

17-56081

IN THE UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

VIRGINIA DUNCAN, et al,
Plaintiff and Appellees,

v.

**XAVIER BECERRA, in his Official
Capacity as Attorney General of the State
of California,**
Defendant and Appellant.

On Appeal from the United States District Court
for the Southern District of California

No. 17-cv-1017-BEN-JLB
The Honorable Roger T. Benitez, Judge

**APPELLANT’S EXCERPTS OF RECORD,
VOLUME VII, ER 1400-1570**

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An Updated Assessment of the Federal Assault Weapons Ban: Impacts on Gun Markets and Gun Violence, 1994-2003

**Report to the National Institute of Justice,
United States Department of Justice**

By

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June 2004

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PREFACE

Gun violence continues to be one of America's most serious crime problems. In 2000, over 10,000 persons were murdered with firearms and almost 49,000 more were shot in the course of over 340,000 assaults and robberies with guns (see the Federal Bureau of Investigation's annual *Uniform Crime Reports* and Simon et al., 2002). The total costs of gun violence in the United States – including medical, criminal justice, and other government and private costs – are on the order of at least \$6 to \$12 billion per year and, by more controversial estimates, could be as high as \$80 billion per year (Cook and Ludwig, 2000).

However, there has been good news in recent years. Police statistics and national victimization surveys show that since the early 1990s, gun crime has plummeted to some of the lowest levels in decades (see the *Uniform Crime Reports* and Rennison, 2001). Have gun controls contributed to this decline, and, if so, which ones?

During the last decade, the federal government has undertaken a number of initiatives to suppress gun crime. These include, among others, the establishment of a national background check system for gun buyers (through the Brady Act), reforms of the licensing system for firearms dealers, a ban on juvenile handgun possession, and Project Safe Neighborhoods, a collaborative effort between U.S. Attorneys and local authorities to attack local gun crime problems and enhance punishment for gun offenders.

Perhaps the most controversial of these federal initiatives was the ban on semiautomatic assault weapons and large capacity ammunition magazines enacted as Title XI, Subtitle A of the *Violent Crime Control and Law Enforcement Act of 1994*. This law prohibits a relatively small group of weapons considered by ban advocates to be particularly dangerous and attractive for criminal purposes. In this report, we investigate the ban's impacts on gun crime through the late 1990s and beyond. This study updates a prior report on the short-term effects of the ban (1994-1996) that members of this research team prepared for the U.S. Department of Justice and the U.S. Congress (Roth and Koper, 1997; 1999).

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The author wishes to thank several people and organizations that assisted this effort in numerous ways. Daniel Woods assisted with data analysis. Jeffrey Roth, who directed our first study of the assault weapons ban, provided advice and editorial input. Additional research assistance was provided by the following former employees of the Urban Institute: Gretchen Moore, David Huffer, Erica Dinger, Darin Reedy, Kate Bunting, Katie Gorie, and Michele Waul. The following persons and organizations provided databases, information, or other resources utilized for this report: Glenn Pierce (Northeastern University), Pamela Shaw and Edward Koch (Baltimore Police Department), Robert Shem (Alaska State Police), Bill McGill and Mallory O'Brien (currently or formerly of the Firearm Injury Center, Medical College of Wisconsin), Rick Ruddell (California State University, Chico), Scott Doyle (Kentucky State Police), Terrence Austin and Joe Vince (currently or formerly of the Bureau of Alcohol, Tobacco, Firearms, and Explosives), Carlos Alvarez and Alan Lynn (Metro-Dade Police Department), Charles Branas (Firearm and Injury Center, University of Pennsylvania), Caroline Harlow (Bureau of Justice Statistics), and Rebecca Knox (Brady Center to Prevent Handgun Violence). Robert Burrows (Bureau of Alcohol, Tobacco, Firearms, and Explosives) and Wain Roberts (Wain Roberts Firearms) shared technical expertise on firearms. Anonymous reviewers for the National Institute of Justice provided thorough and helpful comments on earlier versions of this report, as did Terrence Austin and Robert Burrows of the Bureau of Alcohol, Tobacco, Firearms, and Explosives. Finally, I thank Lois Mock, our National Institute of Justice grant monitor, for her advice and encouragement throughout all of the research that my colleagues and I have conducted on the assault weapons ban.

1. IMPACTS OF THE FEDERAL ASSAULT WEAPONS BAN, 1994-2003: KEY FINDINGS AND CONCLUSIONS

This overview presents key findings and conclusions from a study sponsored by the National Institute of Justice to investigate the effects of the federal assault weapons ban. This study updates prior reports to the National Institute of Justice and the U.S. Congress on the assault weapons legislation.

The Ban Attempts to Limit the Use of Guns with Military Style Features and Large Ammunition Capacities

- Title XI, Subtitle A of the Violent Crime Control and Law Enforcement Act of 1994 imposed a 10-year ban on the “manufacture, transfer, and possession” of certain semiautomatic firearms designated as assault weapons (AWs). The ban is directed at semiautomatic firearms having features that appear useful in military and criminal applications but unnecessary in shooting sports or self-defense (examples include flash hiders, folding rifle stocks, and threaded barrels for attaching silencers). The law bans 18 models and variations by name, as well as revolving cylinder shotguns. It also has a “features test” provision banning other semiautomatics having two or more military-style features. In sum, the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) has identified 118 models and variations that are prohibited by the law. A number of the banned guns are foreign semiautomatic rifles that have been banned from importation into the U.S. since 1989.
- The ban also prohibits most ammunition feeding devices holding more than 10 rounds of ammunition (referred to as large capacity magazines, or LCMs). An LCM is arguably the most functionally important feature of most AWs, many of which have magazines holding 30 or more rounds. The LCM ban’s reach is broader than that of the AW ban because many non-banned semiautomatics accept LCMs. Approximately 18% of civilian-owned firearms and 21% of civilian-owned handguns were equipped with LCMs as of 1994.
- The ban exempts AWs and LCMs manufactured before September 13, 1994. At that time, there were upwards of 1.5 million privately owned AWs in the U.S. and nearly 25 million guns equipped with LCMs. Gun industry sources estimated that there were 25 million pre-ban LCMs available in the U.S. as of 1995. An additional 4.7 million pre-ban LCMs were imported into the country from 1995 through 2000, with the largest number in 1999.
- Arguably, the AW-LCM ban is intended to reduce gunshot victimizations by limiting the national stock of semiautomatic firearms with large ammunition capacities – which enable shooters to discharge many shots rapidly – and other features conducive to criminal uses. The AW provision targets a relatively small number of weapons based on features that have little to do with the weapons’

operation, and removing those features is sufficient to make the weapons legal. The LCM provision limits the ammunition capacity of non-banned firearms.

The Banned Guns and Magazines Were Used in Up to A Quarter of Gun Crimes Prior to the Ban

- AWs were used in only a small fraction of gun crimes prior to the ban: about 2% according to most studies and no more than 8%. Most of the AWs used in crime are assault pistols rather than assault rifles.
- LCMs are used in crime much more often than AWs and accounted for 14% to 26% of guns used in crime prior to the ban.
- AWs and other guns equipped with LCMs tend to account for a higher share of guns used in murders of police and mass public shootings, though such incidents are very rare.

The Ban's Success in Reducing Criminal Use of the Banned Guns and Magazines Has Been Mixed

- Following implementation of the ban, the share of gun crimes involving AWs declined by 17% to 72% across the localities examined for this study (Baltimore, Miami, Milwaukee, Boston, St. Louis, and Anchorage), based on data covering all or portions of the 1995-2003 post-ban period. This is consistent with patterns found in national data on guns recovered by police and reported to ATF.
- The decline in the use of AWs has been due primarily to a reduction in the use of assault pistols (APs), which are used in crime more commonly than assault rifles (ARs). There has not been a clear decline in the use of ARs, though assessments are complicated by the rarity of crimes with these weapons and by substitution of post-ban rifles that are very similar to the banned AR models.
- However, the decline in AW use was offset throughout at least the late 1990s by steady or rising use of other guns equipped with LCMs in jurisdictions studied (Baltimore, Milwaukee, Louisville, and Anchorage). The failure to reduce LCM use has likely been due to the immense stock of exempted pre-ban magazines, which has been enhanced by recent imports.

It is Premature to Make Definitive Assessments of the Ban's Impact on Gun Crime

- Because the ban has not yet reduced the use of LCMs in crime, we cannot clearly credit the ban with any of the nation's recent drop in gun violence. However, the ban's exemption of millions of pre-ban AWs and LCMs ensured that the effects

of the law would occur only gradually. Those effects are still unfolding and may not be fully felt for several years into the future, particularly if foreign, pre-ban LCMs continue to be imported into the U.S. in large numbers.

The Ban's Reauthorization or Expiration Could Affect Gunshot Victimization, But Predictions are Tenuous

- Should it be renewed, the ban's effects on gun violence are likely to be small at best and perhaps too small for reliable measurement. AWs were rarely used in gun crimes even before the ban. LCMs are involved in a more substantial share of gun crimes, but it is not clear how often the outcomes of gun attacks depend on the ability of offenders to fire more than ten shots (the current magazine capacity limit) without reloading.
- Nonetheless, reducing criminal use of AWs and especially LCMs could have non-trivial effects on gunshot victimizations. The few available studies suggest that attacks with semiautomatics – including AWs and other semiautomatics equipped with LCMs – result in more shots fired, more persons hit, and more wounds inflicted per victim than do attacks with other firearms. Further, a study of handgun attacks in one city found that 3% of the gunfire incidents resulted in more than 10 shots fired, and those attacks produced almost 5% of the gunshot victims.
- Restricting the flow of LCMs into the country from abroad may be necessary to achieve desired effects from the ban, particularly in the near future. Whether mandating further design changes in the outward features of semiautomatic weapons (such as removing all military-style features) will produce measurable benefits beyond those of restricting ammunition capacity is unknown. Past experience also suggests that Congressional discussion of broadening the AW ban to new models or features would raise prices and production of the weapons under discussion.
- If the ban is lifted, gun and magazine manufacturers may reintroduce AW models and LCMs, perhaps in substantial numbers. In addition, pre-ban AWs may lose value and novelty, prompting some of their owners to sell them in undocumented secondhand markets where they can more easily reach high-risk users, such as criminals, terrorists, and other potential mass murderers. Any resulting increase in crimes with AWs and LCMs might increase gunshot victimizations for the reasons noted above, though this effect could be difficult to measure.

2. PROVISIONS OF THE ASSAULT WEAPONS BAN

2.1. Assault Weapons

Enacted on September 13, 1994, Title XI, Subtitle A of the *Violent Crime Control and Law Enforcement Act of 1994* imposes a 10-year ban on the “manufacture, transfer, and possession” of certain semiautomatic firearms designated as assault weapons (AWs).¹ The AW ban is not a prohibition on all semiautomatics. Rather, it is directed at semiautomatics having features that appear useful in military and criminal applications but unnecessary in shooting sports or self-defense. Examples of such features include pistol grips on rifles, flash hiders, folding rifle stocks, threaded barrels for attaching silencers, and the ability to accept ammunition magazines holding large numbers of bullets.² Indeed, several of the banned guns (e.g., the AR-15 and Avtomat Kalashnikov models) are civilian copies of military weapons and accept ammunition magazines made for those military weapons.

As summarized in Table 2-1, the law specifically prohibits nine narrowly defined groups of pistols, rifles, and shotguns. A number of the weapons are foreign rifles that the federal government has banned from importation into the U.S. since 1989. Exact copies of the named AWs are also banned, regardless of their manufacturer. In addition, the ban contains a generic “features test” provision that generally prohibits other semiautomatic firearms having two or more military-style features, as described in Table 2-2. In sum, the federal Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) has identified 118 model and caliber variations that meet the AW criteria established by the ban.³

Figures 2-1 and 2-2 illustrate a few prominent AWs and their features. Figure 2-1 displays the Intratec TEC-9 assault pistol, the AW most frequently used in crime (e.g., see Roth and Koper 1997, Chapter 2). Figure 2-2 depicts the AK-47 assault rifle, a weapon of Soviet design. There are many variations of the AK-47 produced around the world, not all of which have the full complement of features illustrated in Figure 2-2.

¹ A semiautomatic weapon fires one bullet for each squeeze of the trigger. After each shot, the gun automatically loads the next bullet and cocks itself for the next shot, thereby permitting a somewhat faster rate of fire relative to non-automatic firearms. Semiautomatics are not to be confused with fully automatic weapons (i.e., machine guns), which fire continuously as long as the trigger is held down. Fully automatic weapons have been illegal to own in the United States without a federal permit since 1934.

² Ban advocates stress the importance of pistol grips on rifles and heat shrouds or forward handgrips on pistols, which in combination with large ammunition magazines enable shooters to discharge high numbers of bullets rapidly (in a “spray fire” fashion) while maintaining control of the firearm (Violence Policy Center, 2003). Ban opponents, on the other hand, argue that AW features also serve legitimate purposes for lawful gun users (e.g., see Kopel, 1995).

³ This is based on AWs identified by ATF’s Firearms Technology Branch as of December 1997.

Table 2-1. Firearms Banned by the Federal Assault Weapons Ban

Firearm	Description	1993 Blue Book Price	Pre-Ban Federal Legal Status	Examples of Legal Substitutes
Avtomat Kalashnikov (AK) (by Norinco, Mitchell, Poly Technologies)	Chinese, Russian, other foreign and domestic: .223 or 7.62x39mm caliber, semiauto. rifle; 5, 10, or 30 shot magazine, may be supplied with bayonet	\$550 (generic import); add 10-15% for folding stock models	Imports banned in 1989.	Norinco NHM 90/91 ¹
Uzi, Galil	Israeli: 9mm, .41, or .45 caliber semiauto. carbine, mini-carbine, or pistol. Magazine capacity of 16, 20, or 25, depending on model and type (10 or 20 on pistols).	\$550-\$1050 (Uzi) \$875-\$1150 (Galil)	Imports banned in 1989	Uzi Sporter ²
Beretta AR-70	Italian: .222 or .223 caliber semiauto. paramilitary design rifle; 5, 8, or 30 shot magazine.	\$1050	Imports banned in 1989.	
Colt AR-15	Domestic: primarily .223 caliber paramilitary rifle or carbine; 5 shot magazines, often comes with two 5-shot detachable magazines. Exact copies by DPMS, Eagle, Olympic, and others.	\$825-\$1325	Legal (civilian version of military M-16)	Colt Sporter, Match H-Bar, Target models
Fabrique National FN/FAL, FN/LAR, FNC	Belgian design: .308 caliber semiauto. rifle or .223 combat carbine with 30 shot magazine. Rifle comes with flash hider, 4 position fire selector on automatic models. Discontinued in 1988.	\$1100-\$2500	Imports banned in 1989.	L1A1 Sporter (FN, Century) ²
Steyr AUG	Austrian: .223/5.56mm caliber semiauto. paramilitary design rifle.	\$2500	Imports banned in 1989	
SWD M-10, 11, 11/9, 12	Domestic: 9mm, .380, or .45 caliber paramilitary design semiauto. pistol; 32 shot magazine. Also available in semiauto. carbine and fully automatic variations.	\$215 (M-11/9)	Legal	Cobray PM11, 12
TEC-9, DC9, 22	Domestic: 9mm caliber semiauto. paramilitary design pistol, 10 or 32 shot magazine.; .22 caliber semiauto. paramilitary design pistol, 30 shot magazine.	\$145-\$295	Legal	TEC-AB
Revolving Cylinder Shotguns	Domestic: 12 gauge, 12 shot rotary magazine; paramilitary configuration	\$525 (Street Sweeper)	Legal	

¹ Imports were halted in 1994 under the federal embargo on the importation of firearms from China.

² Imports banned by federal executive order, April 1998.

Table 2-2. Features Test of the Federal Assault Weapons Ban

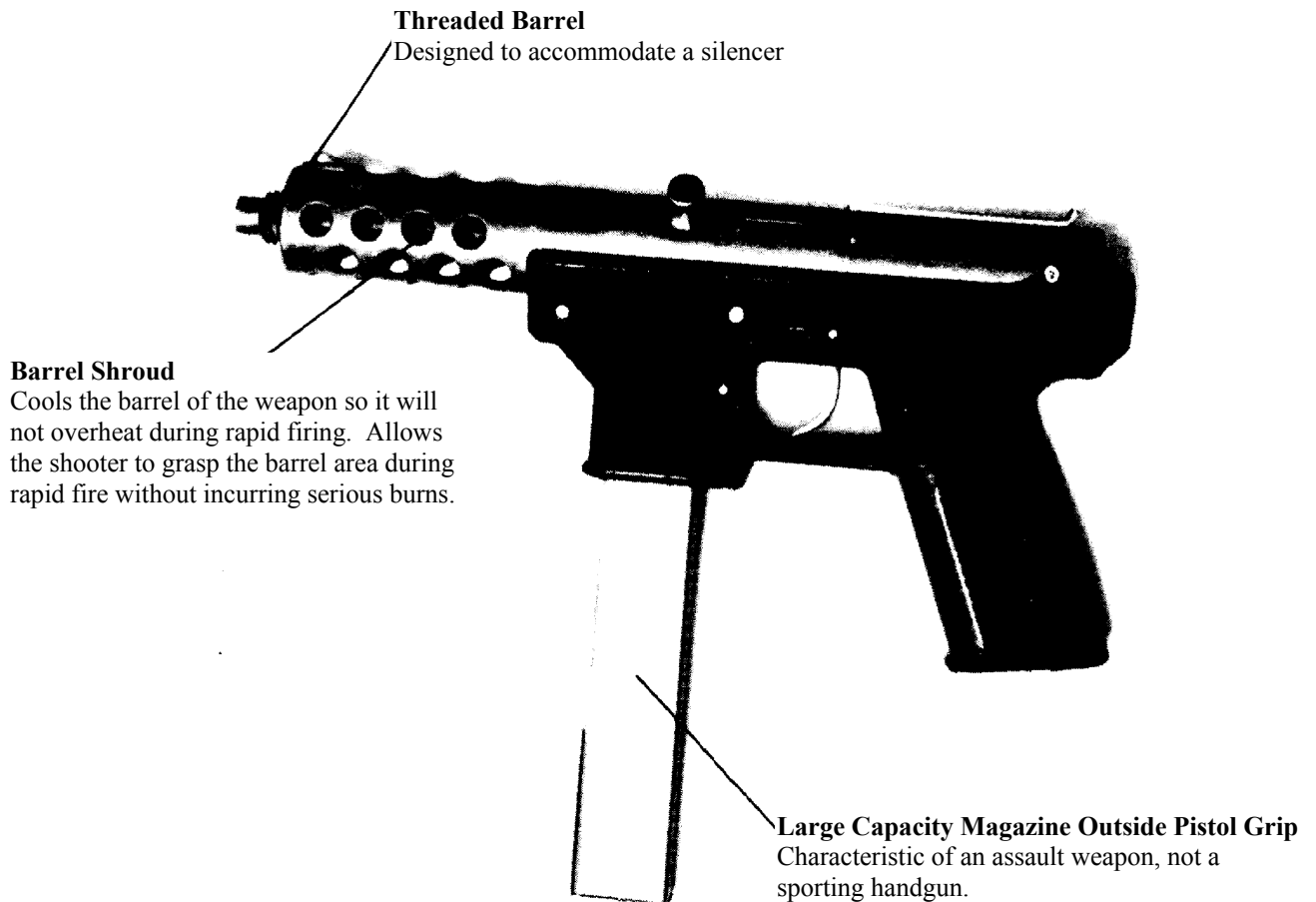
Weapon Category	Military-Style Features (Two or more qualify a firearm as an assault weapon)
Semiautomatic pistols accepting detachable magazines:	<ol style="list-style-type: none"> 1) ammunition magazine that attaches outside the pistol grip 2) threaded barrel capable of accepting a barrel extender, flash hider, forward handgrip, or silencer 3) heat shroud attached to or encircling the barrel 4) weight of more than 50 ounces unloaded 5) semiautomatic version of a fully automatic weapon
Semiautomatic rifles accepting detachable magazines:	<ol style="list-style-type: none"> 1) folding or telescoping stock 2) pistol grip that protrudes beneath the firing action 3) bayonet mount 4) flash hider or threaded barrel designed to accommodate one 5) grenade launcher
Semiautomatic shotguns:	<ol style="list-style-type: none"> 1) folding or telescoping stock 2) pistol grip that protrudes beneath the firing action 3) fixed magazine capacity over 5 rounds 4) ability to accept a detachable ammunition magazine

2.2. Large Capacity Magazines

In addition, the ban prohibits most ammunition feeding devices holding more than 10 rounds of ammunition (referred to hereafter as large capacity magazines, or LCMs).⁴ Most notably, this limits the capacity of detachable ammunition magazines for semiautomatic firearms. Though often overlooked in media coverage of the law, this provision impacted a larger share of the gun market than did the ban on AWs. Approximately 40 percent of the semiautomatic handgun models and a majority of the semiautomatic rifle models being manufactured and advertised prior to the ban were sold with LCMs or had a variation that was sold with an LCM (calculated from Murtz et al., 1994). Still others could accept LCMs made for other firearms and/or by other manufacturers. A national survey of gun owners found that 18% of all civilian-owned firearms and 21% of civilian-owned handguns were equipped with magazines having 10 or more rounds as of 1994 (Cook and Ludwig, 1996, p. 17). The AW provision did not affect most LCM-compatible guns, but the LCM provision limited the capacities of their magazines to 10 rounds.

⁴ Technically, the ban prohibits any magazine, belt, drum, feed strip, or similar device that has the capacity to accept more than 10 rounds of ammunition, or which can be readily converted or restored to accept more than 10 rounds of ammunition. The ban exempts attached tubular devices capable of operating only with .22 caliber rimfire (i.e., low velocity) ammunition.

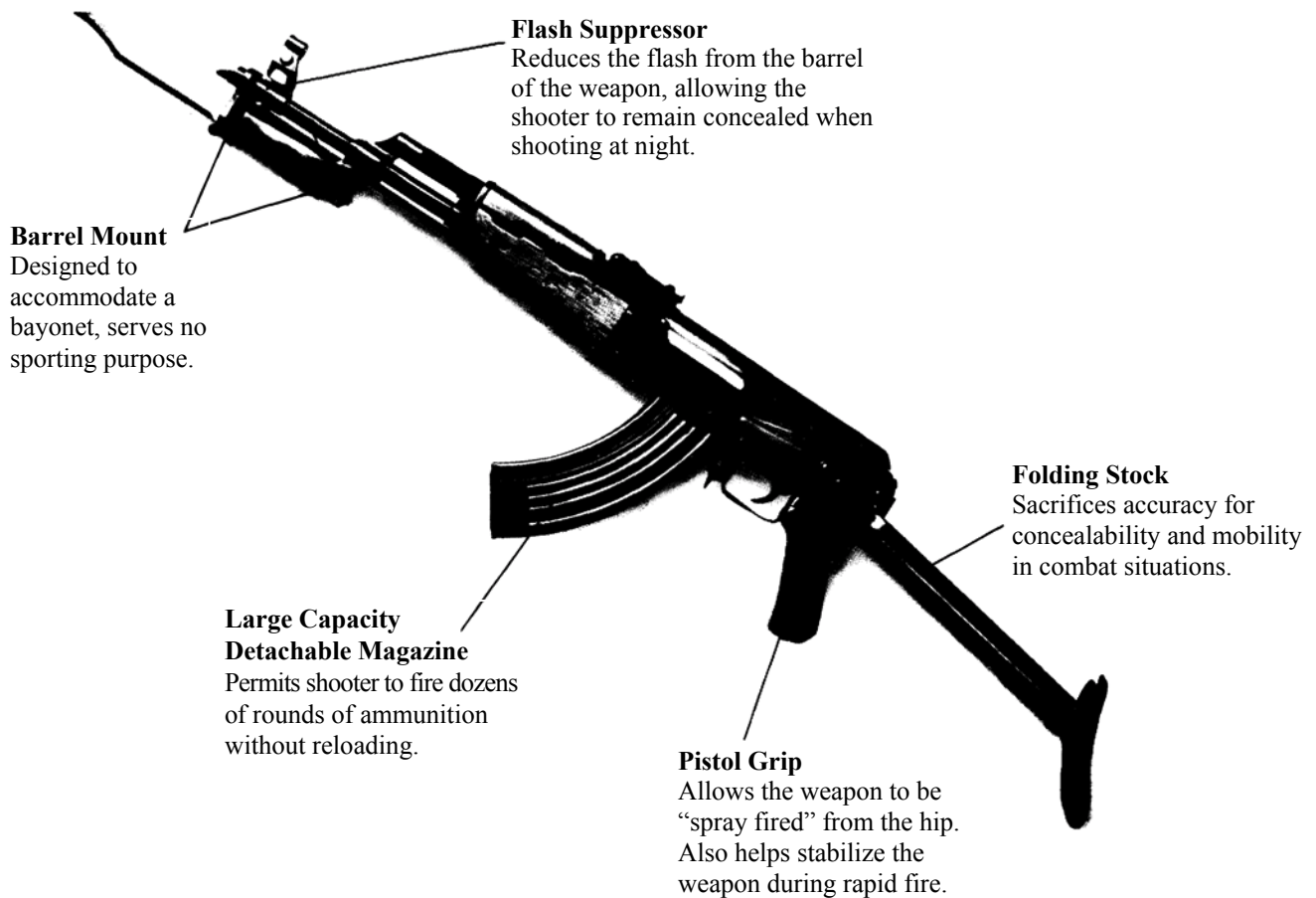
**Figure 2-1. Features of Assault Weapons:
The Intratec TEC-9 Assault Pistol**



Adapted from exhibit of the Center to Prevent Handgun Violence.

As discussed in later chapters, an LCM is perhaps the most functionally important feature of many AWs. This point is underscored by the AW ban's exemptions for semiautomatic rifles that cannot accept a detachable magazine that holds more than five rounds of ammunition and semiautomatic shotguns that cannot hold more than five rounds in a fixed or detachable magazine. As noted by the U.S. House of Representatives, most prohibited AWs came equipped with magazines holding 30 rounds and could accept magazines holding as many as 50 or 100 rounds (U.S. Department of the Treasury, 1998, p. 14). Also, a 1998 federal executive order (discussed below) banned further importation of foreign semiautomatic rifles capable of accepting LCMs made for military rifles. Accordingly, the magazine ban plays an important role in the logic and interpretations of the analyses presented here.

**Figure 2-2. Features of Assault Weapons:
The AK-47 Assault Rifle**



Adapted from exhibit of the Center to Prevent Handgun Violence.

2.3. Foreign Rifles Accepting Large Capacity Military Magazines

In April of 1998, the Clinton administration broadened the range of the AW ban by prohibiting importation of an additional 58 foreign semiautomatic rifles that were still legal under the 1994 law but that can accept LCMs made for military assault rifles like the AK-47 (U.S. Department of the Treasury, 1998).⁵ Figure 2-3 illustrates a few such rifles (hereafter, LCMM rifles) patterned after the banned AK-47 pictured in Figure 2-2. The LCMM rifles in Figure 2-3 do not possess the military-style features incorporated into the AK-47 (such as pistol grips, flash suppressors, and bayonet mounts), but they accept LCMs made for AK-47s.⁶

⁵ In the civilian context, AWs are semiautomatic firearms. Many semiautomatic AWs are patterned after military firearms, but the military versions are capable of semiautomatic and fully automatic fire.

⁶ Importation of some LCMM rifles, including a number of guns patterned after the AK-47, was halted in 1994 due to trade sanctions against China (U.S. Department of the Treasury, 1998).

Figure 2-3. Foreign Semiautomatic Rifles Capable of Accepting Large Capacity Military Magazines: AK47 Copies Banned by Executive Order in 1998



Taken from U.S. Department of the Treasury (1998)

2.4. Ban Exemptions

2.4.1. *Guns and Magazines Manufactured Prior to the Ban*

The ban contains important exemptions. AWs and LCMs manufactured before the effective date of the ban are “grandfathered” and thus legal to own and transfer. Around 1990, there were an estimated 1 million privately owned AWs in the U.S. (about 0.5% of the estimated civilian gun stock) (Cox Newspapers, 1989, p. 1; American Medical Association Council on Scientific Affairs, 1992), though those counts probably did not correspond exactly to the weapons prohibited by the 1994 ban. The leading domestic AW producers manufactured approximately half a million AWs from 1989 through 1993, representing roughly 2.5% of all guns manufactured in the U.S. during that time (see Chapter 5).

We are not aware of any precise estimates of the pre-ban stock of LCMs, but gun owners in the U.S. possessed an estimated 25 million guns that were equipped with LCMs or 10-round magazines in 1994 (Cook and Ludwig, 1996, p. 17), and gun industry sources estimated that, including aftermarket items for repairing and extending magazines, there were at least 25 million LCMs available in the United States as of 1995 (Gun Tests, 1995, p. 30). As discussed in Chapter 7, moreover, an additional 4.8 million pre-ban LCMs were imported into the U.S. from 1994 through 2000 under the grandfathering exemption.

2.4.2. *Semiautomatics With Fewer or No Military Features*

Although the law bans “copies or duplicates” of the named gun makes and models, federal authorities have emphasized exact copies. Relatively cosmetic changes, such as removing a flash hider or bayonet mount, are sufficient to transform a banned weapon into a legal substitute, and a number of manufacturers now produce modified, legal versions of some of the banned guns (examples are listed in Table 2-1). In general, the AW ban does not apply to semiautomatics possessing no more than one military-style feature listed under the ban’s features test provision.⁷ For instance, prior to going out of business, Intratec, makers of the banned TEC-9 featured in Figure 2-1, manufactured an AB-10 (“after ban”) model that does not have a threaded barrel or a barrel shroud but is identical to the TEC-9 in other respects, including the ability to accept an ammunition magazine outside the pistol grip (Figure 2-4). As shown in the illustration, the AB-10 accepts grandfathered, 32-round magazines made for the TEC-9, but post-ban magazines produced for the AB-10 must be limited to 10 rounds.

⁷ Note, however, that firearms imported into the country must still meet the “sporting purposes test” established under the federal Gun Control Act of 1968. In 1989, ATF determined that foreign semiautomatic rifles having any one of a number of named military features (including those listed in the features test of the 1994 AW ban) fail the sporting purposes test and cannot be imported into the country. In 1998, the ability to accept an LCM made for a military rifle was added to the list of disqualifying features. Consequently, it is possible for foreign rifles to pass the features test of the federal AW ban but not meet the sporting purposes test for imports (U.S. Department of the Treasury, 1998).

Another example is the Colt Match Target H-Bar rifle (Figure 2-5), which is a legalized version of the banned AR-15 (see Table 2-1). AR-15 type rifles are civilian weapons patterned after the U.S. military's M-16 rifle and were the assault rifles most commonly used in crime before the ban (Roth and Koper, 1997, Chapter 2). The post-ban version shown in Figure 2-5 (one of several legalized variations on the AR-15) is essentially identical to pre-ban versions of the AR-15 but does not have accessories like a flash hider, threaded barrel, or bayonet lug. The one remaining military feature on the post-ban gun is the pistol grip. This and other post-ban AR-15 type rifles can accept LCMs made for the banned AR15, as well as those made for the U.S. military's M-16. However, post-ban magazines manufactured for these guns must hold fewer than 11 rounds.

The LCMM rifles discussed above constituted another group of legalized AW-type weapons until 1998, when their importation was prohibited by executive order. Finally, the ban includes an appendix that exempts by name several hundred models of rifles and shotguns commonly used in hunting and recreation, 86 of which are semiautomatics. While the exempted semiautomatics generally lack the military-style features common to AWs, many take detachable magazines, and some have the ability to accept LCMs.⁸

2.5. Summary

In the broadest sense, the AW-LCM ban is intended to limit crimes with semiautomatic firearms having large ammunition capacities – which enable shooters to discharge high numbers of shots rapidly – and other features conducive to criminal applications. The gun ban provision targets a relatively small number of weapons based on outward features or accessories that have little to do with the weapons' operation. Removing some or all of these features is sufficient to make the weapons legal. In other respects (e.g., type of firing mechanism, ammunition fired, and the ability to accept a detachable magazine), AWs do not differ from other legal semiautomatic weapons. The LCM provision of the law limits the ammunition capacity of non-banned firearms.

⁸ Legislators inserted a number of amendments during the drafting process to broaden the consensus behind the bill (Lennett 1995). Among changes that occurred during drafting were: dropping a requirement to register post-ban sales of the grandfathered guns, dropping a ban on "substantial substitutes" as well as "exact copies" of the banned weapons, shortening the list of named makes and models covered by the ban, adding the appendix list of exempted weapons, and mandating the first impact study of the ban that is discussed below.

**Figure 2-4. Post-Ban, Modified Versions of Assault Weapons:
The Intratec AB (“After Ban”) Model (See Featured Firearm)**

AMERICAN PRIDE

BRAND NEW

AMERICAN MADE

Introducing The AB-10 Stainless Steel 9mm Pistol!

The New non-threaded AB-10 Stainless Steel Firearm is now available with a 32-round Stainless Steel capacity magazine. This new edition is one of the most affordable and reliable firearms on the market! In Standard Blue or Stainless Steel, the AB-10 series makes an ideal firearm for self-defense or recreation.

A super profit-maker!

"Cat"-9
9mm, Luger Magazine 7+1

Sport -22
Non-Threaded Barrel
10-Round Magazine

"Cat"-9/.380 Auto
Magazine 7+1

"Cat" -45
45 A.C.P.
Magazine 6+1

Pro-"tec"-tor Series
Protec 25B, 8-Round Mag.
Protec 25KB, 8-Round Mag.

INTRATEC

12405 S.W. 130th St., Miami, FL 33186
<http://amfire.com/intratec.html>
 Fax: (305) 253-7207

**Figure 2-5. Post-Ban, Modified Versions of Assault Weapons:
The Colt Match Target HBAR Model**



3. CRIMINAL USE OF ASSAULT WEAPONS AND LARGE CAPACITY MAGAZINES BEFORE THE BAN

During the 1980s and early 1990s, AWs and other semiautomatic firearms equipped with LCMs were involved in a number of highly publicized mass murder incidents that raised public concern about the accessibility of high powered, military-style weaponry and other guns capable of discharging high numbers of bullets in a short period of time (Cox Newspapers, 1989; Kleck, 1997, pp.124-126,144; Lenett, 1995). In one of the worst mass murders ever committed in the U.S., for example, James Huberty killed 21 persons and wounded 19 others in a San Ysidro, California MacDonald's restaurant on July 18, 1984 using an Uzi carbine, a shotgun, and another semiautomatic handgun. On September 14, 1989, Joseph Wesbecker, armed with an AK-47 rifle, two MAC-11 handguns, and a number of other firearms, killed 7 persons and wounded 15 others at his former workplace in Louisville, Kentucky before taking his own life. Another particularly notorious incident that precipitated much of the recent debate over AWs occurred on January 17, 1989 when Patrick Purdy used a civilian version of the AK-47 military rifle to open fire on a schoolyard in Stockton, California, killing 5 children and wounding 29 persons.

There were additional high profile incidents in which offenders using semiautomatic handguns with LCMs killed and wounded large numbers of persons. Armed with two handguns having LCMs (and reportedly a supply of extra LCMs), a rifle, and a shotgun, George Hennard killed 22 people and wounded another 23 in Killeen, Texas in October 1991. In a December 1993 incident, a gunman named Colin Ferguson, armed with a handgun and LCMs, opened fire on commuters on a Long Island train, killing 5 and wounding 17.

Indeed, AWs or other semiautomatics with LCMs were involved in 6, or 40%, of 15 mass shooting incidents occurring between 1984 and 1993 in which six or more persons were killed or a total of 12 or more were wounded (Kleck, 1997, pp.124-126, 144). Early studies of AWs, though sometimes based on limited and potentially unrepresentative data, also suggested that AWs recovered by police were often associated with drug trafficking and organized crime (Cox Newspapers, 1989; also see Roth and Koper, 1997, Chapter 5), fueling a perception that AWs were guns of choice among drug dealers and other particularly violent groups. All of this intensified concern over AWs and other semiautomatics with large ammunition capacities and helped spur the passage of AW bans in California, New Jersey, Connecticut, and Hawaii between 1989 and 1993, as well as the 1989 federal import ban on selected semiautomatic rifles. Maryland also passed AW legislation in 1994, just a few months prior to the passage of the 1994 federal AW ban.⁹

Looking at the nation's gun crime problem more broadly, however, AWs and LCMs were used in only a minority of gun crimes prior to the 1994 federal ban, and AWs were used in a particularly small percentage of gun crimes.

⁹ A number of localities around the nation also passed AW bans during this period.

3.1. Criminal Use of Assault Weapons

Numerous studies have examined the use of AWs in crime prior to the federal ban. The definition of AWs varied across the studies and did not always correspond exactly to that of the 1994 law (in part because a number of the studies were done prior to 1994). In general, however, the studies appeared to focus on various semiautomatics with detachable magazines and military-style features. According to these accounts, AWs typically accounted for up to 8% of guns used in crime, depending on the specific AW definition and data source used (e.g., see Beck et al., 1993; Hargarten et al., 1996; Hutson et al., 1994; 1995; McGonigal et al., 1993; New York State Division of Criminal Justice Services, 1994; Roth and Koper, 1997, Chapters 2, 5, 6; Zawitz, 1995). A compilation of 38 sources indicated that AWs accounted for 2% of crime guns on average (Kleck, 1997, pp.112, 141-143).¹⁰

Similarly, the most common AWs prohibited by the 1994 federal ban accounted for between 1% and 6% of guns used in crime according to most of several national and local data sources examined for this and our prior study (see Chapter 6 and Roth and Koper, 1997, Chapters 5, 6):

- Baltimore (all guns recovered by police, 1992-1993): 2%
- Miami (all guns recovered by police, 1990-1993): 3%
- Milwaukee (guns recovered in murder investigations, 1991-1993): 6%
- Boston (all guns recovered by police, 1991-1993): 2%
- St. Louis (all guns recovered by police, 1991-1993): 1%
- Anchorage, Alaska (guns used in serious crimes, 1987-1993): 4%
- National (guns recovered by police and reported to ATF, 1992-1993): 5%¹¹
- National (gun thefts reported to police, 1992-Aug. 1994): 2%
- National (guns used in murders of police, 1992-1994): 7-9%¹²
- National (guns used in mass murders of 4 or more persons, 1992-1994): 4-13%¹³

Although each of the sources cited above has limitations, the estimates consistently show that AWs are used in a small fraction of gun crimes. Even the highest

¹⁰ The source in question contains a total of 48 estimates, but our focus is on those that examined all AWs (including pistols, rifles, and shotguns) as opposed to just assault rifles.

¹¹ For reasons discussed in Chapter 6, the national ATF estimate likely overestimates the use of AWs in crime. Nonetheless, the ATF estimate lies within the range of other presented estimates.

¹² The minimum estimate is based on AW cases as a percentage of all gun murders of police. The maximum estimate is based on AW cases as a percentage of cases for which at least the gun manufacturer was known. Note that AWs accounted for as many as 16% of gun murders of police in 1994 (Roth and Koper, 1997, Chapter 6; also see Adler et al., 1995).

¹³ These statistics are based on a sample of 28 cases found through newspaper reports (Roth and Koper, 1997, Appendix A). One case involved an AW, accounting for 3.6% of all cases and 12.5% of cases in which at least the type of gun (including whether the gun was a handgun, rifle, or shotgun and whether the gun was a semiautomatic) was known. Also see the earlier discussion of AWs and mass shootings at the beginning of this chapter.

estimates, which correspond to particularly rare events such as mass murders and police murders, are no higher than 13%. Note also that the majority of AWs used in crime are assault pistols (APs) rather than assault rifles (ARs). Among AWs reported by police to ATF during 1992 and 1993, for example, APs outnumbered ARs by a ratio of 3 to 1 (see Chapter 6).

The relative rarity of AW use in crime can be attributed to a number of factors. Many AWs are long guns, which are used in crime much less often than handguns. Moreover, a number of the banned AWs are foreign weapons that were banned from importation into the U.S. in 1989. Also, AWs are more expensive (see Table 2-1) and more difficult to conceal than the types of handguns that are used most frequently in crime.

3.1.1. A Note on Survey Studies and Assault Weapons

The studies and statistics discussed above were based primarily on police information. Some survey studies have given a different impression, suggesting substantial levels of AW ownership among criminals and otherwise high-risk juvenile and adult populations, particularly urban gang members (Knox et al., 1994; Sheley and Wright, 1993a). A general problem with these studies, however, is that respondents themselves had to define terms like “military-style” and “assault rifle.” Consequently, the figures from these studies may lack comparability with those from studies with police data. Further, the figures reported in some studies prompt concerns about exaggeration of AW ownership (perhaps linked to publicity over the AW issue during the early 1990s when a number of these studies were conducted), particularly among juvenile offenders, who have reported ownership levels as high as 35% just for ARs (Sheley and Wright, 1993a).¹⁴

Even so, most survey evidence on the actual use of AWs suggests that offenders rarely use AWs in crime. In a 1991 national survey of adult state prisoners, for example, 8% of the inmates reported possessing a “military-type” firearm at some point in the past (Beck et al., 1993, p. 19). Yet only 2% of offenders who used a firearm during their conviction offense reported using an AW for that offense (calculated from pp. 18, 33), a figure consistent with the police statistics cited above. Similarly, while 10% of adult inmates and 20% of juvenile inmates in a Virginia survey reported having owned an AR, none of the adult inmates and only 1% of the juvenile inmates reported having carried them at crime scenes (reported in Zawitz, 1995, p. 6). In contrast, 4% to 20% of inmates surveyed in eight jails across rural and urban areas of Illinois and Iowa reported having used an AR in committing crimes (Knox et al., 1994, p. 17). Nevertheless, even assuming the accuracy and honesty of the respondents’ reports, it is not clear what

¹⁴ As one example of possible exaggeration of AW ownership, a survey of incarcerated juveniles in New Mexico found that 6% reported having used a “military-style rifle” against others and 2.6% reported that someone else used such a rifle against them. However, less than 1% of guns recovered in a sample of juvenile firearms cases were “military” style guns (New Mexico Criminal Justice Statistical Analysis Center, 1998, pp. 17-19; also see Ruddell and Mays, 2003).

weapons they were counting as ARs, what percentage of their crimes were committed with ARs, or what share of all gun crimes in their respective jurisdictions were linked to their AR uses. Hence, while some surveys suggest that ownership and, to a lesser extent, use of AWs may be fairly common among certain subsets of offenders, the overwhelming weight of evidence from gun recovery and survey studies indicates that AWs are used in a small percentage of gun crimes overall.

3.1.2. Are Assault Weapons More Attractive to Criminal Users Than Other Gun Users?

Although AWs are used in a small percentage of gun crimes, some have argued that AWs are more likely to be used in crime than other guns, i.e., that AWs are more attractive to criminal than lawful gun users due to the weapons' military-style features and their particularly large ammunition magazines. Such arguments are based on data implying that AWs are more common among crime guns than among the general stock of civilian firearms. According to some estimates generated prior to the federal ban, AWs accounted for less than one percent of firearms owned by civilians but up to 11% of guns used in crime, based on firearms reported by police to ATF between 1986 and 1993 (e.g., see Cox Newspapers, 1989; Lennett, 1995). However, these estimates were problematic in a number of respects. As discussed in Chapter 6, ATF statistics are not necessarily representative of the types of guns most commonly recovered by police, and ATF statistics from the late 1980s and early 1990s in particular tended to overstate the prevalence of AWs among crime guns. Further, estimating the percentage of civilian weapons that are AWs is difficult because gun production data are not reported by model, and one must also make assumptions about the rate of attrition among the stock of civilian firearms.

