

Cannabis laws: an analysis of costs

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Abstract: Despite the nine-year Drug Offensive against drug abuse, and the increasing expenditures to enforce the laws against cannabis use, and the seizure of large plantations of cannabis plants, there is evidence that the use of cannabis is increasing in Australia, with stable black-market prices. Recent government data are used to estimate the conservative cost of drug-law enforcement against cannabis use of \$329m in 1991–92. Alternatives to the existing regime are examined, including expiation, decriminalisation, and legalisation.

Keywords: cannabis; drug law enforcement; social costs; policy; expiation; decriminalisation; legalisation

1. Cannabis Use in Australia

Recent data on Australian cannabis use [1] show a slight increase in the number of Australians aged 14 and over who have ever used cannabis. The survey also provides information on the percentages of Australians who have ever been offered cannabis, those who have used cannabis in the last year, and those who would try cannabis if it were offered by a “trusted friend”. The results are summarised in Table 1.² The Table shows that the proportion of Australians who have ever been offered, who have ever tried, and who would try a friend’s cannabis, is stable and perhaps slightly increasing over the six-year period.

Data on illicit drug use from the Australian Federal Police (AFP) include black-market prices [4]. The price ranges are quoted for wholesale and retail

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1. An earlier version of this paper was presented at the Drug Law Reform Conference, “Cannabis and Narcotics: Problems and Prospects for Decriminalisation,” under the auspices of The Law Society of New South Wales, on October 23, 1993.
 2. 1988 survey data [2] show that U.S. cannabis use is similar to Australian: 33% of Americans had ever used cannabis, 11% had used the drug in the past year, 6% in the past month, and about 1% on close to a daily basis. For the Netherlands, the corresponding 1989 figures are 6% ever and 2.7% in the past month [3].

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TABLE 1. *Cannabis use: Australians aged 14 and over.*

Year	Ever been offered cannabis (%)	Ever tried cannabis (%)	Used cannabis in the past year (%)	Would try friend's cannabis (%)
1985	40	28	na	16
1988	40	28	na	14
1991	43	32	13	17

Source: [1] Tables 22, 24, 25.

transactions by drug type. “Annual totals of illicit drugs seized cannot be regarded in isolation as a measure of enforcement performance, any more than they can be said to be indicative of the relative availability of illicit drugs,” [4] but together with the price data, it is possible to conclude that cannabis availability is unchanging over the two-year period 1989 and 1990.

The wholesale price of domestic cannabis leaf fell in the higher wholesale price range (between \$4,000 and \$7,000 per kilogram), but rose at lower wholesale prices (between \$2,000 and \$2,500 per kilogram), possibly due to localised shortages. The retail price (between \$8 and \$50 per gram) was considered stable [4]. There was a ten-fold increase in seizures between 1989 and 1990 (to 2.477 tonnes of cannabis tops, seeds, and resin) but since this is not at all reflected in higher prices at the wholesale or retail level, the conclusion that “Cannabis products continued to be freely available in all states” [4] is not surprising.

Of the total 2.477 tonnes of cannabis seized, 88% was imported cannabis, and 12% domestically grown, but this in no way should be taken to reflect the proportions of supply, since there was a general trend towards smaller, better concealed domestic plantations, with increased imports from Papua New Guinea [4].

2. *Drug-Law-Enforcement (DLE) Expenditures*

There are several components to the social costs associated with drug use and laws: the public expenditures by governments, the private expenditures of individual households, and the non-monetary burdens imposed on society. Research four years ago [5]³ considered the social costs of Australian drug policy in 1987–88: estimates were made of the public and private expenditures on the criminal-justice system and the health-care system, and the further, non-monetary net costs associated with the Australian drug laws. Using a cost–benefit approach, broadly related to the drug-policy analysts’ “harm reduction,” it was argued that control and regulation was preferable to

3. There are two other published reports [6,7].

prohibition [5].

Since 1987–88 the total population has grown by over 1.2m people, or 7%, and there has also been price inflation of 21% [8]. Rather than updating simply by adjusting by 30% to reflect the larger population and inflated 1991 dollar, we shall consider each component cost.

