Exhibit 7
IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

PACHOLSKI, ET AL.,
Plaintiffs,

v.

CITY OF CHICAGO, ET AL.,
Defendants.

No. 10-CV-4184
Judge Edmond E. Chang
Magistrate Judge Geraldine Soat Brown

AFFIDAVIT OF TIMOTHY LAVERY

I, Timothy Lavery, do solemnly affirm and certify under the penalties of perjury that the following facts are true and correct to the best of my knowledge and belief and that they are based on my personal knowledge.

1. I am employed by the Chicago Police Department ("CPD") and am the CPD's Chief Operations Research Analyst. I work in the Research and Analysis Section of the Research and Development Division of CPD. A primary responsibility of the Research and Analysis Section is to respond to requests for police-related data that originate from an outside party. I have access to, and routinely provide, Chicago crime statistics and other information maintained by CPD.

2. According to data maintained by CPD:
   a. In 2010, there were 436 reported murders in Chicago; 81% (353) were committed with a firearm. Of those committed with firearms, 99% (348) were committed with a handgun.
   b. In 2010, there were 14,271 reported robberies in Chicago; 38% (5,371)
were committed with a firearm. Of those committed with a firearm, 98% (5,275) were committed with a handgun.

c. In 2010, there were 5,060 reported aggravated assaults in Chicago; 44% (2,216) were committed with a firearm. Of those committed with a firearm, 96% (2,123) were committed with a handgun.

d. In 2010, there were 9,409 reported aggravated batteries in Chicago; 20% (1,860) were committed with a firearm. Of those committed with a firearm, 97% (1,812) were committed with a handgun.

FURTHER AFFIANT SAYETH NOT.

Timothy Lavery

Subscribed and sworn to before me on this 29 day of February, 2012

Mary Beth Majka
Notary Public

My Commission Expires: 4 April 2013
### Crime in 2009

<table>
<thead>
<tr>
<th>Agency</th>
<th>State</th>
<th>Months reporting</th>
<th>Population coverage</th>
<th>Violent crime</th>
<th>Murder and nonnegligent manslaughter</th>
<th>Forcible rape</th>
<th>Robbery</th>
<th>Aggravated assault</th>
<th>Violent Crime rate</th>
<th>Murder and nonnegligent manslaughter rate</th>
<th>Forcible rape rate</th>
<th>Robbery rate</th>
<th>Aggravated assault rate</th>
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<td>698</td>
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<td>903</td>
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<td>23.5</td>
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<td>New York City Police Dept</td>
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<td>24.2</td>
<td>144.9</td>
<td>276.9</td>
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</table>

**Notes:**
- When data are unavailable, the cells are blank or the year is not presented.
- Variations in population coverage and reporting practices may cause differences in reporting from year to year. (See definitions).
- MSA and non-MSA county populations are not available.
- Crime rates are not available for agencies that report data for less than 12 months of a year.
- Illinois agencies 1985-Present - The data collection methodology for the offense of forcible rape used by the State Uniform Crime Reporting (UCR) Program does not comply with national UCR Program guidelines. Consequently, their figures for forcible rape and violent crime (of which forcible rape is part) are not included in this tool. The exception, however, is Rockford, Illinois. The agency has provided valid forcible rape crime counts as of 2006.

**Sources:** FBI, Uniform Crime Reports as prepared by the National Archive of Criminal Justice Data
Exhibit 9
Estimated crime in 2009

<table>
<thead>
<tr>
<th>State</th>
<th>Population coverage</th>
<th>Violent crime total</th>
<th>Murder and nonnegligent manslaughter</th>
<th>Forcible rape</th>
<th>Robbery</th>
<th>Aggravated assault</th>
<th>Violent crime rate</th>
<th>Murder and nonnegligent manslaughter rate</th>
<th>Forcible rape rate</th>
<th>Robbery rate</th>
<th>Aggravated assault rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States-total</td>
<td>307,006,550</td>
<td>1,318,398</td>
<td>15,241</td>
<td>88,097</td>
<td>408,217</td>
<td>806,843</td>
<td>429.4</td>
<td>5.0</td>
<td>28.7</td>
<td>133.0</td>
<td>262.8</td>
</tr>
</tbody>
</table>

Notes: National or state offense totals are based on data from all reporting agencies and estimates for unreported areas.
- United States-Total -
  - The 168 murder and nonnegligent homicides that occurred as a result of the bombing of the Alfred P. Murrah Federal Building in Oklahoma City in 1995 are included in the national estimate.
  - The 2,823 murder and nonnegligent homicides that occurred as a result of the events of September 11, 2001, are not included in the national estimates.

Sources: FBI, Uniform Crime Reports as prepared by the National Archive of Criminal Justice Data
Exhibit 10
IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

ILLINOIS ASSOCIATION OF
FIREARMS RETAILERS, ET AL.,
Plaintiffs,

v.

CITY OF CHICAGO, ET AL.,
Defendants.

No. 10-CV-4184
Judge Edmond E. Chang
Magistrate Judge Geraldine Soat Brown

AFFIDAVIT OF JOSEPH GORMAN

I, Joseph Gorman, do solemnly affirm and certify under the penalties of perjury that the following facts are true and correct to the best of my knowledge and belief and that they are based on my personal knowledge.

Background

1. I graduated from Northern Illinois University in DeKalb, Illinois in 1985 with a bachelor of arts degree in social studies, with a concentration in criminal justice.

2. I began as a probationary police officer at the Chicago Police Department’s (“CPD”) Training Academy on August 11, 1986.

3. As part of the field-training element of the Training Academy’s curriculum, I was assigned to the Fifth District in November, 1986, and then transferred to the Fourth District in 1987, where I remained until graduation from the Training Academy on August 11, 1987.

4. From graduation until 1989, I was assigned to the Tenth District as a patrol officer. As a patrol officer, I was assigned to a beat car, and my responsibilities included patrolling the district, responding to calls for police assistance, and ensuring citizen compliance with Illinois and
Chicago laws.

5. Between 1989 and 1992, I served on a tactical team in the Tenth District. A tactical team is a special contingent of plain-clothed officers selected by the commander of the district to address chronic crime conditions in the district and any specific problems identified by the commander that arise within the district. Tactical teams are also deployed to address City-wide or catastrophic events. The tactical team of the Tenth District had one lieutenant, three sergeants, and twenty-four officers, and its general mission was to address narcotics offenses, weapons violations and the recovery of illegal firearms, and Part I offenses, including aggravated assault, criminal sexual assault, murder, robbery, arson, burglary, and theft. The Tenth District, which at the time was headquartered at 2259 S. Damen Avenue, was plagued with significant activity by a number of gangs, including the Gangster Disciples, the Black Disciples, the New Breeds, the Traveling Vice Lords, the Black Souls, Two Six, the Latin Kings, the Satan Disciples, the Cullerton Deuces, and Ambrose. The overwhelming majority of the crimes and incidents investigated and handled by the tactical team involved one or more of these gangs.

6. From 1992 through 1993, I was detailed to the detective division of Area 4 to work on its Homicide Intervention Team. The City is divided into five Areas, and at that time, Area 4 was comprised of the First, Tenth, Eleventh, Twelfth, and Thirteen Districts. The Homicide Intervention Team was staffed with two detectives, one sergeant, and eight tactical officers, and its mission was to reduce the increasing homicide rate in Area 4 by removing from the street illegal firearms, which accounted for over 90% of the homicides in Area 4. To achieve that goal, the Homicide Intervention Team utilized a number of investigative tools, including confidential informants and search warrants. The large majority of the Homicide Intervention Team’s work focused on gangs, which were
responsible for much of the violent crime in Area 4, and virtually all of the firearms we recovered were in the possession of known gang members.

7. In 1993, I returned to the tactical team in the Tenth District, and my duties were the same as described above in Paragraph 5.

8. From 1994 until 1998, I was a gang specialist in the Gang Investigations Section of the CPD. The Gang Investigations Section was a City-wide unit in the CPD that conducted investigations into the leadership of Chicago’s gangs in order to uncover evidence of their involvement in criminal activity and prosecute them. The Section oftentimes conducted its investigations in partnership with several federal and state agencies, including the United States Attorney’s Office, the Federal Bureau of Investigation, the Internal Revenue Service, the Bureau of Alcohol, Tobacco, and Firearms, the Drug Enforcement Agency, the United States Marshals, and the Cook County States Attorney’s Office. The Section utilized several law enforcement tools to accomplish its mission, including confidential informants, consensual over-hear devices such as body wires and telephone intercepts, and seizures of computers and other technological devices.

9. I worked on an investigation into the Gangster Disciples while I was in the Gang Investigations Section, and that investigation led to the indictment and conviction of Larry Hoover, the leader of the Gangster Disciples, and approximately 38 other top members of that gang. Subsequent investigations led to the indictment and conviction of other leaders within the Gangster Disciples, including Bryant Crenshaw, Jimmy Goldston, and James Harris. In addition, I worked on an investigation which led to the indictment, conviction, and death sentence of Darryl “Pops” Johnson, a top leader beneath Hoover in the hierarchy of the Gangster Disciples, for ordering the murder of one government informant in 1995. The men who carried out Johnson’s instructions, who
themselves were convicted of murder.

10. In August, 1998, I was promoted to sergeant and reassigned to the Ninth District, where I served until approximately 2000. The Ninth District at that time had three sectors, and I was the beat sergeant for one of those sectors. In that capacity, I supervised the beat cars which patrolled the district, in which several Hispanic gangs operated, including LaRaza, the Latin Saints, the Satan Disciples, Two-Six, and the Latin Kings. A large majority of the calls for police assistance to which my team responded were gang-related.

11. In 2000, I was assigned to the Special Operations Section of the CPD, where I was the sergeant of a team that patrolled Rockwell Gardens, a Chicago Housing Authority ("CHA") multi-building housing development on Chicago’s west side. Because Rockwell Gardens had several gangs which operated on premises, rival gang violence was common. We patrolled for gang-related crime, narcotics offenses, firearm recoveries, and other general crimes.

12. From 2001 until 2003, I served as a sergeant in the gang team in Area 4’s detective division. The gang team was assigned to cases involving aggravated battery with a firearm and oftentimes assisted with murder investigations that were gang-related.

13. In 2003, I was reassigned to the Gang Intelligence Unit, a City-wide unit, where I served as a sergeant until 2005. In that role, I supervised a team of officers who investigated all homicides that were gang-related. The Gang Intelligence Unit was subsequently divided into two teams, one for the northside of Chicago and the other for the south. I was responsible for leading the City’s northside team.

14. In 2005, I was promoted to tactical lieutenant and assigned to the Seventh District, which includes the City’s Englewood neighborhood, and served there until March 2006. The
Englewood neighborhood is a high-crime neighborhood with significant gang activity. I supervised three tactical teams of 10 officers each and two gang teams with eight officers each. My tactical and gang teams were responsible for investigating gangs and gathering intelligence, attempting to curb gang violence, and working on narcotics, vice, and weapons violations cases, as well as Part I offenses identified above in paragraph 5.

15. From March to July, 2006, I was the gang lieutenant in Area 1, which is comprised of the Second, Seventh, Eighth, Ninth, and Twenty-First Districts. As the gang lieutenant, I supervised ten gang teams in addition to two saturation teams of uniformed officers who were disbursed into neighborhoods in Area 1 in response to spikes in crime or to assist with large-scale events. I also supervised two Project Safe Neighborhood gun teams, which were responsible for investigating weapons violations.

16. From July, 2006 until 2008, I was a lieutenant in the CPD’s Gang Investigations Unit, and in 2008, I was promoted to Commander of the Gang Investigations Unit. In 2008, all of the gang teams for the five Areas and the districts were unified, and their functions were consolidated into two separate but related units: the Gang Investigations Unit and the Gang Enforcement Unit.

17. The Gang Investigations Unit currently has approximately 157 officers that are assigned to various teams within the unit. These teams include:

a. **Area Teams.** Each of the five CPD Areas has a team which is responsible for investigating gang-related shootings and assisting on homicide investigations that are gang-related. The Area Teams also conduct surveillance on gang leaders to obtain evidence of their involvement in criminal activity.

b. **The Chicago Anti-Gun Enforcement ("CAGE") Team.** The CAGE Team

5
traces firearms recovered in the City and assists the Bureau of Alcohol, Tobacco & Firearms ("ATF") with tracing firearms recovered in other jurisdictions that are related to Chicago. Indeed, eight members of the CAGE Team are currently assigned to an ATF task force which investigates interstate gun trafficking. Gun tracings are a vital component in solving gun-related violence and in uncovering and prosecuting illegal gun purchases, sales, and transfers.

c. **Homicide/Violent Crime Teams.** There are two Homicide/Violent Crime teams which investigate gang-related murders, sometimes with the assistance of an Area Team described above in paragraph 17a.

d. **Incident Teams.** There are two Incident Teams which investigate gang leadership through various police techniques, including wire taps and other electronic surveillance.

e. **Animal Crime Team.** This team investigates and addresses gang crime as it relates to animals, such as dog fighting.

f. **Detail to FBI.** Sixteen officers are detailed to the FBI for a gang task force which investigates gang activity in Chicago and in areas surrounding Chicago.


g. **Technology Laboratory.** The Unit has a technology laboratory that maintains and services all electronic equipment used by members of the Organized Crime Division, ensures that all affidavits are properly served, and supports the detective division in downloading videos depicting crime.

18. The Gang Enforcement Unit has 350 officers. The Gang Enforcement Unit is responsible for addressing gang-related shootings and murders and providing intelligence on current gang activities. It also develops and maintains hierarchical charts concerning gangs and their factions. The Gang Enforcement Unit is divided into teams, with one team for each of the five CPD
areas, and there is also a City-wide team.

**Chicago’s Gangs**

19. Chicago has at least 80 different street gangs, which is generally considered an organized group that participates in criminal, threatening, or intimidating activity within the community. Within most gangs, there are many factions which operate in different neighborhoods throughout Chicago. The factions arose, in some part, due to the demolition of Chicago public housing projects such as the Robert Taylor Homes by 2007 and Cabrini-Green by 2011. Gangs based in those Chicago public housing projects were forced to relocate elsewhere in Chicago, and in many instances, they relocated to neighborhoods where rival gangs had been long-established. This relocation disrupted the structure and hierarchy of these gangs, with groups of relocated gang members splitting off into their own factions and oftentimes operating within a street or a block of another faction. The destabilization of the gang structure fomented violent interactions not only between the gangs but between factions of the same gang, with the gang leaders attempting to expand and/or protect their turf. There are currently over 300 different gang factions within Chicago.

20. Each gang, and oftentimes the many factions within those gangs, have their own name and symbols, a hierarchy, a geographic territory, a code of conduct, and an organized, continuous course of criminal activity.

21. There are between 80,000 and 100,000 known members of those gangs. That number does not include the many associates and affiliates of gang members who, while not members themselves, assist in or facilitate criminal conduct by gang members, such as the straw purchase of firearms.

22. Gangs have operated within Chicago for decades and are well-entrenched criminal
enterprises. In fact, it is not uncommon for multiple generations of a family to be members of the same gang. Chicago gangs aggressively and violently defend their territory and their criminal enterprises, such as drug dealing. For example, when I was assigned to the Tenth District, the Crips gang from California attempted to obtain a foothold in Chicago. The gangs operating in that area -- the Gangster Disciples, and the Black Gangster Disciples, which are also known as the New Breeds -- violently defended their territory against the influx of the Crips including through firearm assault and homicide, and the Crips eventually abandoned their attempted expansion to Chicago.

23. Due to the increase in the number of factions within gangs and the destabilization of gang structure and hierarchy, gang violence has escalated in Chicago as gangs and rival factions within the same gang fight for territory and their share of criminal activity in Chicago.

24. Gangs engage in extensive criminal activity, including but not limited to the sale of illegal drugs, assaults, shootings, and homicides, in furtherance of their interests. Much of this activity occurs not only in public places such as Chicago’s streets, playgrounds, alleys but also in spaces such as yards, porches, hallways, and stairwells on private property.

25. Gangs and their members routinely use violence and intimidation to advance their criminal interests, and they rely heavily on the use of firearms. Handguns, as opposed to rifles and shotguns, are predominantly used by gang members because they are easily concealed and readily accessible.

26. Gang members also frequently engage in criminal activity not to advance the gangs’ interests but for their own personal gain.

27. Firearms are used in a significant majority of the crimes committed by gang members, whether it be in furtherance of the criminal enterprise or the member’s own personal gain.
Moreover, I estimate that approximately 55-60% of the shootings in Chicago are gang-related. Finally, I estimate that nearly 60% of the homicides in Chicago in 2010 involved gangs, meaning that the murder was gang-related or the victim or offender was a gang member.

28. Chicago gang members obtain firearms in many different ways. Gang members make straw purchases in which an affiliate, associate, or acquaintance of a member, who is legally allowed to purchase a firearm, purchases the firearm for the gang member from a licensed firearm dealer. They also buy firearms in the illegal, underground market, oftentimes obtaining a firearm in exchange for illegal drugs. Gangs also obtain firearms by theft and burglary from gun stores and homes. Gang members will even try to steal firearms from the homes of police officers, sometimes as part of an initiation rite into the gang.

29. As a result of my surveillance work and the operations I have coordinated, I have learned that firearms sold in the illegal market in Chicago are often sold at prices above and beyond the usual retail price of the firearm. For example, in 2011, members of the Gang Intelligence Unit conducted a sting operation in conjunction with the FBI in which they purchased approximately 50 firearms from the Two Six gang. Those firearms were purchased for approximately $100 to $200 more than their usual retail price.

30. In sum, Gang violence is a monumental problem in Chicago and is what spearheads violent crime in Chicago. Gangs are a form of urban terrorism in Chicago.

Possession of Firearms in the Curtilage of the Home

31. Based on my over-twenty years of experience in investigating gangs and combating crime caused by gangs, it is my opinion that the City's ordinance restricting firearm possession to the inside of the home greatly assists CPD in its anti-gang efforts.
32. For example, in conducting surveillance of gang members, I have observed that members of gangs hide firearms in the yards, porches, and garages of their homes. They hide the firearms in those locations in the event they need to access them during a criminal activity, such as a drug deal, or to protect their territory from rival gangs or factions within their own gangs. I have also observed gang members carry firearms in these spaces.

