

# Comments on Naci Mocan and Kaj Gittings' paper: The Impact of Incentives on Human Behavior: Can we Make it Disappear? The Case of the Death Penalty

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Presented at the Conference on Crime, Institutions and Policies

Universidad Torcuato Di Tella

Buenos Aires, Argentina

November 29, 2007

The objective of the paper is to show that the death penalty works as crime deterrent. Specifically, to show that potential murderers respond to incentives in such a way that when the probability of being executed increases, the homicide rate decreases.

This idea is based on an economic approach to crime in which the probability of being punished is interpreted as the "price" of crime. Thus, when its price increases, crime should decrease.

A model of individual decision making indicates that individual  $i$  commits a crime if his/her expected utility with crime is greater than his/her expected utility without crime:

$$EU_i(\text{Crime}) > EU_i(\text{No crime}).$$

Thus, the probability that a crime is committed by individual  $i$  is

$$\Pr_i(\text{Crime}) = \Pr(EU_i(\text{Crime}) > EU_i(\text{No crime})).$$

Hence, the determinants of the probability of committing a crime are the determinants of the expected utility with and without crime for individual  $i$ . Among these, the punishment and the probability of being punished are of interest for this paper. Of course, an increase in any of those variables decreases the expected utility with crime, which implies, according to the theory, that it should also decrease the probability of committing a crime. This is the basic idea behind the economic theory of crime, which the authors intend to test empirically for the particular case of the death penalty.

The main question here is how to do the empirical work.

The probability of being punished that is used in the theoretical model of individual choice depends on individual characteristics like age, race, income level and is an estimation individuals make based on available information like the existing law, the perceived efficiency of the judicial system, and maybe learning from own experience. Hence, the theoretical model is consistent with subjective probabilities of being punished that individuals form.

The central question in this empirical literature is to understand which variables should be used as proxies of this subjective probability of punishment, especially when facing aggregate data.

The case of the death penalty, analyzed in this paper, is particularly controversial, because, as the authors acknowledge, it evokes strong feelings due to political, ideological, religious, moral and other personal beliefs. It is for this reason that a paper that deals with the death penalty as an incentive to potential criminals must be very rigorous in the way the variables are constructed, so that it is clear that the results are independent of those feelings.

The debate is about the choice of the variables that should be used in the empirical work to measure the probability of being executed.

Mocan and Gittings in their 2003 paper use the execution rate, the commutation rate and the removal rate as several proxies that affect the probability of being punished with the death penalty. They argue that for the homicide rate in period  $t$ , the relevant variable is executions in period  $t - 1$  over sentences in period  $t - 7$ , with the argument that the average duration from sentencing to execution is about 6 years.

Donohue and Wolfers in their 2006 paper argue that any truly meaningful assessment a potential murderer makes is likely to be based upon the most recent information available to him/her and conclude that the relevant variable to explain the homicide rate in period  $t$  is executions in period  $t - 1$  over sentences in the same period.

It is a priori difficult to say that one measure is better than the other one, since they are both proxies of what potential murderers interpret as the true probability of being executed.

Likewise, another possibility that is not considered by any of these papers is to think about potential criminals as forward looking individuals. What a criminal really cares about is the probability that he/she will be executed, which will happen on average 8 years from the moment the crime is committed, according to the data presented on the paper. So, why not consider executions in period  $t + 8$  over sentences in period  $t + 2$ ? This would be like rational expectations and it represents the “true” risk of being executed if I murder somebody in period  $t$ .

Or maybe, potential criminals consider all the information available up to date  $t$  and not only the last point observation. Maybe we want to consider an average of all past execution rates as our proxy or just use all the available lags or anything that takes into account all the information.

It could also be that none of those variables is really good the measure what potential murderers perceive as their probability of being executed. The case of Texas may be interesting to illustrate this. Indeed, the authors show that the execution rate in Texas is not the largest in the US. It actually ranks 4th in the author’s sample. Yet, before knowing the true data, one has the impression that the risk of being executed in Texas is far above other states. The reasons may be that Texas executes more convicted than other states or that cases in Texas have more publicity or things like these that make executions in Texas more visible. Thus, it seems that the objective (“true”) probability of being executed is different from individuals’ estimations of it.

My feeling is that the main problem of all this literature (not exclusive of this paper) is that the choice of proxies is very subjective. Since the true data (subjective probabilities) are not available, one can build arguments to use virtually anything as a proxy. Hence, personal beliefs end up having a huge impact on the answer of the scientific question, through the choice of the relevant proxy. In this respect, one thing that the authors do in this paper is to try with an enormous set of different variables to show that all measures that they (or others) have thought of give the same result, namely, that potential criminals respond to incentives. This is a plus of this paper. However, it is still unexplained why not all the variables that affect the probability of being executed are significant, even in the estimations that, according to the authors, are consistent with the theoretical model. In particular, why is that the probability of being executed conditional on having received a death sentence is significant but the probability of receiving a commutation conditional on the death sentence is not? Maybe the reason is that for some people the idea of spending of their lives in prison is almost as bad as being executed.

In any case, I doubt the most relevant question is whether the death penalty has deterrent effects. I believe in incentives, so I’m not surprised by the finding that the death penalty has a deterrent effect. I think the real contribution of all this empirical literature should be to help policymakers choosing the best instruments (in a cost-benefit perspective) to deter crime. In this respect, I think a nice thing to do would be to compare the effect of the death penalty on the crime rate with the effect of other types of

punishment, like life sentences without parole. This may be beyond the scope of this particular paper, but it would surely contribute to the debate of the real issue at stake: what the most effective incentives are.