The 1987–88 drug-law-enforcement (DLE) expenditures were conservatively estimated at \$123.2m [9], based on the expenditures on the AFP and the state police forces, the National Crime Authority (NCA), the Australian Customs Service (ACS), and the expenditures on prisons and courts. The estimate included 60% of the NCA budget, and pro-rated the other budgets by the proportion of officers directly engaged in DLE. This is very conservative, since it ignored the proportion of officers engaged in coping with drug-related crimes, such as property crimes committed by drug users. Moreover, it ignored the capital expenditures on prisons, the expenditures on legal aid, the expenditures on private legal representation, and the costs of time and delays for non-forensic participants in the courts.

After the adjustments⁴ to the AFP and state police force estimates (but not to the NCA or the ACS estimates) and after adding estimates for the capital expenditures on prisons and the expenditures on legal aid, the revised estimate [5] of the expenditures on DLE in 1987–88 was \$320m, still only 13% of the total expenditures of \$2,451m for Police, Courts, and Prisons obtained from top-down estimates [10], or a smaller 9.8% of the expenditure figure of \$3,252m from government estimates [11].⁵

The total current and capital expenditure on law and order for 1990–91 was \$4,578m [11], and so an unchanged 9.8% of this would be \$449m.⁶ We adjust the 1987–88 figures for the DLE expenditures associated with the AFP, the

4. The main adjustment [5] was multiplying the earlier estimates [9] by a factor of 2.5, which was obtained by imputing a proportion of 40% of the Australian prisoners on 30 June 1988 who had been convicted for various kinds of theft (robbery, extortion, break-and-enter, fraud and misappropriation, receiving, and other theft), as having committed the thefts to support purchases of illicit drugs at the high, black-market prices. 44.1% of all 5,431 prisoners had been charged or convicted on theft offences.

5. Government expenditures [11,8] on “public order and safety,” broken down by current and capital, by jurisdiction, and by major expenditure group. show that total capital and current government expenditures on law courts and legal services, police services, and prisons and corrective services were (in current dollars) \$3,252m in 1987–88, rising to \$4,847m in 1991–92, an average annual growth rate in nominal terms of 10.4%.

It is not immediately clear how to reconcile [10] and [11], which include outlays on police colleges, police training, police laboratories; legal representation and advice on behalf of the government and others, expenditures on crown prosecutions, trustees. They exclude, however, outlays associated with industrial law and tribunals and appeal boards associated with industrial law and tribunals and appeal boards that can be classified to special purpose categories, and residential child-care institutions that are not places of secure detention.

ACS, the state police and the recurrent expenditures and legal aid expenditures associated with the courts by 30% to reflect population growth and inflation.⁷ We adjust the figures for prisons (recurrent and capital) by 48%, to reflect inflation and the 20% increase in drug-related and theft incarcerations. We use the higher estimate of the NCA expenditures derived above. The results are presented in Table 2.

TABLE 2. *Estimated drug-law-enforcement (DLE) expenditures, 1991–92*

	\$ million
Australian Federal Police	43.6
National Crime Authority	19.9
Australian Customs Service	9.0
State Police	83.5
Prisons (recurrent and capital)	230.3
Courts (recurrent and Legal Aid)	64.1
Total	450.4

The total of \$450.4m for DLE expenditures in 1991–92 represents an increase of 40% over the estimates for 1987–88, or a 16.3% increase in real terms. It represents only 9.9% of the \$4,578m for total Australian expenditure on law and order [11], and so is a very conservative proportion.

3. *Cannabis-Law-Enforcement Expenditures*

What proportion of our estimated expenditure can be attributed to cannabis? We have a range of proportions: seizures (78% of total seizures), value of turnover in the black markets for illicit drugs (73%, [9]), proportions of the population who have ever used cannabis (91% of all illicit drugs) or who have used cannabis in the past year (87% of all illicit drugs), numbers of arrests by illicit drug (83% for cannabis).⁸ So the choice appears to be between 73% (low, because of the high value of imported black-market heroin and cocaine) and

6. Such an increase is not merely from the effects of price inflation: the number of prisoners on 30 June 1991 was 15,021, including 6,534 (or 43.5%) associated with various kinds of theft, and 1,364 (or 9%) associated with drug offences. The numbers associated with theft had risen by 20% since 1987–88.

