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Testimony
Chicago City Council
The Social Costs of Handgun Violence
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Good morning and thank you for inviting me to testify about the costs of gun violence in the city of Chicago.

I would like to begin by discussing the role that guns play in contributing to gun violence:

- Guns make violent events more lethal compared to crimes that involve knives or other weapons.

- This means that in places where guns are more readily available, a higher percentage of assaults and robberies will result in the victim's death, and so those places will have relatively higher rates of homicide.

- The increased lethality of guns compared to other weapons is one reason why guns are involved in the vast majority of homicides, both nationally (67%) and in the city of Chicago specifically (80.6%).

- The vast majority of the time that a gun is used in homicide in Chicago (98% of the time to be exact), it is a handgun

The role that guns play in making violent crime more lethal imposes massive costs on the city of Chicago, which are widely shared among all of the city's residents but disproportionately so by the most economically vulnerable among us:

- Based on previous research that I have published with colleagues in the *Journal of the American Medical Association* (Cook, Lawrence, Ludwig and Miller, 1999) suggesting that the average medical costs per crime-related gunshot injury is around $45,000 (in inflation-adjusted 2010 dollars), combined with my estimate that there were around 2,060 assault-related gunshot injuries in Chicago in 2008,[1]

[1] I estimate the number of assault-related total gunshot injuries in the city of Chicago for 2008 as follows. Data from the Chicago Police Department indicate that there were 412 firearm homicides in Chicago in 2008. Previous research by my colleague Philip Cook of Duke University (Cook, 1985) suggests that around one of five assault-related gunshot injuries are fatal. These two numbers together imply that there were around 412*5 =2,060 total assault-related gunshot injuries in Chicago in 2008.

implies that the medical costs associated with inter-personal gun violence in Chicago in 2008 were nearly $94 million—over half of which was paid for by government programs, that is, by taxpayers.[2]

- My previous research suggests that gun violence increases the costs of running our criminal justice system by at least $64 million each year.[3]

- Previous research has found that every homicide reduces a city's population by around 70 people. Data from the Census Bureau shows that from 2000 to 2008, the total population of Chicago declined from 2,896,016 to 2,853,114, a decline of nearly 50,000 people. To put this number into perspective, the total population of Hyde Park in 2000 was 29,920. My calculations suggest that if Chicago's homicide rate for the past 8 or 9 years had been more like New York City's, which has a homicide rate that is around one-third of ours, then Chicago's population would have actually *increased* by several hundred thousand residents, rather than declined.[4]

- Previous research by NYU economist Amy Ellen Schwartz and her colleagues show that the massive crime drop in New York over the 1990s contributed substantially to the growth in property values in that city. My calculations suggest that eliminating gun involvement in crime Chicago might increase total property values in the city by perhaps $30 billion or so, and increase property tax revenues by around $30 million per year.[5]

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[2] My 1999 paper in JAMA notes that the lifetime total cost of fatal gunshot injuries in Maryland was $13,191, equal to $19,420 in 2010 dollars, while the total lifetime cost of non-fatal gunshot injuries was $35,367, equal to $52,067 when adjusted to 2010 dollars. The average medical costs are a weighted average of these two figures, where the weights are proportional to the share of total crime-related gunshot injuries that are fatal (20%) versus non-fatal (80%).

[3] To see how this figure is derived, consider the effects of an intervention that results in 100 fewer gunshot injuries. Previous studies suggest that, on average, every 100 assault-related gunshot injuries will lead to 20 deaths. To be conservative, assume that all of the 100gunshot injuries that are prevented are replaced by 100 non-gun injuries, of which around 7 will be fatal on average (see Cook and Leitzel, 1996). The savings to the criminal justice system from eliminating 100 gunshot injuries equals the difference between the criminal justice costs of the 13 "excess" homicide cases (13 times $243,960 = $3.2 million) and the costs of 13 non-fatal aggravated assaults (13 times $6,200 = $80,600). The criminal justice costs for gunshot injuries in Chicago then equal the costs per gunshot injury ($31,000) times the number of gunshot injuries, or 2,060, as noted above. See Cook and Ludwig (2000), p. 86-87, esp. footnote 5.

[4] Data from the CPD's 2008 homicide report indicates that the city experienced a total of (633+667+656+601+454+451+471+445+511) = 4,559 homicides from 2000 through 2008. If our homicide rate had been like New York's over this period (that is, about one-third the actual Chicago homicide rate), then we would have had around 3,009 fewer homicides, or about 3,009*70 = 210,600 more residents. Note that from 2000 to 2008 New York City did indeed have a population increase of several hundred thousand people (from 8,008,278 to 8,363,710, a 4.4 percent increase).

[5] Estimates from Amy Ellen Schwartz and colleagues (2003) suggest that a decline in violent crime rates of 50 percent would increase property values by 7-9 percent. My calculations suggest that about half of this effect comes from homicides, the vast majority of which as noted above are committed with guns. My guess of roughly half the effect comes from evidence from Cullen and Levitt (1996) that each part 1 offense reduces city population by 1 person, while each homicide (as they report in unpublished estimated discussed in Cook and Ludwig, 2000) reduces city population by 70 people. In Chicago in 2008 there were 35,797 part 1 violent crimes and 510 homicides, which implies that about half the population loss due to crime was due to homicides. I assume that the effect on property values is proportional to the effect on population out-migration. Data from the Cook County government reports

- My previous research with Duke Professor Philip J. Cook estimates that the total social costs per assault-related gunshot injury is on the order of around $1 million (Cook and Ludwig, 2000; Ludwig and Cook, 2001). This total social cost estimate includes the intangible costs of crime, such as the fear of losing a loved one to gun violence (which makes life almost unlivable in some of our city's most distressed and dangerous communities) as well as the costs that many people incur to reduce their risk of being shot, such as living far away from where they work. My estimates suggest that the total social cost of gun violence for Chicago annually is around $2.5 billion, or $2,500 per year for each Chicago household.

- A standard principle in economics is that the optimal tax on consumer goods should be equal to the net social costs that the good imposes on the rest of society. Based on the estimates for the social costs of crime that Philip Cook and I have calculated, together with our estimate for the effects of increased household gun ownership rates on an area's homicide rate, Cook and I estimate that the optimal licensing fee for a household to keep a gun would be around $600 per year (Cook and Ludwig, 2006)[6].

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that total property value in the county is $656.5 billion, and that (very roughly) property tax revenues for governmental-type activities in 2008 were $619 million in 2008 http://www.cookcountygov.com/taxonomy/Finance/Documents/CAFR/cc_2008CAFR.pdf. Eliminating gun involvement in crime in Chicago would have the equivalent impact on property values (and hence taxes) as cutting the violent crime rate in half, and so would increase property tax collection by 7-9% of $619 million, or $43 to $56 million. Around 60 percent of Cook County's population lives in Chicago, so I assume the change in Chicago's property tax revues would be 60 percent of $43 to $56 million, or $26 to $34 million. My calculations imply that the total property value of Chicago would be approximated as 60% * $656.5 billion, or $394 billion, and so eliminating gun involvement in crime would lead to an increase in property values of 7-9% of that, or $28 to $35 billion.

[6] In other words, a licensing fee of $600 per year represents the net effect of one more household having a gun on the total volume of gun violence in the local area and the social costs per extra crime related gunshot injury.

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