IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Civil Action No. 22-cv-2680-NYW-SKC

ROCKY MOUNTAIN GUN OWNERS,
NATIONAL ASSOCIATION FOR GUN RIGHTS,
CHARLES BRADLEY WALKER,
BRYAN LAFONTE,
CRAIG WRIGHT,
GORDON MADONNA,
JAMES MICHAEL JONES, and
MARTIN CARTER KEHOE,

Plaintiffs,

v.

THE TOWN OF SUPERIOR,
CITY OF LOUISVILLE, COLORADO,
CITY OF BOULDER, COLORADO, and
BOARD OF COUNTY COMMISSIONERS OF BOULDER COUNTY,

Defendants.

RESPONSE TO DEFENDANTS' MOTION PARTIALLY TO STRIKE MARK PASSAMANECK'S REPORT AND EXCLUDE HIS TESTIMONY

Plaintiffs submit the following response to Defendants' motion partially to strike expert Mark Passamaneck's expert report and exclude his testimony.

INTRODUCTION

Plaintiffs have designated Mr. Passamaneck to provide testimony regarding the prevalence of "assault weapons"[1] and "large capacity magazines"[1] in the United

[1] In using the politically charged terms in the Challenged Ordinances, Plaintiffs do not concede that popular semi-automatic rifles are in any sense "assault weapons." Nor do they concede that the banned standard capacity magazines are "large capacity magazines."

States. The National Shooting Sports Foundation ("NSSF") is the firearms industry trade association, and its compilations are the standard source for information about the number of such arms in circulation. Passamaneck Depo. 234:5-13. Both Mr. Passamaneck and Defendants' expert Louis Klarevas make extensive use of NSSF's 2022 compilation in their reports. For example, Dr. Klarevas relied extensively on NSSF's estimate that there were 24.4 million "modern sporting rifles"[2] produced in the United States from 1990 to 2020. *See*, e.g., Exhibit C, 11. And Mr. Passamaneck cited the same figure in his report. Exhibit A, 5. Indeed, the only difference between Dr. Klarevas' and Mr. Passamaneck's estimates is that Mr. Passamaneck's includes an estimate for rifles produced before 1990 and after 2020. Ex. B, 1-2.

Plaintiffs' expert and Defendants' expert are in agreement about two things: (1) The 2022 NSSF compilation is a reliable source of information upon which expert reports can be based; and (2) there are tens of millions of AR and similar rifles in the United States. Indeed, when it comes to estimating the number of such rifles, Plaintiffs are willing to stipulate to Defendants' expert's estimate that there are 24.4 million "modern sporting rifles" in circulation. There is no need to quibble about whether there are 34 million such rifles or "only" 24 million. The important thing is that all parties agree there are tens of millions. And that is sufficient to establish that the rifles are in common use.

Plaintiffs point out the commonality between Dr. Klarevas' and Mr. Passamaneck's reports because it bears on Defendants' motion to strike. Apparently,

[2] NSSF's term for AR-15s and similar rifles.

Defendants believe their expert should be able to rely extensively on the NSSF compilation as the basis for his estimate of the number of "assault weapons," but when Plaintiffs' expert relies on the same source of information in his report, the report should be stricken. Unsurprisingly, Plaintiffs do not believe this double standard is appropriate. As set forth in detail below, Mr. Passamaneck is qualified to render his opinion and the methodology he applied is reliable. Therefore, Defendants' motion should be denied.

LEGAL STANDARD

A proffer of expert testimony is tested against the standard of reliability, not correctness. *United States v. Crabbe*, 556 F. Supp. 2d 1217, 1221 (D. Colo. 2008), *citing Mitchell v. Gencorp Inc.*, 165 F.3d 778, 781 (10th Cir. 1999). The proponent need only show that the witness has sufficient expertise to choose and apply a methodology, that the methodology applied was reliable, that sufficient facts and data as required by the methodology were used, and that the methodology was otherwise reliably applied. *Id.* "[T]he rejection of expert testimony is the exception rather than the rule." *O'Sullivan v. Geico Cas. Co.*, 233 F. Supp. 3d 917, 922 (D. Colo. 2017), (quoting Fed. R. Evid. 702 advisory committee's note). "[T]he trial court's role as gatekeeper is not intended to serve as a replacement for the adversary system." *Id.* "Vigorous cross-examination and presentation of contrary evidence are the traditional and appropriate means of attacking admissible evidence." *Id.*

This rule applies with even more force when the matter is before the Court and not a jury. "Because this case will be tried to the Court, 'the usual concerns

regarding unreliable expert testimony reaching a jury obviously do not arise.'" *Barnett v. Surefire Med., Inc.*, 2021 WL 1015983, at *3 (D. Colo. Mar. 16, 2021) (*quoting Atty. Gen. of Okla. v. Tyson Foods, Inc.*, 565 F.3d 769, 779-80 (10th Cir. 2009). Thus, a judge maintains greater leeway in admitting expert evidence, weighing its persuasive value upon presentation. *Id.*

ARGUMENT

I. Mr. Passamaneck is Qualified to Render the Challenged Opinion

Mr. Passamaneck is qualified to render his opinions. Rule 702 requires that a witness have expertise resulting from "knowledge, skill, experience, training, or education." Any of these qualifications can be sufficient to support a finding that an expert is qualified. *United States v. Crabbe*, 556 F. Supp. 2d 1217, 1221 (D. Colo. 2008), *citing* Fed.R.Evid. 702 Advisory Committee Notes, 2000 Amendments. "Indeed, in some fields, experience alone is the predominant, if not sole, basis for a great deal of reliable expert testimony." *Id.* (internal quotation marks and citations omitted).

Rule 702 does not impose an "overly rigorous" requirement of expertise, recognizing that specialized knowledge may be acquired through a broad range of experience, skills or training. *Squires ex rel. Squires v. Goodwin*, 829 F. Supp. 2d 1041, 1048 (D. Colo. 2011) (*citing United States v. Velasquez*, 64 F.3d 844, 849 (3rd Cir.1995)). It is sufficient if the expert's experience or knowledge in a field make it appear that his opinion rests on a substantial foundation and aids the trier of fact

in its search for truth. *Id.*, 829 F. Supp. 2d at 10418 (internal quotation marks and citations omitted).

Mr. Passamaneck easily meets these criteria. He is the owner of Carbon Arms Corp., a firearms products manufacturing and design company. Depo.Trans. 45:22-46:12. He has approximately 30 years of professional firearms experience as a firearms instructor, engineer and manufacturer. *Id*. 221:16-18; Ex. A, 10. He has read literally thousands of firearms related articles. *Id*. 226:24-227:6. In 2022, he was part of the management team for SHOT Show, the largest firearms tradeshow in the world. *Id*. 226:1-23. He has personally spoken to dozens of firearm and magazine manufacturer agents and representatives about market information. *Id*. 225:9-25. Mr. Passamaneck's company has produced and sold firearm components, including magazines, and after 30 years he has multi-faceted experience in the firearms industry. 229:19-231:16. In summary, Mr. Passamaneck's decades of experience in the firearms field, including experience as a manufacturer of firearms magazines, make him well qualified to render the opinions he has given.

II. Defendants Misunderstand the Basis of Mr. Passamaneck's Opinion

Defendants argue that Mr. Passamaneck is not qualified to render his opinion because he is not an expert in statistical analysis. Mot. 4. This objection misses the mark because Plaintiffs have not designated Mr. Passamaneck as an expert in statistical analysis. In arriving at his estimates, Mr. Passamaneck relied most prominently on the NSSF industry compilation. Thus, statistical analysis was not

necessary to reach his conclusions. As discussed below, Mr. Passamaneck was entitled to rely on the NSSF compilation and other data so long as they are generally relied on in the field. Therefore, it was not necessary for Mr. Passamaneck to be an expert in statistical analysis to rely on this information.

Defendants do not hold their own expert to the same standard. In his report, Dr. Klarevas also based his conclusions about the prevalence of assault weapons on the NSSF compilation. Ex. C, 11. (Indeed, his estimate is based almost exclusively on that compilation, and in that sense is less thorough than Mr. Passamaneck's who reviewed other data sources as well.) But Dr. Klarevas never subjected the NSSF compilation to an independent statistical analysis. Like Mr. Passamaneck, he relied on the NSSF compilation on its face for his estimates. Presumably, he did so because he agrees with Mr. Passamaneck that the NSSF compilation is the best available source of data for the number of arms in circulation and is generally relied on in the field. Once again, Defendants have proposed a double standard: Dr. Klarevas should be allowed to accept the NSSF industry compilation without subjecting it to statistical analysis, but Mr. Passamaneck's report should be stricken because he did not subject the NSSF data to a statistical analysis. For obvious reasons, Plaintiffs disagree with Defendants' double standard.

III. Mr. Passamaneck's Opinion and the Basis for the Opinion

Mr. Passamaneck's opinion is based primarily on the following information:

(a) An industry compilation produced by NSSF. (Ex. A, 11-28). This compilation discloses that from 1990 to 2020, approximately 24.4 million AR15 and

similar rifles (which NSSF calls "modern sporting rifles") were produced. Ex. A, 17. It discloses that in the same period approximately 159 million LCMS were in the possession of consumers.

(b) A 2021 Survey conducted by Georgetown University Professor William English. Ex. B. This survey estimates that Americans have owned some 542 million rifle and handgun magazines that hold more than 10 rounds, with the most common capacity being in excess of 15 rounds. Ex. B, 24-25.

(c) Information received directly from Mag-pul, the largest manufacturer of AR-15 magazines. Ex. A, 2. Mag-pul estimates there are approximately 350 million magazines with a capacity in excess of 15 rounds.

(d) A 2022 Washington Post survey (*Why do Americans own AR-15s?* (March 27, 2023) (available at bit.ly/3G0vbG9)). Ex. A, 2.

Based on this data, Mr. Passamaneck reported that the number of LCMs in circulation is conservatively 159.8 million (based on the NSSF compilation) and probably much higher, perhaps as many as 350 million. He reported that there are conservatively 24.4 million "modern sporting rifles" in circulation (again based on the NSSF compilation) and perhaps as many as 34 million. Ex. A, 2, 6.

IV. The Basis of Mr. Passamaneck's Opinion is Reliable

A. Experts May Rely on Industry Compilations

The proponent of expert testimony must show that the methodology applied by the witness is reliable, that sufficient facts and data were used, and that the methodology was otherwise reliably applied. *United States v. Crabbe*, 556 F. Supp.