Our own more recent assessment indicates that AWs accounted for about 2.5% of guns produced from 1989 through 1993 (see Chapter 5). Relative to previous estimates, this may signify that AWs accounted for a growing share of civilian firearms in the years just before the ban, though the previous estimates likely did not correspond to the exact list of weapons banned in 1994 and thus may not be entirely comparable to our estimate. At any rate, the 2.5% figure is comparable to most of the AW crime gun estimates listed above; hence, it is not clear that AWs are used disproportionately in most crimes, though AWs still seem to account for a somewhat disproportionate share of guns used in murders and other serious crimes.

Perhaps the best evidence of a criminal preference for AWs comes from a study of young adult handgun buyers in California that found buyers with minor criminal histories (i.e., arrests or misdemeanor convictions that did not disqualify them from purchasing firearms) were more than twice as likely to purchase APs than were buyers with no criminal history (4.6% to 2%, respectively) (Wintemute et al., 1998a). Those with more serious criminal histories were even more likely to purchase APs: 6.6% of those who had been charged with a gun offense bought APs, as did 10% of those who had been charged with two or more serious violent offenses. AP purchasers were also more likely to be arrested subsequent to their purchases than were other gun purchasers.

Among gun buyers with prior charges for violence, for instance, AP buyers were more than twice as likely as other handgun buyers to be charged with any new offense and three times as likely to be charged with a new violent or gun offense. To our knowledge, there have been no comparable studies contrasting AR buyers with other rifle buyers.

3.2. Criminal Use of Large Capacity Magazines

Relative to the AW issue, criminal use of LCMs has received relatively little attention. Yet the overall use of guns with LCMs, which is based on the combined use of AWs and non-banned guns with LCMs, is much greater than the use of AWs alone. Based on data examined for this and a few prior studies, guns with LCMs were used in roughly 14% to 26% of most gun crimes prior to the ban (see Chapter 8; Adler et al., 1995; Koper, 2001; New York Division of Criminal Justice Services, 1994).

- Baltimore (all guns recovered by police, 1993): 14%
- Milwaukee (guns recovered in murder investigations, 1991-1993): 21%
- Anchorage, Alaska (handguns used in serious crimes, 1992-1993): 26%
- New York City (guns recovered in murder investigations, 1993): 16-25%¹⁵
- Washington, DC (guns recovered from juveniles, 1991-1993): 16%¹⁶
- National (guns used in murders of police, 1994): 31%-41%¹⁷

Although based on a small number of studies, this range is generally consistent with national survey estimates indicating approximately 18% of all civilian-owned guns and 21% of civilian-owned handguns were equipped with LCMs as of 1994 (Cook and Ludwig, 1996, p. 17). The exception is that LCMs may have been used disproportionately in murders of police, though such incidents are very rare.

As with AWs and crime guns in general, most crime guns equipped with LCMs are handguns. Two handgun models manufactured with LCMs prior to the ban (the Glock 17 and Ruger P89) were among the 10 crime gun models most frequently recovered by law enforcement and reported to ATF during 1994 (ATF, 1995).

¹⁵ The minimum estimate is based on cases in which discharged firearms were recovered, while the maximum estimate is based on cases in which recovered firearms were positively linked to the case with ballistics evidence (New York Division of Criminal Justice Services, 1994).

¹⁶ Note that Washington, DC prohibits semiautomatic firearms accepting magazines with more than 12 rounds (and handguns in general).

¹⁷ The estimates are based on the sum of cases involving AWs or other guns sold with LCMs (Adler et al., 1995, p.4). The minimum estimate is based on AW-LCM cases as a percentage of all gun murders of police. The maximum estimate is based on AW-LCM cases as a percentage of cases in which the gun model was known.

3.3. Summary

In sum, AWs and LCMs were used in up to a quarter of gun crimes prior to the 1994 AW-LCM ban. By most estimates, AWs were used in less than 6% of gun crimes even before the ban. Some may have perceived their use to be more widespread, however, due to the use of AWs in particularly rare and highly publicized crimes such as mass shootings (and, to a lesser extent, murders of police), survey reports suggesting high levels of AW ownership among some groups of offenders, and evidence that some AWs are more attractive to criminal than lawful gun buyers.

In contrast, guns equipped with LCMs – of which AWs are a subset – are used in roughly 14% to 26% of gun crimes. Accordingly, the LCM ban has greater potential for affecting gun crime. However, it is not clear how often the ability to fire more than 10 shots without reloading (the current magazine capacity limit) affects the outcomes of gun attacks (see Chapter 9). All of this suggests that the ban's impact on gun violence is likely to be small.

4. OVERVIEW OF STUDY DESIGN, HYPOTHESES, AND PRIOR FINDINGS

Section 110104 of the AW-LCM ban directed the Attorney General of the United States to study the ban's impact and report the results to Congress within 30 months of the ban's enactment, a provision which was presumably motivated by a sunset provision in the legislation (section 110105) that will lift the ban in September 2004 unless Congress renews the ban. In accordance with the study requirement, the National Institute of Justice (NIJ) awarded a grant to the Urban Institute to study the ban's short-term (i.e., 1994-1996) effects. The results of that study are available in a number of reports, briefs, and articles written by members of this research team (Koper and Roth, 2001a; 2001b; 2002a; Roth and Koper, 1997; 1999).¹⁸ In order to understand the ban's longer-term effects, NIJ provided additional funding to extend the AW research. In 2002, we delivered an interim report to NIJ based on data extending through at least the late 1990s (Koper and Roth, 2002b). This report is based largely on the 2002 interim report, but with various new and updated analyses extending as far as 2003. It is thus a compilation of analyses conducted between 1998 and 2003. The study periods vary somewhat across the analyses, depending on data availability and the time at which the data were collected.

4.1. Logical Framework for Research on the Ban

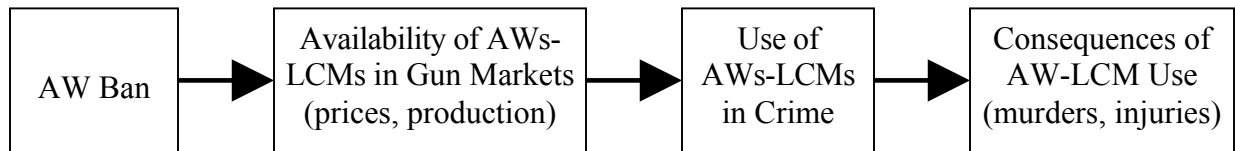
An important rationale for the AW-LCM ban is that AWs and other guns equipped with LCMs are particularly dangerous weapons because they facilitate the rapid firing of high numbers of shots, thereby potentially increasing injuries and deaths from gun violence. Although AWs and LCMs were used in only a modest share of gun crimes before the ban, it is conceivable that a decrease in their use might reduce fatal and non-fatal gunshot victimizations, even if it does not reduce the overall rate of gun crime. (In Chapter 9, we consider in more detail whether forcing offenders to substitute other guns and smaller magazines can reduce gun deaths and injuries.)

It is not clear how quickly such effects might occur, however, because the ban exempted the millions of AWs and LCMs that were manufactured prior to the ban's effective date in September 1994. This was particularly a concern for our first study, which was based on data extending through mid-1996, a period potentially too short to observe any meaningful effects. Consequently, investigation of the ban's effects on gun markets – and, most importantly, how they have affected criminal use of AWs and LCMs – has played a central role in this research. The general logic of our studies, illustrated in Figure 4-1, has been to first assess the law's impact on the availability of AWs and LCMs, examining price and production (or importation) indices in legal markets and relating them to trends in criminal use of AWs and LCMs. In turn, we can relate these market patterns to trends in the types of gun crimes most likely to be affected by changes in the use of AWs and LCMs. However, we cannot make definitive assessments of the

¹⁸ The report to Congress was the Roth and Koper (1997) report.

ban's impact on gun violence until it is clear that the ban has indeed reduced criminal use of AWs and LCMs.

Figure 4-1. Logic Model for Research on the Assault Weapons Ban



4.2. Hypothesized Market Effects

4.2.1. A General Description of Gun Markets

Firearms are distributed in markets commonly referred to as primary and secondary markets. Illicit gun transactions occur in both markets. Primary markets include wholesale and retail transactions by federally-licensed gun dealers, referred to as federal firearm licensees. Licensed dealers are required to, among things, follow federal and state background procedures to verify the eligibility of purchasers, observe any legally required waiting period prior to making transfers, and maintain records of gun acquisitions and dispositions (though records are not required for sales of ammunition magazines).

Despite these restrictions, survey data suggest that as many as 21% of adult gun offenders obtained guns from licensed dealers in the years prior to the ban (Harlow, 2001, p. 6; also see Wright and Rossi, 1986, pp. 183,185). In more recent years, this figure has declined to 14% (Harlow, 2001, p. 6), due likely to the Brady Act, which established a national background check system for purchases from licensed dealers, and reforms of the federal firearms licensing system that have greatly reduced the number of licensed gun dealers (see ATF, 2000; Koper, 2002). Some would-be gun offenders may be legally eligible buyers at the time of their acquisitions, while others may seek out corrupt dealers or use other fraudulent or criminal means to acquire guns from retail dealers (such as recruiting a legally entitled buyer to act as a “straw purchaser” who buys a gun on behalf of a prohibited buyer).

Secondary markets encompass second-hand gun transactions made by non-licensed individuals.¹⁹ Secondary market participants are prohibited from knowingly transferring guns to ineligible purchasers (e.g., convicted felons and drug abusers). However, secondary transfers are not subject to the federal record-keeping and background check requirements placed on licensed dealers, thus making the secondary

¹⁹ Persons who make only occasional sales of firearms are not required to obtain a federal firearms license (ATF, 2000, p. 11).

market almost entirely unregulated and, accordingly, a better source of guns for criminal users.²⁰ In the secondary market, ineligible buyers may obtain guns from a wide variety of legitimate or illegitimate gun owners: relatives, friends, fences, drug dealers, drug addicts, persons selling at gun shows, or other strangers (e.g., see Wright and Rossi, 1986; Sheley and Wright, 1993a). Of course, ineligible purchasers may also steal guns from licensed gun dealers and private gun owners.

Secondary market prices are generally lower than primary market prices (because the products are used), though the former may vary substantially across a range of gun models, places, circumstances, and actors. For example, street prices of AWs and other guns can be 3 to 6 times higher than legal retail prices in jurisdictions with strict gun controls and lower levels of gun ownership (Cook et al., 1995, p. 72). Nonetheless, experts note that primary and secondary market prices correspond to one another, in that relatively expensive guns in the primary market are also relatively expensive in the secondary market. Moreover, in any given locality, trends in secondary market prices can be expected to track those in the primary market because a rise in primary market prices for new weapons will increase demand for used weapons and therefore increase secondary market prices (Cook et al., 1995, p. 71).

4.2.2. *The AW-LCM Ban and Gun Markets*

In the long term, we can expect prices of the banned guns and magazines to gradually rise as supplies dwindle. As prices rise, more would-be criminal users of AWs and LCMs will be unable or unwilling to pay the higher prices. Others will be discouraged by the increasing non-monetary costs (i.e., search time) of obtaining the weapons. In addition, rising legal market prices will undermine the incentive for some persons to sell AWs and LCMs to prohibited buyers for higher premiums, thereby bidding some of the weapons away from the channels through which they would otherwise reach criminal users. Finally, some would-be AW and LCM users may become less willing to risk confiscation of their AWs and LCMs as the value of the weapons increases. Therefore, we expect that over time diminishing stocks and rising prices will lead to a reduction in criminal use of AWs and LCMs.²¹

²⁰ Some states require that secondary market participants notify authorities about their transactions. Even in these states, however, it is not clear how well these laws are enforced.

²¹ We would expect these reductions to be apparent shortly after the price increases (an expectation that, as discussed below, was confirmed in our earlier study) because a sizeable share of guns used in crime are used within one to three years of purchase. Based on analyses of guns recovered by police in 17 cities, ATF (1997, p. 8) estimates that guns less than 3 years old (as measured by the date of first retail sale) comprise between 22% and 43% of guns seized from persons under age 18, between 30% and 54% of guns seized from persons ages 18 to 24, and between 25% and 46% of guns seized from persons over 24. In addition, guns that are one year old or less comprise the largest share of relatively new crime guns (i.e., crime guns less than three years old) (Pierce et al., 1998, p. 11). Similar data are not available for secondary market transactions, but such data would shorten the estimated time from acquisition to criminal use.

However, the expected timing of the market processes is uncertain. We can anticipate that AW and LCM prices will remain relatively stable for as long as the supply of grandfathered weapons is adequate to meet demand. If, in anticipation of the ban, gun manufacturers overestimated the demand for AWs and LCMs and produced too many of them, prices might even fall before eventually rising. Market responses can be complicated further by the continuing production of legal AW substitute models by some gun manufacturers. If potential AW buyers are content with an adequate supply of legal AW-type weapons having fewer military features, it will take longer for the grandfathered AW supply to constrict and for prices to rise. Similarly, predicting LCM price trends is complicated by the overhang of military surplus magazines that can fit civilian weapons (e.g., military M-16 rifle magazines that can be used with AR-15 type rifles) and by the market in reconditioned magazines. The “aftermarket” in gun accessories and magazine extenders that can be used to convert legal guns and magazines into banned ones introduces further complexity to the issue.

4.3. Prior Research on the Ban’s Effects

To summarize the findings of our prior study, Congressional debate over the ban triggered pre-ban speculative price increases of upwards of 50% for AWs during 1994, as gun distributors, dealers, and collectors anticipated that the weapons would become valuable collectors’ items. Analysis of national and local data on guns recovered by police showed reductions in criminal use of AWs during 1995 and 1996, suggesting that rising prices made the weapons less accessible to criminal users in the short-term aftermath of the ban.

However, the speculative increase in AW prices also prompted a pre-ban boost in AW production; in 1994, AW manufacturers produced more than twice their average volume for the 1989-1993 period. The oversupply of grandfathered AWs, the availability of the AW-type legal substitute models mentioned earlier, and the steady supply of other non-banned semiautomatics appeared to have saturated the legal market, causing advertised prices of AWs to fall to nearly pre-speculation levels by late 1995 or early 1996. This combination of excess supply and reduced prices implied that criminal use of AWs might rise again for some period around 1996, as the large stock of AWs would begin flowing from dealers’ and speculators’ gun cases to the secondary markets where ineligible purchasers may obtain guns more easily.

We were not able to gather much specific data about market trends for LCMs. However, available data did reveal speculative, pre-ban price increases for LCMs that were comparable to those for AWs (prices for some LCMs continued to climb into 1996), leading us to speculate – incorrectly, as this study will show (see Chapter 8) – that there was some reduction in LCM use after the ban.²²

²² To our knowledge, there have been two other studies of changes in AW and LCM use during the post-ban period. One study reported a drop in police recoveries of AWs in Baltimore during the first half of 1995 (Weil and Knox, 1995), while the other found no decline in recoveries of AWs or LCMs in Milwaukee homicide cases as of 1996 (Hargarten et al., 2000). Updated analyses for both of these cities

Determining whether the reduction in AW use (and perhaps LCM use) following the ban had an impact on gun violence was more difficult. The gun murder rate dropped more in 1995 (the first year following the ban) than would have been expected based on preexisting trends, but the short post-ban follow-up period available for the analysis precluded a definitive assessment as to whether the reduction was statistically meaningful (see especially Koper and Roth, 2001a). The reduction was also larger than would be expected from the AW-LCM ban, suggesting that other factors were at work in accelerating the decline. Using a number of national and local data sources, we also examined trends in measures of victims per gun murder incident and wounds per gunshot victim, based on the hypothesis that these measures might be more sensitive to variations in the use of AWs and LCMs. These analyses revealed no ban effects, thus failing to show confirming evidence of the mechanism through which the ban was hypothesized to affect the gun murder rate. However, newly available data presented in subsequent chapters suggest these assessments may have been premature, because any benefits from the decline in AW use were likely offset by steady or rising use of other guns equipped with LCMs, a trend that was not apparent at the time of our earlier study.

We cautioned that the short-term patterns observed in the first study might not provide a reliable guide to longer-term trends and that additional follow-up was warranted. Two key issues to be addressed were whether there had been a rebound in AW use since the 1995-1996 period and, if so, whether that rebound had yet given way to a long-term reduction in AW use. Another key issue was to seek more definitive evidence on short and long-term trends in the availability and criminal use of LCMs. These issues are critical to assessing the effectiveness of the AW-LCM ban, but they also have broader implications for other important policy concerns, namely, the establishment of reasonable timeframes for sunset and evaluation provisions in legislation. In other words, how long is long enough in evaluating policy and setting policy expiration dates?

are presented in Chapters 6 and 8.

5. MARKET INDICATORS FOR ASSAULT WEAPONS: PRICES AND PRODUCTION

This chapter assesses the ban's impact on the availability of AWs in primary and secondary markets, as measured by trends in AW prices and post-ban production of legal AW substitute models. Understanding these trends is important because they influence the flow of grandfathered weapons to criminals and the availability of non-banned weapons that are close substitutes for banned ones. In the next chapter, we assess the impact of these trends on criminal use of AWs, as approximated by statistics on gun seizures by police. (Subsequent chapters present similar analyses for LCMs.)

Following our previous methods, we compare trends for AWs to trends for various non-banned firearms. The AW analyses generally focus on the most common AWs formerly produced in the U.S., including Intratec and SWD-type APs and AR-15-type ARs produced by Colt and others. In addition, we selected a small number of domestic pistol and rifle models made by Calico and Feather Industries that fail the features test provision of the AW legislation and that were relatively common among crime guns reported by law enforcement agencies to ATF prior to the ban (see Roth and Koper, 1997, Chapter 5). Together, this group of weapons represented over 80% of AWs used in crime and reported to ATF from 1993 through 1996, and the availability of these guns was not affected by legislation or regulations predating the AW-LCM ban.²³ We also examine substitution of legalized, post-ban versions of these weapons, including the Intratec AB-10 and Sport-22, FMJ's PM models (substitutes for the SWD group), Colt Sporters, Calico Liberty models, and others. We generally did not conduct comparative analyses of named foreign AWs (the Uzi, Galil, and AK weapons) because the 1989 federal import ban had already limited their availability, and their legal status was essentially unchanged by the 1994 ban.

The exact gun models and time periods covered vary across the analyses (based on data availability and the time at which data were collected). The details of each analysis are described in the following sections.

5.1. Price Trends for Assault Weapons and Other Firearms

To approximate trends in the prices at which AWs could be purchased throughout the 1990s, we collected annual price data for several APs, ARs, and non-banned comparison firearms from the *Blue Book of Gun Values* (Fjestad, 1990-1999). The *Blue Book* provides national average prices for an extensive list of new and used firearms based on information collected at gun shows and input provided by networks of dealers

²³ The Intratec group includes weapons made by AA Arms. The SWD group contains related models made by Military Armaments Corporation/Ingram and RPB Industries. The AR-15 group contains models made by Colt and copies made by Bushmaster, Olympic Arms, Eagle Arms, SGW Enterprises, Essential Arms, DPMS, and Sendra.

and collectors. The *Blue Book* is utilized widely in the gun industry, though prices in any given locality may differ notably from the averages appearing in the *Blue Book*.

To assess time trends in gun prices, we conducted hedonic price analyses (Berndt, 1990) in which the gun prices were regressed upon a series of year and model indicators. The coefficients for the year indicators show annual changes in the prices of the guns relative to 1994 (the year the ban went into effect), controlling for time-stable differences in the prices of various gun models. Since manufacturers' suggested retail prices (MSRP) were not available for banned AWs during post-ban years, we utilized prices for AWs in 100% condition for all years.²⁴ For non-banned firearms, we used MSRP.²⁵ For all models, we divided the gun prices by annual values of the gross domestic product price deflator provided in the December 2001 and 2000 issues of *Economic Indicators* and logged these adjusted prices.

Each model presented below is based on data pooled across a number of firearm models and years, so that observation P_{jt} represents the price of gun model j during year t . We weighted each observation, P_{jt} , based on cumulative estimates of the production of model j from 1985 or 1986 (depending on data availability) through year t using data provided by gun manufacturers to ATF and published by the Violence Policy Center (1999).^{26, 27}

²⁴ Project staff also collected prices of weapons in 80% condition. However, the levels and annual changes of the 80% prices were very highly correlated (0.86 to 0.99) with those of the 100% condition prices. Therefore, we limited the analysis to the 100% prices.

²⁵ We utilized prices for the base model of each AW and comparison firearm (in contrast to model variations with special features or accessories).

²⁶ The regression models are based on equal numbers of observations for each gun model. Hence, unweighted regressions would give equal weight to each gun model. This does not seem appropriate, however, because some guns are produced in much larger numbers than are other guns. Weighting the regression models by production estimates should therefore give us a better sense of what one could "typically" expect to pay for a generic gun in each study category (e.g., a generic assault pistol).

²⁷ Several of the selected weapons began production in 1985 or later. In other cases, available production data extended back to only the mid-1980s. Published production figures for handguns are broken down by type (semiautomatic, revolver) and caliber and thus provide perfect or very good approximations of production for the handgun models examined in this study. Rifle production data, however, are not disaggregated by gun type, caliber, or model. For the ARs under study, the production counts should be reasonable approximations of AR production because most of the rifles made by the companies in question prior to the ban were ARs. The rifles used in the comparison (i.e., non-banned) rifle analysis are made by companies (Sturm Ruger, Remington, and Marlin) that produce numerous semiautomatic and non-semiautomatic rifle models. However, the overall rifle production counts for these companies should provide some indication of differences in the availability of the comparison rifles relative to one another. Because production data were available through only 1997 at the time this particular analysis was conducted (Violence Policy Center, 1999), we used cumulative production through 1997 to weight the 1998 and 1999 observations for the comparison handgun and comparison rifle models. This was not a consideration for AWs since their production ceased in 1994 (note that the AW production figures for 1994 may include some post-ban legal substitute models manufactured after September 13, 1994). Nonetheless, weighting had very little effect on the inferences from either of the comparison gun models.

5.1.1. Assault Pistol Prices

The analysis of AP prices focuses on the Intratec TEC-9/DC-9, TEC-22, SWD M-11/9, and Calico M950 models. Regression results are shown in Table 5-1, while Figure 5-1 graphically depicts the annual trend in prices for the period 1990 through 1999. None of the yearly coefficients in Table 5-1 is statistically significant, thus indicating that average annual AP prices did not change during the 1990s after adjusting for inflation. Although the model is based on a modest number of observations ($n=40$) that may limit its statistical power (i.e., its ability to detect real effects), the size of the yearly coefficients confirm that prices changed very little from year to year. The largest yearly coefficient is for 1990, and it indicates that AP prices were only 4% higher in 1990 than in 1994.²⁸

This stands in contrast to our earlier finding (Roth and Koper, 1997, Chapter 4) that prices for SWD APs may have risen by as much as 47% around the time of the ban. However, the earlier analyses were based on semi-annual or quarterly analyses advertised by gun distributors and were intended to capture short-term fluctuations in price that assumed greater importance in the context of the first AW study, which could examine only short-term ban outcomes. *Blue Book* editions released close in time to the ban (e.g., 1995) also cautioned that prices for some AWs were volatile at that time. This study emphasizes longer-term price trends, which appear to have been more stable.²⁹

²⁸ To interpret the coefficient of each indicator variable in terms of a percentage change in the dependent variable, we exponentiate the coefficient, subtract 1 from the exponentiated value, and multiply the difference by 100.

²⁹ Although the earlier analysis of AP prices focused on the greatest variations observed in semi-annual prices, the results also provide indications that longer-term trends were more stable. Prices in 1993, for example, averaged roughly 73% of the peak prices reached at the time the ban was implemented (i.e., late 1994), while prices in early 1994 and late 1995 averaged about 83% and 79% of the peak prices, respectively. Hence, price variation was much more modest after removing the peak periods around the time of the ban's implementation (i.e., late 1994 and early 1995). The wider range of APs used in the current study may also be responsible for some of the differences between the results of this analysis and the prior study.

Table 5-1. Regression of Assault Pistol and Comparison Handgun Prices on Annual Time Indicators, 1990-1999, Controlling for Gun Model

	Assault Pistols (n=40)		Comparison Handguns (n=38)	
	Estimate	T Value	Estimate	T Value
Constant	1.56	26.94***	-0.21	-6.81***
1990	0.04	1.07	0.12	2.07**
1991	0.01	0.30	0.09	1.79*
1992	-0.01	-0.32	0.05	1.30
1993	-0.03	-1.09	0.02	0.48
1995	0.01	0.22	-0.02	-0.48
1996	-0.01	-0.45	-0.09	-2.69***
1997	-0.03	-1.13	-0.11	-3.26***
1998	0.00	-0.10	-0.07	-1.99*
1999	-0.02	-0.58	-0.14	-4.02***
Tec-9	-0.67	-11.95***		
Tec-22	-0.89	-15.59***		
SWD	-0.64	-11.49***		
Davis P32			0.09	3.63***
Davis P380			0.20	8.20***
Lorcin L380			0.29	11.35***
F value	27.79		16.24	
(p value)	<.01		<.01	
Adj. R-square	0.89		0.83	

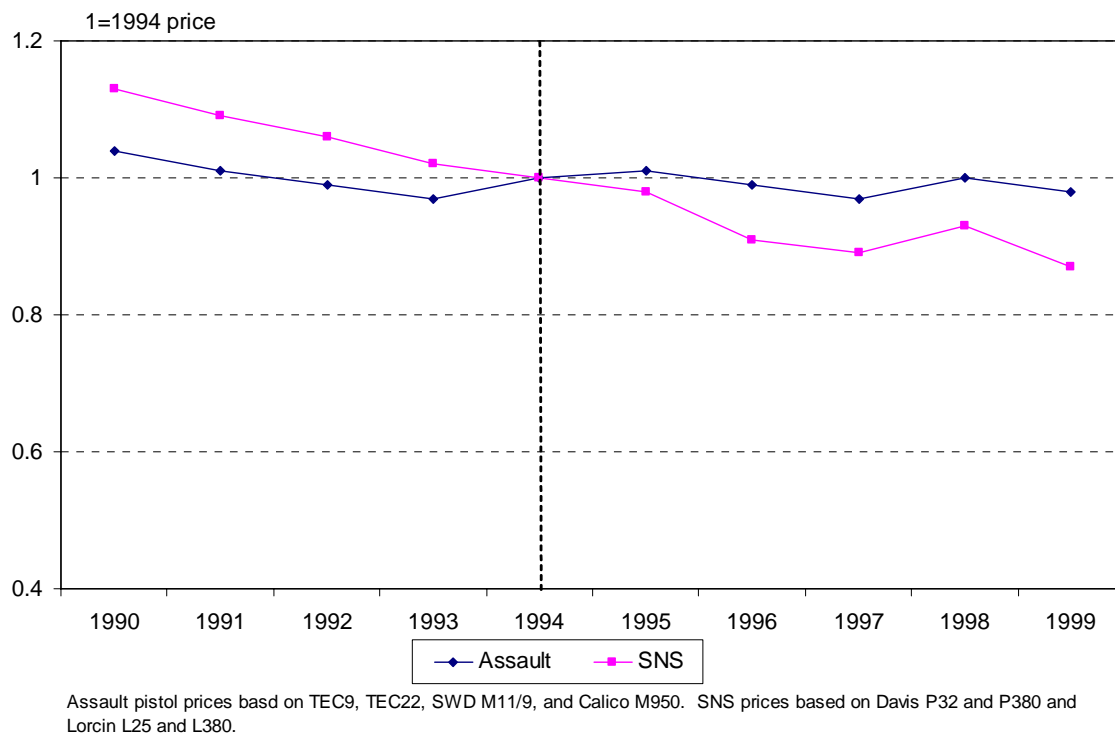
Time indicators are interpreted relative to 1994. Assault pistol model indicators are interpreted relative to Calico 9mm. Comparison handgun models are interpreted relative to Lorcin .25 caliber.

* Statistically significant at $p \leq .10$.

** Statistically significant at $p \leq .05$.

*** Statistically significant at $p \leq .01$.

Figure 5-1. Annual Price Trends for Assault Pistols and SNS Handguns, 1990-1999



5.1.2. Comparison Handgun Prices

For comparison, Table 5-1 and Figure 5-1 illustrate price trends for a number of non-banned, cheaply priced, and readily concealable semiautomatic handgun models: the Davis P32 and P380 and the Lorcin L25 and L380. Such guns are often referred to as Saturday night specials (SNS). By a number of accounts, SNS-type guns, and Davis and Lorcin models in particular, are among the guns most frequently used in crime (ATF, 1995; 1997; Kennedy et al., 1996; Wintemute, 1994). Although the differences between APs and SNS handguns (particularly the fact that most SNS handguns do not have LCMs) suggest they are likely to be used by gun consumers with different levels of firearms experience and sophistication, the SNS guns are arguably a good comparison group for APs because both groups of guns are particularly sensitive to criminal demand. Like AP buyers, SNS buyers are more likely than other gun buyers to have criminal histories and to be charged with new offenses, particularly violent or firearm offenses, subsequent to their purchases (Wintemute et al., 1998b).

Prices of SNS handguns dropped notably throughout the 1990s. Prices for SNS handguns were 13% higher in 1990 than in 1994. Prices then dropped another 13% from 1994 to 1999. This suggests that although AP prices remained generally stable throughout the 1990s, they increased relative to prices of other guns commonly used in crime. We say more about this below.

5.1.3. Assault Rifle Prices

To assess trends in prices of ARs, we examined prices for several Colt and Olympic rifle models in the AR-15 class, as well as Calico models M900 and M951 and Feather models AT9 and AT22.³⁰ Because rifle production data are not disaggregated by weapon type (semiautomatic, bolt action, etc.), caliber, or model, the regressions could only be weighted using overall rifle production counts for each company. For this reason, we calculated the average price of the ARs made by each company for each year and modeled the trends in these average prices over time, weighting by each company's total rifle production.³¹

Results shown in Table 5-2 and Figure 5-2 demonstrate that AR prices rose significantly during 1994 and 1995 before falling back to pre-ban levels in 1996 and remaining there through 1999. Prices rose 16% from 1993 to 1994 and then increased another 13% in 1995 (representing an increase of nearly one third over the 1993 level). Yet by 1996, prices had fallen to levels virtually identical to those before 1994. These patterns are consistent with those we found earlier for the 1992-1996 period (Roth and Koper, 1997, Chapter 4), though the annual price fluctuations shown here were not as dramatic as the quarterly changes shown in the earlier study.

Note, however, that these patterns were not uniform across all of the AR categories. The results of the model were driven largely by the patterns for Colt rifles, which are much more numerous than the other brands. Olympic rifles increased in price throughout the time period, while prices for most Calico and Feather rifles tended to fall throughout the 1990s without necessarily exhibiting spikes around the time of the ban.

³⁰ Specifically, we tracked prices for the Match Target Lightweight (R6530), Target Government Model (R6551), Competition H-Bar (R6700), and Match Target H-Bar (R6601) models by Colt and the Ultramatch, Service Match, Multimatch M1-1, AR15, and CAR15 models by Olympic Arms. Each of these models has a modified, post-ban version. We utilized prices for the pre-ban configurations during post-ban years.

³¹ Prices for the different models made by a given manufacturer tended to follow comparable trends, thus strengthening the argument for averaging prices.

Table 5-2. Regression of Assault Rifle and Comparison Semiautomatic Rifle Prices on Annual Time Indicators, 1991-1999, Controlling for Gun Make

	Assault Rifles (n=36)		Comparison Rifles (n=27)	
	Estimate	T value	Estimate	T value
Constant	1.31	21.15***	1.40	76.75***
1991	-0.12	-1.98*	-0.01	-0.21
1992	-0.13	-2.26**	0.01	0.30
1993	-0.15	-2.78**	0	-0.13
1995	0.12	2.47**	0.03	1.08
1996	-0.11	-2.27**	0.04	1.69
1997	-0.11	-2.23**	0.03	1.46
1998	-0.12	-2.47**	0.02	0.91
1999	-0.14	-2.71**	0.03	1.21
Colt (AR-15 type)	1.07	19.93***		
Olympic (AR-15 type)	1.14	16.08***		
Calico	0.43	5.53***		
Ruger			0.26	20.07***
Remington			0.29	21.69***
F statistic	50.52		63.62	
(p value)	<.01		<.01	
Adj. R-square	0.94		0.96	

Time indicators interpreted relative to 1994. Assault rifle makes interpreted relative to Feather.

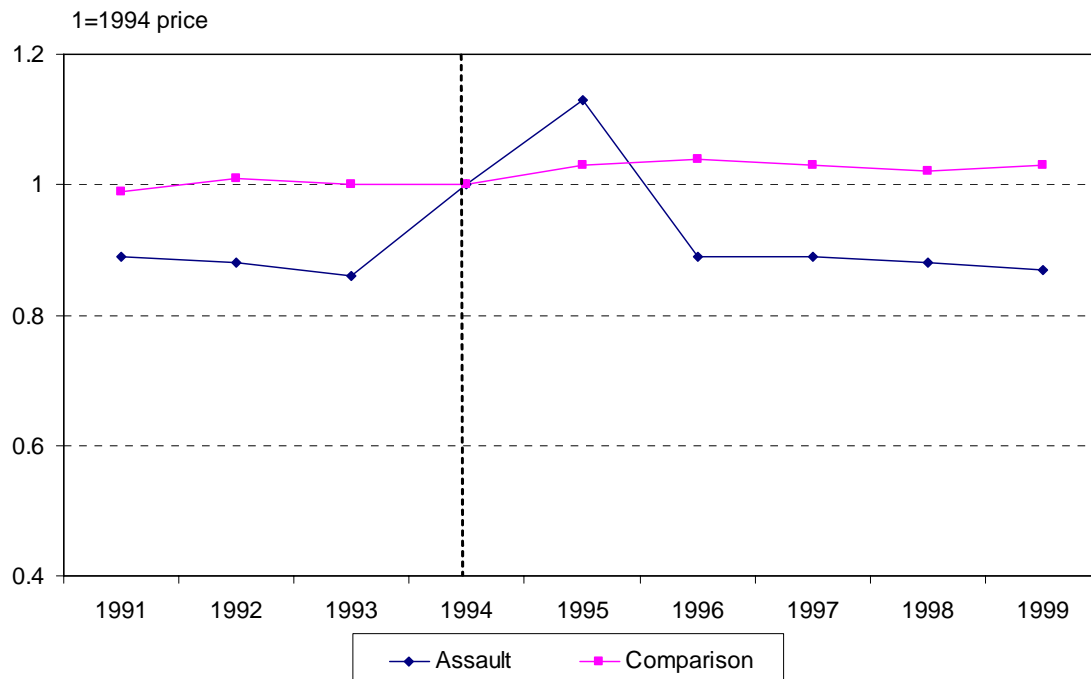
Comparison rifle makes interpreted relative to Marlin.

* Statistically significant at $p \leq .10$.

** Statistically significant at $p \leq .05$.

*** Statistically significant at $p \leq .01$.

Figure 5-2. Annual Price Trends for Assault Rifles and Comparison Semiautomatic Rifles, 1991-1999



Assault rifle prices based on Colt and Olympic AR-type, Calico, and Feather models. Comparison rifle prices based on selected Remington, Marlin, and Sturm Ruger models.

5.1.4. Comparison Semiautomatic Rifles.

The analysis of comparison rifle prices includes the Remington 7400, Marlin Model 9, and Sturm Ruger Mini-14 and Mini-30 models (the Ruger model prices were averaged for each year). The AW legislation exempted each of these semiautomatic rifles by name, though the exemption does not apply to Mini-14 models with folding stocks (a feature included in the ban's features test). The Ruger models are of particular interest since they are among only four exempted guns that can accept LCMs made for military rifles (U.S. Department of the Treasury, 1998, p. 23), though Ruger produced LCMs only for the Mini-14 model and substituted a 5-round magazine for this gun in 1989 (Fjestad, 2002, pp. 1361-1362). The Marlin model was also manufactured with an LCM prior to 1990 (Fjestad, 2002, p. 917). The Remington model is manufactured with a detachable 4-round magazine.

Prices for these guns remained steady throughout the decade (see Table 5-2 and Figure 5-2). The largest change was a 4% increase (non-significant) in prices in 1996 relative to prices in 1994. Therefore, the rifle price spikes in 1994 and 1995 were specific to assault rifles. However, the steady annual price trends may mask short-term fluctuations that we found

previously (Roth and Koper, 1997, Chapter 4) for some non-banned semiautomatic rifles (including the Ruger Mini-14) during 1994 and early 1995.³²

5.2. Production Trends for Assault Weapons and Other Firearms

To more fully assess the ban's effects on gun markets, examination of pre and post-ban trends in production of AWs and legal AW substitutes is a useful complement to studying price trends. Our earlier work revealed a spike in AW production during 1994 as the ban was being debated. Post-ban production of legal AW substitutes should reveal additional information about the reaction of gun markets to the ban. If production of these models has fallen off dramatically, it may suggest that the market for AWs has been temporarily saturated and/or that consumers of AWs favor the original AW models that have more military-style features. Stable or rising production levels, on the other hand, may indicate substantial consumer demand for AW substitutes, which would suggest that consumers consider the legal substitute models to be as desirable as the banned models.

5.2.1. Production of Assault Pistols and Other Handguns

Figure 5-3 presents production trends for a number of domestic AP manufacturers from 1985 through 2001 (the most recent year available for data on individual manufacturers).³³ After rising in the early 1990s and surging notably to a peak in 1994, production by these companies dropped off dramatically, falling 80% from 1993-1994 to 1996-1997 and falling another 35% by 1999-2000 (Table 5-3).³⁴ Makers of Intratec and SWD-type APs continued manufacturing modified versions of their APs for at least a few years following the ban, but at much lower volumes than that at which they produced APs just prior to the ban. Companies like AA Arms and Calico produced very few or no AP-type pistols from 1995 onward, and Intratec – producers of the APs most frequently used in crime – went out of business after 1999.

However, the pattern of rising and then falling production was not entirely unique to APs. Table 5-3 shows that production of all handguns and production of SNS-type pistols both declined sharply in the mid to late 1990s following a peak in 1993. Nonetheless, the trends –

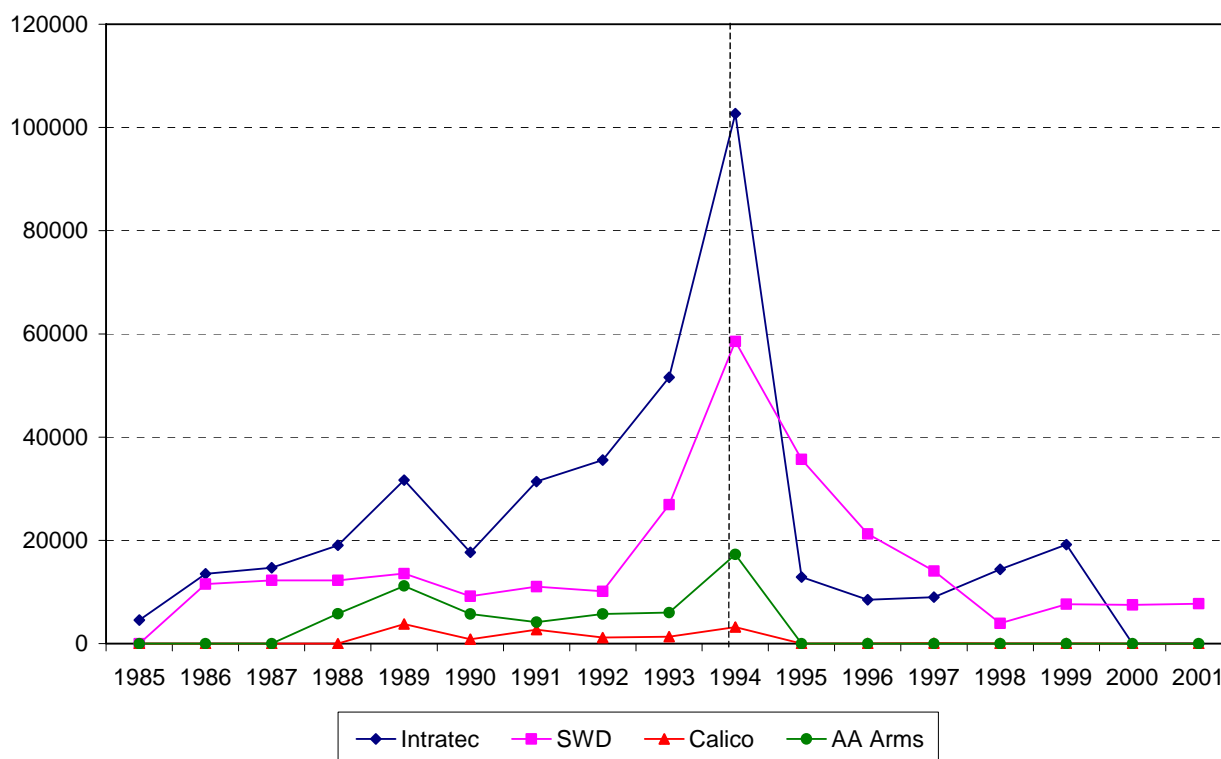
³² We attributed those short-term fluctuations to pre-ban uncertainty regarding which semiautomatic rifles would be prohibited by the ban. Also note that the prior findings were based on a different set of comparison semiautomatic rifles that included a number of foreign rifles. We concentrated on domestically produced rifles for this updated analysis in order to make more explicit links between rifle price and production trends (data for the latter are available only for domestic firearms).

³³ Production figures for individual manufacturers through 2000 have been compiled by the Violence Policy Center (2002). Year 2001 data are available from ATF via the Internet (see www.atf.treas.gov). National gun production totals through 1998 are also available from ATF (2000, p. A-3).

³⁴ The assault pistol production figures used here and in the price analysis include 9mm and .22 caliber pistols made by Intratec, 9mm pistols manufactured by AA Arms, all non-.22 caliber pistols manufactured by S.W. Daniels, Wayne Daniels, and Military Armaments Corporation (which together constitute the SWD group), and .22 and 9mm pistols manufactured by Calico. Intratec produces a few non-AW models in .22 and 9mm calibers, so the Intratec figures will overstate production of assault pistols and their legal substitutes to some degree. The comparison, SNS production figures are based on all handguns produced by Lorcin Engineering and Davis Industries.

both peak and decline – were more dramatic for APs than for other handguns. Production of APs rose 69% from 1990-1991 to 1993-1994, while SNS production and overall handgun production each increased 47%. From 1993-1994 to 1996-1997, production of AP-type handguns, SNS models, and all handguns declined 80%, 66%, and 47%, respectively. Further, production of AP-type handguns continued to decline at a faster rate than that of other handguns through the end of the decade.³⁵

Figure 5-3. Assault Pistol Production, 1985-2001



³⁵ Lorcin, a prominent SNS brand that we examined for the price and production analyses, went out of business after 1998. Unlike the situation in the AP market (where, to our knowledge, former AP makers have not been replaced on any large scale), the SNS market appears to have compensated somewhat to offset the loss of Lorcin. The SNS change from 1996-1997 to 1999-2000 is based on examination of a larger group of SNS-type makers, including Lorcin, Davis, Bryco, Phoenix Arms, and Hi-Point. Production among this group declined by 22% from 1996-1997 to 1999-2000, a decline greater than that for total handgun production but less than that for AP-type production.

