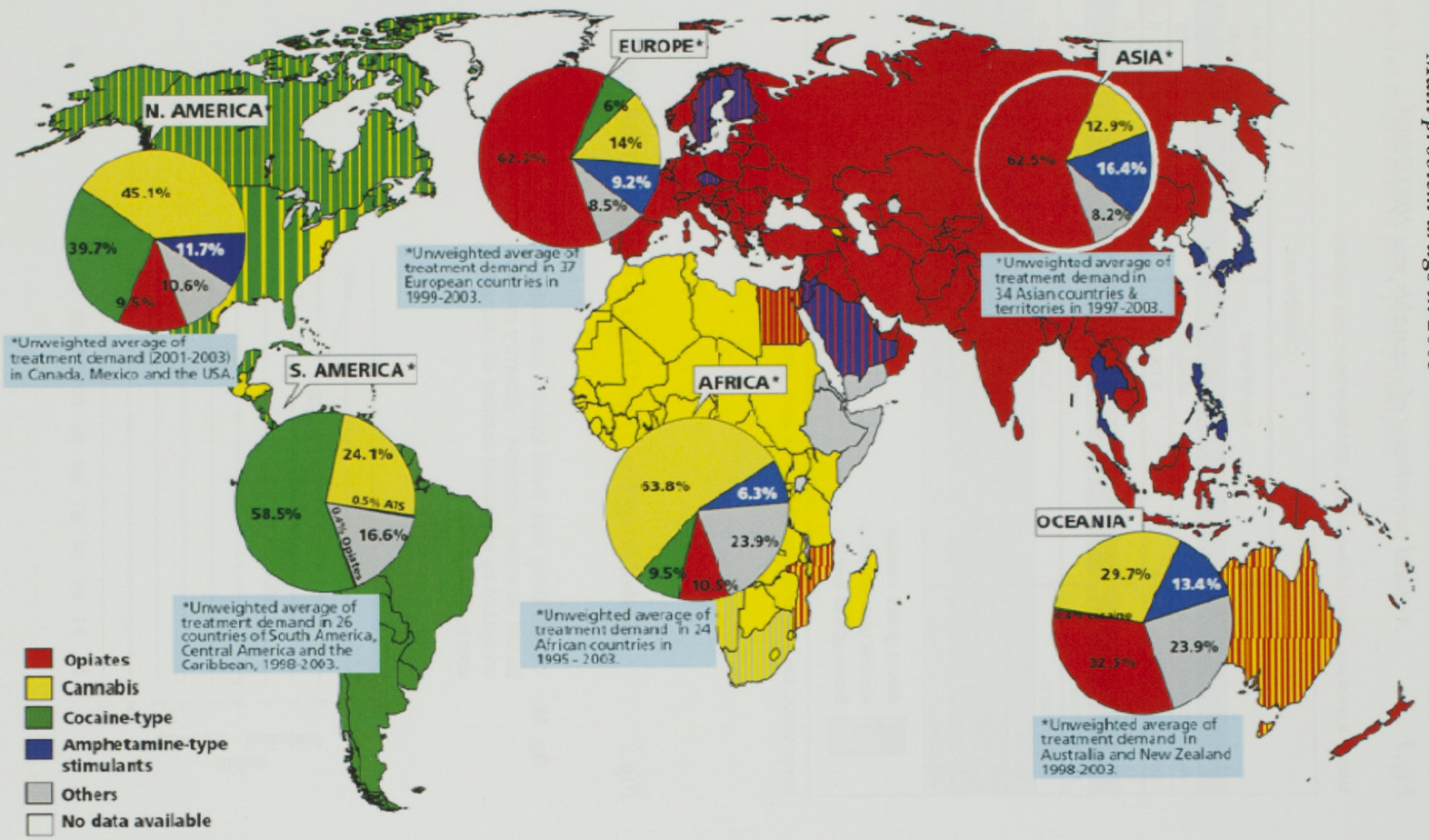
Fig. 46: Global Drug Use Trend Index - cannabis - based on expert opinions (country results weighted by estimated number of cannabis users), 1993-2003



[1] UNODOC, World Drug Report 2005, (2005) E.O5.XI.10, p.39 <http://www.unodoc.org>
[2] UNODC, World Drug Report 2005, above n 1

Fig. 3 Main problem drugs in 2003[3]

Map 1. Main problem drugs (as reflected in treatment demand) in 2003 (or latest year available)



Sources: UNODC, Annual Reports Questionnaire Data/DELTA and National Government Reports.