2d 1217, 1221 (D. Colo. 2008), *citing Mitchell v. Gencorp Inc.*, 165 F.3d 778, 781 (10th Cir. 1999). Mr. Passamaneck's opinion easily meets all of these criteria.

Mr. Passamaneck's method for reaching an opinion was to obtain data from various sources, most prominently the 2022 NSSF industry compilation. Rule 703 requires only that an expert's data be of a type reasonably relied upon by experts in the field. As a general matter, "the cases uniformly recognize that trade and industry publications and compilations can be appropriate sources of facts and data upon which an expert can reasonably rely." *In re Sulfuric Acid Antitrust Litig.*, 235 F.R.D. 646, 656 (N.D. Ill. 2006) (collecting cases). With respect to experts in the field of firearms in particular, courts have held that such experts may rely on firearms trade books and other reference materials. *See, e.g., United States v. Thornton*, 642 F.3d 599, 607 (7th Cir. 2011); *United States v. Ware*, 914 F.2d 997, 1003 (7th Cir. 1990); and *United States v. Gresham*, 118 F.3d 258, 266 (5th Cir. 1997).

B. Defendants' Expert Relied Extensively on the Same NSSF Industry Compilation as Plaintiffs' Expert

Defendants can hardly argue that the NSSF compilation relied on by Mr. Passamaneck is not the sort of data reasonably relied upon by experts in the field, because Dr. Klarevas relied extensively on the same data. Ex. C, 11.[3] The following

[3] Indeed, as noted above, when it comes to estimating the number of "assault weapons," Plaintiffs are willing to stipulate to Dr. Klarevas's estimate that there are 24.4 million "modern sporting rifles" in circulation less those possessed by law enforcement. His estimate is generally consistent with Mr. Passamaneck's and the number he estimates (tens of millions) is sufficient to demonstrate that the arms are in common use.

discussion is a sample of the extensive use Dr. Klarevas made of the NSSF compilation.[4]

Dr. Klarevas estimated that there are approximately 24.4 million "modern sporting rifles" (which he uses as a proxy for "assault weapons") in the United States. He based this estimate on the 2022 NSSF compilation:

> Based on National Sport Shooting Foundation (NSSF) and federal government data, "modern sporting rifles"—which is a firearm industry term for AR-15-platform and AK-47-platform firearms—make up approximately 5.3% of all firearms in circulation in American society, according to the most recent publicly available data (24.4 million out of an estimated 461.9 million firearms).

Ex. C, 11

Dr. Klarevas suggested that the NSSF estimate is an overestimation because it includes rifles owned by law enforcement. *Id*. But he nevertheless treated the NSSF data as generally reliable throughout his report.[5] Dr. Klarevas continued:

> The 5.3% ownership rate for modern sporting rifles was calculated using *NSSF* and Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) data. The *NSSF* estimates that there are approximately 24.4 million modern sporting rifles in civilian hands in the United States as of the end of 2020 (when the most recent data are available). *NSSF*, "Commonly Owned: *NSSF* Announces over 24 Million MSRs in Circulation," July 20, 2022, available at https://www.nssf.org/articles/commonly-owned-nssf-announces-over-24-million-msrs-in- circulation (last accessed January 3, 2023). In a 2020 report that captured data through the end of 2018, the *NSSF* estimated that there were 433.9 million total firearms in civilian circulation in the United States. *NSSF*, Firearm Production in the United States with Firearm Import and Export Data, Industry Intelligence Report, 2020, at 18,

[4] Dr. Klarevas cited the NSSF compilation several times. The quoted passages are only some of the examples.

[5] He does not explain why the fact that a rifle is owned by a law enforcement officer means it should be excluded from the total number of rifles in circulation among citizens. Law enforcement officers are, after all, citizens. Moreover, there are approximately 750,000 law enforcement officers in the United States. Exhibit D, Report of U.S. Department of Justice Bureau of Justice Statistics, 2. Even if one assumes each officer has an AR-15 (certainly a vast overestimation), that still leaves 23.65 million rifles in circulation.

> available at https://www.nssf.org/wp- content/uploads/2020/11/IIR-2020-Firearms-Production-v14.pdf (last accessed January 3, 2023). According to ATF data, in 2019 and 2020, an additional 28.0 million firearms entered the civilian stock nationwide. ATF, National Firearms Commerce and Trafficking Assessment: Firearms in Commerce (2022), at 181, 188, 193, available at https://www.atf.gov/firearms/docs/report/national-firearms-commerce-and-trafficking- assessment-firearms-commerce-volume/download (last accessed January 3, 2023). *Assuming these figures reported by the NSSF and ATF are accurate*, this brings the estimated number of firearms in civilian circulation through the end of 2020 to approximately 461.9 million. The ownership rate is calculated as follows: 24.4 million modern sporting rifles divided by 461.9 million total firearms equals approximately 5.3%.

Ex. C, 11, n.8 (emphasis added).

In summary, Dr. Klarevas based his estimate of the number of "assault weapons" in the United States almost exclusively on the same NSSF compilation relied on by Mr. Passamaneck. Thus, Defendants can hardly suggest that Mr. Passamaneck was somehow remis in relying on this data.

C. Numerous Courts Have Also Relied on the NSSF Compilation

Numerous courts have relied on NSSF reports in reaching conclusions about the number of firearms and/or magazines in circulation, including the same NSSF report relied upon by Mr. Passamaneck and Dr. Klarevas. *See Barnett v. Raoul*, 2023 WL 3160285, at *10 (S.D. Ill. Apr. 28, 2023) (citing NSSF report for number of arms in circulation); *Delaware State Sportsmen's Ass'n, Inc. v. Delaware Dep't of Safety & Homeland Sec.*, 2023 WL 2655150, at *6 (D. Del. Mar. 27, 2023) (same); *Miller v. Bonta*, 542 F. Supp. 3d 1009, 1022 (S.D. Cal. 2021), *vacated and remanded on other grounds*, 2022 WL 3095986 (9th Cir. 2022) (same); *Ass'n of New Jersey Rifle & Pistol Clubs Inc. v. Att'y Gen. New Jersey*, 974 F.3d 237, 256 (3d Cir. 2020), *cert. granted,*

judgment vacated on other grounds 142 S. Ct. 2894 (2022) (Matey J. dissenting) (same); *Friedman v. City of Highland Park*, 68 F. Supp. 3d 895, 904 (N.D. Ill. 2014) (same); *Kolbe v. O'Malley*, 42 F. Supp. 3d 768, 786 (D. Md. 2014) (same); and *New York State Rifle & Pistol Ass'n, Inc. v. Cuomo*, 990 F. Supp. 2d 349, 364 (W.D.N.Y. 2013) (same).

D. Mr. Passamaneck's Other Sources Are Reliable

Mr. Passamaneck also cited a survey published by Georgetown University Professor William English. Exhibit B. In two recent decisions, courts relied on the English study. *See Duncan v. Bonta*, 2023 WL 6180472, at *4 (S.D. Cal. Sept. 22, 2023) (citing English study to estimate number of magazines)l and *Delaware State Sportsmen's Ass'n, Inc. v. Delaware Dep't of Safety & Homeland Sec.*, 2023 WL 2655150, at *6 (D. Del. Mar. 27, 2023) ("Taken together, these data [including the English survey] suggest that the banned assault long guns are indeed 'in common use' for several lawful purposes, including self-defense.").

Mr. Passamaneck also supported his conclusions with information he obtained directly from Magpul, the largest manufacturer of AR-15 magazines in the country. Ex. A 2. Numerous courts have held that a firearms expert may rely on information obtained directly from manufacturers. *See e.g.*, *United States v. Gresham*, 118 F.3d 258 (5th Cir. 1997). Defendants asserts that Mr. Passamaneck merely "parrot[ed]" Magpul's statement. Mot. 12. But this is not a valid objection. It is true that Mr. Passamaneck's report would be objectionable if it *merely* quoted a statement from Magpul. But that is not the case. Instead, he applied his expertise

to synthesize various sources, including the Magpul statement, to reach his conclusions. In *Gresham*, the court rejected an argument identical to the one advanced by Defendants here. In that case, firearms experts based their opinions in part on discussions with manufacturers. *Id.*, 118 F.3d at 266. The defendant objected on hearsay grounds. The court allowed the expert testimony, holding that experts may base their opinion on hearsay, including discussions with firearms manufacturers. *Id.*

V. Mr. Passamaneck's Opinion is Reliable; Indeed, His Estimates are Not Reasonably Disputable

As noted above, Mr. Passamaneck estimated that tens of millions of rifles considered to be "assault weapons" by Defendants are owned by American citizens. He estimated that well over 100 million magazines considered "large capacity magazines" are owned by American citizens. Defendants wish to strike Mr. Passamaneck's opinion as unreliable. But far from being unreliable, Mr. Passamaneck's conclusions are not genuinely disputable. Certainly, Defendants have offered no evidence to dispute them. Indeed, the evidence they have offered actually confirms Mr. Passamaneck's conclusions. Moreover, numerous courts have held that these arms are held by millions of American citizens. **As for AR-15 and similar rifles**, *see Barnett v. Raoul*, 2023 WL 3160285, at *10 (S.D. Ill. Apr. 28, 2023) (citing same 24 million NSSF statistic as Mr. Passamaneck and Dr. Klavevas); *New York State Rifle & Pistol Ass'n, Inc. v. Cuomo*, 804 F.3d 242, 255 (2d Cir. 2015) (millions owned); *Kolbe v. Hogan*, 849 F.3d 114, 128–29 (4th Cir. 2017), *abrogated by Bruen* (millions owned); *United States v. Barber*, 2023 WL 1073667, at *5 (E.D.

Tex. Jan. 27, 2023) (most popular rifle in America); *Kolbe v. Hogan*, 849 F.3d 114, 153 (4th Cir. 2017), *abrogated by Bruen* (Traxler, J., dissenting) ("beyond any reasonable dispute" that millions are owned); *Friedman v. City of Highland Park, Ill.*, 577 U.S. 1039, 136 S. Ct. 447, 449 (2015) (Thomas, J., dissenting) (millions owned); *Heller v. D.C.*, 670 F.3d 1244, 1287 (D.C. Cir. 2011) (Kavanaugh, J., dissenting) (millions owned).