The NCA's budget rose by 20% per year in real terms over the three years 1987–88 to 1990–91 [12], which resulted in a budget of \$26.9m in 1987–88 dollars, or \$33.1m in 1991 dollars. 60% of this corresponds to \$19.9m.

7. This proportion will be excessive for some of these expenditures (such as certain state police forces) and insufficient for others (such as the AFP), but is on average appropriate. See the numbers of officers by state police force and the AFP over past years [8].

91% (high, because of the availability of domestically grown cannabis).

We use the lower proportion of 73%,⁹ and arrive at a figure of \$329m for the year 1991–92. As we remarked above, both the proportion and the base are conservative estimates. But what does such a figure mean? What it doesn't mean is that if cannabis disappeared (because, say, of a disease that destroyed all cannabis plants in the world) then expenditures on law and order in Australia would soon fall by that amount, since so long as other drugs were in demand but prohibited, officers, courts, and prisons would still be necessary to attempt to enforce the law.

If there were a reduction in the severity of the prohibition against cannabis (such as the South Australian expiation system [13,14,15] or the Australian Capital Territory (ACT) system of on-the-spot fines [16]) to what extent would the expenditures estimated above fall? First, there was a clear fall in drug-related offences after the law was changed in South Australia in 1987 [13]. This is also seen in the figures on recorded drug offences [1].¹⁰ If a similar fall in absolute numbers had occurred across Australia, the number of drug offences would have fallen by 72,280, or more than the total number of recorded drug offences for the whole country in 1990. A proportionate fall in numbers would have led to a fall of over 70% in recorded drug offences.

Second, there was a small or negligible fall in the workloads on South

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8. Cannabis seizures were 2,398 of a total of illicit drug seizures of 3,065 in 1991 [1]: an estimated turnover of \$1,905m for cannabis in a total illicit drugs turnover of \$2,617m in 1987–88 [9]; 32% of Australian have ever tried cannabis and 35% have ever tried any illicit drug, and 13% of Australians have used cannabis in the past year and 15% have used any illicit drug in the past year [1]: 29,209 cannabis arrests and a total of 35,296 illicit-drug arrests in 1991 [1].
 9. It is true that the black-market price for cannabis is nothing like as high as the price for such “addictive” drugs as heroin, but this is because the demand for heroin, at least amongst the habitual users who consume most of it, is much less elastic than the demand for softer drugs, such as cannabis. The other side of that particular coin is that it is the consumers of “addictive” drugs who commit most of the drug-related theft: the high, black-market prices cannot be met by habitual users from legal sources of income. So a disproportionately small number of drug-related thefts are committed by offenders who have not been using “addictive” drugs. A disproportionately small number of prisoners who have been using legal drugs and cannabis only have committed drug-related thefts. The expenditures on prisons, then, should be more heavily accounted for by heroin and cocaine.
 10. Sutton and Sarre [13] report that “rate of police detections of minor cannabis offences continued to rise under the cannabis expiation system ... [but] the rate of increase (11% p.a.) was less than the long-term rate of increase (25% p.a.)” although they doubt a direct link between the detection rate on the introduction of the scheme. South Australia had the largest fall in the drug offence rate, from 596 per 100,000 population in 1985 to 178 per 100,000 population in 1988 [1]. This occurred mainly with the introduction of the cannabis expiation scheme.

Australian courts in the nine months after the law was changed [13], since almost half the offenders did not pay their expiation bills by the due date. It was concluded that, with no change in the law, unless substantial effort was made to increase the rate of payment, the impact of the initiative on the courts would not be significant [13].

These observations suggest that, first, individually reducing the penalties for cannabis, while other prohibited drugs remain for which there are continuing demands and black-market transactions, will not reduce public expenditures by much, if at all. Second, that alternatives such as the South Australian initiative may lead to few if any cost savings in the criminal justice system, at least at first. There are, however, clear gains to individuals who are apprehended and no longer risk large penalties and the possibility of criminal records, and there will be other reductions in wider social costs.