[3]UNODC, World Drug Report 2005, above n 1,6

Fig. 4 *Submitters views on the legal status of cannabis*[4]

Table 11: Submitters' views on the legal status of cannabis

OPTIONS	No.	%	GENERAL CATEGORY	No.	%
OPTION A Prohibition	93	17.5%	STATUS QUO	115	21.7%
OPTION B Prohibition with an exemption for medicinal purposes	10	1.9%			
OPTION C Prohibition with expediency principle	0	0%			
OPTION D Prohibition with formal caution and/or referral	12	2.3%			
OPTION E Prohibition with civil/administrative penalties	16	3.0%	DECRIMINALISATION (includes a third category of submissions that supported decriminalisation without specifying a model)	111 (57 non-specific)	20.8%
OPTION F Partial Prohibition	38	7.1%			
OPTION G Legalisation and regulation	278	52.3%	LEGALISATION	285	53.6%
OPTION H Free Trade	7	1.3%			
Not specific or no opinion	21	3.9%		21	3.9%
TOTAL	*475**	*89.3%**		*532*	*100%*

[4] Report of the Health Committee "Inquiry into the public health strategies related to cannabis use and the most appropriate legal status" (presented to the House of Representatives, Wellington, August 2003), 53.

Fig. 5 ***Problems to regular heavy alcohol drinking***[5]

Social problems	Psychological problems	Physical problems
Family problems	Insomnia	Fatty liver
Divorce	Depression	Hepatitis
Homelessness	Anxiety	Cirrhosis
Work difficulties	Attempted suicide	Liver cancer
Unemployment	Suicide	Gastritis
Financial difficulties	Changes in personality	Pancreatitis
Fraud	Amnesia	Cancer of the mouth, larynx, oesophagus
Debt	Delirium tremens	Breast cancer (?)
Vagrancy	Fits of withdrawal	Colon cancer (?)
Habitual convictions for drunkenness	Hallucinosis	Nutritional deficiencies
	Dementia	Obesity
	Gambling	Diabetes
	Misuse of other drugs	Cardiomyopathy
		Raised blood pressure
		Strokes
		Brain damage
		Neuropathy
		Myopathy
		Sexual dysfunction
		Infertility
		Fetal damage
		Hemopoietic toxicity
		Reactions with other drugs

Fig. 6 ***Problems relating to intoxication***[6]

Social problems	Psychological problems	Physical problems
Family arguments	Insomnia	Hepatitis
Domestic violence	Depression	Gastritis
Child neglect/abuse	Anxiety	Pancreatitis
Domestic accidents	Amnesia	Gout
Absenteeism from work	Attempted suicide	Cardiac arrhythmia
Accidents at work	Suicide	Accidents
Inefficient work		Trauma
Public drunkenness		Strokes
Football hooliganism		Failure to take prescribed medicine
Criminal damage		Impotence
Theft		Fetal damage
Burglary		
Assault		
Homicide		
Drink–driving		
Taking and driving away		
Road traffic accidents		
Sexually deviant acts		
Unwanted pregnancy		

[5] Nina Rehn with Robin Room and Griffith Edwards of Alcohol in the European Region,- consumption harm and policies (WHO Regional Office for Europe, 2001), p23.
[6] Nina Rehn with Robin Room and Griffith Edwards of Alcohol in the European Region,- consumption harm and policies (WHO Regional Office for Europe, 2001), p23.

Fig. 7 Cannabis Herb: Retail and Wholesale Prices[7]

CANNABIS HERB

Retail and wholesale prices and purity levels: breakdown by drug, region and country or territory

(prices expressed in US$ or converted equivalent, and purity levels in percentage)

