New Economic Thinking on Addiction and Legalization

Toward Sliding Price Elasticities of Demand for Addictive Substances and their Implications for Public Policy

By Robert B. Charles

Commissioned by:
The National Alliance for Model State Drug Laws

National Alliance for Model State Drug Laws

July 2003

EXECUTIVE SUMMARY

Acknowledgements

This executive summary and the full-length version of ***New Economic Thinking on Addiction and Legalization*** were commissioned by the National Alliance for Model State Drug Laws (the Alliance). Congressional appropriations to the Alliance through the Executive Office of the President, Office of National Drug Control Policy (ONDCP) and the Bureau of Justice Assistance, Office of Justice Programs, U. S. Department of Justice funded the research, writing, publication, and distribution (Grant # 2000-DD-BX-0027) of this study.

This executive summary and the full-length version of ***New Economic Thinking on Addiction and Legalization*** was written by Robert B. Charles of The Charles Group.

The Alliance and Robert B. Charles would like to thank Deborah Beck of Drug and Alcohol Service Providers of Pennsylvania for reviewing a draft manuscript of this publication.

The research conducted for and referenced in ***New Economic Thinking on Addiction and Legalization*** is current through December 2002.

About the National Alliance for Model State Drug Laws

The National Alliance for Model State Drug Laws (the Alliance) is a resource for governors, state legislators, attorneys general, drug and alcohol professionals, community leaders, the recovering community, and others striving for comprehensive and effective state drug and alcohol laws, policies, and programs. The Alliance is the successor of the President's Commission on Model State Drug Laws. Funded by Congressional appropriations since fiscal year 1995, the Alliance is a 501(c)(3) nonprofit bipartisan organization.

To learn more about the Alliance, the model state drug laws, and its services, please contact us:

National Alliance for Model State Drug Laws

700 North Fairfax Street
Suite 550
Alexandria, VA 22314

Phone: 703-836-6100
Fax: 703-836-7495

www.natlalliance.org

About the Author

Robert B. Charles

Robert B. Charles is president of The Charles Group, a public policy consulting firm based in Gaithersburg, Maryland. A former litigator in New York and Washington, Mr. Charles worked at Weil Gotshal & Manges and Kramer Levin between 1988 and 1995. He also clerked on the U.S. Court of Appeals for the Ninth Circuit.

During the Reagan and first Bush White Houses, Mr. Charles held policy positions in these administrations. He was appointed Deputy Associate Director of the White House Office of Policy Development, where he served from 1992-1993. From 1995 and 1999, he was Chief of Staff and Chief Counsel to the United States Subcommittee on National Security, International Affairs, and Criminal Justice. He also served as chief staffer to the United States Speaker of the House Task Force on Counternarcotics. In these roles, Mr. Charles crafted major provisions of key bills, negotiated elements of omnibus appropriations bills on behalf of House Leadership with the White House Office of Management and Budget, and held hundreds of hearings, mark-ups and investigations from 1995 forward. Hearings and legislation ranged from the Department of Defense oversight and law enforcement issues to the Drug War and health care; from the Department of Justice and Waco hearings to NASA and State Department oversight; from the United States Coast Guard and Customs oversight to review of DEA, FBI and INS practices and budgets.

From 1998-2001, Mr. Charles taught both Government and Cyberlaw at Harvard University Extension School. In 2000, he was awarded the Petra T. Shattuck Award for Excellence in Teaching by Harvard University.

A native of Maine, Mr. Charles graduated magna cum laude from Dartmouth College with a Bachelor of Arts in government. He also holds a Master of Arts in politics, philosophy and economics from Oxford University (P. P. E., 1984) and a law degree from Columbia University School of Law (J. D., 1987). As a regular writer and commentator in print and broadcast media, Mr. Charles remains close to many top decision makers in Washington. He lives in Maryland with his wife and two children.

Executive Summary

Any consumer of an addictive substance begins with a first use of that substance. That decision is informed by the costs of use, including price, risk of addiction and other adverse health effects, and perceived benefits of use. As the consumer migrates from treating the addictive substance (for example, cocaine or alcohol) as a "luxury" to treating that same substance as a "necessity," substantial research indicates that the Price Elasticity of Demand (PED) for the drug shrinks – that is, the degree to which use is affected by price falls. Unlike the first time purchaser of drugs, who is assumed to have weighed the addicted substance's putative effects against costs and risks, often based on information (accurate and inaccurate) collected from peers, media, parents and the community-at-large, an addicted person's decision-making is defined by the state of addiction.