Table 5-3. Production Trends for Assault Weapons and Other Firearms, 1990-2000*

Firearm Category	% Change 1990/91 to 1993/94	% Change 1993/94 to 1996/97	% Change 1996/97 to 1999/2000
Total Handguns	47%	-47%	-10%
Assault Pistols (or Post-Ban Models)	69%	-80%	-35%
SNS Handguns	47%	-66%	-22%
Total Rifles	22%	8%	18%
Assault Rifles (or Post-Ban Models)	81%	-51%	156%
Comparison Rifles	15%	13%	-16%

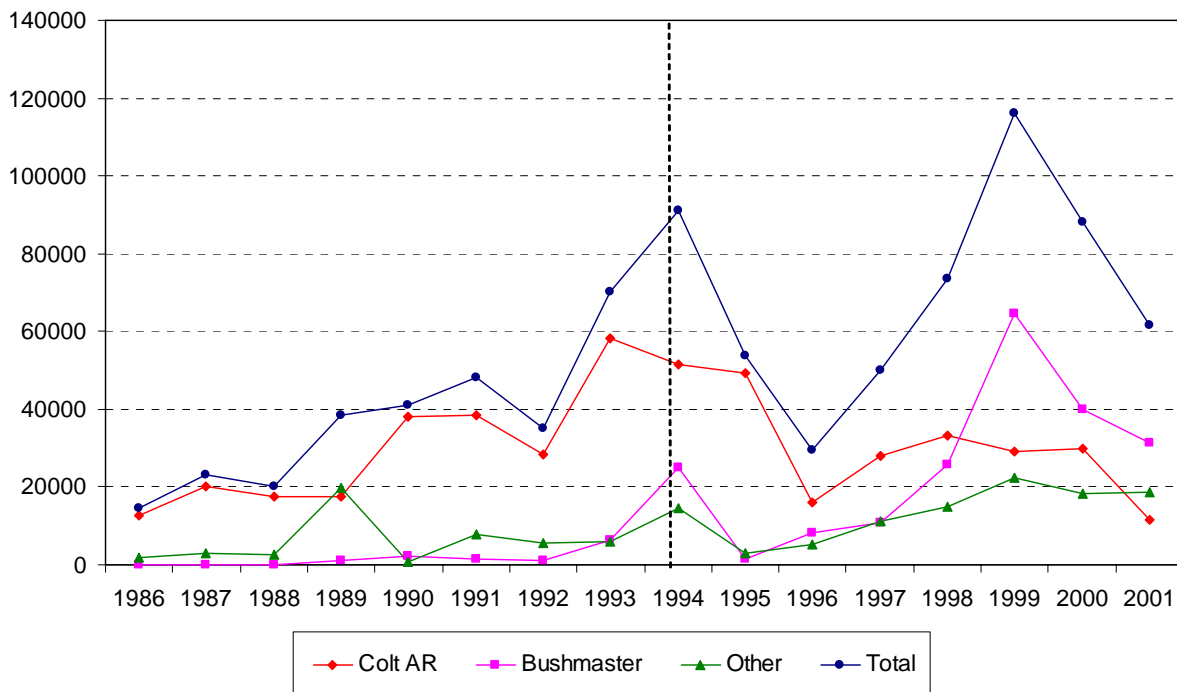
* Total handgun and rifle figures include all production by U.S. manufacturers. Assault pistols include Intratec group, SWD group, and Calico models. SNS figures are based on Lorcin Engineering and Davis Industries for changes up through 1996-1997. Because Lorcin went out of business after 1998, the SNS change from 1996-1997 to 1999-2000 is based on a larger group of SNS makers including Lorcin, Davis, Bryco, Phoenix Arms, and Hi-Point. Assault rifles include AR-15 type models by Colt and others. Comparison rifles include Sturm Ruger, Remington, and Marlin.

5.2.2. Production of Assault Rifles and Other Rifles

As shown in Figure 5-4, production of AR-15 type rifles surged during the early 1990s, reaching a peak in 1994.³⁶ AR production during the early 1990s rose almost 4 times faster than total rifle production and over 5 times faster than production of the comparison rifles examined in the price analysis (Table 5-3). Yet, by 1996 and 1997, production of legalized AR-type rifles had fallen by 51%, as production of other rifles continued increasing. AR production trends reversed again during the late 1990s, however, rising over 150%.³⁷ Total rifle production increased much more modestly during this time (18%), while production of the comparison rifles declined.

³⁶ Note again that the AR and legalized AR production figures are approximations based on all rifles produced by the companies in question (rifle production data are not available by type, caliber, or model), but it appears that most rifles made by these companies during the study period were AR-type rifles. Also, the figures for the comparison rifle companies (Ruger, Marlin, and Remington) are based on all rifles produced by these companies (the price analysis focused on selected semiautomatic models).

³⁷ There was also a notable shift in market shares among AR makers, as Bushmaster overtook Colt as the leading producer of AR-15 type rifles (Figure 5-4).

Figure 5-4. Assault Rifle Production, 1986-2001 (AR-15 Type)

Other: Olympic, Eagle/Armalite, DPMS, Essential Arms, Sendra.

5.3. Summary and Interpretations

Below, we offer some interpretations of the patterns found in the price and production analyses, keeping in mind that these analyses were largely descriptive, so causal inferences must be made cautiously. As documented in our earlier study, Congressional debate over the AW-LCM ban triggered speculative price increases for AWs in the months leading up to the ban's enactment. This study's examination of longer-term, annual price trends suggests that this speculative effect was very brief (and perhaps quite variable across jurisdictions) for APs but persisted through 1995 for ARs. This implies that speculators and sophisticated gun collectors (who we suspect played a large role in driving price trends) have more interest in ARs, which tend to be higher in quality and price than APs.

Responding to the speculative price growth, AW manufacturers boosted their production of AWs in 1994. Although total handgun and rifle production were increasing during the early 1990s, the rise in AW production was steeper, and there was a production peak unique to AWs in 1994 (production of other handguns peaked in 1993). It seems that this boost in the supply of grandfathered AWs was sufficient to satisfy speculative demand, thereby restoring national average AP prices to pre-ban levels within a year of the ban and doing the same for AR prices by 1996. AW prices remained stable through the late 1990s, and production of legalized AW-type weapons dropped off

substantially, at least through 1998. This suggests that the supply of grandfathered AWs was sufficient to meet demand through the late 1990s.

However, prices of APs rose relative to other handguns commonly used in crime during the 1990s. Handgun prices and production declined in general during the late 1990s, implying a decrease in demand for APs and other handguns that probably stemmed from the nation's declining crime rates.³⁸ But the AW ban's restriction of the AP supply, combined with the interest of speculators and collectors in these guns, may have prevented AP prices from falling as did prices for other handguns. The market patterns also suggest that consumers of APs are not as easily satisfied by legalized APs with fewer military-style features; despite the increasing value of APs (in relative terms), post-ban production of legalized APs declined faster than did production of other handguns, and some AP makers went out of business.

Prices of ARs, on the other hand, remained steady during the late 1990s (after the speculative price bubble of 1994-1995) both in absolute terms and relative to other rifles. The failure of AR prices to rise in at least relative terms, as occurred for APs, and the temporary drop in production of AR-type rifles after the ban may signify that the AR market was saturated relative to the AP market for at least a number of years following the ban. However, demand for AR-type rifles later rebounded, as evidenced by the resurgence in production of legalized, AR-type rifles in the late 1990s. In fact, more of these guns were produced in 1999 than in 1994. Unlike AP users, therefore, rifle users appear to be readily substituting the legalized AR-type rifles for the banned ARs, which may be another factor that has kept prices of the latter rifles from rising. All of this suggests that rifle owners, who have a lower prevalence of criminal users than do handgun owners, can more easily substitute rifles with fewer or no military features for the hunting and other sporting purposes that predominate among rifle consumers.

Another relevant factor may have been a surge in the supply of foreign semiautomatic rifles that can accept LCMs for military weapons (the LCMM rifles discussed in Chapter 2) during the early 1990s. Examples of LCMM rifles include legalized versions of banned AK-47, FN-FAL, and Uzi rifles. Importation of LCMM rifles rose from 19,147 in 1991 to 191,341 in 1993, a nine-fold increase (Department of the Treasury, 1998, p. 34). Due to an embargo on the importation of firearms from China (where many legalized AK-type rifles are produced), imports of LCMM rifles dropped

³⁸ It seems likely that the rise and fall of handgun production was linked to the rising crime rates of the late 1980s and early 1990s and the falling crime rates of the mid and late 1990s. Self-defense and fear of crime are important motivations for handgun ownership among the general population (e.g., Cook and Ludwig, 1996; McDowall and Loftin, 1983), and the concealability and price of handguns make them the firearms of choice for criminal offenders. It is likely that the peak in 1993 was also linked to the Congressional debate and passage of the Brady Act, which established a background check system for gun purchases from retail dealers. It is widely recognized in the gun industry that the consideration of new gun control legislation tends to increase gun sales.

The decline in production was more pronounced for SNS handguns, whose sales are likely to be particularly sensitive to crime trends. Criminal offenders make disproportionate use of these guns. We can also speculate that they are prominent among guns purchased by low-income citizens desiring guns for protection. In contrast, the poor quality and reliability of these guns make them less popular among more knowledgeable and affluent gun buyers.

back down to 21,261 in 1994. Importation of all foreign LCMM rifles was ended by federal executive order in 1998.

ATF has reported that criminal use of LCMM rifles increased more quickly during the early 1990s than did that of other military-style rifles (U.S. Department of the Treasury, 1998, p. 33; also see Chapter 6). Accordingly, it is possible that the availability of LCMM rifles also helped to depress the prices of domestic ARs and discourage the production of legalized ARs during the 1990s, particularly if criminal users of rifles place a premium on the ability to accept LCMs. It is noteworthy, moreover, that the rebound in domestic production of legalized ARs came on the heels of the 1998 ban on LCMM rifles, perhaps suggesting the LCMM ban increased demand for domestic rifles accepting LCMs.

In sum, this examination of the AW ban's impact on gun prices and production suggests that there has likely been a sustained reduction in criminal use of APs since the ban but not necessarily ARs. Since most AWs used in crime are APs, this should result in an overall decline in AW use. In the following chapter, we examine the accuracy of this prediction.

6. CRIMINAL USE OF ASSAULT WEAPONS AFTER THE BAN

6.1. Measuring Criminal Use of Assault Weapons: A Methodological Note

In this chapter, we examine trends in the use of AWs using a number of national and local data sources on guns recovered by law enforcement agencies (we focus on the domestic AW models discussed at the beginning of the previous chapter). Such data provide the best available indicator of changes over time in the types (and especially the specific makes and models) of guns used in violent crime and possessed and/or carried by criminal and otherwise deviant or high-risk persons. The majority of firearms recovered by police are tied to weapon possession and carrying offenses, while the remainder are linked primarily to violent crimes and narcotics offenses (e.g., see ATF, 1976; 1977; 1997; Brill, 1977). In general, up to a quarter of guns confiscated by police are associated with violent offenses or shots fired incidents (calculated from ATF, 1977, pp. 96-98; 1997; Brill, 1977, pp. 24,71; Shaw, 1994, pp. 63, 65; also see data presented later in this chapter). Other confiscated guns may be found by officers, turned in voluntarily by citizens, or seized by officers for temporary safekeeping in situations that have the potential for violence (e.g., domestic disputes).

Because not all recovered guns are linked to violent crime investigations, we present analyses based on all gun recoveries and gun recoveries linked to violent crimes where appropriate (some of the data sources are based exclusively, or nearly so, on guns linked to violent crimes). However, the fact that a seized gun is not clearly linked to a violent crime does not rule out the possibility that it had been or would have been used in a violent crime. Many offenders carry firearms on a regular basis for protection and to be prepared for criminal opportunities (Sheley and Wright, 1993a; Wright and Rossi, 1986). In addition, many confiscated guns are taken from persons involved in drugs, a group involved disproportionately in violence and illegal gun trafficking (National Institute of Justice, 1995; Sheley and Wright, 1993a). In some instances, criminal users, including those fleeing crime scenes, may have even possessed discarded guns found by patrol officers. For all these reasons, guns recovered by police should serve as a good approximation of the types of guns used in violent crime, even though many are not clearly linked to such crimes.

Two additional caveats should be noted with respect to tracking the use of AWs. First, we can only identify AWs based on banned makes and models. The databases do not contain information about the specific features of firearms, thus precluding any assessment of non-banned gun models that were altered after purchase in ways making them illegal. In this respect, our numbers may understate the use of AWs, but we know of no data source with which to evaluate the commonality of such alterations. Second, one cannot always distinguish pre-ban versions of AWs from post-ban, legalized versions of the same weapons based on weapon make and model information (this occurs when the post-ban version of an AW has the same name as the pre-ban version), a factor which may have caused us to overstate the use of AWs after the ban. This was more of a problem for our assessment of ARs, as will be discussed below.

Finally, we generally emphasize trends in the percentage of crime guns that are AWs in order to control for overall trends in gun violence and gun recoveries. Because gun violence was declining throughout the 1990s, we expected the number of AW recoveries to drop independently of the ban's impact.

6.2. National Analysis of Guns Reported By Police to the Federal Bureau of Alcohol, Tobacco, and Firearms

6.2.1. An Introduction to Gun Tracing Data

In this section, we examine national trends in AW use based on firearm trace requests submitted to ATF by federal, state, and local law enforcement personnel throughout the nation. A gun trace is an investigation that typically tracks a gun from its manufacture to its first point of sale by a licensed dealer. Upon request, ATF traces guns seized by law enforcement as a service to federal, state, and local agencies. In order to initiate a trace on a firearm, the requesting law enforcement agency provides information about the firearm, such as make, model, and serial number.

Although ATF tracing data provide the only available national sample of the types of guns used in crime and otherwise possessed or carried by criminal and high-risk groups, they do have limitations for research purposes. Gun tracing is voluntary, and police in most jurisdictions do not submit trace requests for all, or in some cases any, guns they seize. Crime and tracing data for 1994, for example, suggest that law enforcement agencies requested traces for 27% of gun homicides but only 1% of gun robberies and gun assaults known to police during that year (calculated from ATF, 1995 and Federal Bureau of Investigation, 1995, pp. 13, 18, 26, 29, 31, 32).

The processes by which state and local law enforcement agencies decide to submit guns for tracing are largely unknown, and there are undoubtedly important sources of variation between agencies in different states and localities. For example, agencies may be less likely to submit trace requests in states that maintain their own registers of gun dealers' sales. Knowledge of ATF's tracing capabilities and procedures,³⁹ as well as participation in federal/state/local law enforcement task forces, are some of the other factors that may affect an agency's tracing practices. Further, these factors are likely to vary over time, a point that is reinforced below.

Therefore, firearms submitted to ATF for tracing may not be representative of the

³⁹ To illustrate, ATF cannot (or does not) trace military surplus weapons, imported guns without the importer name (generally, pre-1968 guns), stolen guns, or guns without a legible serial number (Zawitz 1995). Tracing guns manufactured before 1968 is also difficult because licensed dealers were not required to keep records of their transactions prior to that time. Throughout much of the 1990s, ATF did not generally trace guns older than 5-10 years without special investigative reasons (Kennedy et al., 1996, p. 171). Our data are based on trace requests rather than successful traces, but knowledge of the preceding operational guidelines might have influenced which guns law enforcement agencies chose to trace in some instances.

types of firearms typically seized by police. In general, not much is known about the nature of potential bias in tracing data. In prior studies, however, AWs tended to be more common in tracing data than in more representative samples of guns confiscated by police (Kleck, 1997, pp. 112, 141). This suggests that police have been more likely historically to initiate traces for seized AWs than for other seized guns. Although comparisons across studies are complicated by varying definitions of AWs used in different analyses, studies of guns confiscated by police or used in particular types of crimes generally suggest that AWs accounted for up to 6% of crime guns and about 2% on average prior to the federal AW ban (see Chapter 3 and Kleck, 1997, p. 141), whereas studies of pre-ban tracing data indicated that 8% of traced guns, and sometimes as many as 11%, were AWs (Cox Newspapers, 1989; Lenett, 1995; Zawitz, 1995).

Changes over time in the tracing practices of law enforcement agencies present additional complexities in analyzing tracing data. Due to improvements in the tracing process, ATF promotional efforts, and special initiatives like the Youth Crime Gun Interdiction Initiative (see ATF, 1997; 1999 and more recent reports available via the Internet at www.atf.treas.gov),⁴⁰ the utilization of tracing grew substantially throughout the 1990s in jurisdictions that chose to participate (also see ATF, 2000; Roth and Koper, 1997). To illustrate, trace requests to ATF rose from roughly 42,300 in 1991 to 229,500 in 2002 (see Table 6-1 in the next section), an increase of 443%. This growth reflects changes in tracing practices (i.e., changes in the number of agencies submitting trace requests and/or changes in the percentage of recovered guns for which participating agencies requested traces) rather than changes in gun crime; gun homicides, for example, were falling throughout the 1990s (see Table 6-1 in the next section) and were a third lower in 2002 than in 1991.

Therefore, an increase in trace requests for AWs does not necessarily signal a real increase in the use of AWs. Further, examining trends in the percentage of trace requests associated with AWs is also problematic. Because law enforcement agencies were more likely to request traces for AWs than for other guns in years past, we can expect the growth rate in tracing for non-AWs to exceed the growth rate in traces for AWs as gun tracing becomes more comprehensive. Consequently, AWs are likely to decline over time as a share of trace requests due simply to reporting effects, except perhaps during periods when AWs figure prominently in public discourse on crime.⁴¹

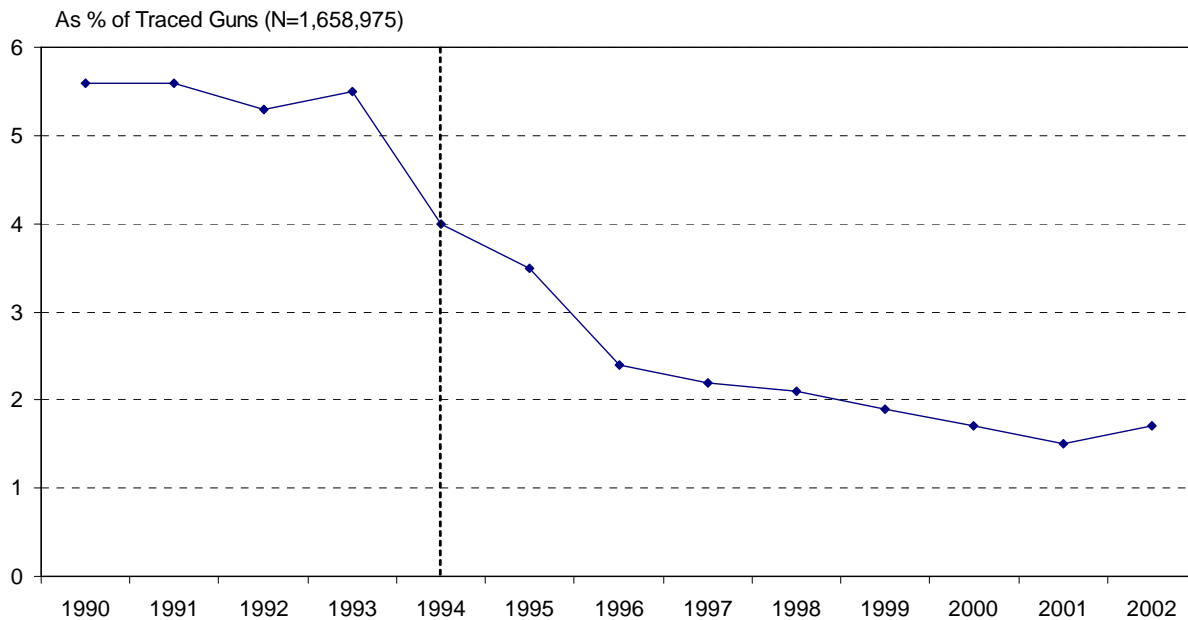
⁴⁰ As part of this initiative, police in a few dozen large cities are submitting trace requests to ATF for all guns that they confiscate. The initiative began with 17 cities in 1996 and has since spread to 55 major urban jurisdictions.

⁴¹ To illustrate, assume that a hypothetical police agency recovers 100 guns a year, 2 of which are AWs, and that the agency has a selective tracing policy that results in the submission of trace requests for 20 of the guns, including 1 of the recovered AWs. Under this scenario, the department would be almost three times as likely to request traces for AWs as for other guns. If the department adopted a policy to request traces on all guns (and again recovered 2 AWs and 98 other guns), AW traces would double and traces of other guns would increase by more than 400%. Moreover, AWs would decline from 5% of traced guns to 2% of traced guns due simply to the change in tracing policy.

6.2.2. Traces of Assault Weapons, 1990-2002

Figure 6-1 illustrates the share of all traces that were for AWs from 1990 through 2002. A more detailed assessment of annual changes in traces for AWs and other guns is presented in Table 6-1. Changes in gun murders are also shown in Table 6-1 to emphasize the differences in trends for tracing and gun crime. Below, we summarize key points from the analysis. Due to the instrumentation problems inherent in tracing data, statistical tests are not presented.⁴²

Figure 6-1. Police Recoveries of Assault Weapons Reported to ATF (National), 1990-2002



Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

⁴² Nearly 30% of the tracing records lack specific gun model designations (the crucial elements for conducting a trace are the gun make and serial number). For the makes and types of guns likely to be AWs, however, the missing model rate was slightly under 10%. Further, we were able to identify some of the latter weapons as AWs with reasonable confidence based on the makes, types, and calibers alone. Nevertheless, we conducted a supplemental analysis using only those records for which the gun model was identified. The results of that analysis were substantively very similar to those presented below.

Table 6-1. Annual Percentage Changes in Gun Murders and Police Requests to ATF for Traces of Assault Weapons and Other Firearms, 1991-2002 (Number of Traces in Parentheses)

<u>Year</u>	<u>Gun Murders</u> (1)	<u>All Traces</u> (2)	<u>AW Traces*</u> (3)	<u>AP Traces</u> (4)	<u>AR Traces</u> (5)	<u>AW and AW Substitute Traces</u> (6)	<u>Violent Crime Traces</u> (7)	<u>AW Violent Crime Traces</u> (8)	<u>LCMM Rifle Traces**</u> (9)
1991	9%	14% (42281)	14% (2378)	24% (1775)	-6% (603)	14% (2378)	19% (6394)	20% (344)	--
1992	-1%	6% (44992)	1% (2398)	4% (1838)	-7% (560)	1% (2398)	3% (6558)	7% (367)	--
1993	5%	20% (54189)	25% (2994)	20% (2199)	42% (795)	25% (2994)	26% (8248)	41% (516)	252% (183)
1994	-4%	53% (82791)	11% (3337)	23% (2706)	-21% (631)	11% (3337)	22% (10083)	-18% (424)	223% (592)
1995	-10%	-6% (77503)	-19% (2730)	-24% (2051)	8% (679)	-18% (2747)	23% (12439)	-15% (362)	-10% (530)
1996	-9%	66% (128653)	12% (3059)	13% (2309)	10% (750)	17% (3214)	67% (20816)	27% (459)	40% (743)
1997	-7%	42% (183225)	31% (4019)	31% (3017)	34% (1002)	36% (4362)	11% (23147)	13% (519)	24% (925)
1998	-11%	5% (192115)	0% (4014)	-9% (2751)	26% (1263)	7% (4681)	3% (23844)	-22% (404)	33% (1227)
1999	-8%	-2% (188296)	-11% (3581)	-12% (2414)	-8% (1167)	-6% (4406)	3% (24663)	0% (404)	-18% (1003)
2000	1%	-3% (182961)	-11% (3196)	-16% (2027)	0% (1169)	-6% (4143)	-13% (21465)	-25% (305)	-14% (859)
2001	-1%	18% (215282)	1% (3238)	5% (2138)	-6% (1100)	3% (4273)	20% (25822)	6% (322)	-3% (833)
2002	6%	7% (229525)	19% (3839)	4% (2214)	48% (1625)	12% (4765)	20% (30985)	65% (531)	4% (865)

* Based on Intratec group, SWD group, AR-15 group, and Calico and Feather models.

** Foreign semiautomatic rifles accepting large capacity military magazines (banned by executive order in 1998). (Data are not shown for 1991 and 1992 because very few of these guns were traced in those years.)

6.2.2.1. *Assault Weapons as a Percentage of Crime Gun Traces*

As shown in Figure 6-1, AWs declined from 5.4% of crime gun traces in 1992-1993 to 1.6% in 2001-2002, a decline of 70%. Although this downward trend could be attributable in large part to changes in tracing practices, it is noteworthy that it did not begin until 1994 (the year of the ban); during the pre-ban years, 1990 to 1993, AWs accounted for a steady share of traces despite a 46% increase in total tracing volume. It is also remarkable that about 3,200 AWs were traced in both 2000 and 2001, which is virtually identical to the average number traced during 1993 and 1994 (3,166) even though total traces increased more than 190% during the same period (Table 6-1, columns 2 and 3).⁴³

6.2.2.2. *Annual Changes in Traces for Assault Weapons and Other Guns*

Throughout most of the post-ban period (particularly 1995 to 2001), AW traces either increased less or declined more than total traces (Table 6-1, columns 2 and 3), a pattern that is also consistent with a decline in the use of AWs relative to other guns, though it too may be distorted by changes in tracing practices. This pattern was largely consistent whether analyzing all traces or only traces associated with violent crimes (columns 7 and 8).⁴⁴

The years when total traces declined or were relatively flat are arguably the most informative in the series because they appear to have been less affected by changes in tracing practices. For example, there was a 6% decline in total trace requests from 1994 to 1995 (the years featured in our earlier study) that coincided with a 10% drop in gun murders (Table 6-1, column 1). Therefore, it seems tracing practices were relatively stable (or, conversely, reporting effects were relatively small) from 1994 to 1995. The 19% reduction in AW traces during this same period implies that AW use was declining faster than that of other guns. Furthermore, there were fewer AW traces in 1995 than in 1993, the year prior to the ban. The fact that this occurred during a period when the AW issue was very prominent (and hence police might have been expected to trace more of the AWs they recovered) arguably strengthens the causal inference of a ban effect.⁴⁵

Total traces also declined slightly (2%-3%) in 1999 and 2000. In each of those years, the decline was greater for AWs (11%). Thus, in years when tracing declined overall, AW traces fell 3 to 6 times faster than did total traces. Put another way, AWs fell between 9% and 13% as a percentage of all traces in each of these years.

The general pattern of AW traces increasing less or declining more than those of

⁴³ These general findings are consistent with those of other tracing analyses conducted by ATF (2003 Congressional Q&A memo provided to the author) and the Brady Center to Prevent Gun Violence (2004).

⁴⁴ A caveat is that requests without specific crime type information are often grouped with weapons offenses (ATF, 1999). Therefore, traces associated with violent crimes are likely understated to some degree.

⁴⁵ This inference is also supported by our earlier finding that trace requests for AWs declined by only 8% in states that had their own AW bans prior to the federal ban (Roth and Koper, 1997, Chapter 5).

other crime guns was clearly apparent for APs but less consistent for ARs (Table 6-1, columns 4 and 5). For example, AR traces went up 26% in 1998 while total traces went up only 5% and AP traces declined 9%. In 2000, total and AP traces fell 3% and 16%, respectively, but AR traces remained flat. This is consistent with predictions derived from the price and production analyses described above. But note that the post-ban AR counts could be overstated because the data do not distinguish pre-ban from post-ban versions of some popular AR-15 type rifles like the Colt Sporter and Bushmaster XM-15. (Also note that the percentage of traces for ARs did fall from 1.4% in 1992-1993 to 0.6% in 2001-2002.)

More generally, the use of post-ban AW-type weapons (including both legalized APs and ARs) has not been widespread enough to completely offset the apparent decline in the use of banned AWs. Combined traces for banned AWs and AW substitutes (Table 6-1, column 6) also followed the pattern of increasing less or declining more than did total traces throughout most of the period, though the differences were not as pronounced as those between AWs and total traces. In 1999 and 2000, for example, AWs traces dropped 11%, while combined traces for AWs and legal substitutes declined only 6%. Still, the latter figure was greater than the 2%-3% drop for total traces.

Finally, traces of the LCMM rifles banned by executive order in 1998 were generally rising to that point, reaching levels as high as those for AR-15 type rifles (Table 6-1, column 9). Since 1998, however, the number of traces for LCMM rifles has fallen substantially. Despite a 4% increase from 2001 to 2002, the number of LCMM traces in 2002 (865) was 30% lower than the peak number traced in 1998 (1,227). Tentatively, this suggests that the 1998 extension of the ban has been effective in curtailing weapons that offenders may have been substituting for the ARs banned in 1994.

6.2.2.3. *Did Use of Assault Weapons Rebound in 2002?*

In 2002, tracing volume increased 7%, which closely matched the 6% increase in gun murders for that year. In contrast to the general pattern, AW traces increased by 19%, suggesting a possible rebound in AW use independent of changes in tracing practices, a development that we have predicted elsewhere (Roth and Koper, 1997) based on the boom in AW production leading up to the ban. The disproportionate growth in AW traces was due to ARs, however, so it could partially reflect increasing use of post-ban AR-type rifles (see the discussion above).

Moreover, this pattern could be illusory. With data from the most recent years, it was possible to run a supplementary analysis screening out traces of older weapons (not shown). Focusing on just those guns recovered and traced in the same year for 2000 through 2002 revealed that recoveries of AWs declined in 2001, more so for ARs (16%) than for APs (9%), while total traces increased 1%.⁴⁶ Traces for APs and ARs then

⁴⁶ The tracing database indicates when guns were recovered and when they were traced. However, the recovery dates were missing for 30% of the records overall and were particularly problematic for years prior to 1998. For this reason, the main analysis is based on request dates. The auxiliary analysis for 2000-

increased in 2002 (1% and 6%, respectively) but by less than total traces (8%). Therefore, the disproportionate growth in AR traces in 2002 shown in Table 6-1 may have been due to tracing of older AWs by newly participating police agencies.

6.2.2.4. *Summary of the ATF Gun Tracing Analysis*

Complexities arising from recent changes in the use of gun tracing by law enforcement warrant caution in the interpretation of ATF gun tracing data. Notwithstanding, the data suggest that use of AWs in crime, though relatively rare from the start, has been declining. The percentage of gun traces that were for AWs plummeted 70% between 1992-1993 and 2001-2002 (from 5.4% to 1.6%), and this trend did not begin until the year of the AW ban. On a year-to-year basis, AW traces generally increased less or declined by more than other gun traces. Moreover, in years when tracing volume declined – that is, years when changes in reporting practices were least likely to distort the data – traces of AWs fell 3 to 6 times faster than gun traces in general. The drop in AW use seemed most apparent for APs and LCMM rifles (banned in 1998). Inferences were less clear for domestic ARs, but assessment of those guns is complicated by the possible substitution of post-ban legal variations.

6.3. Local Analyses of Guns Recovered By Police

Due to concerns over the validity of national ATF tracing data for investigating the types of guns used in crime, we sought to confirm the preceding findings using local data on guns recovered by police. To this end, we examined data from half a dozen localities and time periods.

- All guns recovered by the Baltimore Police Department from 1992 to 2000 (N=33,933)
- All guns recovered by the Metro-Dade Police Department (Miami and Dade County, Florida) from 1990 to 2000 (N=39,456)
- All guns recovered by the St. Louis Police Department from 1992 to 2003 (N=34,143)
- All guns recovered by the Boston Police Department (as approximated by trace requests submitted by the Department to ATF) from 1991 to 1993 and 2000 to 2002 (N=4,617)⁴⁷

2002 focuses on guns both recovered and traced in the same year because it is likely that some guns recovered in 2002 had not yet been traced by the spring of 2003 when this database was created. Using only guns recovered and traced in the same year should mitigate this bias.

⁴⁷ The Boston Police Department has been tracing guns comprehensively since 1991 (Kennedy et al., 1996). However, we encountered difficulties in identifying Boston Police Department traces for several years in the mid-1990s. For this reason, we chose to contrast the 1991 to 1993 period with the 2000 to 2002 period.

- Guns recovered during murder investigations in Milwaukee County from 1991 to 1998 (N=592)⁴⁸
- Guns linked to serious crimes in Anchorage and other parts of Alaska and submitted to state firearm examiners for evidentiary testing from 1987 to 2000 (N=900)⁴⁹

The selection of these particular locations and samples reflects data availability.⁵⁰ The locations were not selected randomly, and some of the samples are small for conducting trend analysis of relatively rare events (i.e., AW recoveries). Accordingly, we must use caution in generalizing the results to other places. However, the data sources reflect a wide geographic range and cover post-ban periods extending through at least the latter 1990s (and typically through the year 2000 or beyond). To the extent that the results are similar across these jurisdictions, therefore, we can have more confidence that they reflect national patterns.

In each jurisdiction, we examined pre-post changes in recoveries of AWs (focusing on the domestic AW group defined earlier) and substitution of post-ban AW models for the banned models. Where possible, we conducted separate analyses of all AW recoveries and those linked specifically to violent crimes.⁵¹ We also differentiated between AP and AR trends using the larger databases from Baltimore, Miami, and St. Louis. But since most of these databases do not extend more than two years beyond 1998, we do not present analyses specifically for LCMM rifles.

Key summary results are summarized in Table 6-2, while more detailed results from each site appear at the end of the chapter in Tables 6-3 through 6-6 and Figures 6-2 through 6-6.⁵² The number of AW recoveries declined by 28% to 82% across these

⁴⁸ The data are described in reports from the Medical College of Wisconsin (Hargarten et al., 1996; 2000) and include guns used in the murders and other guns recovered at the crime scenes. Guns are recovered in approximately one-third of Milwaukee homicide cases.

⁴⁹ The data include guns submitted by federal, state, and local agencies throughout the state. Roughly half come from the Anchorage area. Guns submitted by police to the state lab are most typically guns that were used in major crimes against persons (e.g. murder, attempted murder, assault, robbery).

⁵⁰ We contacted at least 20 police departments and crime labs in the course of our data search, focusing much of our attention on police departments participating in ATF's Youth Crime Gun Interdiction Initiative (YCGII) (ATF, 1997; 1999). Departments participating in the YCGII submit data to ATF on all guns that they recover. Though the YCGII did not begin until 1996 (well after the implementation of the AW ban), we suspected that these departments would be among those most likely to have electronically-stored gun data potentially extending back in time to before the ban. Unfortunately, most of these departments either did not have their gun data in electronic format or could not provide data for other reasons (e.g., resource constraints). In the course of our first AW study (Roth and Koper, 1997), we contacted many other police departments that also did not have adequate data for the study.

⁵¹ All of the Milwaukee and Anchorage analyses were limited to guns involved in murders or other serious crimes. Despite evidence of a decline, AW recoveries linked to violence were too rare in Boston to conduct valid test statistics.

⁵² We omitted guns recovered in 1994 from both the pre and post-ban counts because the speculative price increases for AWs that occurred in 1994 (see previous section and Roth and Koper, 1997, Chapter 4) raise questions about the precise timing of the ban's impact on AW use during that year, thereby clouding the designation of the intervention point. This is particularly a concern for the Baltimore analysis due to a

locations and time periods, but the discussion below focuses on changes in AWs as a share of crime guns in order to control for general trends in gun crime and gun seizures. Prior to the ban, AWs ranged from about 1% of guns linked to violent crimes in St. Louis to nearly 6% of guns recovered in Milwaukee murder cases.⁵³

AWs dropped as share of crime guns in all jurisdictions after the ban. Reductions ranged from a low of 17% in Milwaukee (based on guns linked to homicides) to a high of 72% in Boston (based on all crime guns) but were generally between 32% and 40%.^{54, 55} A decline in the use of AWs relative to other guns was generally apparent whether examining all AW recoveries or just those linked to violent crimes.⁵⁶ An exception was in St. Louis, where

state AP ban that took effect a few months prior to the federal AW ban.

⁵³ These figures should be treated as approximations of the prevalence of AWs. On the one hand, the numbers may understate the prevalence of AWs to a small degree because they are based on only the domestic AW group defined earlier. Based on analysis of national ATF gun tracing data, we estimated previously that the domestic AW group accounts for 82% of AWs used in crime (Roth and Koper, 1997, Chapter 5). To further test the reliability of this assessment, we investigated the prevalence of all banned AW models among guns recovered in Baltimore using an ATF list of all guns defined as AWs under the 1994 Crime Act criteria (118 model and caliber combinations). We chose the Baltimore database because it provides a complete inventory of guns recovered by police in that city during the study period and, having been maintained by crime lab personnel, is particularly thorough with regard to make and model identifications. Though there was some ambiguity in classifying a small number of AK-type semiautomatic rifles (there are many civilian variations of the AK-47 rifle, some of which were legal under the 1994 legislation), our examination suggested that the domestic AW group accounted for approximately 90% of the AWs recovered in Baltimore. (In addition, including all AWs had virtually no effect on the pre-post changes in AW use in Baltimore.) But as discussed previously, the counts could also overstate AW use to some degree because imprecision in the identification of gun models in some data sources may have resulted in some legalized firearms being counted as banned AWs.

⁵⁴ The AW counts for Miami also include Interdynamics KG9 and KG99 models. These models were produced during the early 1980s and were forerunners to the Intratec models (ATF restricted the KG9 during the early 1980s because it could be converted too easily to fully automatic fire). These weapons were very rare or non-existent in most of the local data sources, but they were more common in Miami, where Interdynamics was formerly based. Including these guns increased the AW count in Miami by about 9% but did not affect pre-post changes in AW recoveries.

⁵⁵ State AW legislation passed in Maryland and Massachusetts could have had some impact on AW trends in Baltimore and Boston, respectively. Maryland implemented an AP ban, similar in coverage to the federal AW ban, in June 1994 (Maryland has also required background checks for retail sales of a broader list of state-defined AWs since 1989), and Massachusetts implemented additional legislation on federally-defined AWs in late 1998. The timing and scope of these laws make them largely redundant with the federal ban, so they should not unduly complicate inferences from the analysis. However, Maryland forbids additional transfers of grandfathered APs, and Massachusetts has imposed additional requirements for possession and transfer of LCMs and guns accepting LCMs. Both states also have enhanced penalties for certain crimes involving APs, LCMs, and/or guns accepting LCMs. Hence, the ban on AWs was arguably strengthened in Baltimore and Boston, relative to the other jurisdictions under study. This does not appear to have affected trends in AW use in Baltimore, which were very similar to those found in the other study sites. However, use of AWs and combined use of AWs and post-ban AW substitutes declined more in Boston than in any other study site. Although the trends in Boston could reflect ongoing, post-2000 reductions in use of AWs and similar weapons (Boston was one of the only study sites from which we obtained post-2000 data), it is possible that the Massachusetts legislation was also a contributing factor.

⁵⁶ There may be some inconsistency across jurisdictions in the identification of guns associated with violent crimes. In Miami, for example, 28% of the guns had an offense code equal to “other/not listed,” and this percentage was notably higher for the later years of the data series.

Table 6-2. Pre-Post Changes in Assault Weapons As a Share of Recovered Crime Guns For Selected Localities and Time Periods: Summary Results (Total Number of Assault Weapons for Pre and Post Periods in Parentheses) ^a

Locality and Time Period	AWs	AWs (Linked to Violence)	APs	ARs	AWs and Post-Ban Substitutes
Baltimore (all recoveries) pre=1992-1993, post=1995-2000	-34%*** (425)	-41%** (75)	-35%*** (383)	-24% (42)	-29%*** (444)
Miami-Dade (all recoveries) pre=1990-1993, post=1995-2000	-32%*** (733)	-39%*** (101)	-40%*** (611)	37%* (115)	-30%*** (746)
St. Louis (all recoveries) pre=1992-1993, post=1995-2003	-32%*** (306)	1% (28)	-34%*** (274)	10% (32)	-24%** (328)
Boston (all recoveries) pre=1991-1993, post=2000-2002	-72%*** (71)	N/A	N/A	N/A	-60%*** (76)
Milwaukee (recoveries in murder cases) pre=1991-1993, post=1995-1998	N/A	-17% (28)	N/A	N/A	2% (31)
Anchorage, AK (recoveries in serious crimes) pre=1987-1993, post=1995-2000	N/A	-40% (24)	N/A	N/A	-40% (24)

a. Based on Intratec group, SWD group, AR-15 group, and Calico and Feather models. See the text for additional details about each sample and Tables 6-3 through 6-6 for more detailed results from each locality.

* Statistically significant change at chi-square p level < .1

** Statistically significant change at chi-square p level < .05

*** Statistically significant change at chi-square p level < .01

AWs declined as share of all guns but not of guns linked to violent crimes, though the latter test was based on rather small samples.

These reductions were not due to any obvious pre-ban trends (see Figures 6-2 through 6-6 at the end of the chapter). On the contrary, AW recoveries reached a peak in most of these jurisdictions during 1993 or 1994 (Boston, which is not shown in the graphs due to missing years, was an exception). We tested changes in AW prevalence using simple chi-square tests since there were no observable pre-existing time trends in the data. Due to the small number of AWs in some of these samples, these changes were not all statistically significant. Nonetheless, the uniformity of the results is highly suggestive, especially when one considers the consistency of these results with those found in the national ATF tracing analysis.

The changes in Tables 6-2 through 6-6 reflect the average decline in recoveries of AWs during the post-ban period in each locality. However, some of these figures may understate reductions to date. In several of the localities, the prevalence of AWs among crime guns was at, or close to, its lowest mark during the most recent year analyzed (see Figures 6-2 through 6-6 at the end of the chapter), suggesting that AW use continues to decline. In Miami, for example, AWs accounted for 1.7% of crime guns for the whole 1995 to 2000 period but had fallen to 1% by 2000. Further, the largest AW decline was recorded in Boston, one of two cities for which data extended beyond the year 2000 (however, this was not the case in St. Louis, the other locality with post-2000 data).

Breakouts of APs and ARs in Baltimore, Miami, and St. Louis show that the decline in AW recoveries was due largely to APs, which accounted for the majority of AWs in these and almost all of the other localities (the exception was Anchorage, where crimes with rifles were more common, as a share of gun crimes, than in the other sites). Pre-post changes in recoveries of the domestic AR group weapons, which accounted for less than 1% of crime guns in Baltimore, Miami, and St. Louis, were inconsistent. AR recoveries declined after the ban in Baltimore but increased in St. Louis and Miami. As discussed previously, however, the AR figures may partly reflect the substitution of post-ban, legalized versions of these rifles, thus overstating post-ban use of the banned configurations. Further, trends for these particular rifles may not be indicative of those for the full range of banned rifles, including the various foreign rifles banned by the 1994 law and the import restrictions of 1989 and 1998 (e.g., see the ATF gun tracing analysis of LCMM rifles).⁵⁷

⁵⁷ As discussed in the last chapter, our research design focused on common AWs that were likely to be most affected by the 1994 ban as opposed to earlier regulations (namely, the 1989 import ban) or other events (e.g., company closings or model discontinuations prior to 1994). However, an auxiliary analysis with the Baltimore data revealed a statistically meaningful drop in recoveries of all ARs covered by the 1994 legislation (not including the LCMM rifles) that was larger than that found for just the domestic group ARs discussed in the text. Similarly, an expanded AR analysis in Miami showed that total AR recoveries declined after the ban, in contrast to the increase found for the domestic group ARs. (Even after expanding the analysis, ARs still accounted for no more than 0.64% of crime guns before the ban in both locations. As with the domestic AR group, there are complexities in identifying banned versus non-banned versions of some of the other ARs, so these numbers are approximations.) Consequently, a more nuanced view of AR trends may be that AR use is declining overall, but this decline may be due largely to the 1989 import

Finally, the overall decline in AW use was only partially offset by substitution of the post-ban legalized models. Even if the post-ban models are counted as AWs, the share of crime guns that were AWs still fell 24% to 60% across most jurisdictions. The exception was Milwaukee where recoveries of a few post-ban models negated the drop in banned models in a small sample of guns recovered during murder investigations.⁵⁸

6.4. Summary

Consistent with predictions derived from the analysis of market indicators in Chapter 5, analyses of national ATF gun tracing data and local databases on guns recovered by police in several localities have been largely consistent in showing that criminal use of AWs, while accounting for no more than 6% of gun crimes even before the ban, declined after 1994, independently of trends in gun crime. In various places and times from the late 1990s through 2003, AWs typically fell by one-third or more as a share of guns used in crime.^{59, 60} Some of the most recent, post-2000 data suggest

restrictions that predated the AW ban. It is not yet clear that there has been a decline in the most common ARs prohibited exclusively by the 1994 ban.

⁵⁸ This was not true when focusing on just those guns that were used in the incident as opposed to all guns recovered during the investigations. However, the samples of AWs identified as murder weapons were too small for valid statistical tests of pre-post changes.