	RETAIL PRICE (per gram)					WHOLESALE PRICE (per kilogram)				
Region / country or territory	Typical	Range		Purity	Year	Typical	Range		Purity	Year
Africa										
East Africa										
Eritrea	4.0	3.0 -	5.0		2003	1,100.0	1,000.0 -	1,200.0	1.0 - 5.0	2003
Kenya	0.2	0.1 -	0.3		2003	99.0	70.0 -	130.0		2003
Madagascar	1.3	1.1 -	1.4	100.0	2002	10.0			100.0	2002
Mauritius	10.1			80.0 - 100.0	2002					
Seychelles						4,140.0	3,680.0 -	4,600.0		
Uganda	0.1	0.03 -	0.1		2003	100.0	50.0 -	100.0		2003
North Africa										
Algeria						520.0				2003
Southern Africa										
Malawi	0.1				2003					
Namibia	0.5	0.4 -	0.7		2003					
South Africa	0.2	0.1 -	0.2		2003	20.0	10.0 -	30.0		2003
Swaziland	2.0	1.3 -	3.3		2003	100.0	70.0 -	130.0		2003
Zambia	0.2				2003	150.0	150.0 -	170.0		2003
Zimbabwe	0.9	0.5 -	1.3	90.0	2003	60.0	50.0 -	80.0	90.0	2003
West and Central Africa										
Burkina Faso	0.2	0.2 -	0.4	100.0	2003	20.0	10.0 -	30.0	100.0	2003
Congo	0.2	0.2 -	0.4		2003	40.0	30.0 -	60.0		2003
Côte d'Ivoire	0.7	0.1 -	1.4		2002	10.0				2002
Ghana	4.0	3.0 -	5.0		2003	290.0	230.0 -	350.0		2003
Guinea						10.0				2003
Nigeria	0.2	0.1 -	0.2		2003	10.0				2002
Saint Helena	8.2				2003	8,175.0				2003
Togo	0.1	0.1 -	0.4		2003	130.0				2003
Americas										
Caribbean										
Bahamas	5.0	5.0 -	10.0		2003	1,500.0	1,500.0 -	2,200.0		2003
Bermuda	50.0				2002	13,000.0	11,000.0 -	11,500.0		2002
Cayman Islands	8.0	6.0 -	10.0		2002	2,000.0	1,500.0 -	2,500.0		2002
Montserrat	5.2	4.7 -	5.7		2002	850.0	750.0 -	940.0		2002
Trinidad Tobago	1.2	0.8 -	1.6		2003	470.0	290.0 -	650.0	100.0	2003
Turks & Caicos Islands	10.0				2003	600.0	400.0 -	800.0		2003
Central America										
Costa Rica	2.0	1.5 -	2.5		2003	190.0	180.0 -	200.0		2003
El Salvador	1.0	1.0 -	1.1		2003	1,070.0	1,000.0 -	1,140.0		2003
Guatemala	2.5	2.5 -	3.2	100.0	2003	110.0			100.0	2003
Honduras	0.3	0.3 -	0.4		2003	90.0	70.0 -	120.0		
Nicaragua	0.1				2002	140.0	100.0 -	140.0		2002
North America										
Canada	7.1	7.1 -	17.6	0.5 - 24.0	2003	2,820.0	2,120.0 -	4,230.0	0.1 - 25.0	2003
Mexico						80.0			100.0	2003
United States	11.4				2003	2,035.0	770.0 -	3,300.0	4.8	2003
South America										
Argentina	3.0	2.0 -	4.0		2003	1,750.0	1,000.0 -	2,500.0		2003
Bolivia	0.8				2002	100.0				2002
Colombia	0.1				2003	30.0	10.0 -	70.0		2003
Ecuador	1.0	1.0 -	2.0		2003	1,500.0	1,000.0 -	2,000.0		2003
Paraguay	0.9	0.7 -	1.1		2002	10.0				2002
Suriname	0.9	0.5 -	1.4		2002					
Uruguay	0.3	0.1 -	0.5		2003	200.0	150.0 -	250.0		2003
Venezuela	1.3	1.3 -	1.6		2003	130.0	110.0 -	130.0		2003
Asia										
Central Asia and Transcaucasia										
Armenia	1.8	1.5 -	2.0		2003					
Azerbaijan	0.8	0.8 -	1.0		2002	700.0	650.0 -	800.0		2002
Kyrgyzstan	0.7	0.5 -	1.0	8.0 - 10.0	2003	10.0			8.0 - 10.0	2003
Uzbekistan						700.0	400.0 -	1,000.0		2003

[7] UNODC, World Drug Report 2005, above n 1,

Fig. 8 *Burden of disease attributable to tobacco, alcohol and drugs*[8]

Table 17: Burden of disease in 2000 attributable to tobacco, alcohol and drugs by developing status and sex

	High mortality developing (AFR-D, AFR-E, AMR-D, EMR-D, SEAR-D)			Low mortality developing (AMR-B, EMR-B, SEAR-B, WPR-B)			Developed (AMR-A, EUR-A, EUR-B, EUR-C, WPR-A)		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
Total DALYs (000s)	420 711	412 052	832 763	223 181	185 316	408 497	117 670	96 543	214 213
Smoking and oral tobacco (%)	3.4	0.6	2.0	6.2	1.3	4.0	17.1	6.2	12.2
Alcohol (%)	2.6	0.5	1.6	9.8	2.0	6.2	14.0	3.3	9.2
Illicit drugs (%)	0.8	0.2	0.5	1.2	0.3	0.8	2.3	1.2	1.8

Source: Rehm et al. (in press).

[8] WHO Department of Mental Health and Substance Abuse "Global Status Report on Alcohol 2004" (WHO Geneva 2004) p 50,

Fig.9 Alcohol connected accidents[9]

Table 15: Attributable fractions of acute alcohol-related health effects in the adult general population