As for magazines *see Duncan v. Bonta*, 2023 WL 6180472, at *4 (S.D. Cal. Sept. 22, 2023) ("millions of Americans across the country own large capacity magazines. 'One estimate ... shows that ... civilians possessed about 115 million LCMs'"); *Barnett v. Raoul*, 2023 WL 3160285, at *10 (S.D. Ill. Apr. 28, 2023) (hundreds of millions owned); *Delaware State Sportsmen's Ass'n, Inc. v. Delaware Dep't of Safety & Homeland Sec.*, 2023 WL 2655150, at *8 (D. Del. Mar. 27, 2023) (tens of millions owned); *Kolbe v. Hogan*, 849 F.3d 114, 129 (4th Cir. 2017), *abrogated by Bruen* (75 million); *Heller v. D.C.*, 670 F.3d 1244, 1261 (D.C. Cir. 2011); *Delaware State Sportsmen's Ass'n, Inc. v. Delaware Dep't of Safety & Homeland Sec.*, 2023 WL 2655150, at *6 (D. Del. Mar. 27, 2023) (millions owned); *Ass'n of New Jersey Rifle & Pistol Clubs, Inc. v. Att'y Gen. New Jersey*, 910 F.3d 106, 112 (3d Cir. 2018), *abrogated by Bruen*; *Oregon Firearms Fed'n v. Kotek Oregon All. for Gun Safety*, 2023 WL 4541027, at *10 (D. Or. July 14, 2023) (Millions of Americans today own LCMs); *Wiese v. Becerra*, 263 F. Supp. 3d 986, 991 (E.D. Cal. 2017); *New York State Rifle & Pistol Ass'n, Inc. v. Cuomo*, 804 F.3d 242, 255 (2d Cir. 2015); *Fyock v. City of*

Sunnyvale, 25 F. Supp. 3d 1267, 1275 (N.D. Cal. 2014), *aff'd sub nom. Fyock v. Sunnyvale*, 779 F.3d 991 (9th Cir. 2015).

An expert opinion should be excluded only if it is so "fundamentally unsupported" that it can offer "no assistance" to the trier of fact. *McCullon v. Parry*, 2021 WL 4947237, at *12 (D. Colo. June 23, 2021). It is difficult to understand why Defendants believe Mr. Passamaneck's opinion is "fundamentally unsupported" when his opinion is substantially the same as Defendant's expert and is also consistent with the findings of numerous courts.

VI. Defendants' Other Objections to the Admissibility of Mr. Passamaneck's Testimony are Meritless

A. Mr. Passamaneck Has Not "Parroted" Survey Results

Defendants cites *Fish v. Kobach*, 304 F. Supp. 3d 1027 (D. Kan. 2018), where an expert was excluded because his testimony was based entirely on a voter confusion survey performed by another person. *Id.*, at 1038. But the NSSF compilation is not a "survey" like the voter confusion survey in *Fish*. Rather, it is a compilation of data by a trade group that is generally deemed reliable by experts in the firearms field. Such compilations are "uniformly recognize[d]" as an appropriate source of facts for an expert. *In re Sulfuric Acid Antitrust Litig.*, 235 F.R.D. 646, 656 (N.D. Ill. 2006). Indeed, the court in *Sulfuric Acid Antitrust Litigation* rejected the exact argument advanced by Defendants here. There the plaintiffs moved to exclude because the expert relied on a report that, like the NSSF compilation, compiled industry data and was accepted in the industry as a reliable source of information. The plaintiffs cited cases involving consumer confusion surveys in support of their

argument, but the court held that cases about surveys are not relevant to whether an expert may rely on a compilation of industry data that is widely accepted in the field. *Id.*, 235 F.R.D. at 657.

B. *Oregon Firearms Fed'n* Has No Bearing on This Case

In *Oregon Firearms Fed'n v. Kotek*, 2023 WL 4698752, at *2 (D. Or. May 31, 2023), the court precluded an expert from testifying regarding the number of rounds fired in self-defense situations because he lacked experience in statistical analysis. Defendants cite this case in support of their motion. Mot. 8. As discussed above, Defendants have a fundamental misunderstanding of the nature of Mr. Passamaneck's testimony. He is not an expert in statistical analysis and he has not based his opinion on statistical analysis. Therefore, the court's conclusion in *Oregon Firearms Fed'n* has no bearing on this case.

C. Personal Experience is a Valid Ground for an Expert Opinion

Defendants argue that Mr. Passamaneck cannot rely on his three decades of experience in the firearms industry to support his opinion. Mot. 7. This is not accurate. Rule 702 specifically states that experience may be the basis of an opinion. "Indeed, in some fields, experience alone is the predominant, if not sole, basis for a great deal of reliable expert testimony." *United States v. Crabbe*, 556 F. Supp. 2d 1217, 1221 (D. Colo. 2008) (internal quotation marks and citations omitted).

D. An Expert is not Required to "Verify" a Source He Considers to be Reliable

Defendants object because Mr. Passamaneck did not independently verify the NSSF report, the English report and the Washington Post survey. Mot. 12. But it is

not necessary for an expert independently to verify reports upon which he relies so long as the reports are of the type relied upon in the field. *Tilstra v. BouMatic LLC*, 791 F.3d 749, 753 (7th Cir. 2015); *see also Arkansas River Power Auth. v. Babcock & Wilcox Power Co.*, 2016 WL 9734682, at *4 (D. Colo. 2016) (expert not required independently to verify facts relied upon). In *Droplets, Inc. v. Yahoo! Inc.*, 2021 WL 9038355 (N.D. Cal. 2021), the defendant, like Defendants here, objected to an expert's report because he did not verify the studies he relied on. The court rejected the defendant's argument, holding: "it is black letter law that "[t]he facts or data relied upon [by an expert] need not be otherwise admissible if they are 'of a type reasonably relied upon by experts in a particular field.'" *Id.*, at *11 (*quoting Scott v. Ross*, 140 F.3d 1275, 1285-86 (9th Cir. 1998)).

E. Defendants Do Not Argue They Were Prejudiced by the Supplemental Report

Mr. Passamaneck submitted a two-page supplemental report several days prior to his deposition to update his opinions based on the latest edition of the NSSF compilation. Ex. A, 5-6. Defendants could not have been surprised by this supplemental report, because it is based on the same NSSF compilation on which their own expert, Dr. Klarevas, relied. Ex. C, 11. Moreover, Defendants' counsel examined Mr. Passamaneck extensively regarding the supplemental report at his 6.5-hour[6] deposition. Depo. Trans., 94-121. Defendants suggest in a footnote that the supplemental report should be stricken because it was late. Mot. 1, n.1. However, they do not claim they suffered any prejudice as a result of the late disclosure, nor

[6] Deposition Trans., 249:17.

could they. Thus, Defendants cannot establish any of the factors set forth in *Woodworker's Supply, Inc. v. Principal Mut. Life Ins. Co.*, 170 F.3d 985, 993 (10th Cir. 1999), showing late production was not harmless, and they did not even try to do so. Defendants thus apparently concede they were not in any way harmed or prejudiced by the late production.

F. Alleged Errors Go to Weight, not Admissibility

Finally, Defendants assert that Mr. Passamaneck made errors in his report in terms of transcribing source data, grammar, and arithmetic. Mot. 13-14. But attacks of this nature go to the "credibility of the testimony, not the admissibility." *McCullon v. Parry*, 2021 WL 4947237, at *12 (D. Colo. June 23, 2021) (quotation omitted). These are matters Defendants may bring up on cross-examination. *Obeslo v. Great-W. Cap. Mgmt., LLC*, 2019 WL 1651844, at *6 (D. Colo. 2019). They are not a ground for excluding the testimony altogether. *See also Tuft v. Indem. Ins. Co. of N. Am.*, 2021 WL 1041801, at *2 (D. Colo. Feb. 4, 2021) ("[D]oubts . . . concerning the sufficiency of factual basis to support [the expert's] opinion goes to its weight, and not to its admissibility.") (q*uoting Werth v. Makita Electric Works, Ltd.*, 950 F.2d 643, 654 (10th Cir. 1991).

VII. Defendants' Motion Should be Denied

In summary, Mr. Passamaneck's three decades of experience in the firearms field makes him qualified to render opinions about various topics related to firearms. Even Defendants concede this point to some degree.[7] That experience, especially his

[7] Defendants have not objected to Mr. Passamaneck's testimony on some of the firearms topics covered in his report.

experience as a manufacturer of magazines, qualifies him to render the opinion challenged by Defendants. The methods Mr. Passamaneck employed are reliable, and the data he used are generally relied upon by experts in the field. Defendants can hardly dispute this, since their own expert has relied on the same methods and data. Therefore, Mr. Passamaneck's testimony is admissible.

Defendants' assertions that Mr. Passamaneck made various errors do not change this conclusion. Plaintiffs do not concede such errors exist, but even if they do, the reliability of the method employed is the standard, not correctness. Only if the expert's opinion is so "fundamentally unsupported" that it can offer "no assistance" to the trier of fact should it be excluded. *McCullon v. Parry*, 2021 WL 4947237, at *12 (D. Colo. June 23, 2021). Far from being fundamentally unsupported, Mr. Passamaneck's report is well supported, and, therefore, Defendants' motion should be denied.

Respectfully submitted this 5th day of October 2023.

/s/ Barry K. Arrington

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CERTIFICATE OF SERVICE

I hereby certify that on October 5, 2023, I electronically filed a true and correct copy of the foregoing with the Clerk of the Court using the CM/ECF system, which will send notification of such filing via email to parties of record.

/s/ Barry K. Arrington

Barry K. Arrington

EXHIBIT A

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Expert Report

RE: Client: National Foundation for Gun Rights
EEC Project: 2402 Colorado Magazine Limits

Dear Mr. Arrington,

At your request, Entropy Engineering Corp (Entropy) has evaluated portions of the case referenced above. The purpose of this report is to provide expert opinions on matters for which the author is qualified and has extensive knowledge.

