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A REPORT AND COMMENTARIES

Cost estimates for alcohol and drug abuse

Published below are a report by Henrik J. Harwood et al. and four commentaries on this report

Economic cost of alcohol and drug abuse in the United States, 1992: a report

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Overview

In 1992 the economic cost to society from alcohol and drug abuse was an estimated \$246 billion. Alcohol abuse and alcoholism cost an estimated \$148 billion, while drug abuse and dependence cost an estimated \$98 billion. Adjusted for inflation and population growth, the alcohol estimates for 1992 are relatively similar to cost estimates produced over the past 20 years, while the drug estimates demonstrate a steady and strong pattern of increase. The estimates focus on costs and impacts associated with harmful use (using clinical criteria) and improper use. They represent an inventory or roll-up of many different types of impacts and costs of drug and alcohol problems. This includes the costs of efforts to prevent and reduce these problems, and the costs of various types of damage attributable to abuse of alcohol or illicit drugs. Costs and impacts are included that fall on those that do and do not misuse alcohol and/or drugs, respectively.

Cost of illness (COI) studies in general, and those for alcohol and drug abuse in particular, have a well-established general approach. This study and the past several have followed guidelines created by the US Public Health Service to help standardize the methods used in assess-

ments of the costs of different illnesses. Underlying the study of alcohol and drug abuse COI is the premise that an illness or social problem imposes "costs" when resources are redirected as a result of that illness or problem from purposes to which they otherwise would have been devoted, including goods and services and productive time.

The general approach to this cost methodology (termed the human capital approach) in the United States was articulated by a task force of the US Public Health Service (PHS) chaired by Dorothy Rice (see Hodgson & Meiners 1979, 1982). The *Guidelines* were intended to reduce methodological differences between studies for different illnesses or for the same illnesses over time. The principles are general and have been applied to the alcohol and drug abuse studies performed since the *Guidelines* were developed. The human capital approach yields an estimate of the value of resources used or less/foregone as a result of actual or anticipated adverse impacts of drug and alcohol dependence and/or abuse.

There are alternative approaches that could be used in such studies—e.g. "willingness to pay" (Miller *et al.*, 1991) and the "demographic approach" (Collins & Lapsley, 1996). These methods examine different facets of the economic impacts of drug and alcohol problems, yielding results that should be complementary. Analysts must decide which methodology is suited to the issues that they study. The costs of

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case, we would need information about the probable behavior not of the average person in treatment today, but of the sort of person not in treatment today who would be in treatment if treatment were slightly more easily available.

Knowing the total damage done by drinking, or the abuse of other substances, gives us an idea of whether they are potentially important targets for intervention. (If Harwood *et al.* had differentiated among illicit drugs, the number for cannabis might have been small enough to cast doubt on the wisdom of framing public policy primarily around reducing the total number of cannabis users.) However, it tells us remarkably little about how to intervene, or even whether an intervention with assumed characteristics of cost and effect would be worth the effort.

What would clearly not be worth the effort is continuing to redo this set of cost calculations every several years. Harwood and his team have performed a masterful job of pulling together a widely diverse set of literatures about a subset of the costs of substance abuse, and have made significant methodological improvements over their predecessors in this effort. There let it rest.

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FEDERATION OF AMERICAN SCIENTISTS (1997)
"Principles for Practical Drug Policies"
< <http://www.fas.org/drugs/principles.htm> >

HARWOOD, H., FOUNTAINS, D. & LIVINGSTONE, G. (1999)
The Economic Costs of Alcohol and Drug Abuse in the United States, 1992 (Rockville, MD, US Department of Health and Human Services).

KLEIMAN, M. A. R. (1992) *Against Drugs: drug policy for reality* (New York, Basic Books).

REUTHER, P. (1997) Can we make prohibition work better? Some consequences of avoiding the ugly, *Proceedings of the American Philosophical Society*, 141, 363-375.

VISCUSI, W. K. (1995) *Road, Product, public and private responsibilities for risk* (London and New York, Oxford University Press).

Economic costs calculations and drug policy evaluation
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The Harwood *et al.* report (1998) estimates that drug and alcohol abuse cost American society

\$246 billion in 1992 (\$149 billion for alcohol and \$98 billion for drugs). The cost of drug abuse expressed as a percentage of the GDP is about 1%, a figure substantially higher than for 1995 in Canada (0.2%) (Single *et al.* 1998).

