

## Should Arrest and Incarceration Costs be Included as Part of the Cost-Benefit Analysis?

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Whether to include arrest and incarceration costs depends on one's perspective. The most basic approach would be to evaluate the impact directly on the police department budget in isolation. In this case, the relevant costs would only include the additional salary/materials that go into supporting the program, and the benefits would arise from declines in criminal activity that allow the department to save resources down the road.

Another less narrow approach would be to optimize the overall local public budget. In this setup, one would need to care also about the potential impacts to non-police departments and the corresponding effect on total public expenditures. For instance, if the policing intervention achieves all of its crime reduction goals through incarceration, which would require additional expenditures at the Department of Corrections, the total impact to public budgets may no longer be justifiable based on the observed reductions in crime. Taking this perspective though requires overcoming serious issues of political economy. Imagine for instance that a costly police intervention reduced a county's reliance on incarceration, how easy would it be to convince a Department of Corrections accept the necessary budget reduction to support the additional funding for the police program?

Academics typically consider a third perspective: that of the social planner problem which attempts to maximize social welfare. In the planning problem, we care more broadly than simply the impact on a governmental budget constraint. We assign value to the social costs of crime, compare that to the expenditures required to achieve that reduction and evaluate any other potential benefits and costs that accrue as a result of the program.

Assuming this third perspective, any intervention, policing or otherwise, that aims to affect arrest rates would be incomplete without accounting for the total costs associated with engagement in the criminal justice system. After arrest, individuals may be charged in courts, may end up detained in a jail or prison and could have long term contact with a parole or probation system. Each of these points of contact use up finite public resources and may generate other costs to society.

Before proceeding, I want to define and emphasize two distinct, important concepts:

- (1) *Marginal individuals*: a person for whom the new policing policy would generate a new arrest outcome
- (2) *Marginal costs*: the additional resources required to serve the marginal individuals on top of an existing caseload

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Without making any form of value judgment, some individuals will end up involved with the police regardless of whether Ridgemont adopts the proactive enforcement initiative. Likewise, some individuals will not interact with police no matter whether the initiative is rolled out. Putting these populations aside, the remaining “marginal individuals” are those who are on the bubble of becoming involved in the criminal justice system solely as a result of the introduction of the proactive enforcement.

Defining marginal individuals introduces the concept that an existing caseload may or may not be representative of the individuals impacted by an incremental change in policy. For instance, in the example of pro-active enforcement a disproportionate share of individuals stopped by the proactive patrol unit were minority drivers. Stopping minority versus white motorists likely generates different types and magnitudes of costs and benefits. And since the marginal population is not representative of the average population, using cost estimates based on non-marginal caseload could be very misleading.

One simplified yet concrete example would be to consider the expected administrative costs of incarceration from the hypothetical intervention. To know how to cost this out, one would need to know both the probability that a marginal individual is convicted/sentenced to incarceration, the average sentence length that would be received and how costly that sentence would be to accommodate. Putting aside the issue of how to cost out the sentence, in the hypothetical example it appears that contraband hit rates actually were lower for marginal individuals than typical stops. As a consequence, the incarceration rate would likely be lower than the average incarceration rate as well. If one were to use the average incarceration rate in the pre-period and apply that to the total number of new arrests, it would grossly overestimate the amount of additional institutional costs generated as a result of the policy.

The second issue at hand is determining how to cost out the involvement in the criminal justice system which brings me to the idea of marginal costs. Conditional on identifying the relevant population, marginal costs refers to the additional resources required to serve the marginal population on top of an existing caseload. Marginal cost is a distinctly unique concept relative to average cost, and how to think about it depends on the scope of the intervention.

Let's propose that the operating budget of the Ridgemont Sheriff's detention program is \$150,000,000 per year and it houses 5,000 inmates who each are serving a one year sentence. From this, one could state that a year of detention had an average cost to government of \$30,000. But, what if the population increased to 5,001 inmates? Would total costs increase to \$150,030,000? Probably not given that there are fixed costs being shared across the total population of inmates. The idea of marginal costs seeks to isolate exactly what the additional cost would be if another individual was added to an existing caseload. With just one additional inmate, its marginal costs are likely much lower than average costs.

