

Economic Analysis of Capital Punishment

Capital punishment refers to the usage of a legally authorized execution as a form of punishment for a crime. When studying the death penalty, economists evaluate whether the benefits it may bring as a deterrent outweighs the state costs of implementing the system as opposed to life imprisonment. Many studies have been conducted on the death penalty, but there are limitations due to the inability to establish clear quantitative figures that demonstrate a deterrent effect. Most researchers have unanimously agreed that the estimations of the marginal costs of capital punishment show heavy costs associated with the death penalty, ranging from pre-trial to post-trial fees, that far surpass that of life imprisonment. However, researchers are divided on the issue of the marginal benefits, specifically on the deterrent effect, due to the lack of irrefutable statistical data and mixed results from regression models. As such, the economic analysis of capital punishment suggests that it may not be a cost-effective program because the societal costs are high for deterrent benefits that are not definitively present.

Background

Throughout history, the death penalty has been enforced for crimes including espionage, treason, and murder by almost all major countries globally (Kasten 1996). Presently, the United States is the only Western country that still has the death penalty implemented in 31 out of 50 states (Death Penalty Information Center 2016). However, now it is mainly reserved for criminals that were convicted of murder, which is the premeditated unlawful killing of another human. The death penalty is utilized under the justification that murderers should be executed for retributive reasons as they should suffer and life imprisonment is not a sufficient reprimand for the crime of ending a life (Radelet and Akers 1996). The main function of capital punishment is to serve as a

deterrence for potential murderers to be discouraged from committing heinous acts and preventing the deaths of future victims. The assumption is that people will fear death, especially as a scheduled execution. However, there are seldom any executions performed because of the severity of the punishment. In the United States, there was a total of 28 death row inmates executed in 2015 and 18 thus far in 2016 (Death Penalty Information Center 2016). Therefore, many economists study the subject to determine whether it is actually cost-effective given that it is only implemented at an extremely low rate and is an extreme alternative to life imprisonment.

When studying capital punishment from an economic standpoint to determine the allocative efficiency of the program, economists first look at the associated marginal costs and benefits. The marginal cost is derived from measuring the difference between a murder trial fee where the maximum penalty is life imprisonment and a trial where the death penalty is sought. The marginal benefit is the difference between life imprisonment and capital punishment which is mostly from the deterrent effect. In order to be deemed efficient, the marginal benefits of capital punishment must outweigh the marginal costs when compared to the alternative punishment of life imprisonment.

Since the conception of capital punishment, there have been many philosophical and ethical debates over if it is a just and efficient penalty. For the purpose of an economic analysis, the normative issues associated with capital punishment will not be assessed, including morality and equity, although they are relevant to study to overall effects of the policy. It is not possible to empirically determine whether it is a right or wrong practice as it is more of a subjective moral question. However, separate research can be conducted to determine whether capital punishment does deter criminals and whether the cost of the program is justified based on the deterrent benefits. This research would be independent of any moral considerations and focus primarily on

the magnitude of the deterrent effect of the death penalty to determine its desirability as a social instrument.

Evidence of Deterrence

Capital punishment requires a mandatory trade-off of lives that the State has to take into consideration when granting government sanction to execute. The execution of a murderer could mean potentially saving the lives of future victims. The economic benefits for executing a murderer are that societal protection costs decrease overall and the production from potential victims for their working lives would contribute to society (Kasten 1996). When measuring the deterrent effect of the death penalty, the effectiveness results from the number of possible individuals who are saved due to the implementation. As the exact numbers are impossible to obtain because deterrence would refer to murders that are not committed, research can only utilize estimations to form subjective figures.

The deterrence hypothesis states that potential criminals will weigh the benefits and costs before committing a crime so if the anticipated punishment is severe, they will not partake in the act (Kasten 1996). This theory makes the assumption that criminals are utility-maximizing and rational decision makers that will choose conduct that will maximize benefits and minimize costs (Gerber 2014). Applications of economic theory have shown empirical evidence that supports the hypothesis that criminals respond to incentives and punishments deter them from committing some crimes (Ehrlich 1975). Convicted criminals have been shown to universally prefer life imprisonment to the death penalty which suggests that it is the harshest form of punishment. As such, the incentive to avoid execution should serve as a form of deterrence from murder.