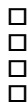
My comments will focus exclusively on the estimates for illegal drugs and, more precisely, on the methodology of calculating public spending. I take up three issues. First, the estimates of public spending on drug abuse are questionable. Second, the breakdown of the social cost among the different players (abusers and household, private insurance, victim losses etc.) is unconvincing. Third, how do social cost estimates help guide policy?

1. Analysis of public spending on drug abuse

The "economic cost" calculated by the report corresponds to what economists generally refer to as *social cost* and, in fact, describes the opportunity cost; that is to say, the amount of resources that could have been used for other purposes if the problem of drug and alcohol abuse did not exist.

The public sector figure includes spending by agencies whose mission is exclusively drug control and only a fraction of the general expenditures of other multi-function agencies (police, judiciary, customs, ...) corresponding to the part of their resources dedicated to drugs. Estimating that fraction is problematic. On the one hand, agencies sometimes attempt to put the "drugs" label on other, unrelated functions, in order to benefit from additional funds available for drugs. On the other hand, some "generalist" agencies estimate their drug control expenditures by a crude "rule of thumb" evaluation. The report compounds the problem by inconsistent inclusion criteria.

Take the example of HIV/AIDS. Thirty two percent of AIDS cases diagnosed in 1992 were drug-related. The \$3.7 billion spent on drug-related HIV/AIDS could have been avoided if there had been no drug use and the corresponding resources saved. The figure, then, is undeniably part of the social cost of drug abuse. On the other hand, it is debatable whether to include in public spending on drug control the \$2 billion spent by Federal and State HIV/AIDS infection of drug users is the direct consequence of drug abuse. However, the means



and the expenditures are directed not toward drug users but toward amelioration of HIV. These sums are part of the government's war on HIV/AIDS and not part of the war on drugs. To assign public expenditure to one type of "war" rather than to another does not affect the total amount of public spending but rather its distribution. The means used by the government to carry out its strategies should be consistent with the stated objectives. Clearly, the choices governing the calculations of the NIDA-NIAAA report overestimate the resources that the government assigns to drug-related health treatment costs. It would be more relevant to include moneys that are spent on the direct consequences of drug abuse, such as AIDS, but not on other health problems of drug abusers which may not result from their drug abuse, or at least not directly.

Narrower criteria are used in other fields. For example, public spending on drug prevention estimated by Harwood *et al.* as \$725.5 million only includes the expenditure on prevention clearly related to drug abuse. The fact that federal government spending accounts for 84% of this total amount suggests that a very narrow criterion was used for classifying prevention expenditures at the state and local levels. Surely some fraction of public preventive measures, in favour of a "healthy lifestyle" or against "delinquency", even if not labelled "drug abuse", contributes to preventing the ill effects of drugs. Not to take these into consideration is inconsistent with the inclusive measures adopted in the domain of HIV/AIDS and hepatitis care and treatment.

The same comments apply to law enforcement and criminal justice. First, it is probable that the report has underestimated the amount of public spending on drug enforcement, because of poor accounting at State and local levels. The figure of \$17.4 billion (\$13.7 billion for the criminal justice system and \$3.6 billion for the federal drug control) is substantially lower than the statistics produced by the ONDCP (1993) and adjusted by Reuter (1994). According to the latter, public expenditure was \$25.9 billion for 1993, of which \$10.9 billion was at the federal level and \$15 billion at state and local levels.

Second, the underlying method of calculation is again hardly consistent with the choices determining the calculations of the statistics on

HIV/AIDS. The methods of calculation by which law enforcement agencies allocate their expenditure are often unclear. The general principle is to use the share of all clients or cases that are in the system because of drug abuse or trafficking.

For example, in the penal system, this generally leads to distributing the total public expenditure on pro rata correction of prisoners imprisoned for drug law violations. This technique does not take into consideration public spending on suppressing crimes that have no apparent link to drug use but are actually generated by the effects of drugs or the economic need that they create. Again, the method of calculation, although quite satisfactory for some purposes, is inconsistent with that adopted in the case of HIV/AIDS.

These inconsistencies in the calculation of the different public spending areas leads the authors of the report to systematically overestimate some components (health) and underestimate others (criminal justice).