But, if the policy might shift the caseload from 5,000 inmates to 7,500 inmates additional costs would arise. New staff would need to be hired and trained, and

existing facilities would either need to be reconfigured or new structures would need to be built. Depending on the horizon over which these fixed costs are being amortized, it is possible that the marginal cost of the intervention could be substantially higher than the pre-existing average cost (at least in the short run).

With these definitions in mind, I consider the overall benefits and costs divided between several distinct categories in order to put structure into this exercise. Consider the following four categories:

- (1) **Administrative impacts.** Administrative impacts refer to the costs and benefits that arise due to changing the probability of entering, and corresponding experience in, the broadly defined criminal justice system. These include expenses that go into administering a public program (e.g., materials, salaries, facilities costs, etc.).<sup>2</sup>
- (2) **Individual social impacts.** Individual social impacts refer to the changes in individual behavior that arise as a consequence of the intervention. Criminal behavior may decline as a consequence of general/specific deterrence or incapacitation - a clear benefit to society of an intervention. Crime could also increase if the intervention (or the resulting incarceration) had a criminogenic effect - a cost to society. Labor market performance and take-up of public assistance programs may also change creating further societal impacts.
- (3) **Extended social impacts.** The consequences at the individual level may have extended reverberations throughout one's household and community. Although we do not have well-defined ways to measure these costs, it is not unreasonable to think that if an intervention resulted in a parent's incarceration that long-term impacts would accrue to their significant other and/or their children.
- (4) **Caseload externalities.** Yet still harder to quantify, but important to acknowledge, is that any intervention that increases entry into the criminal justice system without a corresponding increase in investment to accommodate the larger caseload may result in congestion costs borne by the overall caseload. In the context of the courtroom, this could translate into more plea deals in order to reduce the time spent per case. In the context of a jail or prison, this could show up as generalized overcrowding. Both of these types of changes may erode the functioning of these institutions and worsen outcomes in a more generalized fashion (beyond

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<sup>2</sup> An unresolved question in my mind is whether in this exercise some administrative costs should be thought of as true costs or as simply welfare-neutral transfers. For example, eliminating a Department of Corrections officer's job will free up expenditures but also generate welfare losses if this individual does not find re-employment. How this is valued is not entirely clear to me. Another perspective to take would be to think about the differential rate of return to society of re-employing the DoC officer in a more welfare-improving job (e.g., teacher). Although I believe either these would be more consistent from a theoretical perspective, they present serious feasibility issues and so I stick with common practice in the literature of counting these administrative impacts as true costs.

just the marginal population).

Attempting to not only estimate these impacts, but do so for the *marginal* population is a challenging if not partially infeasible endeavor. In a very precise cost-benefit calculation, the affected population and the corresponding magnitude of the costs will be specific to the actual intervention being proposed. Given sufficient evidence, it might be possible to build out an expectation of the anticipated costs, but the number of studies that credibly tackle this question are limited.

Some work has sought to quantify the measurable welfare impact of incarceration. Mueller-Smith (2015), for example, provides rough estimates of the social cost of a year in prison (excluding the potential benefits of general deterrence). An important caution though if one were to plug in those estimates is that it is critical to avoid double counting impacts. In particular, if the effects on crime rates are measured directly, such impacts should be excluded from the costs of the rest of the criminal justice system.

Another important point: as incarceration becomes a larger part of the total intervention, the timing of costs and benefits matters deeply. Several studies show that, in spite of ample evidence of an incapacitative effect of incarceration (i.e., preventing crime while individuals are incarcerated), over a sufficiently long follow-up horizon (i.e., long enough to include sufficient post-release data) the net impact might go in the opposite direction and interventions that increase incarceration may generate more than less crime in the long-run. As a consequence, measuring the impact of the policing intervention on crime rates using a short follow-up window may tend to overstate the benefit of the intervention.