4. Other Social Costs Related to Cannabis Use.

Several recent studies [16,17,18,19] have canvassed the scientific literature for adverse pharmacological, physiological, and psychological effects caused by sustained, moderate cannabis use.¹¹ Such ill effects, if significant, would result in additional social costs. Despite the strongly held beliefs of some that “cannabis is clearly a dangerous substance leading to a range of physical and psychiatric conditions that should be avoided” [17], the conclusions of many medical researchers are that cannabis is not a dangerous substance, and that, used in moderation, it is physiologically less toxic than many regularly consumed legal substances, such as alcohol and tobacco.

Additional social costs include “lack of respect for the institutions of justice; the maintenance of lucrative illicit markets and any attendant organised-crime involvement, violence or corruption; the costs arising from the criminalisation of individuals [users and dealers]; and the foregone (*sic*) value of other uses to which resources currently engaged in drug commerce and DLE could be put” [17]. We do not attempt to quantify these social costs here, but note that they derive from the *illicit nature* of cannabis use, not from the cannabis use itself, and so would fall or vanish if cannabis use were no longer prohibited [20,21].¹²

5. Supply and Demand

11. Several studies [16,17,19,20] also summarised the findings and recommendations of over twenty Australian and foreign inquiries into the desirability of reforming cannabis laws.

12. These costs are “extrinsic” costs, both direct (to the user) and indirect (to others), but not “intrinsic” to the drug itself [21].

5.1 Supply

Of concern, given the evident lack of effectiveness of the laws prohibiting cannabis use, is the illicit distribution system, with its unscrupulous entrepreneurs. Given the fact that some proportion — probably large, given the relatively low *value-density*¹³ of cannabis leaf, which leads to greater risks of detection as the drug crosses national frontiers — of the drug is grown in Australia, the high mark-ups¹⁴ down the distribution chain are a potential temptation to Australian residents to break the law.

With a conservative average yield of 500 grams of cannabis per plant, Queensland's annual consumption of cannabis (40.5 tonnes, by 83,600 frequent regular users, at a street value of \$361.6m) could be satisfied by about 81,000 mature plants per year [17]. But Queensland police seize on average 40,000 to 50,000 plants annually without any discernible market effect, which implies a much larger crop.

Queensland supply might be significant in Australia,¹⁵ with three-quarters of the state's crop meeting out-of-state demand [17]. If these conclusions are correct, then the Queensland cannabis industry is worth \$632.8m (at retail prices of around \$9 per gram and an annual crop of 70.9 tonnes) or \$283.6m (at wholesale prices of around \$4,000 per kg), comparable with the values of the commercial sugar and wheat crops in Queensland.

The relative sizes of the home-grown crop and the “commercial” crop can be examined by analysing prosecutions for cultivation: cultivations of ten or fewer plants accounted for 72.5% of offences, but only 6.2% of total plants seized [17]. This suggests that casual growers are not significant suppliers. Of more concern is the network of supply, including the “commercial” growers.

The Queensland study [17] corroborated analysis of the illicit heroin distribution network [22], at least in its lower, Australian levels. From the top, a smaller number of criminal/large-scale growers, then a larger group of medium-scale/regional growers with smaller plantations, then a large number of cannabis consumers, some of whom are user/growers and

13. Dollars per litre of the drug as transported. Cannabis oil and cannabis resin, neither of which is believed to be produced in Australia [17], are more attractive for smugglers, given their higher value-densities.

14. One example: the ounce-dealer made a gross return — sales/purchases — of 215%, and the “hotel dealer” (selling “sticks” or “foils”) a gross return of 200% [17]. It is likely that the returns to growers are even higher, given the risks of detection of large-scale plantations.

15. Four reasons: (a) a tightening of DLE in the southern states, especially New South Wales; (b) more favourable growing conditions, especially in far north Queensland; (c) market perceptions that Queensland cannabis is more potent than southern crops; and (d) the presence of established criminal networks with southern market connections.

user/dealers. The local, Queensland networks may be separate from the national networks, with the consumers away in the southern states.