⁵⁹ These findings are also supported by prior research in which we found that reported thefts of AWs declined 7% in absolute terms and 14% as a fraction of stolen guns in the early period following the ban (i.e., late 1994 through early 1996) (Koper and Roth, 2002a, p. 21). We conducted that analysis to account for the possibility that an increase in thefts of AWs might have offset the effect of rising AW prices on the availability of AWs to criminals. Because crimes with AWs appear to have declined after the ban, the theft analysis is not as central to the arguments in this paper.

⁶⁰ National surveys of state prisoners conducted by the federal Bureau of Justice Statistics show an increase from 1991 to 1997 in the percentage of prisoners who reported having used an AW (Beck et al., 1993; Harlow, 2001). The 1991 survey (discussed in Chapter 3) found that 2% of violent gun offenders had carried or used an AW in the offense for which they were sentenced (calculated from Beck et al. 1993, pp. 18,33). The comparable figure from the 1997 survey was nearly 7% (Harlow, 2001, pp.3, 7).

Although these figures appear contrary to the patterns shown by gun recovery data, there are ambiguities in the survey findings that warrant caution in such an interpretation. First, the definition of an AW (and most likely the respondents' interpretation of this term) was broader in the 1997 survey. For the 1991 survey, respondents were asked about prior ownership and use of a "...military-type weapon, such as an Uzi, AK-47, AR-15, or M-16" (Beck et al., 1993, p. 18), all of which are ARs or have AR variations. The 1997 survey project defined AWs to "...include the Uzi, TEC-9, and the MAC-10 for handguns, the AR-15 and AK-47 for rifles, and the 'Street Sweeper' for shotguns" (Harlow, 2001, p. 2). (Survey codebooks available from the Inter-University Consortium for Political and Social Research also show that the 1997 survey provided more detail and elaboration about AWs and their features than did the 1991 survey, including separate definitions of APs, ARs, and assault shotguns.)

A second consideration is that many of the respondents in the 1997 survey were probably reporting criminal activity prior to or just around the time of the ban. Violent offenders participating in the survey, for example, had been incarcerated nearly six years on average at the time they were interviewed (Bureau of Justice Statistics, 2000, p. 55). Consequently, the increase in reported AW use may reflect an upward trend in the use of AWs from the 1980s through the early to mid 1990s, as well as a growing recognition of these weapons (and a greater tendency to report owning or using them) stemming from publicity about the AW issue during the early 1990s.

Finally, we might view the 1997 estimate skeptically because it is somewhat higher than that from most other sources. Nevertheless, it is within the range of estimates discussed earlier and could reflect a

reductions as high as 70%.⁶¹ This trend has been driven primarily by a decline in the use of APs, which account for a majority of AWs used in crime. AR trends have been more varied and complicated by the substitution of post-ban guns that are very similar to some banned ARs. More generally, however, the substitution of post-ban AW-type models with fewer military features has only partially offset the decline in banned AWs.

These findings raise questions as to the whereabouts of surplus AWs, particularly APs, produced just prior to the ban. Presumably, many are in the hands of collectors and speculators holding them for their novelty and value.⁶² Even criminal possessors may be more sensitive to the value of their AWs and less likely to use them for risk of losing them to police.

Finally, it is worth noting the ban has not completely eliminated the use of AWs, and, despite large relative reductions, the share of gun crimes involving AWs is similar to that before the ban. Based on year 2000 or more recent data, the most common AWs continue to be used in up to 1.7% of gun crimes.

somewhat higher use of AWs among the subset of offenders who are most active and/or dangerous; recall that the highest estimate of AW use among the sources examined in this chapter came from a sample of guns recovered during murder investigations in Milwaukee (also see the discussion of offender surveys and AWs in Chapter 3).

⁶¹ Developing a national estimate of the number of AW crimes prevented by the ban is complicated by the range of estimates of AW use and changes therein derived from different data sources. Tentatively, nonetheless, it appears the ban prevents a few thousand crimes with AWs annually. For example, using 2% as the best estimate of the share of gun crimes involving AWs prior to the ban (see Chapter 3) and 40% as a reasonable estimate of the post-ban drop in this figure implies that almost 2,900 murders, robberies, and assaults with AWs were prevented in 2002 (this assumes that 1.2% of the roughly 358,000 gun murders, gun robberies, and gun assaults reported to police in 2002 [see the *Uniform Crime Reports*] involved AWs but that 2% would have involved AWs had the ban not been in effect). Even if this estimate is accurate, however, it does not mean the ban prevented 2,900 gun crimes in 2002; indeed, the preceding calculation assumes that offenders prevented from using AWs committed their crimes using other guns. Whether forcing such weapon substitution can reduce the number of persons wounded or killed in gun crimes is considered in more detail in Chapter 9.

⁶² The 1997 national survey of state prisoners discussed in footnote 60 found that nearly 49% of AW offenders obtained their gun from a “street” or illegal source, in contrast to 36% to 42% for other gun users (Harlow, 2001, p. 9). This could be another sign that AWs have become harder to acquire since the ban, but the data cannot be used to make an assessment over time.

Table 6-3. Trends in Police Recoveries of Domestic Assault Weapons in Baltimore, 1992-2000 ^a

	<u>Pre-Ban Period</u>	<u>Post-Ban Period</u>	<u>Change</u>
<u>A. All Recoveries</u>	Jan. 1992-Dec. 1993	Jan. 1995-Dec. 2000	
Total AWs	135	290	
Annual Mean	67.5	48.33	-28%
AW's as % of Guns	1.88%	1.25%	-34%**
APs	123	260	
Annual Mean	61.5	43.33	-30%
APs as % of Guns	1.71%	1.12%	-35%**
ARs	12	30	
Annual Mean	6	5	-17%
ARs as % of Guns	0.17%	0.13%	-24%
Total AWs and Substitutes	135	309	
Annual Mean	67.5	51.5	-24%
AWs/Subs as % of Guns	1.88%	1.33%	-29%**
<u>B. Recoveries Linked to Violent Crimes ^b</u>			
Total AWs	28	47	
Annual Mean	14	7.83	-44%
AWs as % of Violent Crime Guns	2.1%	1.24%	-41%*

a. Domestic assault weapons include Intratec group, SWD group, AR-15 group, and Calico and Feather models.

b. Murders, assaults, and robberies

* Chi-square p level < .05 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance).

** Chi-square p level < .01 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance).

**Figure 6-2. Police Recoveries of Assault Weapons in
Baltimore, 1992-2000**

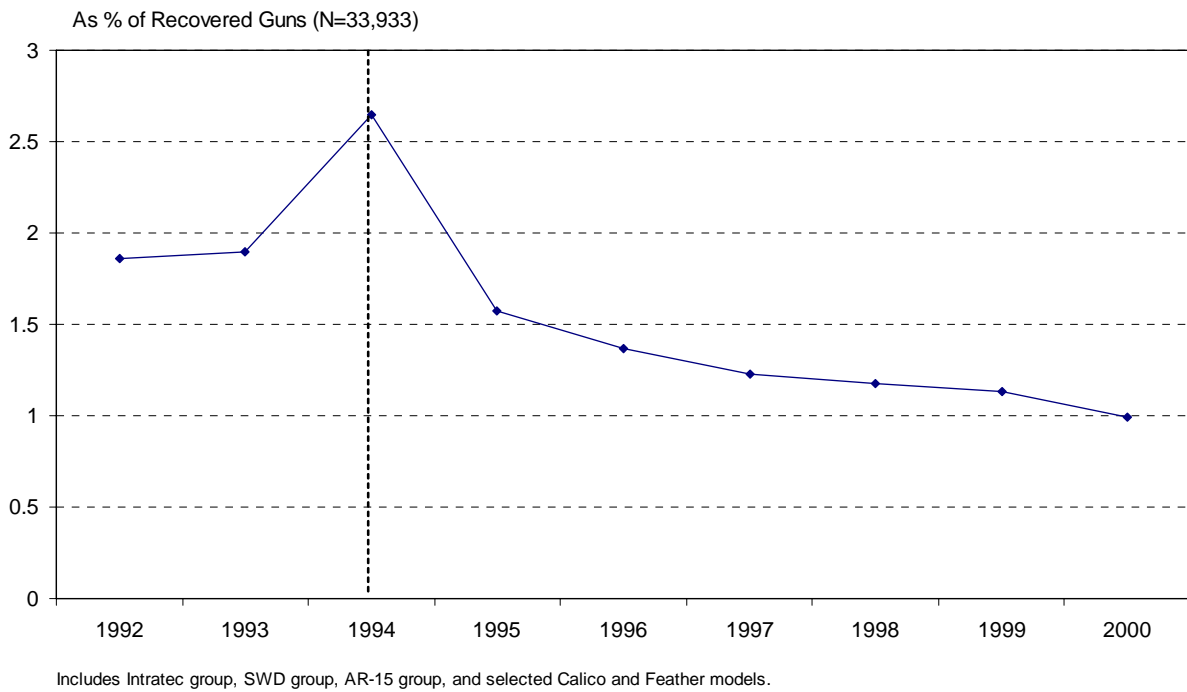


Table 6-4. Trends in Police Recoveries of Domestic Assault Weapons in Miami (Metro-Dade), 1990-2000 ^a

	<u>Pre-Ban Period</u>	<u>Post-Ban Period</u>	<u>Change</u>
<u>A. All Recoveries</u>	Jan. 1990-Dec. 1993	Jan. 1995-Dec. 2000	
Total AWs	403	330	
Annual Mean	100.75	55	-45%
AW's as % of Guns	2.53%	1.71%	-32%***
APs	355	256	
Annual Mean	88.75	42.67	-52%
APs as % of Guns	2.23%	1.33%	-40%***
ARs	43	72	
Annual Mean	10.75	12	12%
ARs as % of Guns	0.27%	0.37%	37%*
Total AWs and Substitutes	403	343	
Annual Mean	100.75	57.17	-43%
AWs/Subs as % of Guns	2.53%	1.78%	-30%***
<u>B. Recoveries Linked to Violent Crimes ^b</u>			
Total AWs	69	32	
Annual Mean	17.25	5.33	-69%
AWs as % of Violent Crime Guns	2.28%	1.39%	-39%**

a. Domestic assault weapons include Intratec group, SWD group, AR-15 group, and Calico and Feather models.

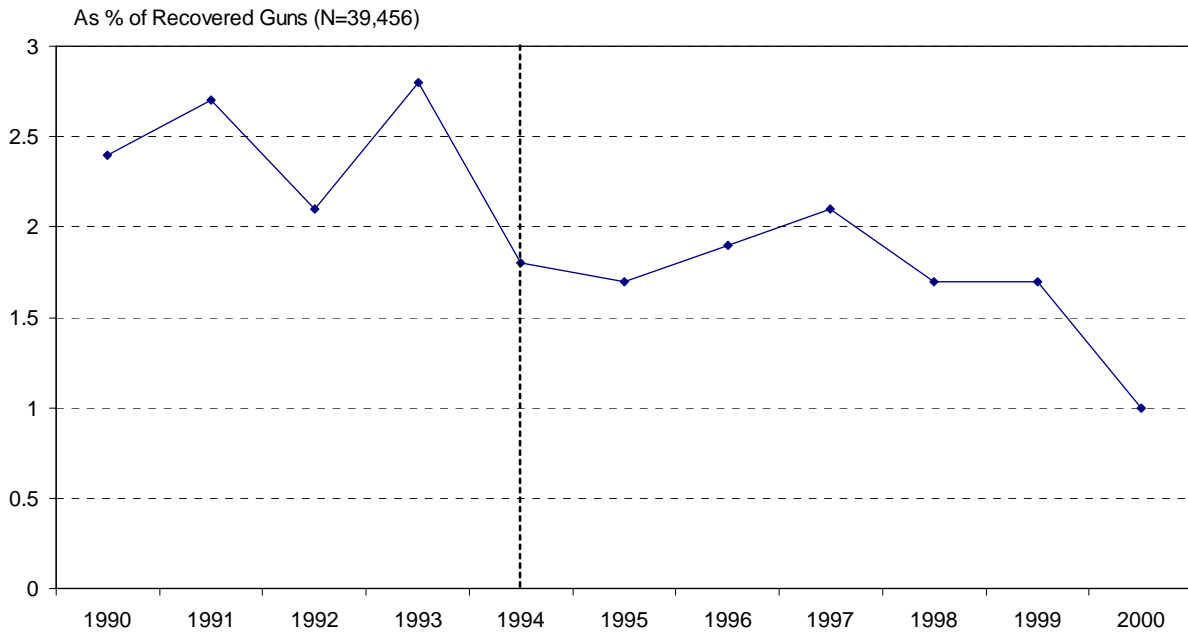
b. Murders, assaults, and robberies

* Chi-square p level < .1 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance)

** Chi-square p level < .05 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance)

*** Chi-square p level < .01 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance)

**Figure 6-3. Police Recoveries of Assault Weapons in Miami
(Metro-Dade), 1990-2000**



Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

Table 6-5. Trends in Police Recoveries of Domestic Assault Weapons in St. Louis, 1992-2003 ^a

	<u>Pre-Ban Period</u>	<u>Post-Ban Period</u>	<u>Change</u>
<u>A. All Recoveries</u>	Jan. 1992-Dec. 1993	Jan. 1995-Dec. 2003	
Total AWs	94	212	
Annual Mean	47	23.56	-50%
AW's as % of Guns	1.33%	0.91%	-32%**
APs	87	187	
Annual Mean	43.5	20.78	-52%
APs as % of Guns	1.23%	0.81%	-34%**
ARs	7	25	
Annual Mean	3.5	2.78	-21%
ARs as % of Guns	0.1%	0.11%	10%
Total AWs and Substitutes	94	234	
Annual Mean	47	26	-45%
AWs/Subs as % of Guns	1.33%	1.01%	-24%*
<u>B. Recoveries Linked to Violent Crimes ^b</u>			
Total AWs	8	20	
Annual Mean	4	2.2	-45%
AWs as % of Violent Crime Guns	0.8%	0.81%	1%

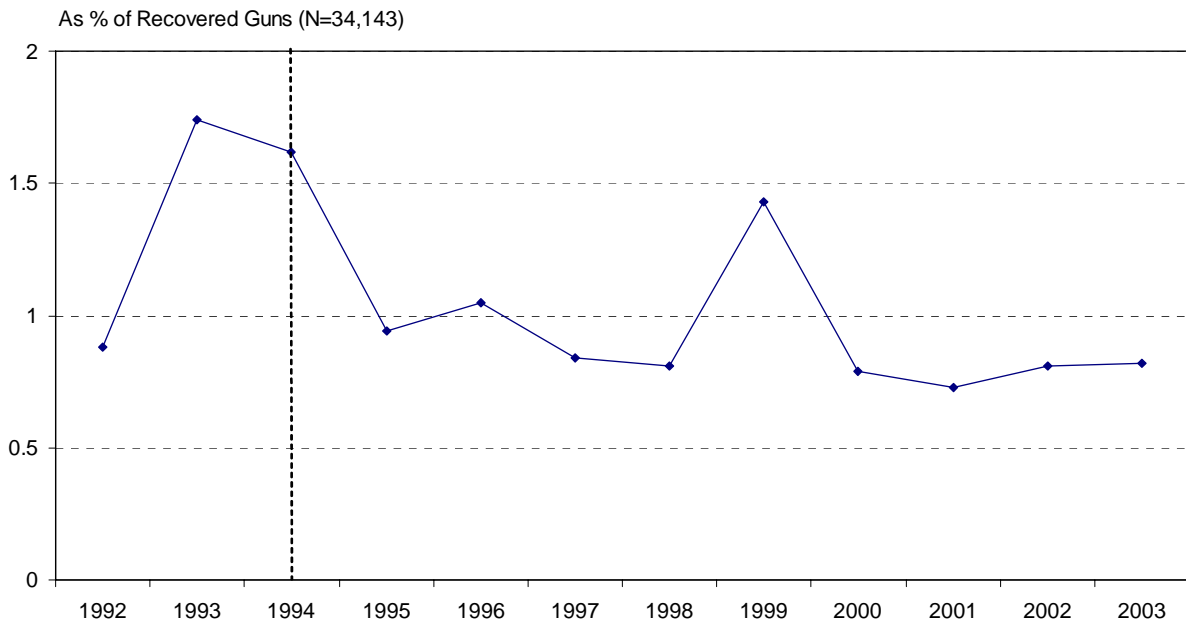
a. Domestic assault weapons include Intratec group, SWD group, AR-15 group, and Calico and Feather models.

b. Murders, assaults, and robberies

* Chi-square p level < .05 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance)

** Chi-square p level < .01 (changes in percentages of guns that were AWs/APs/ARs/AW-subs were tested for statistical significance)

Figure 6-4. Police Recoveries of Assault Weapons in St. Louis, 1992-2003



Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

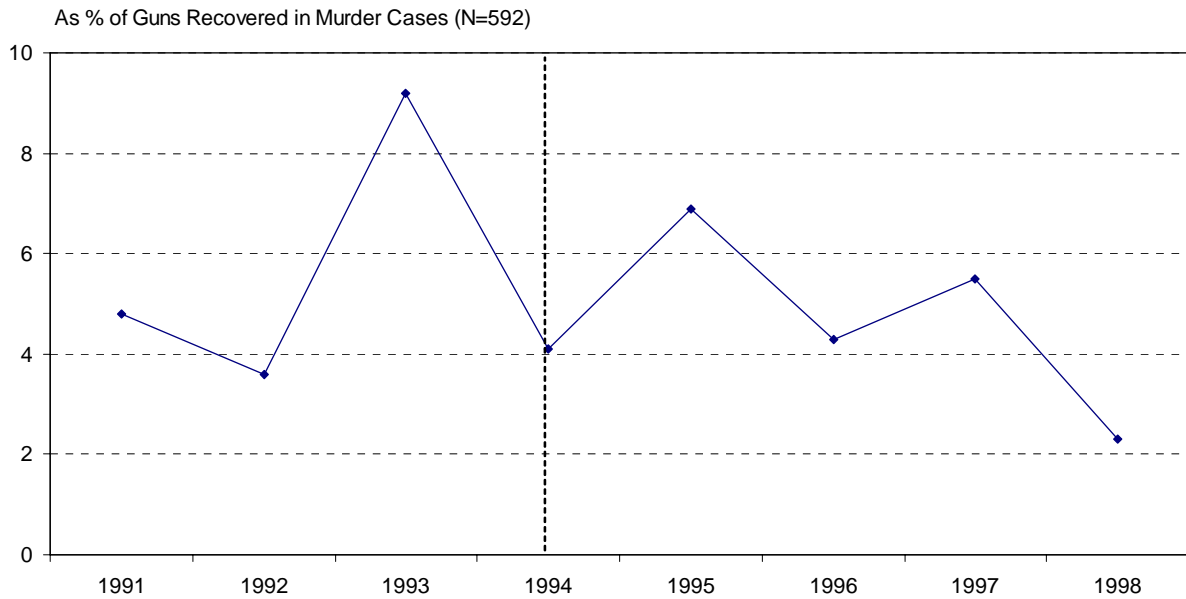
Table 6-6. Trends in Police Recoveries of Domestic Assault Weapons in Boston, Milwaukee, and Anchorage (Alaska) ^a

	<u>Pre-Ban Period</u>	<u>Post-Ban Period</u>	<u>Change</u>
<u>Boston</u>	Jan. 1991-Dec. 1993	Jan. 2000-Dec. 2002	
(All Gun Traces)			
AWs	60	11	
Annual Mean	20	3.7	-82%
AWs as % of Guns	2.16%	0.6%	-72%*
AWs and Substitutes	60	16	
Annual Mean	20	5.3	-74%
AWs/Subs as % of Guns	2.16%	0.87%	-60%*
<u>Milwaukee</u>	Jan. 1991-Dec. 1993	Jan. 1995-Dec. 1998	
(Guns Recovered in Murder Cases)			
AWs	15	13	
Annual Mean	5	3.25	-35%
AWs as % of Guns	5.91%	4.91%	-17%
AWs and Substitutes	15	16	
Annual Mean	5	4	-20%
AWs/Subs as % of Guns	5.91%	6.04%	2%
<u>Anchorage</u>	Jan. 1987-Dec. 1993	Jan. 1995-Dec. 2000	
(Guns Tested for Evidence)			
AWs	16	8	
Annual Mean	2.29	1.33	-42%
AW's as % of Guns	3.57%	2.13%	-40%
AWs and Substitutes	N/A	N/A	

a. Domestic assault weapons include Intratec group, SWD group, AR-15 group, and Calico and Feather models.

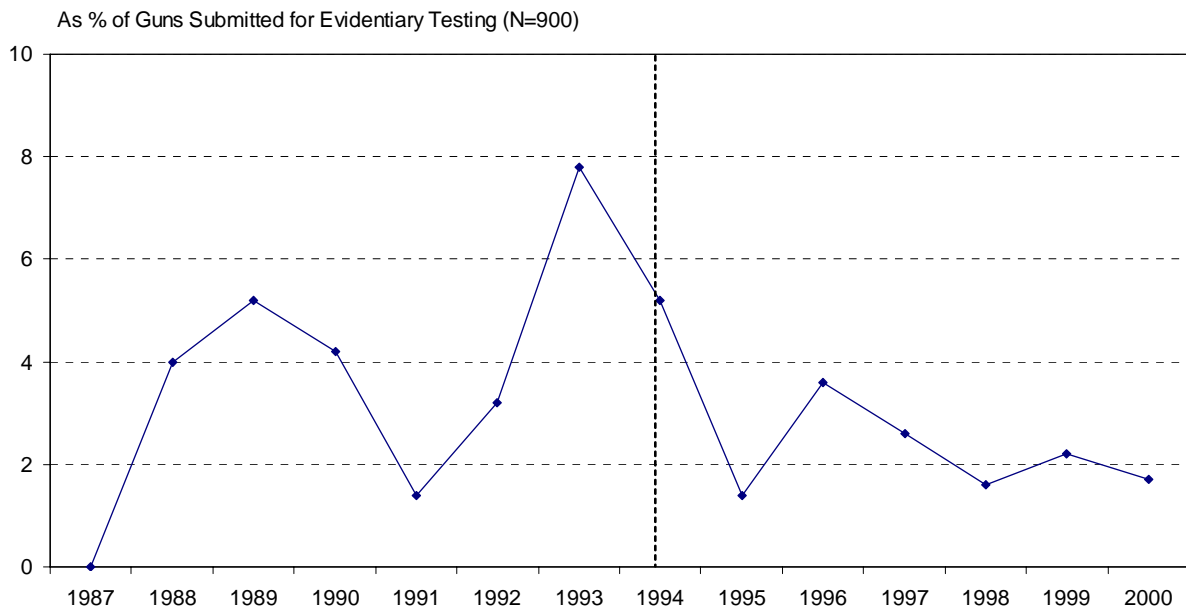
* Chi-square p level < .01 (changes in percentages of guns that were AWs/AW-sub were tested for statistical significance)

Figure 6-5. Assault Weapons Recovered in Milwaukee County Murder Cases, 1991-1998



Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

Figure 6-6. Police Recoveries of Assault Weapons in Anchorage (Alaska), 1987-2000



Includes Intratec group, SWD group, AR-15 group, and selected Calico and Feather models.

7. MARKET INDICATORS FOR LARGE CAPACITY MAGAZINES: PRICES AND IMPORTATION

The previous chapters examined the AW-LCM ban's impact on the availability and criminal use of AWs. In this chapter and the next, we consider the impact of the ban's much broader prohibition on LCMs made for numerous banned and non-banned firearms. We begin by studying market indicators. Our earlier study of LCM prices for a few gun models revealed that prices rose substantially during 1994 and into 1995 (Roth and Koper, 1997, Chapter 4). Prices of some LCMs remained high into 1996, while others returned to pre-ban levels or oscillated more unpredictably. The price increases may have reduced LCM use at least temporarily in the short-term aftermath of the ban, but we could not confirm this in our prior investigation.

7.1. Price Trends for Large Capacity Magazines

For this study, we sought to approximate longer term trends in the prices at which users could purchase banned LCMs throughout the country. To that end, we analyzed quarterly data on the prices of LCMs advertised by eleven gun and magazine distributors in *Shotgun News*, a national gun industry publication, from April 1992 to December 1998.⁶³ Those prices are available to any gun dealer, and primary market retailers generally re-sell within 15% of the distributors' prices.⁶⁴ The distributors were chosen during the course of the first AW study (Roth and Koper, 1997) based on the frequency with which they advertised during the April 1992 to June 1996 period. For each quarterly period, project staff coded prices for one issue from a randomly selected month. We generally used the first issue of each selected month based on a preliminary, informal assessment suggesting that the selected distributors advertised more frequently in those issues. In a few instances, first-of-month issues were unavailable to us or provided too few observations, so we substituted other issues.⁶⁵ Also, we were unable to obtain *Shotgun News* issues for the last two quarters of 1996. However, we aggregated the data annually to study price trends, and the omission of those quarters did not appear to affect the results (this is explained further below).

We ascertained trends in LCM prices by conducting hedonic price analyses,

⁶³ The *Blue Book of Gun Values*, which served as the data source for the AW price analysis, does not contain ammunition magazine prices.

⁶⁴ According to gun market experts, retail prices track wholesale prices quite closely (Cook et al., 1995, p. 71). Retail prices to eligible purchasers generally exceed wholesale (or original-purchase) prices by 3% to 5% in the large chain stores, by about 15% in independent dealerships, and by about 10% at gun shows (where overhead costs are lower).

⁶⁵ The decision to focus on first-of-month issues was made prior to data collection for price analysis update. For the earlier study (Roth and Koper, 1997), project staff coded data for one or more randomly selected issues of every month of the April 1992 to June 1996 period. For this analysis, we utilized data from only the first-of-month issues selected at random during the prior study. If multiple first-of-month issues were available for a given quarter, we selected one at random or based on the number of recorded advertisements. If no first-of-month issue was available for a given quarter, we selected another issue at random from among those coded during the first study.

similar to those described in the AW price analysis (Chapter 5), in which we regressed inflation-adjusted LCM prices (logged) on several predictors: magazine capacity (logged), gun make (for which the LCM was made), year of the advertisement, and distributor. We cannot account fully for the meaning of significant distributor effects. They may represent unmeasured quality differentials in the merchandise of different distributors, or they may represent other differences in stock volume or selling or service practices between the distributors.⁶⁶ We included the distributor indicators when they proved to be significant predictors of advertised price. In addition, we focused on LCMs made for several of the most common LCM-compatible handguns and rifles, rather than try to model the differences in LCM prices between the several hundred miscellaneous makes and models of firearms that were captured in the data. Finally, for both the handgun and rifle models, we created and tested seasonal indicator variables to determine if their incorporation would affect the coefficient for 1996 (the year with winter/spring data only), but they proved to be statistically insignificant and are not shown in the results below.⁶⁷

7.1.1. Large Capacity Magazines for Handguns

The handgun LCM analysis tracks the prices of LCMs made for Intratec and Cobray (i.e., SWD) APs and non-banned semiautomatic pistols made by Smith and Wesson, Glock, Sturm Ruger, Sig-Sauer, Taurus, and Beretta (each of the manufacturers in the former group produces numerous models capable of accepting LCMs). In general, LCMs with greater magazine capacities commanded higher prices, and there were significant price differentials between LCMs made for different guns and sold by different distributors (see Table 7-1). Not surprisingly, LCMs made for Glock handguns were most expensive, followed by those made for Beretta and Sig-Sauer firearms.

Turning to the time trend indicators (see Table 7-1 and Figure 7-1), prices for these magazines increased nearly 50% from 1993 to 1994, and they rose another 56% in 1995. Prices declined somewhat, though not steadily, from 1996 to 1998. Nevertheless, prices in 1998 remained 22% higher than prices in 1994 and nearly 80% higher than those in 1993.

⁶⁶ For example, one possible difference between the distributors may have been the extent to which they sold magazines made of different materials (e.g., steel, aluminum, etc.) or generic magazines manufactured by companies other than the companies manufacturing the firearms for which the magazines were made. For example, there were indications in the data that 3% of the handgun LCMs and 10% of the AR-15 and Mini-14 rifle LCMs used in the analyses (described below) were generic magazines. We did not control for these characteristic, however, because such information was often unclear from the advertisements and was not recorded consistently by coders.

⁶⁷ Project staff coded all LCM advertisements by the selected distributors. Therefore, the data are inherently weighted. However, the weights are based on the frequency with which the different LCMs were advertised (i.e., the LCMs that were advertised most frequently have the greatest weight in the models) rather than by production volume.

Table 7-1. Regression of Handgun and Rifle Large Capacity Magazine Prices on Annual Time Indicators, 1992-1998, Controlling for Gun Makes/Models and Distributors

	Handgun LCMs (n=1,277)		Rifle LCMs (n=674)	
	Estimate	T value	Estimate	T value
Constant	-1.79	-12.74***	-4.10	-19.12***
1992	-0.19	-2.11**	-0.48	-4.20***
1993	-0.38	-6.00***	-0.55	-6.14***
1995	0.44	6.88***	-0.25	-2.64***
1996	0.29	4.05***	-0.12	-0.93
1997	0.36	6.33***	-0.31	-3.68***
1998	0.20	3.51***	-0.44	-5.19***
Rounds (logged)	0.26	5.73***	0.84	15.08***
Cobray	-0.36	-4.15***		
Glock	0.41	8.15***		
Intratec	-0.40	-4.18***		
Ruger	-0.42	-7.79***		
Smith&Wesson	-0.08	-1.71*		
Sig-Sauer	0	-0.09		
Taurus	-0.31	-6.10***		
AK-type			-0.25	-3.15***
Colt AR-15			0.14	1.68*
Ruger Mini-14			-0.08	-0.92
Distributor 1	-0.72	-16.38***	-0.35	-5.15***
Distributor 2	-0.15	-0.97	-0.83	-5.24***
Distributor 3	-0.16	-3.93***	0.19	2.69***
Distributor 4	-0.55	-5.72***	0.16	0.80
Distributor 5	-0.07	-1.79*	-0.18	-2.65***
Distributor 6	-0.53	-1.23	-0.12	-0.32
Distributor 7	-1.59	-3.70***	-0.10	-0.91
Distributor 8			0.14	0.70
Distributor 9	-0.91	-12.52***	-0.48	-4.00***
F statistic	58.76		21.22	
(p value)	<.0001		<.0001	
Adj. R-square	0.51		0.38	

Year indicators are interpreted relative to 1994, and distributors are interpreted relative to distributor 10.

Handgun makes are relative to Beretta and rifle models are relative to SKS.

* Statistically significant at $p \leq .10$.

** Statistically significant at $p \leq .05$.

*** Statistically significant at $p \leq .01$.

Figure 7-1. Annual Price Trends for Large Capacity Magazines, 1992-1998



Based on 1,277 sampled ads for LCMs fitting models of 8 handgun makers and 674 sampled ads for LCMs fitting 4 rifle model groups.

7.1.2. Large Capacity Magazines for Rifles

We approximated trends in the prices of LCMs for rifles by modeling the prices of LCMs manufactured for AR-15, Mini-14, SKS,⁶⁸ and AK-type rifle models (including various non-banned AK-type models). As in the handgun LCM model, larger LCMs drew higher prices, and there were several significant model and distributor effects. AR-15 magazines tended to have the highest prices, and magazines for AK-type models had the lowest prices (Table 7-1).

Like their handgun counterparts, prices for rifle LCMs increased over 40% from 1993 to 1994, as the ban was debated and implemented (see Table 7-1 and Figure 7-1). However, prices declined over 20% in 1995. Following a rebound in 1996, prices moved downward again during 1997 and 1998. Prices in 1998 were over one third lower than the peak prices of 1994 and were comparable to pre-ban prices in 1992 and 1993.

⁶⁸ The SKS is a very popular imported rifle (there are Russian and Chinese versions) that was not covered by either the 1989 AR import ban or the 1994 AW ban. However, importation of SKS rifles from China was discontinued in 1994 due to trade restrictions.

7.2. Post-Ban Importation of Large Capacity Magazines

ATF does not collect (or at least does not publicize) statistics on production of LCMs. Therefore, we cannot clearly document pre-ban production trends. Nevertheless, it seems likely that gun and magazine manufacturers boosted their production of LCMs during the debate over the ban, just as AW makers increased production of AWs. Regardless, gun industry sources estimated that there were 25 million LCMs available as of 1995 (including aftermarket items for repairing magazines or converting them to LCMs) (Gun Tests, 1995, p. 30).

Moreover, the supply of LCMs continued to grow even after the ban due to importation of foreign LCMs that were manufactured prior to the ban (and thus grandfathered by the LCM legislation), according to ATF importation data.⁶⁹ As shown in Table 7-2, nearly 4.8 million LCMs were imported for commercial sale (as opposed to law enforcement uses) from 1994 through 2000, with the largest number (nearly 3.7 million) arriving in 1999.⁷⁰ During this period, furthermore, importers received permission to import a total of 47.2 million LCMs; consequently, an additional 42 million LCMs may have arrived after 2000 or still be on the way, based on just those approved through 2000.^{71, 72}

To put this in perspective, gun owners in the U.S. possessed 25 million firearms that were equipped with magazines holding 10 or more rounds as of 1994 (Cook and Ludwig, 1996, p. 17). Therefore, the 4.7 million LCMs imported in the U.S. from 1994 through 2000 could conceivably replenish 19% of the LCMs that were owned at the time of the ban. The 47.2 million approved during this period could supply nearly 2 additional LCMs for all guns that were so equipped as of 1994.

7.3. Summary and Interpretations

Prices of LCMs for handguns rose significantly around the time of the ban and, despite some decline from their peak levels in 1995, remained significantly higher than pre-ban prices through at least 1998. The increase in LCM prices for rifles proved to be more temporary, with prices returning to roughly pre-ban levels by 1998.⁷³

⁶⁹ To import LCMs into the country, importers must certify that the magazines were made prior to the ban. (The law requires companies to mark post-ban LCMs with serial numbers.) As a practical matter, however, it is hard for U.S. authorities to know for certain whether imported LCMs were produced prior to the ban.

⁷⁰ The data do not distinguish between handgun and rifle magazines or the specific models for which the LCMs were made. But note that roughly two-thirds of the LCMs imported from 1994 through 2000 had capacities between 11 and 19 rounds, a range that covers almost all handgun LCMs as well as many rifle LCMs. It seems most likely that the remaining LCMs (those with capacities of 20 or more rounds) were primarily for rifles.

⁷¹ The statistics in Table 7-2 do not include belt devices used for machine guns.

⁷² A caveat to the number of approved LCMs is that importers may overstate the number of LCMs they have available to give themselves leeway to import additional LCMs, should they become available.

⁷³ A caveat is that we did not examine prices of smaller magazines, so the price trends described here may not have been entirely unique to LCMs. Yet it seems likely that these trends reflect the unique impact of the ban on the market for LCMs.

Table 7-2. Large Capacity Magazines Imported into the United States or Approved For Importation for Commercial Sale, 1994-2000

<u>Year</u>	<u>Imported</u>	<u>Approved</u>
1994	67,063	77,666
1995	3,776	2,066,228
1996	280,425	2,795,173
1997	99,972	1,889,773
1998	337,172	20,814,574
1999	3,663,619	13,291,593
2000	346,416	6,272,876
<i>Total</i>	<i>4,798,443</i>	<i>47,207,883</i>

Source: Firearms and Explosives Imports Branch, Bureau of Alcohol, Tobacco, Firearms, and Explosives. Counts do not include “links” (belt devices) or imports for law enforcement purposes.

The drop in rifle LCM prices between 1994 and 1998 may have due to the simultaneous importation of approximately 788,400 grandfathered LCMs, most of which appear to have been rifle magazines (based on the fact that nearly two-thirds had capacities over 19 rounds), as well as the availability of U.S. military surplus LCMs that fit rifles like the AR-15 and Mini-14. We can also speculate that demand for LCMs is not as great among rifle consumers, who are less likely to acquire their guns for defensive or criminal purposes.

The pre-ban supply of handgun LCMs may have been more constricted than the supply of rifle LCMs for at least a few years following the ban, based on prices from 1994 to 1998. Although there were an estimated 25 million LCMs available in the U.S. as of 1995, some major handgun manufacturers (including Ruger, Sig Sauer, and Glock) had or were close to running out of new LCMs by that time (Gun Tests, 1995, p. 30). Yet the frequency of advertisements for handgun LCMs during 1997 and 1998, as well as the drop in prices from their 1995 peak, suggests that the supply had not become particularly low. In 1998, for example, the selected distributors posted a combined total of 92 LCM ads per issue (some of which may have been for the same make, model, and capacity combinations) for just the handguns that we incorporated into our model.⁷⁴ Perhaps the

⁷⁴ Project staff found substantially more advertisements per issue for 1997 and 1998 than for earlier years. For the LCMs studied in the handgun analysis, staff recorded an average of 412 LCM advertisements per year (103 per issue) during 1997 and 1998. For 1992-1996, staff recorded an average of about 100 ads per year (25 per issue) for the same LCMs. A similar but smaller differential existed in the volume of ads for the LCMs used in the rifle analysis. The increase in LCM ads over time may reflect changes in supply and

demand for enhanced firepower among handgun consumers, who are more likely to acquire guns for crime or defense against crime, was also a factor (and perhaps a large one) putting a premium on handgun LCMs.

Although we might hypothesize that high prices depressed use of handguns with LCMs for at least a few years after the ban, a qualification to this prediction is that LCM use may be less sensitive to prices than is use of AWs because LCMs are much less expensive than the firearms they complement and therefore account for a smaller fraction of users' income (e.g., see Friedman, 1962). To illustrate, TEC-9 APs typically cost \$260 at retail during 1992 and 1993, while LCMs for the TEC-9, ranging in capacity from 30 to 36 rounds, averaged \$16.50 in *Shotgun News* advertisements (and probably \$19 or less at retail) during the same period. So, for example, a doubling of both gun and LCM prices would likely have a much greater impact on purchases of TEC-9 pistols than purchases of LCMs for the TEC-9. Users willing and able to pay for a gun that accepts an LCM are most likely willing and able to pay for an LCM to use with the gun.

Moreover, the LCM supply was enhanced considerably by a surge in LCM imports that occurred after the period of our price analysis. During 1999 and 2000, an additional 4 million grandfathered LCMs were imported into the U.S., over two-thirds of which had capacities of 11-19 rounds, a range that covers almost all handgun LCMs (as well as many rifle LCMs). This may have driven prices down further after 1998.

In sum, market indicators yield conflicting signs on the availability of LCMs. It is perhaps too early to expect a reduction in crimes with LCMs, considering that tens of millions of grandfathered LCMs were available at the time of the ban, an additional 4.8 million – enough to replenish one-fifth of those owned by civilians – were imported from 1994 through 2000, and that the elasticity of demand for LCMs may be more limited than that of firearms. And if the additional 42 million foreign LCMs approved for importation become available, there may not be a reduction in crimes with LCMs anytime in the near future.

demand for LCMs during the study period, as well as product shifts by distributors and perhaps changes in ad formats (e.g., ads during the early period may have been more likely to list magazines by handgun model without listing the exact capacity of each magazine, in which case coders would have been more likely to miss some LCMs during the early period). Because the data collection effort for the early period was part of a larger effort that involved coding prices in *Shotgun News* for LCMs and numerous banned and non-banned firearms, it is also possible that coders were more likely to miss LCM ads during that period due to random factors like fatigue or time constraints.

8. CRIMINAL USE OF LARGE CAPACITY MAGAZINES AFTER THE BAN

Assessing trends in criminal use of LCMs is difficult. There is no national data source on crime guns equipped with LCMs (ATF national tracing data do not include information about magazines recovered with traced firearms), and, based on our contacts with numerous police departments over the course of this study and the first AW study, it seems that even those police departments that maintain electronic databases on recovered firearms do not typically record the capacity of the magazines with which the guns are equipped.^{75,76} Indeed, we were unable to acquire sufficient data to examine LCM use for the first AW study (Roth and Koper, 1997).

For the current study, we obtained four data sources with which to investigate trends in criminal use of LCMs. Three of the databases utilized in the AW analysis – those from Baltimore, Milwaukee, and Anchorage – contained information about the magazines recovered with the guns (see the descriptions of these databases in Chapter 6). Using updated versions of these databases, we examined all LCM recoveries in Baltimore from 1993 through 2003, recoveries of LCMs in Milwaukee murder cases from 1991 to 2001, and recoveries of LCMs linked to serious crimes in Anchorage (and other parts of Alaska) from 1992 through 2002.⁷⁷ In addition, we studied records of guns and magazines submitted to the Jefferson Regional Forensics Lab in Louisville, Kentucky from 1996 through 2000. This lab of the Kentucky State Police services law enforcement agencies throughout roughly half of Kentucky, but most guns submitted to the lab are from the Louisville area. Guns examined at the lab are most typically those associated with serious crimes such as murders, robberies, and assaults.

The LCM analyses and findings were not as uniform across locations as were those for AWs. Therefore, we discuss each site separately. As in the AW analysis, we emphasize changes in the percentage of guns equipped with LCMs to control for overall trends in gun crime and gun recoveries. Because gun crime was falling during the latter 1990s, we anticipated that the number of guns recovered with LCMs might decline independently of the ban's impact. (Hereafter, we refer to guns equipped with LCMs as LCM guns.)

⁷⁵ For the pre-ban period, one can usually infer magazine capacity based on the firearm model. For post-ban recoveries, this is more problematic because gun models capable of accepting LCMs may have been equipped with grandfathered LCMs or with post-ban magazines designed to fit the same gun but holding fewer rounds.

⁷⁶ As for the AW analysis in Chapter 6, we utilize police data to examine trends in criminal use of LCMs. The reader is referred to the general discussion of police gun seizure data in Chapter 6.

⁷⁷ Findings presented in our 2002 interim report (Koper and Roth, 2002b) indicated that LCM use had not declined as of the late 1990s. Therefore, we sought to update the LCM analyses where possible for this version of the report.

8.1. Baltimore

In Baltimore, about 14% of guns recovered by police were LCM guns in 1993. This figure remained relatively stable for a few years after the ban but had dropped notably by 2002 and 2003 (Figure 8-1). For the entire post-ban period (1995-2003), recoveries of LCM guns were down 8% relative to those of guns with smaller magazines (Table 8-1, panel A), a change of borderline statistical significance. Focusing on the most recent years, however, LCM gun recoveries were 24% lower in 2002 and 2003 than during the year prior to the ban, a difference that was clearly significant (Table 8-1, panel B).^{78,79,80} This change was attributable to a 36% drop in LCM handguns (Table 8-1, panel C). LCM rifles actually increased 36% as a share of crime guns, although they still accounted for no more than 3% in 2002 and 2003 (Table 8-1, panel D).⁸¹

Yet there was no decline in recoveries of LCM guns used in violent crimes (i.e., murders, shootings, robberies, and other assaults). After the ban, the percentage of violent crime guns with LCMs generally oscillated in a range consistent with the pre-ban level (14%) and hit peaks of roughly 16% to 17% in 1996 and 2003 (Figure 8-1).⁸² Whether comparing the pre-ban period to the entire post-ban period (1995-2003) or the most recent years (2002-2003), there was no meaningful decline in LCM recoveries linked to violent crimes (Table 8-2, panels A and B).⁸³ Neither violent uses of LCM

⁷⁸ Data on handgun magazines were also available for 1992. An auxiliary analysis of those data did not change the substantive inferences described in the text.

⁷⁹ The Maryland AP ban enacted in June 1994 also prohibited ammunition magazines holding over 20 rounds and did not permit additional sales or transfers of such magazines manufactured prior to the ban. This ban, as well as the Maryland and federal bans on AWs that account for many of the guns with magazines over 20 rounds, may have contributed to the downward trend in LCMs in Baltimore, but only 2% of the guns recovered in Baltimore from 1993 to 2000 were equipped with such magazines.