Discussion

Standard capacity magazines, as originally designed, manufactured and sold within the State of Colorado are commonly possessed and used for lawful purposes. Millions of Americans own and use AR15 style rifles. A Washington Post survey in 2022 numbers the owners of AR15s at 16 million while the 2020 number was almost 20 million according to NSSF President and CEO Joseph Bartozzi, who called the AR-15 the "most popular rifle sold in America" and a "commonly owned firearm." A 2021 survey conducted by Georgetown University Professor William English in 2021 of 16,000-gun owners revealed that of those, 30% owned AR15 style rifles. Further, the NSSF 2020 Industry Intelligence report has the number of AR15 rifles produced minus exports (so sold in the US) at just under 20 million from 1990 through 2018. It is estimated that about 8 to 9 million AR15s were owned by US citizens prior to 1990 and the

total number of semi-automatic rifles owned in the US (2018) at just over 43 million. From 2019 through 2022, another 3 to 4 million have been sold. So, conservatively, there are at least 34 million AR15s owned by US citizens, and the vast majority of those rifles were sold with at least one 20 or 30 round (30 round standard being most common) magazines. As magazines are a commodity that is sold without serialization or tracking, the total number of magazines that are above 15 rounds is difficult to measure. However, the 2018 NSSF Magazine Chart estimates 71 million handgun magazines of 11+ rounds, 9.4 million rifle magazines from 11-29 rounds (20 being the most common and 15 being the second most common) and 79 million rifles magazines of 30+ rounds. Mag-Pul, the largest manufacturer of AR15 magazines (and who also produces Glock and AR10 magazines) estimates the total number of magazines of 15+ rounds at 350 million. The 2018 NSSF estimate of Semi-Automatic handguns is 89 million, with about 40% being 9mm, which are commonly 15 or 17 rounds depending on the frame size. The Glock 17 is the most prolific handgun in the US with 60 to 70 percent of LEOs utilizing them and at least 30% of target and sport shooters using them. They also have an edge for use as a home, or self-defense firearm. They are sold with 2 or 3 standard capacity 17 round magazines. Conservative estimates are that, conservative, and there certainly close to 100 million handgun magazines in the US that are over 15 rounds. That leaves approximately 250 million rifle magazines over 15 rounds. From one third to one half of all US gun owners surely own a magazine that is over 15 rounds.

Detachable magazines are necessary to make semi-automatic firearms, designed to receive such magazines, operate effectively. Without such magazines, semi-automatic firearms are inoperable. The feed angle, magazine spring pressure, and feed ramps are all design features coupled between the magazine (when inserted into the magwell) and the firearm to ensure function as intended. Magazines, by nature and with use, are wear items that must be periodically replaced. The largest percentage of semi-automatic firearms failures are due to damage, or wear, of the magazines. When citizens are not allowed to purchase magazines for their firearms, they will eventually become useless. Some of the most common polymer magazines will wear out and become inoperable in as little as 500 rounds. Very few can pass 2000 rounds without replacement. That is significantly less than the 50K to 100K rounds to wear out a firearm.

Magazines are not merely a box in which ammunition is stored, rather, cartridges are held in the magazine under spring tension. When a semi-automatic firearm is fired, the spring pushes another cartridge up for the bolt to push it into the chamber so that it can be fired with the next pull of the trigger. If there is no magazine pushing cartridges up into the action, one by one, there is no ability to fire a subsequent cartridge due to a subsequent pull of the trigger, which is

the defining characteristic of a semi-automatic weapon. Thus, without magazines as a designed component of semi-automatic firearms they would not exist. In other words, magazines are a necessary and integral part of the operation of a semi-automatic firearm.

In addition, for at least the last 40 years, magazines, as an integral commodity product that allow the semi-automatic firearm to function, have been designed with basepads that specially allow them to be changed with different pads allowing for variable capacities.

Report Limitation

Entropy has been retained to provide advice relative to referenced matter. The findings and conclusions contained herein are derived from numerous sources and believed to be correct. This report is subject to change in the event that additional information or findings are provided to Entropy. Neither this report, nor any of the professional opinions contained herein (or the bases for those opinions) shall be used, relied upon, or otherwise disclosed to anyone other than the parties involved in this matter without Entropy's express written consent.

Qualifications

Mr. Passamaneck has extensive knowledge of firearms desing, manufacture and use. He has designed magazines, barrels, muzzle devices, gas blocks and complete firearms for manufacturers. Mr. Passamaneck has extensively tested firearms, ammunition and accessories. He has conducted shooting reconstructions related to both intentional and unintentional firing of firearms. Mr. Passamaneck has been admitted in courts as a firearms expert and as a ballistics expert. He holds several training certifications and has trained and coached shooting in a wide array of disciplines.

Mr. Passamaneck charges $250/hour for consulting services, including producing work product, testimony and travel. His testimony for the last 4 years is as follows:

Project	Date	Arb, Depo, Trial, Hearing, Mediation	Case Number	Court	Case Name	Client
2280	05.03.19	D	Case#2018CV030954	Office of Franz Hardy Gorden Rees Scully Mansukhani,LLP	Martha Munoz V Public Service DBA X-Cel Energy	John Sheppard

2251	07.07.20	T	Workers Comp. No. 5-123-298		Call In Zoom Call		Cassandra Newell V O'Reilly Auto Parts		Brad Miller
2356	9/16/20	T	Workers Comp. No. 5-119-454		Office of Administrative Courts, Denver, CO		Larry Pfannenstiel V O'Reilly Auto Parts		Brad Miller
2356	10.01.20	D	Workers Comp. No. 5-119-454		Office of Administrative Courts, Denver, CO		Larry Pfannenstiel V O'Reilly Auto Parts		Brad Miller
2252	06.10.21	D	Case#201 8CV31645		District Court Adams County		Steven-Roberts Originals, LLC V Rocky Mountain Mechanical Systems		Brian Suth
2340	08.19.21	T	Case#17C V6		District Court Eagle County, Colorado		Tania Bricel v Wyndham Worldwide		James Bailey
2373	4.21.22	D	Case#202 1CV30152		Boulder County,		Pipe X v Park North		Brad Shefrin
2392	12.13.22	D	2022CV30 439		District Court, Denver County, Colorado		Moutain States Plumbing v. Winter Park Land Co. LLC		Kirsten Kube

Thank you for using Entropy in this matter. Please contact this writer if you have any questions or if we may be of further assistance.

Sincerely,
Entropy Engineering Corp

Mark W. Passamaneck, PE
President, Principal Engineer

Entropy ENGINEERING CORP.

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July 20, 2023

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Arrington Law Firm
4195 Wadsworth Boulevard
Wheat Ridge, Colorado 80033
Barry@arringtonpc.com

Supplemental Report

RE: Client: National Foundation for Gun Rights
EEC Project: 2402 Colorado Municipal Magazine Limits

Dear Mr. Arrington,

At your request, Entropy Engineering Corp (Entropy) has continued to evaluate portions of the case referenced above. The purpose of this supplemental report is to update some estimates relative to this case.

Discussion

Since the original report was issued, the updated NSSF Industry Intelligence report has been reviewed. It was provided to this author by Salam Fatohi, the Director of Research for the NSSF. The "IIR_2022_Firearms_Production_22.pdf" (NIIR2022) is attached. This is the same report referred to in the defendant expert Klarevas report.

Reliable data prior to 1990 related to the ownership of AR15 style rifles is difficult to determine. However, the NIIR2022 estimated the number of "Modern Sporting Rifles" produced from 1990 through 2020 to be approximately 24.4 million. The term Modern Sporting Rifles encompasses AR15 style rifles made by various companies with differing model names and accessories. Colt manufactured the AR15 (several models) in numbers of approximately 2M from 1967 to 1986

based on serial numbers. However, from 1977 through 1990, there were well over 100 producers of AR-15 style rifles, several of which are no longer in business, and none of which reported their production numbers to NSSF during that time frame. Likewise, there is no governmental agency that recorded the production numbers during that time. Based on the prevalence of other manufacturers' rifles procured by law enforcement agencies in that time frame, which predominantly purchase the civilian semi-automatic versions as opposed to the military select fire versions, and as represented in use by competitors in competition, it is apparent that Colt produced far less than half of the AR15 style rifles between 1977 and 1990. The estimate of 8 to 9 million AR15 style rifles in the US prior to 1990 is based on this author's experience and participation in the firearms industry and competition with the AR15 style of rifles. Regardless, it is obvious that from 1990 until the current day, the AR15 style of rifle has become more popular among US citizens for recreational purposes, hunting and self-defense than it was prior to 1990. Since all manufacturers do not report to NSSF and estimating the number of AR15 style rifles prior to 1990 is difficult, the number of AR15 style rifles that actually exists is certainly higher than those in the NSSF estimates.

While the estimates related to standard capacity magazines over 15 rounds presented in the initial expert report are valid based on the author's knowledge and experience, the fact remains that verification of those numbers is difficult. The NSSF Magazine Chart on page 7 of the NIIR2022 Estimates 304 million detachable Pistol and Rifle Magazines in US Consumer Possession from 1990-2018. It does not speak to the number of magazines predating 1990. The number of rifle and pistol magazines that are 11+ rounds is estimated to be 159.8M. This is surely a number that is well below reality. However, it is a number that can be substantiated based on the NSSF data, which is conservative. The NSSF data is a lower bound which is based on industry reporting which is considered to be the most reliable source of data for the lower bound of magazines. Since all manufacturers do not report to NSSF and estimating the number of magazines prior to 1990 is difficult, the number of magazines that actually exists is certainly higher than those in the NSSF Magazine Chart.

Report Limitation

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Qualifications

Mr. Passamaneck has extensive knowledge of firearms design, manufacture and use. He has designed magazines, barrels, muzzle devices, gas blocks and complete firearms for manufacturers. Mr. Passamaneck has extensively tested firearms, ammunition and accessories. He has conducted shooting reconstructions related to both intentional and unintentional firing of firearms. Mr. Passamaneck has been admitted in courts as a firearms expert and as a ballistics expert. He holds several training certifications and has trained and coached shooting in a wide array of disciplines.

Mr. Passamaneck charges $250/hour for consulting services, including producing work product, testimony and travel. His testimony for the last 4 years is attached.

Thank you for using Entropy in this matter. Please contact this writer if you have any questions or if we may be of further assistance.