Despite significant seizures of foreign cannabis arriving in Australia and detection and destruction of apparently large Australian plantations, there has been little if any effect on the supply of the drug, as reflected in stable street prices. This is the strongest evidence for the resilience of the supply side of this black market in the face of determined law enforcement. How the supply network would adjust to changes in the laws relating to cannabis possession and use, *ceteris paribus*, remains to be seen, but a fall in profitability, with no change in the risk of apprehension might be expected to make supply of the drug less attractive to the unscrupulous entrepreneurs.

5.2 Demand

As noted above, the price elasticity of demand¹⁶ for cannabis is higher than for more “addictive” drugs such as heroin, which means that there is less pressure on would-be cannabis consumers to commit property crimes to pay for their drug, with correspondingly lower black-market prices, *ceteris paribus*. But a more highly elastic demand means that a lower price, *cet. par.*, will result in a larger demand for the drug, although, given the relatively benign effects of cannabis on the user, this should not be of concern, except to those who would prohibit its use at any social cost. Relaxation of the prohibition, in South Australia and elsewhere, has not, as we discuss below, resulted in large if any increases in cannabis use [3,15,19,24], despite falls in street prices.

6. Policy

We assert that the appropriate measure for judging policy is not the numbers of users, the quantity of drug used, or even the diversion of society’s scarce resources to DLE. Rather, each policy should be judged by its ability or potential to reduce net social costs or “harm” [2,3,19,20,21], in particular the “extrinsic” costs associated with prohibitionist laws. We have focused above on the DLE costs associated with the prohibition on cannabis use. Benson and Rasmussen [25] argue that a crime-control policy focusing on drug crime will not serve as an effective means of controlling property crime, because increased DLE efforts, with fixed budgets for law enforcement, will reduce the risk of apprehension for those who commit property crimes, which in turn may increase the incidence of property crimes, including those that are drug-related. This suggests that cannabis law enforcement efforts may be counterproductive, when the aim is to reduce social costs, including overall levels of criminal behaviour. Indeed, the evidence presented above suggests that such efforts are quite ineffective at preventing use of cannabis in Australia, but are expensive for the community, both in terms of public

16. Measured by the percentage fall in demand in response to a 1% increase in price, *ceteris paribus*. Estimates are that this is slightly greater than one [23].

expenditures and of non-monetary costs.

There are three broad alternatives to the existing regime: (a) expiation, (b) decriminalisation, and (c) legalisation.¹⁷ Recently, Germany, Italy, and Colombia have moved towards decriminalisation, but for historical data we must look at South Australia, the Netherlands, and several U.S. states, which relaxed the prohibition against cannabis use in the past twenty years.

What does the South Australian initiative suggest the effect of reducing the penalties for cannabis possession and use — and hence the black-market price — would be? Despite the easing of controls over cannabis use in South Australia since 1987, there has been no significant rise in the numbers of cannabis users [13,14,15].¹⁸ Similar results are reported for Ohio, California, Michigan, and the Netherlands [3,15,19,24]. Moreover, there were apparently significant reductions in the cost of DLE in California and other states, owing to the lower rate of arrests, processing, and imprisonment [15,19,24,26], something which South Australia and the ACT may yet enjoy.

But the lack of a reduction in South Australian DLE costs [13] raises a further question: with no increases in numbers of users or quantity used, why not move to decriminalisation, with no penalties for personal use and possession, and so eliminate the remaining DLE costs associated with recalcitrant offenders paying their fines? A further move to legalisation of cannabis would release at least \$329m per year Australia-wide for consumption or investment for the future.

7. References

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17. Expiation and decriminalisation are close, the difference being that, under expiation, possession and use of small amounts of cannabis remain minor (but enforced) offences, while under decriminalisation they are legal; in both cases trafficking and possession of large amounts remain enforced, serious offences. The common characteristic of legalisation schemes is that, although possibly regulated, trafficking and possession of large amounts are not prohibited.

18. The proportion of South Australian secondary school pupils who report using cannabis on a weekly basis remained stable at less than 6%. About 20% of pupils reported ever having used cannabis, again a stable figure. The South Australian figures are similar to those from New South Wales [1].

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