33. In my opinion, gang members would be more likely to do so if it became legal to possess firearms in these spaces. In many instances, gang members or close associates do not have a recorded criminal history that disqualifies them from receiving a Chicago Firearms Permit ("CFP"). Gang members receiving a CFP -- and their associates who also qualify for a CFP -- would therefore be free to possess firearms in such places as a lobby or stairwell of a residential high-rise or multi-unit building, or on the porch or in the yard of a three-flat or a single family home. From those spaces, gang members could easily use a firearm to further their criminal aims, including overseeing drug deals and intimidating or shooting at rival gang members or members of the public that the possessor wishes to intimidate. Moreover, since the mere carrying of a gun by a gang member or associate is intimidating to others in the community, the gang member or associate would be able to intimidate while simply claiming that he or she was carrying the gun only for legitimate self defense. A gang member carrying a gun does not need to do anything more than that to "send a message." And even if the firearm is not used to intimidate or shoot, being able to lawfully carry a firearm in these spaces will embolden gang members to be more aggressive than they might otherwise be, which would likely have the effect of increasing violence between gangs and against innocent bystanders.

34. Under the current ordinance, however, the City can arrest these gang members and
affiliates for storing or carrying firearms in their yards, porches, garages, and similar spaces and common areas, such as hallways, stairwells, and lobbies. This is an important preventative tool that the CPD uses to combat gang violence and intimidation in Chicago because it permits the CPD to arrest gang members for merely possessing a firearm outside the home, thereby taking the gang member and his firearm “off the street” before he commits a violent act with the firearm. This tool is particularly useful when combined with targeted policing strategies in which the CPD deploys officers in areas of high gang activity because it creates a disincentive for gang members to possess firearms outside the home. If there are more police in a particular area, gang members are less likely to possess a firearm outside their homes because they stand a higher chance of being caught with the firearm and arrested for possession of the firearm. And because many times illegal possession of a firearm is the only crime being committed at the time, police will have no opportunity to remove the gang member and his firearm from the street without the ordinance, leaving that gang member free to later use that firearm.

35. Moreover, by providing an independent basis for arrest and prosecution, the illegality of firearms outside the home allows CPD to take gang members off the street without disclosing evidence of larger criminal gang activity in which that gang member is involved (or the sources of that evidence, such as confidential informants) that the CPD may be currently investigating. If this basis did not exist, CPD would have to make a choice between letting the armed gang member remain free or risk compromising a larger investigation.

**Gun Stores**

36. An important police strategy in combating gang violence is to keep gangs from obtaining firearms.
37. Based on my over-twenty years of experience in investigating gangs and combating gang crime, it is my opinion that Chicago's prohibition of gun stores significantly decreases the opportunities for gang members to acquire firearms. Indeed, if gun stores were to open in the City, it is my opinion that gang members would more readily and quickly obtain firearms than they currently do, thereby jeopardizing public safety.

38. Gang members do sometimes travel to suburban gun stores to acquire firearms (either through legal purchase, illegal purchase, or theft), but inherent in such travel is great risk because it involves crossing gang and gang faction boundaries both in Chicago and its suburbs (because Chicago-based gangs also operate in many surrounding suburbs). Therefore, trips by gang members to suburban gun stores require significant planning and forethought. It is my opinion that the risks of making such a trip, and the preparation needed to alleviate those risks, cause some gang members, particularly those acting alone, sporadically, or in a small group, to forego making a trip to a suburban store. Banning gun stores in Chicago maintains these disincentives. If, however, gun stores were allowed in Chicago, these disincentives would be reduced or completely lost. A gang member needing to travel only a few blocks or miles, all while in Chicago, would have less risk to visit a gun store compared to having to travel to a suburban store, and would need less time to prepare. Gun stores in Chicago would therefore increase the likelihood that a gang member will acquire a firearm or that stole firearms will enter the illegal gun market.

39. Area stores have been targeted for theft by Chicago gangs. For example, 195 handguns, mostly automatic, were stolen from Maxon Shooters Supplies in Des Plaines, Illinois on January 15, 2012.

40. It is my opinion that if gun stores were allowed to operate in Chicago, any firearms
stolen would more quickly enter the Chicago illegal gun market than they currently do.

41. If gun stores were allowed in Chicago, it is also my opinion that patrons coming from gun stores would be targeted for theft and/or violent crime by gang members seeking to obtain a firearm. In addition to increasing violent crime in Chicago, it would increase the availability of guns for sale on the illegal market and would do so more quickly.

FURTHER AFFIANT SAYETH NOT.

Joseph Gorman

Subscribed and sworn to before me on this 23rd day of February, 2012

Hector J. Rodriguez
Notary Public

My Commission Expires: 08/12/2013
Exhibit 11
**Crime Summary 2010**

- **January-December 2010**

**Index Crime**

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<thead>
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<th>Crime</th>
<th>Jan-Dec 2009</th>
<th>Jan-Dec 2010</th>
<th>% Change</th>
</tr>
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<tbody>
<tr>
<td>Murder</td>
<td>460</td>
<td>436</td>
<td>-5.2%</td>
</tr>
<tr>
<td>Criminal Sexual Assault</td>
<td>1,479</td>
<td>1,359</td>
<td>-8.1%</td>
</tr>
<tr>
<td>Robbery</td>
<td>15,937</td>
<td>14,205</td>
<td>-10.9%</td>
</tr>
<tr>
<td>Aggravated Assault</td>
<td>5,741</td>
<td>5,033</td>
<td>-12.3%</td>
</tr>
<tr>
<td>Aggravated Battery</td>
<td>10,092</td>
<td>9,360</td>
<td>-7.3%</td>
</tr>
<tr>
<td>Burglary</td>
<td>26,730</td>
<td>26,140</td>
<td>-2.2%</td>
</tr>
<tr>
<td>Theft</td>
<td>79,763</td>
<td>74,561</td>
<td>-6.5%</td>
</tr>
<tr>
<td>Motor Vehicle Theft</td>
<td>15,458</td>
<td>19,016</td>
<td>23.0%</td>
</tr>
<tr>
<td>Arson</td>
<td>608</td>
<td>516</td>
<td>-15.1%</td>
</tr>
<tr>
<td>Violent</td>
<td>33,709</td>
<td>30,393</td>
<td>-9.8%</td>
</tr>
<tr>
<td>Property</td>
<td>122,559</td>
<td>120,233</td>
<td>-1.9%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>156,268</strong></td>
<td><strong>150,626</strong></td>
<td><strong>-3.6%</strong></td>
</tr>
</tbody>
</table>

**January-December 2010 Murder Totals by District**

**January-December 2010 Murder Location**

**January-December Murder Totals: 2004-2010**

**January-December 2010 Murder by Weapon Type**

**Note:** Effective 2009, a change to the data system made it possible to record multiple weapon types. There were three 2009 murders and three 2010 murders in which multiple weapon types were recorded.
January-December 2010
Murder Victim’s Relationship to Offender*

- Stranger: 25.7%
- Some Acquaintance: 48.0%
- Intimate Partner: 12.2%
- Relative: 10.1%
- Not Established: 4.1%

* Cleared murders only.

January-December 2010
Murder Totals by Motive*
(where determined)

- Gang Related: 152
- Allegation: 94
- Domestic: 30
- Robbery: 26
- Other: 25
- Other Index: 5
- Gang-Related Crime: 3

* 101 murders had undetermined motives

January-December 2010
Time of Murder Injury

- 6:00-9:59 AM: 21.3%
- 10:00 AM - 12:59 PM: 9.4%
- 1:00 PM - 3:59 PM: 7.1%
- 4:00 PM - 6:59 PM: 13.5%
- 7:00 PM - 9:59 PM: 18.6%
- 10:00 PM - 12:59 AM: 30.0%

January-December 2010
Murder Victim and Offender Race

- Victim: 76.3% Black, 16.2% Hispanic, 6.1% White, 0.9% Other
- Offender: 60.2% Black, 16.2% Hispanic, 19.3% White, 4.1% Other

January-December 2010
Murder Victim and Offender Prior CPD Record

- Victim: 79.1% Yes, 20.9% No
- Offender: 87.2% Yes, 12.8% No

January-December 2010
Age of Murder Victim

- 9 Years & Younger: 15
- 10 to 16 Years: 26
- 17 to 25 Years: 175
- 26 Years & Older: 220
Exhibit 12
UNDERGROUND GUN MARKETS*

Philip J. Cook, Jens Ludwig, Sudhir Venkatesh and Anthony A. Braga

This article provides an economic analysis of underground gun markets, drawing on interviews with gang members, gun dealers, professional thieves, prostitutes, police, public school security guards and teenagers in the city of Chicago, complemented by results from government surveys of recent arrestees in 22 cities, plus administrative data for suicides, homicides, robberies, arrests and confiscated crime guns. We find evidence that transactions costs are considerable in the underground gun market in Chicago, and to some extent in other cities as well. The most likely explanation is that the underground gun market is both illegal and 'thin' – relevant information about trading opportunities is scarce due to illegality, which makes search costly for market participants and leads to a market thickness effect on transaction costs.

This article provides an economic analysis of underground gun markets, drawing on interviews with gang members, gun dealers, professional thieves, prostitutes, police, public school security guards and teenagers in the city of Chicago, complemented by results from government surveys of recent arrestees in 22 cities plus administrative data for suicides, homicides, robberies, arrests and confiscated crime guns. Systematic data on prices and quantities are generally lacking for underground markets, and ours is no exception. But we are able to provide a qualitative picture of how Chicago's underground gun market operates, and offer some tentative thoughts about what these results might imply for American gun markets and gun policy more generally.¹

This topic is of interest in part because of the high rate of gun violence in the US. Despite a dramatic decline in crime during the 1990s America still has a homicide rate that is about four times as high as in England and Wales (FBI, 2005, Cotton and Bibi, 2005). Because firearms are involved in 70% of all American homicides but fewer than 10% of those in England and Wales, the difference in overall homicide rates is largely accounted for by gun homicides. The total social cost of gun violence in the US is estimated to be in the order of $100 billion per year (Cook and Ludwig, 2000).

Underground gun markets have developed in the US in response to federal regulations that seek to prohibit ownership and possession by that sub-set of the population deemed to be at unacceptably high risk of misusing guns – primarily youth and adults with serious prior criminal records – while preserving easy access for everyone else.

* The authors thank Terrence Austin, former Director of the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) National Tracing Center, for providing ATF firearms trace data to enhance the development of their firearms enforcement programmes. Our research was supported by a grant from the Joyce Foundation and written in part while Cook and Ludwig were resident fellows at the Rockefeller Foundation’s Bellagio Study and Research Center. Thanks to Joseph Peters and Bob Malme for excellent research assistance. We greatly appreciate the helpful input from Roseanna Ander, Bernard Harcourt, Rachel Johnston, Mark Kleiman, Tracey Meares, Peter Reuter, members of the Chicago Police Department’s CAGE firearms team, Mike Vaughn and Peter Cunningham of the Chicago Public Schools, participants in the University of Maryland 2005 Criminology and Economics Summer Workshop, seminar participants at the University of Chicago Law School, as well as the editors and anonymous referees. Any errors and all opinions are our own.

¹ Most of what is known about the underground gun market comes from interviews with incarcerated prisoners or inner-city youth (Wright and Rossi, 1994; Webster et al., 2002; Sheley and Wright, 1993; Callahan and Rivara, 1992; Hales et al., 2006). However such interviews can at best shed light on how a subset of the retail market operates and are not informative about other aspects of market structure or conduct.
Whether the gun market can be segmented in this way remains the topic of spirited debate in policy circles. In Section 1 we review this regulatory system and note that a few jurisdictions, including Chicago, go further and essentially prohibit the private possession of handguns, the type of gun most commonly used in crime and violence. The fact that Chicago has unusually restrictive regulations makes the city an interesting case study of what difference government regulations can make; it also makes for an interesting comparison with the restrictive regimes of Britain and other Western nations, although there is little systematic research on the functioning of underground gun markets anywhere.  

Economists and other sceptics like to point out that government prohibitions on transactions are difficult to enforce; the ingenuity of the marketplace, motivated by profit, will overcome whatever legal obstacles are put in place. If true for handguns in Chicago, then we would expect to find that youths and criminals are able to acquire them with little trouble (low transaction costs) at prices not that much higher from those in the legal market. As New York University law professor James Jacobs observes in this regard, ‘Some criminals claim that it is as easy to buy a gun on the streets as it is to buy fast food. One Chicago gang member stated, “It’s like going through the drive-through window. Give me some fries, a Coke, and a 9-millimeter.”’

The first contribution of our article is to establish the existence of substantial transaction costs in the underground gun market, based on a series of in-depth ethnographic interviews conducted in two high-crime neighbourhoods on Chicago’s South Side by a member of our research team (Sudhir Venkatesh, hereafter SV). In Section 2 we document large mark-ups over legal prices, search costs, a high rate of uncompleted transactions and substantial physical risk and uncertainty about gun quality. These findings stand in stark contrast to both standard economic intuition and the prevailing common wisdom about gun markets in the US.

We argue in Section 3 that the most likely explanation for these transaction costs is the fact that the gun market is both illegal and ‘thin’, that is, has few buyers and sellers. The illegality of the gun market increases search costs for prospective trading partners. Diamond (1982) notes that in this type of trading environment there can be a market ‘thickness effect’ on transaction costs.

In Section 3 we also consider four types of explanations for why the gun market is thin: police; gangs; neighbourhood-specific factors such as attitudes towards guns in high-poverty, high-minority urban areas; and city-specific factors such as Chicago’s ban on handguns. We find that law enforcement activities appear to matter more in suppressing supply in the gun market than in other underground markets, such as those for drugs, in part because the street gangs that are well positioned to deal in guns avoid doing so for fear of attracting police attention, thereby jeopardising the profits associated with the more lucrative drug trade. There is a possibility that the underground gun market in SV’s neighbourhoods differ from other Chicago neighbourhoods, but we show that there is more similarity than difference, at least with respect to the dimensions we can measure from administrative and survey data.

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2 A partial exception is due to the recent study for the Home Office, which sought information on criminal access to guns in Britain through interviews with 80 people imprisoned for firearms offences (Hales et al., 2006).


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We have no direct test of the influence of Chicago's handgun ban in reducing gun availability but demonstrate that it was ineffective in reducing the prevalence of gun ownership in the city. The frictions we observe in the underground market are more likely due to the general scarcity of guns in the city (gun ownership rates are quite low, a fact that predates the ban) and on Chicago's emphasis on anti-gun policing. But even in cities with more guns and less enforcement, our analysis of multi-city survey data of arrestees indicates that many criminals find it difficult to obtain one.

From a social welfare and policy perspective we are also (or perhaps especially) interested in the question of whether friction in the underground gun market winds up influencing gun involvement in crime. Section 4 reviews evidence suggesting an affirmative answer. We discuss the limitations and implications of these findings, and directions for future research, in Section 5.

1. Regulations on Gun Markets in the US

The underground market in the two neighbourhoods studied by SV and in Chicago more generally is shaped by the legal framework that regulates gun ownership and transactions. The prevalence of guns in private hands is also relevant, since one source of guns to underground transactions is the existing stock.

1.1. Regulatory Framework

The 1968 Gun Control Act (GCA) requires everyone 'engaged in the business' of selling guns to obtain a federal firearms license (FFL). Since 1994, all FFLs have been required by either the federal Brady Act or more restrictive state laws to conduct background checks to verify the eligibility of prospective gun buyers (Ludwig and Cook, 2000). Private owners who are not 'engaged' in the gun business are not required to obtain a FFL. The only federal restriction on these sales is that the seller cannot knowingly provide a gun to someone prohibited by law from having one (Cook et al., 2005; Vernick and Hepburn, 2003).4

Under the regulatory system established by the GCA states are allowed to impose additional restrictions on gun transactions beyond those required by federal law. For example several states require that all guns be registered with the authorities or that all gun owners obtain state licences, or both (Vernick and Hepburn, 2003). These requirements are intended to provide officials with some way of tracking – and thus regulating – secondary market gun sales.

1.2. Diversions from Legal to Illegal Hands

Nationwide, few criminals get their guns directly from licensed gun dealers (Wright and Rossi, 1994). But the legal market for guns and legal ownership patterns affect supply in the underground market through theft. With somewhere between 200 and

4 The Federal Gun Control Act bans possession by a number of categories of individuals, including convicted felons, those under indictment, and those convicted of a domestic violence offence. Individuals under age 18 are barred from possession of a handgun unless under supervision.

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250 million guns in private hands in the US, many of which are stored unlocked in order to be readily available for use against criminal intruders, it is not surprising that a large number of guns (over 500,000) are stolen each year (Cook and Ludwig, 1996).

Another source of guns for the underground economy consists of unregulated secondary market sales, estimated to be on the order of 2 to 3 million per year (Cook and Ludwig, 1996). Organised gun shows appear to account for just a small share of all secondary market transactions, including those involving criminals (Wright and Rossi, 1994; Cook and Ludwig, 1996). In addition to secondary market sales, guns may be loaned out among friends and relatives.

A final way in which guns wind up in the hands of criminals is when a legal owner ‘converts’ into a criminal. Most gun crime in the US is accounted for by people not legally allowed to have guns (Cook and Laub, 1998, Cook et al., 2005). However there is still a non-trivial amount of gun violence committed by adults who legally owned guns before using them in crime.

1.3. Chicago’s Regulatory Environment

Chicago provides a particularly interesting case study for understanding underground gun markets because the city has unusually restrictive firearm regulations. The city is located in the state of Illinois, which requires all gun owners to obtain a Firearm Owners ID card and bans private transfer of a gun to anyone lacking such a card. Chicago itself goes still farther; since 1982 it has essentially banned handguns except those already in circulation that were then registered with the city. Furthermore, there are almost no legal firearms retailers operating in the city, so that a private citizen seeking to buy a firearm of any sort must travel outside of city limits. (Mailorder purchases of firearms is banned by federal law.)

In a sense Chicago’s gun regulations and its relatively low rate of gun ownership are more akin than most American jurisdictions to those of other western nations. The prevalence of gun ownership, particularly of handguns, is much higher overall in the US than any other high-income country, and its national regulations on gun transactions and possession are weaker (Hemenway 2004, p. 197-8; Killias et al. 2001). The Chicago ban on handguns has a particular parallel in the handgun ban and buyback in Britain following the Dunblane massacre (Leitzel, 2003).

2. Underground Gun Markets in the Chicago Ghetto

The underground gun market in the Chicago neighbourhoods we study is characterised by substantial transaction costs, by which we mean large mark-ups over legal prices, substantial search times, uncertainty about product quality, and the physical risk associated with exchange. This finding stands in stark contrast to prevailing common wisdom about how these markets operate.

2.1. Study Neighbourhood

Our study draws on uniquely detailed data about underground gun markets derived from SV’s intensive field interviews conducted in the high-crime community in South
Side Chicago known as Grand Boulevard/Washington Park (hereafter GB/WP). The selection of this site is partly pragmatic, given the proximity to SV's initial academic home (the University of Chicago). However this area is also of particular interest given that gun crime in America is disproportionately concentrated in large cities and within these cities occurs disproportionately in highly disadvantaged neighbourhoods.