Sincerely,
Entropy Engineering Corp

Mark W. Passamaneck, PE
President, Principal Engineer

Testimony Record of Mark W. Passamaneck, PE

Four Year Testimony Record

Project	Date	Arb, Depo, Trial, Hearing, Mediation	Case Number	Court	Case Name	Client	PL/DEF	Description
2280	05.03.19	D	Case#2018CV030954	Office of Franz Hardy Gorden Rees Scully Mansukhani,LLP	Martha Munoz V Public Service DBA X-Cel Energy	John Sheppard		Explosion
2251	07.07.20	T	Workers Comp. No. 5-123-298	Call In Zoom Call	Cassandra Newell V O'Reilly Auto Parts	Brad Miller		VAR
2356	9/16/20	T	Workers Comp. No. 5-119-454	Office of Administrative Courts, Denver, CO	Larry Pfannenstiel V O'Reilly Auto Parts	Brad Miller		VAR
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2252	06.10.21	D	Case#2018CV31645	District Court Adams County	Steven-Roberts Originals, LLC V Rocky Mountain Mechanical Systems	Brian Suth		Explosion
2336	07.28.21	D	Case#2019CV30109	Hall & Evans 1001 17th St. Suite 300 Denver 80202	Welch v Dutton	Murray Ogburn		CO
2340	08.19.21	T	Case#17CV 6	District Court Eagle County, Colorado	Tania Bricel v Wyndham Worldwide	James Bailey	PL	CO
2309	11.10.21	D	Case#3..19-CV-44-REP	Regus 1600 Broadway, Suite 1600 Denver, CO 80202	Alves v Army Corp	Joseph Wager		PI
2336	11.12.21	D	Case#2019CV30109	1700 Lincoln St. Ste. 2700 Denver, CO 80203	Welch v. Dutton	Murray Ogburn		CO
2373	4.21.22	D	Case#2021CV30152	Boulder County,	Pipe X v Park North	Brad Shefrin	Def.	Plumbing

Testimony Record of Mark W. Passamaneck, PE

Four Year Testimony Record

Project	Date	Arb, Depo, Trial, Hearing, Mediation	Case Number	Court	Case Name	Client	PL/DEF	Description
2392	12.13.22	D	2022CV30439	District Court, Denver County, Colorado	Moutain States Plumbing v. Winter Park Land Co. LLC	Kirsten Kube	Def.	Plumbing
2402	05.31.23	D	Civil Action#22-cv-1866-NYW-SKC	Colorado Department of Law	National Foundation for Gun Rights, Inc. v Polis	Barry Arrington	PL	Firearms

Firearms/Shooting Resume supplement for: MARK W. PASSAMANECK

Mr. Passamaneck is a mechanical engineer who works for a consulting/forensic engineering firm in Denver. He is also an owner of Carbon Arms Corp, a firearms products manufacturing and design company. He has been shooting since he was a child and has been involved in several forms of competitive shooting for most of his adult life. Mr. Passamaneck takes his engineering and shooting experience and combines them into an analytical approach to training, shooting, testing and reconstruction.

CERTIFICATIONS

Mr. Passamaneck has trained thousands of individuals in the safe and legal use of firearms including civilians and Law Enforcement personnel. He founded and owned a firearms training company for approximately six years for which he wrote several acclaimed texts. Mr. Passamaneck has attended and successively obtained certificates of completion for several seminars and courses presented by some of the top firearms instructors in the country. Mr. Passamaneck also holds classifications in several shooting sports. Mr. Passamaneck earned the following safety and instructional certifications:

National Range Officers Institute (USPSA)	Chief Range Officer
International Defensive Pistol Association	Safety Officer
Rocky Mountain 3 Gun Championship	Range Master
National Rifle Association Instructor	Multiple Certifications

Mr. Passamaneck holds, or has held, the following memberships and or offices:

Life Member of the National Rifle Association, Life Member of the Colorado State Shooting Association, Action Pistol Executive of the Colorado State Shooting Association, Member of the International Defensive Pistol Association, Vice-President of Front Range IDPA, Member of the Glock Sport Shooting Foundation, Member of the United States Practical Shooting Association
Member of several gun ranges

Incident Evaluations

Mr. Passamaneck is a very accomplished shooter and hunter familiar with a wide array of topics related to shooting and firearms. He has an in depth understand of manufacturing processes related to the manufacture of ammunition and firearms. His mechanical and materials engineering training complement his firearms knowledge. Mr. Passamaneck is a skilled reloader of metallic and shotgun cartridges having reloaded several hundred thousand rounds of ammunition. He has conducted ballistic testing (trajectory and terminal) and failure testing on a variety of firearms and topics. He has harvested well over one hundred head of big game, as well as hundreds of other species. This has allowed him to personally examine over a thousand wound channels and collect projectiles fired from handguns, shotguns and rifles. He is experienced in the investigation of shooting and firearms incidents and follows the ASTM E-30 Committee standards related to such investigations. He has investigated numerous cases involving personal injuries and death arising from firearms. These have included component failures, human factors and improper use. His strong background in materials, testing and modeling aids in the evaluation of firearms cases.

INDUSTRY INTELLIGENCE REPORTS℠
HELPING OUR MEMBERS MAKE INFORMED DECISIONS

FIREARM PRODUCTION

IN THE UNITED STATES

WITH FIREARM IMPORT AND EXPORT DATA

KEY FINDINGS

- The average annual production of firearms in the U.S. was 5,453,909 for the last 30 years.
- Total firearm production reported in the 2020 AFMER was 9,740,240 – an increase of 57.9% over 2019 reported figures.
- Long guns totaled 3,237,979 and accounted for 33.2% of total 2020 U.S. firearm production. Of that, rifles totaled 2,761,297 (85.3% of long gun production) and shotguns totaled 476,682 (14.7%).

* **See back page for all Key Findings**

Providing a comprehensive overview of firearm production trends spanning a period of 31 years, this report is based primarily on the data sourced from the Bureau of Alcohol, Tobacco, Firearms and Explosives' (ATF's) Annual Firearms Manufacturing and Export Reports (AFMER). Every effort has been made to provide accurate and updated information so the reader may keep this edition as a reliable resource for trend information. Production data is a leading indicator of industry performance; this is especially true when combined with other valuable sources of information.

This edition includes manufacturing trends for ammunition as sourced from Census Bureau's Annual Survey of Manufacturers (ASM) used for all years that fall between the fifth-year economic census reports. Import and export statistics for firearms compiled from the U.S. International Trade Commission (USITC) are presented in conjunction with the AFMER numbers to provide a more accurate picture of the historical production that has been made available to the U.S. market. These data sources, when used collectively, help to provide an overview of the firearm and ammunition manufacturing industries.

Information on production, imports, exports and other manufacturing variables are only a piece of a more complex puzzle of the firearm industry. Other factors outside of the manufacturing sector, such as the retail sector, the economy and frequently the political climate, must all be taken into consideration. The limitation of the AFMER data is that it reflects historic trends; however, using the data in combination with other reports does provide a more complete picture of the industry. Firearm and ammunition production provide a very significant contribution to the national economy in terms of jobs, wages and benefits. In addition, capital expenditures on materials (energy, equipment, fuels) help boost local economies.

NSSF®
The Firearm Industry Trade Association

U.S. Firearm Production (1990 – 2020)

Year	Pistols	Revolvers	Total Handguns	Rifles	Shotguns	Total Long Guns	Production Total (a)	% Change in Total Production Year over Year
1990	1,371,427	470,495	1,841,922	1,211,664	855,970	2,067,634	3,909,556	-10.6%
1991	1,378,252	456,966	1,835,218	883,482	828,426	1,711,908	3,547,126	-9.3%
1992	1,669,537	469,413	2,138,950	1,001,833	1,018,204	2,020,037	4,158,987	17.2%
1993	2,093,362	562,292	2,655,654	1,173,694	1,148,939	2,322,633	4,978,287	19.7%
1994	2,004,298	586,450	2,590,748	1,316,607	1,254,924	2,571,531	5,162,279	3.7%
1995	1,195,284	527,664	1,722,948	1,441,120	1,176,958	2,618,078	4,341,026	-15.9%
1996	987,528	498,944	1,486,472	1,424,315	925,732	2,350,047	3,836,519	-11.6%
1997	1,036,077	370,428	1,406,505	1,251,341	915,978	2,167,319	3,573,824	-6.8%
1998	960,365	324,390	1,284,755	1,345,899	1,036,520	2,382,419	3,667,174	2.6%
1999	995,446	335,784	1,331,230	1,569,685	1,106,995	2,676,680	4,007,910	9.3%
2000	962,901	318,960	1,281,861	1,583,042	898,442	2,481,484	3,763,345	-6.1%
2001	626,836	320,143	946,979	1,284,554	679,813	1,964,367	2,911,346	-22.6%
2002	741,514	347,070	1,088,584	1,515,286	741,325	2,256,611	3,345,195	14.9%
2003	811,660	309,364	1,121,024	1,430,324	726,078	2,156,402	3,277,426	-2.0%
2004	728,511	294,099	1,022,610	1,325,138	731,769	2,056,907	3,079,517	-6.0%
2005	803,425	274,205	1,077,630	1,431,372	709,313	2,140,685	3,218,315	4.5%
2006	1,021,260	382,069	1,403,329	1,496,505	714,618	2,211,123	3,614,452	12.3%
2007	1,219,664	391,334	1,610,998	1,610,923	645,231	2,256,154	3,867,152	7.0%
2008	1,387,271	431,753	1,819,024	1,746,139	630,710	2,376,849	4,195,873	8.5%
2009	1,868,268	547,547	2,415,815	2,253,103	752,699	3,005,802	5,421,617	29.2%
2010	2,087,577	558,927	2,646,504	1,830,556	743,378	2,573,934	5,220,438	-3.7%
2011	2,464,255	572,857	3,037,112	2,305,854	862,401	3,168,255	6,205,367	18.9%
2012	3,311,081	667,357	3,978,438	3,109,940	949,010	4,058,950	8,037,388	29.5%
2013	4,314,550	725,282	5,039,832	3,996,673	1,203,072	5,199,745	10,239,577	27.4%
2014	3,602,577	744,047	4,346,624	3,379,009	935,411	4,314,420	8,661,044	-15.4%
2015	3,553,035	884,578	4,437,613	3,701,443	777,273	4,478,716	8,916,329	2.9%
2016	4,705,930	856,288	5,562,218	4,198,692	848,615	5,047,307	10,609,525	19.0%
2017	3,691,006	720,917	4,411,923	2,821,945	667,350	3,489,295	7,901,218	-25.5%
2018	3,842,344	664,832	4,507,176	2,905,178	536,119	3,441,297	7,948,473	0.6%
2019	3,046,009	580,601	3,626,610	2,062,966	480,735	2,543,701	6,170,311	-22.4%
2020	5,509,183	993,078	6,502,261	2,761,297	476,682	3,237,979	9,740,240	57.9%
TOTALS (1990–2020)	63,990,433	16,188,134	80,178,567	61,369,579	25,978,690	87,348,269	167,526,836	

Source: Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Annual Firearms Manufacturing and Export Report (AFMER).

