

THE MYTH OF BIG-TIME GUN TRAFFICKING AND THE OVERINTERPRETATION OF GUN TRACING DATA

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In recent years the gun control movement has increasingly shifted its efforts from lobbying for new gun-control legislation to facilitating lawsuits against the gun industry, especially those based on claims of negligent distribution of firearms. These lawsuits are based on the premise that organized gun trafficking, much of it involving corrupt or negligent licensed dealers, plays an important role in supplying guns to criminals. This paper first assesses the extant evidence bearing on this claim, as well as on underlying assertions as to how one can tell whether a crime gun has been trafficked or whether a licensed dealer is involved in trafficking. Law enforcement evidence indicates that high-volume trafficking is extremely unusual, and that average "traffickers" handle fewer than a dozen guns. The aggregate volume of guns moved by known traffickers is negligible compared to even low estimates of the number of guns stolen.

City-level data on crime guns recovered in fifty large U.S. cities in 2000 are then analyzed to investigate (a) whether supposed indicators of gun trafficking are valid, (b) what factors affect trafficking levels, (c) the impact of gun trafficking on gun possession levels among criminals, and (d) the impact of gun trafficking on crime rates. The findings suggest that most supposed indicators that a crime gun has been trafficked have little validity. One possible exception is whether a gun has an obliterated serial number (OSN). Using the share of crime guns with an OSN as a city-level indicator of the prevalence of gun trafficking, the analysis showed that trafficking is more common where guns are scarcer. The analysis also showed that laws regulating the purchase of guns, including one-gun-a-month laws specifically aimed at trafficking, show no effect on trafficking activity. Finally, the research indicates that trafficking levels show no measurable effect on gun possession among criminals (measured as the share of homicides committed with guns), and generally show no effect on violent-crime rates.

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INTRODUCTION

In recent decades the gun control movement has found it increasingly difficult to persuade legislatures to enact new restrictions on firearms. Republican dominance of state legislatures has reduced the chances of getting new state gun laws passed, and no new federal restrictions on guns of any significance have been enacted since the Brady Act was signed into law in 1994.¹ Shifts in the political winds have become so unfavorable that even previously pro-control political figures such as Barack Obama have deemphasized this issue and moved to assert their support for the Second Amendment and their belief in an individual right to keep and bear arms.²

1. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, FEDERAL FIREARMS REGULATIONS REFERENCE GUIDE 2005 (2005), available at http://www.atf.gov/pub/fire-explo_pub/2005/p53004/index.htm.

2. Robert D. Novak, *Obama's Second-Amendment Dance*, WASH. POST, Apr. 7, 2008, at A17; Organizing for Am., Urban Policy, http://origin.barackobama.com/issues/urban_policy/#crime-and-law-enforcement (last visited May 24, 2009).

As a result, the gun control movement has increasingly invested its efforts in alternative, nonlegislative strategies for advancing its cause. These include facilitating lawsuits by both governments and private parties against the gun industry in an attempt to gain in the courts what could not be gained in the legislature. In particular, the nation's leading gun control advocacy group, the Brady Center to Prevent Gun Violence, has through its Legal Action Project supported dozens of lawsuits by both private and public plaintiffs against the gun industry.³ The suits are grounded in numerous legal rationales, but arguably the most important one, especially in suits aimed at manufacturers and distributors, is the claim that the industry engages in negligent distribution of firearms. For example, twenty-two of the first twenty-five suits brought by city, county, or state governments against manufacturers invoked claims of negligent distribution—the most common single claim in such suits.⁴ Negligent distribution is presented by plaintiffs as an enabling tort in which noncriminal gun industry defendants cause third-party criminals to acquire guns and do harm with them. It is claimed that distributors and manufacturers are aware of widespread dealer misconduct, know who the bad dealers are, and could restrain their misconduct by denying them guns to sell or by forcing changes in the way they do business, if they chose to do so. Specifically, advocates assert that manufacturers and distributors could refuse to sell guns to “kitchen table” dealers who do not have stores, to those who sell guns at gun shows, or to those who sell multiple handguns at a time and who could train their employees to recognize attempts at straw purchases by gun traffickers or their confederates.⁵ Advocates of these suits argue that they can motivate reform within the firearms industry, while opponents see them as a way of bankrupting the industry through ruinous legal expenses and damages.⁶

Lawsuits based on claims of negligent distribution, as well as those based on public nuisance theories, adopt a particular model of how guns move from lawful channels of commerce into the possession of criminals. According to this model, the prototypical movement of guns involves a gun trafficker, or a

3. Brady Ctr. to Prevent Gun Violence, Legal Action Project, Gun Distribution & Sales, <http://www.gunlawsuits.org/reform/distribution.php> (last visited May 24, 2009).

4. Nat'l Rifle Ass'n Inst. for Legislative Action, Reckless Lawsuits: Taxpayer Funded Reckless Lawsuits Against the Firearms Industry, <http://www.nraila.org/Issues/FactSheets/Read.aspx?id=147&issue=022> (last visited May 24, 2009).

5. See, e.g., Mark Geistfeld, *Tort Law & Criminal Behavior (Guns)*, in GUNS, CRIME, AND PUNISHMENT IN AMERICA 384, 387 (Bernard E. Harcourt ed., 2003); David Kairys, *The Cities Take the Initiative*, in GUNS, CRIME, AND PUNISHMENT IN AMERICA *supra* at 363, 365.

6. Compare Brady Ctr. to Prevent Gun Violence, *supra* note 3, with Nat'l Rifle Ass'n Inst. for Legislative Action, *supra* note 4.

straw purchaser working for the trafficker, buying many or all of his guns from corrupt or negligent licensed gun dealers. Many traffickers supposedly purchase guns, especially handguns, in large batches from corrupt or irresponsible dealers, especially those operating in states with relatively weak controls over gun selling and buying. These guns are then moved to places with stricter local and state gun laws, where they are sold—supposedly at high markups—to criminal buyers.⁷

This image of illicit guns being smuggled from low-control states to high-crime cities with stricter controls is not put forward solely by gun control advocacy organizations. For example, at a 2007 NAACP presidential primary forum in Detroit, presidential candidate Barack Obama told his audience: “We’ve got to make sure that unscrupulous gun dealers aren’t loading up vans and dumping guns in our communities, because we know they’re not made in our communities. There aren’t any gun manufacturers here, right here in the middle of Detroit.”⁸ Likewise, New York City mayor Michael Bloomberg clearly believes that corrupt or negligent out-of-state licensed gun dealers are substantially responsible for his city’s gun violence problem.⁹

The federal Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), the Brady Campaign to Prevent Gun Violence, and some scholars have argued that gun traffickers are responsible for a significant share of the movement of guns into the hands of criminals, and that disrupting trafficking operations can therefore have a substantial impact on rates of criminal gun possession and gun violence.¹⁰ This position depends for empirical support almost entirely on analyses of ATF gun-tracing data. So many tracing-based studies claiming to find support for this view have been published in recent

7. See, e.g., BRADY CAMPAIGN TO PREVENT GUN VIOLENCE, LARGE VOLUME GUN SALES: THE ILLEGAL GUN TRAFFICKER’S BEST FRIEND, <http://www.bradycampaign.org/pdf/faq/large-volume-sales.pdf> (last visited May 24, 2009).

8. On the Issues, Barack Obama on Gun Control, http://www.ontheissues.org/Domestic/Barack_Obama_Gun_Control.htm (last visited May 24, 2009).

9. See Alan Feuer, *Gun Dealer and Mayor Face Showdown*, N.Y. TIMES, May 22, 2008, at B1.

10. See, e.g., Anthony A. Braga & Glenn L. Pierce, *Disrupting Illegal Firearms Markets in Boston: The Effects of Operations Ceasefire on the Supply of New Handguns to Criminals*, 4 CRIMINOLOGY & PUB. POL’Y 717 (2005); Anthony A. Braga et al., *The Illegal Supply of Firearms*, 29 CRIME & JUST. 319 (2002); Philip J. Cook et al., *Regulating Gun Markets*, 86 J. CRIM. L. & CRIMINOLOGY 59 (1995); David M. Kennedy et al., *Youth Violence in Boston: Gun Markets, Serious Youth Offenders, and a Use-Reduction Strategy*, LAW & CONTEMP. PROBS., Winter 1996, at 147; Christopher S. Koper, *Purchase of Multiple Firearms as a Risk Factor for Criminal Gun Use: Implications for Gun Policy and Enforcement*, 4 CRIMINOLOGY & PUB. POL’Y 749 (2005); Mark H. Moore, *Keeping Handguns From Criminal Offenders*, 455 ANNALS AM. ACAD. POL. & SOC. SCI. 92 (1981); Glenn L. Pierce et al., *Characteristics and Dynamics of Illegal Firearms Markets: Implications for a Supply-Side Enforcement Strategy*, 21 JUST. Q. 391 (2004); Franklin E. Zimring, *Street Crime and New Guns: Some Implications for Firearms Control*, 4 J. CRIM. JUST. 95 (1976).

decades that casual readers of the literature might conclude that a scholarly consensus has developed that organized gun trafficking is vital to the arming of America's criminals.¹¹

We think that this notion deserves closer scrutiny. The goals of this paper are (1) to critically examine the existing evidence on the extent of organized or high-volume gun trafficking, (2) to evaluate the validity of using city-level traced-gun indicators to measure the prevalence of gun trafficking, and (3) to assess the effects of gun trafficking on criminal gun possession and crime rates.

I. GUN TRAFFICKING AND THE FLOW OF GUNS TO CRIMINALS

The oft-stated assertion that gun traffickers supply many guns to criminals is trivial in the absence of any precise definition of a "gun trafficker." As used by ATF, the term refers to anyone who has ever unlawfully sold at least one gun.¹² Similarly, Anthony Braga and Glenn Pierce use the term "gun trafficking enterprises" to encompass operations that have unlawfully sold even a single gun.¹³ The claim that there are many gun traffickers in this legalistic sense is unquestionably true, but largely devoid of policy implications. There is no doubt that unlawful selling of guns is commonplace in America, since gun theft is common, and most stolen guns are sold rather than kept by the thief.¹⁴ Every thief who sells some of the guns he steals is a trafficker in this legalistic sense, even if he sells no more than one gun a year. James Wright and Peter Rossi estimate, from the sample of prisoners they interviewed, that felons who had ever stolen a gun had stolen an average of about thirty-nine guns in their lives¹⁵—fewer than four per year of their active criminal careers. As will be shown later, even the traffickers investigated by ATF sell, on average, fewer than fifteen guns over the entire course of their documented careers. Stopping even thousands of such occasional traffickers is unlikely to have much effect on the flow of guns to criminals, both because the share of "crime guns"¹⁶ that any one of these criminals is responsible for is so small, and because such small-scale operators are so easily replaced. In any case, a policy redirecting significant law

11. See sources cited *supra* note 10.

12. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, CRIME GUN TRACE ANALYSIS REPORTS: THE ILLEGAL YOUTH FIREARMS MARKETS IN 27 COMMUNITIES 14 (1997).

13. Braga & Pierce, *supra* note 10, at 726.

14. See JAMES D. WRIGHT & PETER H. ROSSI, ARMED AND CONSIDERED DANGEROUS 199–204 (1986).

15. *Id.* at 198.

16. Crime guns are guns used to commit violent crimes, either in an attack or a threat.

enforcement resources to such an effort probably could not be implemented in the first place—a point acknowledged even by advocates of greater efforts aimed at disrupting illegal gun markets.¹⁷

The issue of volume is crucial—the greater the number of guns sold by a trafficker, the more likely it is that stopping his activities will reduce the availability of guns to criminals. In this Article, we will use the term “high-volume gun trafficker” to denote a person who unlawfully and persistently sells substantial numbers of guns for profit. Any numerical threshold would be arbitrary—the underlying reality is that the more that flows of guns to criminals are concentrated in relatively few high-volume trafficking channels, the more impact one could realistically expect from a strategy of disrupting illicit suppliers. If pressed to state a number, however, we would regard a person who sold one hundred or more guns annually as a “large-scale” trafficker.

A. Contrasting Models of the Movement of Guns to Criminals

It is critical for policy purposes to determine the degree to which the flow of guns to criminals is highly concentrated, moving through the hands of a relatively small number of high-volume illicit dealers (including both unlicensed dealers and corrupt or negligent licensed dealers). Such traffickers may be harder to quickly replace than occasional illicit sellers of guns, especially if the former make use of unusually rich criminal resources, including extensive contacts with a large customer base, organizations with large numbers of confederates, greater working capital, and greater skill in avoiding arrest. If such a trafficker were arrested and imprisoned, it would be less likely that he would be immediately replaced by an equally active substitute, such as a competitor or an associate in his own organization. On the other hand, if high-volume traffickers are rare and account for only a small share of illicit gun flow, such efforts are likely to be relatively unproductive because occasional illicit gun sellers are likely to be far more numerous and more quickly replaced.

ATF often states in its publications that gun traffickers supply a “significant” share of guns to criminals, without defining what “significant” really means. Many scholars have likewise claimed that criminals regularly involved in gun trafficking play an “important” role in channeling guns to criminals. These scholars have presented an image of relatively organized gun markets with significant numbers of high-volume traffickers, often operating in concert with corrupt or irresponsible licensed dealers who provide

17. Pierce et al., *supra* note 10, at 420.

the traffickers with their supply of guns.¹⁸ Typical of such scholars, Philip Cook and Anthony Braga concede that diffuse (low-volume) sources channel many guns to criminals, but nevertheless insist that point sources (high-volume traffickers) are important in supplying guns to criminals.¹⁹

This concentrated gun trafficking model holds that a significant share of guns are diverted from lawful commerce into the hands of criminals by the illegal activities of corrupt or negligent federal firearms licensees (FFLs) and unlicensed, criminal gun traffickers. A prototypical point-source trafficker, according to this model, obtains many or all of his guns from corrupt or careless FFLs, who either sell guns directly to the trafficker in unrecorded transfers or make recorded sales to straw purchasers—legally qualified persons who purchase guns on behalf of another person. Many traffickers, according to this model, purchase guns—especially handguns—in large batches from corrupt or irresponsible dealers, especially those operating in states with relatively weak controls over gun selling and buying. This model is preferred by advocates of supply-side gun control strategies, since it promises significant reductions in criminal gun possession if high-volume traffickers or corrupt dealers can be stopped.²⁰

The case for the concentrated model relies heavily on vague claims about the significant amount of illegal diversion of guns by gun traffickers (very broadly defined) operating in illicit gun markets. Pierce and his colleagues provide a good example: “Our results indicate that a noteworthy percentage of the guns recovered in crime come rather directly from licensed dealers; in effect criminals are being supplied by dedicated ‘pipelines’ as well as the extant pool of guns.”²¹ Nothing in the authors’ results points to even an approximation of what this noteworthy percentage might be. The only percentages the authors cite pertain to the share of crime guns that possess

18. Braga et al., *supra* note 10, at 319–52; Philip J. Cook & Anthony A. Braga, *Comprehensive Firearms Tracing: Strategic and Investigative Uses of New Data on Firearms Markets*, 43 ARIZ. L. REV. 277–309 (2001); Cook et al., *supra* note 10, at 59–92; Kennedy et al., *supra* note 10, at 147–96; Moore, *supra* note 10, at 92–109; Koper, *supra* note 10, at 749–78; Pierce et al., *supra* note 10, at 391–422; Zimring, *supra* note 10, at 95–107.

19. Cook & Braga, *supra* note 18, at 308.

20. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, COMMERCE IN FIREARMS IN THE UNITED STATES—FEBRUARY 2000, at 11–12, 17–25 (2000); U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, CONCENTRATED URBAN ENFORCEMENT (1977) [hereinafter CONCENTRATED URBAN ENFORCEMENT]; U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, FOLLOWING THE GUN: ENFORCING FEDERAL LAWS AGAINST FIREARMS TRAFFICKERS, 10–22 (2000) [hereinafter FOLLOWING THE GUN]; U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, GUN SHOWS: BRADY CHECKS AND CRIME GUN TRACES, JANUARY 1999 (1999); Braga et al., *supra* note 10; Cook & Braga, *supra* note 18; Cook et al., *supra* note 10; Kennedy et al., *supra* note 10; Pierce et al., *supra* note 10.

21. Pierce et al., *supra* note 10, at 419.

various ambiguous characteristics believed to be indicators of trafficking, such as rapid movement of guns from first retail sale to recovery by police in connection with a crime. The authors report that “nearly a third” of their traced guns had two or more of ten purported indicators of gun trafficking, and hint that guns with this many indicators were likely to have been trafficked, but provide no evidence of this.²² They do not explain why having just two of these ambiguous indicators should be regarded as strong evidence that a gun was trafficked. None of their findings suggest that even 1 percent of crime guns had as many as half of the ten indicators that they considered.²³

Pierce and his colleagues assert that “a supply-side gun market disruption strategy focused on quick diversions of guns from federally licensed dealers may prove to be particularly fruitful” in some cities.²⁴ It becomes evident how vague this assertion is once one realizes that quick diversions from FFLs include not only purchases by traffickers and straw purchasers, but also relatively new guns stolen from their lawful buyers, one or two at a time, in burglaries—diversions beyond the control of either FFLs or ATF. The authors do not provide any specific examples of gun market disruption strategies that would reduce the rate of burglary-linked gun thefts, nor do they provide any evidence to contradict the hypothesis that nearly all quick diversions are the result of gun thefts from lawful buyers rather than of organized gun trafficking.