Injury	ICD-9	USA Stinson et al. (1993)		AUSTRALIA English et al. (1995)		CANADA Single et al. (1996)		AUSTRALIA Ridolfo & Stevenson (2001)	
		F	M	F	M	F	M	F	M
Motor vehicle traffic accidents	E810–E819	0.42	0.42	0.18	0.37	0.43	0.43	0.11 for deaths (d) and hospitalizations (h); pedestrians 0.17 (d); 0.06 (h)	0.33 (d); 024 (h); pedestrians 0.40 (d); 0.37 (h)
Motor vehicle nontraffic accidents	E820–E825	0.42	0.42	0.18	0.37	0.43	0.43		
Bicycle accident injuries	E826	0.20	0.20	0.18	0.37	0.20	0.20		
Other road vehicle accident injuries	E829	0.20	0.20	0.18	0.37	0.2	0.20		
Water transport accident injuries	E830–E839	0.20	0.20	No data	No data	0.20	0.20	No data	No data
Air-space transport accident injuries	E840–E845	0.16	0.16	No data	No data	0.16	0.16	No data	No data
Accidental ethanol and methanol poisoning	E860.0–E860.2	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Accidental fall injuries	E880–E888	0.35	0.35	0.34	0.34	0.13-0.34	0.20-0.34	0.14 for age <65; 0.04> = 65	0.22 for age <65; 0.12> = 65
Arson injuries	E890–E899	0.45	0.45	0.44	0.44	0.38	0.38	0.44	0.44
Accidental excessive cold	E901	0.25	0.25	No data	No data	0.25	0.25	No data	No data
Accidental drowning	E910	0.38	0.38	0.34	0.34	0.31–0.50	0.31–0.50	0.34	0.34
Accidental aspiration	E911	0.25	0.25	1.0	1.00	0.25	0.25	1.00	1.00
Striking against / struck by objects	E917	0.25	0.25	No data	No data	0.07	0.07	No data	No data
Caught in / between objects	E918	0.25	0.25	No data	No data	0.07	0.07	No data	No data
Occupational and machine injuries	E919–E920	0.25	0.25	0.07	0.07	0.07	0.07	0.07	0.07
Accidental firearm missile injuries	E922	0.25	0.25	No data	No data	0.25	0.25	No data	No data
Suicide, self-inflicted injuries	E950–E959	0.28	0.28	0.08	0.12	0.11–0.19	0.23–0.31	0.29	0.32
Victim, fight, brawl, rape	E960	0.46	0.46	0.47	0.47	0.27	0.27	0.47	0.47
Victim assault firearms	E965	0.46	0.46	0.47	0.47	0.27	0.27	0.47	0.47
Victim assault cutting instrument	E966	0.46	0.46	0.47	0.47	0.27	0.27	0.47	0.47
Victim child battering	E967	0.46	0.46	0.16	0.16	0.16	0.16	0.16	0.16
Victim assault other	E968	0.46	0.46	0.47	0.47	0.27	0.27	0.47	0.47
Late effects of injuries by another	E969	0.46	0.46	0.47	0.47	0.27	0.27	0.47	0.47

***Remarks**: Ranges refer to age-specific attributable fractions; minimum (>0) and maximum estimates are shown.*
***Source**: Rehm et al. (in press)*

[9] WHO Department of Mental Health and Substance Abuse "Global Status Report on Alcohol 2004" (WHO Geneva 2004) p 48

Fig. 10 Treatment demand/ Europe[10]

PRIMARY DRUGS OF ABUSE AMONG PERSONS TREATED FOR DRUG PROBLEMS IN EUROPE, 2003 (or latest year available)