(a): Does not include AFMER MISC firearms category which includes items such as: pen guns and starter guns. Also adjusted to exclude/include, as noted:

From 2011 – 2020 several adjustments were made to the data in this chart due to omissions in the AFMER report (i.e.: figures for long guns manufactured by Savage Arms were omitted from the 2017 AFMER), duplication of production due to parts manufactured by machine shops (i.e.: parts reported by machine shop in addtion to being reported by the firearm manufacturer resulting in double-counting) and adjustments to the miscellaneous category (i.e: Aero Precision).

U.S. Firearm Production (1990 – 2020)

ANNUAL AVERAGES

Years	Pistols	Revolvers	Total Handguns	Rifles	Shotguns	Total Long Guns	Production Total
30 Years (1991 to 2020)	2,087,300	523,921	**2,611,222**	2,005,264	837,424	**2,842,688**	**5,453,909**
25 Years (1996 to 2020)	2,171,131	524,594	**2,695,725**	2,173,647	787,811	**2,961,458**	**5,657,183**
20 Years (2001 to 2020)	2,466,798	563,317	**3,030,115**	2,358,345	740,580	**3,098,925**	**6,129,040**
15 Years (2006 to 2020)	3,041,601	648,098	**3,689,698**	2,678,682	748,220	**3,426,902**	**7,116,600**
10 Years (2011 to 2020)	3,803,997	740,984	**4,544,981**	3,124,300	773,667	**3,897,967**	**8,442,947**
5 Years (2016 to 2020)	4,158,894	763,143	**4,922,038**	2,950,016	601,900	**3,551,916**	**8,473,953**

Source: Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) Annual Firearms Manufacturing and Export Report (AFMER). Data is in total units and represents the number of firearms "manufactured and disposed of in commerce during the calendar year." Totals include firearms sold for export and law enforcement, but not military sales.

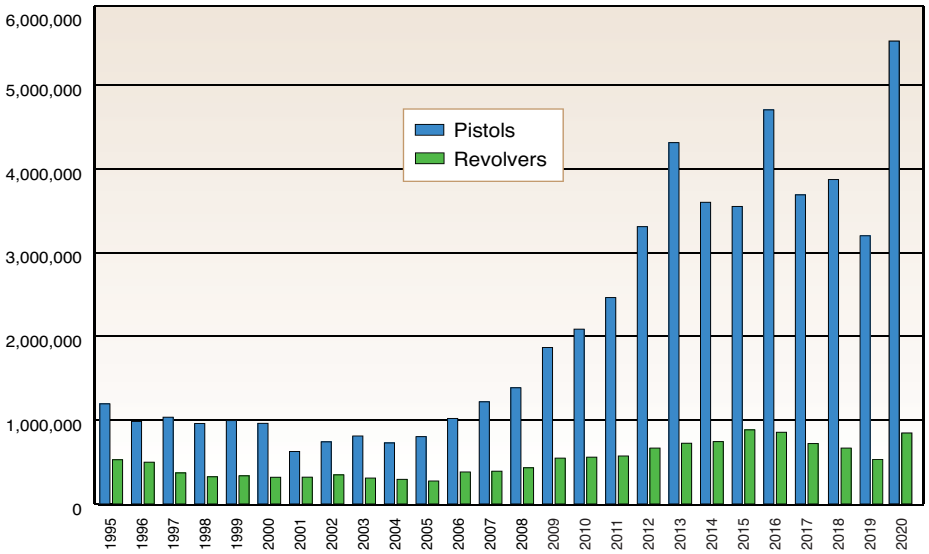
2021 Interim data prepared July 18, 2022. The interim report indicates preliminary data for which the following number of units were reported as manufactured by the manufacturer. This interim AFMER report represents firearms (including separate frames or receivers, actions or barreled actions) manufactured and disposed of in commerce during the calendar year.

Year	Pistols	Revolvers	Total Handguns	Rifles	Shotguns	Total Long-Guns	Production Total
MANUFACTURED							
2021 Interim	6,751,742	1,159,916	**7,911,658**	3,933,398	675,450	**4,608,848**	**12,520,506**

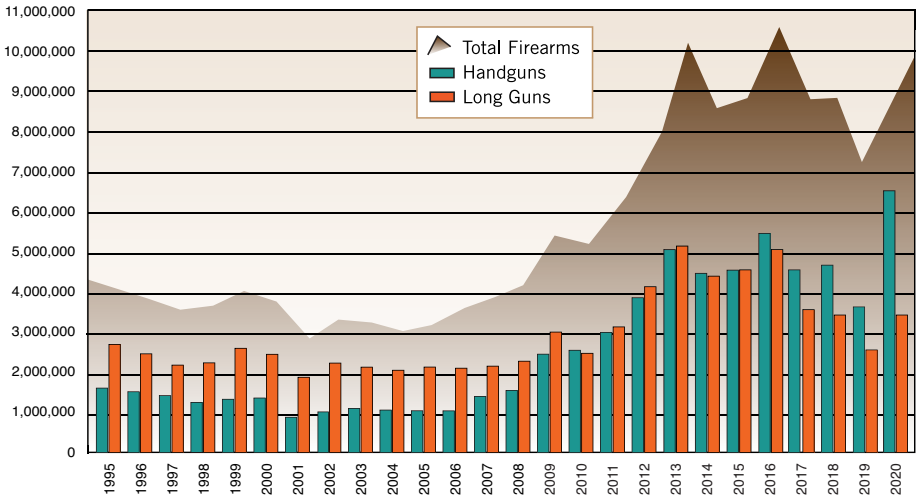
The full 2021 report is expected to be available approximately February 2022. Look for it at www.atf.gov.

U.S. Firearm Production (1995 – 2020)

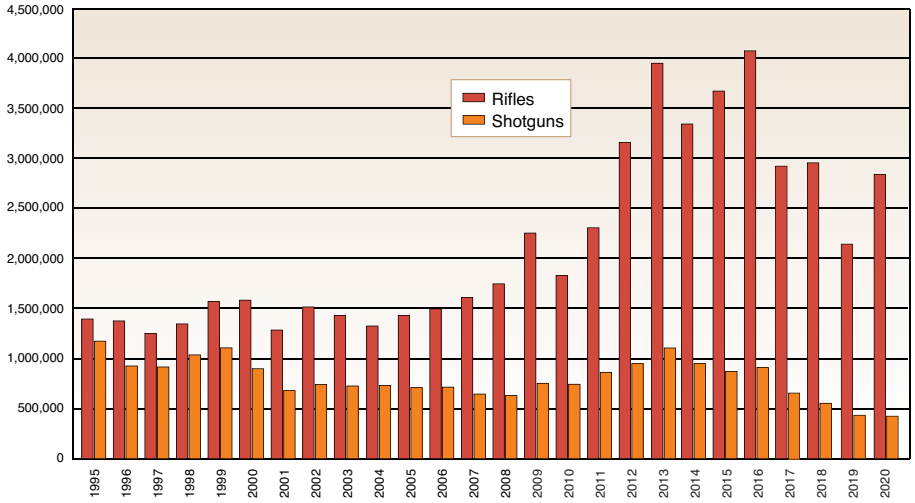
Handguns



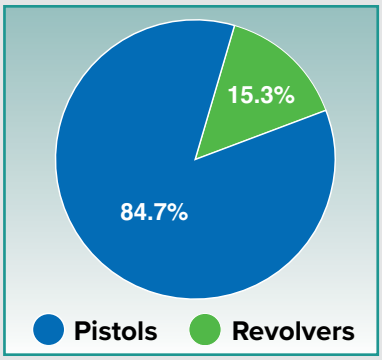
Total Production



Long Guns



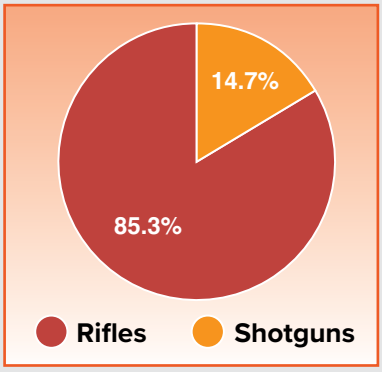
2020 Production At A Glance



Pistols by Caliber		
To .22	678,967	12.3%
To. 25	195,992	3.6%
To .32	56,887	1.0%
To .380	659,899	12.0%
To 9mm	3,211,775	58.3%
To .50	705,663	12.8%
	5,509,183	100.0%

Revolver by Caliber		
To .22	597,015	60.1%
To .32	4,124	0.4%
To. 357 M	181,585	18.3%
To .38 Sp	152,921	15.4%
To .44 M	27,151	2.7%
To. 50	30,282	3.0%
	993,078	100.0%

NOTE: Caliber designations as reported in ATF reports are preceded by the word "to." This represents a range of calibers in a category. For example, the pistol "To .50" category includes .40- and .45-caliber models among others that are larger than 9mm.

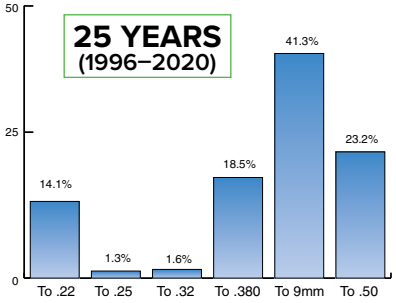


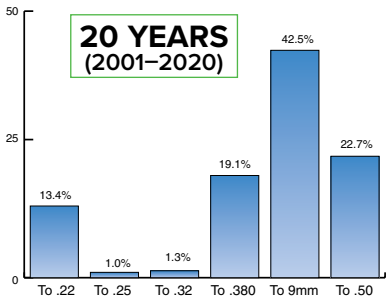
Source: AFMER

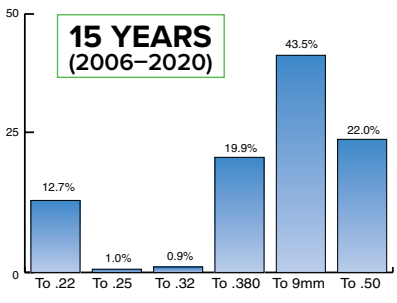
U.S. Pistol Production by Caliber (1990 – 2020)