Advocates of the concentrated gun trafficking model have never stated, in even the most approximate terms, what they mean by a significant share of crime guns being trafficked. They have never explicitly claimed, for example, that even as much as a tenth of crime guns are trafficked. They only assert that high-volume point sources are important in supplying guns to criminals,²⁵ and they make it clear that they believe the trafficked share is large enough to justify the investment of more law enforcement resources focused on high-risk retail dealers and unlicensed traffickers.²⁶

The contrasting dispersed-gun-flow model assumes a highly dispersed market in which criminals obtain guns from a wide variety of largely interchangeable nontrafficker sources. In this view, criminals most commonly (1) obtain guns (directly or indirectly) as a by-product of thefts, primarily

22. *Id.* at 419.

23. *Id.* at 417.

24. *Id.* at 418.

25. *E.g.*, Cook & Braga, *supra* note 18, at 308.

26. Braga et al., *supra* note 10; Pierce et al., *supra* note 10; D.W. Webster et al., *Effects of Undercover Police Stings of Gun Dealers on the Supply of New Guns to Criminals*, 12 INJ. PREVENTION 225 (2006).

residential burglaries, that were not committed specifically for the purpose of obtaining guns; (2) buy guns one at a time from friends and relatives who neither regularly sell guns nor act as straw purchasers; or (3) (if they have no criminal convictions) lawfully purchase guns from licensed dealers, to whom they are indistinguishable from noncriminal buyers. According to this model, high-volume or persistent traffickers are rare, and in the aggregate are of little significance in the arming of criminals. Those who sell guns illegally are not professionals, specialists, or part of criminal organizations devoted to gun trafficking, and they do not sell guns persistently or in large numbers. Illicit gun sellers are instead more likely to be thieves who sell a few guns (typically fewer than a half-dozen per year) along with all the other saleable property they steal, drug dealers who occasionally sell guns as a sideline to their drug business, or friends and relatives of the criminal recipient who do not regularly sell guns.²⁷

Thus, while many crime guns are supplied by black market or street sources, almost all of these are casual low-volume suppliers rather than high-volume point sources. Those holding to this model recognize that some criminals acquire guns legally from licensed dealers through legal purchases (because the criminals are not convicted felons, and do not show up as hits in background checks), while others may use straw purchasers to illegally buy guns from licensed retailers who have no way of recognizing the putative buyers as straws. But the model denies that either intentional criminal conduct or carelessness on the part of licensed retailers contributes significantly to such diversion of guns to criminals, or that such acquisitions are typically part of repeated efforts by traffickers to acquire guns to resell for profit. Instead, the dispersed flow model implies that people who act as straws for ineligible buyers do so only once or very rarely, rather than repeatedly on behalf of traffickers intent on accumulating a supply of guns to sell for profit.

William Vizzard, a political scientist who also served for twenty-seven years as an ATF agent, summarized his view of gun trafficking:

Nothing in the available studies supports an assumption of a well-structured illicit market in firearms. Transactions appear to be casual and idiosyncratic. My own experience, and that of most other agents I have interviewed, supports an assumption that the majority of sources is very dispersed and casual, and regular traffickers in firearms to criminals are few.²⁸

27. See JOSEPH SHELEY & JAMES D. WRIGHT, *IN THE LINE OF FIRE* 46–51 (1996); WRIGHT & ROSSI, *supra* note 14, at 184–87, 196, 198, 202–04; Gary Kleck, *BATF Gun Trace Data and the Role of Organized Gun Trafficking in Supplying Guns to Criminals*, 18 ST. LOUIS U. PUB. L. REV. 23, 39–40 (1999).

28. WILLIAM VIZZARD, *SHOTS IN THE DARK* 31 (2000).

Vizzard attributed the rarity of “regular traffickers in firearms” to the huge reservoir of guns in the United States, and the concomitant fact that criminals can easily draw on many different sources for guns. The existence of these conditions suggests that “there is little economic incentive for persons to specialize in the illegal gun trade.”²⁹ His discussion, however, leaves open the possibility that there could be such specialists in a few exceptional places, such as New York City, where gun laws are exceptionally restrictive and alternative sources of guns are unusually limited. It further leaves open the possibility that some criminals, such as drug dealers, might illegally sell a fairly large number of guns even though they do not specialize in the activity.³⁰

B. The Scale of the Total Flow of Guns to Criminals

It is impossible to meaningfully judge whether the volume of guns moved into criminal hands through a given channel is significant without at least a rough sense of the total volume of guns acquired by criminals. A conservative estimate of the number of guns acquired by criminals can be obtained by beginning with estimates of the number of guns stolen each year, and then extrapolating that number to the total number of guns obtained by all methods, based on the share of their guns that criminals say they obtain by theft.³¹ The best available estimate of the number of annual gun theft incidents comes from the National Crime Victimization Survey (NCVS), which collects data on thefts, including incidents not reported to the police. The survey indicated that in the calendar year 2000 there were 174,680 gun theft incidents that people were willing to report to its interviewers,³² while the figure for 1993—a higher crime year—was 291,820.³³ These estimates are almost certainly conservative because people are reluctant to report thefts of guns that they possess illegally, or whose legal status they are unsure of. The NCVS does not establish the number of guns stolen per incident. The largest national survey to estimate this parameter found that there were 2.2 guns

29. *Id.*

30. WRIGHT & ROSSI, *supra* note 14, at 203–04.

31. Kleck, *supra* note 27, at 40–41.

32. BUREAU OF JUSTICE STATISTICS, U.S. DEP’T OF JUSTICE, CRIMINAL VICTIMIZATION IN UNITED STATES, 2000 STATISTICAL TABLES, tbl.84, available at <http://www.ojp.gov/bjs/pub/pdf/cvus00.pdf> (last visited May 27, 2009).

33. BUREAU OF JUSTICE STATISTICS, U.S. DEP’T OF JUSTICE, CRIMINAL VICTIMIZATION IN UNITED STATES, 1993 STATISTICAL TABLES, tbl.84, available at <http://www.ojp.usdoj.gov/bjs/pub/pdf/cvus935.pdf> (last visited May 27, 2009).

stolen per gun theft incident.³⁴ Thus, a conservative estimate of the number of guns stolen in 2000 would be 384,296, while the figure for 1993 would be 642,000. The NCVS's data indicate that about 53 percent of stolen guns are handguns,³⁵ and thus imply that at least 203,677 handguns were stolen in 2000, and 340,260 in 1993.

The most extensive questioning of criminals on the sources of their guns indicated that felons had personally stolen 32 percent of their most recently acquired handguns.³⁶ This implies that the total number of handguns acquired by criminals is about 3.125 times larger than the number of handguns stolen, and thus that about 636,490 handguns were acquired by criminals by all methods in 2000, and about 1.1 million in 1993. If the percent of all types of guns acquired by theft was the same as for handguns, these figures would imply that criminals acquired about 1.2 million guns of all types 2000 and about 2.0 million in 1993. On the other hand, if one accepts at face value, as some scholars apparently do,³⁷ the results of a 1997 federal survey of prison inmates who used or possessed a firearm during their current offense, which indicated that only 10 percent of criminals' handguns were acquired by theft,³⁸ then the total number of guns acquired by criminals each year would necessarily be ten times as large as the number they stole—about 3.8 million in 2000 and 6.4 million in 1993. We regard such huge figures as implausible, and believe it is unlikely that inmates were fully reporting their gun theft activity to the federal government interviewers. If the ten-percent figure is a product of underreporting, then the theft share would be over ten percent, and the total number acquired by all means would be less than ten times the number stolen. In any case, even conservative estimates indicate that the number of handguns annually obtained by criminals by all methods exceeds 600,000 even in low-crime years. And since handguns claim only half of the guns obtained by criminals via theft, if the same applies to all methods of acquisition, criminals obtain, by all methods, at least 1.2 million guns of all types each year.

34. PHILIP J. COOK & JENS LUDWIG, *GUNS IN AMERICA* 30 (1996).

35. BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, *GUNS AND CRIME* 2 (1994).

36. WRIGHT & ROSSI, *supra* note 14, at 184.

37. See, e.g., Braga et al., *supra* note 10, at 328.

38. BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, *FIREARM USE BY OFFENDERS* 6 (2001).

C. Law Enforcement Evidence on the Prevalence and Volume of Gun Trafficking

The most direct, albeit limited, evidence on the extent of significant organized gun trafficking is law enforcement information gathered in connection with the investigation of traffickers. As with many other types of criminals, much of what we know about gun traffickers is based on those who are arrested. Christopher Koper and Peter Reuter uncritically cite the assessment of unnamed federal officials that a gun running operation that handled 116 guns was “typical of the size of most gun running operations.”³⁹ However, traffickers handling this many guns are extremely rare among those caught by law enforcement, and a more typical volume would be fifteen or fewer guns sold per year.⁴⁰ Although ATF places a high priority on catching high-volume traffickers,⁴¹ the agency was able to identify, over a two-and-a-half-year period (1996–1998), just thirty-seven trafficking operations in the United States in which over 250 guns were trafficked. Thus, on average, there were fewer than fifteen high-volume trafficking operations uncovered by ATF per year in the entire nation.⁴² Further, ATF uncovered only 104 trafficking operations that handled over a hundred guns, or about forty-two such operations per year.⁴³ Thus, by any reasonable standard, ATF rarely uncovers large-scale gun trafficking operations.

It is possible, however, that local law enforcement agencies uncover many additional high-volume dealers, especially in places where political leaders prioritize going after gun trafficking. If big-time traffickers operate anywhere, one would expect to find them in New York City, given its huge size (and correspondingly large number of potential customers), its low level of legal handgun ownership, and its strict gun laws, which reduce the availability of legal handguns. Assuming that law enforcement agencies like to publicize their major successes, higher-volume trafficking cases should be reported in local newspapers once investigations are complete. However, an examination of all New York City daily papers over a 17-year period from 1990 through 2006 uncovered just six cases of trafficking operations purportedly involving a hundred or more guns, or about one such operation

39. Christopher S. Koper & Peter Reuter, *Suppressing Illegal Gun Markets: Lessons From Drug Enforcement*, LAW & CONTEMP. PROBS., Winter 1996, at 119, 127.

40. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, DEP'T OF THE TREASURY, CRIME GUN TRACE REPORTS (2000): NATIONAL REPORT 53 (2002) available at <http://www.atf.gov/firearms/ycgii/2000/index.htm>.

41. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 12, at 2.

42. FOLLOWING THE GUN, *supra* note 20, at 7, 24.

43. *Id.*

reported every three years in the nation's largest city.⁴⁴ Only two of these operations were alleged to have trafficked over 140 guns.⁴⁵

Likewise, in Chicago, which like New York City bans the private possession of handguns, the police catch virtually no high-volume gun traffickers. A newspaper story clearly intended to convey the idea that interstate gun traffickers were important in supplying guns to Chicago criminals nevertheless identified only two traffickers who dealt in even modest numbers of guns—ninety-five and thirty-five guns, respectively.⁴⁶ To put this in perspective, these two traffickers were arrested in a year (2003) in which the Chicago police seized over 10,000 guns from criminals.⁴⁷ If high-volume gun traffickers are almost never uncovered in the nation's largest cities with the strictest controls on handguns, it is highly unlikely that local police in areas with weaker gun controls discover significant numbers of such traffickers, where there would be less need for their services.

These few high-volume operations are clearly the well-publicized exceptions, since average trafficking operations involve far fewer guns. In 2000, ATF initiated 1,319 trafficking investigations and estimated that the targeted operations had trafficked a total of 19,777 firearms, for an average of just fifteen guns per trafficking operation.⁴⁸ Arithmetic means, however, are misleading, with highly skewed distributions such as these in which a handful of operations handling extremely large numbers of guns drive up the average. It follows that the median number of guns trafficked per operation is less than half the average,⁴⁹ so a typical operation (one with a median volume) investigated in 2000 probably handled fewer than seven guns. Further, the average gun volume among *all* trafficking operations, including those not important enough to merit ATF investigation, would almost certainly be lower still. Although investigators may underestimate the number of the guns trafficked, the number that has been documented is clearly small. It also should be kept in mind that traffickers sell to virtually anyone with money, not just criminals, so the number of guns going to criminals is necessarily smaller than the total number trafficked.⁵⁰

44. This result was drawn from a LexisNexis search of all New York City daily papers for “gun trafficking,” “gun smuggling,” or “gun running.”

45. *Id.*

46. David Heinzmann, *Gangs Run Gun Pipeline From Delta to Chicago—Lenient Laws Make Buying Weapons Easier in South*, CHI. TRIB., Feb. 5, 2004, at 1.

47. *Id.*

48. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at 53.

49. FOLLOWING THE GUN, *supra* note 20, at 13.

50. VIZZARD, *supra* note 28, at 31.

What share of all guns acquired by criminals is supplied, then, by known traffickers? As noted above, the total number of guns known to have been trafficked by all traffickers investigated by ATF in 2000 was 19,777. We have estimated that in that same year, criminals acquired a total of at least 1.2 million guns.⁵¹ Thus, even if one unrealistically assumed that all of the 19,777 guns known to have been trafficked by ATF-investigated traffickers were sold to criminals, and if all of these were trafficked in a single year, then at most this comprised 1.6 percent of the guns acquired by criminals in that year. More realistically, if traffickers sell indiscriminately to whoever will pay, and if they therefore sold only half of their guns to criminals, then these trafficked guns would comprise less than 1 percent of the guns acquired by criminals.

There are, however, traffickers unknown to police, and there may even be high-volume traffickers who are never caught. Law enforcement evidence, the best evidence available, cannot prove a negative, such as the assertion that virtually no high-volume traffickers operate. One can only say that the law enforcement agencies charged with uncovering such trafficking have discovered few large-scale operations, have not generated affirmative evidence of widespread high-volume trafficking, and have not supplied evidence that would support an affirmative claim that traffickers supply more than a tiny share of criminals' guns.

D. The Involvement of Licensed Dealers in Trafficking

Do corrupt or negligent FFLs contribute significantly to the flow of illicit guns to criminals? Compared to criminals who commit offenses like burglary or auto theft, illicit gun dealers should be especially easy for investigators to uncover, for the same reason that street dealers of illicit drugs are easy to identify: It must be possible for prospective customers to find the sellers. And if buyers can find them, then the police or their informants can do so as well. Licensed but corrupt dealers should be even easier to detect than unlicensed traffickers because all FFLs are known to authorities as gun dealers, required to maintain detailed records of every acquisition or disposition of a gun, and subject to close inspection of those records. Audits of these records can uncover suspicious patterns, and even if the required records are not maintained, this failure can itself serve as the basis for regulatory action, more intensive investigation, and in some cases, revocation of a dealer's license or criminal charges. Because FFL misbehavior is easier to detect, and because FFLs may

51. See *infra* Part I.C.

be targeted for investigation more frequently for this very reason, the FFLs' share of trafficking is likely to be overstated by law enforcement data.

Despite the relative ease of doing so, ATF discovered so little serious misconduct among FFLs that in all of fiscal year 1999 they revoked the licenses of only 20 FFLs in the entire United States—less than a fiftieth of one percent of the 103,942 total FFLs operating at that time.⁵² Even when ATF selectively focused extensive compliance inspections on 1,700 dealers thought to be more likely to be involved in gun trafficking because they displayed “a range of indicators of potential firearms trafficking,”⁵³ few of these were found to be involved in misconduct serious enough to merit revocation of their licenses. Of the 1,700 suspect dealers inspected in 1998, ATF revoked the licenses of just thirteen, in addition to seventy-five who surrendered their licenses, were placed out of business, or were denied renewal of their licenses.⁵⁴

Conversely, among 1,530 trafficking operations investigated by ATF during 1996–1998, only 8.7 percent involved trafficking by any FFLs.⁵⁵ Thus, few FFLs are involved in trafficking, and few trafficking operations involve FFLs. Those who believe in the importance of high-volume trafficking involving FFLs, however, stress that, on those rare occasions that an FFL is involved in trafficking, the numbers of guns trafficked are much larger than in other trafficking operations—an understandable result given an FFL's easy access to large supplies of guns.⁵⁶ Indeed, ATF figures indicate that 32 percent of guns trafficked by the operations investigated by the agency were handled by operations in which FFLs were implicated.⁵⁷ These data, however, cannot establish the share of all guns going to criminals that were moved by trafficking operations involving FFLs. ATF cautions that their investigations “do not necessarily reflect typical criminal diversions of firearms.”⁵⁸ And this percentage almost certainly overstates the FFL share of trafficked guns given

52. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, COMMERCE IN FIREARMS IN THE UNITED STATES—FEBRUARY 2000 A-21, A-22 (2000).

53. *Id.* at 30.

54. *Id.* at 31.

55. FOLLOWING THE GUN, *supra* note 20, at 11.

56. See, e.g., *id.*; Braga et al., *supra* note 10.

57. FOLLOWING THE GUN, *supra* note 20, at 13 tbl.3 (2000). This report indicates that 40,365 firearms were “trafficked by licensed dealer[s], including pawnbroker[s],” from among a total of 84,128 trafficked firearms identified in 114 investigations of trafficking by licensed dealers. *Id.* at 13. It is, however, inappropriate to calculate the FFL share as 40,365 out of 84,128, because ATF double-counted both its investigations and trafficked firearms in multiple “trafficking channel” categories. The sum of the firearms attributed to each separate category was 125,928, indicating that each trafficked gun was counted about 1.5 times ($125,928 / 84,128 = 1.5$). Using the proper base total, a more correct FFL share would be 32 percent ($40,365 / 125,928 = 0.321$).