Country*	Source	Year	Distribution of main drug in percentages								
					Amphetamine-type stimulants						
			Opiates	Cocaine	Amphetamines	Ecstasy	Hallucinogens	Cannabis	Hypnotics and Sedatives	Inhalants/ solvents	People treated*
Austria	Govt.	2003/2	87.0%	-	-	-	-	-	-	-	11,753
Albania	UNODC	2003	97.1%	-	-	-	-	2.9%	-	-	1,185
Belarus	UNODC	2003	70.7%	2.00%	1.7%	1.3%	0.9%	7.4%	2.8%	13.4%	128
Belgium	Focal Point EMCDDA	2002	61.3%	15.0%	5.5%	0.8%	0.4%	14.6%	1.2 %		10,200
Bulgaria	UNODC	1999	96.9%	0.5%	-	-	-	1.2 %	1.1 %	-	1,065
Croatia	UNODC	2003	70.4%	0.5%	1.2 %	0.6 %	-	23.7 %	2.0 %	0.4 %	5,215
Cyprus	UNODC	2003	69.6%	8.9 %	0.7 %	3.0 %	-	16.2 %	1.0 %	-	303
Czech Republic	UNODC	2003	25.0%	0.3%	52.8 %	0. 6%	-	16.5 %	-	2.7 %	9,237
Denmark	UNODC	2002	30.1%	2.5%	3.3%	0.6%	0.1%	16.7%	-	27.8 %	4,310
Estonia	Focal Point EMCDDA	2001	53.8%	-	18.6%	-	-	-	-		2,034
Finland	EMCDDA	2002	34.1%	0.2%	34.0%	0.6%	0.2%	25.6%	-	-	3,497
France	UNODC	2001	62.1%	7.3%	0.9%	1.4%	0.9%	23.2%	4.0 %	-	28,363
Germany	UNODC	2003	66.2%	25.6%	14.9%	13.4%	6.9%	58.0%	-	-	30,109
Greece	UNODC	2003	88.4%	1.6%	0.0%	0.4%	0.1%	7.8%	-	-	3,195
FYR of Macedonia	UNODC	2003	99.6%	-	-	-	-	0.4%	-	-	568
Hungary	UNODC	2003	17.0%	0.9%	3.6 %	2.3 %	-	25.3 %	33.4 %	-	15,333
Iceland	UNODC	2000	0.1%	7.1%	65.6 %	0.9 %	-	26.3 %	-	-	2,285
Ireland	UNODC	2002	74.7%	1.8%	0.4%	3.1%	0.2%	17.6%	-	-	8,596
Italy	UNODC	2002/3	79.8%	6.9%	0.2%	1.0%	0.1%	9.0%	0.6 %	-	181,572
Latvia	UNODC	2003	44.9%	0.0%	7.5 %	-	-	1.3 %	8.2 %	-	523
Liechtenstein	UNODC	2002	33.3%	8.3%	-	-	-	50.0 %	-	-	12
Lithuania	UNODC	2003	80.2%	0.1%	3.1 %	-	-	0.8 %	-	4.4 %	2,913
Luxembourg	EMCDDA	2002	80.0%	6.0%	0.0%	0.0%	0.0%	11.0%	-	-	470
Malta	UNODC	2001	86.8%	3.8%	-	0.7 %	0.1 %	8.5 %	0.1 %	-	1,444
Netherlands	UNODC	2002	56.7%	27.5%	1.9%	0.9%	0.0%	13.1%	-	-	28,311
Norway	Focal Point EMCDDA	2001	58.2%	-	12.5 %	-	-	13.9 %	-	-	11,424
Poland	UNODC	2002	39.3%	0.8%	8.1 %	-	-	3.4 %	-	3.3 %	11,915
Portugal	Focal Point EMCDDA	2002/3	67.0%	32.0%	3.0%	2.0%	0.0%	36.0%	0.2 %	-	29,596
Romania	UNODC	2003	74.1%	0.4%	0.3 %	0.1 %	-	1.9 %	-	23.2 %	2,734
Russian Fed.	UNODC	2003	88.4%	0.02%	1.6 %	-	-	6.1 %	-	-	343,335
Slovakia	UNODC	2003	52.5%	0.8%	17.5 %	0.5 %	-	14.2 %	-	8.7 %	2,119
Slovenia	UNODC	2002	90.9%	0.7%	0.2 %	0.2 %	-	7.7 %	-	0.1 %	2,860
Spain	UNODC	2002	60.7%	25.5%	0.7%	1.0%	0.2%	10.2%	1.3 %	-	46,744
Sweden	UNODC	2002	31.1%	1.2%	38.2%	1.0%	0.0%	17.6%	7.5 %	-	2,997
Switzerland	Govt.	2003/2	42.0%	28.9%	0.6 %	0.6 %	0.3 %	5.6 %	2.3 %	-	20,316
Turkey	UNODC	2001	58.6%	0.0%	-	-	-	13.0 %	8.0 %	20.5 %	386
United Kingdom	UNODC	2002	75.0%	6.0%	3.0%	1.0%	0.1%	11.0%	2.0 %	-	74,545
Europe - average (unweighted)			**62.3%**	**6.0%**	**8.2%**	**1.0%**	**0.3%**	**14.0%**	**2.0%**	**3.0%**	**901,593**
East-Europe - average (unweighted)			66.2%	0.4%	7.3%	0.3%	0.1%	7.9%	3.5%	4.8%	401,550
West-Europe - average (unweighted)			59.2%	10.3%	8.8%	1.5%	0.5%	18.7%	1.0%	1.3%	500,043

* Please note that treatment definitions differ from country to country

In some countries people are being treated for more than one substance; sum of the percentages may thus exceed 100%.

Sources: UNODC, Annual Reports Questionnaire data; EMCDDA, Data Library.

[10] UNODC, World Drug Report 2005, above n 1, 374

Fig. 11 Treatment demand /Oceania[11]

PRIMARY DRUGS OF ABUSE AMONG PERSONS TREATED FOR DRUG PROBLEMS IN OCEANIA
2003 (or latest year available)

Country and year	Source	Year	Opiates	Cocaine	Cannabis	Amphetamie-type stimulants		Inhalants	Sedatives	People treated*
						Amphetamines	Ecstasy			
Australia**	Govt	2002/03	33.3%	0.4%	36.3%	17.7%	0.6%	-	4.7%	74,592
New Zealand***	Govt	1998/2003	31.7%	0.4%	23.1%	7.8%		3.2%	38.6%	6,489
Average			**32.5%**	**0.4%**	**29.7%**	**12.8%**	**0.6%**	**1.6%**	**21.7%**	81,081

* Please note that treatment definitions differ from country to country.

** Data for Australia refer to closed drug related treatment episodes over the July 2002-June 2003 period (N = 74,600).

*** Data for New Zealand refer to 1998, the latest year for which a breakdown of drug related treatment data has been published; the proportion shown for amphetamines refers to 2003.

The proportion of methamphetamine related telephone helpline calls is used as a proxy for the importance of methamphetamine in overall treatment.

