



ANALYSIS OF POTENTIAL COSTS AND BENEFITS OF ILLINOIS HB2265/SB2267:  
SENTENCE ENHANCEMENTS FOR UNLAWFUL USE OF A WEAPON (UW) OFFENSES<sup>1</sup>  
October 7, 2013

## I. OVERVIEW

Illinois House Bill 2265 (Senate Bill 2267) provides for increased sentence enhancements for unlawful use of a weapon (UW) offenses. While the University of Chicago Crime Lab does not take political positions, including offering views about specific pieces of proposed legislation, we do believe it is important for policymakers to have as accurate a sense as possible for the potential costs and benefits associated with new legislative proposals. In section II of this memo we document the role that illegal gun carrying plays in contributing to the violence problem in Illinois, and in particular in the state's major urban centers. For example in the city of Chicago, the vast majority of homicides are committed with guns in public places, suggesting that illegal gun carrying is a proximate cause for most homicides that happen in the city. In Section III we consider what existing evidence can tell us about the potential costs and benefits to the state of Illinois from the proposed legislation.

The most obvious concern with any new mandatory minimum proposal for any type of criminal offense is the possibility of increasing the number of people in jail or prison, which in recent years has been at historically high numbers in the United States as a whole. Some analysts have estimated the costs of the legislation to be the number of people currently convicted of UW multiplied by the expected increase in time behind bars that would result from the new legislation. The best available evidence, however, suggests that the true costs associated with the legislation are likely to be lower than this figure – perhaps substantially lower – because of the expected deterrent effect of more consistent punishment for UW cases on the propensity of Illinois residents to carry guns illegally. This last point raises the larger issue that any assessment of the new legislation must consider the potential public safety benefits, not just the cost side of the ledger. Section III provides estimates for the number of crimes that may be prevented by the proposed bill, as well as the dollar value of the social costs associated with those crimes and how they compare to the estimated effects on the DOC budget. Section IV closes with a discussion of some caveats and limitations to our analysis.

## II. ILLEGAL GUN CARRYING AND GUN VIOLENCE

A total of 500 people were murdered in the City of Chicago for 2012 according to the FBI, which accounts for a disproportionate share of all homicides in the state of Illinois. Nearly one-third of homicide victims were between the ages of 10 and 25 for all of the United States (FBI 2012). The overwhelming majority of all murder victims in the state (86%) were killed by gunfire—429 victims (84%) by handguns alone. Previous social science research also makes clear that gun involvement greatly increases the lethality of inter-personal violence (Zimring, 1968, 1972, Zimring and Hawkins, 1997, Cook, 1991, Cook et al 2013). Most (77.1% in 2011) murder victims in Chicago are found

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outdoors, a percentage which has risen steadily since 1991 (38.7%) (Chicago PD 2011). Of those Chicago homicides where police can make a determination of the motivation, fully 70% are believed to have stemmed from an altercation (Chicago PD, 2011).

These data suggest a pattern to much of the gun violence that occurs across the state of Illinois: An argument in some public place turns deadly because someone – often an impulsive young person – has a gun ready at hand. Strategies that were capable of deterring illegal gun carrying could help reduce the lethality of violent crime. As Lawrence Sherman, Wolfson Professor of Criminology at Cambridge University (UK) noted, “To the extent that homicide frequently occurs spontaneously among young men in public places, it is the *carrying* of firearms, rather than the ownership that is the immediate proximate cause of criminal injury” (Sherman, 2000).

The harms of this gun violence fall disproportionately on the most economically and socially vulnerable residents in the state of Illinois. More than three-quarters (75.3%) of murder victims in Chicago were African American, far higher than the share of all city residents who are African-American. Gun violence is also very disproportionately concentrated in the most economically disadvantaged communities in the state, including the south and west sides of Chicago. Offenders are concentrated in the same disadvantaged groups as their victims. Currently, more 20 to 34-year-old African American men without a high school diploma are incarcerated than employed. By the time they are in their mid-thirties, 68% of African American male high school dropouts will spend at least some time in prison (Western and Pettit, 2010.) To the extent that a large portion of gun violence is most often a spur-of-the-moment reaction, then given the severe penalties associated with violent gun crimes, keeping a gun out of a young male’s hands can save more than one life. One important way to reduce the over-representation of disadvantaged groups in prison is to reduce prison sentences for selected crimes, particularly those that do not pose a direct threat of violence to the public. Another way to reduce the prison population is to prevent seriously violent crimes of the sort that most people agree merit serious prison sentences.