In the 1970s, the economist Isaac Ehrlich was the first to discover evidence of a significant deterrent effect of capital punishment in the United States. His research estimated that from between 1933 to 1967, each execution prevented eight homicides on average (Ehrlich 1975). Ehrlich's research reexamined the homicide and execution statistics between that time period along with social factors such as unemployment and per capita income (Lamperti 2010). He then established a mathematical model that compared murder rates to the social variables and execution rates. This multiple regression model revealed a slightly negative correlation which Ehrlich stated was evidence of the trade-off between executions and murders (Lamperti 2010).

There were several economists that concurred with Ehrlich's findings and believed in the deterrent effect of the death penalty. Hashem Dezhbakhsh of Emory University conducted a judicial experiment to analyze the murder and execution rates in the United States from 1960 to 2000. Figure 1 shows that between this time period, the two trends move opposite to each other which suggests that there are patterns of correlation. More comparative results were also seen in the one-year window before and after a moratorium was lifted or imposed with the annual murder rate jump of 9.3% or fall of 8.3% respectively (Dezhbakhsh and Shepherd 2003). His results conclude that there are indications of capital punishment exhibiting a deterrent effect in capital crimes.

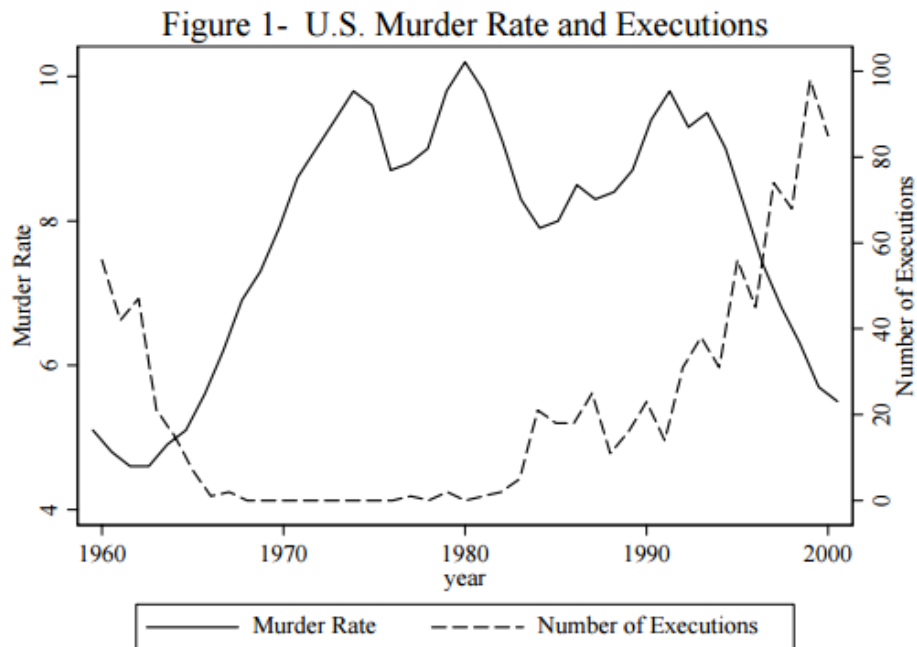


Figure 1 – U.S. Murder Rate and Executions (Dezhbakhsh and Shepherd 2003)

The current system of capital punishment only allows for a small percentage of death row inmates to actually face execution each year. Due to the legal requirement of allowing convicted murderers to file for multiple appeals, the percentage of convictions to executions was only 1.2% of 2,575 death row criminals in 1992 (Kasten 1996). Some economists argue that the deterrent effect of the death penalty would actually be far more evident if there were a few changes made to the current implemented system (Radelet and Akers 1996). If the delays to execution were shortened, then death following a conviction would have a shorter time frame which would cause more fear. Additionally, if capital punishment had a strict guideline for applicable cases rather than based on the prosecution's charges, people would understand that death is inevitable for certain crimes (Becker 2006).

Arguments Against Deterrence Effect

As Ehrlich's research was the first to point towards a correlation between the death penalty and reduced murder rates, it was heavily scrutinized by economists. Peter Passell and John Taylor experimented with Ehrlich's model and found that the negative relation disappeared if minor changes were made to the data (Lamperti 2010). When they simply changed the time frame for the data, there was no longer any evidence of a deterrent effect which is why they discount Ehrlich's work and any valid inferences that could be made from it. Further research from other economists concurred with this statement through the usage of comparative research, time-series studies, and immediate impact studies.