In 1998 0.4% of treatment cases concerned amphetamines; telephone helplines reported a major increase with regard to methamphetamine from 0.5% in 2001 to 1.4% in 2002 & 7.8% in 2003, in parallel, to hospital reports of large increases in methamphetamine related cases.

[11] UNODC, World Drug Report 2005, above n 1, 375.

[12] UNODC, World Drug Report 2005, above n 1, 368.

Fig. 12 ***Annual prevalence of cannabis abuse as percentage of the population aged 15 - 64***[12]

CANNABIS
Annual prevalence of abuse as percentage of the population aged 15-64 (unless otherwise indicated)

AFRICA	
East Africa	
Mauritius*,2000	7.2
Kenya*, 1994	4.0
Comoros*, 2002	2.9
Ethiopia*,1999	2.6
Somalia, 2002	2.5
Uganda**	1.4
Tanzania, United Rep.**,1999	0.2
North Africa	
Morocco, 2003	11.8
Egypt**, 1997	5.2
Libyan Arab Jamahiriya,1998	0.05
Southern Africa	
Zambia*, 2003	17.7
South Africa*, 2002	8.4
Zimbabwe, 2000	6.9
Namibia, 2000	3.9
West and Central Africa	
Ghana, 1998	21.5
Sierra Leone, 1996	16.1
Nigeria, 2000	13.8
Mali*, 1995	7.8
Angola,1999	2.1
Chad, 1995	0.9
Cote d'Ivoire, 1997	0.01
Sao Tome Principe, 1997	0.01
AMERICA	
Central America	
Guatemala, 2003	9.1
Belize*, 2003	6.7
Panama*, 2003	4.0
Nicaragua*, 2002	2.2
El Salvador*, 2003	2.0
Honduras*, 2002	1.6
Costa Rica, 2001	1.3
North America	
Canada, (15+), 2004	14.1
USA, 2003	13.0
Mexico,(12-65),2002	0.6
South America	
Chile, 2002	5.5
Colombia*, 2001	4.3
Argentina, (16-64), 1999	3.7
Venezuela*, 2002	3.3
Ecuador*, (12-49), 1995	3.0
Guyana*, 2002	2.6
Bolivia, (12-50), 2000	2.2
Suriname*, 2002	2.0
Paraguay*, 2002	1.8
Peru, 2002	1.8
Uruguay, (15-65),2001	1.5
Brazil, (12-65), 2001	1.0
The Caribbean	
Haiti*, 2000	16.10
Jamaica*, 1997	10.45
Barbados*, 2002	7.30
Grenada*, 2003	6.70
Bahamas*, 2003	4.70
Montserrat, 1997	0.75
Dominica, 1997	0.05
ASIA	
Central Asia and Transcaucasia	
Kyrgyzstan*, 2001	6.4
Kazakhstan*, 2000	4.2
Uzbekistan*, 2003	4.2
Armenia*, 2003	3.5
Azerbaijan*, 2004	3.5
Tajikistan*, 1998	3.3
Near and Middle East / South-West Asia	
Philippines*, 2003	5.5
Cambodia*, 2003	3.5
Macao SAR, China*, 2003	2.6
Malaysia*, 2003	1.6
Thailand, (12-65), 2001	1.5
Myanmar*, 2001	1.4
Indonesia*, 2003	1.3
Lao People's Dem. Rep.*, 2002	0.7
China (Hong Kong SAR)**	0.6
Taiwan province, China**	0.5
Viet Nam*, 2002	0.3
Japan, 2002	0.1
Republic of Korea**	0.1
Singapore, 1998	0.03
Brunei Darussalam, 1996	0.02
Near and Middle East / South-West Asia	
Afghanistan**	7.5
Lebanon*, 2001	6.4
Israel*, 2001	5.7
Iran, Islamic Republic, 1999	4.2
Pakistan*, 2000	3.9
Jordan*, 2001	2.1
Syrian Arab Rep.**, 2002	2.0
Bahrain**	0.4
Oman, 1999	0.1
Qatar, 1996	0.1
South Asia	
Bangladesh, 1997	3.3
India, 2000	3.2
Maldives,1994	1.5
Nepal*, 1998	3.2
Sri Lanka, 2000	1.5

[12] UNODC, World Drug Report 2005, above n 1, 368.

CANNABIS
Annual prevalence of abuse as percentage of the population aged 15-64 (unless otherwise indicated)