58. *Id.* at 53.

the greater ease of detecting criminal activity within a group that Cook and Braga rightly characterize as “vulnerable to ATF’s capacities for regulation and enforcement.”⁵⁹

ATF’s caveat is more than merely pro forma—the agency clearly focuses disproportionately on more vulnerable investigative targets. To illustrate, 13.9 percent of ATF’s 1996–1998 trafficking investigations were aimed at “gun shows and flea markets,”⁶⁰ even though the Census Bureau’s 1997 Survey of State Prison inmates found that only 1.7 percent of gun criminals had obtained their crime guns from a gun show or a flea market.⁶¹ ATF was clearly not focusing its investigations on gun show trafficking because this activity supplies a large share of crime guns. Rather, because gun shows are advertised, legal events, they may simply be easier to investigate than trafficking rings that operate secretly.

E. The Significance of the Prices Criminals Pay for Guns

Data on prices paid for illegal guns also strongly suggest that FFL involvement in trafficking, whether knowing or negligent, is rare. Traffickers who buy guns, new or used, from FFLs at retail prices can only make a profit if they sell the guns at prices substantially higher than retail price. Further, given the need to pay straw purchasers for their services, when employed, and to cover transportation and other expenses, it is unlikely that traffickers could begin to turn a profit unless they sold guns for amounts well above—perhaps at least double—the retail price. Thus, if many criminals obtain guns through the efforts of traffickers working in this way, we should find that a large share of criminals buy guns at prices well above retail price. Interviews with criminals, however, indicate that the vast majority instead generally pay less than retail price for their guns. Joseph Sheley and James Wright found that 65 percent of inmates of juvenile correctional facilities and 74 percent of high school students paid less than \$100 for their most recently acquired handgun,⁶² at a time (about 1990) when only a handful of handguns had a retail price under \$100.⁶³ Similarly, Wright and Rossi concluded, based on interviews with adult inmates, that even though criminals often possessed higher quality guns, they typically paid much less than retail, because “prices in the informal, gray, and black markets are heavily discounted, in all

59. Cook & Braga, *supra* note 18, at 300.

60. FOLLOWING THE GUN, *supra* note 20, at 11.

61. BUREAU OF JUSTICE STATISTICS, *supra* note 38, at 6.

62. SHELEY & WRIGHT, *supra* note 27, at 49–50.

63. KEN WARNER, GUN DIGEST 1990 *passim* (1989).

likelihood because of the predominance of stolen weapons in these markets.”⁶⁴ Thus, even though virtually all guns are sold at or near full retail price when they are new, by the time their ultimate criminal consumers acquire the guns, they generally are sold for much less. This evidence strongly suggests that traffickers were not responsible for moving the retail-priced guns from licensed dealers to criminals.

Occasional claims that criminals pay substantially above-retail prices for guns are supported only by isolated, unsubstantiated anecdotes, typically fed to uncritical reporters by ATF agents. For example, Philip Cook and his colleagues cite a newspaper article in which an ATF agent was quoted as asserting that for illegal handguns purchased in New York City there was a markup of “five times or more over the price in Virginia.”⁶⁵ These authors likewise cite unsubstantiated claims by journalists that handguns purchased for \$50 in Ohio were sold for \$250 in Philadelphia.⁶⁶ The evidence for such journalistic claims usually turns out to be unverified anecdotes supplied by ATF agents.⁶⁷

Some scholars even insist that criminals pay a premium over retail for illicit guns in the face of their own contradictory evidence. For example, Philip Cook and his colleagues, based on interviews with criminals in one high-crime area of Chicago, claimed at one point that there was a substantial price markup in the underground gun market.⁶⁸ Their own interviews, however, indicated that even among the more naïve, less well-connected youth in the area of their study, prices actually paid ranged from \$250 to \$400.⁶⁹ Assuming that the mean price paid by these youth was around the midpoint between \$250 and \$400, then the average price paid was \$325. This is very close to the mean retail price of handguns confiscated from criminals in that same area, which was about \$316.⁷⁰ This implies an average markup of just 3 percent over the average retail price, which cannot be accurately described as substantial considering that it is far less than the 15 percent markup over cost that *legal* gun retailers typically charge.⁷¹ Thus, in a low-gun-ownership city with very

64. WRIGHT & ROSSI, *supra* note 14 at 233.

65. Cook et al., *supra* note 10, at 72 n.56.

66. *Id.*

67. E.g., Richard Lacayo, *Running Guns Up the Interstate*, TIME, Feb. 6, 1989, at 24; Howard Schneider, *Gun-Control Fusillade Heats Up; Rally in Annapolis Backs Bill's Foes*, WASH. POST, Mar. 8, 1991, at C5; John F. Harris, *Gunrunning Alleged in Indictment—Trail Said to Run From VA. to N.Y.*, WASH. POST, Jan. 6, 1993, at D1.

68. Philip J. Cook et al., *Underground Gun Markets*, 117 ECON. J. F588, F592–96 (2007).

69. *Id.*

70. Cook et al., *supra* note 68, at F594, F616.

71. Cook et al., *supra* note 10, at 71 n.54.

restrictive gun laws, even more naïve young gun buyers lacking extensive criminal connections were not paying prices substantially over retail. Although prices for used guns sold by licensed retailers would not be as high as the new-gun retail prices used by Cook and his colleagues,⁷² the differences in prices charged by gun dealers between new guns and near-new used guns is slight, and Cook himself has asserted that most crime guns are relatively new.⁷³

Moreover, these data pertain only to an unrepresentative sample of a small segment of the population in just one unrepresentative area of Chicago.⁷⁴ Cook and his colleagues also reported considerably more statistically meaningful city-wide data on prices paid by Chicago arrestees who were interviewed in 1996–1997 as part of the U.S. Justice Department’s Drug Use Forecasting program. This more systematic body of data indicated that the median price paid for handguns by Chicago criminals was just \$150,⁷⁵ less than half the \$331 mean new-gun retail price of the guns confiscated from Chicago criminals during that time frame.⁷⁶

It is certainly possible that traffickers served only a segment of the criminal market covered by Cook’s study, and that criminal customers in this segment do indeed pay large markups over retail. Cook and his colleagues’ data, however, indicate that only 6.8 percent of Chicago arrestees paid \$500 or more for their guns,⁷⁷ a price that, based on Cook’s claims in 1995, should have been commonplace in areas with a relative scarcity of guns and restrictive gun laws.⁷⁸ Since some of these arrestees may have been buying guns with retail prices only modestly above \$500, the share of Chicago arrestees paying markups of three or four times retail price (\$900–\$1200) necessarily must have been quite small.

Thus, Cook’s evidence consistently contradicts his earlier claims of huge price markups, as large as four- or five-to-one,⁷⁹ and does not even support his claim that criminals pay amounts even slightly more than retail prices. Even in Chicago, where handguns have been banned since 1982 and where gun ownership was quite low even before the ban, the prices paid by criminals are generally comparable with or below retail, and thus provide no support for the theory that gun traffickers buy guns at retail prices from licensed gun

72. See Cook et al., *supra* note 68, at F616.

73. Cook & Braga, *supra* note 18.

74. See Cook et al., *supra* note 68, at F561–62.

75. *Id.* at F573.

76. Computed from the data provided in *id.* at F616 tbl.A4.

77. *Id.* at F603.

78. See Cook et al., *supra* note 10, at 72.

79. *Id.* at 72 n.56.

dealers and then sell them at moderate-to-huge markups to criminals in areas with strict gun laws.

Perhaps Chicago is unrepresentative of high-control cities, and perhaps traffickers realize higher profit margins in other places with stringent controls. To provide comparative perspective, we analyzed Drug Use Forecasting data from interviews conducted in 1997 with arrestees in New York City and Washington, D.C., where handgun ownership is likewise banned. The mean price paid by arrestees for their most recently acquired handgun was \$259 in New York, \$219 in D.C., and \$190 in Chicago.⁸⁰

A rough estimate of the retail prices of handguns used by criminals in those cities can be obtained from published ATF data on guns recovered and submitted for tracing. The ten most frequently recovered types of guns, classified by manufacturer, caliber, and general gun type (revolver, semi automatic pistol, and so forth) are listed in ATF reports.⁸¹ We looked up the suggested retail price of the least expensive model within each category (for example, the least expensive Ruger nine millimeter semiautomatic pistol) in the 1997 edition of *Gun Digest*, and conservatively assumed that this was the average retail price of guns in each category.⁸² We weighted these prices by the number of crime guns in that category that were recovered and traced, in order to obtain an average retail price of the most popular crime guns recovered from criminals in each city. Even assuming conservatively that the least expensive handgun was used in each category, the average retail price of crime guns recovered in 1998 was \$260 in New York City, \$374 in Washington, D.C., and \$237 in Chicago.

Thus, even in these exceptional urban areas with stringent gun controls, where traffickers are supposed to flourish, criminals pay *under* the retail price for handguns. Consequently, the notion that criminals could make significant profits by selling guns purchased at retail prices from FFLs is not plausible even in cities with unusually low gun ownership rates and unusually strict gun laws, such as New York, Washington, D.C. or Chicago. Traffickers who purchase guns at retail prices can, at best, profit only by selling to unusually ill-informed or poorly connected criminals, that is, the handful willing to pay far more than the average criminal in their city. The idea of such a trafficker profiting is even less plausible with regard to places where controls over gun sales

80. U.S. DEP'T OF JUSTICE, NAT'L INST. OF JUSTICE, DRUG USE FORECASTING IN 24 CITIES IN THE UNITED STATES, 1987-1997 (1998) [GUN ADDENDUM DATA, 1997] (restricted version of ICPSR Study 9477 obtained from the National Archive of Crim. Just. Data, on file with author).

81. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 12, at 33.

82. KEN WARNER, GUN DIGEST 1997 (1996).

are weaker, gun ownership (and thus gun theft) rates are higher, and traffickers therefore face more competition from legal dealer sales and from stolen guns.

II. HOW DO CRIMINALS GET GUNS?

A. The Survey Evidence

The richest sources of information on gun acquisition by criminals are surveys of incarcerated criminals.⁸³ The findings from direct questioning of felons are consistent with the “dispersed” model of the movement of guns to criminals, which hypothesizes that offenders most commonly steal their own guns or buy them from friends, relatives, or acquaintances. The most detailed questioning of criminals about their methods of gun acquisition was conducted by James Wright and Peter Rossi, who found that theft was an especially important method.⁸⁴ When asked how they had obtained their most recently acquired handgun, 32 percent of felons reported that they personally stole the gun. The prisoners were also asked if they believed that their most recently acquired handgun was stolen, and 46 percent stated that the weapon was “definitely stolen” (these inmates presumably included the 32 percent who reported having personally stolen the gun). Another 24 percent indicated the weapon was “probably stolen.”⁸⁵ Thus, the criminals believed that 46–70 percent of their handguns were stolen.

This study also found that criminals do not typically seek out guns to steal, but rather steal those they happen to come across in the course of criminal activity,⁸⁶ most commonly thefts from homes or vehicles.⁸⁷ Criminals usually sell the guns they steal, but most gun thieves have also retained at least one gun for their own use. They typically kept the gun because the stolen weapon was a “nice piece,” rather than because they did not already have one.⁸⁸ Thus, the criminals evidently used theft as a way of upgrading the quality of their weaponry, rather than as a way of becoming armed. Surveys also indicate that

83. See, e.g., SHELEY & WRIGHT, *supra* note 27; U.S. BUREAU OF JUSTICE STATISTICS, SURVEY OF STATE PRISON INMATES 1991 (1993); U.S. BUREAU OF JUSTICE STATISTICS, *supra* note 38; WRIGHT & ROSSI, *supra* note 14; cf. DAVID C. MAY & G. ROGER JARJOURA, ILLEGAL GUNS IN THE WRONG HANDS 8–9 (2006).

84. WRIGHT & ROSSI, *supra* note 14, at 198–204.

85. *Id.* at 196.

86. *Id.* at 200.

87. *Id.* at 206.

88. *Id.* at 201–02.

offenders believe that they can get guns from multiple types of sources; therefore, eliminating a single channel would likely not prevent the acquisition of a gun.⁸⁹

Wright and Rossi also found that 16 percent of the felons' handguns had been purchased from retail (presumably licensed) sources,⁹⁰ although their questions did not differentiate between a felon buying the gun directly and a felon using a straw purchaser. The authors did not ask whether the felon had any disqualifying criminal convictions at the time of the purchase, so it is impossible to tell whether any of these guns were acquired unlawfully, were straw-purchased, or involved unlawful behavior or negligence on the part of the retail seller.⁹¹ Nevertheless, even some scholars who have adopted the theory that traffickers use straw purchasers to acquire guns from FFLs concede that criminals rarely use straw purchases from FFLs to obtain guns for themselves.⁹²

Although the surveys provide little direct support for the concentrated flow model or the organized trafficking model, this at least partly reflects the limits of the method. Criminals typically know only the proximate source of their guns—the person from whom they directly obtained a gun. They usually would not know whether traffickers were involved in earlier movements of the gun, further back in the chain of possession. A buyer also would not always know whether the proximate source was regularly engaged in illicit gun sales. In any case, the questions asked in past studies have not been framed in a way that allows researchers to distinguish sources who regularly and persistently sold illicit guns from those who did so on only on a few occasions. Thus, while the survey evidence does not support the view that traffickers channel a significant share of the guns obtained by criminals, neither does it rule it out.

B. Evidence from Traced Crime Guns

The belief in the importance of persistent, organized, or high-volume gun trafficking is largely based on indirect inferences from information on guns that are seized or recovered from apprehended criminals and then traced by ATF. The process of tracing a gun works as follows: When a criminal is arrested and found to possess a gun, or when a gun is otherwise recovered by police

89. *Id.* at 210–15; SHELEY & WRIGHT, *supra* note 27, at 47; MAY & JARJOURA, *supra* note 83, at 37, 47 tbl.3.1.

90. WRIGHT & ROSSI, *supra* note 14, at 185.

91. *Id.*

92. Cook et al., *supra* note 68, at F566–F567; Daniel W. Webster et al., *How Delinquent Youths Acquire Guns*, 79 J. URB. HEALTH 60, 65–66 (2002).

and it is known or suspected to be a crime gun, law enforcement officers may submit a request to ATF for that gun to be traced. This means that its history is established, as officially recorded on various legal forms, hopefully up to the point of first retail sale—when it was first sold as a new gun. ATF typically does this by first contacting the manufacturer or importer (or, equivalently, by consulting a manufacturer's computer database supplied to ATF) in order to identify the distributor (wholesaler) to whom the gun was sold by the manufacturer or importer. ATF then contacts this distributor to establish the identity of the licensed retail dealer to whom the gun was sold. Finally, ATF contacts the retail dealer who sold the gun, in order to establish who first purchased the new gun. If all necessary records were completed and remain available, the gun can be traced as far back as its first private owner, at which point the paper trail ends, since ATF typically does not have access to records of transfers (including thefts) that occur after the first retail sale.⁹³ A criminal who uses a gun to commit a violent crime is rarely the weapon's first retail purchaser, so tracing alone rarely identifies a previously unknown suspect. Indeed, most crime guns become available for tracing only because they were recovered from criminal possessors at the time of their arrest. ATF and local law enforcement agencies more commonly use trace data for the purpose of identifying unlicensed traffickers or high-risk potentially corrupt FFLs.⁹⁴

C. Putative Gun-Trafficking Indicators

ATF has identified a number of indicators that it believes are correlated with a heightened probability that a given crime gun was trafficked.⁹⁵ If indicator data are aggregated up to the dealer level, high risk dealers may be identified. In other words, FFLs who sell many guns with these traits, or who have many crime guns traced back to them, may be engaged in criminal or irresponsible gun selling. Further, if the data on crime guns are aggregated up to the city level, some of these indicators may also be useful measures of the relative prevalence of gun trafficking among cities.

ATF has not directly validated any of these indicators, for example, by demonstrating that it can efficiently differentiate trafficked guns from nontrafficked guns, or that it can identify dealers who were later found, through law enforcement investigation or inspection of dealer records, to be traffickers. Nor has ATF made any specific claims as to what share of trafficked

93. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at 68 (2002).

94. *Id.* at 64.

95. *E.g., id.* at ix.

guns or corrupt dealers are characterized by any given indicator. Scholars who use ATF's indicators have generally simply assumed their validity, based largely on ATF arguments as to why they should be associated with trafficking.⁹⁶

An effective indicator of trafficking would have two attributes: (1) it would be substantially more common among trafficked guns than among nontrafficked guns, and (2) a large share of guns with this trait would be trafficked guns. If a potential indicator possessed the first attribute but not the second, it would be an inefficient tool for identifying trafficked guns, since a large share of guns characterized by the indicator would be false positives. In other words, they would be predicted to be trafficked guns when they were not. For example, suppose that 5 percent of guns possessing trait X were trafficked, while only 1 percent of guns without trait X were trafficked. Guns with the indicator are then five times more likely to have been trafficked than guns without the indicator, yet trait X would still have little value for identifying trafficked guns, because 95 percent of guns with trait X were not trafficked. It would be wasteful to direct investigative resources at FFLs who sold guns with this trait. Thus, the absolute prevalence of trafficking among guns with a given indicator is essential in assessing the indicator's utility. Nonetheless, ATF makes no claims about the approximate share of guns with any of its preferred indicators that it believes were trafficked, or about the share of trafficked guns characterized by a given indicator. For example, ATF has never asserted that even as much as 10 percent of crime guns recovered by police within three years of first retail sale (sometimes loosely described as "new" guns) were trafficked. Nor, conversely, has ATF asserted that at least 10 percent of trafficked guns are recovered within three years.