Predictable operation of the laws of supply and demand, requiring rational consumer behavior, seems not to work when applied to the addicted consumer. Price becomes less important to the addicted consumer. Consistent with the clinically proven elements of addiction, including dependence and tolerance, the market as applied to this consumer is no longer characterized by free and rational choice. The Price Elasticity of Demand has fallen to a low point. In other words, large changes in price do not affect the addicted person's demand for the addictive substance or commodity, even if they do affect first time or non-addicted purchaser choices.[1]

To be sure, there is a considerable body of writing that discusses the non-economic arguments for and against different methods of treating addiction, as well as a considerable body of opinion containing non-economic arguments for and against policies raising or lowering the price of various addictive substances, ranging from legalization of illegal substances to taxation of legal and addictive substances. There is also a body of writing propounding narrow-gauge analysis of economic factors which might come into play if different policy options were pursued, and another body of writing best described as pseudo-economic, in that these authors tend to reason from broad and unsubstantiated assertions to broad and unsubstantiated conclusions.

This study does not take any of these tacts. It explicitly does not address any of the (possibly quite valid) political, social, philosophical, moral or emotional arguments surrounding different types of drug use or addiction policy. It also does not pursue a narrow-gauge economic approach, isolating one variable and ignoring others in an effort to make pure the economic analysis. A number of variables are discussed, while the importance of recognizing sliding PEDs for different drugs and purchaser groups is viewed as central to future public policy. Finally, the pseudo-economic writers are addressed directly in several instances, without disparaging the merit that may attach to ideas raised.

Primary Findings

After reviewing, analyzing and discussing the relevant economic and medical literature, this study's primary findings are as follows:

- Policies that lower the price of addictive substances tend to increase first time use or initiation rates for these substances.

- Increased use or initiation rates tend to increase addiction rates, based on responsiveness of first time and casual purchasers to lower prices.

- Raising prices of an addictive substance generally appears to lower the rate of first time use or initiation for most addictive substances, although higher prices do not appear to have any substantial impact on consumption by the addicted population.

- Substitution of one addictive substance for another similar substance by the addicted population appears more likely at higher prices and in the event of lower availability.

- Substitution may include accessible, affordable treatment to end the addiction where available, but is less likely to occur where significant effort is required by an addicted population to obtain the treatment.

- Rational or free choice by the addicted population appears to be significantly impaired by a combination of the cognitive deficit produced by using certain addictive substances (i.e. cognitive changes in brain function created by use of the addictive substance) and what is generally described as compulsion, a combination of dependence and growing tolerance to the addictive substance.

- Addictive substances appear to be comparable to one another on several bases, including abusive potency, addictiveness based on time to dependence and rate of tolerance growth, severity of withdrawal symptoms, adverse collateral health, adverse brain function effects and overall physiological and psychological change induced by the addictive substance.

- A price versus time-used continuum appears to exist on which most addictive substances can be placed somewhere relative to one another.

- This price versus time-used continuum reflects the price sensitivity of purchasers at different times in the use cycle (from first use to addiction) for any given addictive substance relative to any other addictive substance, even if the absolute sensitivity to price by purchasers at a particular time for a particular addictive substance is elusive.

- *Most discussants of legalization or government distribution of addictive substances do not take account of predictable long-term growth in the population of addicted persons and/or the long-term addiction costs associated with this policy choice.*

- No discussant of legalization or government distribution of addictive substances takes account of the vast literature supporting a Price Elasticity of Demand for addictive substances that consistently slides from high PED to low PED, albeit at different rates for different addictive substances, unless the addicted population becomes unable to act upon the low PED or substitutes treatment for addiction.

- No discussant of legalization or government distribution of additive substances takes account of the implications associated with a Price Elasticity of Demand that consistently slides, at varying rates for different addictive substances, from high to low for all measured addictive substances, unless the addicted population becomes unable to act upon the low PED or substitutes treatment for addiction.

- Much of the literature on economics and addiction, as well as economics and drug abuse, focuses on a single variable to the exclusion of other variables materially affecting conclusions drawn (i.e. assuming away difficult questions) or is unsubstantiated or opinionated in nature.

- Insufficient economic data and insufficient stratification of purchaser groups exists to confidently measure or estimate the absolute prices (or price ranges) at which different purchaser cohorts (e.g. first time, occasional, frequent and addicted purchasers)[2] will choose to purchase or not to purchase different addictive substances.

- Insufficient economic research has been done on the efficacy of generally applying traditional supply and demand principles to the use of addictive substances by different purchaser cohorts (e.g. first time purchase, occasional, frequent and addicted purchasers).

Key Conclusions

This study yields two basic, but important, conclusions:

First, the existence of a high Price Elasticity of Demand for addictive substances at the time when consumers evaluate whether to initiate use of an addictive substance, paired with the high potential costs of addiction to both the individual and society, strongly reinforce policies that have: 1) the effect of creating and maintaining high prices in order to deter first use, and 2) the effect of educating potential first time purchasers about the risk of, and costs associated with, possible addiction.