The target community is a large contiguous swatch of poor and working-class neighbourhoods in the South Side of Chicago that forms the heart of the 'Black Metropolis', Chicago's oldest African-American settlement. The community has become a space of considerable gentrification and economic development, thereby combining extremely poor city blocks – including the site of the notorious Robert Taylor Homes public housing project – with blocks of middle-class homeowners. Despite these recent changes, data from the 2000 Census show that residents of the community are still mostly African-American and much more disadvantaged than other residents of Chicago or the US as a whole (Table 1). The homicide rate in the GB/WP area is about 75% higher than in the city of Chicago overall and is about 6 times the national rate.

SV's interview samples are defined by age and criminal involvement, as well as role in the underground gun market. His goal was to ensure that each 'type' of neighbourhood resident is represented in the study but the particular set of individuals interviewed within each type is essentially a convenience sample. Interviews were conducted with 190 non-gang affiliated youths aged 18-21, of whom 116 owned a gun, and 75 gang-affiliated youths, whose access to guns is usually under control of the gang leadership. SV also interviewed 90 non-gang affiliated adults, of whom around 45 owned a gun; and 57 gang-affiliated adults (including 12 gang leaders), of whom 50 owned a gun. In addition SV interviewed 12 elite gun suppliers (importers or wholesalers), 11 retail brokers, 17 adults engaged actively with criminal associations, and 77 prostitutes.

2.2. Characteristics of the Underground Gun Market

2.2.1. Gun demand

What motivates the demand for guns in the GB/WP area? SV's younger informants typically seek guns for the status they confer, rather than as inputs into a crime production function. With status goods economists sometimes refer metaphorically to

---

5 The physical infrastructure of the area is changing dramatically because of public housing demolition and heightened gentrification. Given these changes we focus only on gun markets apart from public housing, given that any in-depth findings on public housing-based gun use and trading would soon be outdated.

6 The Greater Grand Boulevard area consists of three 'community areas', the official administrative unit that sub-divides Chicago: Oakland, Grand Boulevard and Washington Park, which in 2003 together had 17 homicides and a population of 48,262 (Chicago PD Annual Report, 2003).

7 Sample size is a somewhat imprecise concept with ethnographic fieldwork, since for example some of these discussions might be held informally with a group in an apartment building hallway. We try to count 'respondents' only as those with whom SV had a reasonably lengthy one-on-one discussion. There is also some ambiguity about people's roles within the neighbourhood; for example SV's definitions of 'gang affiliated' may not correspond to those used by the Chicago Police Department.

8 Note human subjects requirements prevented SV from interviewing minors, so all respondents are 18 or older.

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Table 1

Selected Demographic Characteristics for Grand Boulevard/Washington Park Field Site Neighbourhoods versus Chicago and US

<table>
<thead>
<tr>
<th></th>
<th>Grand Boulevard/Washington Park*</th>
<th>Chicago</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage under age 20</td>
<td>39.8</td>
<td>29.0</td>
<td>28.6</td>
</tr>
<tr>
<td>Race:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% White</td>
<td>0.6</td>
<td>42.0</td>
<td>75.1</td>
</tr>
<tr>
<td>% Black</td>
<td>98.2</td>
<td>36.8</td>
<td>12.5</td>
</tr>
<tr>
<td>% Asian</td>
<td>0.1</td>
<td>4.3</td>
<td>3.6</td>
</tr>
<tr>
<td>% Hispanic (any race)</td>
<td>0.9</td>
<td>26.0</td>
<td>12.5</td>
</tr>
<tr>
<td>Schooling of adults 25 and over:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% &gt;= high school</td>
<td>61.0</td>
<td>71.8</td>
<td>80.4</td>
</tr>
<tr>
<td>% &gt;= BA</td>
<td>8.7</td>
<td>25.5</td>
<td>24.4</td>
</tr>
<tr>
<td>Marital status of people 15 and over:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never married</td>
<td>50.9</td>
<td>40.9</td>
<td>27.1</td>
</tr>
<tr>
<td>Divorced</td>
<td>10.4</td>
<td>8.8</td>
<td>9.7</td>
</tr>
<tr>
<td>% adults 16 and over in labour force</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% people poor</td>
<td>48.4</td>
<td>61.3</td>
<td>63.9</td>
</tr>
<tr>
<td>2003 homicide rate per 100,000</td>
<td>48.5</td>
<td>19.6</td>
<td>12.4</td>
</tr>
<tr>
<td></td>
<td>35.2</td>
<td>20.5</td>
<td>5.7</td>
</tr>
</tbody>
</table>


'arms races', but in the market for guns among young people there seems to be a literal arms race at work. As one young gang member notes, in the absence of having a gun: 'Who is going to fear me? Who is going to take me seriously? Nobody. I'm a pussy unless I got my gun.'

Just showing rather than actually firing guns is usually sufficient for the purposes of achieving the desired result. As one youth noted, 'You have to let [other people] see it without letting them see it. See, it's all about them not messing with you.' As another youth noted, 'Like them slick flics [pornographic movies], it's all about the bulge. It never even gets that far [explicitly showing other people the gun].' Another non-gang affiliated youth notes: 'Thing is, see, it ain't really about fighting or nothing, because even if you have a group of guys and you see a group of guys, lot of times, it's just you show 'em you got one, they show you they got one, and you just be on your way. It's just like signifying that you prepared.'

Even for older gang members and professional criminals who are regularly engaged in crime, gun use was typically limited to simply brandishing the weapon. For example of the 57 older gang members SV interviewed, only around 10% admitted to having fired their gun during a robbery.9

2.2.2. Gun quality

Prevailing wisdom about the demand for gun quality in the underground market is nicely summarised by Sheley and Wright (1993, p. 83): 'No military force willingly

9 One notable exception is for robbing drug dealers. One informant described to SV his technique of firing a shotgun through the dealer's door in order to 'buy yourself some time to steal their shit because it makes so much noise ... and they need to see you mean business.'

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enters battle with inferior weapons, and likewise, no central city resident would willingly carry anything other than the best small arms available.\textsuperscript{10} We instead find that preferences for gun quality are heterogeneous, consistent with the findings noted above that many consumers seek guns for status.

SV's younger informants tend to be quite ignorant about gun quality and general gun use. Fewer than one in ten of the 190 non-gang affiliated youths SV interviewed had ever been taught how to use a gun.\textsuperscript{11} Older gang members and professional criminals tend to be more discerning. One older gang affiliate recounts his gun preferences for the purposes of robbing commercial establishments, especially for daytime robbery:

>'When [cashiers] see that Glock [manufacturer of popular 9 mm semi-automatic pistols] or that .38 [caliber handgun] – I mean, a .44 [caliber] would be better, but that's hard to find around here – then you get that cash quick. You don't want to be keeping one of them sissy weapons.'

The presence of buyers who are indifferent to whether a gun works helps to explain how the market handles the problem that guns are 'experience goods' – sellers for obvious reasons discourage buyers from test-firing the gun during the transaction. The same information problem that faces buyers – working and non-working guns are often observationally equivalent – means that youth can 'produce' the ultimate services of interest (status, intimidation) with a broken gun as easily as with a working gun.

2.2.3. Gun prices

Interviews by SV with 116 gun-owning non-gang affiliated youths (age 18–21) reveal prices paid that range between $250 and $400. Interviews with 11 local gun brokers, who handle a large share of retail transactions on behalf of importers, suggest most of their guns are sold for between $150 and $350. These prices are typically for guns of low quality, manufactured by companies such as Lorcin, Raven and Bryco. These names were often mentioned to SV in interviews and as noted above also show up frequently in administrative data on confiscated crime guns maintained by ATF. While SV's interviews do not include information on the condition of the gun, it is noteworthy that most pistols from these manufacturers listed on websites (such as gunsamerica.com) sell for between $50 and $100 (with a $10 mailing/transaction fee), even for those used guns that are reported to be in 'excellent condition.'\textsuperscript{12}

Thus the price markup in the underground market appears to be substantial. The street markup for illicit drugs such as heroin and cocaine appears to be somewhat higher. Jeffrey Miron estimates that '...the black market price of cocaine in the United States is 2–4 times the price that would obtain in a legal market, and of heroin 6–19

\textsuperscript{10} Some criminologists, such as Kennedy \textit{et al.} (1996), have observed that criminals may tend to acquire low quality guns in practice even though some express a desire for high-quality guns. ATF's top-ten crime-gun lists (ATF 2000b) have long noted the prevalence of cheap guns used in crime.

\textsuperscript{11} For example one youth, 'Tony,' narrated a common learning experience. SV: 'So, how did you know what to do with the .38?' T: 'I took it, started putting bullets in. Hell, I even put a rock in there and tried to fire it! You know, I just fiddled with it.' SV: 'Did it fire?' T: 'I'm not sure. I think it did.' SV: 'Well, that's kind of like saying "I might be pregnant." Either it fired or it didn't.' T: 'I mean it made a noise.' SV: 'Um, hmm. A noise. So, you really don't know anything about guns except possibly how to kill yourself.' T: 'Listen, it's not like we get taught that in school.'

\textsuperscript{12} Under federal law guns can only be sent by mail to licensed dealers, so these web sites require some FFL to broker the sale.
times' (Miron, 2003, p. 529). But in still more stringent conditions, the price of handguns could increase to rival the drug markup. In a recent study of the underground gun market in England, based on interviews with 80 people imprisoned for Firearms Act violations, Hales et al. (2006) found that prices paid for handguns ranged 'from around £150 to £200 for a gun known to have been used in a crime, to a typical £1,000 to £1,400 for a new 9 mm model' (p. xii).

2.2.4. Volume of transactions
The underground market in firearms is a small part of the overall underground economy. We estimate that there are no more than 1,400 gun sales per year in the GB/WP area,13 or about 1 sale per day for every 30 people living in this very high-crime neighbourhood. By comparison there would be at least 200,000 and perhaps as many as 500,000 or 1 million cocaine sales in this community every year – a difference of up to three orders of magnitude. Total revenue in this community for gun sales would be on the order of $200,000 to $500,000, compared to perhaps $10 or $20 million in the market for cocaine.14 Our findings in this sense are quite consistent with those reported by Koper and Reuter (1996).

2.2.5. Search costs
SV's interviews provide three types of evidence for substantial search costs in the underground gun market in the GB/WP area:

- A system of local brokers has developed to facilitate market exchange and typically charge $30 to $50 per transaction, a large percentage of the sales price. These brokers capitalise on the information they have about the local underground economy – of the 11 brokers SV interviewed, all were over 30 and long-time residents of the area, and most were either participants in or closely connected to suppliers in the illegal markets for sex, gypsy cabs, or unregulated car repair or hairstyling.
- Even local gun brokers report that a large share of their transaction attempts fail – around 30–40%. Reasons included the inability to get a gun from a supplier; the customer and broker could not agree on the location for the transaction; and the broker either did not trust the customer's intentions or thought he or she was an undercover police officer.15

13 SV interviewed five gun 'brokers', discussed in more detail below, who report an average number of gun transactions during the past year of 16. SV knew of 24 brokers working during the 15-month period of his fieldwork, and believes there were no more than 5 or 10 additional brokers not known to him, so we conservatively assume 34 total brokers in operation in the GB neighbourhood, who (if his group of 5 interviewees is representative) would have facilitated a total of 544 sales. Gun suppliers report that 60–80% of their sales are negotiated through brokers (we assume the 80% figure) and by our own estimates gun suppliers account for around half of all gun sales in the GB community, implying a total of around 1,560 gun sales per year. There are about 48,000 residents in the combined GB neighbourhoods.

14 Our thanks to Peter Reuter for these drug market calculations. He notes that each year in the US there are perhaps 250 tons of pure cocaine, sold in pure units of 250 milligrams, suggesting around 1 billion sales nationwide each year. If we assume the national rate applies in the South Side GB/WP neighbourhood then there would be around 200,000 transactions, but given that this area is unusually disadvantaged there could plausibly be as many as 500,000 or even a million sales per year.

15 In other cases, the transaction failed because the customer failed to bring enough cash to the transaction or tried to negotiate down the price.

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Interviews with 17 young adults who consider themselves 'regular' thieves, self-defined as deriving a substantial share of income from crime and engaging in at least four thefts per year, further support the general finding. Of the 17 interviewees in this group, only one person said they could find a gun in less than a week.

The search process in this market is further complicated by the fact that participants require information about prospective trading partners to engage in exchange.\(^{16}\) In this market, reliable 'connections' appear to be scarce. The underground market for guns in Chicago does not involve large amounts of money but executing transactions with strangers is surely a risky business. The buyer may be an undercover police officer or potential informant, or simply dangerous. One gun dealer explained his preference for relying on brokers rather than dealing directly with customers.\(^ {17}\)

'You never know who these niggers are that need these things. Sometimes they just act crazy on you, 'cause you know, if I want a gun, then usually you pissed off. And, I don't like messing with these fools, 'cause they sometimes don't pay, they steal your shit. And, you know, they could be working for the cops, too, so I got to trust the folks I'm working with.'

Why do people tolerate these search costs when any Chicago resident can identify the location of numerous licensed suburban gun dealers with a quick search of the local phone directory or the Internet? These dealers are not prohibited from selling guns to Chicago residents. Even those people who are themselves ineligible to buy a gun from a licensed gun dealer can get someone else, usually a wife or girlfriend, to make a 'straw purchase' on their behalf if she obtained an Illinois Firearm Owners ID (FOID) card. The answer seems to be in part that the residents of SV's neighbourhoods are very parochial, perhaps because gang turf increases the risks of travelling to other areas.\(^ {18}\)

One gang leader notes:

'Most of us, we never been outside these four or five blocks, our neighbourhood. Now, how can you bring the guns here if you don't even know how to get to other places? ... Even if we go to jail, we really spend most of our time around where we live, where we work.'

Table 2 presents the results of our analysis of administrative data on confiscated crime guns that were traced by the ATF. Chicago submits all confiscated crime guns for tracing during our study period, although of course only a fraction of crime guns are ever confiscated; see Cook and Braga (2001) and our data Appendix. With this caveat in mind, the first column of Table 2 shows that guns recently purchased in the Chicago suburbs of Cook County account for only around one-tenth of the crime guns in the

\(^{16}\) In an analysis of drug law-enforcement strategy, Mark Moore points out that '...what is consistently difficult about drug trafficking is the process of reliably executing large financial transactions in a crooked world with no police or courts to enforce the contracts' (Moore, 1990, p. 138).

\(^{17}\) The account suggests part of the broker's fee is rent on broker information, and part is compensation for the unavoidable risks associated with selling guns.

\(^{18}\) Another possible explanation is that federally licensed firearm dealers (FFLs) are by law required to record the identity of the official purchaser, which increases the legal risk associated with buying a gun from a dealer (even if one's girlfriend or wife makes a straw purchase).
GB/WP community, with only about a fifth of these guns (2% of the total) first purchased by a female.\textsuperscript{19}

2.2.6. Gun ‘rentals’

SV’s sources reported that guns are often loaned out or shared in the GB/WP neighbourhood. However most of these exchanges occur outside of the market context and occur among people within the same social network, and so do not conform to what we would think of as a normal ‘rental market’.

One form of sharing arises from the fact that groups of youths often join together to purchase a gun collectively. In particular youths who are not affiliated with a gang would be expected to have greater difficulty in making an arms-length connection than others. In SV’s 116 interviews with non-gang-affiliated youths who had owned a gun, 40% reported obtaining their gun from a relative.\textsuperscript{20} The importance of family sources for this group is consistent with previous surveys of criminally active youth; see Koper and Reuter (1996) for a review.

2.2.7. Ammunition

Ammunition (like guns) is illegal in Chicago,\textsuperscript{21} and because most people rarely if ever fire their guns is essentially a durable good. Most people interviewed by SV have trouble securing ammunition and face large price markups compared to the legal market. Waits of 1 to 4 weeks for ammunition were not unusual. As one respondent noted, ‘You really don’t have someone who sells ammo around here, I mean it’s like you have to hope you can get it from [the organisation] or maybe [a gun broker]. But you never

\textsuperscript{19} Our finding that straw purchasing is rare in Chicago’s underground gun market is consistent with results from interviews with incarcerated juveniles in Maryland, who also report rarely leaving their communities to get guns (Webster \textit{et al}., 2002). It is possible that increased enforcement by Chicago Police Department and ATF over the course of the 1990s made it less attractive for gun traffickers to use females as straw purchasers of new guns at nearby licensed dealers.

\textsuperscript{20} In addition, 35% obtained their gun from someone affiliated with a gang; 17% from a licensed security guard; 6% from a broker; and 2% from some other source.

\textsuperscript{21} Chicago law forbids the possession of ammunition except if the individual is the holder of a valid registration certificate for a firearm of the same gauge or caliber as the ammunition possessed, and has the registration certificate in his possession while in possession of the ammunition, or is a licensed weapons dealer ... or [runs] a licensed shooting gallery or gun club’. Put differently, anyone found in illegal possession of a gun will also by definition be in illegal possession of ammunition if the gun is loaded. Secondary sales of either guns or ammunition are illegal by private parties in Chicago.

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know, so, lots of times it’s just a waiting thing, where you hope that someone who you got the gun from might have some bullets. But that really never happens, usually it’s the gang that sells it or you just know somebody.’ One non-gang affiliated youth reported that he spent $50 to get 10 bullets for a Beretta semi-automatic for which he had paid $300. By contrast, for $50 in the legal market one can purchase a box of 500 rounds of 9 millimetre ammunition. The ratio of street to legal prices in this case is on the order of 50 to 1.\textsuperscript{22}

While older professional thieves often have more reliable sources of ammunition, even this group carefully rations bullets. One professional criminal reports to SV: 'I'm stealing a lot of car radios right now, and sometimes, if I get really brave I may try to take a purse. For that shit, I keep the gun, but I never use it, you know. I don't even load it, I keep the bullets I got for the bigger shit I do.'

3. Explaining Transaction Costs in the Underground Gun Market

Why do the high transaction costs documented in the previous Section exist and persist in the underground gun market studied by SV on the South Side of Chicago? In market environments where search for trading opportunities is costly and information is scarce, there can be a market 'thickness' effect in which transaction costs decline as the number of buyers and sellers increases. This seems like a potentially promising explanation for the high transaction costs we find in the gun market, since illegality impairs information transmission. But that leaves unanswered the question of why the gun market is so thin. We consider several explanations including policing, gangs and neighbourhood or city-specific factors, with an eye toward identifying policy levers to further reduce the efficiency of these markets (Schelling, 1984). Anti-gun policing and low overall rates of household gun ownership seem to be among the more important contributors to limiting the number of willing suppliers.