⁸⁰ All comparisons of 1993 to 2002-2003 in the Baltimore data are based on information from the months of January through November of each year. At the time we received these data, information was not yet available for December 2003, and preliminary analysis revealed that guns with LCMs were somewhat less likely to be recovered in December than in other months for years prior to 2003. Nevertheless, utilizing the December data for 1993 and 2002 did not change the substantive inferences. We did not remove December data from the comparisons of 1993 and the full post-ban period because those comparisons seemed less likely to be influenced by the absence of one month of data.

⁸¹ This increase may have been due largely to a general increase in rifle seizures. LCM rifles actually dropped as a percentage of all rifle recoveries from 1993 to 2002-2003, suggesting that recoveries of LCM rifles were increasing less than recoveries of other rifles.

⁸² For 1996, 45% of all records and 24% of those linked to violent crimes had missing data for magazine capacity (due to temporary changes in operational procedures in the Baltimore crime lab). For other years, missing data rates were no more than 6%. Based on those cases for which data were available, the share of guns with LCMs in 1996 was comparable to that in other years, particularly when examining all gun recoveries. At any rate, the analyses focusing on 1993, 2002, and 2003 reinforce the findings of those that include the 1996 data.

⁸³ The ammunition capacity code in the Baltimore data usually reflected the full capacity of the magazine and weapon, but sometimes reflected the capacity of the magazine only. (For instance, a semiautomatic with a 10-round magazine and the ability to accept one additional round in the chamber might have been coded as having a capacity of 10 or 11.) Informal assessment suggested that capacity was more likely to reflect the exact capacity of the magazine in the early years of the database and more likely to reflect the full capacity of the gun and magazine in later years. For the main runs presented in the text and tables, guns were counted as having LCMs if the coded capacity was greater than 11 rounds. This ensured that LCMs were not overestimated, but it potentially understated LCM prevalence, particularly for the earlier

handguns or LCM rifles had declined appreciably by 2002-2003 (Table 8-2, panels C and D). Hence, the general decline in LCM recoveries may reflect differences in the availability and use of LCMs among less serious offenders, changes in police practices,⁸⁴ or other factors.

Figure 8-1. Police Recoveries of Guns Equipped With Large Capacity Magazines in Baltimore, 1993-2003



years. However, coding the guns as LCM weapons based on a threshold of 10 (i.e., a coded capacity over 10 rounds) in 1993 and a threshold of 11 (i.e., a coded capacity over 11 rounds) for 2002-2003 did not change the inferences of the violent crime analysis. Further, this coding increased the pre-ban prevalence of LCMs by very little (about 4% in relative terms).

⁸⁴ During the late 1990s, for example, Baltimore police put greater emphasis on detecting illegal gun carrying (this statement is based on prior research and interviews the author has done in Baltimore as well as the discussion in Center to Prevent Handgun Violence, 1998). One can hypothesize that this effort reduced the fraction of recovered guns with LCMs because illegal gun carriers are probably more likely to carry smaller, more concealable handguns that are less likely to have LCMs.

Table 8-1. Trends in All Police Recoveries of Firearms Equipped With Large Capacity Magazines, Baltimore, 1993-2003

	<u>Pre-Ban Period</u>	<u>Post-Ban Period</u>	<u>Change</u>
<u>A. All LCM Guns</u>	Jan.-Dec. 1993	Jan. 1995-Nov. 2003	
Total	473	3703	
Annual Mean	473	445.86 ^a	-6%
LCM Guns as % of All Guns	13.51%	12.38%	-8%*
<u>B. All LCM Guns</u>	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
Total	430	626	
Annual Mean	430	313	-27%
LCM Guns as % of All Guns	13.47%	10.3%	-24%***
<u>C. LCM Handguns</u>	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
Total	359	440	
Annual Mean	359	220	-39%
LCM Handguns as % of All Guns	11.25%	7.24%	-36%***
<u>D. LCM Rifles</u>	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
LCM Rifles	71	183	
Annual Mean	71	91.5	29%
LCM Rifles as % of All Guns	2.22%	3.01%	36%**

a. Annual average calculated without 1996 and 2003 (to correct for missing months or missing magazine data).

* Chi-square p level < .10 (changes in percentages of guns equipped with LCMs were tested for statistical significance)

** Chi-square p level < .05 (changes in percentages of guns equipped with LCMs were tested for statistical significance)

*** Chi-square p level < .01 (changes in percentages of guns equipped with LCMs were tested for statistical significance)

Table 8-2. Trends in Police Recoveries of Firearms Equipped With Large Capacity Magazines in Violent Crime Cases, Baltimore, 1993-2003

	<u>Pre-Ban Period</u>	<u>Post-Ban Period</u>	<u>Change ^a</u>
<u>A. All LCM Guns</u>	Jan.-Dec. 1993	Jan. 1995-Nov. 2003	
Total	87	711	
Annual Mean	87	81.86 ^b	-6%
LCM Guns as % of All Guns	14.01%	14.44%	3%
<u>B. All LCM Guns</u>	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
Total	79	104	
Annual Mean	79	52	-34%
LCM Guns as % of All Guns	13.96%	13.65%	-2%
<u>C. LCM Handguns</u>	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
Total	62	81	
Annual Mean	62	40.5	-35%
LCM Handguns as % of All Guns	10.95%	10.63%	-3%
<u>D. LCM Rifles</u>	Jan.-Nov. 1993	Jan.-Nov. 2002-2003	
LCM Rifles	17	23	
Annual Mean	17	11.5	-32%
LCM Rifles as % of All Guns	3%	3.02%	1%

a. Changes in the percentages of guns with LCMs were statistically insignificant in chi-square tests.

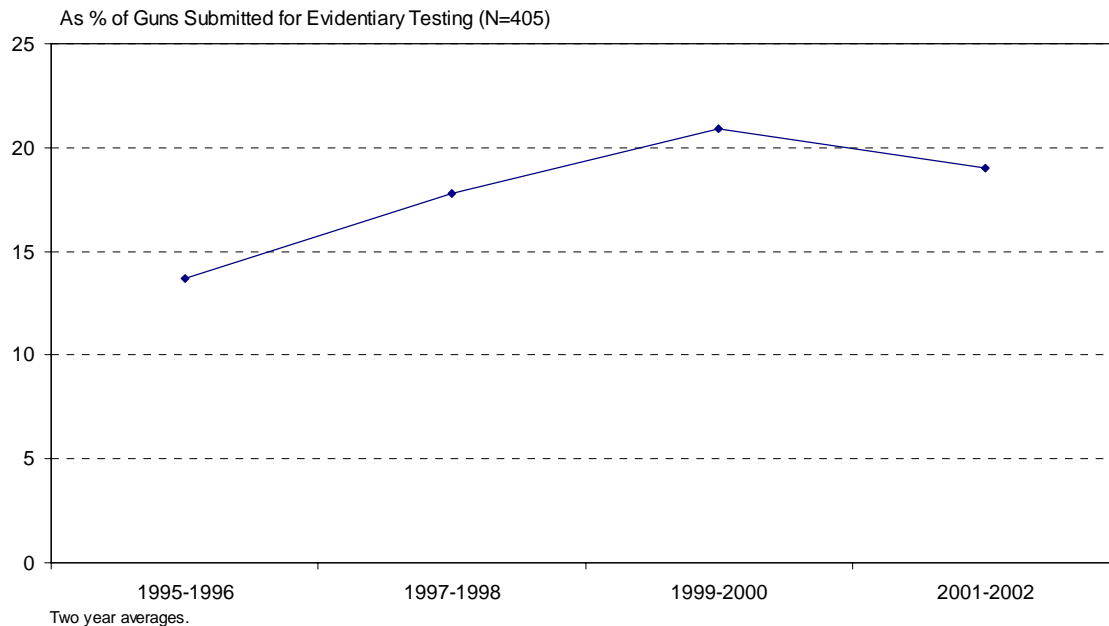
b. Annual average calculated without 1996 and 2003 (to correct for missing months or missing magazine data).

8.2. Anchorage

In the Alaska database, magazine capacity was recorded only for guns recovered during the post-ban years, 1995 through 2002. However, we estimated pre-ban use of LCM handguns by identifying handgun models inspected during 1992 and 1993 that were manufactured with LCMs prior to the ban.⁸⁵ This permitted an assessment of pre-post changes in the use of LCM handguns.

As shown in Figure 8-2 (also see Table 8-3, panel A), LCM guns rose from 14.5% of crime guns in 1995-1996 to 24% in 2000-2001 (we present two-year averages because the sample are relatively small, particularly for the most recent years) and averaged about 20% for the entire post-ban period. LCM handguns drove much of this trend, but LCM rifles also increased from about 3% of crime guns in 1995-96 to 11% in 2000-2001.

Figure 8-2. Police Recoveries of Guns Equipped With Large Capacity Magazines in Anchorage (Alaska), 1995-2002



⁸⁵ To make these determinations, we consulted gun catalogs such as the *Blue Book of Gun Values* and *Guns Illustrated*.

Table 8-3. Trends in Police Recoveries of Firearms Equipped With Large Capacity Magazines in Violent Crime Cases, Anchorage (Alaska), 1992-2002 ^a

	<u>Pre-Ban Period</u>	<u>Post-Ban Period</u>	<u>Change ^b</u>
<u>A. All LCM Guns</u>	N/A	Jan. 1995-Dec. 2002	
Total		80	
Annual Mean		10	N/A
LCM Guns as % of All Guns		19.75%	N/A
<u>B. LCM Handguns</u>	Jan. 1992-Dec. 1993	Jan. 1995-Dec. 2002	
Total	17	57	
Annual Mean	8.5	7.13	-16%
LCM Handguns as % All Handguns	26.15%	22.35%	-15%
<u>C. LCM Handguns</u>	Jan. 1992-Dec. 1993	Jan. 2001-Dec. 2002	
Total	17	10	
Annual Mean	8.5	5	-41%
LCM Handguns as % of All Handguns	26.15%	19.23%	-26%

a. Based on guns submitted to State Police for evidentiary testing.

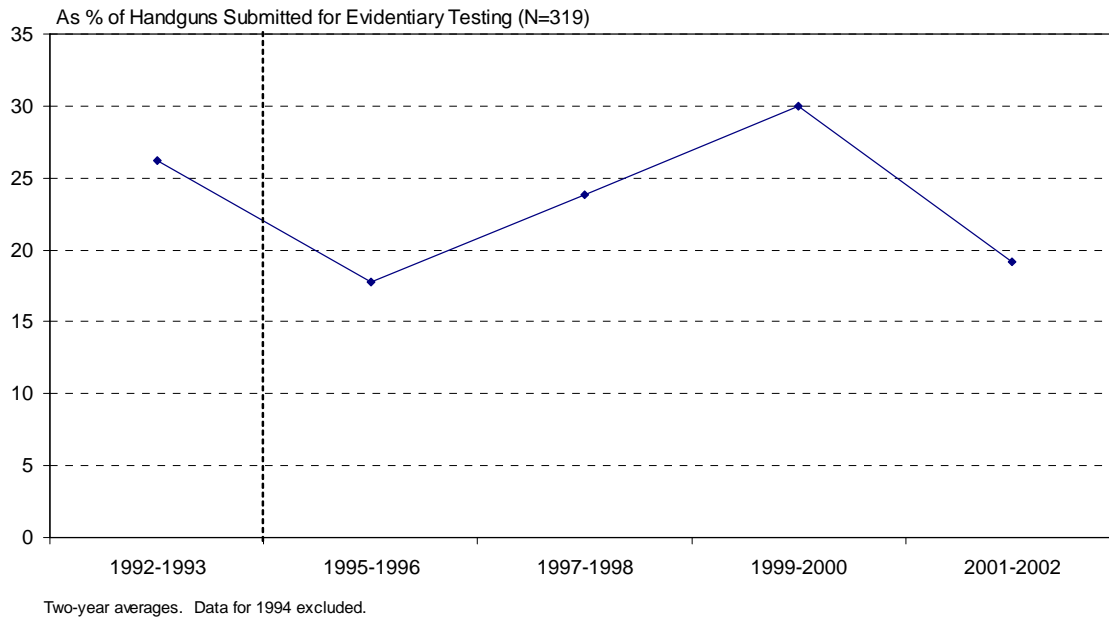
b. Changes in the percentages of guns equipped with LCMs were statistically insignificant in chi-square tests.

Investigation of pre-post changes for handguns revealed an inconsistent pattern (Figure 8-3). LCM handguns dropped initially after the ban, declining from 26% of handguns in 1992-1993 to 18% in 1995-1996. However, they rebounded after 1996, reaching a peak of 30% of handguns in 1999-2000 before declining to 19% in 2001-2002.

For the entire post-ban period, the share of handguns with LCMs was about 15% lower than in the pre-ban period (Table 8-3, panel B). By the two most recent post-ban years (2001-2002), LCM use had dropped 26% from the pre-ban years (Table 8-3, panel C). These changes were not statistically significant, but the samples of LCM handguns were rather small for rigorous statistical testing. Even so, it seems premature to conclude

that there has been a lasting reduction in LCM use in Alaska. LCM use in 2001-2002 was somewhat higher than that immediately following the ban in 1995-1996, after which there was a substantial rebound. Considering the inconsistency of post-ban patterns, further follow-up seems warranted before making definitive conclusions about LCM use in Alaska.

Figure 8-3. Police Recoveries of Handguns Equipped With Large Capacity Magazines in Anchorage (Alaska), 1992-2002



8.3. Milwaukee

LCM guns accounted for 21% of guns recovered in Milwaukee murder investigations from 1991 to 1993 (Table 8-4, panel A). Following the ban, this figure rose until reaching a plateau of over 36% in 1997 and 1998 (Figure 8-4). On average, the share of guns with LCMs grew 55% from 1991-1993 to 1995-1998, a trend that was driven by LCM handguns (Table 8-4, panels A and B).⁸⁶ LCM rifles held steady at between 4% and 5% of the guns (Table 8-4, panel C).

We also analyzed a preliminary database on 48 guns used in murders during 2000 and 2001 (unlike the 1991-1998 database, this database did not include information on other guns recovered during the murder investigations). About 11% of these guns were LCM guns, as compared to 19% of guns used in murders from 1991 to 1993 (analyses not shown). However, nearly a quarter of the 2000-2001 records were missing information on magazine capacity.⁸⁷ Examination of the types and models of guns with

⁸⁶ LCM guns also increased as share of guns that were used in the murders (the full sample results discussed in the text include all guns recovered during the investigations).

⁸⁷ Magazine capacity was missing for less than 4% of the records in earlier years.

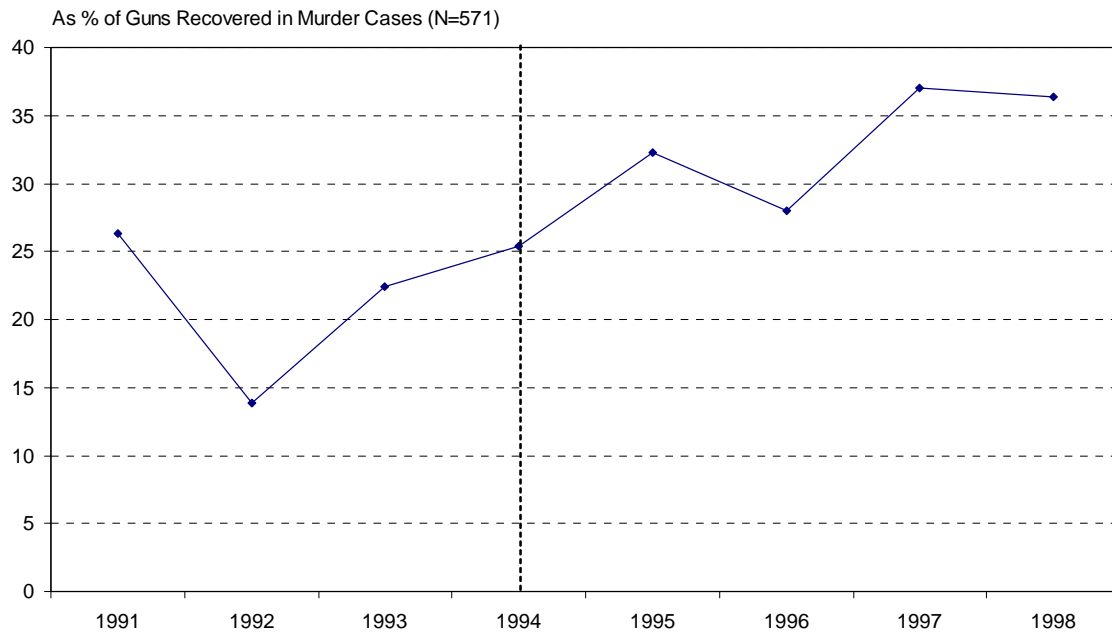
unidentified magazines suggested that as many as 17% of guns used in murders during 2000 and 2001 may have been LCM guns (based on all those that either had LCMs, were models sold with LCMs prior to the ban, or were unidentified semiautomatics). While this still suggests a drop in LCM use from the peak levels of the late 1990s (26% of guns used in murders from 1995 to 1998 had LCMs), it is not clear that LCM use has declined significantly below pre-ban levels.

Table 8-4. Trends in Police Recoveries of Firearms Equipped With Large Capacity Magazines in Murder Cases, Milwaukee County, 1991-1998

	<u>Pre-Ban Period</u>	<u>Post-Ban Period</u>	<u>Change</u>
	Jan. 1991-Dec. 1993	Jan. 1995-Dec. 1998	
<u>A. All LCM Guns</u>			
Total	51	83	
Annual Mean	17	20.75	22%
LCM Guns as % of All Guns	20.9%	32.42%	55%*
<u>B. LCM Handguns</u>	Jan. 1991-Dec. 1993	Jan. 1995-Dec. 1998	
Total	40	71	
Annual Mean	13.33	17.75	33%
LCM Handguns as % of All Guns	16.39%	27.73%	69%*
<u>C. LCM Rifles</u>	Jan. 1991-Dec. 1993	Jan. 1995-Dec. 1998	
Total	11	12	
Annual Mean	3.67	3	-18%
LCM Rifles as % of All Guns	4.51%	4.69%	4%

* Chi-square p level < .01 (changes in percentages of guns equipped with LCMs were tested for statistical significance)

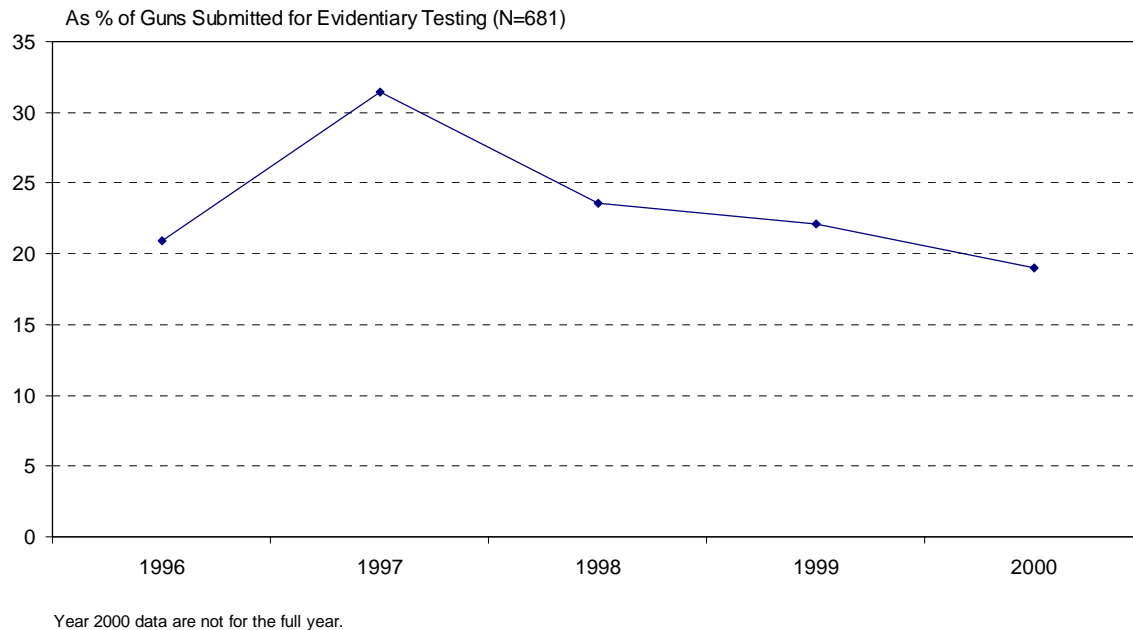
Figure 8-4. Recoveries of Guns Equipped With Large Capacity Magazines in Milwaukee County Murder Cases, 1991-1998



8.4. Louisville

The Louisville LCM data are all post-ban (1996-2000), so we cannot make pre-post comparisons. Nonetheless, the share of crime guns with LCMs in Louisville (24%) was within the range of that observed in the other cities during this period. And similar to post-ban trends in the other sites, LCM recoveries peaked in 1997 before leveling off and remaining steady through the year 2000 (Figure 8-5). LCM rifles dropped 21% as a share of crime guns between 1996 and 2000 (analyses not shown), but there were few in the database, and they never accounted for more than 6.2% of guns in any year.

Figure 8-5. Police Recoveries of Guns Equipped With Large Capacity Magazines in Louisville (Kentucky), 1996-2000



8.5. Summary

Despite a doubling of handgun LCM prices between 1993 and 1995 and a 40% increase in rifle LCM prices from 1993 to 1994, criminal use of LCMs was rising or steady through at least the latter 1990s, based on police recovery data from four jurisdictions studied in this chapter. These findings are also consistent with an earlier study finding no decline in seizures of LCM guns from juveniles in Washington, DC in the year after the ban (Koper, 2001).⁸⁸ Post-2000 data, though more limited and inconsistent, suggest that LCM use may be dropping from peak levels of the late 1990s but provide no definitive evidence of a drop below pre-ban levels.⁸⁹ These trends have been driven primarily by LCM handguns, which are used in crime roughly three times as

⁸⁸ From 1991 to 1993, 16.4% of guns recovered from juveniles in Washington, DC had LCMs (14.2% had LCMs in 1993). In 1995, this percentage increased to 17.1%. We did not present these findings in this chapter because the data were limited to guns recovered from juveniles, the post-ban data series was very short, and the gun markets supplying DC and Baltimore are likely to have much overlap (Maryland is a leading supplier of guns to DC – see ATF, 1997; 1999).

⁸⁹ We reran selected key analyses with the Baltimore, Milwaukee, and Louisville data after excluding .22 caliber guns, some of which could have been equipped with attached tubular magazines that are exempted from the LCM ban, and obtained results consistent with those reported in the text. It was possible to identify these exempted magazines in the Anchorage data. When they were removed from Anchorage's LCM count, the general pattern in use of banned LCMs was similar to that presented in the main 1995-2002 analysis: guns with banned LCMs rose, reaching a peak of 21% of crime guns in 1999-2000, before declining slightly to 19% in 2001-2002.

often as LCM rifles. Nonetheless, there has been no consistent reduction in the use of LCM rifles either.

The observed patterns are likely due to several factors: a hangover from pre-ban growth in the production and marketing of LCM guns (Cook and Ludwig, 1997, pp. 5-6; Wintemute, 1996);⁹⁰ the low cost of LCMs relative to the firearms they complement, which seems to make LCM use less sensitive to prices than is firearm use;⁹¹ the utility that gun users, particularly handgun users, attach to LCMs; a plentiful supply of grandfathered LCMs, likely enhanced by a pre-ban surge in production (though this has not been documented) and the importation of millions of foreign LCMs since the ban;⁹² thefts of LCM firearms (see Roth and Koper, 1997, Chapter 4); or some combination of these factors.⁹³ However, it is worth noting that our analysis did not reveal an upswing in use of LCM guns following the surge of LCM importation in 1999 (see the previous chapter). It remains to be seen whether recent imports will have a demonstrable effect on patterns of LCM use.

Finally, we must be cautious in generalizing these results to the nation because they are based on a small number of non-randomly selected jurisdictions. Nonetheless, the consistent failure to find clear evidence of a pre-post drop in LCM use across these geographically diverse locations strengthens the inference that the findings are indicative of a national pattern.

⁹⁰ To illustrate this trend, 38% of handguns acquired by gun owners during 1993 and 1994 were equipped with magazines holding 10 or more rounds, whereas only 14% of handguns acquired before 1993 were so equipped (Cook and Ludwig, 1997, pp. 5-6).

⁹¹ Although elevated post-ban prices did not suppress use of LCMs, a more subtle point is that LCM use rose in most of these locations between 1995 and 1998, as LCM prices were falling from their peak levels of 1994-1995. Therefore, LCM use may have some sensitivity to price trends.

⁹² However, we do not have the necessary data to determine if LCMs used in crime after the ban were acquired before or after the ban.

⁹³ In light of these considerations, it is conceivable that the ban slowed the rate of growth in LCM use, accelerated it temporarily (due to a pre-ban production boom), or had no effect. We do not have the data necessary to examine this issue rigorously. Moreover, the issue might be regarded as somewhat superfluous; the more critical point would seem to be that nearly a decade after the ban, LCM use has still not declined demonstrably below pre-ban levels.

9. THE CONSEQUENCES OF CRIMES WITH ASSAULT WEAPONS AND LARGE CAPACITY MAGAZINES

One of the primary considerations motivating passage of the ban on AWs and LCMs was a concern over the perceived dangerousness of these guns and magazines. In principal, semiautomatic weapons with LCMs enable offenders to fire high numbers of shots rapidly, thereby potentially increasing both the number of person wounded per gunfire incident (including both intended targets and innocent bystanders) and the number of gunshot victims suffering multiple wounds, both of which would increase deaths and injuries from gun violence. Ban advocates also argued that the banned AWs possessed additional features conducive to criminal applications.

The findings of the previous chapters suggest that it is premature to make definitive assessments of the ban's impact on gun violence. Although criminal use of AWs has declined since the ban, this reduction was offset through at least the late 1990s by steady or rising use of other guns equipped with LCMs. As argued previously, the LCM ban has greater potential for reducing gun deaths and injuries than does the AW ban. Guns with LCMs – of which AWs are only a subset – were used in up to 25% of gun crimes before the ban, whereas AWs were used in no more than 8% (Chapter 3). Furthermore, an LCM is arguably the most important feature of an AW. Hence, use of guns with LCMs is probably more consequential than use of guns with other military-style features, such as flash hiders, folding rifle stocks, threaded barrels for attaching a silencers, and so on.⁹⁴

This is not to say that reducing use of AWs will have no effect on gun crime; a decline in the use of AWs does imply fewer crimes with guns having particularly large magazines (20 or more rounds) and other military-style features that could facilitate some crimes. However, it seems that any such effects would be outweighed, or at least

⁹⁴ While it is conceivable that changing features of AWs other than their magazines might prevent some gunshot victimizations, available data provide little if any empirical basis for judging the likely size of such effects. Speculatively, some of the most beneficial weapon redesigns may be the removal of folding stocks and pistol grips from rifles. It is plausible that some offenders who cannot obtain rifles with folding stocks (which make the guns more concealable) might switch to handguns, which are more concealable but generally cause less severe wounds (e.g. see DiMaio, 1985). However, such substitution patterns cannot be predicted with certainty. Police gun databases rarely have information sufficiently detailed to make assessments of changes over time in the use of weapons with specific features like folding stocks. Based on informal assessments, there was no consistent pattern in post-ban use of rifles (as a share of crime guns) in the local databases examined in the prior chapters (also see the specific comments on LCM rifles in the previous chapters).

Pistol grips enhance the ability of shooters to maintain control of a rifle during rapid, “spray and pray” firing (e.g., see Violence Policy Center, 2003). (Heat shrouds and forward handgrips on APs serve the same function.) While this feature may prove useful in military contexts (e.g., firefights among groups at 100 meters or less – see data of the U.S. Army’s Operations Research Office as cited in Violence Policy Center, 2003), it is unknown whether civilian attacks with semiautomatic rifles having pistol grips claim more victims per attack than do those with other semiautomatic rifles. At any rate, most post-ban AR-type rifles still have pistol grips. Further, the ban does not count a stock thumbhole grip, which serves the same function as a pistol grip (e.g., see the illustration of LCMM rifles in Chapter 2), as an AR feature.

obscured, by the wider effects of LCM use, which themselves are likely to be small at best, as we argue below.⁹⁵

Because offenders can substitute non-banned guns and small magazines for banned AWs and LCMs, there is not a clear rationale for expecting the ban to reduce assaults and robberies with guns.⁹⁶ But by forcing AW and LCM offenders to substitute non-AWs with small magazines, the ban might reduce the number of shots fired per gun attack, thereby reducing both victims shot per gunfire incident and gunshot victims sustaining multiple wounds. In the following sections, we consider the evidence linking high-capacity semiautomatics and AWs to gun violence and briefly examine recent trends in lethal and injurious gun violence.

9.1. The Spread of Semiautomatic Weaponry and Trends in Lethal and Injurious Gun Violence Prior to the Ban

Nationally, semiautomatic handguns grew from 28% of handgun production in 1973 to 80% in 1993 (Zawitz, 1995, p. 3). Most of this growth occurred from the late 1980s onward, during which time the gun industry also increased marketing and production of semiautomatics with LCMs (Wintemute, 1996). Likewise, semiautomatics grew as a percentage of crime guns (Koper, 1995; 1997), implying an increase in the average firing rate and ammunition capacity of guns used in crime.⁹⁷

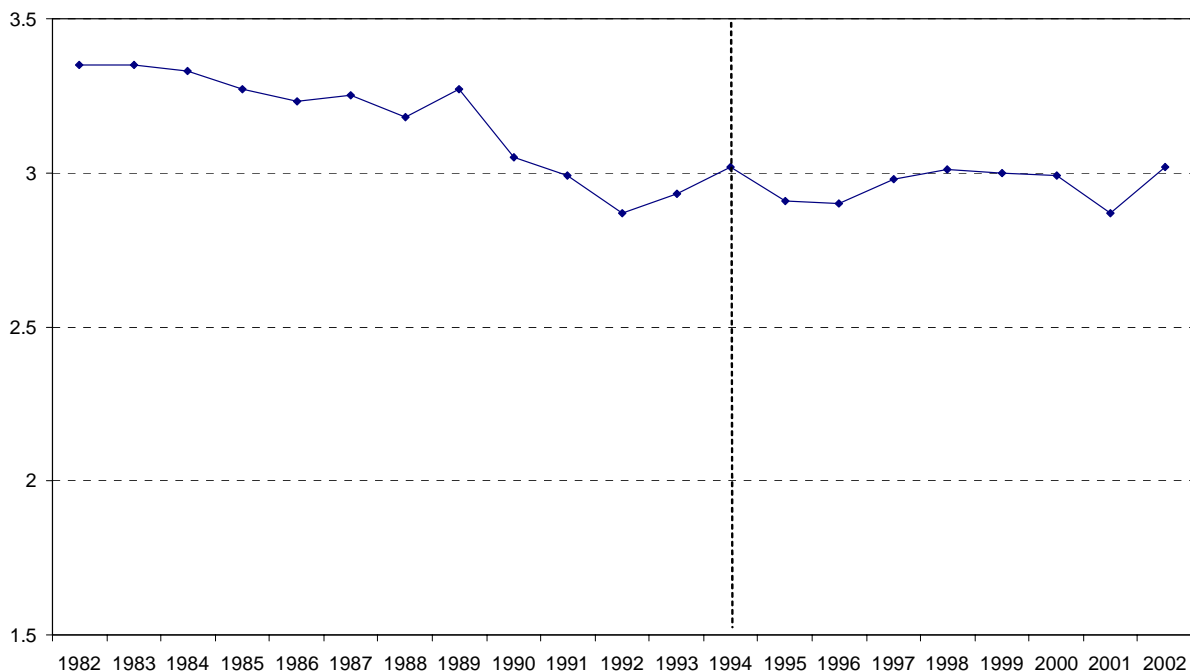
⁹⁵ On a related note, a few studies suggest that state-level AW bans have not reduced crime (Koper and Roth, 2001a; Lott, 2003). This could be construed as evidence that the federal AW ban will not reduce gunshot victimizations without reducing LCM use because the state bans tested in those studies, as written at the time, either lacked LCM bans or had LCM provisions that were less restrictive than that of the federal ban. (New Jersey's 1990 AW ban prohibited magazines holding more than 15 rounds. AP bans passed by Maryland and Hawaii prohibited magazines holding more than 20 rounds and pistol magazines holding more than 10 rounds, respectively, but these provisions did not take effect until just a few months prior to the federal ban.) However, it is hard to draw definitive conclusions from these studies for a number of reasons, perhaps the most salient of which are the following: there is little evidence on how state AW bans affect the availability and use of AWs (the impact of these laws is likely undermined to some degree by the influx of AWs from other states, a problem that was probably more pronounced prior to the federal ban when the state laws were most relevant); studies have not always examined the effects of these laws on gun homicides and shootings, the crimes that are arguably most likely to be affected by AW bans (see discussion in the main text); and the state AW bans that were passed prior to the federal ban (those in California, New Jersey, Hawaii, Connecticut, and Maryland) were in effect for only three months to five years (two years or less in most cases) before the imposition of the federal ban, after which they became largely redundant with the federal legislation and their effects more difficult to predict and estimate.

⁹⁶ One might hypothesize that the firepower provided by AWs and other semiautomatics with LCMs emboldens some offenders to engage in aggressive behaviors that prompt more shooting incidents. On the other hand, these weapons might also prevent some acts of violence by intimidating adversaries, thus discouraging attacks or resistance. We suspect that firepower does influence perceptions, considering that many police departments have upgraded their weaponry in recent years – often adopting semiautomatics with LCMs – because their officers felt outgunned by offenders. However, hypotheses about gun types and offender behavior are very speculative, and, pending additional research on such issues, it seems prudent to focus on indicators with stronger theoretical and empirical foundations.

⁹⁷ Revolvers, the most common type of non-semiautomatic handgun, typically hold only 5 or 6 rounds (and sometimes up to 9). Semiautomatic pistols, in contrast, hold ammunition in detachable magazines that, prior to the ban, typically held 5 to 17 bullets and sometimes upwards of 30 (Murtz et al., 1994).

The impact of this trend is debatable. Although the gun homicide rate rose considerably during the late 1980s and early 1990s (Bureau of Justice Statistics, 1994, p. 13), the percentage of violent gun crimes resulting in death was declining (see Figure 9-1 and the related discussion in section 9.3). Similarly, the percentage of victims killed or wounded in handgun discharge incidents declined from 27% during the 1979-1987 period to 25% for the 1987-1992 period (calculated from Rand, 1990, p. 5; 1994, p. 2) as semiautomatics were becoming more common crime weapons.⁹⁸ On the other hand, an increasing percentage of gunshot victims died from 1992 to 1995 according to hospital data (Cherry et al., 1998), a trend that could have been caused in part by a higher number of gunshot victims with multiple wounds (also see McGonigal et al., 1993). Most notably, the case fatality rate for assaultive gunshot cases involving 15 to 24-year-old males rose from 15.9% in late 1993 to 17.5% in early 1995 (p. 56).

Figure 9-1. Percentage of Violent Gun Crimes Resulting in Death (National), 1982-2002



Based on gun homicides, gun robberies, and gun assaults reported in the Uniform Crime Reports and Supplemental Homicide Reports.

⁹⁸ A related point is that there was a general upward trend in the average number of shots fired by offenders in gunfights with New York City police from the late 1980s through 1992 (calculated from Goehl, 1993, p. 51). However, the average was no higher during this time than during many years of the early 1980s and 1970s.

Some researchers have inferred links between the growing use of semiautomatics in crime and the rise of both gun homicides and bystander shootings in a number of cities during the late 1980s and early 1990s (Block and Block, 1993; McGonigal et al., 1993; Sherman et al., 1989; Webster et al., 1992). A study in Washington, DC, for example, reported increases in wounds per gunshot victim and gunshot patient mortality during the 1980s that coincided with a reported increase in the percentage of crime guns that were semiautomatics (Webster et al., 1992).

Nevertheless, changes in offender behavior, coupled with other changes in crime guns (e.g., growing use of large caliber handguns – see Caruso et al., 1999; Koper, 1995; 1997; Wintemute, 1996), may have been key factors driving such trends. Washington, DC, for example, was experiencing an exploding crack epidemic at the time of the aforementioned study, and this may have raised the percentage of gun attacks in which offenders had a clear intention to injure or kill their victims. Moreover, studies that attempted to make more explicit links between the use of semiautomatic firearms and trends in lethal gun violence via time series analysis failed to produce convincing evidence of such links (Koper, 1995; 1997). However, none of the preceding research related specific trends in the use of AWs or LCMs to trends in lethal gun violence.

9.2. Shots Fired in Gun Attacks and the Effects of Weaponry on Attack Outcomes

The evidence most directly relevant to the potential of the AW-LCM ban to reduce gun deaths and injuries comes from studies examining shots fired in gun attacks and/or the outcomes of attacks involving different types of guns. Unfortunately, such evidence is very sparse.

As a general point, the faster firing rate and larger ammunition capacities of semiautomatics, especially those equipped with LCMs, have the potential to affect the outcomes of many gun attacks because gun offenders are not particularly good shooters. Offenders wounded their victims in no more than 29% of gunfire incidents according to national, pre-ban estimates (computed from Rand, 1994, p. 2; also see estimates presented later in this chapter). Similarly, a study of handgun assaults in one city revealed a 31% hit rate per shot, based on the sum totals of all shots fired and wounds inflicted (Reedy and Koper, 2003, p. 154). Other studies have yielded hit rates per shot ranging from 8% in gunfights with police (Goehl, 1993, p. 8) to 50% in mass murders (Kleck, 1997, p. 144). Even police officers, who are presumably certified and regularly re-certified as proficient marksman and who are almost certainly better shooters than are average gun offenders, hit their targets with only 22% to 39% of their shots (Kleck, 1991, p. 163; Goehl, 1993). Therefore, the ability to deliver more shots rapidly should raise the likelihood that offenders hit their targets, not to mention innocent bystanders.⁹⁹

⁹⁹ However, some argue that this capability is offset to some degree by the effects of recoil on shooter aim, the limited number of shots fired in most criminal attacks (see below), and the fact that criminals using non-semiautomatics or semiautomatics with small magazines usually have the time and ability to deliver multiple shots if desired (Kleck, 1991, pp. 78-79).

A few studies have compared attacks with semiautomatics, sometimes specifically those with LCMs (including AWs), to other gun assaults in terms of shots fired, persons hit, and wounds inflicted (see Tables 9-1 and 9-2). The most comprehensive of these studies examined police reports of attacks with semiautomatic pistols and revolvers in Jersey City, New Jersey from 1992 through 1996 (Reedy and Koper, 2003), finding that use of pistols resulted in more shots fired and higher numbers of gunshot victims (Table 9-1), though not more gunshot wounds per victim (Table 9-2).¹⁰⁰ Results implied there would have been 9.4% fewer gunshot victims overall had semiautomatics not been used in any of the attacks. Similarly, studies of gun murders in Philadelphia (see McGonigal et al., 1993 in Table 9-1) and a number of smaller cities in Pennsylvania, Ohio, and Iowa (see Richmond et al., 2003 in Table 9-2) found that attacks with semiautomatics resulted in more shots fired and gunshot wounds per victim. An exception is that the differential in shots fired between pistol and revolver cases in Philadelphia during 1990 did not exist for cases that occurred in 1985, when semiautomatics and revolvers had been fired an average of 1.6 and 1.9 times, respectively. It is not clear whether the increase in shots fired for pistol cases from 1985 to 1990 was due to changes in offender behavior, changes in the design or quality of pistols (especially an increase in the use of models with LCMs – see Wintemute, 1996), the larger sample for 1990, or other factors.

¹⁰⁰ But unlike other studies that have examined wounds per victim (see Table 9-2), this study relied on police reports of wounds inflicted rather than medical reports, which are likely to be more accurate.

Table 9-1. Shots Fired and Victims Hit in Gunfire Attacks By Type of Gun and Magazine

Data Source	Measure	Outcome
Gun attacks with semiautomatic pistols and revolvers, Jersey City, 1992-1996 ^a	Shots Fired	Avg. = 3.2 – 3.7 (n=165 pistol cases) * Avg. = 2.3 – 2.6 (n=71 revolver cases) *
Gun homicides with semiautomatic pistols and revolvers, Philadelphia, 1985 and 1990 ^b	Shots Fired	Avg. = 1.6 (n=21 pistol cases, 1985) Avg. = 1.9 (n=57 revolver cases, 1985) Avg. = 2.7 (n=95 pistol cases, 1990) Avg. = 2.1 (n=108 revolver cases, 1990)
Gun attacks with semiautomatic pistols and revolvers, Jersey City, 1992-1996 ^a	Victims Hit	Avg. = 1.15 (n=95 pistol cases) * Avg. = 1.0 (n=40 revolver cases) *
Mass shootings with AWs, semiautomatics having LCMs, or other guns, 6+ dead or 12+ shot, United States, 1984-1993 ^c	Victims Hit	Avg. = 29 (n=6 AW/LCM cases) Avg. = 13 (n=9 non-AW/LCM cases)
Self-reported gunfire attacks by state prisoners with AWs, other semiautomatics, and non-semiautomatic firearms, United States, 1997 or earlier ^d	% of Attacks With Victims Hit	19.5% (n=72 AW or machine gun cases) 22.3% (n=419 non-AW, semiautomatic cases) 23.3% (n=608 non-AW, non-semiautomatic cases)

a. Reedy and Koper (2003)

b. McGonigal et al. (1993)

c. Figures calculated by Koper and Roth (2001a) based on data presented by Kleck (1997, p. 144)

d. Calculated from Harlow (2001, p. 11). (Sample sizes are based on unpublished information provided by the author of the survey report.)

* Pistol/revolver differences statistically significant at p<.05 (only Reedy and Koper [2003] and Harlow [2001] tested for statistically significant differences). The shots fired ranges in Reedy and Koper are based on minimum and maximum estimates.

Table 9-2. Gunshot Wounds Per Victim By Type of Gun and Magazine

Data Source	Measure	Outcome
Gun attacks with semiautomatic pistols and revolvers, Jersey City, 1992-1996 ^a	Gunshot Wounds	Avg. = 1.4 (n=107 pistol victims) Avg. = 1.5 (n=40 revolver victims)
Gun homicides with semiautomatic pistols and revolvers, Iowa City (IA), Youngstown (OH), and Bethlehem (PA), 1994-1998 ^b	Gunshot Wounds	Avg. = 4.5 total (n=212 pistol victims)* Avg. = 2.9 entry Avg. = 2.0 total (n=63 revolver victims)* Avg. = 1.5 entry
Gun homicides with assault weapons (AWs), guns having large capacity magazines (LCMs), and other firearms, Milwaukee, 1992-1995 ^c	Gunshot Wounds	Avg. = 3.23 (n=30 LCM victims) ** Avg. = 3.14 (n=7 AW victims) Avg. = 2.08 (n=102 non-AW/LCM victims)**

a. Reedy and Koper (2003)

b. Richmond et al. (2003)

c. Roth and Koper (1997, Chapter 6)

* Pistol/revolver differences statistically significant at $p < .01$.

** The basic comparison between LCM victims and non-AW/LCM victims was moderately significant ($p < .10$) with a one-tailed test. Regression results (with a slightly modified sample) revealed a difference significant at $p = .05$ (two-tailed test). Note that the non-LCM group included a few cases involving non-banned LCMs (.22 caliber attached tubular devices).

Also, a national survey of state prisoners found that, contrary to expectations, offenders who reported firing on victims with AWs and other semiautomatics were no more likely to report having killed or injured victims than were other gun offenders who reported firing on victims (Table 9-1). However, the measurement of guns used and attack outcomes were arguably less precise in this study, which was based on offender self-reports, than in other studies utilizing police and medical reports.¹⁰¹

Attacks with AWs or other guns with LCMs may be particularly lethal and injurious, based on very limited evidence. In mass shooting incidents (defined as those in which at least 6 persons were killed or at least 12 were wounded) that occurred during the decade preceding the ban, offenders using AWs and other semiautomatics with LCMs (sometimes in addition to other guns) claimed an average of 29 victims in comparison to an average of 13 victims for other cases (Table 9-1). (But also see the study discussed in the preceding paragraph in regards to victims hit in AW cases.)