In terms of long-term deterrent effects, comparative research matches the murder rates between non-capital and capital states. Research conducted by the Capital Punishment Research Project and the New York Times in 1994 showed that there is no empirical difference between murder rates in Texas versus New York (Kasten 1996). Time-series studies similarly look at the long-term trends as executions should be followed by periods of decreased murder. However, the number of murders in New Jersey before and after the death penalty was removed in 1982 also showed no signs of decrease (Kasten 1996). Additionally, it was noted that a lot of Southern states that still have capital punishment enacted had the highest murder rates in the country. While the empirical evidence points towards no significant deterrent effect as suggested, there are three possible explanations for the discrepancy. The first is that murderers are rational decision makers, but may just enjoy killing so that they do not believe the marginal cost of getting caught outweighs the utility gain of the thrill. A second possibility is that murderers are simply not rational and do not act in a utility-maximizing way so they would not be subject to any deterrent. The third explanation is also the most plausible in that murderers do not consider the impacts of their actions

and simply act spontaneously in a crime of passion (Kasten 1996). These three reasons can help to explain why there is an inconsistency in no empirical evidence of a deterrent effect on murderers. However, many economists have seen questioned why there is a lack of difference between murder rates in capital and non-capital states that exhibit similar social and economic conditions as it suggests that deterrence is not significant if any (Lamperti 2010).

Immediate impact studies were conducted in analyzing the short-term deterrence immediately following a publicized execution to determine if murder rates decreased from fear. The reasoning was that there could be evidence of a deterrent effect in the period following an execution if potential murderers were truly deterred. However, a study conducted in 1935 by Robert Dann analyzing the homicide trends in the 60-days before and after five publicized executions in Philadelphia demonstrated no supporting evidence of a deterrent effect (Lamperti 2010). In fact, he noted that the murder rates actually increased which was contradictory to the research done by Dazhbakhsh and Shepherd. A similar study conducted twenty years later by Leonard Savitz also did not yield any evidence of a significant difference in homicide rates after an execution (Lamperti 2010).

Some economists go beyond an opposition to the death penalty by suggesting that it not only does not deter murders but actually incites it in some cases. There are situations in which the offender wishes to attempt suicide by capital punishment so they kill. Another possibility is the brutalization hypothesis that states that capital punishment encourages murder by legitimating the act of killing enemies (Lamperti 2010). However, these alternative theories also lack statistical evidence and are not conclusive aside from anecdotes.

Three types of studies have shown that there is a lack of empirical evidence supporting the deterrent effect as there are no significant changes to homicide rates either between capital and

non-capital states or within states that outlawed or enforced the death penalty. As such, a lot of economists agree that general murder rates are not responsive to capital punishment, but suggest that further research into the types of murders could yield some supporting evidence. The only conclusive statement that can be made in terms of the deterrent effect are that if there are any, it has a small magnitude and could go in either direction of deterring or causing murders (Lamperti 2010).

Cost-Effectiveness

The costs of the death penalty are quite high as they begin incurring from time of investigation to the burial. The State must pay for all the fees associated with each execution which are included in the analysis of whether capital punishment is an efficient system. The total costs of a capital case total an average of \$2.16 million to \$5.44 million varying on the results from four separate studies in different states (Kasten 1996). This causes states to incur additional annual costs that could range from \$14.5 million to \$141 million from death penalty cases. The high costs are caused by the fact that the Supreme Court of the United States recognizes capital punishment as severe and irrevocable so a heightened level of due process is enforced (Spangenberg and Walsh 1989). Therefore, in order to bring a murder case to trial, there are court system fees to consider for pre-trial research, lawyers, jury selection, motions, depositions, court reporters, appeals, and other miscellaneous costs (Kasten 1996).

In terms of pre-trial costs, aside from lawyer fees, the largest charges come from police investigations. In order to obtain a death penalty conviction, prosecutors and police must work to ensure that all evidence is gathered and there is no shred of doubt that the person committed the murder. As the jury have an accused person's life on their hands, they must be convinced that the

defendant is the murderer and that the killing was gruesome enough to warrant a death sentence. To pursue a death penalty conviction, the investigation is conducted above standard with no room for incompetency so extra personnel are assigned to the case. Investigators could cost \$50 an hour for 200 hours of work for one capital trial which amounts to \$10,000 total extra per case (Kasten 1996).