3.1. Theory

The illegality of the gun market in Chicago creates information problems in matching prospective buyers and sellers. Neither side of the market can take advantage of the well-developed infrastructure for legal advertising. In addition the illegality of the market means that participants do not have recourse to the courts to enforce transactions. The risk of theft, arrest, injury or even death associated with exchange means that buyers and sellers will want to obtain additional information about the characteristics of their trading partners. Matches of buyers to sellers will differ in quality depending on the degree to which one knows one’s trading partner, or knows those who know one’s trading partner. Given the information requirements and scarcity associated with exchange in the underground gun market, economic models that

\textsuperscript{22} http://www.ammunitionsstore.com/pricelist_ammo4.htm#9mm. In their interview study of prisoners for the Home Office, Hales \textit{et al.} (2006) also find high prices for ammunition, and conclude that 'Ammunition appears to be a limiting factor and harder to obtain than firearms (p. xiii).’ Interestingly their informants report that guns are usually sold bundled together with a small amount of ammunition, which is not true in Chicago.

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emphasise search costs are a natural starting point for understanding the source of the transaction costs that we document in the previous Section.

The stochastic matching model developed by Diamond (1982) provides one way to understand transaction costs in the gun market. The prohibition on gun sales in Chicago introduces trade frictions, and moves us away from what Diamond describes as the 'fictional Walrasian auctioneer' that is usually assumed to facilitate exchange. Illegality makes it difficult to advertise, and so trade requires some search effort by both buyers and sellers with some probability of failure that is inversely related to overall market activity. In this type of environment economic activities can create trading externalities and positive feedback effects: 'The externality comes from the plausible assumption that an increase in the number of potential trading partners makes trade easier. The positive feedback is that easier trade, in turn, makes production more profitable' (Diamond, 1982, p. 882). That is, there will be a market 'thickness' effect where search costs decline with an increase in the number of market participants.

Similarly, Gan and Li (2004) and Gan and Zhang (2005) develop models with heterogeneity in products and buyer preferences, where search costs lead to a market thickness effect on match quality. Since match quality is relevant to our definition of transaction costs – product uncertainty and risk of injury or arrest should be lower when buying or selling a gun to someone about whom more is known – this type of model provides another complementary explanation for why there would be a market thickness effect on transaction costs in the gun market. An increase in the number of market participants increases the odds of encountering a buyer or seller that one knows or is at least known within one's social network.

Note this literature suggests it is in large part the combination of illegality and 'market thinness' that drives the transaction costs we document in the underground gun market. In 'thin' but legal markets, trading institutions can develop to reduce the costs to buyers and sellers of finding trading partners. For example, eBay has special sections of its website devoted to the markets for antique dolls (pre-1930), Annette Funicello bears, imitation pearl pins and brooches, and game-used Major League Baseball memorabilia.25

If the market were illegal but thick, as for narcotics, institutions would develop to facilitate exchange, and sellers and buyers would have incentives to develop reputations (Koper and Reuter, 1996; Venkatesh, 2006).24

The limited evidence available on price mark-ups for other illegal, thin markets is suggestive of large markups. For example, one estimate from the Centers for Disease Control in the United States found that the Supreme Court's Roe V. Wade decision legalising abortion may have reduced the average price of an abortion from $500 to $150, while other estimates suggest prices may have declined by as much as 90% in

25 See http://www.ebay.com
24 For example drug-selling corners have developed in that market and seem to change locations easily in response to law-enforcement pressures, given that buyers and sellers are closely connected and so information about changes in trading locations is easily transmitted back and forth. In contrast in the underground gun market some white ethnic street gangs or gun importers help to organise fist-fighting events in the city's warehouses but these occur only every 3–4 months. The coordination costs of moving these fighting events in response to legal or other threats is greater than with relocating a drug corner and so these events are advertised only among a selected clientele.
some jurisdictions. There is also evidence that the market for illegal abortions prior to
Roe

was characterised by substantial price dispersion and often considerable physical
risk (Graber, 1996, pp. 60–7). Similarly, pharmaceuticals to induce abortion that are
sold for 50,000 rials in Pakistan or India are reported to have a retail street price in
Tehran on the order of 200,000 to 700,000 rials.25 The Center for Strategic and
International Studies (1996, p. 115) reports that in the 1990s, Iraqi agents offered to
buy a nuclear warhead from the director of a Russian nuclear research centre for $2
billion. By comparison the average cost of producing a nuclear warhead for the US is
probably no more than $80 million.26

3.2. Sources of Market ‘Thinness’

Why is the gun market so ‘thin’? The descriptive results presented in Section 2 suggest
that the durability of guns (and ammunition) may play some role, as does the possi-
bility of shared ownership of guns by groups of youths. But this cannot be a complete
explanation, particularly on the supply side.27 After all, drug dealers regularly come
into contact with many of the people who would at least periodically want a gun; why do
they not diversify into the gun trade as well? In what follows we consider four general
types of explanations: police pressure; interference by gangs; neighbourhood-specific
factors; and city-specific factors.

3.2.1. Police

A drive through Chicago’s South Side highlights the limits on policing the under-
ground markets for drugs and sex services; street corners populated by drug dealers or
prostitutes are a common sight, even in the middle of the day. And yet we find that the
police activity does discourage participation in the gun trade. Police pressure against
guns has the effect of jeopardising gang profits from the more lucrative drug trade, if
the gang is careless about its involvement with guns.

While historically gangs were often organised for defensive or social purposes (Klein,
1995; Akerlof and Kranton, 2000), over time some gangs have undergone a process of
‘corporatisation’ (Levitt and Venkatesh, 2000). The most important income-generating
activity of the gangs studied by SV on the South Side of Chicago is the distribution of
illegal drugs (Levitt and Venkatesh, 2000).

As one gang leader explained to SV about why his organisation does not sell guns:
‘It’s really not worth it because not that many people buying.’ Another gang leader
notes: ‘Police don’t like [guns] moving around here, man. We stay away from that shit,

26 Stephen Schwartz of the Brookings Institution estimates that from 1940 to 1996 the US spent about $5.5
   trillion in constant 1996 dollars on nuclear weapons and weapons-related programmes (http://www.brook-
   ings.edu/innovation/nuccost/swartz.htm). Between 1945 and 1990 a total of 70,000 different warheads
   were produced (http://www.brook.edu/innovation/nuccost/50.htm). Dividing the total expenditures
   1940–96 by the total production 1945–90 yields around $79 million per warhead in 1996 dollars. To the
   extent there was additional production from 1990–6, the cost per nuclear warhead to the US government
   would be even lower than this crude estimate would suggest.
27 On the demand side, many owners loan their guns out and never get them back, lose them, or sell them
   when cash is tight (Cook and Ludwig, 1996). In addition many youth in SV’s neighbourhoods seem to have
   trouble finding suitable places to store their guns, which further increases the probability of theft or loss
   (Cook et al., 2005).

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see, 'cause we already got enough trouble with them [police].\(^{28}\) Police typically assume that gang members or alumni caught in possession of a gun obtained the weapon from the gang and so crack down on the gang accordingly.\(^{29}\) These remarks are consistent with what one police officer explained to SV:

'Look, I'll be honest with you. There will always be drugs, drug dealing and drug dealers. The reason we get tight on guns is that it's better that there be drugs and no one gets killed than if someone gets killed. We love guns! We love getting them because it makes the job easier on the street. So, when we find one, yes, we really go after them [gang leaders] because they know the rules. They know the agreement, and if we get a gun, that means they broke it.'

3.2.2. Gangs

An alternative possible explanation for the 'thinness' of the underground gun market studied by SV is that gangs actually suppress the gun trade in order to preserve a monopoly over the capacity to inflict lethal violence in the neighbourhood. Yet SV's interviews do not find that gangs expend a great deal of effort in suppressing gun markets. Gang leaders are interested in knowing who is selling guns on their turf, and charge the standard 'tax' applied to other forms of underground exchange but do not seem to take any unusual actions to reduce the number of sellers in the gun market.

In fact, SV's interviews suggest that a substantial amount of gang involvement by neighbourhood youth is itself motivated by the transaction costs that seem to exist for other reasons in the underground gun market. For members, a gang creates a social network within which gun transactions can be accomplished with relatively little risk. The gang leadership has information about the reliability of its members and can make a credible threat to punish misbehaviour. Many respondents to SV's interviews on the South Side of Chicago report that they joined or stay in the gang to preserve access to guns. As one former gang member notes, 'You never leave [the gang] before you got the gun, because after you leave, they don't really have no reason to help you get one.'

In practice access to guns within the gang is regulated, with most transactions in the form of loans or rentals with strings attached. The general rule is that members can only own guns if authorised by gang leaders. These gang leaders in turn ration gun ownership in part by age. 'Shorties', young rank-and-file members who often want guns for social status, are typically authorised to access guns during gang wars (though even then many shorties are only allowed to carry knives), drug sales (at least for one member of the 4–6 member drug selling team assigned to provide security), and drug pick-ups and drop-offs outside the gang's own turf. These constraints are motivated by

\(^{28}\) Another gang leader expressed his frustration about gun use by gang alumni: 'It's like these niggers get stupid after they leave. I mean, they know not to keep a gun on them when they do this [engage in income-generating crime], 'cause the cops hate that shit. I mean, they could use a knife or something. Why the gun? That just brings down [the police] on us really, I mean, that's the thing that happens all the time, [the gang] gets blamed and we get shut down.'

\(^{29}\) During SV's fieldwork on the GB/WP neighbourhood, 43 gang members exited out of the 2 largest street gangs in the area, of which 37 continued to work in some capacity in the local underground economy (such as selling drugs, committing burglaries, fencing, or providing off-the-books services as day labourers or security guards). Of this group, 11 were arrested and in every case a gun was confiscated. In 7 of these cases, the police confronted the gang leaders about whether they had provided the suspect his gun.
the gang's other economic interests, including the fact that gun violence induces police crack downs on gang drug-selling activities and also may scare away customers.

Sometimes gang leaders actually enlist the police as agents in controlling gun use by notifying the police about unauthorised gun possession by rank-and-file shorties. In this scenario the police usually confiscate the gun but do not make an arrest, which helps to reduce enforcement costs to both gangs and the police. As one police officer notes:

'Yes, I suppose I'll admit that, on occasion, we will act on a call from [the gang leaders]. We prefer to have the guns off of the street. That is our first priority. It's hard, we cannot stop guns from coming through here, but these kind of arrangements help us to control who gets hurt. That's not good policing some would say, but they are not seeing what I see every day.'

Older gang members are less likely to use guns in ways that are contrary to the gang’s economic interests both because age may reduce impulsivity and because many older members stay in the gang primarily for economic reasons.30

3.2.3. Neighbourhood-specific factors

A third possible explanation for SV's findings of high transaction costs in the gun market attributes them to factors that are unique to the neighbourhoods he studied. The neighbourhoods studied by SV are located somewhat far away from suburban gun dealers, are notorious for having among the city's most powerful street gangs, and could plausibly be subject to unusually vigorous policing against guns.

Yet we find that neighbourhood-specific factors cannot be a very important explanation for the transactions costs documented by SV given that prices, availability and other characteristics of the gun market in the GB/WP area as measured by administrative and other survey data appear to be so similar to the rest of Chicago. Compare for example the first and second columns in Table 2 on the proportion of confiscated crime guns traced by ATF that show the hallmarks of having been 'straw purchased' in suburban gun stores. Appendix Tables A1 to A4 show crime guns found in SV's study area are similar to those from the rest of Chicago along other dimensions as well. The similarity between these administrative data and SV's interviews of course also enhances our confidence in the reliability of the latter.

Table 3's statistics suggest SV's findings are also consistent with the reports of 1,194 arrestees interviewed in Chicago in 1996–7 as part of the US Department of Justice’s Drug Use Forecasting (DUF) system (see data Appendix). For example, the prices paid are in the same range: of the 20% of DUF arrestees who ever owned a gun, more than two-thirds report having paid between $100 and $499 for their most recent gun, with a median price of $150 (median price of $100 for adult males, as seen in column two). DUF respondents also report high transaction costs. Of those arrestees who never owned a gun but indicated they might want one someday (just under one-quarter of

30 Gang leaders also value the human capital developed by experienced members and so are more likely to formally or informally waive the gang's rules on gun ownership for older members. As one gang official notes, 'The way we do it is that we just don't write down that [the older guys] are carrying something.' Gang leaders sometimes use access to guns as an incentive for performance; for example, in some gangs the custom is to provide a gun to members who successfully execute authorised drive-by shootings.
Table 3

<table>
<thead>
<tr>
<th>Sample size (N)</th>
<th>Full sample</th>
<th>Adult males only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ever own handgun?</td>
<td>1,194</td>
<td>1,074</td>
</tr>
<tr>
<td>Yes</td>
<td>20.8%</td>
<td>20.4%</td>
</tr>
<tr>
<td>Gun acquisitions (for those ever owned)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stole</td>
<td>6.1</td>
<td>6.9</td>
</tr>
<tr>
<td>Rented/borrowed</td>
<td>10.4</td>
<td>10.3</td>
</tr>
<tr>
<td>Bought</td>
<td>61.9</td>
<td>59.6</td>
</tr>
<tr>
<td>Gift/other</td>
<td>21.6</td>
<td>23.2</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>Amount paid if bought:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$0–50</td>
<td>5.7</td>
<td>6.8</td>
</tr>
<tr>
<td>$50–99</td>
<td>20.5</td>
<td>24.7</td>
</tr>
<tr>
<td>$100–199</td>
<td>34.1</td>
<td>34.2</td>
</tr>
<tr>
<td>$200–499</td>
<td>33.0</td>
<td>26.0</td>
</tr>
<tr>
<td>$500 or more</td>
<td>6.8</td>
<td>8.2</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td>(Median paid)</td>
<td>($150)</td>
<td>($100)</td>
</tr>
<tr>
<td>Might want gun? (of those never owning)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.6%</td>
<td>17.4%</td>
<td></td>
</tr>
<tr>
<td>How long to get gun? (those who want one)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>More than a week</td>
<td>61.4%</td>
<td>60.4%</td>
</tr>
<tr>
<td>Gang member?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current</td>
<td>21.1%</td>
<td>19.8%</td>
</tr>
<tr>
<td>Current or Past</td>
<td>44.3%</td>
<td>43.6%</td>
</tr>
</tbody>
</table>

Source: Author calculations from Drug Use Forecasting System data for 1996 and 1997 (ICPSR 9477).

those who never had a gun), fully 61% indicated that it would take them more than one week to get a gun.

The DUF survey reports in Chicago also confirm SV’s field data about the limited involvement of drug dealers with gun sales. Only 40% of the arrestees interviewed in Chicago as part of the DUF system agree with the statement that ‘if you want a gun, drug dealers will be able to get one for you’. Finally, DUF responses suggest that gang membership is quite common in Chicago as a whole, not just in the GB/WP neighbourhood studied by SV. Fully one-fifth of Chicago arrestees interviewed in DUF report being gang members at the time, while a total of 44% had ever been in a gang.

3.2.4. City-specific factors

The final type of explanation we consider for the thinness of the gun market studied by SV are city-specific factors. It appears that guns are somewhat more difficult for criminals to get in Chicago than other cities, although guns are surprisingly difficult for criminals to get in other cities as well. To the extent to which Chicago’s gun market works less well than in other places, the most likely explanations are the city’s low rate of household gun ownership and police emphasis on guns, rather than the city’s ban on private possession of handguns.

Detailed ethnographic information is not available for cities other than Chicago. However the 1996–7 interviews of arrestees in 22 cities conducted by the Drug Use Forecasting (DUF) project included an addendum about gun ownership and use.
Making reliable inferences from the DUF data is made difficult by the fact that the study uses unrepresentative ('convenience') samples of arrestees in participating cities. In several cities, sample characteristics appear far out of line with what we learn from other sources. Nevertheless the DUF data provide one of the best (albeit imperfect) ways to compare gun markets across cities.

The top panel of Figure 1 shows that the fraction of arrestees interviewed in the Chicago DUF site who report that they ever owned a gun, 21% (measured along the vertical axis), is much lower than the mean and median values for DUF cities (31% and 33%, respectively). The Figure also highlights obvious measurement error—specifically, the rates of gun ownership reported by arrestees in two of the Texas cities in the sample, Dallas and San Antonio, are implausibly low. For that reason we should be cautious drawing strong inferences from the pattern of findings across individual DUF sites. But the overall finding that a minority of arrestees had ever owned a gun, and a still smaller percentage currently owned one, is plausible, since it is in line with the prevalence of gun use in crime. (We discuss this matter in greater detail below.)

Several other measures available from these DUF arrestee interviews also suggest that guns may be difficult for a high proportion of criminals to access across cities. Of the 18% of Chicago arrestees who had never owned a gun but thought they might want one someday, about 70% report that it would take them at least a week (which includes those who say they think they would be unable to get a gun at all), while only around 15% say they could get a gun within a day. In the other DUF sites about 60% of arrestees who had never owned a gun but might want one think getting a gun would require at least a week, while only around 20% think they could get a gun in a day.

The potential importance of gun prevalence to transactions costs is illustrated in Figure 1. The top panel depicts a positive relationship between DUF reports of gun ownership by interviewed arrestees and the best available county-level proxy for household gun ownership, the fraction of suicides that involve firearms (FSS), with a slope for this regression relationship equal to +0.310 (SE = 0.16, p = 0.06).\footnote{The US does not maintain administrative data on gun ownership and most surveys are not representative at the local level. The fraction of suicides committed with guns has been shown to be highly correlated with survey-based estimates of household gun ownership at the state or region level in both the cross section and within jurisdictions over time (Azrael et al., 2004; Cook and Ludwig, 2006b).}

The bottom panel of Figure 1 shows the same basic pattern when we adjust for arrestee and offence characteristics for DUF respondents to account for differences across cities in the survey samples. We first regress the individual DUF responses about lifetime gun ownership against a detailed set of arrestee and offence characteristics.\footnote{These characteristics include interactions between gender and race/ethnicity, age (using separate indicators for two-year age categories from 15 to 30, then 5-year age groups to age 60, with a catch-all category of 60 and over), indicators for whether the arrestee self-reports having used drugs in the past year, an indicator for self-reported sold drugs in past year, whether the respondent tested positive for various drugs in the urinalyses tests administered to arrestees as part of the DUF, and whether the respondent self-reports having ever used marijuana, cocaine or heroin. We also condition on a rich set of indicator variables for the specific criminal charge for which the arrestee was arrested.}

We then replace our measure for actual DUF gun ownership on the vertical access with the DUF site means for the regression residuals, and continue to find a positive relationship between this measure and FSS (slope = +0.36, se = 0.15, p = 0.03).