The Brady Center to Prevent Gun Violence is among those entities who have misunderstood this limitation, claiming that ATF believes that crime guns with a "time-to-crime" (which is more accurately described as "time-to-recovery," or TTR) of under three years "likely were trafficked out of licensed dealers into the criminal market."⁹⁷ That is, the Brady Center asserted that ATF believes that most new crime guns were trafficked. However, ATF merely states, in its characteristically ambiguous way, "To the investigator, the short time from retail sale to crime, known as 'time-to-crime,' suggests illegal diversion or criminal intent associated with the retail purchase from

96. See, e.g., Cook et al., *supra* note 10; Pierce et al., *supra* note 10; Daniel W. Webster et al., *Effects of a Gun Dealer's Change in Sales Practices on the Supply of Guns to Criminals*, 83 J. URB. HEALTH 778 (2006).

97. BRADY CTR. TO PREVENT GUN VIOLENCE, WITHOUT A TRACE: HOW THE GUN LOBBY AND THE GOVERNMENT SUPPRESS THE TRUTH ABOUT GUNS AND CRIME 11 (2006), available at <http://www.bradycenter.org/xshare/pdf/reports/giw.pdf> (emphasis added).

the FFL.”⁹⁸ ATF thus does not claim that even 1 percent of new crime guns were trafficked, much less a majority or even many of them.

The most common logical fallacy that appears to underlie misinterpretation of tracing-based indicators is that of “affirming the consequent.”⁹⁹ An analyst accurately notes that a large share of trafficked guns possesses attribute X, but then draws conclusions that follow only if the converse was true—if a gun has attribute X, it is certain or likely that it has been trafficked. Perhaps the most extreme example of this misinterpretation was by Daniel Webster, Jon Vernick, and Maria Bulzacchelli, who labeled all guns with a time-to-crime of under one year, and whose criminal possessor was not the original retail purchaser, as “new trafficked crime guns.”¹⁰⁰ In fact, virtually all of these guns may simply have been stolen from their lawful buyers within a year of purchase.

In other research, this logical fallacy is implicit rather than overt. Glenn Pierce and his colleagues carried out a long series of statistical analyses exploring what traits of crime guns were associated with a short TTR.¹⁰¹ Their key underlying assumption was that a short TTR is an indicator of trafficking or illegal diversion of guns. The authors inferred that other traits that were correlated with short TTR were also indicators that the gun had been trafficked. They did not explicitly assert that all or even most guns with a short TTR are trafficked or illegally diverted, but instead merely repeated the vague ATF claim that guns with this trait, in combination with other indicator traits, “may have been illegally diverted from legal commerce.”¹⁰² Obviously one can always infer that any given crime gun *may* have been trafficked, even without making use of any supposed trafficking indicators. This weak assertion leaves open the possibility that nearly all guns with a short TTR are *not* trafficked guns, in which case most or nearly all variation in TTR across crime guns is likely to be unrelated to whether the guns were trafficked. Consequently, any associations discovered between short TTR (or any other weak indicator) and other variables may tell us nothing about the correlates of trafficking history. The conclusions drawn by Pierce and his colleagues therefore embody the fallacy of affirming the consequent, by assuming that a large share of guns with short TTRs had been trafficked—an assumption with no empirical support.

98. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at ix (emphasis added).

99. This fallacy is committed if one starts with the premise: If P, then Q. Upon observing that Q is true, one then (wrongly) concludes: Therefore, P is true.

100. Webster et al., *supra* note 96, at 779.

101. Pierce et al., *supra* note 10, 391–422.

102. *Id.* at 402.

We consider below the most commonly discussed trafficking indicators, including dealer-level traits of FFLs that may point to their involvement in trafficking (for example, a large number of crime guns being traced back to a dealer). We do not consider measures of the thoroughness or effectiveness of ATF enforcement actions, such as number of compliance inspections conducted, because the corresponding data are not available for use at the city level.

1. Shorter Time-to-Recovery (TTR)

Like legitimate businesses, gun traffickers likely seek to make sales quickly and avoid accumulating large unsold inventories, so they work to move their guns quickly from first retail sale (in which the trafficker or a straw-purchaser associate buys a gun) to a sale by the trafficker to his customer. The more quickly this happens, the sooner a gun is likely to end up in a criminal's possession, be used in a crime, recovered by police (usually in connection with the criminal possessor's arrest), and traced. Thus, ATF has long regarded a short TTR as an indicator that a gun has been trafficked.¹⁰³ However, firearms stolen by thieves who steal (and sell) a few relatively new guns each year are also likely to have a short TTR. Anyone who wants to profit from an illicit sale would prefer to do it quickly, and thieves also want to minimize the time they are in possession of stolen property. As will be explained, newer guns are disproportionately likelier to be stolen, and then purchased by other criminals. Thus, like trafficked guns, newer stolen guns will move quickly into the hands of criminals, and a short TTR does not imply anything about how a gun came into a criminal's possession.

Many guns move quickly into criminal hands because they were stolen from their owners shortly after retail purchase. A short average TTR among traced crime guns in a given area therefore may serve more as an indirect indicator of rates of property crime, especially burglary, in that area than of widespread firearms trafficking. Anthony Braga and Glenn Pierce reported data on the percent of recovered handguns in Boston that had a TTR less than three years, for the period 1996–2003, and interpreted declines in this percentage as evidence of declining gun trafficking in Boston.¹⁰⁴ We computed the cross-temporal Pearson's correlation between their figures for the percent of crime guns with TTRs under three years and Boston's burglary

103. CONCENTRATED URBAN ENFORCEMENT, *supra* note 20; U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40; Zimring, *supra* note 10.

104. Braga & Pierce, *supra* note 10, at 740–42.

rate, as reported in the Uniform Crime Reports (1997–2004),¹⁰⁵ and found it to be an extremely strong 0.89. The higher an area's crime rate, the shorter the time before the next crime occurs and thus the sooner any given firearm will be stolen from its lawful owner and used to commit a crime. In the absence of any direct evidence of a correlation between TTR trends and actual trafficking rates, it appears to be more likely that short-TTR guns are the result of thefts of relatively new guns than the result of high-volume, FFL-involved trafficking. Thus, it is likely that the share of a city's crime guns with short TTRs serves as an indirect indicator of the gun theft rate in that city.

Consequently, licensed dealers whose traced guns have shorter TTRs cannot be assumed to be involved in trafficking. Shorter TTRs would characterize guns sold by dealers located in or near high-crime neighborhoods, regardless of whether the dealers were operating in an unlawful or irresponsible fashion. One would likewise expect a shorter average TTR among those models or types of guns, such as inexpensive handguns, that are especially popular as self-defense weapons in high-crime areas, since they would be more likely to be stolen.

Gun thieves, of course, steal older guns as well as new ones, but are more likely to retain the better ones (presumably the newer ones) for their own use.¹⁰⁶ Criminals presumably prefer newer guns to old ones, just as criminals and noncriminals alike generally prefer new varieties of almost any consumer good to older ones. Among noncriminals, new guns would, on average, cost more to buy than their used counterparts, but among criminals who obtain their guns by theft, a preference for new guns costs nothing to indulge. For this reason alone one would expect a larger share of guns to be new among criminals than among noncriminals. Criminals who steal guns are presumably

105. See FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, CRIME IN THE UNITED STATES 2004, at 100 (2005); FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, CRIME IN THE UNITED STATES 2003, at 96 (2004); FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, CRIME IN THE UNITED STATES 2002, at 92 (2003); FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, CRIME IN THE UNITED STATES 2001, at 90 (2002); FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, CRIME IN THE UNITED STATES 2000, at 88 (2001) [hereinafter FBI 2000]; FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, CRIME IN THE UNITED STATES 1999, at 85 (2000) [hereinafter FBI 1999]; FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, CRIME IN THE UNITED STATES 1998, at 85 (1999) [hereinafter FBI 1998]; FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, CRIME IN THE UNITED STATES 1997, at 90 (1998) [hereinafter FBI 1997]. Burglaries per 100,000 population for 1996–2003 were (in chronological order): 914, 775, 645, 612, 710, 713, 642, and 737 (computed from City of Boston crime counts and population estimates), while the percent of crime guns with a TTR under three years was 53.8, 36.6, 24.9, 15.6, 15.1, 19.3, 15.5, and 22.3 (derived from Braga and Pierce, *supra* note 10, at 740).

106. See WRIGHT & ROSSI, *supra* note 14, at 200–01 (noting that 68 percent of gun thieves who kept a stolen gun for personal use did so because it was “nicer” than the one they were currently carrying).

likely to retain, and later use in crimes, the newer guns. Among those stolen guns sold by the thief, the newer ones are also likely to be the most attractive to the gun thief's customers, and the first sold, other things being equal. This would help to explain why guns with a short TTR comprise a disproportionately large share of recovered crime guns.

In addition, biases in samples of guns submitted for tracing are likely to exaggerate the share of short-TTR guns. Because newer guns are likely to have changed hands fewer times between retail sale and recovery in a crime, they have more value for the investigation of gun trafficking, since it is more likely that authorities can link such a crime gun to a trafficker or to a corrupt licensee. Consequently, police are likely to prefer to submit trace requests on newer guns, which would result in short-TTR guns claiming a larger share of traced crime guns than of all recovered guns.

Pierce and his colleagues disputed the idea that a large share of crime guns had been stolen, reasoning that "if most crime guns were stolen or were sold . . . as part of legal private transactions, we would expect to have an age distribution of crime guns that closely resembles the age distribution of firearms produced for sale in [the] United States."¹⁰⁷ They found that traced guns do not show such an age distribution, and concluded that most crime guns had not been stolen or sold in legal private transfers. However, this age distribution of traced guns is partly an artifact of the biased nature of traced-gun samples—they over-represent newer guns. But even ignoring this problem, the authors' reasoning is itself fallacious, because it implicitly assumes that, unlike virtually everyone else, criminals have no preference for newer guns, and in effect randomly choose, from among the available pool of stolen weapons, the guns they keep for themselves and later use in crime. Thus, the fact that newer guns are disproportionately involved in crime is not at all inconsistent with the proposition that most crime guns are obtained directly or indirectly by theft. Rather, the age distribution of crime guns suggests that, even though most of the firearms obtained by criminals may have been stolen, and many of these stolen weapons were older guns, gun thieves and other criminals prefer to retain, and use in crimes, the newer weapons.

There are still other reasons why one would expect relatively new guns to comprise a large share of crime guns, even if few were purchased by traffickers and quickly sold to criminals. First, crime victims are disproportionately

107. GLENN A. PIERCE ET AL., *THE CHARACTERISTICS AND DYNAMICS OF CRIME GUN MARKETS: IMPLICATIONS FOR SUPPLY-SIDE FOCUSED ENFORCEMENT STRATEGIES* 38 (2003), available at <http://www.ncjrs.gov/pdffiles1/nij/grants/208079.pdf>.

young,¹⁰⁸ and the property owned by younger people tends to be relatively new. For example, among a randomly selected sample of 339 handguns reported in the 1994 National Survey of the Private Ownership of Firearms, the mean number of years that 18–24-year-old respondents had owned the gun was 2.7 years, compared to 4.8 years among those aged 25–39, 11.8 years among those aged 40–64, and 20.7 years among those aged 65 or older.¹⁰⁹ Thus, the higher rate of victimization among younger people implies that newer guns have a greater chance of being stolen, and thereby comprise a disproportionately large share of the guns possessed by criminals. Further, crime guns that were directly and lawfully purchased from FFLs by criminal users will be disproportionately new when used in crimes simply because criminals are themselves disproportionately young and thus likely to have been gun owners for shorter periods of time.

At the city level, if one interpreted the prevalence of guns with a short TTR among recovered crime guns as an indicator of the involvement of gun traffickers in supplying guns to criminals, one would be forced to draw some very dubious conclusions about where gun trafficking is most common. The consensus among scholars is that organized or systematic illicit trade in guns will be more profitable and thus more common in places where the acquisition of guns is more strictly regulated and gun ownership levels are lower.¹¹⁰ Table 1 shows that all of the cities where gun trafficking is thought to be commonplace—due to strict local gun laws and low noncriminal gun ownership levels—actually have *longer-than-average* TTRs than other cities. In New York, Boston, and Chicago, three cities with some of the strictest controls in the nation, crime guns on average actually take longer to reach criminals' hands than crime guns in other cities. Therefore, if one views shorter-than-average TTR as an indicator of the prevalence of gun trafficking, one would have to conclude that there is less gun trafficking taking place in these cities with relatively strict gun controls. Conversely, crime guns recovered in many cities with higher gun ownership rates, weaker gun laws, and thus little need for the services of gun traffickers, have very short average TTRs. Such cities include Albuquerque, Atlanta, Greensboro, Memphis, Nashville, New Orleans, Phoenix, Richmond, and Tucson. This observed pattern makes

108. See BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, CRIMINAL VICTIMIZATION IN UNITED STATES, 1994 STATISTICAL TABLES, tbl.84.

109. See POLICE FOUND., NATIONAL STUDY OF PRIVATE OWNERSHIP OF FIREARMS IN THE UNITED STATES, 1994, ICPSR version, (1998), available at <http://www.icpsr.umich.edu/access/index.html>.

110. See, e.g., Cook & Braga, *supra* note 18, at 308; Braga et al., *supra* note 10, at 333; Cook et al., *supra* note 10, at 72; D.W. Webster et al., *Relationship Between Licensing, Registration, and Other Gun Sales Laws and the Source State of Crime Guns*, 7 INJ. PREVENTION 184 (2001).

sense if a shorter average TTR mostly reflects high rates of gun theft, and if crime guns that move quickly into criminal hands are more prevalent in cities with high rates of gun ownership and high rates of gun theft. We empirically test this hypothesis later.

TABLE 1. DOES A SHORT AVERAGE TIME-TO-RECOVERY (TTR) INDICATE A HIGH LEVEL OF GUN TRAFFICKING?¹¹¹

City	% Traced Guns with TTR < 3 years	Median TTR (in years)
Albuquerque, NM	43	4.7
Anaheim/Long Beach, CA	14	8.8
Atlanta, GA	49	3.1
Austin, TX	33	6.2
Baltimore, MD	26	6.8
Baton Rouge, LA	43	6.1
Birmingham, AL	29	3.0
Boston, MA	19	7.9
Buffalo, NY	30	6.6
Camden, NJ	27	6.1
Charlotte-Mecklenburg, NC	41	4.4
Chicago, IL	29	6.2
Cincinnati, OH	38	5.4
Cleveland, OH	33	6.5
Dallas, TX	29	6.6
Denver-Aurora, CO	38	4.9
Detroit, MI	26	6.9
Gary, IN	53	2.6
Greensboro, NC	39	4.6
Houston, TX	26	7.1
Indianapolis, IN	49	3.1
Jacksonville, FL	24	6.7
Jersey City, NJ	31	6.4
Las Vegas, NV	39	4.5

111. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40 (drawing figures from each corresponding city report pertaining to 2000).

Los Angeles, CA	17	8.0
Louisville, KY	38	5.5
Memphis, TN	35	5.1
Miami, FL	28	6.5
Milwaukee, WI	41	4.6
Minneapolis, MN	34	5.3
Nashville, TN	33	5.4
New Orleans, LA	39	5.0
New York City	21	7.4
Newark, NJ	28	6.5
Oakland, CA	19	8.0
Oklahoma City, OK	25	6.5
Philadelphia, PA	44	3.8
Phoenix, AZ	35	5.1
Pittsburgh, PA	16	7.8
Portland, OR	30	6.0
Richmond, VA	38	4.6
Salinas, CA	24	6.7
San Jose, CA	19	9.0
San Antonio, TX	26	6.9
Seattle, WA	46	4.1
St. Louis, MO	18	7.6
Stockton, CA	17	9.2
Tampa, FL	25	6.7
Tucson, AZ	43	4.0
Washington, D.C.	31	5.7
U.S.	31	6.1

In sum, though trafficked guns are likely to have a short TTR, this does not imply that guns with a short TTR are likely to have been trafficked. New York City (NYC) is commonly regarded as a place where gun traffickers are especially important as suppliers of criminals' guns, since there are virtually no sales of handguns to the general public by licensed dealers within the city.¹¹² If the ATF's view of TTR were accurate, one would expect to find that a large share of NYC crime guns move quickly from retail sale to recovery by NYC law enforcement. In fact, among NYC guns traced in 2000, only 11 percent had

112. VIZZARD, *supra* note 28, at 31.

a TTR under one year,¹¹³ even lower than the comparable 15-percent share that prevailed in nationwide.¹¹⁴ That is, looking only at TTR, only about a tenth of the city's traced guns moved quickly enough into criminals' possession to look like trafficked guns. Even fewer crime guns possessed multiple indicators.

2. Out-of-State (OOS) Origins

Some traffickers or their straws buy significant numbers of guns in batches from sources in states with weaker gun control laws, and then sell the guns in high-control states.¹¹⁵ A significant volume of interstate gun smuggling would suggest that substantial numbers of crime guns were first purchased in a state different from the one in which police recovered them. It certainly is true that many guns used in crimes had previously been moved across state lines. Some scholars, however, have overinterpreted this fact as signaling something about the prevalence of interstate gun smuggling. For example, Jeremy Travis and William Smarrito asserted that guns were being supplied to NYC criminals by "a highly effective interstate black market," based almost entirely on the fact that a large share of those guns were originally purchased in a different state.¹¹⁶ An out-of-state (OOS) origin, however, is not necessarily an indicator of the involvement of gun-smuggling traffickers, since there are mundane alternative explanations for cross-state movement, such as the gun being moved by its owner upon a change of residence and then being stolen.