Further, a study of Milwaukee homicide victims from 1992 through 1995 revealed that those killed with AWs were shot 3.14 times on average, while those killed with any

¹⁰¹ See the discussion of self-reports and AW use in Chapter 3.

gun having an LCM were shot 3.23 times on average (Table 9-2). In contrast, victims shot with guns having small magazines had only 2.1 wounds on average. If such a wound differential can be generalized to other gun attacks – if, that is, both fatal and non-fatal LCM gunshot victims are generally hit one or more extra times – then LCM use could have a considerable effect on the number of gunshot victims who die. To illustrate, the fatality rate among gunshot victims in Jersey City during the 1990s was 63% higher for those shot twice than for those shot once (26% to 16%) (Koper and Roth, 2001a; 2001b). Likewise, fatality rates are 61% higher for patients with multiple chest wounds than for patients with a single chest wound (49% to 30.5%), based on a Washington, DC study (Webster et al., 1992, p. 696).

Similar conclusions can also be inferred indirectly from the types of crimes involving LCM guns. To illustrate, handguns associated with gunshot victimizations in Baltimore (see the description of the Baltimore gun and magazine data in the preceding chapter) are 20% to 50% more likely to have LCMs than are handguns associated with other violent crimes, controlling for weapon caliber (Table 9-3). This difference may be due to higher numbers of shots and hits in crimes committed with LCMs, although it is also possible that offenders using LCMs are more likely to fire on victims. But controlling for gunfire, guns used in shootings are 17% to 26% more likely to have LCMs than guns used in gunfire cases resulting in no wounded victims (perhaps reflecting higher numbers of shots fired and victims hit in LCM cases), and guns linked to murders are 8% to 17% more likely to have LCMs than guns linked to non-fatal gunshot victimizations (perhaps indicating higher numbers of shots fired and wounds per victim in LCM cases).¹⁰² These differences are not all statistically significant, but the pattern is consistent. And as discussed in Chapter 3, AWs account for a larger share of guns used in mass murders and murders of police, crimes for which weapons with greater firepower would seem particularly useful.

¹⁰² Cases with and without gunfire and gunshot victims were approximated based on offense codes contained in the gun seizure data (some gunfire cases not resulting in wounded victims may not have been identified as such, and it is possible that some homicides were not committed with the guns recovered during the investigations). In order to control for caliber effects, we focused on 9mm and .38 caliber handguns. Over 80% of the LCM handguns linked to violent crimes were 9mm handguns. Since all (or virtually all) 9mm handguns are semiautomatics, we also selected .38 caliber guns, which are close to 9mm in size and consist almost entirely of revolvers and derringers.

The disproportionate involvement of LCM handguns in injury and death cases is greatest in the comparisons including both 9mm and .38 caliber handguns. This may reflect a greater differential in average ammunition capacity between LCM handguns and revolvers/derringers than between LCM handguns and other semiautomatics. The differential in fatal and non-fatal gunshot victims may also be due to caliber effects; 9mm is generally a more powerful caliber than .38 based on measures like kinetic energy or relative stopping power (e.g., see DiMaio, 1985, p. 140; Warner 1995, p. 223; Wintemute, 1996, p. 1751).

Table 9-3. Probabilities That Handguns Associated With Murders, Non-Fatal Shootings, and Other Violent Crimes Were Equipped With Large Capacity Magazines in Baltimore, 1993-2000

<u>Handgun Sample</u>	<u>% With LCM</u>	<u>% Difference (#2 Relative to #1)</u>
A. Handguns Used in Violent Crimes With and Without Gunshot Injury		
1) 9mm and .38: violence, no gunshot victims	23.21%	
2) 9mm and .38: violence with gunshot victims	34.87%	50%*
1) 9mm: violence, no gunshot victims	52.92%	
2) 9mm: violence with gunshot victims	63.24%	20%*
B. Handguns Used in Gunfire Cases With and Without Gunshot Injury		
1) 9mm and .38: gunfire, no gunshot victims	27.66%	
2) 9mm and .38: gunfire with gunshot victims	34.87%	26%
1) 9mm: gunfire, no gunshot victims	54.17%	
2) 9mm: gunfire with gunshot victims	63.24%	17%
C. Handguns Used in Fatal Versus Non-Fatal Gunshot Victimizations		
1) 9mm and .38: non-fatal gunshot victims	32.58%	
2) 9mm and .38: homicides	38.18%	17%
1) 9mm: non-fatal gunshot victims	61.14%	
2) 9mm: homicides	66.04%	8%

* Statistically significant difference at $p < .01$ (chi-square).

The findings of the preceding studies are subject to numerous caveats. There were few if any attempts to control for characteristics of the actors or situations that might have influenced weapon choices and/or attack outcomes.¹⁰³ Weapons data were typically missing for substantial percentages of cases. Further, many of the comparisons in the tables were not tested for statistical significance (see the notes to Tables 9-1 and 9-2).¹⁰⁴

Tentatively, nonetheless, the evidence suggests more often than not that attacks with semiautomatics, particularly those equipped with LCMs, result in more shots fired, leading to both more injuries and injuries of greater severity. Perhaps the faster firing rate and larger ammunition capacities afforded by these weapons prompt some offenders to fire more frequently (i.e., encouraging what some police and military persons refer to as a “spray and pray” mentality). But this still begs the question of whether a 10-round limit on magazine capacity will affect the outcomes of enough gun attacks to measurably reduce gun injuries and deaths.

¹⁰³ In terms of offender characteristics, recall from Chapter 3 that AP buyers are more likely than other gun buyers to have criminal histories and commit subsequent crimes. This does not seem to apply, however, to the broader class of semiautomatic users: handgun buyers with and without criminal histories tend to buy pistols in virtually the same proportions (Wintemute et al., 1998b), and youthful gun offenders using pistols and revolvers have very comparable criminal histories (Sheley and Wright, 1993b, p. 381). Further, semiautomatic users, including many of those using AWs, show no greater propensity to shoot at victims than do other gun offenders (Harlow, 2001, p. 11; Reedy and Koper, 2003). Other potential confounders to the comparisons in Tables 9-1 and 9-2 might include shooter age and skill, the nature of the circumstances (e.g., whether the shooting was an execution-style shooting), the health of the victim(s), the type of location (e.g., indoor or outdoor location), the distance between the shooter and intended victim(s), the presence of multiple persons who could have been shot intentionally or accidentally (as bystanders), and (in the mass shooting incidents) the use of multiple firearms.

¹⁰⁴ Tables 9-1 and 9-2 present the strongest evidence from the available studies. However, there are additional findings from these studies and others that, while weaker, are relevant. Based on gun model information available for a subset of cases in the Jersey City study, there were 12 gunfire cases involving guns manufactured with LCMs before the ban (7 of which resulted in wounded victims) and 94 gunfire cases involving revolvers or semiautomatic models without LCMs. Comparisons of these cases produced results similar to those of the main analysis: shot fired estimates ranged from 2.83 to 3.25 for the LCM cases and 2.22 to 2.6 for the non-LCM cases; 1.14 victims were wounded on average in the LCM gunshot cases and 1.06 in the non-LCM gunshot cases; and LCM gunshot victims had 1.14 wound on average, which, contrary to expectations, was less than the 1.47 average for other gunshot victims.

The compilation of mass shooting incidents cited in Table 9-1 had tentative shots fired estimates for 3 of the AW-LCM cases and 4 of the other cases. The AW-LCM cases averaged 93 shots per incident, a figure two and a half times greater than the 36.5 shot average for the other cases.

Finally, another study of firearm mass murders found that the average number of victims killed (tallies did not include others wounded) was 6 in AW cases and 4.5 in other cases (Roth and Koper, 1997, Appendix A). Only 2 of the 52 cases studied clearly involved AWs (or very similar guns). However, the make and model of the firearm were available for only eight cases, so additional incidents may have involved LCMs; in fact, at least 35% of the cases involved unidentified semiautomatics. (For those cases in which at least the gun type and firing action were known, semiautomatics outnumbered non-semiautomatics by 6 to 1, perhaps suggesting that semiautomatics are used disproportionately in mass murders.)

9.2.1. Will a 10-Round Magazine Limit Reduce Gunshot Victimization?

Specific data on shots fired in gun attacks are quite fragmentary and often inferred indirectly, but they suggest that relatively few attacks involve more than 10 shots fired.¹⁰⁵ Based on national data compiled by the FBI, for example, there were only about 19 gun murder incidents a year involving four or more victims from 1976 through 1995 (for a total of 375) (Fox and Levin, 1998, p. 435) and only about one a year involving six or more victims from 1976 through 1992 (for a total of 17) (Kleck, 1997, p. 126). Similarly, gun murder victims are shot two to three times on average according to a number of sources (see Table 9-2 and Koper and Roth, 2001a), and a study at a Washington, DC trauma center reported that only 8% of all gunshot victims treated from 1988 through 1990 had five or more wounds (Webster et al., 1992, p. 696).

However, counts of victims hit or wounds inflicted provide only a lower bound estimate of the number of shots fired in an attack, which could be considerably higher in light of the low hit rates in gunfire incidents (see above).¹⁰⁶ The few available studies on shots fired show that assailants fire less than four shots on average (see sources in Table 9-1 and Goehl, 1993), a number well within the 10-round magazine limit imposed by the AW-LCM ban, but these studies have not usually presented the full distribution of shots fired for all cases, so it is usually unclear how many cases, if any, involved more than 10 shots.

An exception is the aforementioned study of handgun murders and assaults in Jersey City (Reedy and Koper, 2003). Focusing on cases for which at least the type of handgun (semiautomatic, revolver, derringer) could be determined, 2.5% of the gunfire cases involved more than 10 shots.¹⁰⁷ These incidents – all of which involved pistols – had a 100% injury rate and accounted for 4.7% of all gunshot victims in the sample (see Figure 9-2). Offenders fired a total of 83 shots in these cases, wounding 7 victims, only 1 of whom was wounded more than once. Overall, therefore, attackers fired over 8 shots

¹⁰⁵ Although the focus of the discussion is on attacks with more than 10 shots fired, a gun user with a post-ban 10-round magazine can attain a firing capacity of 11 shots with many semiautomatics by loading one bullet into the chamber before loading the magazine.

¹⁰⁶ As a dramatic example, consider the heavily publicized case of Amadou Diallo, who was shot to death by four New York City police officers just a few years ago. The officers in this case fired upon Diallo 41 times but hit him with only 19 shots (a 46% hit rate), despite his being confined in a vestibule. Two of the officers reportedly fired until they had emptied their 16-round magazines, a reaction that may not be uncommon in such high-stress situations. In official statistics, this case will appear as having only one victim.

¹⁰⁷ The shots fired estimates were based on reported gunshot injuries, physical evidence (for example, shell casings found at the scene), and the accounts of witnesses and actors. The 2.5% figure is based on minimum estimates of shots fired. Using maximum estimates, 3% of the gunfire incidents involved more than 10 shots (Reedy and Koper, 2003, p. 154).

A caveat to these figures is that the federal LCM ban was in effect for much of the study period (which spanned January 1992 to November 1996), and a New Jersey ban on magazines with more than 15 rounds predated the study period. It is thus conceivable that these laws reduced attacks with LCM guns and attacks with more than 10 shots fired, though it seems unlikely that the federal ban had any such effect (see the analyses of LCM use presented in the previous chapter). Approximately 1% of the gunfire incidents involved more than 15 shots.

for every wound inflicted, suggesting that perhaps fewer persons would have been wounded had the offenders not been able to fire as often.¹⁰⁸

Figure 9-2. Attacks With More Than 10 Shots Fired

Jersey City Handgun Attacks, 1992-1996

- **2.5% - 3% of gunfire incidents involved 11+ shots**
 - **3.6% - 4.2% of semiauto pistol attacks**
- **100% injury rate**
- **Produced 4.7% of all gunshot wound victims**
- **8.3 shots per gunshot wound**

Based on data reported by Reedy and Koper (2003). Injury statistics based on the 2.5% of cases involving 11+ shots by minimum estimate.

Caution is warranted in generalizing from these results because they are based on a very small number of incidents (6) from one sample in one city. Further, it is not known if the offenders in these cases had LCMs (gun model and magazine information was very limited); they may have emptied small magazines, reloaded, and continued firing. But subject to these caveats, the findings suggest that the ability to deliver more than 10 shots without reloading may be instrumental in a small but non-trivial percentage of gunshot victimizations.

On the other hand, the Jersey City study also implies that eliminating AWs and LCMs might only reduce gunshot victimizations by up to 5%. And even this estimate is probably overly optimistic because the LCM ban cannot be expected to prevent all incidents with more than 10 shots. Consequently, any effects from the ban (should it be extended) are likely to be smaller and perhaps quite difficult to detect with standard statistical methods (see Koper and Roth, 2001a), especially in the near future, if recent patterns of LCM use continue.

9.3. Post-Ban Trends in Lethal and Injurious Gun Violence

Having established some basis for believing the AW-LCM ban could have at least a small effect on lethal and injurious gun violence, is there any evidence of such an effect to date? Gun homicides plummeted from approximately 16,300 in 1994 to 10,100 in 1999, a reduction of about 38% (see the Federal Bureau of Investigation's *Uniform Crime*

¹⁰⁸ These figures are based on a supplemental analysis not contained in the published study. We thank Darin Reedy for this analysis.

Reports). Likewise, non-fatal, assaultive gunshot injuries treated in hospitals nationwide declined one-third, from about 68,400 to under 46,400, between 1994 and 1998 (Gotsch et al., 2001, pp. 23-24). Experts believe numerous factors contributed to the recent drop in these and other crimes, including changing drug markets, a strong economy, better policing, and higher incarceration rates, among others (Blumstein and Wallman, 2000). Attributing the decline in gun murders and shootings to the AW-LCM ban is problematic, however, considering that crimes with LCMs appear to have been steady or rising since the ban. For this reason, we do not undertake a rigorous investigation of the ban's effects on gun violence.¹⁰⁹

But a more casual assessment shows that gun crimes since the ban have been no less likely to cause death or injury than those before the ban, contrary to what we might expect if crimes with AWs and LCMs had both declined. For instance, the percentage of violent gun crimes resulting in death has been very stable since 1990 according to national statistics on crimes reported to police (see Figure 9-1 in section 9.1).¹¹⁰ In fact, the percentage of gun crimes resulting in death during 2001 and 2002 (2.94%) was slightly higher than that during 1992 and 1993 (2.9%).

Similarly, neither medical nor criminological data sources have shown any post-ban reduction in the percentage of crime-related gunshot victims who die. If anything, this percentage has been higher since the ban, a pattern that could be linked in part to more multiple wound victimizations stemming from elevated levels of LCM use. According to medical examiners' reports and hospitalization estimates, about 20% of gunshot victims died nationwide in 1993 (Gotsch et al., 2001). This figure rose to 23% in 1996, before declining to 21% in 1998 (Figure 9-3).¹¹¹ Estimates derived from the Uniform Crime Reports and the Bureau of Justice Statistics' annual National Crime Victimization Survey follow a similar pattern from 1992 to 1999 (although the ratio of fatal to non-fatal cases is much higher in these data than that in the medical data) and also show a considerable increase in the percentage of gunshot victims who died in 2000 and 2001 (Figure 9-3).¹¹² Of course, changes in offender behavior or other changes in crime

¹⁰⁹ In our prior study (Koper and Roth 2001a; Roth and Koper, 1997, Chapter 6), we estimated that gun murders were about 7% lower than expected in 1995 (the first year after the ban), adjusting for pre-existing trends. However, the very limited post-ban data available for that study precluded a definitive judgment as to whether this drop was statistically meaningful (see especially Koper and Roth, 2001a). Furthermore, that analysis was based on the assumption that crimes with both AWs and LCMs had dropped in the short-term aftermath of the ban, an assumption called into question by the findings of this study. It is now more difficult to credit the ban with any of the drop in gun murders in 1995 or anytime since. We did not update the gun murder analysis because interpreting the results would be unavoidably ambiguous. Such an investigation will be more productive after demonstrating that the ban has reduced crimes with both AWs and LCMs.

¹¹⁰ The decline in this figure during the 1980s was likely due in part to changes in police reporting of aggravated assaults in recent decades (Blumstein, 2000). The ratio of gun murders to gun robberies rose during the 1980s, then declined and remained relatively flat during the 1990s.

¹¹¹ Combining homicide data from 1999 with non-fatal gunshot estimates for 2000 suggests that about 20% of gunshot victimizations resulted in death during 1999 and 2000 (Simon et al., 2002).

¹¹² The SHR/NCVS estimates should be interpreted cautiously because the NCVS appears to undercount non-fatal gunshot wound cases by as much as two-thirds relative to police data, most likely because it fails to represent adequately the types of people most likely to be victims of serious crime (i.e., young urban males who engage in deviant lifestyles) (Cook, 1985). Indeed, the rate of death among gunshot victims

weaponry (such as an increase in shootings with large caliber handguns) may have influenced these trends. Yet is worth noting that multiple wound shootings were elevated over pre-ban levels during 1995 and 1996 in four of five localities examined during our first AW study, though most of the differences were not statistically significant (Table 9-4, panels B through E).

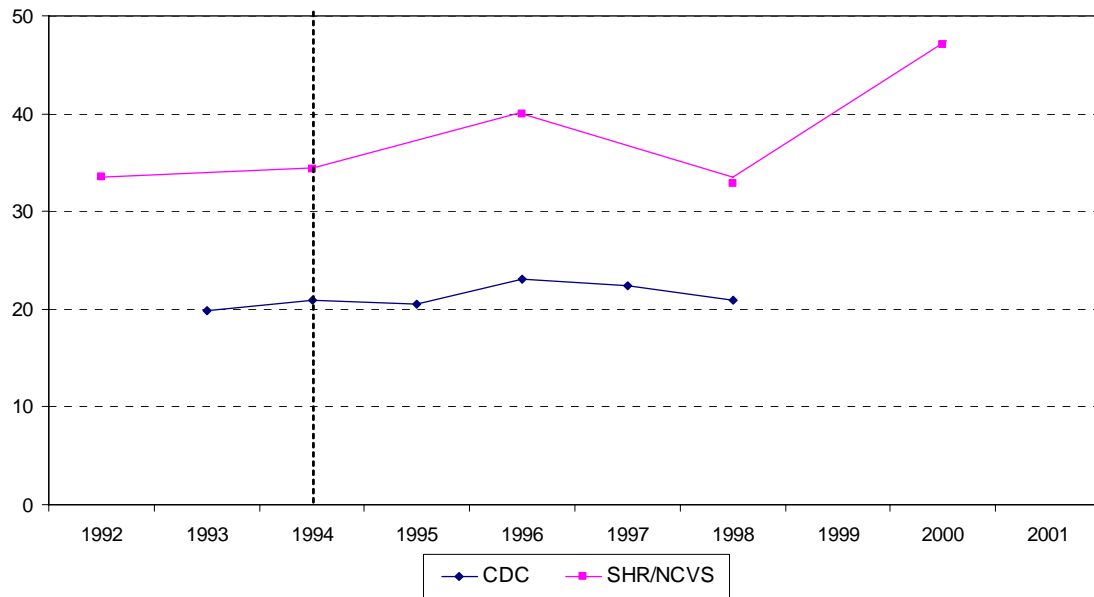
Another potential indicator of ban effects is the percentage of gunfire incidents resulting in fatal or non-fatal gunshot victimizations. If attacks with AWs and LCMs result in more shots fired and victims hit than attacks with other guns and magazines, we might expect a decline in crimes with AWs and LCMs to reduce the share of gunfire incidents resulting in victims wounded or killed. Measured nationally with UCR and NCVS data, this indicator was relatively stable at around 30% from 1992 to 1997, before rising to about 40% from 1998 through 2000 (Figure 9-4).¹¹³ Along similar lines, multiple victim gun homicides remained at relatively high levels through at least 1998, based on the national average of victims killed per gun murder incident (Table 9-4, panel A).¹¹⁴

appears much higher in the SHR/NCVS series than in data compiled from medical examiners and hospitals (see the CDC series in Figure 9-3). But if these biases are relatively consistent over time, the data may still provide useful insights into trends over time.

¹¹³ The NCVS estimates are based on a compilation of 1992-2002 data recently produced by the Inter-University Consortium for Political and Social Research (ICPSR study 3691). In 2002, only 9% of non-fatal gunfire incidents resulted in gunshot victimizations. This implies a hit rate for 2002 that was below pre-ban levels, even after incorporating gun homicide cases into the estimate. However, the 2002 NCVS estimate deviates quite substantially from earlier years, for which the average hit rate in non-fatal gunfire incidents was 24% (and the estimate for 2001 was 20%). Therefore, we did not include the 2002 data in our analysis. We used two-year averages in Figures 9-3 and 9-4 because the annual NCVS estimates are based on very small samples of gunfire incidents. The 2002 sample was especially small, so it seems prudent to wait for more data to become available before drawing conclusions about hit rates since 2001.

¹¹⁴ We thank David Huffer for this analysis.

Figure 9-3. Percentage of Gunshot Victimization Resulting in Death (National), 1992-2001



SHR/NCVS series based on two-year averages from the Supplemental Homicide Reports and National Crime Victimization Survey. CDC series based on homicide and hospitalization data from the Centers for Disease Control (reported by Gotsch et al. 2001).

Table 9-4. Short-Term, Post-Ban Changes in the Lethality and Injuriousness of Gun Violence: National and Local Indicators, 1994-1998 ^a

Measure and Location	<u>Pre-Ban Period</u>	<u>Post-Ban Period</u>	Change
A. Victims Per Gun Homicide Incident (National)	Jan. 1986-Sept. 1994 1.05 (N=106,668)	Oct. 1994-Dec. 1998 1.06 (N=47,511)	1%**
B. Wounds per Gun Homicide Victim: Milwaukee County	Jan. 1992-Aug. 1994 2.28 (N=282)	Sept. 1994-Dec. 1995 2.52 (N=136)	11%
C. Wounds Per Gun Homicide Victim: Seattle (King County)	Jan. 1992-Aug. 1994 2.08 (N=184)	Sept. 1994-Jun. 1996 2.46 (N=91)	18%
D. Wounds Per Gunshot Victim: Jersey City (NJ)	Jan. 1992-Aug. 94 1.42 (N=125)	Sept. 1994-Jun. 1996 1.39 (N=137)	-2%
E. % of Gun Homicide Victims With Multiple Wounds: San Diego County	Jan. 1992-Aug. 1994 41% (N=445)	Sept. 1994-Jun. 1996 43% (N=223)	5%
F. % of Non-Fatal Gunshot Victims With Multiple Wounds: Boston	Jan. 1992-Aug. 1994 18% (N=584)	Sept. 1994-Dec. 1995 24% (N=244)	33%*

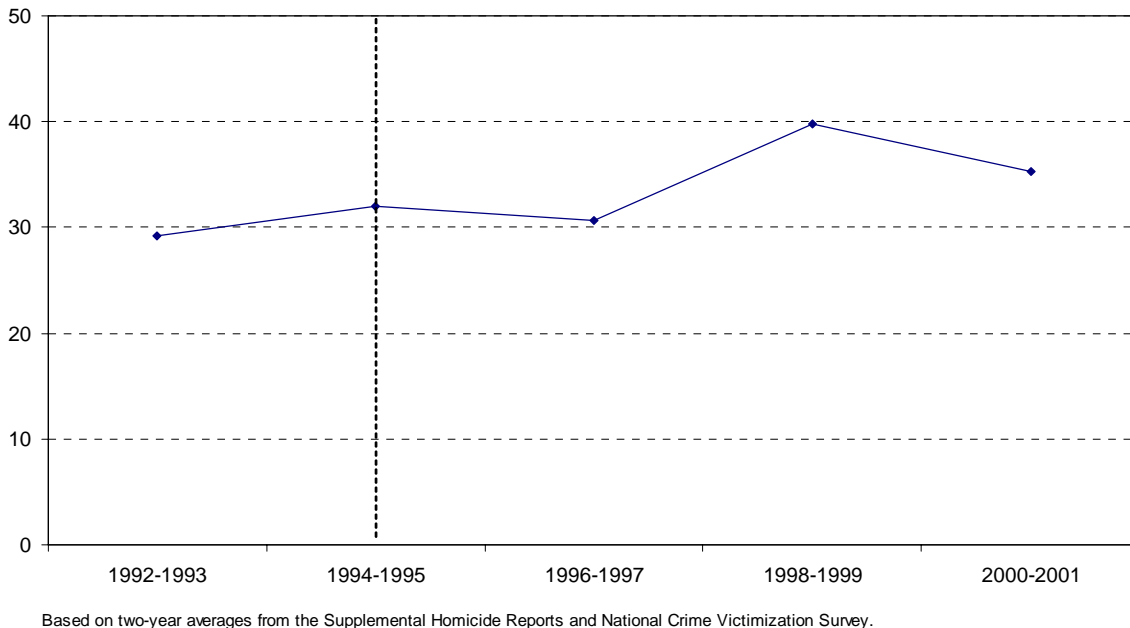
a. National victims per incident figures based on unpublished update of analysis reported in Roth and Koper (1997, Chapter 5). Gunshot wound data are taken from Roth and Koper (1997, Chapter 6) and Koper and Roth (2001a). Wound data are based on medical examiners' reports (Milwaukee, Seattle, San Diego), hospitalization data (Boston), and police reports (Jersey City).

* Chi-square p level < .1.

** T-test p level < .01.

If anything, therefore, gun attacks appear to have been more lethal and injurious since the ban. Perhaps elevated LCM use has contributed to this pattern. But if this is true, then the reverse would also be true – a reduction in crimes with LCMs, should the ban be extended, would reduce injuries and deaths from gun violence.

Figure 9-4. Percentage of Gunfire Cases Resulting in Gunshot Victimizations (National), 1992-2001



9.4. Summary

Although the ban has been successful in reducing crimes with AWs, any benefits from this reduction are likely to have been outweighed by steady or rising use of non-banned semiautomatics with LCMs, which are used in crime much more frequently than AWs. Therefore, we cannot clearly credit the ban with any of the nation's recent drop in gun violence. And, indeed, there has been no discernible reduction in the lethality and injuriousness of gun violence, based on indicators like the percentage of gun crimes resulting in death or the share of gunfire incidents resulting in injury, as we might have expected had the ban reduced crimes with both AWs and LCMs.

However, the grandfathering provision of the AW-LCM ban guaranteed that the effects of this law would occur only gradually over time. Those effects are still unfolding and may not be fully felt for several years into the future, particularly if foreign, pre-ban LCMs continue to be imported into the U.S. in large numbers. It is thus premature to make definitive assessments of the ban's impact on gun violence.

Having said this, the ban's impact on gun violence is likely to be small at best, and perhaps too small for reliable measurement. AWs were used in no more than 8% of gun crimes even before the ban. Guns with LCMs are used in up to a quarter of gun crimes, but it is not clear how often the outcomes of gun attacks depend on the ability to fire more than 10 shots (the current limit on magazine capacity) without reloading.

Nonetheless, reducing crimes with AWs and especially LCMs could have non-trivial effects on gunshot victimizations. As a general matter, hit rates tend to be low in gunfire incidents, so having more shots to fire rapidly can increase the likelihood that offenders hit their targets, and perhaps bystanders as well. While not entirely consistent, the few available studies contrasting attacks with different types of guns and magazines generally suggest that attacks with semiautomatics – including AWs and other semiautomatics with LCMs – result in more shots fired, persons wounded, and wounds per victim than do other gun attacks. Further, a study of handgun attacks in one city found that about 3% of gunfire incidents involved more than 10 shots fired, and those cases accounted for nearly 5% of gunshot victims. However, the evidence on these matters is too limited (both in volume and quality) to make firm projections of the ban's impact, should it be reauthorized.

10. LOOKING TO THE FUTURE: RESEARCH RECOMMENDATIONS AND SPECULATION ABOUT THE CONSEQUENCES OF REAUTHORIZING, MODIFYING, OR LIFTING THE ASSAULT WEAPONS BAN

In this chapter, we discuss future lines of inquiry that would be informative whether or not the AW-LCM ban is renewed in September 2004. We then offer some brief thoughts about the possible consequences of reauthorizing the ban, modifying it, or allowing it to expire.

10.1. Research Recommendations and Data Requirements

10.1.1. An Agenda for Assault Weapons Research and Recommendations for Data Collection by Law Enforcement

The effects of the AW-LCM ban have yet to be fully realized; therefore, we recommend continued study of trends in the availability and criminal use of AWs and LCMs. Even if the ban is lifted, longer-term study of crimes with AWs and LCMs will inform future assessment of the consequences of these policy shifts and improve understanding of the responses of gun markets to gun legislation more generally.¹¹⁵

Developing better data on crimes with LCMs is especially important. To this end, we urge police departments and their affiliated crime labs to record information about magazines recovered with crime guns. Further, we recommend that ATF integrate ammunition magazine data into its national gun tracing system and encourage reporting of magazine data by police departments that trace firearms.

As better data on LCM use become available, more research is warranted on the impacts of AW and LCM trends (which may go up or down depending on the ban's fate) on gun murders and shootings, as well as levels of death and injury per gun crime. Indicators of the latter, such as victims per gunfire incident and wounds per gunshot victim, are useful complementary outcome measures because they reflect the mechanisms through which use of AWs and LCMs is hypothesized to affect gun deaths and injuries.¹¹⁶ Other potentially promising lines of inquiry might relate AW and LCM use to mass murders and murders of police, crimes that are very rare but appear more likely to involve AWs (and perhaps LCMs) and to disproportionately affect public perceptions.¹¹⁷

¹¹⁵ Establishing time series data on primary and secondary market prices and production or importation of various guns and magazines of policy interest could provide benefits for policy researchers. Like similar statistical series maintained for illegal drugs, such price and production series would be valuable instruments for monitoring effects of policy changes and other influences on markets for various weapons.

¹¹⁶ However, more research is needed on the full range of factors that cause variation in these indicators over time and between places.

¹¹⁷ Studying these crimes poses a number of challenges, including modeling of rare events, establishing the reliability and validity of methods for measuring the frequency and characteristics of mass murders (such as through media searches; see Duwe, 2000, Roth and Koper, 1997, Appendix A), and controlling for factors like the use of bullet-proof vests by police.

Finally, statistical studies relating AW and LCM use to trends in gun violence should include statistical power analysis to ensure that estimated models have sufficient ability to detect small effects, an issue that has been problematic in some of our prior time series research on the ban (Koper and Roth, 2001a) and is applicable more generally to the study of modest, incremental policy changes.

Research on aggregate trends should be complemented by more incident-based studies that contrast the dynamics and outcomes of attacks with different types of guns and magazines, while controlling for relevant characteristics of the actors and situations. Such studies would refine predictions of the change in gun deaths and injuries that would follow reductions in attacks with AWs and LCMs. For instance, how many homicides and injuries involving AWs and LCMs could be prevented if offenders were forced to substitute other guns and magazines? In what percentage of gun attacks does the ability to fire more than ten rounds without reloading affect the number of wounded victims or determine the difference between a fatal and non-fatal attack? Do other AW features (such as flash hiders and pistol grips on rifles) have demonstrable effects on the outcomes of gun attacks? Studies of gun attacks could draw upon police incident reports, forensic examinations of recovered guns and magazines, and medical and law enforcement data on wounded victims.

10.1.2. Studying the Implementation and Market Impacts of Gun Control

More broadly, this study reiterates the importance of examining the implementation of gun policies and the workings of gun markets, considerations that have been largely absent from prior research on gun control. Typical methods of evaluating gun policies involve statistical comparisons of total or gun crime rates between places and/or time periods with and without different gun control provisions. Without complimentary implementation and market measures, such studies have a “black box” quality and may lead to misleading conclusions. For example, a time series study of gun murder rates before and after the AW-LCM ban might find that the ban has not reduced gun murders. Yet the interpretation of such a finding would be ambiguous, absent market or implementation measures. Reducing attacks with AWs and LCMs may in fact have no more than a trivial impact on gun deaths and injuries, but any such impact cannot be realized or adequately assessed until the availability and use of the banned guns and magazines decline appreciably. Additionally, it may take many years for the effects of modest, incremental policy changes to be fully felt, a reality that both researchers and policy makers should heed. Similar implementation concerns apply to the evaluation of various gun control policies, ranging from gun bans to enhanced sentences for gun offenders.

Our studies of the AW ban have shown that the reaction of manufacturers, dealers, and consumers to gun control policies can have substantial effects on demand and supply for affected weapons both before and after a law’s implementation. It is important to study these factors because they affect the timing and form of a law’s impact

on the availability of weapons to criminals and, by extension, the law's impact on gun violence.

10.2. Potential Consequences of Reauthorizing, Modifying, or Lifting the Assault Weapons Ban

10.2.1. Potential Consequences of Reauthorizing the Ban As Is

Should it be renewed, the ban might reduce gunshot victimizations. This effect is likely to be small at best and possibly too small for reliable measurement. A 5% reduction in gunshot victimizations is perhaps a reasonable upper bound estimate of the ban's potential impact (based on the only available estimate of gunshot victimizations resulting from attacks in which more than 10 shots were fired), but the actual impact is likely to be smaller and may not be fully realized for many years into the future, particularly if pre-ban LCMs continue to be imported into the U.S. from abroad. Just as the restrictions imposed by the ban are modest – they are essentially limits on weapon accessories like LCMs, flash hiders, threaded barrels, and the like – so too are the potential benefits.¹¹⁸ In time, the ban may be seen as an effective prevention measure that stopped further spread of weaponry considered to be particularly dangerous (in a manner similar to federal restrictions on fully automatic weapons). But that conclusion will be contingent on further research validating the dangers of AWs and LCMs.

10.2.2. Potential Consequences of Modifying the Ban

We have not examined the specifics of legislative proposals to modify the AW ban. However, we offer a few general comments about the possible consequences of such efforts, particularly as they relate to expanding the range of the ban as some have advocated (Halstead, 2003, pp. 11-12).

¹¹⁸ But note that although the ban's impact on gunshot victimizations would be small in percentage terms and unlikely to have much effect on the public's fear of crime, it could conceivably prevent hundreds of gunshot victimizations annually and produce notable cost savings in medical care alone. To help place this in perspective, there were about 10,200 gun homicides and 48,600 non-fatal, assault-related shootings in 2000 (see the FBI's *Uniform Crime Reports* for the gun homicide estimate and Simon et al. [2002] for the estimate of non-fatal shootings). Reducing these crimes by 1% would have thus prevented 588 gunshot victimizations in 2000 (we assume the ban did not actually produce such benefits because the reduction in AW use as of 2000 was outweighed by steady or rising levels of LCM use). This may seem insubstantial compared to the 342,000 murders, assaults, and robberies committed with guns in 2000 (see the *Uniform Crime Reports*). Yet, gunshot victimizations are particularly costly crimes. Setting aside the less tangible costs of lost lives and human suffering, the lifetime medical costs of assault-related gunshot injuries (fatal and non-fatal) were estimated to be about \$18,600 per injury in 1994 (Cook et al., 1999). Therefore, the lifetime costs of 588 gun homicides and shootings would be nearly \$11 million in 1994 dollars (the net medical costs could be lower for reasons discussed by Cook and Ludwig [2000] but, on the other hand, this estimate does not consider other governmental and private costs that Cook and Ludwig attribute to gun violence). This implies that small reductions in gunshot victimizations sustained over many years could produce considerable long-term savings for society. We do not wish to push this point too far, however, considering the uncertainty regarding the ban's potential impact.

Gun markets react strongly merely to debates over gun legislation. Indeed, debate over the AW ban's original passage triggered spikes upwards of 50% in gun distributors' advertised AW prices (Roth and Koper, 1997, Chapter 4). In turn, this prompted a surge in AW production in 1994 (Chapter 5). Therefore, it seems likely that discussion of broadening the AW ban to additional firearms would raise prices and production of the weapons under discussion. (Such market reactions may already be underway in response to existing proposals to expand the ban, but we have not investigated this issue.) Heightened production levels could saturate the market for the weapons in question, depressing prices and delaying desired reductions in crimes with the weapons, as appears to have happened with banned ARs.

Mandating further design changes in the outward features of semiautomatic weapons (e.g., banning weapons having any military-style features) may not produce benefits beyond those of the current ban. As noted throughout this report, the most important feature of military-style weapons may be their ability to accept LCMs, and this feature has been addressed by the LCM ban and the LCMM rifle ban. Whether changing other features of military-style firearms will produce measurable benefits is unknown.

Finally, curbing importation of pre-ban LCMs should help reduce crimes with LCMs and possibly gunshot victimizations. Crimes with LCMs may not decline substantially for quite some time if millions of LCMs continue to be imported into the U.S.

10.2.3. Potential Consequences of Lifting the Ban

If the ban is lifted, it is likely that gun and magazine manufacturers will reintroduce AW models and LCMs, perhaps in substantial numbers.¹¹⁹ In addition, AWs grandfathered under the 1994 law may lose value and novelty, prompting some of their lawful owners to sell them in secondary markets, where they may reach criminal users. Any resulting increase in crimes with AWs and LCMs might increase gunshot victimizations, though this effect could be difficult to discern statistically.

It is also possible, and perhaps probable, that new AWs and LCMs will eventually be used to commit mass murder. Mass murders garner much media attention, particularly when they involve AWs (Duwe, 2000). The notoriety likely to accompany mass murders if committed with AWs and LCMs, especially after these guns and magazines have been deregulated, could have a considerable negative impact on public perceptions, an effect that would almost certainly be intensified if such crimes were committed by terrorists operating in the U.S.

¹¹⁹ Note, however, that foreign semiautomatic rifles with military features, including the LCMM rifles and several rifles prohibited by the 1994 ban, would still be restricted by executive orders passed in 1989 and 1998. Those orders stem from the sporting purposes test of the Gun Control Act of 1968.

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Exhibit 67

ER1515

Man wanted in officer's slaying dies in gunbattle

By RICH McKAY
SENTINEL STAFF WRITER

BEVILLE'S CORNER — A man wanted in the killing of a New Jersey police officer last week was slain during a gunfight Easter morning after a chase by

and abdomen, also wounding her partner before fleeing.

Hernando deputies called for backup as they began to pursue Marti and he sped off and shot at them, Bergen County, N.J., prosecutor John L. Molinelli said.

drove northeast on State crossing from Hernando in

ment, Caruthers said. The chase covered about 20 miles, Hernando sheriff's officials said.

When the car stopped about 9:50 a.m., Marti got out with an AK-47 assault rifle and again shot at the deputies, officials said. He was shot several times by deputies, Caruthers said.

Marti was airlifted to a Lakeland hospital where he was pronounced



Violence Policy Center

"Officer Down"

Assault Weapons and the War on Law Enforcement

Rifle attack called officer's nightmare

B6 The Roanoke Times, Sunday, June 17, 2001

Suspect brandished 9 mm 'Uzi-style' weapon, authorities say

Slain officer wanted shift with most action

ACTION FROM 1-A

In his application, Cudnik said he wanted to be a police officer because it was "one of the most mentally and physically challenging and emotionally rewarding vocations that I can aspire to."

wanted to work when all the action was happening."

His personnel file showed no commendations. The only reprimand occurred in February 1995 when he was suspended for 60 days for leaving the scene of a three-car accident while off-duty, then failing to report his involvement in it.

Cudnik grew up in the Garfield Heights area and graduated from Parma Senior High School in 1967. He was the divorced father of three sons: Hilary Jr., 23, a Cleveland firefighter; Michael, 21, a student at the University of Dayton; and Daniel, 20, with the Coast Guard.

Even though he worked the grueling 8 p.m. to 4 a.m. shift in one of the city's toughest neighborhoods, Cudnik was a frequent presence at the bar, which opened at 6 a.m. to serve bacon and eggs to the no-nonsense working man's crowd at the nearby LTV Steel Co. mill.

"He was always here," said

ER1516

The Violence Policy Center (VPC) is a national non-profit educational organization that conducts research and public education on firearms violence and provides information and analysis to policymakers, journalists, grassroots advocates, and the general public. The Center examines the role of firearms in America, analyzes trends and patterns in firearms violence, and works to develop policies to reduce gun-related death and injury.

This report was authored by VPC Legislative Director Kristen Rand and VPC Policy Analyst Marty Langley. It was edited by VPC Publications Coordinator Aimée Stenzel and VPC Executive Director Josh Sugarmann.

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- *Firearms Production in America 2002 Edition—A Listing of Firearm Manufacturers in America with Production Histories Broken Out by Firearm Type and Caliber* (March 2003)
- *“Just Like Bird Hunting”—The Threat to Civil Aviation from 50 Caliber Sniper Rifles* (January 2003)
- *When Men Murder Women: An Analysis of 2000 Homicide Data* (October 2002)
- *No Deal: The Drop in Federally Licensed Firearms Dealers in America* (September 2002)
- *Sitting Ducks—The Threat to the Chemical and Refinery Industry from 50 Caliber Sniper Rifles* (August 2002)
- *License to Kill IV: More Guns, More Crime* (June 2002)
- *American Roulette: The Untold Story of Murder-Suicide in the United States* (April 2002)
- *The U.S. Gun Industry and Others Unknown—Evidence Debunking the Gun Industry’s Claim that Osama bin Laden Got His 50 Caliber Sniper Rifles from the U.S. Afghan-Aid Program* (February 2002)
- *“A .22 for Christmas”—How the Gun Industry Designs and Markets Firearms for Children and Youth* (December 2001)
- *Kids in the Line of Fire: Children, Handguns, and Homicide* (November 2001)
- *Unintended Consequences: Pro-Handgun Experts Prove That Handguns Are a Dangerous Choice For Self-Defense* (November 2001)
- *Voting from the Rooftops: How the Gun Industry Armed Osama bin Laden, Other Foreign and Domestic Terrorists, and Common Criminals with 50 Caliber Sniper Rifles* (October 2001)
- *Shot Full of Holes: Deconstructing John Ashcroft’s Second Amendment* (July 2001)
- *Hispanics and Firearms Violence* (May 2001)
- *Where’d They Get Their Guns?—An Analysis of the Firearms Used in High-Profile Shootings, 1963 to 2001* (April 2001)
- *A Deadly Myth: Women, Handguns, and Self-Defense* (January 2001)
- *Handgun Licensing and Registration: What it Can and Cannot Do* (September 2000)
- *Pocket Rockets: The Gun Industry’s Sale of Increased Killing Power* (July 2000)
- *Gunland USA: A State-by-State Ranking of Gun Shows, Gun Retailers, Machine Guns, and Gun Manufacturers* (June 2000)
- *Guns For Felons: How the NRA Works to Rearm Criminals* (March 2000)
- *One Shot, One Kill: Civilian Sales of Military Sniper Rifles* (May 1999)
- *Cease Fire: A Comprehensive Strategy to Reduce Firearms Violence* (Revised, October 1997)

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ER1517

Introduction

In 1994, Congress passed, and President Clinton signed, a ban on the production of certain semiautomatic assault weapons as well as high-capacity ammunition magazines that hold more than 10 rounds. The law banned specific assault weapons by name and also classified as assault weapons semiautomatic firearms that could accept a detachable ammunition magazine and had two additional assault weapon design characteristics. The law is scheduled to end on September 13, 2004.

This study reveals the gun industry's efforts to evade the 1994 ban and documents the significant threat assault weapons still pose to law enforcement. These facts make clear the need to not only renew, but also *strengthen*, the ban before it expires next year. Legislation will soon be introduced in the U.S. Congress to accomplish this goal. Without action this Congress, the 1994 law will expire in 2004.