To what extent does gun policy contribute to scarcity of guns to criminals? One intriguing pattern in Figure 1 is that the three DUF cities with the most stringent
restrictions on private handgun ownership (Chicago, New York City and Washington, DC) are all clustered together with low rates of household gun ownership and low rates of lifetime gun ownership reported by arrestees in the DUF study.

Figure 2 shows that Cook County, which is dominated by Chicago, experienced a temporary dip in our proxy for household gun ownership rates, FSS, following the city’s handgun ban in 1982. (We present 5-year averages for FSS to reduce measurement error.) However a simple difference-in-difference estimate suggests this is not due to the ban, since from 1979–82 to 1983–7 the dip in FSS in Cook County (−4.3 percentage points) is actually smaller than in surrounding counties unaffected by the ordinance (−8.8 percentage points) or in the rest of Illinois (−6.0 points). Nor did household gun ownership rates decline in the District of Columbia following that city’s handgun
ban in 1978, either absolutely or compared to the nearby city of Baltimore over this period (Cook and Ludwig, 2006b, p. 710). The fact that Chicago and DC have low gun ownership rates may be more cause than consequence of restrictive local gun laws.

We should note that it is possible that handgun bans affect gun availability to criminals in ways other than by reducing household gun ownership rates, as might occur if owners are now less likely to resell their guns through unregulated secondary market transactions. Our FSS measure would not be informative about these types of effects, and more direct measures of gun access to criminals (such as those in the DUF) are not available for multiple points in time. Chicago’s handgun ban may also have helped to reduce criminal access to guns by preventing the location of licensed gun dealers in high-crime neighbourhoods.

SV’s interviews also point to another important policy – the Chicago Police Departments’ (CPD) long-standing emphasis on taking guns off the street. Starting in the 1950s the CPD has emphasised a policy of ‘making your presence felt’, which involves getting patrolmen out into the community to interact with the public, make vehicle or other stops and search for guns as appropriate. At least during the 1950s and 1960s officers who confiscated illegal guns were provided with departmental citations. During the period 1999–2003, the Chicago Police Department averaged over 10,000 firearms confiscations per year, far in excess of other large cities.

Pushing in the other direction is the prevalence of gang membership. Table 4 shows that Chicago together with Los Angeles are outliers in the DUF sample with respect to gang activity, with around 20% of arrestees in these cities reporting membership in a gang at the time of their arrest, about eight times the median value in the DUF sample and about twice as high as the rate reported in the next-highest city, Birmingham. Chicago and LA continue to have unusually high rates of gang membership if we limit

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33 Personal communication of Philip Cook with Herman Goldstein, August 18, 2004.
34 Chicago Police Department, Annual Report: 2003 Year in Review. By comparison, from 1999 to 2001 a total of around 12,000 guns of all types were confiscated each year in New York State as a whole (Council of the City of New York, Office of Communications, September 12, 2003, ‘Committee Hears Testimony on Proposals to Stem the Flow of Illegal Guns Into the City’).

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### Table 4

**Gang Membership Among Arrestees in DUF Sample**

<table>
<thead>
<tr>
<th>City</th>
<th>Sample (N)</th>
<th>Currently in gang</th>
<th>Currently or ever in gang</th>
<th>Sample (N)</th>
<th>Currently in gang</th>
<th>Currently or ever in gang</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago</td>
<td>1,221</td>
<td>20.5</td>
<td>44.9</td>
<td>2,077</td>
<td>20.3</td>
<td>44.2</td>
</tr>
<tr>
<td>Los Angeles</td>
<td>3,076</td>
<td>18.9</td>
<td>33.6</td>
<td>1,161</td>
<td>12.3</td>
<td>27.1</td>
</tr>
<tr>
<td>Birmingham</td>
<td>3,630</td>
<td>10.8</td>
<td>20.3</td>
<td>1,816</td>
<td>4.9</td>
<td>14.6</td>
</tr>
<tr>
<td>Denver</td>
<td>5,589</td>
<td>8.4</td>
<td>22.8</td>
<td>2,336</td>
<td>3.6</td>
<td>17.9</td>
</tr>
<tr>
<td>Phoenix</td>
<td>1,555</td>
<td>7.8</td>
<td>19.5</td>
<td>677</td>
<td>5.3</td>
<td>16.5</td>
</tr>
<tr>
<td>St. Louis</td>
<td>2,331</td>
<td>6.3</td>
<td>23.3</td>
<td>1,352</td>
<td>5.0</td>
<td>25.2</td>
</tr>
<tr>
<td>Indianapolis</td>
<td>4,313</td>
<td>5.4</td>
<td>18.3</td>
<td>1,836</td>
<td>5.3</td>
<td>21.5</td>
</tr>
<tr>
<td>Portland</td>
<td>495</td>
<td>5.3</td>
<td>13.5</td>
<td>239</td>
<td>1.3</td>
<td>10.0</td>
</tr>
<tr>
<td>San Antonio</td>
<td>4,040</td>
<td>5.1</td>
<td>17.1</td>
<td>2,127</td>
<td>3.0</td>
<td>14.2</td>
</tr>
<tr>
<td>San Jose</td>
<td>1,370</td>
<td>5.1</td>
<td>16.6</td>
<td>721</td>
<td>2.2</td>
<td>12.2</td>
</tr>
<tr>
<td>Cleveland</td>
<td>2,733</td>
<td>3.2</td>
<td>17.5</td>
<td>1,258</td>
<td>1.4</td>
<td>15.4</td>
</tr>
<tr>
<td>Omaha</td>
<td>2,750</td>
<td>2.8</td>
<td>15.5</td>
<td>1,366</td>
<td>3.5</td>
<td>16.2</td>
</tr>
<tr>
<td>Houston</td>
<td>2,360</td>
<td>2.5</td>
<td>12.3</td>
<td>1,505</td>
<td>3.3</td>
<td>14.6</td>
</tr>
<tr>
<td>Miami</td>
<td>1,560</td>
<td>2.1</td>
<td>9.8</td>
<td>1,299</td>
<td>2.0</td>
<td>9.5</td>
</tr>
<tr>
<td>Dallas</td>
<td>3,374</td>
<td>1.9</td>
<td>11.2</td>
<td>2,056</td>
<td>2.5</td>
<td>12.9</td>
</tr>
<tr>
<td>Fort Lauderdale</td>
<td>2,235</td>
<td>1.5</td>
<td>10.2</td>
<td>1,816</td>
<td>1.9</td>
<td>12.9</td>
</tr>
<tr>
<td>New York</td>
<td>2,319</td>
<td>1.1</td>
<td>11.1</td>
<td>1,456</td>
<td>1.2</td>
<td>14.1</td>
</tr>
<tr>
<td>Detroit</td>
<td>2,238</td>
<td>1.0</td>
<td>8.0</td>
<td>1,549</td>
<td>0.9</td>
<td>9.3</td>
</tr>
<tr>
<td>Philadelphia</td>
<td>2,737</td>
<td>0.8</td>
<td>10.9</td>
<td>1,452</td>
<td>1.3</td>
<td>14.7</td>
</tr>
<tr>
<td>New Orleans</td>
<td>2,838</td>
<td>0.7</td>
<td>6.4</td>
<td>1,887</td>
<td>1.1</td>
<td>7.5</td>
</tr>
<tr>
<td>Atlanta</td>
<td>7,288</td>
<td>0.7</td>
<td>6.5</td>
<td>5,511</td>
<td>0.7</td>
<td>7.3</td>
</tr>
<tr>
<td>Washington, DC</td>
<td>2,735</td>
<td>0.4</td>
<td>4.2</td>
<td>1,538</td>
<td>0.4</td>
<td>5.1</td>
</tr>
</tbody>
</table>

*Source: DUF samples of arrestees, 1996 and 1997. (See Appendix for details.)*

The sample to just adult males (last three columns of Table 4) or regression-adjust for a more elaborate set of arrestee and offence characteristics (not shown).

Consistent with SV’s interview reports, among DUF arrestees in Chicago we find that the proportion who report ever having owned a gun is much higher for those in gangs compared to other respondents (30% vs. 19%). The same differential between gang and non-gang members is found in other DUF cities, although the absolute levels of gun ownership are much higher for both groups (58% and 29%).

### 4. Gun Availability and Gun Use in Crime

The previous Sections of the article present evidence of substantial transactions costs in the underground gun market in Chicago’s South Side, in the rest of the city as well, and to some extent in other cities across the US. The key question for social welfare is whether the difficulty a criminal has in obtaining a gun affects what really matters for social welfare – gun use in crime. This question is not settled by evidence that only a fraction of all arrestees interviewed as part of the DUF have ever owned a gun, since it remains possible that the most serious criminals can get guns even though most have not. The results presented in this Section suggest that transactions costs in the underground gun market do have some impact on gun use in crime.

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One indirect piece of evidence that gun market frictions affect gun use in crime is that gun use in violent crime is not the norm in the US, despite its deserved reputation for outstripping other Western nations in this regard. Cook (1976) finds that the value of items taken in completed robberies is over twice as high in gun robberies as for robberies with other weapons. Yet in a country with 200–250 million guns in private circulation, guns are used in only around 27% of personal robberies and 8% of serious assaults (Perkins, 2003, p. 2).\textsuperscript{35} Gun use is far higher than in Britain, for example, but lower than what we would expect in a truly gun-saturated society.

Table 5 demonstrates that the patterns of gun involvement in crime across jurisdictions within the US is also consistent with the hypothesis that guns are used less often in crime in gun markets where the prevalence of guns is low (contributing to "thinness" in the underground market). In particular we consider the relationship between the fraction of suicides involving firearms (FSS) and gun involvement in crime using data for the 200 counties with the largest populations in the US in 2000. We measure gun involvement in crime using data on the share of homicides and robberies with guns as reported in the UCR.\textsuperscript{36} It should be noted that that UCR data are known to have considerable measurement error at the county level (Maltz, 1999). The data that describe gun involvement in these UCR crimes appear to be even noisier.

The first column of the Table shows the cross-sectional relationship between household gun ownership rates and gun involvement in crime: A one percentage point increase in FSS increases the share of homicides (top panel) and robberies (bottom panel) that involve guns by about one-third of a percentage point. We estimate this model pooling three years of data to reduce measurement error in our FSS proxy for household gun ownership rates (Cook and Ludwig, 2006a); given that FSS evolves slowly over time within areas, almost all of the variation will be cross-sectional. We focus on the years 1994–6 because these are the last years for which data on gun involvement in robbery are available for Cook County, Illinois, which contains the city of Chicago.

We initially try to account for possible confounding factors by conditioning on the percentage of the county that is urban and African-American (both powerful predictors of crime), the county’s population (in thousands) and population squared to account for the well-documented relationship between crime rates and overall city size; see for example Blumstein (2000). To account further for unmeasured criminogenic factors we also condition on the county’s burglary rate. The second column of Table 5 reveals that our analysis is not very sensitive to excluding these covariates. The third column of Table 5 shows our cross-section results are also not sensitive to whether we weight by county population or not in the analysis.\textsuperscript{37}

\textsuperscript{35} That guns are used in a small minority of violent crimes might be due in part to the deterrent effect of sentencing add-ons for gun use in violent crime, rather than the difficulty of accessing guns. Previous research yields mixed results on the deterrent effect of sentencing enhancements for gun use (McDowall et al. 1992; Marwell and Moody, 1995; Raphael and Ludwig, 2003).

\textsuperscript{36} We do not consider the fraction of aggravated assaults that involve guns because this offense is more susceptible to differences across areas and over time in definitional problems about the distinction between aggravated and simple assault.

\textsuperscript{37} We also find that all of the estimates shown in Table 5 are usually qualitatively similar when we focus on just the 100 or 50 largest counties in the US, although the estimates particularly for gun involvement in robbery are usually much less precisely estimated when we employ less data. We cannot focus on all counties in the US because the Vital Statistics system only makes county-level data on suicide mortality available for the larger counties.

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### Table 5

Relationship Between Household Gun Ownership Rates (Correlate of Market Frictions) with Gun Use in Crime in 200 Largest US Counties

<table>
<thead>
<tr>
<th>% homicides with guns</th>
<th>'Cross-section' model (1)</th>
<th>'Cross-section' model (2)</th>
<th>'Cross-section' model (3)</th>
<th>Panel model (4)</th>
<th>Panel model (5)</th>
<th>Panel model (6)</th>
<th>Panel model (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient for HH gun ownership (FSS)</td>
<td>0.354** (0.041)</td>
<td>0.325** (0.042)</td>
<td>0.320** (0.050)</td>
<td>0.157** (0.036)</td>
<td>0.165** (0.036)</td>
<td>0.128** (0.041)</td>
<td>0.083** (0.036)</td>
</tr>
<tr>
<td>Covariates?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Weight by population?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>County and year fixed effects?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>County-specific linear trend?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Sample years</td>
<td>94-96</td>
<td>94-96</td>
<td>94-96</td>
<td>79-99</td>
<td>79-99</td>
<td>79-99</td>
<td>79-99</td>
</tr>
<tr>
<td>$N$</td>
<td>557</td>
<td>572</td>
<td>557</td>
<td>5,924</td>
<td>5,987</td>
<td>5,924</td>
<td>5,924</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.365</td>
<td>0.095</td>
<td>0.223</td>
<td>0.557</td>
<td>0.552</td>
<td>0.430</td>
<td>0.615</td>
</tr>
<tr>
<td>% robbery with guns</td>
<td>0.316** (0.028)</td>
<td>0.369** (0.033)</td>
<td>0.257** (0.029)</td>
<td>0.056 (0.023)</td>
<td>0.066** (0.031)</td>
<td>0.041** (0.019)</td>
<td>0.010 (0.017)</td>
</tr>
<tr>
<td>Covariates?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Weight by population?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>County and year fixed effects?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>County-specific linear trend?</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
<td>Y</td>
</tr>
<tr>
<td>Sample years</td>
<td>94-96</td>
<td>94-96</td>
<td>94-96</td>
<td>79-99</td>
<td>79-99</td>
<td>79-99</td>
<td>79-99</td>
</tr>
<tr>
<td>$N$</td>
<td>538</td>
<td>541</td>
<td>538</td>
<td>3,620</td>
<td>3,684</td>
<td>3,620</td>
<td>3,620</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.561</td>
<td>0.187</td>
<td>0.528</td>
<td>0.630</td>
<td>0.614</td>
<td>0.675</td>
<td>0.711</td>
</tr>
</tbody>
</table>

**Notes.** Parentheses contain robust standard errors that are adjusted to account for within-county correlation in error terms. ** = Statistically significant at 5% level. The analytic sample consists of data for the 200 largest counties in the US for the period 1979–99, where gun involvement in homicide and robbery is measured using data from the FBI's Uniform Crime Reporting system and our proxy for household gun ownership is measured using the fraction of suicides involving firearms collected from the Vital Statistics system. Our 'cross-section' estimator pools together data from three years to reduce measurement error in FSS (Cook and Ludwig, 2006a); we focus on 1994–6 for the cross-section because these are the last years for which data on gun involvement in robbery are available for Cook County, Illinois, the county that contains the city of Chicago. Covariates included in the regression models include percentage of county black, the county's burglary rate from the UCR, county population (in thousands) and population squared, and (in the cross-section models) percentage of the county living in an urban area in the 2000 census.
The last four columns of Table 5 show that the positive relationship between FSS and gun involvement in violent crime persists when we switch from cross-section to panel regression analysis. However, the magnitudes of the coefficient estimates are smaller. The fourth column shows that a 1 percentage point increase in FSS within a county leads to an increase in the share of homicides that involve guns equal to 0.16 percentage points (significant at the usual 5% cutoff), with an effect for gun involvement in robbery that is equal to 0.04 percentage points (p = 0.2). 38

Of course without a clear source of exogenous identifying variation in household gun ownership rates, these estimates do not necessarily provide reliable estimates of the causal effects of household gun prevalence on gun use in crime. Much of the variation in household gun ownership across counties over time in the US over this period derives from a general convergence in gun prevalence between the traditionally high-gun regions in the South and West with the region where guns have traditionally been less common, the Northeast (Cook and Ludwig, 2006a). It is thus interesting that when we also condition on county-specific linear trends (last column of Table 5) the positive relationship between FSS and gun involvement in crime remains, at least for homicide. Furthermore, in a simple 20-year difference-in-difference test that captures the long-term convergence in gun prevalence between the historically high and low-gun areas, we again obtain a qualitatively similar estimate. All told, these results presented in Table 5 provide at least suggestive evidence that one likely source of transactions costs in the underground gun market – low household gun ownership rates – is related to gun use in crime.

Finally, it is interesting to consider how gun use in crime in Chicago compares to other places. Once we control for the basic set of county characteristics described above (race and urbanicity, population and the burglary rate) the proportions of homicides and robberies that involve guns were about 6 percentage points lower in 1994–6 in Cook County (dominated by Chicago) compared to the other 200 largest counties in the country. 39

5. Discussion

Our findings about the presence of substantial transaction costs and price mark-ups in Chicago’s underground gun market stand in contrast to conventional wisdom in the sociology and criminology literatures, which in the context of the US has emphasised the ease with which criminals can access guns in the informal market, as well as the inelasticity of demand by criminals. For example, Sheley and Wright (1998) stress the

38 Bertrand et al. (2004) discuss the problems of incorrectly accounting for serial correlation in difference-in-differences analysis, many of which are relevant for our estimates since our key explanatory variable of interest (FSS) is also highly serially correlated. We present robust standard errors that allow for an arbitrary correlation in error terms over time within each county.

39 This finding is quite similar when we do not control for the burglary rate. The difference is closer to 5 percentage points if we compare Cook County to just the 50 or 100 largest counties in the US. The raw (unadjusted) differences in fraction homicide and robbery that involve guns for Cook County versus the 200 largest counties equal around 4 for both the gun homicide rate and the share of homicides that involve guns (Blumstein, 2000, pp. 37–8).
ease of access on the basis of a survey of 16–18-year-old high school students drawn from a convenience sample of 53 schools. Half reported that obtaining a gun would be 'little' or 'no trouble' if they desired one, while the other half of the sample indicated that getting a gun would be 'a lot of trouble' or 'impossible'. The vagueness of these adjectives (how would a youth who thought they could get a gun in a month respond?) leaves the authors free to impose their own spin. See also, for example, Jacobs (2002); Shely and Wright (1995, pp. 148ff.); Wright and Rossi (1994, Chap. 12.). We believe that the difference is more a matter of interpretation and emphasis than outright contradiction. But there may remain some question whether our data are misleading.