This raises the question of whether it is indeed even possible to deter criminal behavior through the threat of punishment. This is a question that has been the subject of considerable debate within criminology for decades. However in recent years there has been a growing body of research suggesting that the threat of swift, certain sanctions can indeed deter crime. These sanctions need not be draconian, so long as they are delivered swiftly and consistently. For example, in Hawaii HOPE Probation (Hawaii’s Opportunity Probation with Enforcement) was launched in 2004 as a pilot program intended to reduce probation violations of drug offenders and others at high risk of recidivism. Probationers in HOPE Probation received immediate and predictable sanctions for each violation of probation, such as missed appointments with a probation officer or drug use. Sanctions were not draconian - typically a few days in jail at most. Compared to probationers in a control group, HOPE probationers were, after one year, 55% less likely to be arrested for a new crime and 72% less likely to use illegal drugs (Hawken and Kleiman, 2009). Importantly, despite the increased threat of short jail stays, the total amount of time behind bars declined for those assigned to Hawaii HOPE. The intervention successfully deterred misbehaviors that led so many people in the control group to have their probations violated.

While Hawaii HOPE provides compelling evidence that illegal drug use can be deterred through swift, certain punishments, does the same hold true for decisions to carry guns illegally? We believe the answer is probably yes, based partly on studies that were conducted many years ago of a previous policy in Massachusetts: the Bartley-Fox amendment, which was enacted in 1975, created a mandatory

one-year minimum prison sentence for carrying a firearm without a permit. Beha (1977) suggests that this policy of increased certainty of punishment for illegal gun carrying helped deter criminal gun use (see also Cook, 1980). A more current study by Cohen and Ludwig (2003) of a different intervention, anti-gun police patrols in the city of Pittsburgh, also finds evidence consistent with a large deterrent effect on illegal gun carrying from increased certainty of punishment.<sup>2</sup>

One challenge in at least some parts of Illinois at present, such as Cook County, is the variability or inconsistency in punishment for UUW cases within the court system. A 2011 analysis by the Chicago Sun-Times of sentences handed down for gun possession in Cook County found that while nearly 75% of defendants were sent to prison, 14% received probation, 6% received boot camp, and 4% community service (Main 2013). A Chicago Tribune analysis of people charged with UUW near Cornell Square Park between 2008 and 2012 found that 60% received probation (Sweeney, 10/1/13). Any measure capable of reducing this variability and increasing the consistency or certainty of sanctions would be expected to help reduce gun carrying through deterrence.

### III. POTENTIAL COSTS AND BENEFITS OF NEW LEGISLATION

The starting point for our analysis of the potential costs and benefits of HB2265/SB2267 is the excellent initial analysis by the Illinois Sentencing Policy Advisory Council (SPAC).<sup>3</sup> This sort of data-driven effort to estimate the societal consequences of new legislation is extraordinarily valuable for informing public policy decisions.

SPAC performed a retrospective analysis of data from 2010-2012 on arrests, sentences and convictions for UUW cases.<sup>4</sup> SPAC assumes an average marginal cost per person per year of incarceration equal to \$21,600. Given their analysis of how times served would change under the new proposed legislation, they estimate that DOC costs for the years 2010-12 would have increased by \$394,195,572 had the

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<sup>2</sup> Cohen and Ludwig (2003) study the effects of stepped-up anti-gun police patrols in Pittsburgh. The goal of the patrols is to increase the likelihood (certainty) of punishment for carrying a gun illegally in public places, which as noted above is a precursor to the majority of all shootings in Chicago. The unique aspect of Pittsburgh's program is that the police patrols were launched on some days of the week (Wednesday through Saturday, "on days"), but not others (Sunday to Tuesday, "off days"), in some neighborhoods of the city ("treatment areas") but not others ("controls") for a defined period of time. This allows for an unusually strong quasi-experimental evaluation by comparing how the difference in rates of gun violence between on and off days changes in the treatment versus control areas during the period when patrols go into effect versus when they were not in place. The study found that shots fired declined by perhaps as much as 34 percent and hospital-treated assault gunshot injuries declined by 71 percent. These reductions most likely reflect the effects of deterrence against illegal gun carrying and misuse, rather than merely incapacitation (arresting and taking criminals off the street), because the number of guns confiscated as a result of the patrols was fairly modest.