EUROPE	
East Europe	
Russian Federation*, 2003	3.9
Ukraine*, 2003	3.6
Belarus*, 2003	2.6
Southeast Europe	
Bulgaria*, 2003	4.1
Croatia*, 2003	4.0
Albania*, 2001	2.6
Turkey*, (15-65), 2003	1.9
Romania*, 2003	1.7
Western and Central Europe	
Spain, 2003	11.3
Czech Rep., 2002	10.9
United Kingdom, (16-59), 2003	10.9
France, 2002	9.8
Switzerland*, 2003	9.6
Belgium*, 2003	8.0
Luxembourg*, 2003	7.6
Greenland*,2003	7.6
Germany, (18-50), 2003	6.8
Slovenia*, 2003	6.2
Denmark, (16-64), 2000	6.2
Italy, (15-45), 2001	6.2
Austria*, 2003	6.1
Netherlands, 2001	6.1
Liechtenstein*, 1998	6.0
Ireland, 2003	5.1
Iceland, (18-75), 2001	5.0
Norway, 1999	4.5
Greece, 1998	4.4
Latvia, 2003	3.8
Cyprus*, 2003	3.7
Slovakia, 2002	3.6
Portugal, 2001	3.3
Finland, 2002	3.2
Hungary, 2003	3.0
Poland, 2002	2.8
Lithuania*(15-66), 2003	2.4
Estonia, (18-70), 1998	2.0
Sweden*, 2003	1.7
Malta, (18-65), 2001	0.8
OCEANIA	
Papua New Guinea, 1995	29.5
Micronesia Fed.State., 1995	29.1
Australia, 2004	13.9
New Zealand, 2001	13.4
New Caledonia**	1.9
Fiji, 1996	0.2
Vanuatu, 1997	0.1

*UNODC estimates based on local studies, special population group studies, and /or law enforcement agency assessments.
** Tentative estimates.
Sources: Annual Reports Questionnaires, Government Reports, US Department of State, European Monitoring Center for Drugs and Drug Abuse (EMCDDA).

Fig. 13 ***Per Capita Consumption of Alcoholic Beverages (Gallons of Pure Alcohol) 1910-1929*** [13]

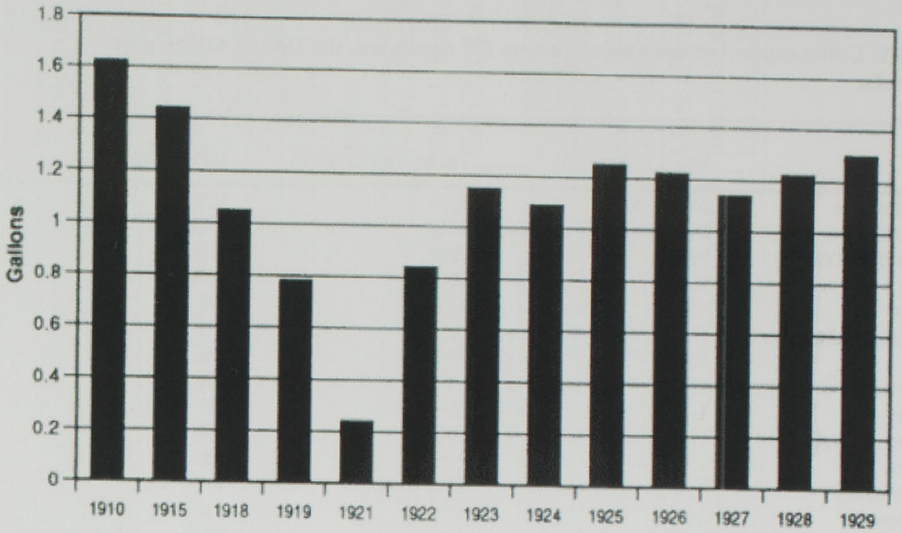
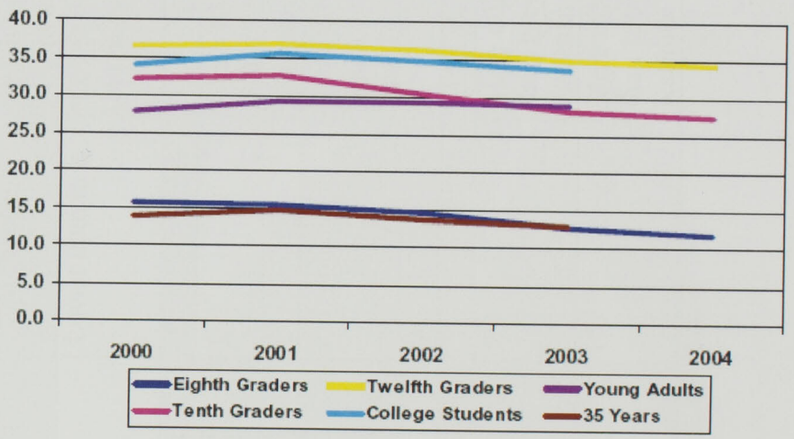


Fig. 14 ***Rates of Past Year Use of Marijuana in the USA, 2000-2004***[14]



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

[14] National Drug Threat Assessment 2005 Summary Report, Fig.6; source: <http//:www.usdoj.gov/ndic/ pubs11/13846/images/fig8.gif> (last accessed 03.07.2005)

Fig. 15 ***Consumption of Cannabis in Some EU countries, USA and Australia 2003*** [15]

Table 1: Consumption of cannabis in some EU countries, the United States and Australia