Our study relies in large part on the unusually detailed interviews and field observations of Sudhir Venkatesh, who sought to capture information about prices, waiting times and other specific characteristics of market operation, rather than potentially ambiguous descriptions of people's perceptions of how markets work. Of course SV's fieldwork, like any survey work in this area, necessarily relies heavily on self-reports from people who regularly engage in criminal or anti-social activities, which in turn raises concerns about misreporting. However SV's interviews are quite consistent with the variety of other data sources that are available to us, including those that do not rely on self-reports by criminals.

So why does the gun market in the Chicago South Side neighbourhood studied by SV have such high transaction costs? We have argued for an explanation in terms of illegality and market thinness. Handguns have been illegal in Chicago since 1982, and more generally under the 1968 Gun Control Act youths and convicted criminals cannot possess firearms or obtain them directly from licensed gun dealers. Since gun transactions are illegal in Chicago, communication between potential buyers and sellers is made difficult, especially in a thin market.

But why is the underground gun market so thin? Even if there are relatively few buyers in this market, owing in part to the durability of guns, why do drug dealers and drug-selling gangs not diversify into the gun trade given that they already come into regular contact with most of the people who would be interested in having a gun and could presumably enter into the gun selling business at low marginal cost? We argue that police emphasis on guns is an important contributing factor, since gangs are reluctant to jeopardise the profits associated with the more lucrative drug trade. Gang leaders control a stash of guns and regulate their distribution and use by members with an eye to the gang’s corporate objectives. Some youths report joining a gang to gain access to guns but that access is limited.

The underground gun market in the high-crime South Side Chicago neighbourhood studied by SV is not unique. Other data sources indicate that high transaction costs characterise the underground gun market elsewhere in Chicago and in some other large cities. These cross-city comparisons in transaction costs are limited by the fact that the arrestee samples are not representative of all criminals or even all arrestees in the participating cities; better data on criminal reports about underground gun markets across cities should be a priority for future research. Cross-national comparisons of underground markets would also be of great interest for tracing out the effects of gun prevalence and regulations on transactions prices and costs.

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One policy implication of our findings is that law enforcement efforts targeted at reducing gun availability at the street level seem promising.\footnote{The possibility of buy-and-bust or sell-and-bust operations by undercover police officers could further erode trust in the underground gun market and increase the information requirements for successful exchange. Similarly, offering rewards for information about gun sellers and possessors, either in the form of cash or leniency for the informant's own legal difficulties, should further inhibit the flow of information in the underground market, which consists primarily of word-of-mouth within social networks. Providing informants with incentives might also reduce the value of guns to youth for social status, since public display of a firearm would now entail additional legal risk. This type of reward programme has been employed in New York but has to date not been rigorously evaluated (Golden and Alano, 2004). In Boston, law enforcement efforts focusing on the illegal diversion of handguns from retail sources reduced the prevalence of new handguns recovered in crime (Braga and Pierce, 2005).} If ‘thinness begets thinness’ in markets with non-trivial search costs, as suggested by Diamond (1982), then the impact of stepped-up enforcement activities may produce multiplier effects. Of course this virtuous cycle becomes vicious if reversed, which is of some concern given recent cuts in federal funding for law enforcement in general and for gun-oriented activities in particular (Donohue, 2004; Lichtblau, 2004). Our results also provide some support for police strategies that hold the gang as a whole accountable for gun possession or misuse by individual members, thus creating an incentive for gang leaders to regulate gun access among members. This collective-deterrence strategy seeks to leverage gang cohesion together with the economic motivations of gang leaders and was a key feature of Boston’s Operation Ceasefire (Braga et al., 2001; Piehl et al., 2003).

While the public safety gains from local restrictions on gun ownership may be modest, broad efforts that could reduce the rate at which households own guns have promise. In principle widespread household gun ownership can have positive as well as negative externalities, by generating a general deterrent threat to criminal predation (Lott, 2000). However in practice weapon choice by violent criminals is positively correlated with prevalence of gun ownership. The best evidence indicates that an increase in gun prevalence results in more homicides, burglaries and perhaps suicides as well (Duggan, 2001, 2003; Cook and Ludwig, 2005, 2006a). The dollar value of the negative externality may be considerable – in one estimate, $600 per year per gun-owning household (Cook and Ludwig, 2006a). Increased sales taxes on guns and ammunition, or even licensing systems with annual permit fees for gun ownership, may further contribute to market thinness and increase transaction costs to criminals.

Data Appendix

Our analysis of Chicago’s underground gun market draws on data from 6 main sources: intensive field interviews and observations conducted in high-crime neighbourhoods on the city’s South Side by one member of our team (Sudhir Venkatesh), discussed in the text; data on crime gun traces from Chicago collected by the Bureau of Alcohol, Tobacco and Firearms (ATF); a census of all arrests made in the state of Illinois from 1990 to 2001 recorded by the Illinois State Police (ISP); city- and state-level data on crime rates and gun ownership from the FBI’s Uniform Crime Report (UCR) system; the census of all death certificates in the US maintained as part of the Vital Statistics (VS) system; and data from the Drug Use Forecasting (DUF) system of arrestee interviews, specifically data from the 1996–7 gun addendum to DUF. In what follows we discuss each of the last 5 sources in turn.
A. Crime Gun Traces

We draw on data from the Bureau of Alcohol, Tobacco and Firearms (ATF) on crime guns confiscated by the Chicago Police Department between 1999 and 2003 submitted to ATF for tracing. By using serial numbers that are unique to a given gun (conditional on manufacturer), ATF tries to identify the first legal purchaser of the firearm by accessing the commercial transactions records maintained by law by dealers, distributors and manufacturers.

Between 1999 and 2003 the Chicago PD submitted all confiscated crime guns to the ATF for trace requests, as part of ATF’s Youth Crime Gun Intervention Initiative (ICGI). A total of 43,413 guns were submitted for tracing over this period, of which 23,237 (53.5%) were successfully traced. This tracing success rate is quite similar for our study area of GB/WP and for the rest of Chicago. This tracing success rate is also quite similar to national data for 1999 (54%). Nationwide in 1999, 10% of guns could not be traced because the guns were too old, while others could not be traced because of problems with the serial number or errors in the paperwork and the like. It is important to note that even when guns are successfully traced this process can only identify the first purchaser from a FFL, and provides no information on subsequent transactions in the underground distribution chain; see Cook and Braga (2003) for more on the trace process and limitations of the ATF data.

B. Arrest Data

Our arrest data consists of a census of all arrests made in the state of Illinois from 1990 to 2001 reported to the ISP. These data provide information on the date of each arrest, the arresting agency (so that we can distinguish arrests in Chicago versus elsewhere in the state, but cannot determine where within Chicago a crime was committed), all criminal charges filed against the suspect as part of the arrest, and (albeit with some additional measurement error) the disposition of these charges.

C. UCR Crime Data

To measure gun involvement in crime in Chicago and other cities we use standard data from the FBI’s Uniform Crime Report (UCR) system. These data capture crimes voluntarily reported by victims to the police and then voluntarily submitted by police to the FBI. Problems with the UCR data in terms of variation across areas and time in victim reporting to police and police reporting to the FBI are well known; see for example Maltz (1999). However the UCR data are generally believed to be more reliable for more-serious than for less-serious offences.

D. Vital Statistics

To measure gun ownership rates we use data from the Vital Statistics (VS) census of all deaths to construct a measure of the fraction of suicides within a jurisdiction that is committed with firearms (firearm suicides divided by suicides, or FSS). While the VS is generally thought to capture most deaths that occur in the US, one source of measurement error comes from the fact that coroners or medical examiners report the cause of death on the death certificate, which may disagree with the results of subsequent police investigations and more generally can be subject to some ambiguity. (For example, when the beat-cra writer William S. Borroughs famously tried to shoot an apple off of his wife’s head but missed and killed her instead the medical examiner handling the case may plausibly have had some doubts about whether to classify this as an accident, homicide or, from the perspective of Borroughs’ wife, suicide at least in a probabilistic sense). The fraction of suicides that involve a firearm has been shown to be strongly correlated
with survey-based measures of household gun ownership rates in the cross-section (Azrael et al., 2004) and within states or regions over time as well (Cook and Ludwig, 2006a).

E. Drug Use Forecasting Data

The Drug Use Forecasting (DUF) system was administered by the US Department of Justice and has collected survey information on arrestees from 1987 through 1997. (The successor to the DUF is called the ADAM, which was itself recently discontinued.) Usually the sample includes arrestees from 24 different US cities, although sites vary somewhat from year to year. Within participating cities, first a set of selected booking facilities are selected and then arrestees within these booking facilities are asked to be interviewed. In Chicago and 10 other DUF sites (Atlanta, Cleveland, Denver, Detroit, Houston, Kansas City, Omaha, Philadelphia, St. Louis and Washington, DC) the catchment area for selecting booking facilities was the city. In the other DUF sites (Dallas, Ft. Lauderdale, Indianapolis, Miami, New Orleans, Manhattan, Phoenix, Portland, San Antonio, and San Jose) booking facilities were selected from catchment areas defined by borough, county or parish. Each site attempted to collect data from around 225 adult males per quarter and 100 adult females. Some (but not all) sites also attempted to collect data from 100 juvenile males and 100 juvenile females.

Typically around 90% of arrestees asked to participate agreed to answer survey questions about drug use and involvement with crime, while 80% agreed to provide urine samples for drug testing. These sources of data are complemented by administrative data from police arrest records regarding the arrestee’s demographics (age, race) and the crime for which the person was arrested.

In 1995, 1996 and 1997 the DUF survey included a gun addendum that asked survey respondents to report on their experiences with guns, including ownership, gun use in the most recent crime, acquisitions, victimisation experiences and general availability in the community. Because these data were collected for only the second half of 1995 we focus our analysis on data from 1996 and 1997. The DUF data used in our analyses are restricted-use and obtained under a special agreement with ICPSR. For more information about the dataset see the documentation for ICPSR study number 9477.

Table A1

<table>
<thead>
<tr>
<th>Recovery crime type</th>
<th>Grand Boulevard/Wash Park</th>
<th></th>
<th>Other Chicago Neighbourhoods</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Juvenile (&lt;18)</td>
<td>Youth (18–24)</td>
<td>Adult (25+)</td>
<td>Juvenile (&lt;18)</td>
</tr>
<tr>
<td>Firearms offence</td>
<td>50.0</td>
<td>39.4</td>
<td>37.0</td>
<td>57.8</td>
</tr>
<tr>
<td>Narcotics crime</td>
<td>43.6</td>
<td>50.6</td>
<td>49.6</td>
<td>24.8</td>
</tr>
<tr>
<td>Violent crime</td>
<td>5.1</td>
<td>8.3</td>
<td>11.1</td>
<td>13.7</td>
</tr>
<tr>
<td>Other crime</td>
<td>1.3</td>
<td>1.7</td>
<td>2.3</td>
<td>3.6</td>
</tr>
<tr>
<td>Total (Number)</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td></td>
<td>(78)</td>
<td>(348)</td>
<td>(395)</td>
<td>(548)</td>
</tr>
</tbody>
</table>

Source. See Table 1

Violent crime = homicide, robbery, assaults, kidnapping, sex crimes (i.e. rape/assault); Narcotics crime = drug offences not distinguished by possession, sales, or type of drug; Other crime = burglary, theft, fraud, explosives, vice crimes, integrity crimes, etc.; Firearms offence = illegal carrying or possession of a firearm (carrying and possession are not distinguished in the data).

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## Table A2

**Source States of Guns Confiscated in Chicago**

<table>
<thead>
<tr>
<th>State</th>
<th>Grand Blvd/Wash Park (%)</th>
<th>Rest of Chicago (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois</td>
<td>46.2</td>
<td>48.3</td>
</tr>
<tr>
<td>Indiana</td>
<td>11.5</td>
<td>11.6</td>
</tr>
<tr>
<td>Mississippi</td>
<td>10.9</td>
<td>9.6</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>3.4</td>
<td>2.8</td>
</tr>
<tr>
<td>Georgia</td>
<td>2.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Arkansas</td>
<td>2.3</td>
<td>1.8</td>
</tr>
<tr>
<td>Kentucky</td>
<td>2.3</td>
<td>2.5</td>
</tr>
<tr>
<td>Alabama</td>
<td>2.0</td>
<td>1.8</td>
</tr>
<tr>
<td>Texas</td>
<td>1.9</td>
<td>2.0</td>
</tr>
<tr>
<td>Tennessee</td>
<td>1.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Other</td>
<td>15.4</td>
<td>15.6</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source: See Table 1.*

## Table A3

**Type and Calibre of Guns Confiscated in Chicago**

<table>
<thead>
<tr>
<th></th>
<th>Grand Blvd/Wash Park (%)</th>
<th>Rest of Chicago (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
<td>4,483</td>
<td>38,930</td>
</tr>
<tr>
<td><strong>Type of firearm</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Semi-automatic Pistol</td>
<td>49.0</td>
<td>50.2</td>
</tr>
<tr>
<td>Revolver</td>
<td>34.6</td>
<td>33.0</td>
</tr>
<tr>
<td>Shotgun</td>
<td>7.7</td>
<td>7.9</td>
</tr>
<tr>
<td>Rifle</td>
<td>7.2</td>
<td>7.0</td>
</tr>
<tr>
<td>Derringer</td>
<td>1.5</td>
<td>1.6</td>
</tr>
<tr>
<td>Other</td>
<td>0.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Caliber/Gauge</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 mm</td>
<td>18.7</td>
<td>18.0</td>
</tr>
<tr>
<td>.38</td>
<td>15.9</td>
<td>15.5</td>
</tr>
<tr>
<td>.22</td>
<td>11.4</td>
<td>12.9</td>
</tr>
<tr>
<td>.380</td>
<td>10.4</td>
<td>11.2</td>
</tr>
<tr>
<td>.32</td>
<td>7.5</td>
<td>6.7</td>
</tr>
<tr>
<td>.25</td>
<td>7.2</td>
<td>8.4</td>
</tr>
<tr>
<td>.357</td>
<td>6.9</td>
<td>6.5</td>
</tr>
<tr>
<td>.45</td>
<td>5.5</td>
<td>4.7</td>
</tr>
<tr>
<td>12 gauge</td>
<td>5.4</td>
<td>5.7</td>
</tr>
<tr>
<td>.40</td>
<td>2.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Other</td>
<td>8.7</td>
<td>8.3</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

*Source: Authors' calculations of guns submitted by Chicago Police Department to ATF for tracing in 1999-2003 (see Appendix).*

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### Retail Price and Age of Guns Confiscated in Chicago

<table>
<thead>
<tr>
<th></th>
<th>Grand Blvd/Wash Park</th>
<th></th>
<th>Rest of Chicago</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number</strong></td>
<td>72</td>
<td>301</td>
<td>293</td>
<td>484</td>
</tr>
<tr>
<td><strong>Retail Price</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
<td>$294</td>
<td>$312</td>
<td>$326</td>
<td>$297</td>
</tr>
<tr>
<td><strong>Median</strong></td>
<td>$173</td>
<td>$311</td>
<td>$400</td>
<td>$269</td>
</tr>
<tr>
<td><strong>Price Distrib</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; $150</td>
<td>43.1</td>
<td>28.9</td>
<td>30.0</td>
<td>35.5</td>
</tr>
<tr>
<td>$150–300</td>
<td>11.1</td>
<td>20.9</td>
<td>16.0</td>
<td>17.9</td>
</tr>
<tr>
<td>$300–450</td>
<td>15.2</td>
<td>23.5</td>
<td>23.5</td>
<td>19.4</td>
</tr>
<tr>
<td>$450–600</td>
<td>29.2</td>
<td>24.9</td>
<td>29.4</td>
<td>26.2</td>
</tr>
<tr>
<td>&gt; $600</td>
<td>1.3</td>
<td>1.7</td>
<td>1.0</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Age of Gun</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; = 3 years</td>
<td>18.2</td>
<td>22.3</td>
<td>25.6</td>
<td>18.4</td>
</tr>
<tr>
<td>4–7 years</td>
<td>27.3</td>
<td>19.8</td>
<td>20.2</td>
<td>23.2</td>
</tr>
<tr>
<td>8–12 years</td>
<td>10.9</td>
<td>17.8</td>
<td>15.5</td>
<td>17.6</td>
</tr>
<tr>
<td>13–19 years</td>
<td>10.9</td>
<td>11.6</td>
<td>6.2</td>
<td>10.1</td>
</tr>
<tr>
<td>20 + years</td>
<td>32.7</td>
<td>28.5</td>
<td>32.5</td>
<td>30.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source. See Table 1. 'Retail price' is estimated price of gun sold new at retail from Blue Book figures, and does not account for actual condition of gun, which is not available in the ATF data.

Duke University and NBER
University of Chicago and NBER
Columbia University
Harvard University

References


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Exhibit 13
IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

ILLINOIS ASSOCIATION OF FIREARMS
RETAILERS, KENNETH PACHOLSKI,
KATHRYN TYLER; and MICHAEL HALL,

Plaintiffs,

v.

THE CITY OF CHICAGO and RICHARD
M. DALEY, Mayor of the City of Chicago,

Defendants

Case No: 10-CV-4184
Judge Edmond E. Chang

DECLARATION OF PHILIP J. COOK

I, PHILIP J. COOK, declare, pursuant to 28 U.S.C. § 1746, the following to be true and
correct under penalty of perjury:

1. My current academic appointment is at Duke University, where I am ITT/Sanford
Professor of Public Policy, Professor of Economics and Sociology, and Senior Associate Dean of
the Sanford School of Public Policy. For more than 35 years, I have researched and written
about firearms violence and policy.

2. Among other topics, I am an expert on the social and economic costs of gun
violence, the illicit markets for guns, the consequences of weapon choice in crime, the influence
of gun availability on gun use in crime, the use of guns in self-defense, and the effectiveness of
gun control regulations.

3. I have been retained by Defendants in the above-captioned matter as an expert
witness.

701148031 11070255
4. On August 26, 2011, I disclosed an expert report attached as Exhibit A.

5. I stand by the opinions in the attached report for all the reasons set forth therein. The expert report of Dr. Gary Kleck, disclosed by Plaintiffs on September 30, 2011, contends that several of the studies upon which I relied were imperfect in one way or another. I acknowledge that any individual study may have limitations, but base my expert opinions here on trends that have been identified in the literature as a whole. The studies cited in the attached report are sufficiently valid to support my opinions, and I attest that the attached report is a true and correct representation of my expert opinions in this matter and incorporate Exhibit A as if it was set out here in full.