Since the ability to influence consumer decision making is at an apex just prior to the consumer's decision to purchase, or when the potential first time purchaser is deciding whether or not to enter the market, policies targeting price and education at this time – even marginally – are most likely to reduce use and addiction. On the other hand, policies seeking to significantly deter consumption among *people with addictions* through changes in price are not likely to be cost-effective.

Second, the existence of consistently low Price Elasticity of Demand among addicted consumers or frequent purchasers of addictive substances, paired with the adverse economic effects of this consumer group's behavior on individual consumers and society at large, strongly reinforce policies that have: 1) the effect of restoring rational consumer decision making, 2) the effect of reducing consumer dependence on and tolerance for these addictive substances, and 3) the effect of restoring this group of consumers to a position of involvement in the economic system based on predictable interplay of supply and demand, namely a position maintained prior to first use of the addictive substance.

While there are points after first use and prior to addiction in which price and education may influence consumer behavior, and there are cognitive elements of the decision-making process which may never be restored even after intervention, the most cost-effective way for any society to reduce the cost of addiction is to intervene with effective treatment for one purpose: to end consumption of the addictive substance.

A consumer caught in the economic trap of addiction to a substance with a low Price Elasticity of Demand is not freed by replacing one addictive substance with another. While this policy might be able to reduce the adverse effects of the first addictive substance and replace them with the adverse effects of the second addictive substance, such substitution does not reduce either the costs or the opportunity costs associated with addiction. Moreover, policies that seek to substitute one addiction for another in the name of cost savings tend to be highly expensive and offer no measurable cost-benefit over time, other than accelerating the progress of adverse health effects and death, which reduces the cost to society of health care and addiction maintenance for that consumer.

Substitution of addiction-ending treatment for addiction is only cost-effective when sustained over time; thus, policies that actively intervene to end addiction must be coupled with policies which educate the formerly addicted consumer to maintain his or her economic position. While price may then play a modest role in governing the consumer's behavior, other factors beyond price are likely to be equally important, as the consumer may never be as sensitive to price as he or she was prior to first use.

Core Recommendation

The study's core recommendation is simply put:

In practical and economic terms, the concept of a sliding Price Elasticity of Demand for addictive substances is important. Policymakers can best reduce the costs associated with drug use and addiction in two ways:

- First, by aggressively deterring first time purchases through policies that raise prices and educate potential consumers just prior to market entry, taking advantage of the high Price Elasticity of Demand at that time

- Second, by aggressively intervening to permanently end addiction through treatment regimes dedicated to stopping (not substituting) consumption of addictive substances, restoring rational economic decision making to consumers affected by addiction, and maintaining this rational economic behavior over time in response to consistently low Price Elasticity of Demand for different drugs among addicted consumers.

❖ ❖ ❖

Notes and References

The research conducted for and referenced in ***New Economic Thinking on Addiction and Legalization*** is current through December 2002.

[1]Note, application of these economic principles may appear intuitive for highly addictive substances, such as heroin, cocaine and methamphetamine, but apply with equal force to less addictive substances, including alcohol. See, e.g., Wagenaar, A., and Holder, H., "Changes in Alcohol Consumption Resulting from the Elimination of Retail Wine Monopolies: Results from Five U.S. States," ***Journal of Studies on Alcohol 56*** no. 5 (1995): 566-572; Watts, R., and Rabor, J., "Alcohol Availability and Alcohol-Related Problems in 213 California Cities," ***Alcoholism: Clinical and Experimental Research 7*** (1983):47-58; Gruenewald, P.; Ponicki, W.; and Holder, H., "The Relationship of Outlet Densities to Alcohol Consumption: A Time Series Cross-sectional Analysis," ***Alcoholism: Clinical and Experimental Research 17*** no. 1 (1993): 38-47; Smart, R., "The Impact on Consumption of Selling Wine in Grocery Stores," ***Alcohol and Alcoholism 21*** (1986): 233-236; Rush, B.; Steinberg, M.; and Brook, R., "The Relationships among Alcohol Availability, Alcohol Consumption, and Alcohol-Related Damage in the Province of Ontario and the State of Michigan, 1955-1982," ***Advances in Alcohol and Substance Abuse 5*** no. 4 (1986): 33-45; Wagenaar, A., and Holder, H., "A Change from Public to Private Sales of Wine: Results from Natural Experiments in Iowa and West Virginia," ***Journal of Studies on Alcohol 52*** (1991): 162-173. Studies applying these economic principles to highly addictive substances are set forth elsewhere.

[2]Throughout this document, references to first time use and first time users are intended to implicate first time purchase and purchasers, since first time use itself may not, in fact, involve a purchase.