<sup>3</sup> SPAC "HB2265/SB2267 SENTENCE ENHANCEMENTS FOR UNLAWFUL USE OF A WEAPON (UUW) OFFENSES." [http://www.icjia.org/spac/pdf/HB2265\\_SB2267\\_SPAC\\_Analysis.pdf](http://www.icjia.org/spac/pdf/HB2265_SB2267_SPAC_Analysis.pdf)

<sup>4</sup> SPAC notes that over this period there were 3,546 convictions over this three year period for UUW (720 ILCS 5/24-1.1), of whom 475 were given probation (13%), 768 were first-time offenders (22%) who served an average of 0.97 years in DOC, and 1,832 (52%) were second offenses who served an average of 1.3 years. (Figures do not add up to 100% because of plea bargains, sentences for other offenses that were part of the initial arrest, dismissed charges, or cases that were not yet disposed of at the time of the SPAC analysis). Over this period, another 3,910 people were convicted for Aggravated UUW (720 ILCS 5/24-1.6), of whom 1,811 were assigned to probation (46%), 1,098 (28%) were first offenses that served an average of 0.33 years in DOC, and 550 (14%) were second offenses that served an average of 1.15 years in DOC. An additional 298 people were convicted of unlawful use of a weapon by a gang member (720 ILCS 5/24-1.8) with 21 assigned to probation and 179 convicted and serving an average of 0.81 years in DOC. Another 3,546 were convicted of UUW by a felon (720 ILCS 5/24-1.1) of whom 475 received probation, 768 received a first offense conviction with an average DOC length of stay of 0.97 years, and 1,832 second offenses with an average DOC length of stay of 1.30 years.

current proposed legislation been in place over that period, or \$131,398,524 per year. Put differently, at an average cost per person per year of detention of \$21,600, SPAC estimates that the new legislation will increase the number of person-years behind bars by 6,083 per annum.

Note that the concern about increased detention population raised by SPAC is presumably most relevant just for state prisons run by the Illinois Department of Corrections (DOC). The mandatory minimum proposal affects people's probabilities of detention (and duration of detention) after people have been found guilty of UUW – that is, affects post-trial detention. If enactment of the proposed law has no effect on the decisions made by judges about pre-trial detention (that is, judge decisions about what bail to set for UUW arrestees), then the new law would have little effect on the population of people being held pre-trial in county jails.

We believe that SPAC's very careful analysis of the potential costs of the proposed bill is almost surely an over-estimate of the actual realized costs from enacting the law. The reason we believe SPAC's estimates over-state the likely costs of the policy is because of their implicit assumption that the increased certainty of punishment for UUW that results from the law would not deter any illegal gun carrying behavior. We cannot determine at present the exact amount by which the SPAC analysis will overstate the actual realized costs, because we cannot currently know by exactly how much UUW will be deterred. But the size of the deterrent effect on UUW could be quite large. An increase in the certainty of punishment for UUW in Pittsburgh was found to reduce shots fired reports by 34 percent and hospital-treated assault gunshot injuries by fully 71 percent (Cohen and Ludwig, 2003). Zimring (2011) shows that as New York City policies changed in the direction of increasing the chances that UUW would result in arrest, and changed court practices to increase consistency of punishment for UUW cases, gun violence fell alongside reductions in total prison commitments. Put differently, as a logical matter if the deterrent effect of the law change on illegal gun carrying were large enough the prison costs of the new policy could in principle even be negative – that is, reduce DOC costs.

How likely is it that the new law, if enacted, would generate benefits to society in excess of the costs that are imposed? As an illustrative exercise, we analyzed data on everyone assigned to probation for aggravated UUW (720 ILCS 5/24-1.6) during calendar year 2011, and then estimated their follow-up criminal behavior for one year using Chicago Police Department (CPD) arrest data. While we do not have data on the re-offending rates for everyone convicted of UUW in the entire state of Illinois, this figure provides one useful initial estimate for the social cost of crime of this larger population of UUW offenders. Over 63% of these UUW probationers are re-arrested for some crime within 12 months, with 7% re-arrested for a violent crime specifically. We estimate the average social cost of crime committed by this population of UUW probationers per year to equal \$115,602, more than 5 times the estimated DOC cost of incarceration per person per year.<sup>5</sup>

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<sup>5</sup> There were 340 people in our study sample assigned to probation for aggravated UUW (720 ILCS 5/24-1.6) in Chicago during calendar year 2011. We followed the same convention that the FBI uses in tabulating crime data for the Uniform Crime Report (UCR) system and used just the most serious charge per arrest event to classify a crime, so that someone arrested for (say) robbery, marijuana possession and driving under the influence would contribute just a single offense (robbery) to our cost-of-crime calculations. Of the violent crimes committed within one year of assignment to probation of this group of N=340 people, there were 3 homicides, which Cohen et al. (2004) estimate to each have a social cost of \$12 million (in inflation-adjusted 2013 dollars), 1 criminal sexual assault, which each have a social cost of \$293,000, 6 robberies (social cost \$287,000 each), and 15 commit aggravated assault or aggravated battery (social cost \$86,000 each). These figures imply a total social cost of \$39,305,000 from violent crimes by these 340 UUW probationers over a 12 month period, or \$115,603 dollars per UUW probationer per year. [Cohen et al (2004)'s cost-of-crime numbers using 2004 dollars, that is, not adjusting for inflation, are equal to: homicide (\$9.7 million), armed robbery (\$232,000), serious assaults