Trial costs are exorbitant as the stakes are higher so both defense and prosecutors will want to ensure that they present their case as convincingly as possible by utilizing all resources and exhausting all legal options. This begins in voir dire as jury backgrounds are explored more in depth to ensure fairness and impartiality. A study done in California in 1991 showed that jury selection in capital cases took 5.3 longer which costs \$120,433 more than other cases (Kasten 1996). Litigation is also extensive because there is more scrutiny on arguments and more expert witnesses are brought in including medical examiners, polygraph experts, or eyewitness experts. Often times, the defense will attempt to utilize diminished capacity or insanity as a defense which requires psychiatric evaluations from both sides to refute the opposition (Spangenberg and Walsh 1989). The study also demonstrated that capital cases are 3.5 times longer with 30 extra trial days which costs \$90,325 more. The sentencing period for a capital crime requires a separate trial due to the irreversibility of capital punishment. The defense presents mitigating factors while the prosecution presents aggravating factors to prevent or push for a death penalty imposition respectively. The total extra costs of the entire trial and sentencing could range from \$45,099 to \$146,196 according to two different studies conducted by Von Drehle in 1988 (Kasten 1996).

Post-trial costs are also sustained as even after a death penalty is imposed on a criminal, due process requires that they are entitled to a series of appeals. These appeals also incur high lawyer and court fees that range from \$87,041 to \$200,440 total. Additionally, the average time a

criminal spends on death row is eight years as execution may not take place until the appeals process is exhausted. (Spangenberg and Walsh 1989). This means that costs are incurred by the state for the maintenance and staff of the maximum security prison which is estimated to be \$922, 682 annually in Kansas (Spangenberg and Walsh 1989). Additionally, if a death sentence still stands after various appeals, there are still execution costs to consider. This includes the fixed cost of a death chamber and the variable costs of round-the-clock watch, last meal allowance, executioner fee, medical profession fee, and funeral cost. Although these fees only amount to a few thousand dollars, it is still an additional financial burden placed on the state (Kasten 1996).

There are also costs from foregone output associated with a death penalty case. The inmate would no longer be working as part of their prison duties which is lost productivity and jurors would have to take more time away from their professions so there would be a reduction in performance. Additionally, there have been cases of falsely convicted individuals that were wrongly executed which would also be a loss in productivity for society.

The costs associated with the death penalty are extensively high considering the fact that despite the state extending all resources, there is no guarantee of an execution. Throughout the process, there are four alternative outcomes that could arise that would not result in a death penalty conviction. The defendant could be found innocent; guilty, but not with a capital punishment penalty; guilty, but overturned by appeal; or guilty, but granted clemency by the governor. The likelihood of a death penalty actually being executed is extremely low as even 30%-50% of death sentences are overturned by appeal ultimately according to studies (Kasten 1996).

The alternative punishment of life imprisonment is significantly less in terms of post-trial fees as the estimated annual cost of housing an inmate in New York is \$15, 050 or \$602, 000 for forty years (Spangenberg and Walsh 1989). In fact, the pure cost of execution in California was

\$600, 000 whereas the annual housing cost of a prisoner was \$14, 254 (Spangenberg and Walsh 1989). Given the high estimation of marginal costs associated with the death penalty from pre-trial to post-trial, research suggests that it is not an efficient program for society. However, while the efficiency cannot be determined definitively, it is clear from the quantitative figures that it is definitely more expensive compared to the housing costs of life imprisonment.

Conclusion

Research conducted in the study of capital punishment is limited due to the inability to accurately measure the quantitative figures associated with all the marginal costs and benefits. The main benefit of the death penalty is the deterrence it imposes on potential criminals to realize that the punishment outweighs the crime. The deterrent effect is extremely difficult to quantify because it refers to murders that are not committed as a result of the death penalty which cannot be definitively calculated. As such, research into the deterrent effect has yielded mixed results from different economists who either support or argue against capital punishment as there is no way to prove that the effect is non-existent. Alternatively, the state costs associated with the death penalty is more quantifiable and has shown to incur fees far greater than those from a non-capital murder case. Further investigation would have to be conducted to draw more quantitative data on deterred homicides before a definitive statement can be made regarding capital punishment. Based on research at hand, it can be concluded that there are high marginal costs for capital punishment and not sufficient marginal benefits evidence that would suggest that the death penalty is cost-effective.

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