Both President Bush and Attorney General Ashcroft have expressed support for the assault weapons ban. President Bush's support for the ban has been longstanding. In October 2000, Bush campaign spokesperson Ray Sullivan told *Salon* magazine that he would expect then-candidate Bush to reauthorize the ban.¹ That position was reiterated by Attorney General John Ashcroft during his confirmation hearings on January 17, 2001, when he stated, "It is my understanding that the president-elect of the United States has indicated his clear support for extending the assault weapon ban, and I would be pleased to move forward that position, and to support that as a policy of this president, and as a policy of the Justice Department."² Most recently, in April of this year, White House spokesperson Scott McClellan told Knight Ridder news service, "The President supports the current law, and he supports reauthorization of the current law."³

This study contains three sections. *Section One: Assault Weapons, the Gun Industry, and Law Enforcement* reveals how the firearms industry has evaded the current ban, and how assault weapons continue to pose a stark threat to America's law enforcement personnel. *Section Two: Law Enforcement Officers Killed in the Line of Duty by Assault Weapons, 1998 Through 2001* is a chart listing the known incidents of police officers killed by assault weapons, including year, state, manufacturer, model of assault weapon, and caliber. *Section Three: Selected Incidents of Law Enforcement Officers Killed in the Line of Duty by Assault Weapons, 1998 Through*

¹ Jake Tapper, "Gore Shoots Blanks on Guns," *Salon*, October 24, 2000.

² "Day 2, Morning Session of a Hearing of the Senate Judiciary Committee," *Federal News Service*, January 17, 2001.

³ Shannon McCaffrey, "In Surprise Move, Bush Backs Renewing Ban on Assault Weapons," *Knight Ridder/Tribune News Services*, April 12, 2003.

2001 offers expanded narratives for 15 of the law enforcement shootings that occurred during this period. Each narrative also includes a representative illustration of the model of assault weapon used in the shooting (each weapon shown is representative of the brand or model of assault weapon and may not be identical to the specific weapon used in the shooting detailed in the narrative).

Section One: Assault Weapons, the Gun Industry, and Law Enforcement

Assault Weapons: A Clear Threat to Law Enforcement

A primary stimulus for the 1994 law was the severe threat that assault weapons pose to law enforcement officers. Police and other law enforcement personnel were some of the first victims of the assault weapon trend that emerged in the 1980s. For example, in October 1984, a San Jose, California, police officer was gunned down with an UZI carbine. In a high-profile shootout in April 1986, two agents from the Federal Bureau of Investigation (FBI) were killed by robbery suspects wielding a Ruger Mini-14 assault rifle. Five other agents were wounded in the gun battle. As high-capacity assault weapons became more commonplace, police routinely complained that they were being outgunned by suspects. As a result, major law enforcement organizations supported passage of the 1994 federal assault weapons ban.

In 1995, the first full year in which the ban was implemented, police continued to be victims of assault weapons. Approximately one in 10 of the 74 law enforcement officers killed in the line of duty in 1995 was slain with a banned assault weapon.⁴

The Gun Industry Evades the Law

Immediately after the 1994 law was enacted, the gun industry moved quickly to make slight, cosmetic design changes in their “post-ban” guns to evade the law, a tactic the industry dubbed “sporterization.” Of the nine assault weapon brand/types listed by manufacturer in the law,⁵ six of the brand/types have been re-marketed in new,

⁴ *Cop Killers: Assault Weapon Attacks on America’s Police*, Violence Policy Center, September 1995.

⁵ The law states, “The term ‘semiautomatic assault weapon’ means—(A) any of the firearms, or copies or duplicates of the firearms in any caliber, known as—(i) Norinco, Mitchell, and Poly Technologies Avtomat Kalashnikovs (all models); (ii) Action Arms Israeli Military Industries UZI and Galil; (iii) Beretta Ar70 (SC-70); (iv) Colt AR-15; (v) Fabrique National FN/FAL, FN/LAR, and

“sporterized” configurations.⁶ In fact, gunmakers openly boast of their ability to circumvent the assault weapons ban. Their success is described in an August 2001 *Gun World* magazine article about the new Vepr II assault rifle, a “sporterized” version of the AK-47:

In spite of assault rifle bans, bans on high capacity magazines, the rantings of the anti-gun media and the rifle’s innate political incorrectness, the Kalashnikov [AK-47], in various forms and guises, has flourished. Today there are probably more models, accessories and parts to choose from than ever before.

Equally blunt was an article in the May 2003 issue of *Gun World* reviewing the LE Tactical Carbine, a post-ban, “sporterized” AR-15 clone:

Strange as it seems, despite the hit U.S. citizens took with the passage of the onerous crime bill of 1994 [which contained the federal assault weapons ban], ARs are far from dead. Stunned momentarily, they sprang back with a vengeance and seem better than ever. Purveyors abound producing post-ban ARs for civilians and pre-ban models for government and law enforcement agencies, and new companies are joining the fray.⁷

Just such a post-ban AR, the Bushmaster XM15 M4 A3 assault rifle, was used by the Washington, DC-area snipers to kill 10 and injure three in October 2002. The Bushmaster is the poster child for the industry’s success at evading the ban. The snipers’ Bushmaster is even marketed as a “Post-Ban Carbine.” [Please see page four for catalog copy.]

The industry’s efforts have been aided by the fact that not all assault weapons are covered by the 1994 ban. For example, assault weapons with more conventional designs, such as the Ruger Mini-14, were not covered by the 1994 law — although gun experts define them as assault weapons. Furthermore, any gun that was legally possessed as of the date the 1994 law took effect may still be legally possessed and

FNC; (vi) SWD — 10, M-11/9, and M-12; (vii) Steyr AUG; (viii) INTRATEC TEC-9, TEC-DC9 and TEC-22; and (ix) revolving cylinder shotguns, such as (or similar to) the Street Sweeper and Striker 12....”

⁶ Assault weapons that have not been reintroduced are the Beretta AR70, Street Sweeper and Striker 12 assault shotguns (the latter two guns were re-classified by the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) as subject to the strict regulations of the National Firearms Act of 1934), and Steyr AUG, although Steyr has begun marketing a new assault weapon—the Vector—that, like the AUG, is of a bullpup design.

⁷ “Rock River’s LE Tactical Carbine,” *Gun World* (May 2003), p. 50.

4 Bushmaster Rifles & Carbines
Internet: www.bushmaster.com

Bushmaster XM15 M4 Type 16" Post-Ban Carbine...

M4 Profile Barrel • Mini Y Comp Muzzle Brake • Fixed length BATF Approved Tele-style Stock

A new model from Bushmaster in 2001, this XM15 E2S M4 Type Post-Ban Carbine features a lightweight 14.5" Barrel machined in the distinctive M4 profile with a permanently attached Mini Y Comp muzzle brake. This configuration yields a total barrel length of 16" to comply with Post-Ban regulations. A BATF approved fixed tele-style buttstock is added to complete the military look of this new carbine. The 14.5" barrel is chrome lined in both bore and chamber for maximum longevity and ease of maintenance. The barrel's button rifling, in a 1 x 9" right hand twist, will stabilize a wide range of currently available ammunition with bullet weights up to 69 grains. The M16A2 dual aperture, rear sight system offers both windage and elevation adjustments - elevation is calibrated from 300 to 800 meters. The two different apertures give either a short range, quick target acquisition sight picture or a smaller "peep" aperture for long distance accuracy. The tele-stock style buttstock is pinned and fixed in an "open" position and has been BATF approved for use on Post-Ban manufactured carbines.

As with all other Bushmasters, the forged 7075T6 aircraft quality aluminum receivers are finished in a non-reflective mil. spec. hard anodize for durability, and include all M16A2 design improvements such as cartridge case deflector, last round bolt hold-open and raised ridges for magazine release button protection. A mil. spec. manganese phosphate coating insures complete protection against corrosion or rust on barrel and other exposed steel parts. The M4-16" Carbine is shipped in a lockable, hard plastic case - complete with 10 round magazine, carrying sling, and Operator's Safety and Instruction Manual.

M4 Profile Chrome Lined Barrel & Mini Y Comp Muzzle Brake
(permanently pinned and welded in place)

SPECIFICATIONS:
XM15 M4 Type 16" Post-Ban Carbine

Caliber	.223 Rem. (5.56 mm)
Mag. Capacity	Shipped with 10 round (accepts all M16 type)
Overall Length	34.875 inches (88.6 cm)
Barrel Length	16" total w/ Mini Y Comp (40.6 cm)
Rifling	R.H. twist; 1 turn in 9"
Weight w/o magazine	6.59 Lbs. (2.99 kg)
Mode of Operation	Gas Operated - Semi-Automatic

BATF Approved, Fixed Position, Tele-Style Buttstock

Bushmaster XM15 E2S M4 Type 16" Post-Ban Carbine
(Model Number PCWA2X 14M4MY)

Call your FFL Dealer for Price.

Shipped with 10 Round Magazine, Sling and Operator's Manual in Bushmaster's lockable rifle case.



This new carbine is also available in an "A3" type model including the Bushmaster Flat-top Upper Receiver and Removable A3 Carry Handle to offer you the ultimate in sight and scope mounting versatility.

Call your FFL dealer for pricing on...

Model # PCWA3X 14M4MY

Bushmaster Value!...
All complete Bushmaster Rifles and Carbines are shipped in this foam lined, hard plastic, lockable case.
A \$14.95 Value!



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The Bushmaster XM15 used by the Washington, DC-area snipers to kill 10 and wound three in October 2002 is the poster child for the gun industry's cynical efforts to circumvent the federal assault weapons ban. Maine-based Bushmaster even advertises the gun—based on the banned Colt AR-15 assault rifle—as a "Post-Ban Carbine."

transferred without restriction. With respect to high-capacity ammunition magazines, manufacturers stockpiled thousands, or perhaps hundreds of thousands, of magazines before the ban took effect. Those magazines—some of which can hold up to 75 rounds of ammunition—are still widely available.

Still a Threat to Police—One in Five Law Enforcement Officers Slain in the Line of Duty is Killed With an Assault Weapon

The gun industry's evasion of the 1994 ban on assault weapons and high-capacity ammunition magazines continues to put law enforcement officers at extreme risk. Using data obtained from the Federal Bureau of Investigation, the Violence Policy Center has determined that ***at least 41 of the 211 law enforcement officers slain in the line of duty between January 1, 1998, and December 31, 2001, were killed with assault weapons.***⁸ ***Using these figures, one in five law enforcement officers slain in the line of duty was killed with an assault weapon.***

While no comprehensive information is yet available for the years 2002 and 2003, it is clear that law enforcement personnel continue to be killed by assault weapons. For example, on February 20, 2003, in Alexandria, Louisiana, two police officers were killed in an ambush with an AK-47-type assault rifle. Anthony Molette, age 25, had a long criminal history, including a charge of attempted first-degree murder. The day before the murders, Molette opened fire on an officer in his patrol car. The officer was not hurt, but 18 to 20 rounds were fired into the vehicle. Molette bragged to his friends about the shooting, prompting Alexandria police to search for him. When officers arrived at Molette's residence to serve a warrant, Molette opened fire, fatally wounding Officers Charles Ezernack, age 26, and Jeremy "Jay" Carruth, age 29. Molette was shot and killed as he charged two other police officers.⁹

The fact that from 1998 through 2001 one in five law enforcement officers slain in the line of duty was killed with an assault weapon indicates that the ban in its current form is inadequate to protect police and the public from the hazards presented by assault weapons.

⁸ The Federal Bureau of Investigation data does not identify the firearm used in some instances, in those cases the type of firearm is listed as "unknown." Therefore, the number of law enforcement officers killed with assault weapons may actually be higher. (This figure does not include the 72 law enforcement deaths that resulted from the events of September 11, 2001. The foreword of the FBI's *Law Enforcement Officers Killed and Assaulted, 2001* states, "Because a catastrophe such as the September 11 attacks falls far outside the normal course of police experience, the FBI has not included those fatalities in the 2001 rate, trend, or disposition tables for to do so would skew the data and render analyses meaningless.") The year 2001 is the most recent year for which complete information is available from the FBI.

⁹ "Police Killings Baffling," *State-Times/Morning Advocate*, February 22, 2003.

According to the Urban Institute's 1997 study of the effects of the 1994 ban,¹⁰ "the relatively high use of assault weapons in murders of police suggests that police gun murders should be more sensitive to the effects of the ban than gun murders of civilians." The stark reality that murders of law enforcement personnel committed with assault weapons have not abated demonstrates the need to not only renew, but significantly strengthen, the current ban.

¹⁰ Roth and Koper, *Impact Evaluation of the Public Safety and Recreational Firearms Use Protection Act of 1994 Final Report*, Urban Institute, March 13, 1997.

Section Two: Law Enforcement Officers Killed in the Line of Duty by Assault Weapons, 1998 Through 2001

Year	State	Manufacturer	Model	Caliber
1998	Alaska	Colt	AR-15	7.62mm
	Georgia	Iver Johnson	M1 Carbine	.30
	Oregon	Norinco	SKS ¹¹	7.62mm
	New York	Unknown	MAC-11	9mm
	California	Armalite	M151A	.223
	Mississippi	Colt	AR-15	.223
	Mississippi	Colt	AR-15	.223
	Michigan	DPMS, Inc.	AR-15	.223
	Florida	Unknown	SKS	7.62mm
	Colorado	Unknown	SKS	7.62mm
	Texas	Unknown	AR-15	.223
	Texas	Unknown	AR-15	.223
	Missouri	Unknown	MAK 90	7.62mm
	California	Ruger	Mini-14	.223
	Indiana	Norinco	SKS	7.62mm
1999	California	Ferunion/Hungarian Arms	SA85	7.62mm
	Indiana	Norinco	SKS	7.62mm

¹¹ The SKS is not banned by name under the 1994 federal assault weapons ban. Only SKS rifles that were modified to be defined as an assault weapon under Section (B) of the law were affected by the ban. Section (B) defines a “semiautomatic assault weapon” as “a semiautomatic rifle that has an ability to accept a detachable ammunition magazine and has at least 2 of—(i) a folding or telescoping stock; (ii) a pistol grip that protrudes conspicuously beneath the action of the weapon; (iii) a bayonet mount; (iv) a flash suppressor or threaded barrel designed to accommodate a flash suppressor; and (v) a grenade launcher....” Legislation to be introduced this Congress would explicitly ban any SKS able to accept a detachable ammunition magazine. Unless otherwise stated, the exact configuration of SKS weapons used in police shootings cited in this study cannot be determined.

Year	State	Manufacturer	Model	Caliber
	New Jersey	Intratec	TEC-9	9mm
	Arizona	Unknown	AK-47	7.62mm
	California	Norinco	MAK 90	7.62mm
	Oklahoma	Colt	AR-15 H-BAR	.223
	Texas	Norinco	MAK 90 Sporter	7.62mm
	Texas	Norinco	MAK 90	7.62mm
	Texas	Norinco	MAK 90	7.62mm
	Texas	Norinco	MAK 90	7.62mm
2000	North Carolina	Maadi	ARM	7.62mm
	Georgia	Ruger	AR-15 ¹²	.223
	California	Colt	CAR-15	.223
	Texas	Ruger	Mini-14	.223
	Georgia	Intratec	TEC-9	9mm
	Maryland	Unknown	M1 Carbine	.30
2001	California	Unknown	AR-15	.223
	Florida	SWD, Inc.	M-11	9mm
	Indiana	Unknown	AK-47	7.62mm
	Kentucky	Underwood	M1 Carbine	.30
	Kentucky	Underwood	M1 Carbine	.30
	Michigan	Unknown	SKS	7.62mm
	Tennessee	Maadi	MAK 90	7.62mm
	Texas	Unknown	M-11	9mm
	Texas	Norinco	SKS	7.62mm
	Utah	Norinco	SKS	7.62mm

¹² Inconsistency between manufacturer and weapon type from FBI data.

**Section Three: Selected Incidents of Law Enforcement Officers
Killed in the Line of Duty by Assault Weapons,¹³
1998 Through 2001**

¹³ Each weapon shown is representative of the brand or model of assault weapon and is not a picture of the specific weapon used in the shooting described in the narrative.

Date: January 27, 1998

Location: Portland, Oregon

Assault Weapon: Norinco SKS 7.62mm rifle

On January 27, 1998, one police officer was killed and two were wounded with a Norinco SKS 7.62mm rifle. The officers, working on a drug investigation in Portland, entered the home of Steven Douglas Dons and were met with gunfire. Colleen Waibel, a six-year veteran, was hit with multiple gunshots, becoming the first female officer killed in the line of duty in Portland. Kim Keist, a 15-year veteran, was wounded in the chest and arm despite wearing a bullet-proof vest. A third officer was treated for a gunshot wound to the hand. A neighbor reported that Dons was known to have a large arsenal of weapons and that police had been called to the house weeks before on a complaint of weapons being fired. Dons committed suicide while awaiting trial.

Lauren Dodge, "Three Portland Officers Ambushed at House; One Dead, Two Wounded," *Associated Press*, January 28, 1998; "Victim, Husband Have Mixed Feelings Over Apparent Suicide of Suspect," *The Columbian*, February 26, 1998.

AK MAGAZINE FED...SKS SPORTER RIFLE 7.62X39 CAL.

Extra 30Rd. or 5Rd. AK mags
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RETAIL: \$399.95 & DEALER: \$249.50

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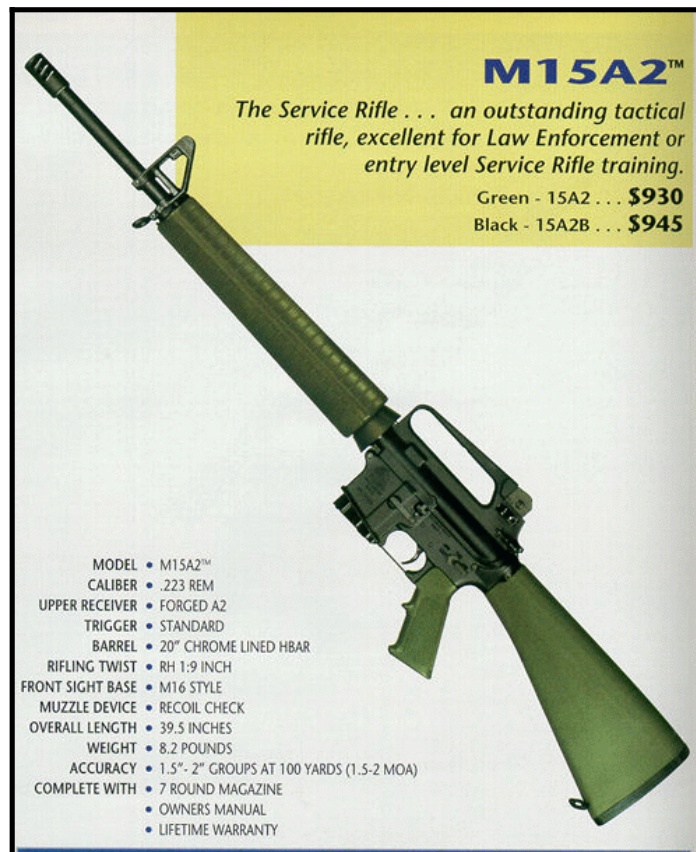
Date: April 25, 1998

Location: Millbrae, California

Assault Weapon: Armalite M151A .223 rifle

On April 25, 1998, one police officer was killed with an Armalite M151A .223 rifle. Officer David Chetcuti responded to another officer's call for help in a traffic stop on the Millbrae Avenue off-ramp of U.S. 101. Officer Seann Graham had pulled over Marvin Patrick Sullivan for not having a current registration sticker for his vehicle. Sullivan, who was heavily armed and had bombs strapped to his body, opened fire, wounding Officer Chetcuti. Chetcuti returned fire hitting the suspect once in the side before being killed by two shots to the head from close range. Several of the bullets penetrated Chetcuti's bullet-proof vest, and more than 40 bullet casings were recovered at the scene. Officer Graham escaped harm by diving into a drainage ditch. Sullivan was arrested after leading several police cars in a chase across the San Mateo Bridge. Sullivan has been repeatedly declared incompetent to stand trial, and sent to a California state mental hospital.

Tyche Hendricks and Jim Herron Zamora, "Cop Killing: No Fremont Tie," *San Francisco Examiner*, April 27, 1998; "Judge: Man isn't competent; Defendant Sent Back to Hospital in Millbrae Cop Slaying Case," *San Jose Mercury News*, July 23, 2002.



Date: May 29, 1998

Location: Cortez, Colorado

Assault Weapon: SKS 7.62mm rifle

On May 29, 1998, one police officer was killed and two were wounded with an SKS 7.62mm rifle. Officer Dale Claxton stopped a truck that had been reported stolen the day before. As Officer Claxton was checking the stolen truck's license plate, a passenger in the truck fired approximately 40 rounds through the front of Claxton's police cruiser. Montezuma County Sheriff's Deputy Jason Bishop responded to the radio call of an officer being shot, and was wounded as his cruiser was hit with approximately 40 more rounds from the SKS. Minutes later, Deputy Todd Martin was wounded in the left arm and right leg. The three suspects, described by authorities as "anti-government, end-of-the-world-fearing survivalists," escaped into Colorado. Two of the suspects were later found dead, while the third, Jason Wayne McVean, is still at large.

Greg Burton, "Posse Scours Badlands for 3 Cop Killers," *Salt Lake Tribune*, May 31, 1998; Julie Cart, "Answers Vanished Along With Four Corners Outlaw," *Los Angeles Times*, November 24, 1999.



Date: July 7, 1998

Location: San Benito, Texas

Assault Weapon: AR-15 .223 rifle

On July 7, 1998, two U.S. Border Patrol agents were killed with an AR-15 .223 rifle. Ernie Moore, reportedly enraged over a broken love affair, shot and wounded Dan Morin, who had been dating Moore's former girlfriend, and killed Morin's mother and sister. Two hours later, a shootout ensued between Moore and police officers resulting in the death of two Border Patrol agents before Moore was fatally wounded. In addition to a cocaine habit, Moore had a history of emotional problems and displayed Nazi posters and photos of Adolf Hitler in his bedroom.

James Pinkerton, "Two Border Patrol Agents Are Slain During Rampage," *Houston Chronicle*, July 8, 1998; "Assault Rifle Costs Border Town \$35M," *National Law Journal*, March 4, 2002.



Date: November 29, 1998

Location: Los Angeles, California

Assault Weapon: Ruger Mini-14 .223 rifle

On November 29, 1998, Los Angeles Police Department training officer Brian Brown was killed with a Ruger Mini-14 .223 rifle. Brown and his partner witnessed a drive-by shooting in Culver City and attempted to stop the suspects. The gunmen fired multiple rounds from the Mini-14, killing Officer Brown. Police shot and killed one of the suspects near the scene while the other managed to commandeer a taxi, leading police on a five-mile chase before also being fatally wounded.

Anthony Breznican, "Three Dead, Including Police Officer, During Violent Arrest for Drive-By Shooting," *Los Angeles Times*, December 1, 1998.



Date: January 10, 1999

Location: Oakland, California

Assault Weapon: MAK-90 or SA85 7.62mm rifle

On January 10, 1999, Officer James Williams was killed with a MAK-90 or SA85 7.62mm rifle. Officer Williams was among a group of officers who were searching for a rifle that had been discarded by the occupants of a vehicle that was involved in a chase with police. While they were searching for the rifle, a gunman opened fire from a nearby overpass, killing Officer Williams. Chad Rhodes was arrested and charged with special-circumstances murder, attempted murder, three counts of firing an assault weapon, and possessing an assault weapon. Rhodes pleaded guilty to second-degree murder and was sentenced to life in prison without parole.

Henry K. Lee, "Arrest in Oakland Sniper Slaying," *San Francisco Chronicle*, January 12, 1999; Henry K. Lee, "Sniper Suspect Enters Plea of Not Guilty," *San Francisco Chronicle*, February 6, 1999; "Man Pleads Guilty in Killing of Oakland Cop," *San Francisco Chronicle*, April 9, 2003.



Date: April 8, 1999

Location: Orange, New Jersey

Assault Weapon: TEC-9 9mm pistol

On April 8, 1999, Officer Joyce Carnegie was killed with a TEC-9 9mm pistol. Condell Woodson pleaded guilty to felony murder in the death of Officer Carnegie. Woodson claimed that his gun accidentally went off, shooting Carnegie in the head and abdomen as she was attempting to arrest Woodson for armed robbery. Woodson also pleaded guilty to robbery and weapons offenses. Carnegie was the second policewoman killed in the line of duty in New Jersey history.

Amy Westfeldt, "Man Pleads Guilty to Policewoman's Murder," *Associated Press*, May 13, 1999.



Date: June 12, 1999

Location: Orange County, California

Assault Weapon: MAK-90 or SA85 7.62mm rifle

On June 12, 1999, Sheriff's Deputy Brad Riches was killed with a MAK-90 or SA85 7.62mm rifle. Deputy Riches was sitting in his patrol car outside a 7-Eleven when his police cruiser was riddled with assault weapon fire. The 7-Eleven clerk said that a customer told him he was carrying an AK-47-style assault rifle to shoot a police officer. Maurice Steksal was convicted on November 19, 2002 of the first-degree murder of Deputy Riches.

Jack Leonard, "Thousands Pay Last Respects to Slain Deputy," *Los Angeles Times*, June 17, 1999; Greg Hardesty, "Laborer Guilty of Deputy's Murder," *Orange County Register*, November 20, 2002.



Date: January 27, 2000

Location: Lexington, North Carolina

Assault Weapon: Maadi 7.62mm rifle

On January 27, 2000, Sheriff's Deputy Todd Cook was killed with a Maadi 7.62mm rifle. Deputy Cook was serving a warrant at the home of Christopher Lee Cooper who had been accused of trespassing and was also wanted by Lexington police for questioning about a statutory rape. Deputy Cook was shot at least five times from behind. After the shooting, Cooper led police on a car chase that ended when he crashed through a roadblock. Officers found Cooper dead in the car from a self-inflicted gunshot wound.

"Piedmont Community Mourns Loss of Slain Deputy," *Associated Press*, January 29, 2000.



Date: August 3, 2000

Location: San Marcos, Texas

Assault Weapon: Ruger Mini-14 .223 rifle

On August 3, 2000, State Trooper Randall Vetter was killed with a Ruger Mini-14 .223 rifle. Trooper Vetter stopped 72-year-old Melvin Hale for not wearing his seat belt. Hale got out of his car and aimed his rifle at Vetter because he believed the traffic stop violated his constitutional rights. Vetter raised his pistol and ordered him to put down his gun. Hale fired at least twice, hitting Vetter in the head as he sat in his patrol car. Six months earlier, another San Marcos trooper had written a letter warning Hays County law enforcement officers to exercise caution around Hale. The trooper said Hale had threatened him with a rifle when he stopped at Hale's ranch to ask about deer hunting on the 125-acre property. Hale pleaded guilty to the shooting and was sentenced to life in prison.

Jason Spencer, "A Somber Salute for a Fallen Officer," *Austin American-Statesman*, August 9, 2000; "Trooper's Shooter Gets Life Sentence; 74-year-old Accepted Surprise Plea Agreement as Jury Selection Began," *Austin American-Statesman*, January 24, 2002.



Date: March 29, 2001

Location: San Antonio, Texas

Assault Weapon: M-11 assault pistol

On March 29, 2001, San Antonio Police Officer Hector Garza, age 48, was shot and killed while responding to a domestic disturbance report. Jessica Garcia, age 21, had called police to ask for an officer's protection while she moved out of her home. When Garcia's husband, Frank, learned of her plans, he drove home and killed both Jessica and Officer Garza—a 25-year police veteran—by shooting them both in the head with an M-11 assault pistol. Frank Garcia, 28, was arrested at the scene and charged with two counts of capital murder and three counts of attempted murder. Garcia was convicted of the murders in February 2002.

Bill Hendricks, "Cop's Slaying Stuns City," *San Antonio Express-News*, March 30, 2001; "Garcia Gets Death Penalty; Cop Killer Sentenced," *San Antonio Express-News*, February 12, 2002.



Date: April 4, 2001

Location: Detroit, Michigan

Assault Weapon: SKS assault rifle

On April 4, 2001, Detroit Police Officer Neil Wells, age 41, was fatally shot during a drug raid at an abandoned apartment house. While on patrol, Wells and his partner received a complaint of drug sales at the building. When the officers arrived, the gunman was waiting in ambush behind a door. Wells was shot twice at close range with an SKS assault rifle. Lamont Smith, age 21, was charged with murder and felony firearm violations. Smith was convicted of second degree murder and sentenced to 60 to 90 years in prison.

Norman Sinclair, "Gun Owner Sought in Cop's Killing," *The Detroit News*, April 8, 2001; "Man Given 60-90 Years in Cop Killing," *Detroit Free Press*, January 16, 2002.



Date: September 6, 2001

Location: Hamilton County, Tennessee

Assault Weapon: MAK 90 assault rifle

On September 6, 2001, Hamilton County Sheriff's Deputy Donald Bond, age 35, was shot and killed when he stopped at a fruit and vegetable stand to check on a suspicious vehicle. When Deputy Bond did not respond to a 2:18 AM call from his dispatcher, an alert was sent out to locate him. A fellow deputy found Bond dead beside his patrol car, shot multiple times with an MAK 90 assault rifle. Later that morning, acting on a tip, a SWAT team evacuated the suspect's street and waited for a chance to make an arrest. After observing Marlon Duane Kiser, age 31, throw out a front panel of body armor and Deputy Bond's service weapon, police arrested Kiser and charged him with first-degree murder. Kiser is awaiting trial in the case.

Mike O'Neal and Gary Tanner, "Suspect Held in Deputy's Death," *Chattanooga Times Free Press*, September 7, 2001; "Law Enforcement Officers Killed and Assaulted, 2001," Federal Bureau of Investigation; "Courts News Digest," *Chattanooga Times Free Press*, February 18, 2003.



Date: September 17, 2001

Location: Indianapolis, Indiana

Assault Weapon: AK-47 assault rifle

On September 17, 2001, Marion County Sheriff's Deputy Jason Baker, age 24, was killed during a car chase and gun battle. On his way to a report of a domestic dispute, Deputy Baker tried to make a traffic stop. The driver refused to stop and a chase ensued. Allen Dumperth, a convicted felon, and Michael Shannon, both age 20, fired at Baker from their fleeing car. When Baker's fellow officers found him, he was dead from a gunshot wound to the head. The front and rear windows of his patrol car were shot out. After crashing his car, Dumperth was shot and killed by members of the police SWAT team. Shannon later pleaded guilty in court to shooting Deputy Baker.

Vic Ryckaert, "Role in Deputy Death Brings 40 Years; 21-Year-Old Bought the Assault Rifles Used by 2 Men Accused in Slaying of Jason Baker," *Indianapolis Star*, April 11, 2002.



Date: November 13, 2001

Location: Nicholasville, Kentucky

Assault Weapon: M1 Carbine

Jessamine County Sheriff's Deputies Billy Ray Walls, age 28, and Chuck Morgan, age 51, were shot and killed, and another deputy was wounded, when they tried to serve a warrant for misdemeanor terroristic-threatening to Phillip Walker, age 75, on his drydocked houseboat. Walker had threatened to kill a family member with a gun. While in the houseboat with the deputies, Walker fired 11 shots from a 30-caliber M1 Carbine, killing Deputy Walls and fatally injuring Deputy Morgan. Walker was killed in the gun battle.

Greg Kocher, "Man Who Killed Deputy Fired 11 Times Police Say," *Lexington Herald Leader*, November 15, 2001.



About the Violence Policy Center

The Violence Policy Center (VPC) is a national nonprofit educational organization working to reduce death and injury from firearms. As America's premier think tank on gun policy, the VPC studies current firearms issues and provides information to policymakers, journalists, public health professionals, and grassroots activists.

The virtually unrestricted distribution of firearms is more than a crime problem, it is a national health crisis. Unlike every other consumer product, firearms are exempt from federal health and safety laws. Guns—especially handguns and assault weapons—are inherently dangerous products, and the failure to regulate them like all other products costs thousands of lives and billions of dollars every year. By conducting research on key issues in firearms policy, the VPC counters the gun lobby's distortions and brings hard facts to the debate over firearms death and injury.



Violence Policy Center

www.vpc.org

Exhibit 68

ER1545

Assault Weapons Profile



**United States
Department of the Treasury**

Bureau of Alcohol, Tobacco and Firearms

April 1994

ER1546

AK's -- Norinco, Mitchell, Poly Technologies

Background

These assault rifles are semi-automatic copies of machineguns designed in Communist block countries. They are variations of post-World War II military rifles.

Production

These firearms have been imported as follows: Norinco from China, Mitchell from Yugoslavia, Poly Technologies from China. In 1989, these assault rifles were banned from importation into the United States, because they did not meet the sporting purpose criteria under the Gun Control Act. Approximately 100,000 of these firearms have been imported into the U.S., and are still in circulation.

Ammunition Magazine

These assault rifles come equipped with a 30-round magazine.

Numbers Traced *

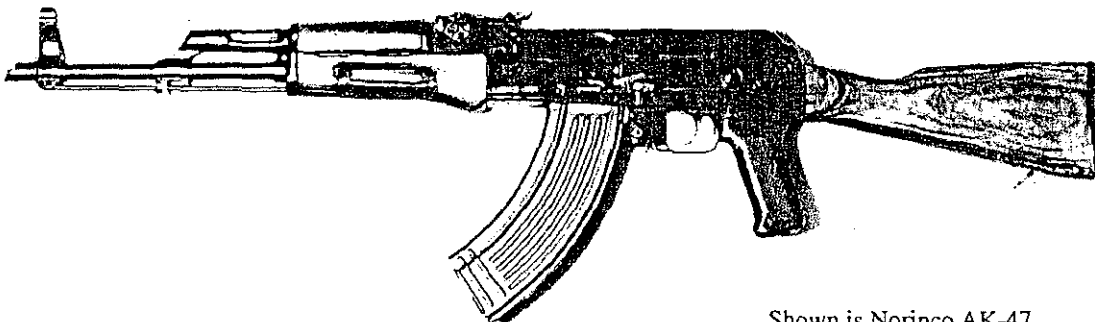
During the years 1990 to 1993, these firearms accounted for 2,061 of the firearms traced for law enforcement officials nationwide. The traces included 329 narcotics investigations and 272 murder cases.

* not all firearms used in crime are traced.

Examples of Use in Crime

In a Detroit, Michigan suburb, a Norinco AK-47 was recovered in a narcotics-related double homicide. The weapon had an obliterated serial number. The AK-47 was one of the weapons purchased by an individual who was diverting them to drug traffickers.

Federal, State and local officers recently raided the Kentucky Courts public housing complex in Washington, DC, following the fatal shooting of police officer Jason White. The seizure turned up six guns, including an AK-47 assault rifle. The Kentucky Court Crew gang is suspected of doling out guns, including assault weapons, and crack from an apartment within firing range of where Officer White was gunned down.



Shown is Norinco AK-47

M-10, M-11, M-11/9, and M-12

Background

These semi-automatic assault pistols are manufactured in the United States, and designed as semi-automatic copies of submachine guns. The M-11/9 weighs 3.25 pounds unloaded, 4.25 pounds when fully loaded, some of SWD's M-11/9 models were manufactured as rifles.

Production

Approximately 100,000 of these firearms have been manufactured.

Ammunition Magazine

These assault pistols come equipped with a 32-round magazine.

Numbers Traced *

During the years 1990 to 1993, these firearms accounted for 3,091 of the firearms traced for law enforcement officials nationwide. They were traced for 561 narcotics investigations, 313 murder cases, and 125 instances of assault.

According to ATF's Tracing Center, from 1991 through the present, the M11/9 has been in the top 10 firearms that were traced.

* not all firearms used in crime are traced.

Examples of Use in Crime

In October 1992, a bank in Sykesville, Maryland was robbed by two gunmen using a MAC firearm that had been purchased in West Virginia. Four tellers were taken hostage and shot. Two of the tellers subsequently died.

In Atlanta, Georgia, 11 individuals were indicted in a gun-trafficking scheme. For 2 years, nearly 1,000 guns were shipped illegally to New York, where many were recovered in crimes in New York City. The men had converted a number of semi-automatic Cobray 9mm pistols (MAC 10) into automatic operation.

A Houston, Texas police officer made a traffic stop and was critically wounded, shot four or five times by the driver. The suspect got away and later, the suspect attempted a robbery. A trooper approached the suspect's car and was met with assault weapon fire. After abandoning his car, the suspect continued shooting at the pursuing officers and a gun battle ensued. The suspect was clutching a MAC 11 when he was killed. A search of his vehicle disclosed an AK-47.



Shown is SWD M11/9

Action Arms UZI and Galil

Background

These assault rifles and pistols are semi-automatic copies of machineguns designed in Israel. They are variations of post-World War II military rifles.

Production

In 1989, these assault rifles were banned from importation into the United States because they did not meet the sporting purpose criteria under the Gun Control Act. Approximately 10,000 of these firearms were imported into the U.S. prior to the ban and are in circulation today. The UZI assault pistol was banned from importation into the United States in 1993 by President Clinton because it did not meet the sporting purpose criteria under the Gun Control Act. The UZI assault rifle has the same appearance as the submachine gun, and was first imported in 1980. The Galil was introduced into U.S. commerce in 1982.

Ammunition Magazine

The UZI Carbine chambers 9mm ammunition, and comes equipped with a 25-round magazine.

The Galil is a .308 caliber semi-automatic rifle and comes equipped with a 20-shot magazine.

Numbers Traced *

During the years 1990 to 1993, these firearms accounted for 755 of the firearms traced for law enforcement officials nationwide. Galils were traced for 9 narcotics investigations, 2 murder cases, and 2 instances of assault. UZIs were traced for 151 narcotics investigations, 47 murder cases, and 30 instances of assault.

* not all firearms used in crime are traced.

Examples of Use in Crime

A Louisville, Kentucky police officer stopped a suspect in a shooting incident. The officer found, in the suspect's car, a 9mm UZI with an obliterated serial number and loaded with a magazine of 17 rounds.

In Boston, Massachusetts, an undercover agent infiltrated an Asian gang involved in illegal narcotics and gun sales. The undercover agent bought over a kilo of 91% pure heroin (street value of \$1 million), and 29 guns. The purchased firearms included an Action Arms UZI, an SWD/Cobray M-11/9 pistol, an Intratec TEC-9 (converted to fire fully automatic), and an AK-47 assault rifle.



Shown is UZI Pistol

Beretta AR-70

Background

These assault rifles are semi-automatic copies of machineguns designed in Italy. They are variations of post-World War II military rifles.

Production

In 1989, these assault rifles were banned from importation into the United States because they did not meet the sporting purpose criteria under the Gun Control Act. Approximately 1,000 of these firearms were imported into the U.S. prior to the ban, and remain in circulation.

Ammunition Magazine

This gas-operated semi-automatic 5.56 x 45 mm assault rifle comes equipped with a 30-round ammunition magazine.

Numbers Traced *

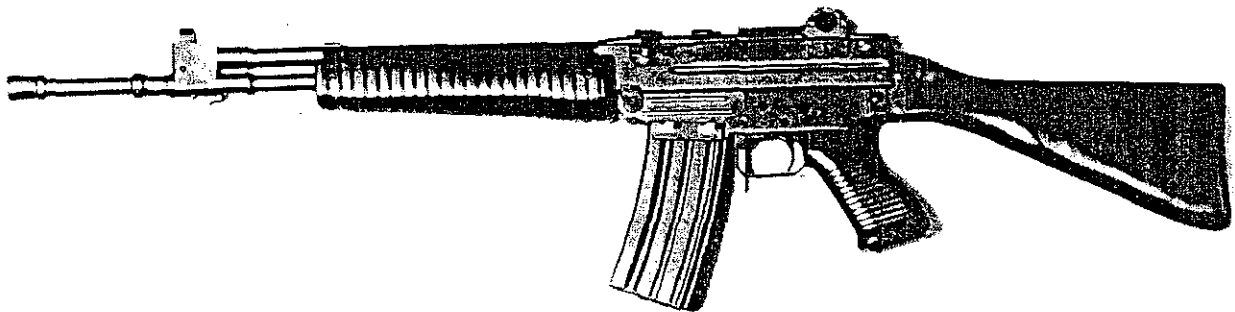
During the years 1990 to 1993, these firearms accounted for 3 of the firearms traced for law enforcement officials nationwide.

* not all firearms used in crime are traced.

Examples of Use in Crime

In April 1992, ATF agents in Fargo, North Dakota recovered a Beretta AR-70, another long gun, 3 handguns and approximately 8,000 rounds of ammunition from a convicted illegal manufacturer of explosives.

In May 1993, the San Bernardino, California Sheriff's Office recovered a Beretta AR-70 and Intratec TEC 9 mm pistol and two pounds of methamphetamine from a suspected drug dealer. The suspect was convicted under California law of possessing an unregistered assault weapon and is awaiting trial on the drug charges.



Shown is Beretta AR70

Colt AR-15

Background

These assault rifles are semi-automatic copies of machineguns manufactured in the United States. Semi-automatic versions of the M-16, they are variations of post-World War II military rifles.

Production

Approximately 400,000 of these firearms have been manufactured. In 1989, these assault rifles were banned from re-importation into the United States because they did not meet the sporting purpose criteria under the Gun Control Act.

Ammunition Magazine

The Colt AR-15 comes equipped with a 5-round detachable box magazine. However, this firearm is typically fitted with a 30-round magazine as shown below.

Numbers Traced *

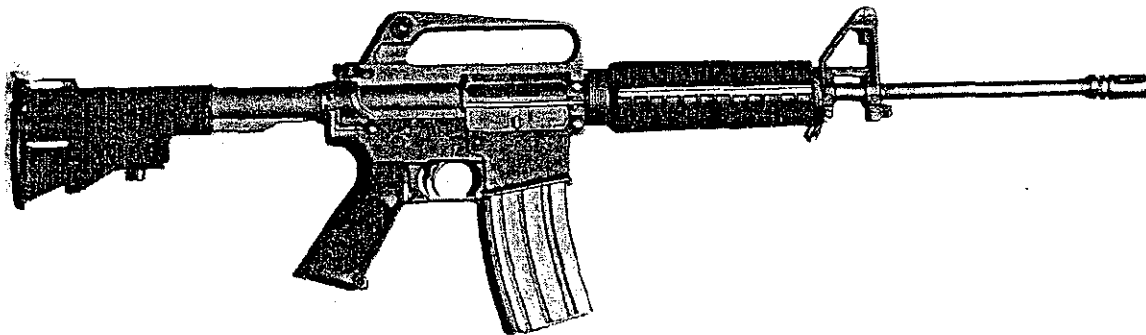
During the years 1990 to 1993, these firearms accounted for 1,802 of the firearms traced for law enforcement officials nationwide. They were traced for 212 narcotics investigations, 106 murder cases, and 39 instances of assault.

* not all firearms used in crime are traced.

Examples of Use in Crime

In San Fernando Valley, California, a son shot and killed his father using an AR-15. He then opened fire on the police as they arrived on the scene. One police officer was killed.

Seven-year old Dantrell Davis and his mother were walking to school in the Chicago, Illinois housing project where they lived. A sniper armed with an AR-15 fired into the area as part of a violent feud between gangs. A shot hit the boy in the head and he was killed instantly.



Shown is AR-15

Fabrique Nationale FN/FAL, FN/LAR, and FNC

Background

These assault rifles are semi-automatic copies of machineguns designed in Belgium, and used by various NATO countries. They are variations of post-World War II military rifles.

Production

In 1989, these assault rifles were banned from importation into the United States because they did not meet the sporting purpose criteria under the Gun Control Act. Approximately 30,000 of these firearms had been imported into the U.S., and are in circulation today.

Ammunition Magazine

These semi-automatic assault rifles come equipped with a 30-round magazine.