NYC provides a useful extreme case study, since an unusually large share of its crime guns have OOS origins—84.5 percent of those traced in 2000, compared to 38 percent of guns recovered nationwide.¹¹⁷ Given that virtually no private citizen may legally buy handguns in NYC, it is scarcely surprising that few crime handguns were first purchased in NYC. Does interstate gun smuggling into NYC, however, account for this cross-state movement of guns, or could routine migration of gun owners produce the same result? Census Bureau data indicates that in 2000, 798,565 of NYC's residents had been born in a different state, 368,388 of them in the South. All of these NYC residents necessarily lived in a different state, and then moved to New York. Still other residents were born in New York, moved to another state, and then moved

113. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, New York Section, at 5.

114. *Id.* at ix.

115. BRADY CTR. TO PREVENT GUN VIOLENCE, *supra* note 97, at 14.

116. Jeremy Travis & William Smarrito, *A Modest Proposal to End Gun Running in America*, 19 FORDHAM URB. L.J. 795, 802 (1992).

117. See U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at 16 tbl.F (noting that only 15.5 percent of traced crime guns recovered in New York City were originally sold within the state of New York).

back to New York. In just the five-year period between 1995 and 2000, 301,243 people moved from a different state to NYC.¹¹⁸ These migrants presumably moved their possessions with them. If handgun ownership among these migrants was equal to U.S. average (at least 0.325 handguns per person),¹¹⁹ migrants born in other states would have moved about 260,000 handguns from other states into NYC, and recent migrants alone would have moved around 98,000 handguns just in the preceding five-year period, about 20,000 per year. At this rate, over a period of a single seventy-year human life span, 1.4 million OOS handguns would have been moved into the city, lending some credence to the admittedly extreme guess by the Intelligence Division of the New York Police Department that there were two million illegal handguns in the city in 1980.¹²⁰ While some migrants who are both law-abiding and aware of New York's strict gun laws no doubt leave their handguns behind, others surely do not, either due to ignorance, or due to a judgment that retaining their handguns is more important than obeying gun laws. Among migrants, criminals would be especially likely to move their handguns with them, both because they are more willing to violate gun laws, and because they expect to need them for criminal activity and for self-protection.

As a standard of comparison, in 2003 a total of 3,666 violent crimes (homicides, robberies, and assaults) known to the police were committed with guns in NYC.¹²¹ Even if one implausibly assumed that each gun crime involved a different gun, thereby maximizing the number of crime-involved guns, the criminal population needed at most 3,666 guns to commit all of the known violent gun crimes in NYC.

These numbers do not suggest either that all of NYC's crime handguns actually do arrive through people moving to the city, or that 1.4 million handguns have actually arrived in the city in this way over the course of the past seventy years. But these numbers do establish that all handguns used in crime in a given year easily could have been arrived in this way, without any organized gun smuggling. Thus, routine cross-state migration of gun owners provides a credible alternative explanation for cross-state movement of the city's crime guns. Further, still other mechanisms besides interstate gun-running

118. U.S. CENSUS BUREAU, TABLE 2, NET MIGRATION FOR THE POPULATION 5 YEARS AND OVER FOR THE UNITED STATES, REGIONS, STATES, COUNTIES, NEW ENGLAND MINOR CIVIL DIVISIONS, AND METROPOLITAN AREAS: 2000, CENSUS 2000, available at <http://www.census.gov/population/www/cen2000/briefs/phc-t22/tables/tab02.pdf> (county-level data from New York section of Table 2).

119. GARY KLECK, TARGETING GUNS: FIREARMS AND THEIR CONTROL 97 tbl.3.1 (1997).

120. *Illegal Guns By the Millions Filling City*, N.Y. TIMES, Mar. 31, 1980, at B1.

121. Memorandum From Joe Pasarella to Commanding Officer, Office of Management Analysis and Planning, Police Department, City of New York (Mar. 18, 2005).

move guns across state lines. Any NYC resident can get a handgun if she or he has a friend or relative in another state who is willing to buy a handgun for them. A one-time straw purchase of this sort would be unlawful, but it would be misleading to label either participant a trafficker.

After arrival in the city, many guns will inevitably move into criminal possession through residential burglary, vehicle theft, and other thefts. The last large-scale victimization survey conducted in NYC estimated that there were 184,100 household burglaries in 1972,¹²² at a time when the city had about 2,832,036 occupied housing units.¹²³ Thus, assuming no repeat victimization within a year, an average NYC residence had a 6.5 percent chance of being burglarized. Homes in high-crime neighborhoods, where handgun possession for self-protection may be higher, had a still higher risk of burglary. At this rate, a home containing a handgun would have about a 49 percent chance of being burglarized within a decade.¹²⁴

To be sure, gun smuggling does move at least a few handguns into NYC, given that law enforcement agencies occasionally uncover gun smuggling operations, albeit typically small-scale ones. There are evidently a few criminals who do not appreciate the difficulties of making a living from gun-running, particularly the risks associated with contacting large numbers of paying customers without coming to the attention of police. And the frequent news stories of guns being purchased “down South” for \$100 and sold “on the streets” of NYC for \$600¹²⁵ may inadvertently encourage occasional attempts at high-volume gun-running by especially naïve criminals. Nevertheless, as previously noted, over the period from 1990 to 2006, only six trafficking operations that moved a hundred or more guns were reported in NYC newspapers—about one every three years. There is no evidence that the total

122. U.S. DEP'T OF JUSTICE, CRIMINAL VICTIMIZATION SURVEYS IN THE NATION'S FIVE LARGEST CITIES: NATIONAL CRIME PANEL SURVEYS OF CHICAGO, DETROIT, LOS ANGELES, NEW YORK, AND PHILADELPHIA 44 (1975).

123. Interpolated from 1970 and 1980 Census data, in BUREAU OF THE CENSUS, U.S. DEP'T OF COMMERCE, COUNTY AND CITY DATA BOOK, 1977 at 723; BUREAU OF THE CENSUS, U.S. DEP'T OF COMMERCE, COUNTY AND CITY DATA BOOK, 1983 at 753.

124. $1-(1-0.065)^{10}=0.49$ (The probability of any one NYC household suffering a burglary over a ten year period would be one minus the probability of not being burglarized over that period. The probability of not being burglarized in any of the ten years would equal the probability of not being burglarized in any one year, raised to the tenth power, i.e. multiplied times itself ten times. The probability of burglary in any one year was 0.065, so the probability of not experiencing a burglary in any one year was $1-0.065$ or 0.935, and the probability of not being burglarized in any of ten years would be 0.935 raised to the tenth power, or 0.51. Thus, the probability of being burglarized at least once over the ten year period would be $1-0.51=0.49$, or 49 percent).

125. See, e.g., Patrice O'Shaughnessy, *Students Major in Running Guns*, N.Y. DAILY NEWS, Sept. 29, 2002, at 4, available at https://www.nydailynews.com/archives/news/2002/09/29/2002-09-29_students_major_in_running_gu.html.

number of guns trafficked into the nation's largest city in a typical year is more than a few hundred—a tiny number compared to the 20,000 or so handguns that could move into the city annually as a byproduct of the routine migration of gun owners.

If ordinary migration followed by gun theft, rather than gun smuggling, accounts for the vast majority of cross-state movement of crime guns, one would expect that crime guns with OOS origins would be especially likely to originate in states with high gun ownership rates, since a higher share of migrants from such states would own guns in the first place. ATF trace data indicate that this is indeed the observed pattern. For example, among NYC crime guns recovered in 2000, the leading source states were New York (15.5 percent), Virginia (14.0 percent), North Carolina (9.4 percent), and Georgia (9.2 percent).¹²⁶ Based on 2001 state-level surveys, all of the three leading originating states had rates of household gun ownership higher than the national average.¹²⁷ While some scholars have interpreted such patterns as indicating that OOS crime guns tend to originate in places with weaker gun laws,¹²⁸ there is no evidence that weakness of gun laws in source states has any impact on the patterns of interstate movement of guns, independent of the higher gun-ownership levels that tend to prevail in those same states.

3. Criminal Possessor Was Not the Gun's First Retail Purchaser

If a trafficker was involved in moving a gun into the possession of another criminal, it follows that the criminal found by police to possess the gun is different from the person recorded on the initial purchase form (ATF Form 4473). This logic, however, cannot be reversed; it cannot be assumed that a large share of crime guns found in the possession of a person other than the first purchaser are trafficked guns. There are an enormous number of private transfers of used guns among noncriminal Americans. A national survey in 1994 found that 36 percent of guns and 31 percent of handguns acquired by the general public were acquired used.¹²⁹ Likewise, anytime a thief steals a gun and sells it to another criminal there is an intermediate possessor (the thief) even if no trafficker ever possessed the gun. Because it is so commonplace

126. U.S. BUREAU OF ALCOHOL, TOBACCO AND FIREARMS, *supra* note 40, at 16 tbl.F.

127. See Catherine A. Okoro et al., *Prevalence of Household Firearms and Firearms-Storage Practices in the 50 States and the District of Columbia*, 116 PEDIATRICS e370, e372 (2005).

128. E.g., Braga et al., *supra* note 10, at 333 (stating that many crime guns recovered in cities with tight firearm controls originated in southern states with less restrictive controls); Pierce et al., *supra* note 10, at 401 (stating that because New York and Boston have relatively strict gun controls, "a higher percentage of guns are imported into these cities from dealers in states with weaker controls").

129. See COOK & LUDWIG, *supra* note 34, at 25 tbl.3.11.

that nontrafficked guns come to be possessed by people other than the first retail purchaser, this trait is likely to be at best a weak indicator that a gun was trafficked. It may also be an indirect indicator of out-of-state origins, if one accepts the premise that the further an object travels, the more likely it is that it was possessed by more than one person.

4. Guns Part of a Multiple-Handgun Sale

Based on the theory that traffickers acquire substantial numbers of guns by buying them in relatively large batches from corrupt or negligent licensed dealers, ATF equivocally states that “the acquisition of handguns in multiple[-handgun] sales *can* be an important trafficking indicator.”¹³⁰ Philip Cook and Jens Ludwig even interpret trace data as indicating that handguns sold as part of a multiple-handgun sale (MHS) “are much more likely than others to move quickly into criminal use.”¹³¹ However, more recent evidence indicates that this conclusion is wrong; it is not true that a large share of MHS guns are trafficked, or that MHS handguns are more likely to end up in criminal hands.¹³² If the typical MHS involved the purchase of dozens or hundreds of handguns, it would be reasonable to regard a MHS as highly suspect. But if MHS transfers more commonly involve just two or three handguns, this inference is weak. In fact, lawful concurrent purchases of small numbers of handguns are quite common. To illustrate, Christopher Koper found that 27 percent of all handguns sold by licensed dealers (not just those later used in crimes) in Maryland in 1990–1995 were sold as part of a MHS.¹³³

Likewise, few MHS guns show signs of having been trafficked. As will be discussed later, there is good reason to view an obliterated serial number (OSN) as the strongest indicator that a gun has been trafficked. Yet, hardly any traced crime handguns that were originally sold in multiples have an OSN. Even when ATF examined a sample of handguns biased to over-represent handguns with OSNs (by analyzing only handguns from eight cities that requested traces on large numbers of guns with OSNs), it found that only 2.2 percent of MHS handguns had an OSN.¹³⁴

130. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at ix (emphasis added).

131. Braga, *supra* note 18, at 300.

132. Koper, *supra* note 10, at 760.

133. *Id.* at 758.

134. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at 52. The OSN data came from just the eight cities (of forty-six total cities contributing to the 2000 national tracing report) that requested traces from ATF on at least eighty-five crime guns with OSNs. *Id.* at 50.

Further, it does not appear to be true that MHS guns are more likely to be used in crimes. Koper studied guns sold in Maryland and found that handguns sold as part of a MHS were slightly less likely to end up being used in a crime than those sold separately from other handguns. Even ten years after initial sale, only 4.1 percent of MHS handguns had been recovered by police in connection with a crime—slightly less than the 4.7 percent of single-purchase handguns linked with crimes.¹³⁵ This pattern directly contradicts the claim that MHS handguns are more likely than other handguns to be trafficked and later used in crime. Even though some traffickers do buy guns in multiples, very few guns sold in multiples show signs of being trafficked.¹³⁶ Likewise, a dealer-level study by Garen Wintemute and his colleagues found no significant relationship between a dealer's volume of MHS transactions and the rate at which crime guns were traced to the dealer.¹³⁷ The fact that a handgun was sold as part of a MHS is consequently unlikely to have much utility for identifying trafficked guns, and it is unlikely that geographic areas with more MHS transactions host more gun trafficking activity.

5. Guns Sold by a Dealer With a High Trace Count

Another possible indicator that a gun has been trafficked is if it was sold by a licensed dealer to whom many other crime guns have been traced.¹³⁸ The underlying rationale is that many dealers who sell a disproportionately large number of guns that end up in criminal hands are corrupt dealers who knowingly or negligently sell guns to criminal consumers, unlicensed traffickers, or straw purchasers. The Attorney General of New York, Andrew Cuomo, made it clear during his 2006 election campaign that his planned policies for dealing with illegal guns were based on the belief that high trace counts indicate illegal behavior by gun dealers: “A wave of illegal guns has been breaking over New York for years. Incredibly, 1 percent of gun dealers account for the majority of illegal guns [that is, traced guns]. We need to crack down on their illegal behavior and put them out of business.”¹³⁹

135. Koper, *supra* note 10, at 758.

136. Koper nevertheless asserted that MHS handguns were “at elevated risk for criminal use.” *Id.* at 769. But this was true only within the tiny share (less than 1 percent) of all handguns that were recovered by police within one year of first retail sale, and the even smaller share of Maryland-sold guns that were recovered in nearby Washington, D.C. *Id.* at 761, 767.

137. Garen J. Wintemute et al., *Risk Factors Among Handgun Retailers for Frequent and Disproportionate Sales of Guns Used in Violent and Firearm Related Crimes*, 11 *INJ. PREVENTION* 357, 361 (2005).

138. *E.g.*, Pierce et al., *supra* note 10.

139. Andrew Cuomo, *The Role of the Attorney General*, N.Y. L.J., Nov. 1, 2006, at 7.

The fact that many crime guns are traced back to a licensed dealer may appear damning, but for most such dealers, there are perfectly legitimate explanations for their high trace counts. First, if a dealer has a higher sales volume, it necessarily implies a larger number of guns at risk of coming into criminal possession through channels (such as theft from the owner) that are beyond the dealer's control. Thus, merely operating a successful business will increase the chances that a dealer will register a high trace count. A study of California FFLs found that just 11.7 percent of dealers accounted for 85.5 percent of traced crime handguns. This might suggest, as Mr. Cuomo apparently believed, that many of these FFLs must be criminal or irresponsible dealers—until one learns that these same dealers also accounted for 81.5 percent of all handgun sales.¹⁴⁰ That is, their share of crime guns was only slightly higher than one would expect if the FFLs were lawful and responsible dealers, and sheer sales volume accounted for their high trace counts. A dealer-level analysis likewise found that sales volume alone accounted for most of the variation in dealers' trace counts.¹⁴¹

Second, some FFLs do business in areas with higher crime rates, which leads to a larger share of the dealer's guns being stolen from their lawful purchasers, used in crimes, recovered by police, and traced by ATF. Thus, some or all of the variation in dealer trace counts that is not due to variation in sales volume may be attributable to variation in gun theft rates in the areas served by the FFLs. A recent dealer-level study imperfectly tested this idea. Wintemute and his colleagues analyzed predictors of dealer trace rates, but tested the effects only of types of crimes that rarely involve gun theft; the authors did not report any findings for the impact of rates of burglary, a crime that does often result in the theft of firearms. Among the crime types that they tested, the one that came closest to a property crime was robbery, and this was the one crime rate found to be significantly related to dealer trace rates—dealers in cities with higher robbery rates had higher trace rates.¹⁴²

Consonant with these observations, ATF has long acknowledged that most licensed dealers to whom crime guns have been traced have been found to have been “operating within the confines of Federal law, and the vast majority of the illegal acts relating to these firearms occurred on the part of the individual purchasers” and not the dealers.¹⁴³ Even Philip Cook and

140. See Wintemute et al., *supra* note 137, at 360.

141. Garen J. Wintemute, Research Letter, *Relationship Between Illegal Use of Handguns and Handgun Sales Volume*, 284 JAMA 566, 567 (2000).

142. See Wintemute et al., *supra* note 137, at 360 tbl.4.

143. CONCENTRATED URBAN ENFORCEMENT, *supra* note 20, at 62.

Anthony Braga,¹⁴⁴ who strongly favor using tracing to uncover trafficking, conceded that “the number of traces to a particular FFL is only a rough indicator of the likelihood that the FFL is engaging in negligent or criminal sales practices.”¹⁴⁵ Even this weak endorsement of trace counts as an indicator of trafficking, however, cannot be justified, since the ability of high trace counts to efficiently identify corrupt FFLs has never been empirically demonstrated.

6. Obliterated Serial Number (OSN)

ATF is typically circumspect in its claims about the validity of the trafficking indicators it employs, for example, stating that short TTR “suggests illegal diversion” or that “acquisition of handguns in multiple sales *can* be” a trafficking indicator. In sharp contrast, ATF flatly states that “the obliteration of the serial number on a crime gun is a key criminal indicator of trafficking,”¹⁴⁶ and that “crime guns with obliterated serial numbers are *likely* to have been trafficked.”¹⁴⁷ Braga and Pierce echo this assessment, unequivocally describing OSN as “a clear indicator of gun trafficking.”¹⁴⁸ An OSN probably is the strongest available indicator of trafficker involvement in a gun’s movement, since there are powerful motives for traffickers to efface serial numbers, while few people who are not traffickers have equally strong reasons for doing so. Obliteration not only definitively establishes that a criminal possessed the gun at some time (effacing a serial number is itself a crime), but also constitutes strong evidence that some past possessor wanted to obstruct the tracing of the gun, and thereby prevent it from being linked with past, presumably illegal, transfers. Traffickers would clearly want to impede tracing that could link them with their criminal associates, such as straw purchasers or a corrupt licensed dealer who supplied their guns. High-volume traffickers would be especially strongly motivated to impede tracing, since the more guns that one sells, the higher the risk that some of them can be traced back to the trafficker after being used in a crime.