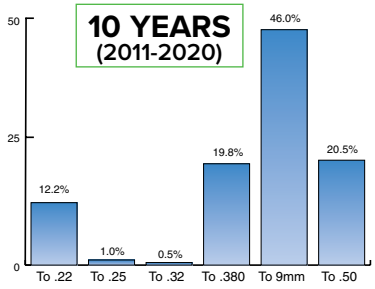
Year	To .22	To .25	To .32	To .380	To 9mm	To .50	TOTALS
1990	351,456	239,345	56,297	172,051	348,679	203,599	1,371,427
1991	306,088	252,370	55,007	215,595	358,228	190,964	1,378,252
1992	352,621	253,955	50,916	371,095	468,182	172,768	1,669,537
1993	452,509	277,306	52,268	508,469	586,039	216,771	2,093,362
1994	449,495	119,769	25,972	313,915	750,693	344,454	2,004,298
1995	260,059	51,025	19,220	182,801	398,472	283,707	1,195,284
1996	206,485	41,156	20,709	166,089	319,696	233,393	987,528
1997	250,983	43,103	43,623	154,046	303,212	241,110	1,036,077
1998	184,836	50,936	62,338	98,266	284,374	279,615	960,365
1999	229,852	24,393	52,632	81,881	270,298	336,390	995,446
2000	184,577	23,198	60,527	108,523	277,176	308,900	962,901
2001	123,374	5,697	57,823	41,634	213,378	184,930	626,836
2002	144,722	10,009	53,999	59,476	205,197	268,111	741,514
2003	189,785	10,987	43,471	79,788	219,668	267,961	811,660
2004	211,473	10,140	32,435	68,291	182,493	223,679	728,511
2005	139,178	10,455	29,024	107,386	299,681	217,701	803,425
2006	141,651	9,625	39,197	126,939	352,383	351,465	1,021,260
2007	180,419	11,361	43,914	138,484	391,312	454,174	1,219,664
2008	195,633	14,586	40,485	278,945	421,746	435,876	1,387,271
2009	320,697	15,053	47,396	390,897	586,364	507,861	1,868,268
2010	320,237	21,722	39,792	615,630	591,876	498,320	2,087,577
2011	357,884	19,182	13,890	537,063	838,957	697,279	2,464,255
2012	586,625	9,853	11,248	582,645	1,175,564	945,146	3,311,081
2013	554,431	18,578	6,591	852,663	1,653,900	1,228,387	4,314,550
2014	410,747	19,097	10,494	873,087	1,254,582	1,034,570	3,602,577
2015	410,041	11,567	14,763	819,103	1,531,033	766,528	3,553,035
2016	439,628	13,174	10,269	1,129,761	2,275,660	837,438	4,705,930
2017	408,705	11,135	8,152	848,425	1,756,618	657,971	3,691,006
2018	417,805	25,370	30,306	760,044	2,062,010	546,809	3,842,344
2019	382,168	53,402	44,923	470,857	1,729,833	364,826	3,046,009
2020	678,967	195,992	56,887	659,899	3,211,775	705,663	5,509,183
TOTALS	9,843,131	1,873,541	1,134,568	11,813,748	25,319,079	14,006,366	63,990,433

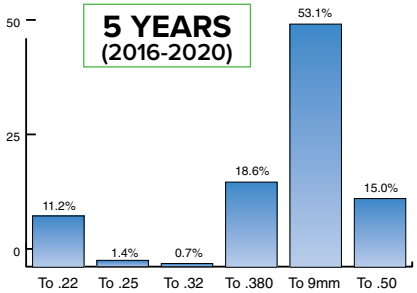
Percentage of Pistols produced in the U.S. by caliber











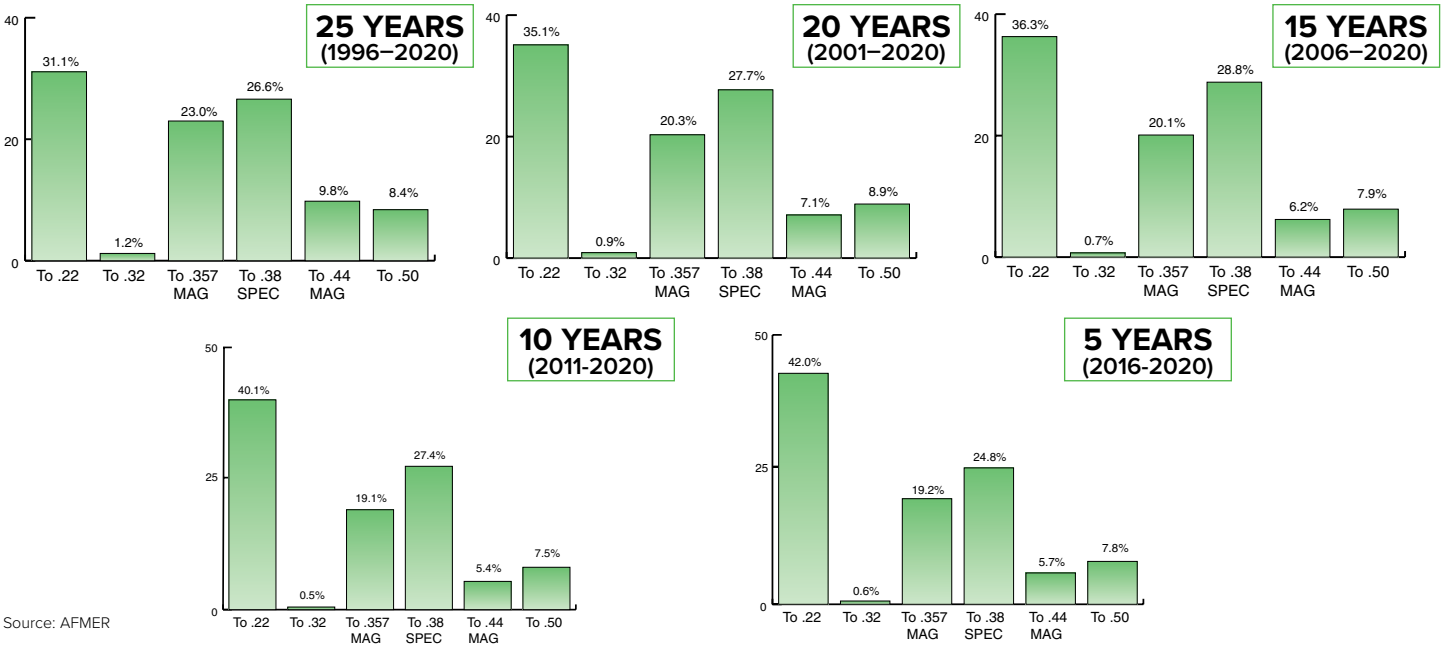
NOTE: Caliber designations as reported in ATF reports are preceded by the word "to." This represents a range of calibers in a category. For example, the pistol "To .50" category includes .40- and .45- caliber models among others that are larger than 9mm.

Source: AFMER

U.S. Revolver Production by Caliber (1990 – 2020)

Year	To .22	To .25	To .32	To .380	To 9mm	To .50	TOTALS
1990	97,728	24,049	127,095	136,733	65,311	19,579	470,495
1991	79,676	10,957	155,237	121,387	76,582	13,127	456,966
1992	74,408	10,243	168,720	120,721	80,705	14,616	469,413
1993	122,614	10,421	183,328	146,767	70,381	28,781	562,292
1994	133,990	9,160	170,856	146,630	89,713	36,101	586,450
1995	99,578	4,381	210,379	92,913	90,144	30,269	527,664
1996	127,119	3,083	134,910	115,432	80,456	37,944	498,944
1997	109,296	3,876	70,792	85,935	61,324	39,205	370,428
1998	68,108	2,602	73,905	77,289	64,236	38,250	324,390
1999	80,140	5,844	68,174	86,356	55,957	39,313	335,784
2000	79,472	1,598	81,017	59,339	46,931	50,603	318,960
2001	77,433	5,003	50,120	85,628	39,515	62,444	320,143
2002	86,806	17,599	95,570	51,472	46,080	49,543	347,070
2003	108,518	3,928	59,591	57,078	46,533	33,716	309,364
2004	88,570	3,446	62,640	54,842	35,097	49,504	294,099
2005	63,333	2,297	68,476	68,785	25,802	45,512	274,205
2006	84,452	2,242	99,562	85,321	54,308	56,184	382,069
2007	91,963	3,509	93,320	104,498	46,719	51,325	391,334
2008	115,511	6,681	105,944	133,621	31,135	38,861	431,753
2009	141,840	7,590	107,834	232,339	29,967	27,977	547,547
2010	131,543	8,605	126,525	210,762	45,361	36,131	558,927
2011	153,749	5,182	125,237	206,191	35,791	46,707	572,857
2012	234,164	1,717	126,594	203,005	36,116	65,761	667,357
2013	226,749	1,914	149,730	238,384	46,466	62,039	725,282
2014	200,739	5,260	151,635	283,990	41,640	60,783	744,047
2015	278,784	9,413	185,976	225,782	48,170	136,453	884,578
2016	320,773	7,851	182,564	248,143	51,451	45,506	856,288
2017	319,364	1,715	134,053	177,956	42,062	45,767	720,917
2018	271,553	1,100	113,394	199,028	42,434	37,323	664,832
2019	365,440	1,674	95,094	67,821	26,507	24,065	580,601
2020	597,015	4,124	152,921	181,585	27,151	30,282	993,078
TOTALS	5,030,428	187,064	3,731,193	4,305,733	1,580,045	1,353,671	16,188,134

Percentage of Revolvers produced in the U.S. by caliber



Source: AFMER

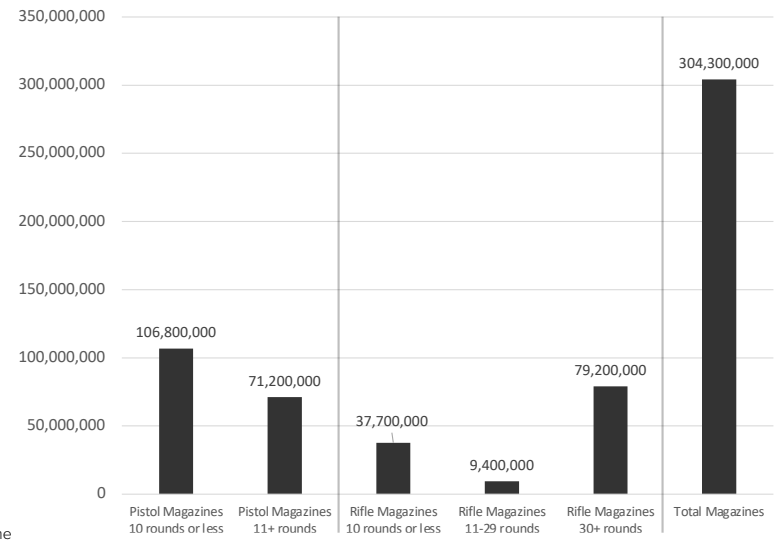
Estimated Modern Sporting Rifles in the United States 1990 – 2020