–	Age	Taken once or more	Taken recently
United States	14 and over	38%	10%
Australia	14 and over	33%	13%
England and Wales	16-59	29%	11%
Spain	15-65	25%	10%
France	15-65	23%	8%
Belgium (Wallonia)	18-49	22%	?
Italy	15-44	22%	6%
Netherlands	15-65	21%	6%
Ireland	18-64	20%	9%
Germany ('West')	18-59	19%	6%
Greece	15-65	13%	4%
Luxembourg	15-65	13%	?
Sweden	15-65	13%	1%
Finland	15-65	10%	2%
Portugal	15-65	8%	3%

Source: National Drug Monitor, 2003 Annual Report

[15] Hoogervorst, Donner and Remkes „Policy on Cannabis" (Parliamentary Document, 2004) <http://www.minvws.nl>

Table 1 Ability of the different approaches to influence cannabis consumption and to address market failures

	1	2	3	4	5	6
	Total free market	**Total prohibition**	**Total prohibition with expediency principles**	**Total prohibition with civil penalties**	**Partial prohibition**	**Regulation**
Consumption level	High	Lower than in 1	Lower than in 1, but higher than in 2	Lower than in 1 and 3, but higher than in 2	Lower than in 1, but higher than in 2 and 4	Lower than in 1 but higher than 2, 4 and 5
Ability to address market failures						
Information asymmetries	(-)	(-)	More effective than 1 and 2 but, less than 6	(-)	(-)*	(+)
Externalities: Health care costs**	(-)	(+)	More effective than1, but less than 2	More effective than 1, but less than 2	More effective than 1, but less than 2 and 4, might equal 3	More effective than 1, but less than 2,3,4, and 5
Paternalism / involuntary choices						
Youth	(-)	(+)	More effective than 1, but slightly less than 2	More effective than 1, but slightly less than 2	More effective than 1, but slightly less than 2	More effective than 1, but slightly less than 2
Addicts	(-)	(+)	More effective than 1, but slightly less than 2	More effective than 1, but slightly less than 2	More effective than 1, but slightly less than 2	More effective than 1, but slightly less than 2

(+) Issue addressed
(-) Issue not addressed

* in regard to the market exchange of cannabis
** assumed that prohibition leads to consumption reduction

Table 2 **Comparison: Impact on the black market, addressing ethical concerns, public opinion, enforcement and costs**

	1	2	3	4	5	6
	Total free market	**Total prohibition**	**Total prohibition with expediency principle**	**Total prohibition with civil penalties**	**Partial prohibition**	**Regulation**
Black market	(-)	(+)	(+)	(+)	(+)	(-)
Ethical concerns:						
Conservatives	(-)	(+)	(<+)	(<+)	(<+)	(-)
Christians	(-)	(+)	(<+)	(<+)	(<+)	(-)
Parents	(-)	(+)	(<+)	(<+)	(<+)	(<+)
Liberals	(+)	(-)	(>-)	(>-)	(>-)	(+)
Religious groups	(+)	(-)	(>-)	(>-)	(>-)	(+)
Med. cannabis use	(+)	(-)	(>-)	(>-)	(>-)	(+)
Public opinion	Is not in the line of the public opinion	Is not in the line of the public opinion	More in the line of the public opinion than 1	More in the line of the public opinion than 1	More in the line of public opinion than 1	Seems to be in the line of the public opinion today
Enforcement		grey zones (+)	grey zones (+)	grey zones (+)	grey zones (+)	grey zones*
Enforcement costs	(-)	(+)	(+)	(+), lower than in 2 , but higher than in 3	(+), lower than in 2,3 and 4	(+) lower than in 2,3,4 and 5
Changing costs	(+)	(-)	(-)	(-)	(-)	(+)

(+) Satisfied / Issue addressed
(-) Dissatisfied / Issue not addressed
(<+) Not completely satisfied, but rather better off
(>-) Not completely dissatisfied, but rather worse off

* Whether there would be grey zones in a regulation approach is not clear

Table 3 **Comparison: Impact on market participants, consumers and third parties**

	1	2	3	4	5	6
	Total free market	**Total prohibition**	**Total prohibition with expediency principle**	**Total prohibition with civil penalties**	**Partial prohibition**	**Regulation**
Market participants						
Buyer	(+)	(-)	(>-)	(-)	(>-)	(<+)
Seller	(+)	(-)	(>-)	(-)	(>-)	(<+)
Consumers	(+)	(-)	(+)	(-)	(+)	(+)
Third parties being affected by externalities	(-)	(-)	(-)	(-)	(-)	(-)

(+) Satisfied
(-) Dissatisfied
(<+) Not completely satisfied, but rather better off
(>-) Not completely dissatisfied, but rather worse off

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Fig. 12 ***Annual prevalence of cannabis abuse as percentage of the population aged 15 - 64***
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Fig. 13 ***Per Capita Consumption of Alcoholic Beverages (Gallons of Pure Alcohol) 1910-1929***
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Fig. 15 ***Consumption of Cannabis in Some EU countries, USA and Australia 2003***
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