144. See Cook & Braga, *supra* note 18, at 277–309.

145. *Id.* at 302.

146. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, CRIME GUN TRACE REPORTS (1999): NATIONAL REPORT IX (2000).

147. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 12, at 8 (emphasis added).

148. Cook & Braga, *supra* note 18, at 737; see also Koper, *supra* note 10, at 753 (noting that obliterated serial numbers are “an obvious flag for potential trafficking”).

D. Biases in Samples of Traced Guns

Experts have repeatedly concluded that the guns traced by ATF are not a representative sample of crime guns, and cannot provide a reliable picture of the modes of acquisition most frequently used by criminals or the paths of distribution that crime guns most often follow.¹⁴⁹ For example, the National Research Council's Committee to Improve Research Information and Data on Firearms flatly concluded that "trace data cannot show whether a firearm has been illegally diverted from legitimate firearms commerce."¹⁵⁰ It further concluded that studies based on this data "cannot show what happened in between [the first retail sale and recovery by law enforcement]: whether a firearm was legitimately purchased and subsequently stolen, sold improperly by a licensed dealer, or any other of a myriad of possibilities."¹⁵¹ Even ATF has never explicitly claimed that traced guns are representative of crime guns or that they show the typical ways that guns are diverted to criminals. Unfortunately, many scholars have not taken these caveats sufficiently seriously, and have repeatedly drawn conclusions about the trafficking of crime guns, when their supporting data pertained only to nonrandomly selected subsets of guns that were traced.¹⁵²

The problem is not merely that traced guns do not constitute a random sample of crime guns, and thus might be unrepresentative of crime guns generally. Rather, the processes by which guns are selected for tracing are known to systematically bias samples of crime guns in ways that tend to exaggerate the share of guns characterized by putative trafficking indicators. The biased selection occurs at two stages: (1) when police choose to request ATF traces for some guns and not others, and (2) when ATF is able to successfully trace some guns submitted for tracing but not others.¹⁵³ When police recover crime guns, their primary motive for submitting the guns for tracing is to help identify possible traffickers (and occasionally other types of criminals). It therefore is sensible for law enforcement officers to favor tracing guns that

149. U.S. CONG. RESEARCH SERV., "ASSAULT WEAPONS": MILITARY-STYLE SEMIAUTOMATIC FIREARMS FACTS AND ISSUES, H.R. REP. NO. 92-434 at 65 (1992); COMM. ON LAW & JUSTICE, NAT'L RESEARCH COUNCIL, FIREARMS AND VIOLENCE: A CRITICAL REVIEW 40 (Charles F. Wellford et al. eds., 2004) [hereinafter FIREARMS AND VIOLENCE]; Kleck, *supra* note 27, at 29–32.

150. FIREARMS AND VIOLENCE, *supra* note 149, at 40.

151. *Id.*

152. See, e.g., Christopher S. Koper, *Federal Legislation and Gun Markets: How Much Have Recent Reforms of the Federal Firearms Licensing System Reduced Criminal Gun Suppliers?*, 1 CRIMINOLOGY & PUB. POL'Y 151, 155, 175 (2002); Pierce et al., *supra* note 10; Travis & Smarrito, *supra* note 116, at 800.

153. U.S. CONG. RESEARCH SERV., *supra* note 149; FIREARMS AND VIOLENCE, *supra* note 149.

show initial indications of trafficker involvement. For example, if the gun's serial number was obliterated, trafficker involvement is more likely. Likewise, if the criminal who possessed the gun when it was seized had an out-of-state driver's license, it is more likely that the gun also originated out of state. This in turn could suggest that the gun was moved across state lines by a gun smuggler. There might also be a preference for tracing newer models of guns, or guns that, based on limited wear, look newer, since tracing older guns has less investigative value—it is unlikely that identifying the person who bought a gun when it was new ten or twenty years ago would help identify a current trafficker. ATF has explicitly acknowledged that there is more law enforcement value in tracing newer guns: “[S]hort time-to-crime guns have the most immediate investigative potential for law enforcement officials because they are likely to have changed hands less frequently.”¹⁵⁴

One implication of this bias in favor of guns with a short TTR is that unwary analysts may misinterpret data on samples of traced guns as indicating that a large percentage of crime guns move directly from retail sale as new guns into the hands of criminals, even if the large share of guns with a short TTR is largely a reflection of the fact that police see little value in tracing older guns. Even sophisticated consumers of trace data have fallen into this trap. Although in other ways skeptical about the value of trace data, the members of National Research Council's Committee to Improve Research Information and Data on Firearms were convinced that one could somehow infer from trace data that crime guns that moved from other states into cities with tight gun regulations “are imported directly after the out-of-state retail sale”¹⁵⁵ (uncritically citing the conclusions of Cook and Braga¹⁵⁶). In fact, trace data can neither establish that such guns were deliberately imported for purposes of illegal sale (rather than merely moved along with their owner's other possessions), nor that a large share of them were moved immediately after retail sale.

Samples of guns submitted for tracing may also under-represent guns with in-state origins because law enforcement personnel in states with their own gun-registration systems can use those systems to trace in-state guns, turning to ATF mostly for tracing of out-of-state guns along with a few in-state guns that were not successfully traced by the state's databases. Such a systematic bias would artificially inflate the out-of-state share.¹⁵⁷ Police may

154. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at xii.

155. FIREARMS AND VIOLENCE, *supra* note 149, at 80.

156. Cook & Braga, *supra* note 18.

157. See Kleck, *supra* note 27, at 32; JEFFREY A. ROTH & CHRISTOPHER S. KOPER, IMPACT EVALUATION OF THE PUBLIC SAFETY AND RECREATIONAL FIREARMS USE PROTECTION ACT OF

also prefer to trace guns that they suspect came from another state simply because they believe, correctly or not, that a large share of crime guns in their city were smuggled from out-of-state, and they want to identify the sources.

Further, types of guns that are of especially strong political interest and subject to heightened media attention may also be overrepresented among guns selected by police for tracing. Failure to fully appreciate this bias in traced-gun samples has led to unwarranted conclusions in past research. For example, Travis and Smarrito claimed that assault weapons (AWs) were “disproportionately involved in criminal activity,” based entirely on samples of traced guns,¹⁵⁸ which over-represent AWs.¹⁵⁹ Likewise, Christopher Koper and Jeffrey Roth concluded that national trends in trace requests suggest that criminal use of AWs declined after the federal assault weapons ban was passed.¹⁶⁰ In sharp contrast, Koper’s and Roth’s data on all AWs recovered by police (not just those submitted to ATF for tracing) indicated that there were no significant declines in the AW share of crime guns in the wake of the federal ban.¹⁶¹ Thus the decline in AW trace requests may merely have been an artifact of a decline in police interest in tracing AWs once the AW problem was “solved” by passage of the federal AW ban and once news media interest in the issue declined. Although this hypothesis was dismissed by Koper and Roth, it is perfectly consistent with the authors’ own observation that the decline was weaker in states that already had their own AW laws,¹⁶² where passage of the largely redundant federal ban would presumably have been of less significance or popular interest.

In addition to police preferences for submitting trace requests on guns with certain traits, ATF has its own policies concerning which guns it will trace, and these policies further bias samples of traced guns. At various times in the past, ATF would not routinely trace guns more than five (or ten, or twenty) years old, which skewed the distribution so that nearly all traced guns were relatively new, no matter how common older guns were in the entire population of recovered crime guns. For example, in a 1999 report, ATF

1994, at 59 (1997); Eleanor Weber-Burdin et al., *Weapons Policies: A Survey of Police Department Practices Concerning Weapons and Related Issues 4–9* (1981) (unpublished report to the U.S. Department of Justice, University of Massachusetts, Amherst); Zimring, *supra* note 10, at 105 n.2.

158. Travis & Smarrito, *supra* note 116, at 800.

159. See KLECK, *supra* note 119, at 112.

160. The assault weapons ban was Title XI of the Violent Crime Control and Law Enforcement Act of 1994, Pub. L. No. 103-322, 108 Stat 1796 (codified as amended in scattered sections of 42 U.S.C.). See Christopher S. Koper & Jeffrey A. Roth, *The Impact of the 1994 Federal Assault Weapons Ban on Gun Markets*, 18 J. QUANTITATIVE CRIMINOLOGY 239, 256–59 (2002).

161. See *id.* at 260–61.

162. See *id.* at 257–59.

stated that their National Tracing Center's "policy was not to trace firearms manufactured before 1990, unless specifically requested by a law enforcement management official"¹⁶³—that is, no tracing of guns more than nine years old. Despite widespread, decades-old awareness of this censoring of older guns from trace samples, scholars have continued to insist, based solely on firearms tracing data, that few crime guns are older guns,¹⁶⁴ or that crime guns are "imported [into tight control cities] directly after the out-of-state retail sale."¹⁶⁵

In sum, the process of selecting guns for tracing results in data that overrepresent guns that are relatively new (and therefore have a shorter TTR), have out-of-state origins, or have other traits that are associated with these characteristics. That is, samples of guns successfully traced or submitted for tracing overrepresent guns that look like they were trafficked. This problem is routinely ignored by those who use trace data to support a claim that trafficking is important in supplying guns to criminals. For example, Glenn Pierce and his colleagues conclude that crime guns are disproportionately new compared to the total stock of guns, as judged by manufacture and importation data.¹⁶⁶ Their data, however, pertained only to samples of traced guns, which systematically excluded nearly all of the older crime guns.

It has been hinted (though never explicitly stated) that the unrepresentative nature of traced gun samples was, beginning around 1997, largely eliminated in cities participating in the ATF Youth Crime Gun Interdiction Initiative (YCGII) program, because these cities promised to trace "comprehensively" (i.e. request traces on all the guns that their police recovered). Some scholars appear to have taken it on faith that all police departments that promised to perform comprehensive tracing actually did so.¹⁶⁷ However, these scholars typically do not consider whether YCGII cities do actually submit trace requests on all, or nearly all, recovered crime guns. Rather, they draw conclusions about

163. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 12, at 19.

164. See, e.g., Braga et al., *supra* note 10, at 331–33 (favorably listing studies that use firearms trace data to conclude that "recovered crime guns tend to be quite new"); Cook et al., *supra* note 10, at 62–63 ("[W]e conclude that most guns used in crime . . . have been acquired relatively recently.") (citing Zimring, *supra* note 10); Zimring, *supra* note 10, at 95–96 (supporting the "new guns" hypothesis with a study of "federally initiated traces."). Both Braga et al. and Cook et al. note some limitations of trace data, but then proceed to draw precisely the same conclusions that would follow in the absence of their caveats.

165. FIREARMS AND VIOLENCE, *supra* note 149, at 80.

166. Pierce et al., *supra* note 10, at 394.

167. See, e.g., Cook & Braga, *supra* note 18, at 286; Koper, *supra* note 10, at 759 (stating that because Baltimore and Washington, D.C. have a comprehensive tracing policy, the cities can provide "complete data on guns recovered in those jurisdictions"); Pierce et al., *supra* note 10, at 397; Wintemute et al., *supra* note 137, at 361 ("Most traced guns in California come from cities with mandatory tracing policies, so within-jurisdiction selection bias should be minimal.").

crime guns in general based solely on analyses of traced guns—conclusions that logically follow from the evidence only if one assumes that YCGII cities actually do trace comprehensively, thereby guaranteeing that traced gun samples accurately represent the population of all recovered crime guns.¹⁶⁸

This assumption, however, is clearly false for many of the YCGII cities, and remains unsubstantiated for the rest. ATF has repeatedly acknowledged that “the effort to achieve comprehensive tracing has not been fully institutionalized,”¹⁶⁹ that it “cannot determine definitively whether all recovered guns are being traced,”¹⁷⁰ that “the tracing of guns with obliterated serial numbers is not conducted consistently by law enforcement agencies,”¹⁷¹ and that “the extent of program implementation varies from one jurisdiction to another”¹⁷²—something that obviously could not be true if implementation was 100 percent in all participating cities.

In 1999 ATF conducted a survey of YCGII police departments in order to determine the completeness of tracing, and “about half” of the thirty-eight cities participating at the time in the YCGII program did not even respond to the survey. ATF explicitly acknowledged that ten of the remaining nineteen (or so) cities were tracing less than 100 percent of recovered guns.¹⁷³ ATF has not repeated this evaluation effort since 1999. Even the figures on tracing rates provided to ATF by these reporting agencies were not substantiated by ATF. ATF did not perform any independent assessments of tracing levels for any of the YCGII agencies, for example by performing their own audits of police department gun files in order to establish the share of recovered guns that matched up with trace requests submitted to ATF. Thus, the actual completeness of tracing remains unknown for most YCGII cities. In addition, there is still no firm evidentiary basis for the claim that YCGII eliminated or even substantially reduced the sample bias due to the preferences of police officers for requesting traces on guns displaying various presumed signs of trafficking.

Even if police really did submit all recovered guns for tracing, only an unrepresentative subsample could be successfully traced to the point where the presence or absence of various potential indicators of trafficking can be established. For example, a gun must be successfully traced to its first retail

168. See, e.g., Braga et al., *supra* note 10, at 331; Cook & Braga, *supra* note 18, at 303–07; Koper, *supra* note 10, at 759; Pierce et al., *supra* note 10, at 397.

169. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 12, at A1.

170. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at 67.

171. *Id.* at 50.

172. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 12, at B3.

173. U.S. BUREAU OF ALCOHOL, TOBACCO AND FIREARMS, DEP'T OF THE TREASURY, CRIME GUN TRACE REPORTS (1999): NATIONAL REPORT B4, B5 (2000).

sale in order to establish whether this sale occurred in a state different from the one in which it was recovered, or to determine how long ago the sale occurred, thereby establishing TTR. ATF, however, will not even initiate traces on older guns unless a law enforcement executive makes a special request, or the dealer that sold the gun has gone out of business and the records of their transfers can be found in ATF's out-of-business dealer files.¹⁷⁴ Thus, among the 88,570 guns for which police in forty-four YCGII cities requested a trace in 2000, ATF did not even begin a trace for 12.8 percent of them, in most cases because the gun was too old. Among the guns for which ATF did initiate a trace, another 33.6 percent could not be successfully traced to their first retail purchaser. And for at least 10.7 percent of all trace requests, a trace could not be completed to the first retail purchaser for reasons clearly related to the gun being older (it had been produced or imported by a manufacturer or importer no longer in business, the twenty-year record retention period had expired, or records were otherwise no longer available).¹⁷⁵

Thus, even after the advent of YCGII, it was still impossible to successfully trace about half of the guns submitted for tracing. In addition, unknown numbers of other guns recovered by police were never submitted for tracing. As such, there remained ample reasons to suspect systematic bias in the data obtained from samples of successfully traced guns. In particular, the percent of recovered guns that appeared to be fairly new (have a short TTR), is overstated as a result of the systematic exclusion of older guns from those submitted for tracing, and from those for which a trace successfully was completed. On the other hand, because this problem is inherent in the national ATF tracing system, the inability to trace older guns operates to a similar degree in all localities. Thus, although traced gun samples overstate the absolute prevalence of supposed trafficking indicators among crime guns, use of such samples does not necessarily distort comparisons across different areas. Trace data may still provide a basis for macro-level indicators of the relative prevalence of trafficking between cities.

III. A TENTATIVE ESTIMATE OF THE TRAFFICKING SHARE OF CRIME GUNS

As previously noted, the guns known to have been trafficked as a result of law enforcement investigations comprise only a tiny share (probably under

174. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at 68.

175. *See id.* at 25–27, 68.

1 percent) of the guns acquired by criminals.¹⁷⁶ This clearly establishes that ATF enforcement efforts impact only a tiny share of the flow of guns to criminals. However, it cannot establish the trafficker-supplied share of crime guns since some traffickers are not caught, and the authorities may underestimate the number of guns trafficked by those who are apprehended. One can instead approach this issue by considering the prevalence of stronger trafficking indicators among traced guns. Suppose, for the sake of argument, that all trafficked guns had OSNs, and all guns with OSNs had been trafficked. National tracing data indicate that less than 1.6 percent of traced guns have OSNs, suggesting that few crime guns were trafficked. When ATF examined a sample of recovered handguns from all 46 YCGII cities that was limited to just those with an extremely short time-to-recovery (TTR) of one year or less—which, according to ATF doctrine are especially likely to have been trafficked—only 1.6 percent of these handguns had an OSN.¹⁷⁷ If one takes into account the fact that some guns with OSNs were not trafficked, then the estimated trafficked share would be still lower than 1.6 percent—probably under one percent.

Moreover, if one only labeled as “trafficked” guns that possess other indicators in addition to an OSN and an extremely short TTR, the trafficking share would be lower still. For example, ATF found that only 0.4 percent of crime handguns with a TTR under one year that were traced in 2000 had an OSN and were purchased as part of a multiple handgun sale (MHS).¹⁷⁸ Because this sample was limited to those with TTRs under one year, it was biased in favor of guns with supposed trafficking indicators. Further, since crime guns with a TTR under one year comprised only 15 percent of all traced guns,¹⁷⁹ and just 0.4 percent of these fast-TTR handguns had an OSN and were part of a MHS, only about 0.06 percent, or one in 1,667, traced guns had all three of these putative indicators of having been trafficked.