2. Who bears the costs of drugs?

The social cost of drug use affects, in different ways, many parties. The report correctly points out that even a public policy measure having a neutral effect on the social cost always favours one group of individuals at the expense of another. In 1992, the "government" lost very considerable resources (\$45.1 billion and 46% of the total); "abusers and households" came next with a loss of \$42.9 billion or 44%, "victim losses" were \$6.5 billion or 7% and finally, "private insurance" lost \$3.1 billion or 3%.

The method of calculation is not clearly indicated and the result is surprising. Among productivity costs for example, the government bears 48% (\$7,541 million) of the total cost of lost earnings due to drug-related morbidity, and 31% (\$4,459 million) due to deaths, while Medicaid and the \$280 million of Medicare expenditures. There is no doubt that these sums were actually spent by the government, but was it really in the domain of drug abuse? The "abusers and household" sustained only 52% (\$8141 million) and 56% (\$8202 million) of these two costs. In each case, how is it that the present value of lost lifetime earnings created by drug-related deaths are charged to the govern-

ment? The argument is developed in a rather complex way. By far the largest part of the costs borne by the abusers is shifted to the government and finally to the tax-payer. The reasoning depends on a single hypothesis: when an individual dies, the government loses the taxes that it would have collected from him. It is doubtful whether the revenue which the government loses from the deaths of drug abusers is higher than the total of lost earnings. Moreover, the death of a drug abuser, although obviously eliminating future revenue for the government, also relieves it of subsequent expense!

The question posed by the report is: Which sector bears the largest fraction of the social cost of drugs? It does not offer a clear answer because of certain confusions between the notions of public spending, costs and social transfers. All the cost elements of illness, unemployment, etc. are attributed to the government, all the while noting that it is the taxpayers who foot the bill. This procedure artificially inflates public expenditure. It would without doubt be more judicious to modify the names of the groups and to distribute the total cost among "abusers", "crime victims", "non-abusers", "private insurance" and "government", attributing to "government" the total of public spending and to non-abusers the total of transferred charges. It is equally necessary to be prepared to distribute the charge attributed to non-abusers between employers and households, which according to the report is currently impossible.

For employers, one of the consequences of drug abuse is lower productivity. The report "has estimated worksite productivity impacts in terms of lost earnings of drug and alcohol abusers". In other words, the impact on productivity due to drugs is supported by the abusers themselves. Nevertheless, when workers perform below the expected productivity level, production costs are increased. Thus, employers bear costs related to drug abuse. They also have to support the costs of health insurance and social insurance. However, the report notes that "there are insufficient data to develop such estimates".

For households, the material well being of fellow family members may be reduced when the drug user's earnings drop through lower wage rates or reduced working days. On this point, it seems that no data are available to estimate such

problems. Secondly, a family's quality of life suffers through, for example, violence. However, here again, the costs of these qualitative aspects are difficult to estimate. Finally, there are other costs to households, such as higher car insurance because of a greater number of accidents caused by drug abusers.

3. Social cost and public policy

The government could try to reach a better balance in drug control, characterized by a lower social cost. In order to lower the social cost of drug abuse, the government has three types of leverage at its disposal: laws themselves, enforcement, prevention and treatment. In sharp contrast to public policy on tobacco and a little less sharply different from alcohol, where any decline in consumption leads to an indisputable decline in social cost, it is hard to establish the impact of changes in drug policy. A particular policy measure might lower consumption (positive effect) while raising the precarious position of the users (negative effect) eventually translating into a rise in total social cost.

The calculation of the social cost of drug use and in particular its breakdown by type of cost should allow the modelling (*ex ante*) of any changes in public policy. Unfortunately, economic theory has difficulty with this: while we can calculate the aggregate social cost of today's policies, we have no means of doing so for a hypothetical situation (a society where drugs are legalized). The modelling of public action is limited to the category of "second best", where it is only possible to evaluate marginal changes in existing policy. The capacity to seriously model a change in government policy is far greater when the envisioned modification is less important, which reduces the impact of the analysis.