Numbers Traced *

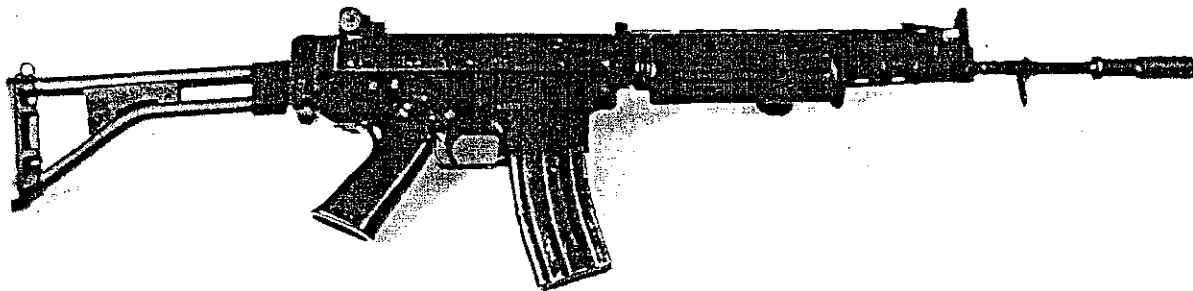
During the years 1990 to 1993, these firearms accounted for 39 of the firearms traced for law enforcement officials nationwide.

* not all firearms used in crime are traced.

Examples of Use in Crime

Police in Las Vegas, Nevada recovered an FN rifle and silencer, RPB 9mm converted machinegun and 2,268 rounds of ammunition from a convicted burglar.

A suspect was arrested by ATF agents in St. Louis, Missouri for dealing in cocaine. The suspect was arrested at his residence with 30 firearms in his possession, the majority of which were assault weapons, including an FN FNC assault rifle.



Shown is FN FNC

Steyr AUG

Background

These assault rifles are semi-automatic copies of machineguns designed in Austria. They are used by military forces in Austria, Australia and various NATO countries, and are variations of post-World War II military rifles.

Production

In 1989, these assault rifles were banned from importation into the United States because they did not meet the sporting purpose criteria under the Gun Control Act. Approximately 10,000 of these firearms were imported into the U.S. prior to the ban, and remain in circulation. They have subsequently been manufactured in the United States in limited quantities.

Ammunition Magazine

This semi-automatic assault rifle comes equipped with either a 30 or 40-shot magazine.

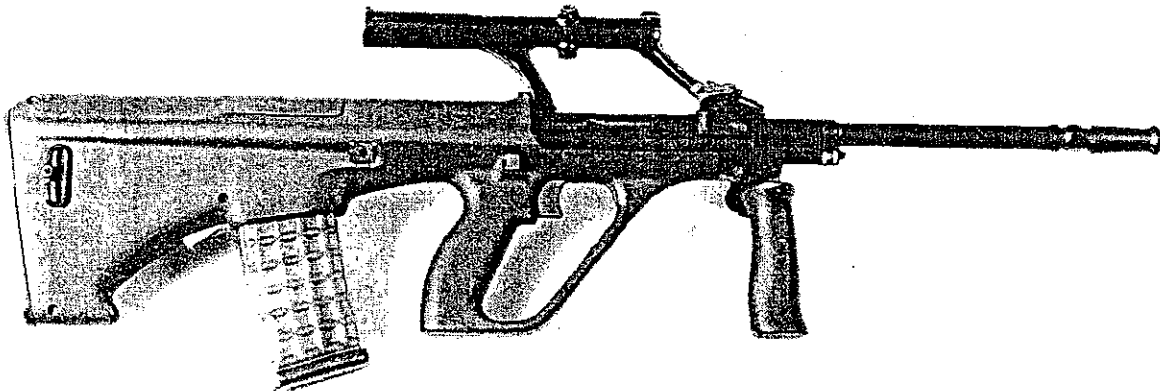
Numbers Traced *

During the years 1990 to 1993, these firearms accounted for 18 of the firearms traced for law enforcement officials nationwide.

* not all firearms used in crime are traced.

Examples of Use in Crime

A self-styled survivalist and weapons expert was arrested by ATF agents in Dallas, Texas for possession of a large quantity of cocaine. Police searched a storage unit owned by the suspect and seized 2 Steyr AUGs and parts to convert them to fully automatic operation (all of the work to convert had been completed on the guns), a grenade launcher on a Colt AR-15 with the parts to convert the firearm to fully automatic, another AR-15 and several other firearms. The suspect later was convicted on Federal firearms charges and received 27 months in prison.



Shown is Steyr AUG

Intratec TEC-9, TEC-DC9, and TEC-22

Background

The TEC-9 weighs 50 ounces unloaded, and 72 ounces when fully loaded.

Production

This semi-automatic assault pistol is manufactured domestically by Intratec in Miami. Approximately 200,000 have been manufactured.

Ammunition Magazine

The TEC-9 chambers 9mm ammunition and comes equipped with a 36-round magazine.

Numbers Traced *

During the years 1990 to 1993, these firearms accounted for 3,710 of the firearms traced for law enforcement officials nationwide. They were traced for 638 narcotics investigations, 319 murder cases, and 234 instances of assault.

According to ATF's Tracing Center, from 1991 through 1993, the TEC-9 has been in the top 10 firearms that were traced.

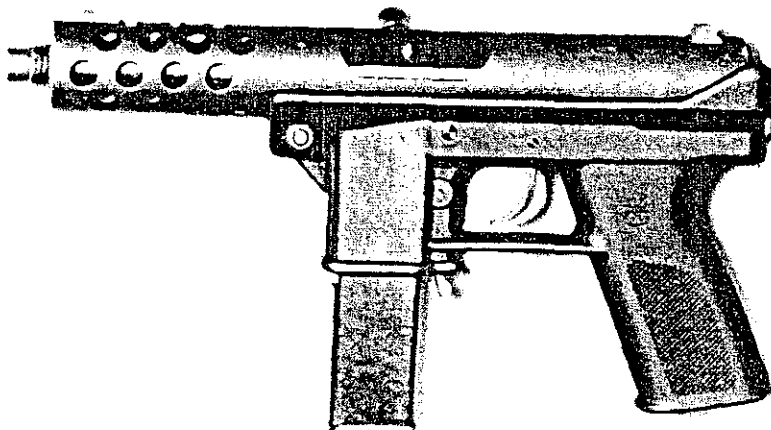
* not all firearms used in crime are traced.

Examples of Use in Crime

An ATF undercover agent in Colorado Springs, Colorado attempted to buy illegally purchased firearms from members of a Los Angeles based street gang (in Colorado). The gang members critically wounded the agent with a TEC-9, 9mm semi-automatic pistol.

In Anchorage, Alaska, the police department investigated an armed robbery in which a TEC-9 semiautomatic assault pistol was used. The suspect was one of 17 defendants in an ATF drug/gun conspiracy investigation.

A convicted felon with gang affiliations was arrested after taking a TEC-22 into the Louisiana State University Medical Center.



Shown is TEC 9 (DC 9)

Street Sweeper/Striker 12 (also including the USAS 12)

Background

On March 1, 1994, these assault shotguns were classified as destructive devices under the National Firearms Act. As such, they may still be manufactured, but must be registered with ATF.

Production

In 1984 and 1988, these shotguns were denied for importation because they did not meet the sporting purpose criteria under the Gun Control Act. They have subsequently been manufactured in the United States. Approximately 18,000 have been manufactured domestically to date.

The Striker was originally designed in Rhodesia and manufactured in South Africa for the purposes of crowd control. The Street Sweeper is a domestic copy of the original Striker 12. The USAS-12 was originally produced in Korea and was based on an automatic version of the weapon used by the military.

Ammunition Magazine

These shotguns come equipped with magazine capacities of 12 shotgun shell rounds.

Numbers Traced *

During the years 1991 to 1993, these shotguns accounted for 176 of the firearms traced for law enforcement officials nationwide. They were traced for 42 narcotics investigations, 11 murder cases, and 6 instances of assault.

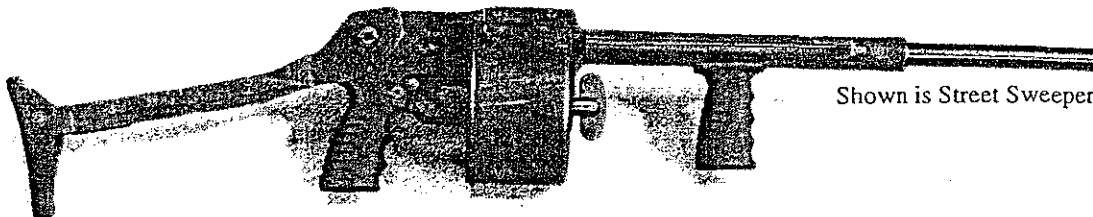
* not all firearms used in crime are traced.

Examples of Use in Crime

In New Orleans, Louisiana, a multiple conviction felon, with a conviction for drive-by shootings, was found in possession of a Street Sweeper and TEC-22. He was a known gang member and escaped from custody after an initial arrest. He has been recaptured and is a suspect in several California homicides.

A Street Sweeper was confiscated from a tax protester in Minneapolis, Minnesota during a DWI. The Street Sweeper was decorated with Nazi insignias -- the words "White Power" and swastikas.

A Street Sweeper was confiscated from a suspect who was believed to have participated in the recent Brooklyn Bridge attack on a group of Hasidic Jews in New York City.



Shown is Street Sweeper

Questions and Answers About Semi-Automatic Assault Weapons

What are semi-automatic assault weapons?

As defined in the Senate Crime Bill and in legislation pending in the House of Representatives, assault weapons are large capacity, semi-automatic firearms designed and configured for rapid fire, combat use (the Street Sweeper/Striker 12 shotguns have a wind-up drum). Most are patterned after machine guns used by military forces. They have distinct features which separate them from sporting firearms.

Many are banned from being imported into the United States, but all can be legally manufactured in this country. Passing assault weapons legislation removes these guns from circulation.

Why ban semi-automatic assault weapons?

Assault weapons make up only 1% of the guns in circulation in the United States. They account for up to 8% of the guns traced by law enforcement officials in the investigation of criminal activity. They are preferred by criminals over law abiding citizens 8 to 1. A number of these guns rank in the top 10 of all guns traced in relation to crime.

The way to show that we are serious about violent crime is to ban assault weapons. We are not being tough on gangsters if we allow open access to gangster weapons. Passing assault weapons legislation puts an end to an arms race on our streets.

Some people say semi-automatic assault weapons are just different looking versions of sporting firearms?

Some people might try to tell us that a diesel locomotive is like a family sedan because they have internal combustion engines. Assault weapons were designed for rapid fire, close quarter shooting at human beings. That is why they were put together the way they were. You will not find these guns in a duck blind or at the Olympics. They are mass produced mayhem.

Can't conventional sporting firearms be fitted with large magazines?

The legislation now pending in Congress bans ammunition magazines with a capacity greater than 10 rounds.

If someone crafts an illegal magazine, we can prosecute that person. Right now factories legally turn out such magazines and distribute them by the truckload.

Don't some gun owners say that this ban will lead to a ban of their semiautomatic sporting firearms?

The legislation pending in Congress specifically exempts nearly 700 conventional sporting firearms from its provisions. This legislation doesn't threaten the law abiding gun owners; it protects them and protects those who own no guns at all.

Will banning these firearms have an impact on crime?

Yes, it will. These guns help the criminals who have them to commit their crimes, adding to the carnage. They embolden the crook. Access to them shifts the balance of power to the lawless.

It is also a matter of principle that we ban these semi-automatic assault weapons. For people who say they are serious about addressing violent crime, it is time to vote seriously about the firearms criminals prefer.

The AR-15 comes equipped with a 5-round magazine. How can you classify this firearm as a rapid fire assault weapon?

Any weapon that takes a detachable magazine will hold a magazine of a larger capacity. Large capacity magazines of up to 150 rounds are available in unknown quantities for all of the firearms identified in this legislation, except the Street Sweeper. However, twenty and fifty-round magazines are readily available for use with these firearms.

Firearms Exempted in Proposed Legislation as Hunting and Sporting Firearms

Centerfire Rifles—Autoloaders

Browning BAR Mark II Safari Semi-Auto Rifle
Browning BAR Mark II Safari Magnum Rifle
Browning High-Power Rifle
Heckler & Koch Model 300 Rifle
Iver Johnson M-1 Carbine
Iver Johnson 50th Anniversary M-1 Carbine
Marlin Model 9 Camp Carbine
Marlin Model 45 Carbine
Remington Nylon 66 Auto-Loading Rifle
Remington Model 7400 Auto Rifle
Remington Model 7400 Rifle
Remington Model 7400 Special Purpose Auto Rifle
Ruger Mini-14 Autoloading Rifle (w/o folding stock)
Ruger Mini Thirty Rifle

Centerfire Rifles—Lever & Slide

Browning Model 81 BLR Lever-Action Rifle
Browning Model 81 Long Action BLR
Browning Model 1886 Lever-Action Carbine
Browning Model 1886 High Grade Carbine
Cimarron 1860 Henry Replica
Cimarron 1866 Winchester Replicas
Cimarron 1873 Short Rifle
Cimarron 1873 Sporting Rifle
Cimarron 1873 30" Express Rifle
Dixie Engraved 1873 Rifle
E.M.F. 1866 Yellowboy Lever Actions
E.M.F. 1860 Henry Rifle
E.M.F. Model 73 Lever-Action Rifle
Marlin Model 336CS Lever-Action Carbine
Marlin Model 30AS Lever-Action Carbine
Marlin Model 444SS Lever-Action Sporter
Marlin Model 1894S Lever-Action Carbine
Marlin Model 1894CS Carbine
Marlin Model 1894CL Classic
Marlin Model 1895SS Lever-Action Rifle
Mitchell 1858 Henry Replica
Mitchell 1866 Winchester Replica
Mitchell 1873 Winchester Replica
Navy Arms Military Henry Rifle
Navy Arms Henry Trapper
Navy Arms Iron Frame Henry
Navy Arms Henry Carbine
Navy Arms 1866 Yellowboy Rifle
Navy Arms 1873 Winchester-Style Rifle
Navy Arms 1873 Sporting Rifle
Remington 7600 Slide Action
Remington Model 7600 Special Purpose Slide Action

Rossi M92 SRC Saddle-Ring Carbine
Rossi M92 SRS Short Carbine
Savage 99C Lever-Action Rifle
Uberti Henry Rifle
Uberti 1866 Sporting Rifle
Uberti 1873 Sporting Rifle
Winchester Model 94 Side Eject Lever-Action Rifle
Winchester Model 94 Trapper Side Eject
Winchester Model 94 Big Bore Side Eject
Winchester Model 94 Ranger Side Eject Lever-Action Rifle
Winchester Model 94 Wrangler Side Eject

Centerfire Rifles—Bolt Action

Alpine Bolt-Action Rifle
A-Square Caesar Bolt-Action Rifle
A-Square Hannibal Bolt-Action Rifle
Anschutz 1700D Classic Rifles
Anschutz 1700D Custom Rifles
Anschutz 1700D Bavarian Bolt-Action Rifle
Anschutz 1733D Mannlicher Rifle
Barret Model 90 Bolt-Action Rifle
Beeman/HW 60J Bolt-Action Rifle
Blaser R84 Bolt-Action Rifle
BRNO 537 Sporter Bolt-Action Rifle
BRNO ZKB 527 Fox Bolt-Action Rifle
BRNO ZKK 600, 601, 602 Bolt-Action Rifles
Browning A-Bolt Rifle
Browning A-Bolt Stainless Stalker
Browning A-Bolt Left Hand
Browning A-Bolt Short Action
Browning Euro-Bolt Rifle
Browning A-Bolt Gold Medallion
Browning A-Bolt Micro Medallion
Century Centurion 14 Sporter
Century Enfield Sporter #4
Century Swedish Sporter #38
Century Mauser 98 Sporter
Cooper Model 38 Centerfire Sporter
Dakota 22 Sporter Bolt-Action Rifle
Dakota 76 Classic Bolt-Action Rifle
Dakota 76 Short Action Rifles
Dakota 76 Safari Bolt-Action Rifle
Dakota 416 Rigby African
E.A.A./Sabatti Rover 870 Bolt-Action Rifle
Auguste Francotte Bolt-Action Rifles
Carl Gustaf 2000 Bolt-Action Rifle
Heym Magnum Express Series Rifle
Howa Lightning Bolt-Action Rifle
Howa Realtree Camo Rifle
Interarms Mark X Viscount Bolt-Action Rifle
Interarms Mini-Mark X Rifle
Interarms Mark X Whitworth Bolt-Action Rifle
Interarms Whitworth Express Rifle
Iver Johnson Model 5100A1 Long-Range Rifle
KDF K15 American Bolt-Action Rifle
Krico Model 600 Bolt-Action Rifle
Krico Model 700 Bolt-Action Rifles

Mauser Model 66 Bolt-Action Rifle
Mauser Model 99 Bolt-Action Rifle
McMillan Signature Classic Sporter
McMillan Signature Super Varminter
McMillan Signature Alaskan
McMillan Signature Titanium Mountain Rifle
McMillan Classic Stainless Sporter
McMillan Talon Safari Rifle
McMillan Talon Sporter Rifle
Midland 1500S Survivor Rifle
Navy Arms TU-33/40 Carbine
Parker-Hale Model 81 Classic Rifle
Parker-Hale Model 81 Classic African Rifle
Parker-Hale Model 1000 Rifle
Parker-Hale Model 1100M African Magnum
Parker-Hale Model 1100 Lightweight Rifle
Parker-Hale Model 1200 Super Rifle
Parker-Hale Model 1200 Super Clip Rifle
Parker-Hale Model 1300C Scout Rifle
Parker-Hale Model 2100 Midland Rifle
Parker-Hale Model 2700 Lightweight Rifle
Parker-Hale Model 2800 Midland Rifle
Remington Model Seven Bolt-Action Rifle
Remington Model Seven Youth Rifle
Remington Model Seven Custom KS
Remington Model Seven Custom MS Rifle
Remington 700 ADL Bolt-Action Rifle
Remington 700 BDL Bolt-Action Rifle
Remington 700 BDL Varmint Special
Remington 700 BDL European Bolt-Action Rifle
Remington 700 Varmint Synthetic Rifle
Remington 700 BDL SS Rifle
Remington 700 Stainless Synthetic Rifle
Remington 700 MTRSS Rifle
Remington 700 BDL Left Hand
Remington 700 Camo Synthetic Rifle
Remington 700 Safari
Remington 700 Mountain Rifle
Remington 700 Custom KS Mountain Rifle
Remington 700 Classic Rifle
Ruger M77 Mark II Rifle
Ruger M77 Mark II Magnum Rifle
Ruger M77RL Ultra Light
Ruger M77 Mark II All-Weather Stainless Rifle
Ruger M77 RSI International Carbine
Ruger M77 Mark II Express Rifle
Ruger M77VT Target Rifle
Sako Hunter Rifle
Sako Fiberclass Sporter
Sako Safari Grade Bolt Action
Sako Hunter Left-Hand Rifle
Sako Classic Bolt Action
Sako Hunter LS Rifle
Sako Deluxe Lightweight
Sako Super Deluxe Sporter
Sako Mannlicher-Style Carbine
Sako Varmint Heavy Barrel

Sako TRG-S Bolt-Action Rifle
 Sauer 90 Bolt-Action Rifle
 Savage 110G Bolt-Action Rifle
 Savage 110CY Youth/Ladies Rifle
 Savage 110WLE One of One Thousand Limited Edition Rifle
 Savage 110GXP3 Bolt-Action Rifle
 Savage 110F Bolt-Action Rifle
 Savage 110FXP3 Bolt-Action Rifle
 Savage 110GV Varmint Rifle
 Sayage 112FV Varmint Rifle
 Savage Model 112FVS Varmint Rifle
 Savage Model 112BV Heavy Barrel Varmint Rifle
 Savage 116FSS Bolt-Action Rifle
 Savage model 116FSK Kodiak Rifle
 Savage 110FP Police Rifle
 Steyr-Mannlicher Sporter Models SL, L, M, S, S/T
 Steyr-Mannlicher Luxus Model L, M, S
 Steyr-Mannlicher Model M Professional Rifle
 Tikka Bolt-Action Rifle
 Tikka Premium Grade Rifles
 Tikka Varmint/Continental Rifle
 Tikka Whitetail/Battue Rifle
 Ultra Light Arms Model 20 Rifle
 Ultra Light Arms Model 28, Model 40 Rifles
 Voere VEC 91 Lightning Bolt-Action Rifle
 Voere Model 2165 Bolt-Action Rifle
 Voere Model 2155, 2150 Bolt-Action Rifles
 Weatherby Mark V Deluxe Bolt-Action Rifle
 Weatherby Lasermark V Rifle
 Weatherby Mark V Crown Custom Rifles
 Weatherby Mark V Sporter Rifle
 Weatherby Mark V Safari Grade Custom Rifles
 Weatherby Weathermark Rifle
 Weatherby Weathermark Alaskan Rifle
 Weatherby Classicmark No. 1 Rifle
 Weatherby Weatherguard Alaskan Rifle
 Weatherby Vanguard VGX Deluxe Rifle
 Weatherby Vanguard Classic Rifle
 Weatherby Vanguard Classic No. 1 Rifle
 Weatherby Vanguard Weatherguard Rifle
 Wichita Classic Rifle
 Wichita Varmint Rifle
 Winchester Model 70 Sporter
 Winchester Model 70 Sporter WinTuff
 Winchester Model 70 SM Sporter
 Winchester Model 70 Stainless Rifle
 Winchester Model 70 Varmint
 Winchester Model 70 Synthetic Heavy Varmint Rifle
 Winchester Model 70 DBM Rifle
 Winchester Model 70 DBM-S Rifle
 Winchester Model 70 Featherweight
 Winchester Model 70 Featherweight WinTuff
 Winchester Model 70 Featherweight Classic
 Winchester Model 70 Lightweight Rifle
 Winchester Ranger Rifle
 Winchester Model 70 Super Express Magnum
 Winchester Model 70 Super Grade

Winchester Model 70 Custom Sharpshooter
Winchester Model 70 Custom Sporting Sharpshooter Rifle

Centerfire Rifles—Single Shot

Armsport 1866 Sharps Rifle, Carbine
Brown Model One Single Shot Rifle
Browning Model 1885 Single Shot Rifle
Dakota Single Shot Rifle
Desert Industries G-90 Single Shot Rifle
Harrington & Richardson Ultra Varmint Rifle
Model 1885 High Wall Rifle
Navy Arms Rolling Block Buffalo Rifle
Navy Arms #2 Creedmoor Rifle
Navy Arms Sharps Cavalry Carbine
Navy Arms Sharps Plains Rifle
New England Firearms Handi-Rifle
Red Willow Armory Ballard No. 5 Pacific
Red Willow Armory Ballard No. 1.5 Hunting Rifle
Red Willow Armory Ballard No. 8 Union Hill Rifle
Red Willow Armory Ballard No. 4.5 Target Rifle
Remington-Style Rolling Block Carbine
Ruger No. 1B Single Shot
Ruger No. 1A Light Sporter
Ruger No. 1H Tropical Rifle
Ruger No. 1S Medium Sporter
Ruger No. 1 RSI International
Ruger No. 1V Special Varminter
C. Sharps Arms New Model 1874 Old Reliable
C. Sharps Arms New Model 1875 Rifle
C. Sharps Arms 1875 Classic Sharps
C. Sharps Arms New Model 1875 Target & Long Range
Shiloh Sharps 1874 Long Range Express
Shiloh Sharps 1874 Montana Roughrider
Shiloh Sharps 1874 Military Carbine
Shiloh Sharps 1874 Business Rifle
Shiloh Sharps 1874 Military Rifle
Sharps 1874 Old Reliable
Thompson/Center Contender Carbine
Thompson/Center Stainless Contender Carbine
Thompson/Center Contender Carbine Survival System
Thompson/Center Contender Carbine Youth Model
Thompson/Center TCR '87 Single Shot Rifle
Uberti Rolling Block Baby Carbine

Drillings, Combination Guns, Double Rifles

Baretta Express SSO O/U Double Rifles
Baretta Model 455 SxS Express Rifle
Chapuis RGExpress Double Rifle
Auguste Francotte Sidelock Double Rifles
Auguste Francotte Boxlock Double Rifle
Heym Model 55B O/U Double Rifle
Heym Model 55FW O/U Combo Gun
Heym Model 88b Side-by-Side Double Rifle
Kodiak Mk. IV Double Rifle
Kreighoff Teck O/U Combination Gun
Kreighoff Trumpf Drilling

Merkel Over/Under Combination Guns
 Merkel Drillings
 Merkel Model 160 Side-by-Side Double Rifles
 Merkel Over/Under Double Rifles
 Savage 24F O/U Combination Gun
 Savage 24F-12T Turkey Gun
 Springfield Inc. M6 Scout Rifle/Shotgun
 Tikka Model 412s Combination Gun
 Tikka Model 412S Double Fire
 A. Zoli Rifle-Shotgun O/U Combo

Rimfire Rifles—Autoloaders

AMT Lightning 25/22 Rifle
 AMT Lightning Small-Game Hunting Rifle II
 AMT Magnum Hunter Auto Rifle
 Anschutz 525 Deluxe Auto
 Armscor Model 20P Auto Rifle
 Browning Auto-22 Rifle
 Browning Auto-22 Grade VI
 Krico Model 260 Auto Rifle
 Lakefield Arms Model 64B Auto Rifle
 Marlin Model 60 Self-Loading Rifle
 Marlin Model 60ss Self-Loading Rifle
 Marlin Model 70 HC Auto
 Marlin Model 990I Self-Loading Rifle
 Marlin Model 70P Papoose
 Marlin Model 922 Magnum Self-Loading Rifle
 Marlin Model 995 Self-Loading Rifle
 Norinco Model 22 ATD Rifle
 Remington Model 522 Viper Autoloading Rifle
 Remington 552BDL Speedmaster Rifle
 Ruger 10/22 Autoloading Carbine (w/o folding stock)
 Survival Arms AR-7 Explorer Rifle
 Texas Remington Revolving Carbine
 Voere Model 2115 Auto Rifle

Rimfire Rifles—Lever & Slide Action

Browning BL-22 Lever-Action Rifle
 Marlin 39TDS Carbine
 Marlin Model 39AS Golden Lever-Action Rifle
 Remington 572BDL Fieldmaster Pump Rifle
 Norinco EM-321 Pump Rifle
 Rossi Model 62 SA Pump Rifle
 Rossi Model 62 SAC Carbine
 Winchester Model 9422 Lever-Action Rifle
 Winchester Model 9422 Magnum Lever-Action Rifle

Rimfire Rifles—Bolt Actions & Single Shots

Anschutz Achiever Bolt-Action Rifle
 Anschutz 1416D/1516D Classic Rifles
 Anschutz 1418D/1518D Mannlicher rifles
 Anschutz 1700D Classic Rifles
 Anschutz 1700D Custom Rifles
 Anschutz 1700 FWT Bolt-Action Rifle
 Anschutz 1700D Graphite Custom Rifle

Anschutz 1700D Bavarian Bolt-Action Rifle
 Armscor Model 14P Bolt-Action Rifle
 Armscor Model 1500 Rifle
 BRNO ZKM-452 Deluxe Bolt-Action Rifle
 BRNO ZKM 452 Deluxe
 Beeman/HW 60-J-ST Bolt-Action Rifle
 Browning A-Bolt 22 Bolt-Action Rifle
 Browning A-Bolt Gold Medallion
 Cabanas Phaser Rifle
 Cabanas Master Bolt-Action Rifle
 Cabanas Espronceda IV Bolt-Action Rifle
 Cabanas Leyre Bolt-Action Rifle
 Chipmunk Single Shot Rifle
 Cooper Arms Model 36S Sporter Rifle
 Dakota 22 Sporter Bolt-Action Rifle
 Krico Model 300 Bolt-Action Rifles
 Lakefield Arms Mark II Bolt-Action Rifle
 Lakefield Arms Mark I Bolt-Action Rifle
 Magtech Model MT-22C Bolt-Action Rifle
 Marlin Model 880 Bolt-Action Rifle
 Marlin Model 881 Bolt-Action Rifle
 Marlin Model 882 Bolt-Action Rifle
 Marlin Model 883 Bolt-Action Rifle
 Marlin Model 883SS Bolt-Action Rifle
 Marlin Model 25MN Bolt-Action Rifle
 Marlin Model 25N Bolt-Action Repeater
 Marlin Model 15YN "Little Buckaroo"
 Mauser Model 107 Bolt-Action Rifle
 Mauser Model 201 Bolt-Action Rifle
 Navy Arms TU-KKW Training Rifle
 Navy Arms TU-33/40 Carbine
 Navy Arms TU-KKW Sniper Trainer
 Norinco JW-27 Bolt-Action Rifle
 Norinco JW-15 Bolt-Action Rifle
 Remington 541-T
 Remington 40-XR Rimfire Custom sporter
 Remington 541-T HB Bolt-Action Rifle
 Remington 581-S Sportsman Rifle
 Ruger 77/22 Rimfire Bolt-Action Rifle
 Ruger K77/22 Varmint Rifle
 Ultra Light arms Model 20 RF Bolt-Action Rifle
 Winchester Model 52B Sporting Rifle

Competition Rifles—Centerfire & Rimfire

Anschutz 64-MS Left Silhouette
 Anschutz 1808D RT Super Match 54 Target
 Anschutz 1827B Biathlon Rifle
 Anschutz 1903D Match Rifle
 Anschutz 1803D Intermediate Match
 Anschutz 1911 Match Rifle
 Anschutz 54.18MS REP Deluxe Silhouette Rifle
 Anschutz 1913 Super Match Rifle
 Anschutz 1907 Match Rifle
 Anschutz 1910 Super Match II
 Anschutz 54.18MS Silhouette Rifle
 Anschutz Super Match 54 Target Model 2013

Anschutz Super Match 54 Target Model 2007
Beeman/Feinwerkbau 2600 Target Rifle
Cooper Arms Model TRP-1 ISU Standard Rifle
E.A.A./Weihrauch HW 60 Target Rifle
E.A.A./HW 660 Match Rifle
Finnish Lion Standard Target Rifle
Krico Model 360 S2 Biathlon Rifle
Krico Model 400 Match Rifle
Krico Model 360S Biathlon Rifle
Krico Model 500 Kricotronic Match Rifle
Krico Model 600 Sniper Rifle
Krico Model 600 Match Rifle
Lakefield Arms Model 90B Target Rifle
Lakefield Arms Model 91T Target Rifle
Lakefield Arms Model 92S Silhouette Rifle
Marlin Model 2000 Target Rifle
Mauser Model 86-SR Specialty Rifle
McMillan M-86 Sniper Rifle
McMillan Combo M-87/M-88 50-Caliber Rifle
McMillan 300 Phoenix Long Range Rifle
McMillan M-89 Sniper Rifle
McMillan National Match Rifle
McMillan Long Range Rifle
Parker-Hale M-87 Target Rifle
Parker-Hale M-85 Sniper Rifle
Remington 40-XB Rangemaster Target Centerfire
Remington 40-XR KS Rimfire Position Rifle
Remington 40-XBBR KS
Remington 40-XC KS National Match Course Rifle
Sako TRG-21 Bolt-Action Rifle
Steyr-Mannlicher Match SPG-UIT Rifle
Steyr-Mannlicher SSG P-I Rifle
Steyr-Mannlicher SSG P-III Rifle
Steyr-Mannlicher SSG P-IV Rifle
Tanner Standard UIT Rifle
Tanner 50 Meter Free Rifle
Tanner 300 Meter Free Rifle
Wichita Silhouette Rifle

Shotguns—Autoloaders

American Arms/Franchi Black Magic 48/AL
Benelli Super Black Eagle Shotgun
Benelli Super Black Eagle Slug Gun
Benelli M1 Super 90 Field Auto Shotgun
Benelli Montefeltro Super 90 20-Gauge Shotgun
Benelli Montefeltro Super 90 Shotgun
Benelli M1 Sporting Special Auto Shotgun
Benelli Black Eagle Competition Auto Shotgun
Beretta A-303 Auto Shotgun
Beretta 390 Field Auto Shotgun
Beretta 390 Super Trap, Super Skeet Shotguns
Beretta Vittoria Auto Shotgun
Beretta Model 1201F Auto Shotgun
Browning BSA 10 Auto Shotgun
Browning BSA 10 Stalker Auto Shotgun
Browning A-500R Auto Shotgun

Browning A-500G Auto Shotgun
 Browning A-500G Sporting Clays
 Browning Auto-5 Light 12 and 20
 Browning Auto-5 Stalker
 Browning Auto-5 Magnum 20
 Browning Auto-5 Magnum 12
 Churchill Turkey Automatic Shotgun
 Cosmi Automatic Shotgun
 Maverick Model 60 Auto Shotgun
 Mossberg Model 5500 Shotgun
 Mossberg Model 9200 Regal Semi-Auto Shotgun
 Mossberg Model 9200 USST Auto Shotgun
 Mossberg Model 9200 Camo Shotgun
 Mossberg Model 6000 Auto Shotgun
 Remington Model 1100 Shotgun
 Remington 11-87 Premier Shotgun
 Remington 11-87 Sporting Clays
 Remington 11-87 Premier Skeet
 Remington 11-87 Premier Trap
 Remington 11-87 Special Purpose Magnum
 Remington 11-87 SPS-T Camo Auto Shotgun
 Remington 11-87 Special Purpose Deer Gun
 Remington 11-87 SPS-BG-Camo Deer/Turkey Shotgun
 Remington 11-87 SPS-Deer Shotgun
 Remington 11-87 Special Purpose Synthetic Camo
 Remington SP-10 Magnum-Camo Auto Shotgun
 Remington SP-10 Magnum Auto Shotgun
 Remington SP-10 Magnum Turkey Combo
 Remington 1100 LT-20 Auto
 Remington 1100 Special Field
 Remington 1100 20-Gauge Deer Gun
 Remington 1100 LT-20 Tournament Skeet
 Winchester Model 1400 Semi-Auto Shotgun

Shotguns—Slide Actions

Browning Model 42 Pump Shotgun
 Browning BPS Pump Shotgun
 Browning BPS Stalker Pump Shotgun
 Browning BPS Pigeon Grade Pump Shotgun
 Browning BPS Pump Shotgun (Ladies and Youth Model)
 Browning BPS Game Gun Turkey Special
 Browning BPS Game Gun Deer Special
 Ithaca Model 87 Supreme Pump Shotgun
 Ithaca Model 87 Deerslayer Shotgun
 Ithaca Deerslayer II Rifled Shotgun
 Ithaca Model 87 Turkey Gun
 Ithaca Model 87 Deluxe Pump Shotgun
 Magtech Model 586-VR Pump Shotgun
 Maverick Models 88, 91 Pump Shotguns
 Mossberg Model 500 Sporting Pump
 Mossberg Model 500 Camo Pump
 Mossberg Model 500 Muzzleloader Combo
 Mossberg Model 500 Trophy Slugster
 Mossberg Turkey Model 500 Pump
 Mossberg Model 500 Bantam Pump
 Mossberg Field Grade Model 835 Pump Shotgun

Mossberg Model 835 Regal Ulti-Mag Pump
 Remington 870 Wingmaster
 Remington 870 Special Purpose Deer Gun
 Remington 870 SPS-BG-Camo Deer/Turkey Shotgun
 Remington 870 SPS-Deer Shotgun
 Remington 870 Marine Magnum
 Remington 870 TC Trap
 Remington 870 Special Purpose Synthetic Camo
 Remington 870 Wingmaster Small Gauges
 Remington 870 Express Rifle Sighted Deer Gun
 Remington 879 SPS Special Purpose Magnum
 Remington 870 SPS-T Camo Pump Shotgun
 Remington 870 Special Field
 Remington 870 Express Turkey
 Remington 870 High Grades
 Remington 870 Express
 Remington Model 870 Express Youth Gun
 Winchester Model 12 Pump Shotgun
 Winchester Model 42 High Grade Shotgun
 Winchester Model 1300 Walnut Pump
 Winchester Model 1300 Slug Hunter Deer Gun
 Winchester Model 1300 Ranger Pump Gun Combo & Deer Gun
 Winchester Model 1300 Turkey Gun
 Winchester Model 1300 Ranger Pump Gun

Shotguns—Over/Unders

American Arms/Franchi Falconet 2000 O/U
 American Arms Silver I O/U
 American Arms Silver II Shotgun
 American Arms Silver Skeet O/U
 American Arms/Franchi Sporting 2000 O/U
 American Arms Silver Sporting O/U
 American Arms Silver Trap O/U
 American Arms WS/OU 12, TS/OU 12 Shotguns
 American Arms WT/OU 10 Shotgun
 Armsport 2700 O/U Goose Gun
 Armsport 2700 Series O/U
 Armsport 2900 Tri-Barrel Shotgun
 Baby Bretton Over/Under Shotgun
 Beretta Model 686 Ultralight O/U
 Beretta ASE 90 Competition O/U Shotgun
 Beretta Over/Under Field Shotguns
 Beretta Onyx Hunter Sport O/U Shotgun
 Beretta Model SO5, SO6, SO9 Shotguns
 Beretta Sporting Clay Shotguns
 Beretta 687EL Sporting O/U
 Beretta 682 Super Sporting O/U
 Beretta Series 682 Competition Over/Unders
 Browning Citori O/U Shotgun
 Browning Superlight Citori Over/Under
 Browning Lightning Sporting Clays
 Browning Micro Citori Lightning
 Browning Citori Plus Trap Combo
 Browning Citori Plus Trap Gun
 Browning Citori O/U Skeet Models
 Browning Citori O/U Trap Models

Browning Special Sporting Clays
 Browning Citori GTI Sporting Clays
 Browning 325 Sporting Clays
 Centurion Over/Under Shotgun
 Chapuis Over/Under Shotgun
 Connecticut Valley Classics Classic Sporter O/U
 Connecticut Valley Classics Classic Field Waterfowler
 Charles Daly Field Grade O/U
 Charles Daly Lux Over/Under
 E.A.A./Sabatti Sporting Clays Pro-Gold O/U
 E.A.A./Sabatti Falcon-Mon Over/Under
 Kassnar Grade I O/U Shotgun
 Krieghoff K-80 Sporting Clays O/U
 Krieghoff K-80 Skeet Shotgun
 Krieghoff K-80 International Skeet
 Krieghoff K-80 Four-Barrel Skeet Set
 Krieghoff K-80/RT Shotguns
 Krieghoff K-80 O/U Trap Shotgun
 Laurona Silhouette 300 Sporting Clays
 Laurona Silhouette 300 Trap
 Laurona Super Model Over/Unders
 Ljutic LM-6 Deluxe O/U Shotgun
 Marocchi Conquista Over/Under Shotgun
 Marocchi Avanza O/U Shotgun
 Merkel Model 200E O/U Shotgun
 Merkel Model 200E Skeet, Trap Over/Unders
 Merkel Model 203E, 303E Over/Under Shotguns
 Perazzi Mirage Special Sporting O/U
 Perazzi Mirage Special Four-Gauge Skeet
 Perazzi Sporting Classic O/U
 Perazzi MX7 Over/Under Shotguns
 Perazzi Mirage Special Skeet Over/Under
 Perazzi MX8/MX8 Special Trap, Skeet
 Perazzi MX8/20 Over/Under Shotgun
 Perazzi MX9 Single Over/Under Shotguns
 Perazzi MX12 Hunting Over/Under
 Perazzi MX28, MX410 Game O/U Shotguns
 Perazzi MX20 Hunting Over/Under
 Piotti Boss Over/Under Shotgun
 Remington Peerless Over/Under Shotgun
 Ruger Red Label O/U Shotgun
 Ruger Sporting Clays O/U Shotgun
 San Marco 12-Ga. Wildflower Shotgun
 San Marco Field Special O/U Shotgun
 San Marco 10-Ga. O/U Shotgun
 SKB Model 505 Deluxe Over/Under Shotgun
 SKB Model 685 Over/Under Shotgun
 SKB Model 885 Over/Under Trap, Skeet, Sporting Clays
 Stoeger/IGA Condor I O/U Shotgun
 Stoeger/IGA ERA 2000 Over/Under Shotgun
 Techni-Mec Model 610 Over/Under
 Tikka Model 412S Field Grade Over/Under
 Weatherby Athena Grade IV O/U Shotguns
 Weatherby Athena Grade V Classic Field O/U
 Weatherby Orion O/U Shotguns
 Weatherby II, III Classic Field O/Us
 Weatherby Orion II Classic Sporting Clays O/U

Weatherby Orion II Sporting Clays O/U
Winchester Model 1001 O/U Shotgun
Winchester Model 1001 Sporting Clays O/U
Pietro Zanoletti Model 2000 Field O/U

Shotguns—Side by Sides

American Arms Brittany Shotgun
American Arms Gentry Double Shotgun
American Arms Derby Side-by-Side
American Arms Grulla #2 Double Shotgun
American Arms WS/SS 10
American Arms TS/SS 10 Double Shotgun
American Arms TS/SS 12 Side-by-Side
Arrieta Sidelock Double Shotguns
Armsport 1050 Series Double Shotguns
Arizaga Model 31 Double Shotgun
AYA Boxlock Shotguns
AYA Sidelock Double Shotguns
Beretta Model 452 Sidelock Shotgun
Beretta Side-by-Side Field Shotguns
Crucelegui Hermanos Model 150 Double
Chapuis Side-by-Side Shotgun
E.A.A./Sabatti Saba-Mon Double Shotgun
Charles Daly Model Dss Double
Férlib Model F VII Double Shotgun
Auguste Francotte Boxlock Shotgun
Auguste Francotte Sidelock Shotgun
Garbi Model 100 Double
Garbi Model 101 Side-by-Side
Garbi Model 103A, B Side-by-Side
Garbi Model 200 Side-by-Side
Bill Hanus Birdgun Doubles
Hatfield Uplander Shotgun
Merkell Model 8, 47E Side-by-Side Shotguns
Merkel Model 47LSC Sporting Clays Double
Merkel Model 47S, 147S Side-by-Sides
Parker Reproductions Side-by-Side
Piotti King No. 1 Side-by-Side
Piotti Lunik Side-by-Side
Piotti King Extra Side-by-Side
Piotti Piuma Side-by-Side
Precision Sports Model 600 Series Doubles
Rizzini Boxlock Side-by-Side
Rizzini Sidelock Side-by-Side
Stoeger/IGA Uplander Side-by-Side Shotgun
Ugartechea 10-Ga. Magnum Shotgun

Shotguns—Bolt Actions & Single Shots

Armsport Single Barrel Shotgun
Browning BT-99 Competition Trap Special
Browning BT-99 Plus Trap Gun
Browning BT-99 Plus Micro
Browning Recoilless Trap Shotgun
Browning Micro Recoilless Trap Shotgun
Desert Industries Big Twenty Shotgun

Harrington & Richardson Topper Model 098
Harrington & Richardson Topper Classic Youth Shotgun
Harrington & Richardson N.W.T.F. Turkey Mag
Harrington & Richardson Topper Deluxe Model 098
Krieghoff KS-5 Trap Gun
Krieghoff KS-5 Special
Krieghoff K-80 Single Barrel Trap Gun
Ljutic Mono Gun Single Barrel
Ljutic LTX Super Deluxe Mono Gun
Ljutic Recoilless Space Gun Shotgun
Marlin Model 55 Goose Gun Bolt Action
New England Firearms Turkey and Goose Gun
New England Firearms N.W.T.F. Shotgun
New England Firearms Tracker Slug Gun
New England Firearms Standard Pardner
New England Firearms Survival Gun
Perazzi TM1 Special Single Trap
Remington 90-T Super Single Shotgun
Snake Charmer II Shotgun
Stoeger/IGA Reuna Single Barrel Shotgun
Thompson/Center TCR '87 Hunter Shotgun."

CERTIFICATE OF SERVICE

Case Name: **Duncan, Virginia et al v.
Xavier Becerra**

No. **17-56081**

I hereby certify that on October 12, 2017, I electronically filed the following documents with the Clerk of the Court by using the CM/ECF system:

APPELLANT'S EXCERPTS OF RECORD, VOLUME VII, ER 1400-1570

I certify that **all** participants in the case are registered CM/ECF users and that service will be accomplished by the CM/ECF system.

I declare under penalty of perjury under the laws of the State of California the foregoing is true and correct and that this declaration was executed on October 12, 2017, at San Francisco, California.

N. Newlin
Declarant

s/ N. Newlin
Signature