In any case, trace data are fully consistent with the hypothesis that traffickers supply less than one percent of crime guns. Certainly, there is no affirmative evidence that traffickers supply even this large a share of crime guns. Nevertheless, since it is possible that substantial numbers of trafficked guns never had their serial numbers obliterated, the trafficked share could be larger than OSN prevalence suggests. Further, even small numbers of trafficked guns might influence the share of criminals with guns, if the trafficking was

176. See *supra* Part I.C, at 1245–46.

177. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at 50, 52.

178. *Id.* at 50, 52 tbl.21.

179. *Id.* at 30.

concentrated in areas where significant numbers of criminals had no satisfactory alternative sources of guns. Thus, it remains an open question whether trafficking levels affect crime rates—a question that can be tested with an analysis of empirical data. This analysis, however, requires valid measures of trafficking.

IV. NEW CITY-LEVEL EVIDENCE ON GUN TRAFFICKING

A. Methods of the Present Study

We wanted to first evaluate the utility of ATF trace data for measuring the prevalence of gun trafficking activity in cities, so we tested various indicators of whether (1) individual crime guns had been trafficked, or (2) individual FFLs were involved in trafficking, in order to determine which, if any, could be used as city-level indicators of the prevalence of gun trafficking. Then, assuming that some of the indicators were valid, we sought to explore (1) the conditions that favor higher trafficking levels, (2) the impact of gun trafficking on gun possession among criminals, and (3) the impact of gun trafficking on violent crime rates.

Either of two likely possibilities regarding the validity of gun trace-based indicators of gun trafficking may be true. First, all of these indicators might be invalid, including even the one in which the most faith is placed, the prevalence of OSNs. If this is so, this means that the case for the concentrated gun trafficking model, which relies almost entirely on trace data, is fundamentally unsound and therefore cannot be taken seriously. Alternatively, some trace-based indicators—in particular, the prevalence of OSNs among recovered crime guns—might be relatively valid and useful as measures of the prevalence of gun trafficking. If this is the case, the concentrated gun trafficking model still fails, because our analysis of patterns among putative trafficking indicators shows (1) that most of them have little correlation with each other (suggesting that, even if some are valid indicators of gun trafficking, they are mostly measuring different things), and (2) that even the best indicators show no significant positive association with measures of gun availability among criminals or crime rates (suggesting that even if some sort of gun trafficking is being validly measured, it has no measurable effect on criminal gun possession or crime rates).

ATF has released detailed reports on fifty YCGII cities, describing the guns submitted by their police departments for tracing in 2000.¹⁸⁰ Our tentative working assumption was that the larger the share of these guns that displayed putative trafficking indicators, the larger the share of local crime guns that was supplied by traffickers. That is, we initially assumed that biases in samples of traced guns are sufficiently similar across YCGII cities to permit meaningful comparisons of the relative prevalence of putative trafficking indicators across those cities. We began by examining bivariate correlations among the indicators. If the measures all reflect levels of trafficking, they should have strong bivariate correlations with each other. Then we conducted a principle components analysis to see if the indicator variables all reflect, to varying degrees, a single underlying factor. Finally, we estimated regression models to estimate the impact of apparent trafficking levels (based on putative trace-based indicators) on criminal gun possession and on violent crime rates.

B. Findings

Table 2 lists the variables in the analysis, including the potential city-level indicators of the prevalence of gun trafficking, while Table 3 displays the weighted correlations among the trafficking indicators. Each YCGII city is weighted by the number of trace requests it submitted to ATF, since this quantity purportedly equals the total number of crime guns recovered by the police in that city. Table 3 also includes the percent of suicides committed with guns (PSG), which has been shown to be a highly valid proxy for measuring differences in gun ownership levels across areas.¹⁸¹ PSG is used to test the hypothesis that there will be less trafficking in cities where local, predominantly lawful gun ownership is already high, and criminal demand can therefore be met by guns stolen from local residents. If this hypothesis is correct, PSG should be negatively related to any variables that are valid indicators of trafficking prevalence. Table 3 also includes a gun theft rate variable derived from the Stolen Gun Files of the FBI's National Criminal Information Center.¹⁸² These data were available only at the state level, so they pertain to the state in which each city is located. The gun theft counts are for a two-year period from 1999 to 2000, so they were divided in

180. These data are available on the Web at BUREAU OF ALCOHOL, TOBACCO, & FIREARMS, *supra* note 40.

181. COOK & LUDWIG, *supra* note 34; Gary Kleck, *Measures of Gun Ownership Levels for Macro-Level Crime and Violence Research*, 41 J. RES. CRIME & DELINQUENCY 3, 8–19 (2004).

182. See AMS. FOR GUN SAFETY FOUND., *STOLEN FIREARMS: ARMING THE ENEMY* 16, 17 tbl.3 (2002) (report based on NAT'L CRIME INFO. CTR., FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, *STOLEN GUN FILE RECORDS* (1999–2000)).

half to produce an annual average, and then divided by the state's population (in 100,000s). No gun theft data was available for the District of Columbia (D.C.), but since D.C. has lower-than-average gun ownership but higher-than-average crime rates, it was assigned the national average gun theft rate as a reasonable approximation.

TABLE 2. VARIABLES IN THE CITY ANALYSIS
(Consolidated data from 50 cities, weighted by number of trace requests)

Variable	Description	Mean	Standard Deviation
OSN	Percent recovered guns with obliterated serial number	4.86	4.51
OUTSTATE	Percent recovered guns first sold in another state	32.97	19.94
DLR250ML	Percent recovered guns first sold by FFL \geq 250 miles away	24.02	17.74
POSNOTBY	Percent recovered guns possessed by person not 1st buyer	88.84	5.93
TTRU1YR	Percent recovered guns with time-to-recovery under 1 year	14.46	5.26
TTRU3YR	Percent recovered guns with time-to-recovery under 3 years	30.96	8.86
TTRMEDN	Median time-to-recovery among recovered guns	6.00	1.42
DELR5PTR	Percent recovered guns traced to FFL with 5+ traces	52.45	16.27
DLR10PTR	Percent recovered guns traced to FFL with 10+ traces	42.67	18.91
DLR25PTR	Percent recovered guns traced to FFL with 25+ traces	29.53	18.70
DISTANCE	Distance in miles, city center to nearest state border	74.39	89.19
BURGRATE	Burglaries known to police per 100,000 people	1269.15	498.51
PSG9498	Percent of suicides committed with guns, 1994-1998	51.51	13.16
TRAFVOLU	Number of traced guns with OSN per 100,000 people	15.01	14.82

MURDRATE	Murders, nonnegligent manslaughters per 100,000 people	19.57	11.78
ASLTRATE	Aggravated assaults per 100,000 people	756.21	324.57
ROBRATE	Robberies per 100,000 people	534.83	222.04
PGH9902	Percent of homicides committed with guns	70.25	7.98
COPRATE	Sworn officers per 100,000 people	6027.13	9860.19
POVERTY	Percent population below poverty line	19.95	4.74
MFI	Median family income (dollars)	40950.40	7580.97
UNEMPLOY	Percent labor force unemployed	5.11	1.81
EDUC	Percent population age 25+ with high school diploma or higher	73.96	6.67
BLACK	Percent population African-American	34.99	21.46
HISP	Percent population Hispanic	19.31	17.66
AGE1824	Percent population age 18–24	11.20	1.52
OWNEROCC	Percent housing units occupied by owners	48.66	9.16
FEMHEAD	Percent of households headed by females	18.63	4.97
POPCHANG	Percent change in population from 1990 to 2000	5.85	13.60
POPCITY	Resident population of city (in 100,000s)	15.08	19.18
DENSITY	Persons per square mile	7112.03	6319.20
SOUTH	City located in former slave-owning state	0.43	0.50
STORES	Retail establishments per 100,000 people	375.62	100.64
ONEGUN	State law limiting handgun purchases to one per month (0=no, 1=yes)	0.06	0.23
REGISTER	State law requiring registration of handgun purchases (0 = no, 1 = yes)	0.28	0.12

PERMIT	State law requiring permit to purchase handgun (0 = no, 1 = yes)	0.31	0.47
WAITPER	Days buyer must wait before taking delivery of handgun	1.71	3.02

The correlations in Table 3 indicate that many of the potential trafficking indicators are not significantly correlated with each other, and some are even negatively correlated. For example, if one tentatively assumes that the percent of crime guns that have an OSN is a strong indicator of trafficking, as both ATF and scholars agree, one finds that cities where many crime guns can be traced back to retail dealers with high trace counts actually have less trafficking, as measured by the percent of recovered guns with OSNs. This is not what one would expect if one assumed that many high trace count dealers were involved in trafficking. On the other hand, these findings are fully compatible with the hypothesis that high trace counts primarily reflect high sales volume, since there is a strong positive correlation between the share of crime guns sold by dealers with high trace counts and the city's gun ownership rate, and thus its volume of gun sales to the noncriminal public. That is, these correlations suggest that indicators based on high dealer trace counts are more likely to reflect higher volumes of lawful gun sales than the involvement of corrupt licensees in trafficking.

Consistent with this idea, one of the strongest (and highly significant) correlations in the table is between PSG and OSN. This supports the hypothesis that the higher a city's local gun ownership level, the less its gun trafficking activity. Where more guns are owned, more guns will be stolen, other things being equal, which results in more guns circulating among criminals. A large volume of stolen guns competes with guns sold by traffickers and depresses black market prices, reducing both the profit incentive for traffickers and the need for their services. This interpretation is directly supported by the significant ($r = -0.517$) correlation between the gun theft rate and OSN prevalence among traced crime guns; where more guns are stolen, there is less trafficking. These correlations can also be viewed as indications of the construct validity of the OSN indicator as a measure of trafficking activity: it correlates strongly with variables (gun ownership levels and gun theft rates) with which it should be correlated if our hypothesis is correct.¹⁸³

183. See JUM C. NUNNALLY, *PSYCHOMETRIC THEORY* 86–87 (1967).

TABLE 3. CORRELATIONS AMONG POTENTIAL GUN TRAFFICKING INDICATORS—
 PERCENT OF RECOVERED GUNS WITH INDICATED TRAIT
 (Consolidated data from 50 cities, weighted by number of trace requests)

	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Obliterated Serial Number	1	.689 .000	.660 .000	.442 .001	-.183 .102	-.151 .148	.158 .136	-.310 .014	-.290 .021	-.200 .082	-.425 .001	-.517 .006	-.695 .000
2 Out of State Origin		1	.918 .000	.656 .000	-.376 .004	-.342 .008	.354 .006	-.674 .000	-.635 .000	-.544 .000	-.492 .000	-.442 .001	-.684 .000
3 Dealer 250+ Miles Away			1	.575 .000	-.426 .001	-.419 .001	.456 .000	-.651 .000	-.615 .000	-.531 .000	-.258 .035	-.560 .000	-.729 .000
4 Possessor Not 1st Purchaser				1	-.370 .004	-.350 .006	.300 .017	-.510 .000	-.512 .000	-.472 .000	-.484 .000	-.254 .037	-.336 .008
5 Time-to-Recovery Under 1 Years					1	.968 .000	-.936 .000	.505 .000	.477 .000	.436 .001	-.102 .241	.481 .000	.381 .003
6 Time-to-Recovery Under 3 Year						1	-.975 .000	.496 .000	.484 .000	.447 .001	-.177 .109	.526 .000	.374 .004
7 Median Time-to-Recovery							1	-.522 .000	-.513 .000	-.478 .000	.188 .096	-.588 .000	-.398 .002
8 Dealer Has 5+ Traces								1	.979 .000	.927 .000	.193 .089	.370 .004	.404 .002
9 Dealer Has 10+ Traces									1	.956 .000	.168 .122	.358 .005	.357 .005
10 Dealer Has 25+ Traces										1	.096 .255	.256 .036	.226 .057
11 Distance from City to State Border											1	.035 .406	.189 .094
12 State Gun Theft Rate												1	.660 .000
13 % Suicides With Gun (PSG)													1

The OSN measure is moderately correlated with measures of the share of crime guns that traveled into the jurisdiction from distant locales—the percent first sold out of state, and the percent sold by FFLs over 250 miles from the city where the crime gun was recovered. These two “distant-origin” variables are almost perfectly correlated with each other, and are basically two ways of measuring the same underlying trait. The distant-origin measures, however, are ambiguous because they also reflect the geographical location of

the city. We measured the distance from each city's center to the nearest state border, and found significant negative correlations between this distance and the percent of crime guns first sold out of state or by a distant FFL. In other words, a city may have a larger share of its crime guns coming from another state simply because it is located closer to that state. Other things being equal, the closer a city is to a given state, the more of its migrants originate from that state. Migrants bring their possessions, including their guns, with them, and some of the migrants are burglarized in their new homes. Consequently, a city with many residents who moved there from state X is likely to have more guns that had been lawfully purchased in state X show up among the guns recovered from criminals in that city. Consistent with this, ATF trace data indicate that, among crime guns originating out of state, the state that guns are most likely to have come from is, other things being equal, the nearest state among those with larger populations.¹⁸⁴ Thus, the distant-origin indicators may reflect both a city's proximity to other states and trafficking prevalence. Nevertheless, distant origins of crime guns may be the next-best trafficking indicator, after OSN prevalence.

Among the remaining potential trafficking indicators, only one measure showed even a modest correlation with the OSN measure. The percent of guns whose criminal possessor was not the original retail buyer had a significant ($r=0.44$) correlation with OSN. It was also significantly correlated with the distant-origin measures. This is consistent with the expectation that the further a gun traveled to a city, the more likely it is that the gun passed through the hands of multiple possessors.

The measures of the prevalence of fast-TTR (TTR less than one year) guns had no significant correlation with OSN. Excluding their correlations with each other, they also were not strongly related to any other indicators. Indeed, many of their correlations were even negative. Thus, even if one rejected the validity of the OSN indicator, one would still have to conclude that there is little support for TTR as a trafficking indicator. The only indicators with which the TTR variables were moderately ($0.4 < r < 0.6$) and significantly correlated were those reflecting the share of crime guns linked to dealers with high trace counts. Both of these types of indicators appear to be poor measures of trafficking prevalence. Instead, fast-TTR and high-FFL trace counts are more likely to be indicators of higher gun theft rates, since the correlation between the state gun theft rate and median TTR was significant ($r=-.588$). It is all the more remarkable that this correlation is as strong as it is given the considerable error in the measurement of gun theft;

184. See U.S. BUREAU OF ALCOHOL, TOBACCO, & FIREARMS, *supra* note 40.

most thefts are not reported to the police,¹⁸⁵ and this rate pertained to theft in the surrounding state rather than just the city itself. In any case, the rapid movement of guns into criminal hands is far more strongly correlated with gun theft rates than with putative gun trafficking indicators.

TABLE 4. PRINCIPLE COMPONENTS ANALYSIS OF POTENTIAL TRAFFICKING INDICATORS (Factor loadings of rotated solutions)¹⁸⁶

Analysis	Exploratory Analysis			Confirmatory Analysis
	(No Constraints on number of factors)			(Constrained to one factor)
	Component			
	1	2	3	1
OSN	.011	-.030	.898	-.505
OUTSTATE	-.405	-.150	.851	-.807
DLR250ML	-.365	-.249	.815	-.816
POSNOTBY	-.353	-.184	.630	-.671
TTRU1YR	.208	.944	-.171	.743
TTRU3YRS	.214	.962	-.137	.738
TTRMDN	-.249	-.942	.136	-.748
DELR5PTR	.886	.272	-.324	.885
DLR10PTR	.912	.254	-.287	.870
DLR25PTR	.933	.226	-.183	.811

Next, we performed an exploratory factor analysis of all the potential indicators. We initially did not restrict the number of factors that could be extracted because we wanted to know whether all the items were indicators of a single underlying construct, presumably the prevalence of gun trafficking, and thus loaded on a single factor. The left side of Table 4 displays the results of a principle components factor analysis with varimax rotation. This analysis extracted three factors with eigenvalues greater than one, indicating that a single underlying factor was not sufficient to adequately explain the observed correlations among potential indicators. The first factor primarily reflects the prevalence of crime guns with fast TTRs, the second primarily reflects the prevalence of guns originating with dealers with high trace counts, and the third mainly reflects the prevalence of guns with OSNs

185. BUREAU OF JUSTICE STATISTICS, *supra* note 33 at tbl.93a.

186. Principal component analysis, using varimax rotation with Kaiser normalization.

and guns that originated in distant locales. Whatever these indicators are measuring, they do not appear to be measuring the same thing. Prior research suggests that the third factor is the relatively more valid measure of trafficking of the three because it reflects the prevalence of a reputedly strong indicator, OSN prevalence, and other indicators correlated with OSN.¹⁸⁷ The first factor may simply be measuring higher sales volumes in some cities, which would lead to higher average trace counts among FFLs even in the absence of trafficking activity. The second factor may be an indirect measure of high gun theft rates, since the more often gun thefts occur, the faster guns move into criminal hands. Results were substantially the same when oblimax rotation, which does not assume that factors are orthogonal, was used: three factors were extracted, with the same clusterings of items.

The right side of Table 4 displays the results of a factor analysis in which the solution was constrained to a single factor, based on the a priori assumption that all the items were valid indicators of a single unmeasured trait, such as trafficking prevalence. These results also suggest that the items are measuring different concepts, since about half of the supposed trafficking indicators load positively on the factor and about half load negatively. Whatever the single underlying concept might be, the individual items do not measure this concept in the same direction. Cities with more of this underlying concept have, on the one hand, more guns with fast TTR and more guns from dealers with high trace counts, but, on the other hand, have fewer guns with an OSN, a possessor different from the original buyer, or distant origins. These results are hard to reconcile with the idea that all of these variables are indicators of gun trafficking. A few of them might be indicators, but most of them probably are not.

