

## A note on the economic rationalization of gun control

Vivek Chaudhri<sup>a,\*</sup>, John Geanakoplos<sup>b</sup>

<sup>a</sup>Melbourne Business School, University of Melbourne, Melbourne, Australia

<sup>b</sup>Cowles Foundation, Yale University, New Haven, CT, USA

Received 27 June 1997, accepted 18 July 1997

*Keywords* Demand; Elasticity, Gun control

*JEL classification* D0

Drugs, guns and crime all rank high on the public agenda of social concerns. About 60 percent of all homicides and suicides are committed with guns, as are a third of all robberies, and a fifth of aggravated assaults. In all, guns are used in about 800 000 violent crimes each year. Further, roughly 35 000 Americans are killed each year as a consequence of the homicidal, accidental and suicidal use of guns.<sup>1</sup>

While the connection between gun availability and crime is certainly not lost on members of the community in general, it is interesting to note that the prescriptive policy solutions vary drastically contingent on the particular lobby group proffering answers. We certainly do not contend any deeper knowledge or understanding of these complicated issues, at a sociological level, than the authors of the copious and diverse existing literature, but it may be instructive to analyze the public policy implications of such ideas as gun control and legalizing drugs through the economist's looking glass.

Most of us have an opinion, and freely offer it at dinner parties, on the merits or problems with such policy prescriptions as legalizing drugs, or greater gun controls. What was puzzling to us is the realization that we both support the legalization of drugs and making the ownership of guns far less accessible, indeed illegal. The rationale for this seemingly incongruous response comes from a simple application of basic economic analysis.<sup>2</sup>

Consider the market for guns. Casual empiricism reveals the demand for guns can be divided into three categories: hunting or sporting related demand, personal safety, and criminal activity. Presumably in denouncing the infringement of civil liberties by the state in any attempts at stringent gun control, the anti gun regulation advocates speak on behalf of the first two demand categories and not the third. The right to bear arms has oft been cited as a fundamental, inalienable right of each and every law abiding citizen.

\*Corresponding author Tel : + 61 3 93498144, fax: + 61 3 93498133; e-mail v.chaudhri@mbs.unimelb.edu.au

<sup>1</sup>See Cook, 1991.

<sup>2</sup>Indeed, the idea for this paper came from writing an Introductory Microeconomics exam.

Curiously, the antecedents of the Second Amendment rest on the precepts of controlling Federalism; in particular, enabling balancing powers between the federal government and the states. In fact, to allow citizens a constitutionally protected right to serve in militias ensured the existence of state militias, and as such, a military and political balance between state and federal power.

The National Rifle Association (NRA) has spearheaded the anti gun control forces. It is interesting to note that the NRA's principal membership has embraced the "gun culture" as part of its hunting or sporting ethos. Though the sporting nature of putting 10 rounds of ammunition from a semi automatic assault rifle into a deer is certainly a point of contention, the real substantive anti gun control argument comes on the right to defend oneself against criminal elements wielding firearms. Again, though the Second Amendment is frequently conjured up as the definitive statement on the right to protect oneself, that was not the context in which it was drafted.

Lets examine the personal protection argument a little more closely. It seems like a reasonable conjecture that if one were to poll the members of gangs around the United States, they would favor a situation in which no gang had guns (this would likely raise the life expectancy of gang members).<sup>3</sup> Clearly then, there is an externality effect on the demand for guns. That is, as more people have guns, the demand for guns increases (not only among gang members, but presumably, the perception of the need for protection amongst the general public increases) Conversely, it follows that a reduction in the quantity of guns would have feedback effects in reducing demand further.

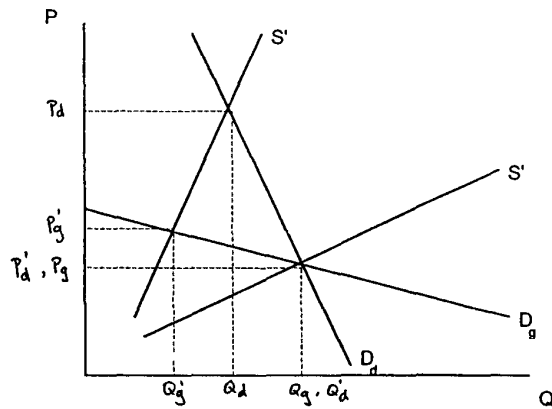
This idea can be formalized as recognizing that the elasticity of demand for guns is very high. So, policy changes that make guns illegal would have the effect of essentially taxing the supply of guns, and could (if penalties for gun running were prohibitively high), make the price of guns on the black market sufficiently high to stifle the demand for guns entirely.

This is a first cut at modeling the issue of gun control. Proponents of the anti gun control movement frequently lament about the fact that given the existing supply of guns, any measures towards gun control would simply put the guns in the "wrong" hands. We live in a society that has children in high schools walking through metal detectors. Clearly, the guns are already in the "wrong" hands. Nonetheless, there is a very real policy dilemma given the existing stock of guns in the economy. Indeed, the next step of modeling may be to recognize the stock versus flow arguments of gun control, and to analyze the market in terms of difference equations. Specifically, what quantity of guns need to be taken out of the economy to validate the policy of making guns illegal.

We have talked about the market for guns in isolation. Of course the guns and drugs markets are inextricably linked and feed directly into the level of crime in society. Our initial observation of favoring legalizing drugs and making guns illegal was validated by the realization that the demand for drugs is relatively inelastic while the demand for guns is relatively elastic. It may be true that making guns illegal and drugs legal are policies that are independently untenable, however, it seems to us that the joint policy implementation must necessarily have a huge effect on reducing crime in the country.

<sup>3</sup>We recognize that this could not be a sustainable equilibrium as each gang would have an incentive to "cheat", but as a first cut it is instructive to abstract away from these concerns in analyzing the demand for guns.

**Appendix A**



Let  $S'$  be the supply of drugs (or guns) when they are illegal, and  $S$  be the supply of drugs (or guns) when they are legal.  $D_g, D_d$  denote the demand for guns and drugs respectively. Then the situation at present is  $[(P_g, Q_g), (P_d, Q_d)]$  where  $P_g, P_d, Q_g,$  denote the price of guns, price of drugs, and the quantity of drugs respectively. Now, legalizing drugs, because of the relatively inelastic demand schedule only increases quantity demanded to  $Q'_d$ , while making guns illegal greatly decreases demand (to  $Q'_g$ ).

**References**

Cook, P, 1991. The technology of personal violence. In Tonry, M (Ed.), Crime and Justice: A Review of Research University of Chicago Press