Independently of these remarks, the report of the NIDA-NIAAA constitutes a remarkable advance in the study of drugs. There is no doubt that such a study should be conducted in other countries, especially in Europe where the need for a less passionate debate over drug policy is growing. In most countries the impact of the illicit drug problem, especially in comparison with other addictive substances such as alcohol and tobacco, has not been measured. Few studies have been dedicated to the social cost of illegal drugs (Maynard *et al.* 1987; Durlin &



Balletto, 1990; Kraan, 1994; Hartwigs & Pies, 1995; Kopp & Palle, 1996). The attention focused on the illicit drug problem has been accompanied by a substantial overestimation of the sums of money needed daily by addicts and of the extent of delinquency induced by drug craving. The European Parliament has recently issued a resolution to the effect that more information on public spending on illicit drugs, as well as evaluation of the social cost of drug problems, are urgently required by EMCDDA. In France, INSERM (the National Institute for Health and Medical Research) and OPDT (Office for Drugs and Drug Addiction), and the Council of Europe's Pampidou Group are currently conducting social cost studies. There is growing concern about the efficacy of the tools currently used to fight drugs. Treatment evaluation studies emanating from Switzerland and The Netherlands give a strong incentive to other governments to plan their policies more rationally. It is to be hoped that recent political changes in Germany and the participation in the coalition of the Greens—who have long been demanding a policy change on cannabis—will give fresh impetus to the European drug policy debate.

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- DASTINE, J. P. & BALLETO, R. (1990) *Le coût de la consommation de drogues illégales* [The cost of the consumption of illegal drugs], in: *Le problème de la drogue—en particulier en Suisse—considéré sous son aspect social et préventif* [The drug problem in its social and preventive aspects, with particular reference to Switzerland] pp. 43–45. (Institut suisse de prophylaxie de l'alcoolisme, université de Lausanne/DEEP-HEC).
- HARWOOD, H., FOUNTAIN, D. & LIVERMORE, G. (1998) *The economic costs of alcohol and drug abuse in the United States 1992*. NIH Publication no. 98-4327. (Bethesda, MD, National Institute on Drug Abuse).
- HARTWIGS, H. & PIES, I. (1995) *Rationale drogenpolitik in der Demokratie* [A national drug policy for democracies]. (Tübingen, JCB Mohr Verlag).
- KOPP, P. & PALLE, U. (1996) *Le coût de la politique publique de la drogue. Essai de mesure des dépenses des administrations d'Etat* [The cost of public policies on drugs. An attempt to measure State expenditures]. (Office Français de la Droque et des Toxicomanies, Paris).
- KRAAN, J. (1994) Economic view on Dutch drugs policy in: E. LEUW & I. HAIN MARSHALL (Eds)

- Between Prohibition and Legalization: the Dutch Experiment on Drug Policy*, pp. 67–78. (Amsterdam, Studies on Crime and Justice, Kluwer Publications).
- MAYNARD, A., HADJIMAK, G. & WHELAN, A. (1987) Measuring the social costs of addictive substances. *British Journal of Addiction*, 82, 701–706.
- ONDCP (1993) *State and local spending on drug control activities* (internal report). (Washington, DC, Office of National Drug Control Policy).
- REUTER, P. (1994) Setting priorities: budget and program choice for drug control, in: *Toward a Rational Drug Policy*, *The University of Chicago Legal Forum*, 1994, 145–173.
- SINGLE, E., ROBINSON, L., XASOU, X. & RIMAS, J. (1998) The economic costs of alcohol, tobacco and illicit drugs in Canada, 1992. *Addiction*, 93, 981–998.

Alcohol, drugs and crime: is "crime" really one-third of the problem?

Mark A. Cohen

Harwood, Fountain & Livermore (1998) estimate that \$78.8 billion—about one-third of the costs of alcohol and drug abuse—are due to criminal victimization and criminal justice expenditures. The report perpetuates many flaws of its predecessors by inappropriately attributing some crimes to alcohol or drug abuse and by using inaccurate data on the cost of crime. In this comment, I focus on four key issues: (1) causal connection between alcohol/drug abuse and crime, (2) number of crimes committed, (3) magnitude of crime costs, and (4) productivity losses for incarcerated offenders and those involved in illegal drug activities.

Causal connection between alcohol and drug abuse and crime

This report estimates "causal factors" to attribute diseases, health problems and crimes to alcohol or drug abuse. In the case of medical problems, researchers often have access to epidemiological studies isolating the relative risk after controlling for other health risks. However, in the case of crimes, the authors do not have estimates of the relative risk of criminal activity for alcohol or drug abuse controlling for other factors. Instead, they have estimated the number of crimes in which alcohol or drug abuse is somehow implicated, generally using self-reported assessments by prisoners. Thus, instead of calculating a relative risk for each individual, drugs or alcohol are likely to be