Another approach to assessing measurement validity is to select a criterion measure thought, on a priori grounds, to be the best measure available, and then measure correlations between this criterion and other potential measures.¹⁸⁸ If one tentatively accepted the a priori reasoning that pointed to OSN prevalence as the best available measure of the prevalence of trafficking, as well as the rather definitive endorsement by ATF and scholars of the validity of this trait as an indication that a gun had been trafficked, it could be treated as a criterion measure. Table 3 correlations indicated that, by this standard, the only other indicators with even moderate validity are the distant-origins measures—the percent of crime guns originating out-of-state and the percent originating with dealers from over 250 miles away. But even these

187. See Part II.C.6 at 1269.

188. NUNNALLY, *supra* note 183, at 77–78.

variables share less than half their variation in common with OSN ($r^2 < .5$), suggesting that they mostly measure something other than what OSN measures, and therefore should not be regarded as strong indicators of trafficking levels.

Because the validity of even OSN as a trafficking measure is debatable, the Table 5 multivariate analyses making use of this measure must be regarded as strictly exploratory. ATF states that police in YCGII cities do not consistently request traces on crime guns with OSNs,¹⁸⁹ though the same could probably be said of crime guns in general in these cities. These analyses are performed for the purpose of exploring the causes and consequences of higher trafficking levels if one accepts the validity of OSN as a measure of the prevalence of gun trafficking in a city.

Thus, we tentatively assumed that OSN prevalence among traced guns in a city measures the prevalence of gun trafficking, and we estimated weighted least squares models to investigate some of the possible determinants of gun trafficking levels, and the impact of gun trafficking on criminal gun ownership and crime rates. As in the previous analyses, cities were weighted by the number of crime guns for which traces were requested. Of course, if even this reputedly strong indicator of trafficking is not valid, it is highly unlikely that any of the other putative indicators are similarly valid. Therefore, the case for the importance of organized or high-volume gun trafficking collapses, since it is almost entirely based on analyses that assume the validity of these indicators.

TABLE 5. THE DETERMINANTS OF GUN TRAFFICKING LEVELS AND THEIR EFFECTS ON CRIMINAL GUN POSSESSION LEVELS AND CRIME RATES¹⁹⁰

	Coefficients (Ratio of coefficient/standard error)				
	(1)	(2)	(3)	(4)	(5)
Dependent Variable:	OSN	PCTGHOM	Murder Rate	Robbery Rate	Assault Rate
Independent Variables:					
OSN (Gun Trafficking)		.366 (1.28)	-.006 (-0.53)	.022 (1.88)	.008 (0.54)

189. See U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 40, at 50.

190. Cities were weighted by number of trace requests. Variables present in some crime rate models but not others were omitted because they were found to be unrelated to that specific crime rate.

PSG9498	-0.207 (-4.23)	0.253 (2.05)			
PCTGHOM			0.034 (6.07)	0.009 (1.45)	0.001 (0.15)
Murder Rate		0.501 (5.14)			
Burglary Rate		-0.005 (-2.28)			
ONEGUN	4.171 (1.94)	14.435 (-3.11)	0.843 (3.97)	0.588 (2.54)	0.309 (1.07)
REGISTER	0.653 (0.48)	-4.029 (-1.57)	-0.224 (-2.00)	-0.346 (-2.83)	0.309 (1.07)
WAITPER	-0.221 (-1.21)	0.311 (0.93)	0.015 (0.94)	0.015 (0.86)	0.044 (2.04)
PERMIT	1.338 (1.02)	0.394 (0.15)	0.180 (1.72)	0.254 (2.22)	0.236 (1.66)
POVERTY			0.029 (2.78)	0.042 (3.78)	
BLACK			0.012 (4.61)	0.005 (1.65)	0.011 (2.83)
HISPANIC					0.008 (1.88)
Constant	14.999	53.735	-0.626	4.404	5.778
R^2_A	0.493	0.477	0.828	0.646	0.300
Alternate trafficking proxy results: DLR250ML ¹⁹¹		-0.050 (-0.58)	-0.004 (-1.16)	-0.004 (-0.95)	-0.007 (-1.39)

The resulting estimates are shown in Table 5. Column 1 displays estimates of a model of the percent of a city's crime guns recovered by police that had an OSN, treated here as a proxy for the prevalence of gun trafficking in the city. That is, the estimates address the question: What conditions

191. These are estimates from models including the same variables in each model that are shown in this table, but using DLR250ML as the trafficking proxy instead of OSN.

favor higher gun trafficking levels? They indicate, first, that the higher the gun ownership rate that prevailed in a city in the late 1990s, the lower the share of the city's crime guns recovered in 2000 that were supplied by traffickers. Second, none of four types of state laws regulating the purchase of firearms influence trafficking prevalence: laws limiting handgun purchases to one a month, laws requiring the registration of handgun purchases, laws requiring a permit to purchase guns, nor laws specifying a minimum number of days that a buyer must wait before taking delivery of a gun. All showed no relationship with the share of crime guns that were trafficked. When the gun theft rate was included in the model instead of the gun ownership measure, its coefficient was also significant and negative ($b=-0.054$, $p<.01$), indicating that where gun theft was more common, trafficking was less prevalent. Because gun ownership and the gun theft rate were highly correlated ($r=0.66$), however, both could not be included in the same model and still retain significant coefficients.

Column 2 of Table 5 reports estimates of a model of the prevalence of gun possession among criminals, measured as the share of homicides committed with guns.¹⁹³ The results indicate that trafficking, as measured by OSN, has no significant effect on the share of criminals in possession of guns. We also created a measure of the volume of trafficking, computed as the number of trace requests (purportedly the number of crime guns recovered by police), multiplied by the percent with an OSN. When this was included in the model instead of OSN, the results (not shown) were even less supportive (1-tailed, $p = .438$) of the hypothesis that trafficking levels affect gun possession levels among criminals.

The murder rate appears to have a significant positive effect on criminal gun possession, suggesting that more dangerous environments motivate more criminals to acquire guns for protection. This association, however, could also reflect a positive effect of criminal gun levels on murder rates. Laws regulating gun sales generally show no effect on criminal gun possession, with one notable exception: Laws limiting citizens to one handgun purchase per month, which are explicitly intended to reduce gun trafficking, appear to have a significant negative effect on gun possession among criminals. It is unlikely, however, that this reflects an actual effect of one-gun-a-month laws via their effects on trafficking, since these laws showed no effect on levels of trafficking (see Column 1). This negative association may instead reflect a negative

193. For a recent example of this measure's use as a measure of access to guns among criminals, see Cook & Braga, *supra* note 18, at 306–07.

effect of gun ownership on the enactment of gun control laws. Gun levels among noncriminals are highly correlated with gun levels among criminals, and larger numbers of gun-owning voters discourage legislators from supporting new gun laws.¹⁹⁴

Columns 3 through 5 report estimates of the parameters of models of rates of murder, robbery, and aggravated assault. All crime rates were expressed in terms of their natural logs, to reduce the skewness of their distributions. Because the Column 2 results indicated that trafficking levels have no effect on criminal gun possession levels, there is no obvious reason why trafficking should affect crime rates. The PCTGHOM (percent of homicides committed with guns) variable, however, is only an imperfect indicator of gun possession among criminals, so it remains possible that trafficking has some undetected impact on criminal gun possession, and thus on crime rates. The crime rate results nevertheless indicate that trafficking has no effect on rates of either murder or assault, but may have a marginally significant (1-tailed, $p=.034$) positive effect on robbery. Given the evidence that trafficking does not affect criminal gun levels or homicide or assault rates, this borderline-significant association with robbery may be nothing more than a product of random chance and a large number of hypothesis tests. The weakness of the associations between trafficking and either criminal gun possession or crime rates could, however, also be partly attributable to random error in measuring trafficking.

It might be argued that OSN data are unusually poor compared to other trace-based indicators, due to police inconsistency in requesting traces of guns with OSNs despite the stated commitment of YCGII cities to submit *all* such crime guns for tracing. Therefore, as a robustness check, we re-estimated the equations for criminal gun possession and violent crime rates using an alternative, though probably inferior, indicator of trafficking prevalence. Our correlation and principle component analysis results suggested that the percent of crime guns traced to dealers 250 or more miles from the city where they were recovered (DLR250ML) was the next-best trafficking indicator after OSN. When this was used as the proxy for trafficking prevalence, results were even less supportive of the hypotheses that trafficking affects criminal gun possession, or violent crime rates. The estimates for this alternate proxy are shown in the last row of Table 5. The coefficients are all negative, though nonsignificant. Thus, even if one believed that OSN data were more problematic than data for other indicators, the results still lead to the conclusion

194. See John M. Bruce & Clyde Wilcox, *Gun Control Laws in the States: Political and Apolitical Influences*, in *THE CHANGING POLITICS OF GUN CONTROL* 139, 150 (John M. Bruce & Clyde Wilcox eds., 1998).

that the prevalence of gun trafficking, measured using the two best proxies, is not significantly related to criminal gun possession or violent crime rates.

CONCLUSION

The model of criminal gun acquisition underlying lawsuits based on claims of negligent distribution is largely a myth, composed in part of rare and unrepresentative anecdotes about a handful of genuinely corrupt licensed gun dealers and misinterpreted ATF trace data. In contrast, the following conclusions are supported by the strongest prior research on the movement of guns to criminals, and the results of the empirical research reported in this paper:

1. Time-to-recovery (TTR, or “time-to-crime”) measures are not trafficking indicators. They more likely are indirect indicators of the gun theft rate, with which they are far more strongly correlated.

2. High trace counts for FFLs are not indicators of trafficking by FFLs. They are, first, indirect measures of gun dealer sales volume and of local gun ownership levels. In places where there are more gun owners, there are more guns sold by licensed dealers, and eventually more guns stolen and found in the possession of criminals. Second, high trace counts are indirect measures of the rates of gun theft prevailing in the areas served by the FFLs. No research has ever shown high trace counts to be even weakly correlated with a dealer’s identification as a trafficker once one holds constant the dealer’s sales volume and gun theft rates prevailing in the areas served by the dealer.

3. The only variable that is likely to be a strong city-level measure of gun trafficking activity is the prevalence of obliterated serial numbers (OSNs) among recovered crime guns.

4. Illicit gun selling is almost all done at a very low volume. Typical trafficking operations uncovered by law enforcement authorities handle fewer than seven guns each, and ATF uncovers fewer than fifteen high-volume (greater than 250 guns) operations in the entire nation each year.

5. High-volume trafficking, with or without the involvement of corrupt or negligent FFLs, probably supplies less than 1 percent of criminals’ guns.

6. Trafficking, if validly measured by OSN prevalence, has no measurable effect on levels of gun possession among criminals, as measured by the percent of homicides committed with guns, and has no effect on violent crime rates. One likely explanation would be that nearly all traffickers’ potential criminal customers have other sources of guns (especially the pool of locally stolen guns) and are not dependent on traffickers.

7. These specific conclusions logically lead to the broad policy conclusion that even the best-designed strategies aimed at reducing gun trafficking are

unlikely to have any measurable effect on gun possession among criminals or on violent crime rates. In particular, lawsuits intended to make the firearms industry rein in gun trafficking involving the knowing complicity or negligence of licensed dealers are unlikely to have such effects.

We can learn something about the potential of such strategies by considering evaluations of existing programs aimed at reducing trafficking. Perhaps the best known effort to reduce gun violence by going after traffickers was the Boston Gun Project, implemented in 1996–1999. The academic architects of the Project have conceded that criminal gun possession probably did not decline in Boston, and that much-touted short-term drops in gang homicide could not be attributed to the “law enforcement attack on illicit firearms traffickers,” since criminal cases against traffickers were made only after the drops in gang homicide had already occurred.¹⁹⁵ They also conceded that they had no firm evidence that “supply-side enforcement strategies have any measurable impacts on gun violence,” though they nevertheless argued that these efforts somehow “increased the ‘effective price’ for new handguns.”¹⁹⁶

Their basis for this last claim was that the share of Boston’s crime guns that were new (recovered within three years of initial sale) declined during the Project’s implementation from 1996 to 1999, a drop that they interpreted as a decline in the trafficking of new handguns. In fact, this decline paralleled a 50 percent decline in the city’s burglary rate over the same period, a decline that began years before the Project started. As soon as the burglary decline ended in 1999,¹⁹⁷ the decline in the new gun share of Boston’s crime guns also promptly stopped.¹⁹⁸ Thus, the decline in new handguns that the authors perceived as evidence of a decline in one type of gun trafficking was more likely due to a drop in the burglary rate, and thus the gun theft rate.

Similarly dubious interpretations of trends in short-TTR guns afflicts the efforts of Webster, Bulzacchelli, Zeoli, and Vernick to assess the impact of police stings directed at suspect FFLs in Chicago, Detroit, and Gary, Indiana in the late 1990s.¹⁹⁹ The authors concluded that the stings caused a decline in Chicago in corrupt FFLs channeling guns to criminals, based on the declining share of traced crime guns that were recovered from a criminal who was not the original possessor, and that had a short TTR (this share

195. See Braga & Pierce, *supra* note 10, at 722–23.

196. *Id.* at 741.

197. See FEDERAL BUREAU OF INVESTIGATION, U.S. DEP’T OF JUSTICE, UNIFORM CRIME REPORTS FOR THE UNITED STATES 1996, at 87 (1997) [hereinafter FBI 1996]; FBI 1997, *supra* note 105, at 90; FBI 1998, *supra* note 105, at 85; FBI 1999, *supra* note 105, at 85; FBI 2000, *supra* note 105, at 88.

198. See Braga & Pierce, *supra* note 10, at 740 tbl.3.

199. See Webster et al., *supra* note 26, at 229.

increased nonsignificantly in Gary).²⁰⁰ The authors failed to note, however, that over the period studied, 1996–2001, the burglary rate declined by 39 percent in Chicago and 62 percent in Detroit,²⁰¹ implying similarly huge drops in gun thefts, which would in turn result in fewer crime guns with a short TTR. Thus, the patterns among traced crime guns that the authors observed could be entirely due to the decline in gun theft rather than stings of licensed dealers.

Theft is central to criminal gun acquisition.²⁰² Interviews with incarcerated felons indicate that most guns acquired by criminals were probably stolen at some time in the past.²⁰³ Most gun theft is a by-product of residential burglary and other thefts from private owners. Less than two percent of stolen guns are stolen from dealers and other licensees. Only 12,302 gun thefts from FFLs were reported in 1997,²⁰⁴ compared to about 618,000 total gun thefts, based on victim survey estimates.²⁰⁵ Unlike gun sales by traffickers, every gun theft by definition places a gun directly and immediately into criminal hands. Further, the known volume of gun theft is many times higher than any evidence-based estimate of the volume of trafficked guns.

One could speculate that even though virtually all known traffickers handle very small numbers of guns, there are many high-volume dealers who are too smart or lucky to be caught. One might also speculate that even though trafficked guns known to authorities are few in number, traffickers actually sell large numbers of undiscovered guns. One could also speculate that, unknown to criminal buyers, a large share of the guns they bought had been moved by professional traffickers further back in the chain of possession. There is, however, no affirmative evidence to support any of these speculations. The view that organized or large-scale trafficking is important in arming American criminals is based not on strong evidence but rather on

200. *Id.*

201. See FBI 1996, *supra* note 197, at 123, 128; FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, UNIFORM CRIME REPORTS FOR THE UNITED STATES 2001, at 130, 137 (2002).

202. See Cook et al., *supra* note 10, at 80–84.

203. See WRIGHT & ROSSI, *supra* note 14, at 17 (reporting that 70 percent of felons surveyed reported their most recent handgun acquisition had either been directly stolen by them, definitely stolen by someone else, or probably stolen by someone else).

204. U.S. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, DEP'T OF THE TREASURY, ATF ANNUAL REPORT 1997, at 19 (1997).

205. There were about 281,080 gun theft incidents in 1997, times 2.2 guns stolen per incident. See BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, CRIMINAL VICTIMIZATION IN UNITED STATES, 1997 STATISTICAL TABLES, tbl.84, available at <http://www.ojp.gov/bjs/pub/pdf/cvus97.pdf> (last visited May 27, 2009); COOK & LUDWIG, *supra* note 34, at 30 (dividing number of guns stolen in noncommercial theft in 1994 by total number of gun-owning households that experienced the theft of at least one firearm that year).

(1) claims phrased in terms so vague and ill-defined as to render the assertions meaningless or trivial, (2) isolated anecdotes about unrepresentative, extremely rare large-scale trafficking operations uncovered by law enforcement authorities, and (3) dubious interpretations of highly ambiguous gun trace data. These are not sound bases for making public policy.

Virtually everyone believes that unicorns are mythical creatures. This belief is not, however, attributable to some scientific demonstration that unicorns do not exist. It is logically impossible to prove a negative, and previously unknown species are discovered all the time. Rather, unicorns are regarded as mythical because there is no reliable affirmative evidence that they do exist. Likewise, though a handful of large-scale gun trafficking enterprises are uncovered each year, there is at present no reliable evidence to affirmatively support the view that such traffickers are common enough to be important in supplying firearms to criminals, either in the nation as a whole or in any major local jurisdiction. Nor is there any reliable affirmative support for the theory that corrupt or negligent dealers play a significant role in supplying guns to traffickers. It is in this sense that the belief that big-time traffickers, or corrupt licensed gun dealers, significantly contribute to the arming of America's criminals is a myth. Indeed, there is no sound empirical foundation for the belief that any type of gun trafficker, as distinct from burglars and other thieves who occasionally sell guns they have stolen, has a substantial effect on the share of criminals who are armed with guns.