Our estimates, if they are correct, imply that the additional 6,083 person-years of detention time generated by the new mandatory minimum law would avert over 3,800 crimes, including over 400 violent crimes, through “incapacitation” alone. (Incapacitation is the mechanical crime-reducing effect that arises because people in detention are physically prevented from committing crimes against the general public). The total social cost of crime averted would equal over \$700,000,000, or more than 5 times SPAC’s upper-bound estimate for the DOC budget costs of implementing the new policy. Any deterrent effect of the new law on gun crime (which we believe would be likely based on existing research) would serve to increase the ratio of benefits to costs.

#### IV. CAVEATS AND LIMITATIONS

Any benefit-cost analysis of a policy change in the criminal justice area requires assigning some dollar value to the social costs associated with criminal behavior. Estimating the cost of crime is necessarily subject to more uncertainty than is calculating the fairly straightforward dollar values associated with the tangible costs of criminal justice interventions, such as the costs of additional imprisonment to the DOC budget. As a sensitivity analysis we have recalculated the dollar value of the social costs of crime that would be averted from the proposed mandatory minimum bill, using what we believe are the lowest reasonable cost-of-crime estimates that are in the literature. These estimates imply that the extra years of prison time generated by the proposed law would avert \$333,000,000 in social harm from violent crimes prevented due to incapacitation, still well over twice the upper-bound costs of the DOC budget costs estimated by SPAC.<sup>6</sup>

Another caveat to our analysis is the possibility that judges, prosecutors, and other actors within the criminal justice system might respond to the imposition of new mandatory minimums by relying more on lesser charges, so that the total increase in jail or prison time for UYW cases is lower than what is assumed in SPAC’s calculations. Analysis of exactly how other criminal justice system actors might react to the proposed new law, and whether there are alternative changes to the current system that might be capable of achieving the same desired endpoint (increased certainty in punishment for UYW), is beyond the scope of this memo.

How would our analysis change if the criminal justice system reacts by handing out fewer person-years of prison in response to the new law than SPAC’s calculations assume? One implication is that the benefits to citizens of Illinois from reductions in crime will be smaller than what we have estimated here – but so will the costs, since under this scenario there would be fewer additional person-years of jail or prison time handed out as a result of the law change. We expect our estimates for the *ratio* of social benefits to costs of increased detention of UYW cases to hold regardless of how many additional people wind up behind bars as a result of the law change. The reason is that the ratio of benefits to

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(\$70,000).] These social cost of crime figures use the “willingness to pay” approach for valuing non-market “goods” (in this case the “good” would be “freedom from crime”), the preferred approach by economists (see Cook and Ludwig, 2000).

<sup>6</sup> Some previous studies of the social cost of crime have relied on jury award data to value the intangible part of the social cost of crime. These prior cost estimates (taken from Miller, Cohen, and Wiersema 1996 as cited in Cohen et al 2004) equal: Murder: \$3.9 million in 2000 dollars (in 2013 inflation-adjusted dollars: \$5.8 million); Sexual Assault: \$114,000 (in 2013 inflation-adjusted dollars: \$170,000); Armed Robbery: \$31,800 (in 2013 inflation-adjusted dollars: \$47,401); Serious Assaults: \$35, 600 (in 2013 inflation-adjusted: \$53,065). The total social cost of violent crimes committed per probationer using these lower cost-of-crime estimates equals \$54,854 per probationer, still more than two and a half times as high as the incarceration cost per person.

costs depends on the prison cost and estimated criminal behavior per person per year, not on the total number of person-years of extra detention time that result.

We close by noting that any piece of legislation inevitably also involves normative or value judgments that by their nature cannot be informed by social science. For example, SPAC's analysis assumes that the only costs of putting someone behind bars for an extra year are the tangible budget costs to DOC, equal to \$21,600 per year. But it is almost surely the case that imprisonment also creates other collateral costs to society, such as the adverse effects on families and children and even entire communities. We have no way of knowing what these unmeasured social costs of imprisonment are at present. But our calculations suggest that unless the collateral costs of incarceration are multiple times the direct DOC budget costs, the proposed legislation would still be likely to pass a benefit-cost test.

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