Dated: February 24, 2012

Further the Declarant Sayeth Not,

By: [Signature]
Philip J. Cook
EXHIBIT A
Expert Report of Philip J. Cook

I. Background and Qualifications

My current academic appointment is at Duke University, where I am ITT/Sanford Professor of Public Policy, Professor of Economics and Sociology, and Senior Associate Dean of the Sanford School of Public Policy. I began my research program on firearms violence in 1975, and since then have coauthored scholarly books and articles on a variety of related topics, including the economic costs of gun violence, the illicit markets for guns, the consequences of weapon choice in robbery and assault, the influence of gun availability on gun use in crime, the use of guns in self-defense, and the effectiveness of gun control regulations. I have served on expert panels for the National Academy of Sciences that dealt with violence prevention, “smart” guns, rampage shootings in schools, and injury control. I also served as Consultant to the Enforcement Division of the United States Department of Treasury (1999–2000), which at that time included the Bureau of Alcohol, Tobacco and Firearms (“ATF”). I was elected fellow of the American Society of Criminology in 2000, and elected Member of the Institute of Medicine of the National Academies in 2001. A full curriculum vitae is attached as Appendix A of this report.

I am being compensated at a rate of $300/hour for my time in rendering my opinion and testimony in this matter. I have testified as an expert in two other cases in the last four years: Woolard v. Sheridan, No. 10-CV-02068-JFM (D. Md.) and Kachalsky v. Cacace, No. 10-CV-5413 (S.D.N.Y.).

II. Materials Reviewed

The opinions that I articulate in this report are based on my review of numerous studies published in scientific peer-reviewed journals and books, the Chicago firearms ordinance, and discovery materials from Illinois Association of Firearms Retailers v. City of Chicago, No. 10-CV-4184 (N.D. Ill.), made available to me. The material I used to formulate my opinions is listed in the attached Appendix B. I anticipate reviewing additional materials as they become relevant and available and reserve the right to amend my report, opinion, and testimony as necessary.

III. Regulations at Issue and Summary of Opinions

I have been asked to opine on whether certain firearms-ordinance provisions enacted by the City of Chicago (“City”) serve the goal of enhancing public safety. Those provisions fall into two categories: (1) the regulation of firearms sales and transfers within the City limits, and (2) the regulation of the public carriage of firearms outside of the home.

The specific ordinances at issue state with respect to firearms sales or transfers:

It shall be unlawful for any person to engage in the business of selling, or to sell, give away, or otherwise transfer, any . . . deadly weapon which can be carried or concealed on the person . . . without securing a weapons dealer license. . . . It
shall be unlawful for a person licensed under this chapter to engage in the business of selling, or to sell, give away or otherwise transfer, any firearm."
Chicago Ordinance 4-144-010.

"No firearm may be sold, acquired or otherwise transferred within the city, except through inheritance of the firearm.
Chicago Ordinance 8-20-100(a).

In summary, these provisions bar sales and transfers of firearms (except through inheritance). The logical implication is that a Chicago resident who wants to lawfully acquire a firearm must leave the City to do so.

It is my opinion that this ban on the transfer of firearms within the City plausibly serves to promote public safety, and in particular to reduce gun use in violence. This conclusion is based on research findings that support the following conclusions:

A. Gun violence is a serious public health and safety problem that has social and economic consequences.

B. The type of weapon used in an assault or robbery affects the likelihood that the victim will be killed. In particular, with other things being equal, violent crimes committed with firearms are far more likely to result in the death of the victim than violent crimes committed with knives, blunt objects, or bare fists.

C. Weapon choice by violent offenders is influenced by the prevalence and availability of firearms in the community, and has a direct effect on the criminal homicide rate. Other things equal, an increase in the prevalence and availability of firearms is associated with an increase in the percentage of violent crimes committed with firearms.

D. It is plausible that legal restrictions on sales and other transfers of firearms, such as those in the current Chicago ordinance, have the effect of reducing the prevalence and availability of firearms to people who may be inclined to use them in violent crime.

With respect to public carriage of firearms, the specific ordinances at issue state:

"It is unlawful for any person to carry or possess a handgun, except when in the person's home.
Chicago Ordinance 8-20-020(a).

"It is unlawful for any person to carry or possess a long gun, except when in the person's home or fixed place of business.
Chicago Ordinance 8-20-030(a).

In summary, the public carriage provisions limit possession of a handgun to the owner's home and a long gun to the owner's home or fixed place of business. A licensed Chicago resident can freely carry a weapon in his or her home, but is restricted from carrying that weapon elsewhere.
It is my opinion that this ban on public carriage serves to promote public safety, and in particular to reduce gun use in violence. This conclusion is based on research findings that support the following conclusions:

A. Carrying firearms away from home contributes directly to the use of guns in violent crime and is associated with increases in violence and lethality.

B. An *ex ante* permitting regime for carry is not sufficient to screen out all potential bad actors because many people who commit gun crimes do not, in fact, have a prior record that would disqualify them from carrying under typical prescreening regimes.

C. A regime limiting public carriage facilitates enforcement efforts, particularly targeted patrol efforts to remove illegal guns from the street before they can be used in the commission of a crime.

D. The best scientific evidence provides no reason to believe that loosening these public-carriage restrictions would have a deterrent effect on crime. Further, the frequency and utility of gun use in self-defense against criminal predation is unknown, but conclusions based on surveys are demonstrably suspect.

IV. Basic Findings Concerning Guns and Violence

Firearms are appreciably more lethal than other commonly available weapons. One way to reduce firearms use in violence, and the attendant social costs, is to reduce the availability of guns to criminals.

A. Gun violence is a serious public health and safety problem that has social and economic consequences.

1. A great many Americans die or are injured by gunfire.

Approximately one million Americans have died from gunshot wounds in homicides, accidents and suicides during the last three decades. In 2007, the most recent year for which the National Center for Health Statistics provides final tabulations on injury deaths, there were 31,224 firearms deaths, including 12,632 firearms homicides and 17,352 firearms suicides.¹ (These counts are similar to those in other years during the last decade.) As a point of reference, there were three gun deaths for every four traffic deaths.

Most homicides are committed with guns. Of the criminal homicides in 2007, 69 percent were by gunshot. It is also true that half of all suicides are committed with firearms.

Of course not all gunshot injuries are fatal. Emergency rooms treated 66,769 nonfatal gunshot injuries in 2009, including 44,466 nonfatal injuries from criminal assaults. And there

¹ Computed using statistics made available by the Centers for Disease Control and Prevention, online at http://webappa.cdc.gov/sasweb/ncipc/mortrate10_sy.html.
were a total of over 300,000 assaults and robberies in that year in which the perpetrator used a gun, in most cases to threaten the victim.2

The City of Chicago has more than its share of criminal homicides. According to police statistics, there were 436 homicides in 2010, of which 81 percent were by gun. The overall homicide rate was 16 per 100,000 residents, over three times the national average.

2. **Homicide is not evenly distributed across the population, but highly concentrated among youthful minority males.**

Focusing just on males age 15–34, homicide victimization rates in 2007 (consistent with earlier years) were 15 times as high for blacks as for whites. Homicide is the leading cause of death for blacks, and the second-leading cause of death for Hispanic males in this age group. For all men in this age range, most all (85 percent) homicides are committed with guns.

3. **Firearms also pose a particular threat to public officials and law enforcement officers.**

Fourteen of the 15 direct assaults against Presidents, Presidents-elect, and presidential candidates in United States history were perpetrated with firearms, including the five resulting in death.3 (The one exception of the 15, a failed attack with a hand grenade against President George W. Bush, occurred overseas.) Of the 536 law enforcement officers who were feloniously killed between 2000 and 2009, 490 (91 percent) were assaulted with a firearm.4

4. **The medical costs of gun violence are substantial, but constitute only a fraction of the overall social costs.**

My colleagues and I conducted a detailed study of the medical costs of gun violence using a variety of medical-records data.5 Our conclusion, published in the *Journal of the American Medical Association*, was that the average lifetime medical cost per nonfatal gunshot wound case in which the patient was hospitalized was about $35,500 in 1994 (a figure that would

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be about $67,500 today due to medical-cost inflation). All told, gunshot injuries in 1994 associated with assault and homicide produced total lifetime medical costs of approximately $1.7 billion, of which over half was paid for from government funds.

The results from this study can be used to generate an estimate of the lifetime medical costs of treating gun assault and homicide victims in Chicago in 2010. In our study, there were 4.0 nonfatal injuries known to medical authorities for every fatal gun assault, of which 2.3 were admitted to the hospital and 1.7 were treated in the emergency department only. Assuming similar ratios in Chicago in 2010, we estimate that in addition to the 354 gun homicides recorded by the Chicago Police Department, there were over 1,400 nonfatal gun assaults treated in local hospitals, all together generating medical costs amounting to $63 million.

The medical costs are only a fraction of the total costs of firearms violence to the community. The threat of being shot causes private citizens and public institutions to undertake a variety of costly measures to reduce this risk, such as weapons screening to schools and public buildings, and, for people who have the means, moving to safer neighborhoods that may be less conveniently located. Furthermore, the threat of gun violence is in some neighborhoods an important disamenity, causing residents to be fearful and take special precautions to protect themselves and their children. That threat depresses property values and puts a drag on economic development.

Together with economist Jens Ludwig, I quantified the overall magnitude of these social costs. Much of the cost is subjective, but that makes it no less real. The accepted procedure in economics for estimating subjective costs is to conduct a contingent-valuation survey. In particular, we asked survey respondents a series of questions to ascertain whether they would be willing to vote for a program that would reduce gun violence by 30 percent in their community, which respondents were told would entail a specified increase in their taxes. Their answers implied a national total valuation of $24 billion for that partial reduction. We extrapolated from this valuation of a partial reduction to estimate an overall cost of firearms assault and homicide of $80 billion in 1995, which was approximately $1 million per gunshot wound. We also noted the evidence that murder rates have a direct effect on the rate of population growth or decline, with each murder associated with a reduction of 70 residents. Jens Ludwig has testified about the implications of these findings for the City of Chicago, noting that the relatively high homicide rate in Chicago could account for the population decline in the City since 2000.

---


B. The type of weapon used by a perpetrator of violent crime is an important
determinant of whether the victim is killed.

1. Guns are intrinsically more lethal than other commonly available weapons.

Guns provide a means of inflicting a fatal wound quickly, from a distance, requiring
relatively little personal risk, determination, involvement, or strength. Gun use in an assault
increases the likelihood of death by making it easier to kill. As a result, while only a small
fraction (5 percent) of criminal assaults are perpetrated with guns, over two-thirds of fatal
assaults (murders and non-negligent homicides) are perpetrated with guns.

The goal of separating guns from criminal violence is somewhat distinct from the goal of
reducing overall rates of criminal violence. A program or regulation that was effective in
reducing gun use in violent crime would save lives (by reducing the case-fatality rate) even if
there was no change in the overall rate of violence. Thus, the City has an interest in reducing
gun use by criminals that goes beyond its interest in violent-crime prevention.

That the type of weapon used in a violent crime has an influence on the outcome of the
crime is known as the "instrumentality effect."^8

2. Evidence for the "instrumentality" effect.

In two seminal articles, Franklin Zimring provided systematic evidence that the weapon
type used in an assault affects the likelihood the victim will be killed. Zimring drew on crime
data from Chicago to show that case-fatality rates in gun attacks are a multiple of those in knife
attacks, despite the fact that the circumstances are generally quite similar. In serious attacks, he
concluded, the difference between whether the victim lived or died was often a matter of chance
rather than a difference in intent, and the chances of a fatality were higher with a gun than a
knife.

Zimring found further confirmation in comparing the case-fatality rates among shootings
involving guns of different caliber. He demonstrated that victims were more likely to die in
larger-caliber shootings, again suggesting that the intrinsic lethality of the weapon, and not just
the assailant’s intent, affected the outcome.

Research on the crime of robbery provides further confirmation for the instrumentality
effect. About half of victims of non-commercial robbery included in the National Crime
Victimization Survey ("NCVS") report being physically attacked by the robber (rather than just

^8 Cook, P.J., "The Technology of Personal Violence" in M. Tonry, ed., Crime and Justice: An

^9 Zimring, F.E., "Is gun control likely to reduce violent killings?" University of Chicago Law
Review, 35, 1968: 21–37; Zimring, F.E., "The medium is the message: Firearm caliber as a

^10 Zimring (1972), supra.
threatened), and one-fifth require medical treatment. We know from other data sources that many robbery victims are killed. In 2005 the FBI classified 921 murders as robbery-related (6 percent of all murders), implying that on the order of 1 in 1,000 robberies resulted in death that year. Since the most serious potential outcome of a robbery is the victim’s death, it is of considerable interest to know what distinguishes fatal robberies from the great majority in which the victim survives. One of my studies compared robbery murders (as documented by the FBI’s Supplementary Homicide Reports) to nonfatal robberies, finding similar statistical patterns with respect to the characteristics of the offenders. The most prominent difference between robbery and robbery murder is with respect to the types of weapons used. About two-thirds of robbery murders are committed with guns, while less than one-third of robberies involve guns. Gun robberies are three times more likely to result in the death of the victim than knife robberies, and knife robberies are three times more likely to result in death than robberies with other weapons. A regression analysis of changes in robbery-murder rates in 43 cities found a close relationship between the robbery rate and the robbery murder rate, as if the latter were simply a probabilistic byproduct of the former. Every additional 1,000 gun robberies added 4 robbery murders to a city’s total, while an additional 1,000 nongun robberies added just one murder.

My conclusion is that whether the victim of an assault or robbery dies is not just a reflection of the offender’s intentions. The type of weapon used by the offender in an assault or robbery has a causal effect on whether the victim lives or dies. If the weapon used is a firearm, the victim is much more likely to die than if the weapon is a knife or club. If the fraction of assaults or robberies involving guns increases, then the death rate (i.e., the criminal homicide rate) will also increase.

C. Weapon choice by violent offenders is influenced by the prevalence and availability of firearms in the community, and has a direct effect on the criminal homicide rate.

1. Guns used in crime are obtained from a variety of sources.

The likelihood that a gun will be used in a crime, and thereby render the crime more lethal than it otherwise would be, is closely linked to the general availability of guns, and especially handguns. Currently about one in three households nationwide are in possession of at least one firearm. The prevalence of gun ownership differs widely across the counties and states, and is lower in Cook County, and still lower in the City of Chicago, than is true for the


12 Id.

13 Id. at 373. See also Wells, W. and J. Horney, “Weapon effects and individual intent to do harm; influences on the escalation of violence,” Criminology, 40(2), 2002: 265–96.

United States as a whole. The household prevalence of gun ownership affects their use in crime and suicide both directly—by providing members of gun-owning households with immediate access to guns—and indirectly—by making it easier to steal a gun or arrange a purchase or loan.

In particular, I conducted an analysis of residential burglary using data from the National Crime Victimization Survey and other sources, and found that the burglary rate and gun-theft rate increased in direct relation to the prevalence of firearm ownership in the county. That connection is apparently due to the fact that guns are profitable “loot,” so that burglaries in gun-rich areas are more profitable.

Data on the sources by which criminals obtain guns point to a variety of channels. Almost all firearms used in crime in the United States were first sold at retail by a federally licensed dealer. In some cases the sale is directly to the individual who eventually uses the firearm in crime, or to a straw purchaser who is acting on the individual’s behalf. In some of these sales, the dealer is complicit.

In most cases the firearm is not purchased directly by the ultimate perpetrator, but rather goes through a series of transactions first. In one nationwide study of guns that were confiscated by police and traced by the ATF’s National Tracing Center, just 11 percent of the guns were confiscated from the individual who had first purchased them from a federally licensed firearm dealer (“FFL”). Typical transactions include informal transfers among family members, off-the-books sales or loans by acquaintances (including transfers within a criminal gang), sales by underground brokers or traffickers, and thefts, among other channels.

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17 Department of Treasury, Bureau of Alcohol, Tobacco & Firearms, “Following the Gun: Enforcing Federal Laws Against Firearms Traffickers” 3 (June 2000).

18 Pierce, G.L., A.A. Braga, R.R. Hyatt & C.S. Koper, “Characteristics and dynamics of illegal firearms markets: implications for a supply-side enforcement strategy,” Justice Quarterly, 21(2), 2004: 391–422. It should be noted that this statistic is based on a minority of guns submitted for tracing, since in a majority of cases the information on the identity of the possessor or of the first buyer were missing.
The nationwide 1997 Survey of Inmates in State Correctional Facilities, for example, asked inmates who had been in possession of a gun where they had obtained it. Of those who were serving their first prison sentence, less than 20 percent said they obtained their gun from a licensed dealer, but most obtained their guns in the local "informal" or "secondary" market: 40 percent got it from a friend or family member, 31 percent by theft or a transaction in the underground market, and 9 percent from other sources.¹⁹

2. The prevalence of guns in a community influences weapon choice in violent crime.

My research has provided strong evidence that the prevalence of gun ownership is closely linked to the likelihood that robbers or assailants will use a gun as opposed to a knife or other weapon. In articles published in scientific journals, I and my coauthors have analyzed the effect of the prevalence of gun ownership on several crime-related outcomes. For instance, in an analysis of annual Uniform Crime Reports data for the 200 largest counties over 20 years, we found that an increase in the prevalence of gun ownership in a county was associated with an increase in the percentage of robberies committed with a gun.²⁰ While the prevalence of gun ownership is not the only determinant of the fractions of assaults and robberies in which the perpetrator uses a gun, it is my opinion that it is one important causal influence.

In a cross-section analysis of data from a survey of adolescent males, Jens Ludwig and I demonstrated that the prevalence of gun ownership has a strong positive relationship to the probability of gun carrying by adolescent males, after statistically controlling for other factors.²¹ Thus an increase in gun prevalence is associated with an increase in gun carrying by this group. (We found that gun prevalence had no effect on the likelihood of carrying a knife or other type of weapon.)

A reasonable inference is that violence-prone people find it easier to access firearms when firearms ownership is relatively widespread. But it is often argued that widespread gun ownership also has socially beneficial effects as a deterrent to crime. My research has investigated this hypothesis, finding that the prevalence of ownership has little or no effect on rates of assault, robbery, or rape.²²

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¹⁹ Harlow, C.W., “Firearm Use by Offenders,” Bureau of Justice Statistics Special Report, Table 9 (rev. 2002).


I conclude that an increase in gun ownership has on balance neither a deterrent effect on violent crime, nor does it augment violence rates. Thus the prevalence of firearms does not affect the volume of violence, but has a positive effect on gun use and hence the death rate in assault and robbery—the criminal homicide rate. (In other words, the likelihood that an assault or a robbery "converts" to a homicide is much higher if a gun is involved.) That prediction is confirmed in an analysis of data for the 200 largest counties mentioned above. In that study we found that the homicide rate increased with the prevalence of gun ownership. On average, a 10 percent increase in the prevalence of gun ownership increased the homicide rate by about 2 percent.23

V. Public-Safety Ends Served by the City’s Regulation of Private and Dealer Firearms Transactions within the City Limits

A. The ban on private sales and transfers is a reasonable effort to preserve high transactions costs for guns in the underground market.

The current Chicago gun ordinance effectively bans the transfer of firearms within the City limits. As discussed above, the private transfer of guns in the informal, illegal market is the proximate source of most guns that end up being used in crime. In Chicago, the relatively low prevalence of gun ownership and the tradition of gun emphasis in policing have made guns quite scarce "on the street." Indeed, most criminals in Chicago currently lack a gun and have difficulty obtaining one. It is reasonable to suppose that the current transfer ban—which bans all forms of transfer (except for inheritance)—will help preserve that scarcity.

Direct evidence documenting the scarcity of guns to youths and criminals comes from a unique study conducted by the ethnographer Sudhir Venkatesh several years ago. His inquiry into the underground gun market in two neighborhoods of southside Chicago involved interviewing hundreds of gang members, robbers, prostitutes, drug dealers, and people active in the gun trade.24 These interviews documented a widespread belief in the value of guns, coupled with surprising ignorance about how to go about obtaining one or the appropriate ammunition. Respondents who reported that they were successful in obtaining a gun reported paying prices that tended to be substantially higher than in the legal market, despite the questionable quality of the guns that were changing hands. The drug-dealing gangs did not deal in guns because they were concerned that it would lead to a police crackdown (and would put their main source of income, drug dealing, at risk). Some criminals, wanting a gun but not knowing how to obtain one, hired a broker who for a substantial fee ($30–$50) attempted to find one. The overall result from Venkatesh’s ethnography, supplemented by more traditional evidence that I and other coauthors analyzed for this project, is that the underground market in guns did not work smoothly. There were high transactions costs; due to the illegality of handgun possession and transfer, potential buyers and sellers had trouble finding each other or trusting each other. Inflated prices, long waits, and suspect quality were the norm. As a result, it is unusual for criminals in Chicago to be in possession of a gun. By rendering sales and transfers illegal, the


Chicago ordinance helps to maintain these transaction costs, which in turn, it is reasonable to suppose, depresses possession rates by criminals.

Another source of information provides further support for this conclusion. A survey of a large sample of arrestees, conducted by the U.S. Department of Justice in 1996 and 1997 in 22 cities, included a series of questions on guns. Of the 1,194 arrestees interviewed in Chicago, only 20.8 percent had ever owned a handgun. An additional 18 percent indicated that they would like to have one someday; about 70 percent of those reported that it would take them at least a week or that they would simply be unable to obtain one. (Although the samples are not directly comparable across cities, it is noteworthy that a larger percentage than in Chicago thought they could obtain one relatively quickly.)

B. The ban on dealers will help curtail another source of crime guns.

While most guns used in crime were not sold directly to the criminal by an FFL, some dealers do serve as a regular and disproportionate source of guns to crime. Nationwide in 1998, 1.2 percent of dealers accounted for 57 percent of all guns that were submitted by law enforcement agencies for tracing to the National Tracing Center of ATF. An analysis of 1,470 investigation files from ATF found that corrupt FFLs accounted for nearly half of all guns that could be accounted for in these investigations. Corrupt dealers may knowingly sell to purchasers who are disqualified because of a criminal record or other characteristic, or to a straw purchaser who is buying the gun with a clear intent of transferring it to someone who is disqualified.

Some years ago the City of Chicago ran a sting operation on suburban FFLs to investigate their willingness to sell guns in spite of a professed illegal motive or obvious intention to act as a straw purchaser. Several dealers were willing to make the sale nonetheless, and even provided advice to those acting as customers about how to make an illegal purchase.27

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Similarly, a systematic study of FFLs in California documented the willingness of clerks to sell to "customers" who posed as being in clear violation of the law. 28

One reason why FFLs may become scofflaws is that the main regulatory agency, ATF, provides little oversight and is rarely able to revoke a license. A report by the Inspector General of the U.S. Department of Justice concluded this: "We found that the ATF’s inspection program is not fully effective for ensuring that FFLs comply with federal firearms laws because inspections are infrequent and of inconsistent quality, and follow-up inspections and adverse actions have been sporadic." 29 In particular, "ATF conducted 4,581 FFL compliance inspections in FY 2002, or about 4.5 percent of the approximately 104,000 FFLs nationwide. At that rate, it would take the ATF more than 22 years to inspect all FFLs." 30

In addition, some guns may be stolen from gun dealers or are the subject of unregulated, undocumented transfers. A more recent report on ATF inspections (in a letter from Assistant Attorney General Ronald Weich to U.S. Congressman Mike Quigley dated October 21, 2010) found that in FY2009, 6.5 percent of FFLs had guns missing from inventory, amounting to over 28,000 guns lost to thefts or undocumented transfers in total.

The Chicago gun ordinance does not allow FFLs to operate within the City limits. Of course, it is legal for a qualified Chicago resident to buy a gun from a gun store outside the city. But the fact that there are no FFLs within city limits makes illegal transactions from an FFL somewhat more difficult for youths and criminals. In the study of Chicago gun markets mentioned above, we found that it was rare for guns used in Chicago crimes to be purchased directly from an FFL in the suburbs. Among the guns taken by law enforcement agencies and submitted for tracing, only 12 percent were confiscated within 3 years of the initial purchase and were originally purchased in Cook County. 31 A partial explanation for why active criminals do not acquire guns at suburban FFLs was provided by one of Sudhir Venkatesh's sources, who indicated that people like him rarely left their own neighborhood. This suggests that were FFLs free to operate in the City, these criminals would be more likely to acquire guns from an FFL.

VI. Public-Safety Ends Served by the City’s Regulation of Public Carriage of Firearms

The City ordinance bans public carriage of firearms by private citizens. Since most violent crimes are committed away from the residence of the perpetrator, carrying is the usual

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30 Id. at iii.

precursor to gun crime. A ban on carrying, coupled with police enforcement targeted on illegal carrying, will plausibly reduce the misuse of guns outside the home.

A. Carrying firearms away from home contributes directly to the use of guns by perpetrators of violent crime.

Most gun robberies and other gun assaults are committed away from the offender's place of residence. For an offender to use his or her own gun in a crime logically requires that the offender has transported the gun to the location of the criminal assault. For that reason the state has a legitimate interest in the regulation of whether and how guns are carried in public, and by whom.

To develop this point, I consulted tabulations provided by the Chicago Police Department ("CPD"). First, almost all firearms used in crime in Chicago are handguns. The obvious advantage of handguns for criminal use is that they are small, and easy to carry and conceal. In 2010, police records indicate that over 98 percent of all robberies with firearms involved handguns. Similarly, a CPD analysis of firearms used in homicides in 2008 found that 98 percent were handguns. The preponderance of handguns among guns used in crime is by no means limited to Chicago. National crime statistics demonstrate that handguns are used in the great majority of gun crimes—far out of proportion to their relative importance in the stock of guns in private hands.

Of Chicago robberies with a handgun in 2010, 68 percent occurred in a location identified as an alley, street, public park, sidewalk, or public parking lot or garage. Most of the other robberies with a handgun were directed against commercial locations. Only 10 percent occurred at residential locations. For homicides with guns, only 18 percent occurred at residential locations (including yards, hallways, and garages).

The evidence cited in Part IV.C above, concerning the prevalence of gun ownership, is also relevant to establishing the connection between the incidence of gun carrying and the incidence of gun assault. My studies have documented the close positive relationship between the prevalence of gun ownership and the incidence of gun carrying by young men, as well as the positive effect of gun prevalence on the percentage of assaults and robberies involving a gun. These findings provide general support for and are consistent with the conclusion that the incidence of gun carrying contributes directly to gun use in assault (and the resulting increased lethality of such crimes). That is to say, where there is more gun carrying, we should expect more of the harms outlined in Part IV.A.

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33 Zimring, F.E. and G. Hawkins, Crime is not the Problem: Lethal Violence in America, Chs. 1, 3 & 7 (Oxford University Press, 1997).
B. The violence-reduction effects of restrictions on public carriage may depend on enforcement efforts, and in particular by targeted patrol efforts to remove illegal guns from the street.

Regulations alone will not dissuade all criminals from carrying guns in public to commit crimes. The existence of a regulation prohibiting this behavior, however, allows police officers to intervene and remove the weapon before it can be used in the commission of a crime. In many cities, police departments have adopted targeted patrols against illegal gun carrying in an effort to reduce gun misuse. The Chicago Police Department's emphasis of "getting guns off the street" dates back to the 1950s.\textsuperscript{34} In recent years, targeted patrol has been one tactic used by the CPD as part of Project Safe Neighborhoods.\textsuperscript{35}

Targeted patrol against illicit gun carrying has been shown to be effective. For example, in 1998, the Pittsburgh Police Department instituted a Firearm Suppression Patrol against illegal carrying. This program involved expansion of patrol activities during high-crime periods of the week, in two high-crime areas of the city. A careful analysis found that the program, which increased the number of stops of suspicious vehicles and pedestrians, had the effect of reducing gun misuse, including "shots fired" calls and gunshot injuries.\textsuperscript{36} Similarly, an experimental intervention in two areas of Indianapolis provided some evidence that directed patrol that was clearly targeted on illicit gun carrying (as implemented in one of the areas) reduced rates of gun violence.\textsuperscript{37}

Targeted patrol against guns has been a prominent feature of New York City policing for the last two decades, a period during which that city has enjoyed an unprecedented reduction in violent crime. Targeted patrol includes a large volume of police contacts with suspicious individuals who are stopped for questioning and frisked if there is reason to believe that they are carrying a weapon. (In 2006, there were over a half million such encounters recorded by the New York City Police Department.)\textsuperscript{38} Since policing resources and tactics changed in other ways as well in New York City, analysts have found it difficult to identify the precise contribution of targeted patrol to the crime drop.

It has been argued that stringent regulation of firearms carrying helps establish the legal basis for stop-and-frisk tactics. "When applicable law bans the possession or carrying of

\textsuperscript{34} Cook, P.J., J. Ludwig, S. Venkatesh & A. Braga (2007), \textit{supra}, at F606.


firearms, whenever an officer reasonably suspects that an individual is illegally carrying a firearm—such as a suspicious bulge in a waistband—a stop-and-frisk is considered constitutionally reasonable.” 39 I am not an expert on the relevant legal doctrine and hence not in a position to pass judgment on the technical legal validity of this argument, but I can say that if such stop-and-frisk tactics (or other targeted patrol tactics) became unavailable for any reason (including because the legal basis for conducting them was eliminated through the striking down of strict carrying restrictions), then the reductions of gun misuse resulting from these tactics would be lost.

C. There is no reason to expect a different public carriage regime immediately outside of the home.

Up to this point, neither I nor the literature has drawn a distinction between the harms and necessity of regulating the carriage of firearms in traditional public places (such as streets, schools and malls) and potentially privately owned spaces immediately outside of the main dwelling structure of a residence such as yards or porches. I am not personally familiar with the geographic layout of Chicago or a typical neighborhood or private property, but if it could be established by a witness who was familiar with these facts that these nominally private spaces were no different than public spaces in terms of the ability of people in those spaces to inflict public gun violence or be the victim of public gun violence, then my opinions on the carry regulations set out in this report would apply equally to those private spaces. If a bullet fired from one space into the other would not respect the nominal change in ownership status, there is no reason to expect that outcomes which are true “on the street” would not hold true just off of it.

D. A regime of licensing applicants who lack a serious criminal record to carry firearms would allow a large percentage of dangerous people to carry legally.

It should be noted that the State of Illinois bans carrying firearms in public places within city limits. The ban applies to carrying either concealed or openly, and specifies only limited exceptions, such as carrying a gun that has been broken down for transportation purposes. 40 Even if the City repealed its ban on carrying, state regulations would continue to apply. 41 In consideration of the possibility that both the City and State bans might be repealed, it is of interest to consider the consequences of a licensing arrangement.

All but three states currently either ban carrying a concealed firearm or restrict carrying to those who have obtained a license or permit for that purpose. In 33 states the statute requires the relevant authority to issue a license to any applicant who meets certain minimum requirements and pays the required fee; both the requirements and the fee differ among these

39 Id. at 38.

40 720 ILCS 5/24-1(a)(10).

41 One difference may be that the Illinois statute allows carriage of a firearm into a friend’s residence. The expert report of Daniel Webster in this matter is relevant to judging the risks of introducing a gun, or an additional gun, into a home, even if permission is granted by a member of the household.
“shall issue” states. In other states the issuing authority has some discretion in responding to an application. These “may issue” states generally require that the applicant, in addition to meeting minimum requirements and paying a fee, demonstrate a justifiable need to carry a concealed weapon.

In “shall-issue” states where authorities are required to issue concealed-carry permits to all applicants who meet certain minimum conditions, the list of conditions typically includes a minimum age provision (usually 21) and incorporates the list of provisions of the federal Gun Control Act that limit lawful possession. Among other things, those provisions ban possession by those with a prior felony conviction, a misdemeanor conviction for domestic violence (or restraining order), an involuntary commitment for mental illness, or a current felony indictment. Of those provisions, a felony conviction is most prominent—it is relatively well-documented in computerized databases that are available to law enforcement authorities, and has been the most common reason for denying a firearms transfer following a federally mandated background check. Overall, 62 percent of the federal denials of a gun transfer have been due to a finding of a felony conviction.42

It is sometimes alleged that most gun crimes are committed by active criminals who can be readily identified as such. For that reason, it is claimed that issuing concealed-carry permits to applicants who are not identified as criminals from public records poses no risk to the public safety. But this claim is false. In particular, the evidence indicates that a majority of criminal homicides and other serious crimes committed are committed by individuals who have not been convicted of a felony.

One of the first systematic studies of this subject was conducted using data from Illinois. In that study, we found that just 43 percent of adults arrested for criminal homicide during the 1990s had a felony conviction on their record.43 Thus, most adults who are arrested for felony homicide would not have been barred from obtaining a firearm prior to that arrest, if the only requirements for obtaining that card were a lack of prior felony conviction and minimum age. (In fact there are several other disqualifying conditions, but these are either less common than felony conviction or cannot be reliably checked by authorities from existing databases.)

These statistics demonstrate that most adults who are arrested for felony homicide would not have been barred from obtaining a permit to carry a concealed firearm prior to that arrest, if the only requirements for obtaining a permit were a lack of prior felony conviction (and minimum age). In other words, if the goal is to protect the public against dangerous criminal acts in public with firearm, then it is not enough to just ex ante screen out those with felony


convictions, through a licensing or permitting regime. That group constitutes only a minority of future arrestees for serious crimes, including felony homicide.

Various investigations have sought to document the frequency with which concealed-carry permit holders are arrested and convicted of serious crimes. Since May 2007, the Violence Policy Center has tabulated from news reports the number of individuals killed by people with concealed-carry permits (net of justifiable self-defense killings), uncovering a total of 370 by August 2011.\(^{44}\)

E. The best scientific evidence provides no reason to believe that loosening these public-carry restrictions would have a deterrent or preventive effect on crime.

One potential counterargument to restrictive public carriage regimes is that loosening restrictions would have a deterrent effect on crime by allowing “law abiding” citizens to carry guns for self-defense. This theory posits that criminals knowing that they themselves are at risk of a lethal outcome will be deterred from committing crime. I find no scientific evidence for this theory. Further, there is reason to doubt survey-based estimates of the utility of carrying a firearm for self-defense.

In 1997, economists John Lott and David Mustard published an article evaluating the effects of the adoption of so-called “right to carry” (“RTC”) or “shall issue” laws in 10 states. This article found that violent crime rates were reduced by the adoption of these laws, while property crime rates were possibly increased. This article, and Lott’s subsequent book, More Guns, Less Crime, initiated a wide-ranging academic debate about the effects of RTC laws on crime rates. Because the research results appeared to be having a considerable influence on policy, the National Research Council assembled a group of distinguished scholars who had not participated in the academic debate on RTC laws or on gun regulations generally, and tasked them with assessing this research. This panel of experts issued a report in 2005. One conclusion of this report, endorsed by 17 of the 18 panel members, was that the evidence on the effectiveness of RTC laws was too weak and inconsistent to support any conclusion about their effectiveness.\(^{45}\)

With the passage of time more data have become available and further studies conducted. A recent analysis, using data from 1977 through 2006, found that the estimates of the effects of RTC laws change depending on the details of how the analysis is conducted, and that the “bottom line” issue of whether RTC laws tend to reduce—or increase—rates of violence cannot be determined with confidence using commonly accepted research methods.\(^{46}\)


I conclude on the basis of the extensive research on this issue that quantitative evaluation methods do not provide a reliable basis for determining whether RTC laws increase or reduce crime and violence—or indeed, whether there truly is a consistent effect one way or another. As a result, I conclude that the City restrictions on public carriage of firearms are in no sense contraindicated by the evidence on public safety. On the other hand, the restrictions are plausibly supported by the preceding discussions in this report, including the association between gun carrying and the increased lethality of crime.

Furthermore, I note that prominent claims have been made that guns are used millions of times each year by private citizens in self-defense against criminal predation, including in public places.47 These claims are based not on police records, but rather on responses to one-time surveys (typically by telephone) of a sample of adults. Such estimates are an order of magnitude higher than those generated by the large ongoing federal survey of crime victimization (National Criminal Victimization Survey), and far higher than would be logically compatible with other sources of data on crime and violence, including the number of cases treated for gunshot wounds.48 A technical problem called “telescoping” with these one-time surveys may explain part of the upward bias.49 But close study of the survey reports of defensive gun use suggest that many of these reports are about events that simply did not happen, as suggested by inconsistencies in the alleged facts.50

In one study a panel of criminal-court judges reviewed reported defensive gun uses from a survey and found that these reports are frequently of actions that are not legitimate self-defense, but rather criminal assault. The authors make this observation, with which I agree: “Regular citizens with guns, who are sometimes tired, angry, drunk or afraid, and who are not trained in dispute resolution or on when it is proper to use a firearm, have many opportunities for inappropriate gun use. People engage in innumerable annoying and somewhat hostile interactions with others in the course of a lifetime.”51

Finally, in judging the utility of widespread gun carrying, it is worth noting the results of two surveys that “gun use against adults to threaten and intimidate is far more common than self defense gun use by them, and that most self reported self defense gun uses are probably illegal, and may be against the interests of society.”52

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51 Hemenway, D., D. Azrael, M Miller (2000), supra, at 266.

52 Id. at 267.
August 26, 2011

Philip J. Cook