Year	US Production less exports of MSR/AR platform	US Import less exports of MSR/AR, AK platform	ANNUAL TOTAL
1990	43,000	31,000	74,000
1991	46,000	69,000	115,000
1992	33,000	72,000	105,000
1993	62,000	226,000	288,000
1994	103,000	171,000	274,000
1995	54,000	77,000	131,000
1996	27,000	43,000	70,000
1997	44,000	81,000	125,000
1998	70,000	75,000	145,000
1999	113,000	119,000	232,000
2000	86,000	130,000	216,000
2001	60,000	119,000	179,000
2002	97,000	145,000	242,000
2003	118,000	262,000	380,000
2004	107,000	207,000	314,000
2005	141,000	170,000	311,000
2006	196,000	202,000	398,000
2007	269,000	229,000	498,000
2008	444,000	189,000	633,000
2009	692,000	314,000	1,006,000
2010	444,000	140,000	584,000
2011	653,000	163,000	816,000
2012	1,308,000	322,000	1,630,000
2013	1,882,000	393,000	2,275,000
2014	950,000	237,000	1,187,000
2015	1,360,000	245,000	1,605,000
2016	2,217,000	230,000	2,447,000
2017	1,406,000	158,000	1,564,000
2018	1,731,000	225,000	1,956,000
2019	1,679,000	169,000	1,848,000
2020	2,466,000	332,000	2,798,000
TOTALS	18,901,000	5,545,000	24,446,000

Source: ATF AFMER, US ITC, Industry estimates

NSSF® Magazine Chart

Estimated 304 Million Detachable Pistol and Rifle Magazines
in U.S. Consumer Possession 1990 – 2018



Source: ATF AFMER, US ITC, Industry estimates
Note: Magazine update is not available at this time

U.S. Production by Manufacturer (2020)

LICENSE NAME HANDGUN	PISTOLS	REVOLVERS	TOTALS
SMITH & WESSON SALES COMPANY / SMITH & WESSON INC.	1,559,856	267,651	1,827,507
STURM, RUGER & COMPANY, INC	772,382	269,211	1,041,593
SIG SAUER INC	1,018,063	0	1,018,063
GLOCK INC	445,442	0	445,442
HERITAGE MANUFACTURING, INC	0	306,159	306,159
KIMBER MFG INC	212,395	12,634	225,029
SCCY INDUSTRIES LLC	185,616	0	185,616
SPRINGFIELD INC	161,991	0	161,991
TAURUS INTERNATIONAL MANUFACTURING, INC	100,678	0	100,678
BERETTA USA CORP	91,663	0	91,663
FN AMERICA, LLC	90,624	0	90,624
KEL TEC CNC INDUSTRIES INC	80,315	0	80,315
COLT'S MANUFACTURING COMPANY LLC	31,141	33,539	64,680
NORTH AMERICAN ARMS INC	630	50,562	51,192
BOND ARMS, INC	49,274	0	49,274
STRASSELLS MACHINE INC	44,775	0	44,775
BROWNING ARMS COMPANY	37,276	0	37,276
CZ USA	31,736	68	31,804
CHARCO 2000 INC	0	30,571	30,571
BEARMAN INDUSTRIES, LLC	30,228	0	30,228
AMERICAN TACTICAL INC	29,703	0	29,703
PALMETTO STATE ARMORY, LLC	29,619	0	29,619
EPP TEAM INC	25,210	0	25,210
DANIEL DEFENSE LLC	22,697	0	22,697
MAVERICK ARMS, INC	20,045	0	20,045
DIAMONDBACK FIREARMS LLC	19,086	0	19,086
CMMG INC	17,812	0	17,812
SHADOW SYSTEMS LLC	17,659	0	17,659
STANDARD MANUFACTURING CO LLC	328	17,254	17,582
PHOENIX ARMS	16,800	0	16,800
STI FIREARMS, LLC	15,931	0	15,931
RADICAL FIREARMS LLC	15,053	0	15,053
WALTHER MANUFACTURING INC	13,229	0	13,229
FREEDOM ORDNANCE MANUFACTURING INC	13,039	0	13,039
SAEILO, INC	12,472	0	12,472
MAGNUM RESEARCH INC	9,615	1,665	11,280
LEGACY SPORTS INTERNATIONAL INC	10,917	1	10,918
FM PRODUCTS INC	10,805	0	10,805
FMK FIREARMS INCORPORATED	9,993	0	9,993
HECKLER & KOCH, INC	9,739	0	9,739
WILSONS GUN SHOP INC	9,409	0	9,409
ZEV TECHNOLOGIES INC	8,130	0	8,130
HASKELL MANUFACTURING INC	8,100	0	8,100
EXTAR LLC	7,537	0	7,537
MASTERPIECE ARMS HOLDING COMPANY	7,497	0	7,497
SAEILO INC	7,231	0	7,231
PTR INDUSTRIES INC	6,972	0	6,972
FROG BONES LLC	6,327	305	6,632
TRAILBLAZER FIREARMS LLC	6,561	0	6,561
OUTDOOR COLORS LLC	6,361	0	6,361
IWI US INC	6,348	0	6,348
PATRIOT ORDNANCE FACTORY INC	6,339	0	6,339
BRAVO COMPANY MFG INC	5,681	0	5,681
ALTOR CORPORATION	5,510	0	5,510
DEL-TON, INC	5,108	0	5,108
POLYMER80 INC	4,971	0	4,971
IBERIA FIREARMS INC	4,899	0	4,899
CENTURY ARMS INC	4,831	0	4,831
KRISS USA, INC	4,541	0	4,541
TIPPMANN ARMS COMPANY LLC	4,233	0	4,233
NIGHTHAWK CUSTOM LLC	3,364	799	4,163
JA INDUSTRIES LLC	3,940	0	3,940
LWRC INTERNATIONAL	3,927	0	3,927
RWC GROUP LLC	3,843	0	3,843
AUTOMATED FINISHING COMPANY INC	2,499	867	3,366
STAG ARMS LLC	3,171	0	3,171
GWYNEDD MANUFACTURING INC	2,995	0	2,995
ANGSTADT ARMS LLC	2,917	0	2,917
VOLQUARTSEN FIREARMS INC	2,913	0	2,913
BLACK RAIN ORDNANCE INC	2,876	0	2,876
HENRY RAC HOLDING CORP	2,827	0	2,827
AFMER TOTALS	5,509,183	993,078	6,502,261

NOTE: Manufacturers producing less than 2,800 handguns in 2020 are not displayed above, but all reported units are included in the total.

LICENSE NAME LONG GUNS	RIFLES	SHOTGUNS	TOTALS
STURM, RUGER & COMPANY, INC	617,725	6	617,731
SMITH & WESSON SALES COMPANY / SMITH & WESSON INC.	493,257	199	493,456
MAVERICK ARMS, INC	75,330	245,946	321,276
HENRY RAC HOLDING CORP	228,840	15,629	244,469
SPRINGFIELD INC	232,108	0	232,108
LEGACY SPORTS INTERNATIONAL INC	38,070	108,265	146,335
DIAMONDBACK FIREARMS LLC	111,504	0	111,504
KEL TEC CNC INDUSTRIES INC	66,823	38,516	105,339
PALMETTO STATE ARMORY, LLC	60,438	0	60,438
SIG SAUER INC	58,956	0	58,956
RADICAL FIREARMS LLC	52,243	0	52,243
KEYSTONE SPORTING ARMS LLC	46,461	953	47,414
CENTURY ARMS INC	34,304	0	34,304
DEL-TON, INC	33,435	0	33,435
BLACK RAIN ORDNANCE INC	31,134	0	31,134
TDJ BUYER, LLC	30,850	0	30,850
STRASSELLS MACHINE INC	29,971	0	29,971
DANIEL DEFENSE LLC	29,180	0	29,180
COLT'S MANUFACTURING COMPANY LLC	23,895	0	23,895
AMERICAN TACTICAL INC	21,433	2,204	23,637
WM C ANDERSON INC	22,481	0	22,481
ROCK RIVER ARMS INC	21,597	0	21,597
LWRC INTERNATIONAL	18,632	2	18,634
OUTDOOR COLORS LLC	4,788	12,882	17,670
BRAVO COMPANY MFG INC	17,130	0	17,130
BERETTA USA CORP	0	16,326	16,326
FN AMERICA, LLC	15,902	0	15,902
WINDHAM WEAPONRY INC	14,283	0	14,283
IWI US INC	1,905	12,122	14,027
STAG ARMS LLC	13,759	0	13,759
STRATEGIC ARMORY CORPS LLC	11,466	0	11,466
GREAT LAKES FIREARMS AND AMMUNITION LLC	9,297	0	9,297
RILEY DEFENSE INC	9,034	0	9,034
RWC GROUP LLC	3,358	5,181	8,539
CMMG INC	8,442	0	8,442
BP FIREARMS COMPANY LLC	8,386	0	8,386
PATRIOT ORDNANCE FACTORY INC	8,339	0	8,339
PTR INDUSTRIES INC	8,054	0	8,054
ADAMS ARMS HOLDINGS, LLC	7,841	0	7,841
STANDARD MANUFACTURING CO LLC	1,193	6,524	7,717
WILSONS GUN SHOP INC	7,532	16	7,548
GWYNEDD MANUFACTURING INC	7,304	0	7,304
CZ USA	7,202	0	7,202
BARRETT FIREARMS MFG INC	6,815	0	6,815
TIPPMANN ARMS COMPANY LLC	6,241	0	6,241
PIONEER ARMS CORP	6,073	0	6,073
ALEX PRO FIREARMS LLC	5,790	0	5,790
F-1 FIREARMS LLC	5,774	0	5,774
WEATHERBY INC	5,720	0	5,720
3RD GEN MACHINE INC	149	5,533	5,682
SAEILO, INC	5,508	0	5,508
BEAR CREEK ARSENAL LLC	5,487	0	5,487
FMK FIREARMS INCORPORATED	5,284	0	5,284
KRISS USA, INC	4,172	0	4,172
JUST RIGHT CARBINES LLC	3,681	0	3,681
ABC RIFLE COMPANY	3,381	0	3,381
SEEKINS PRECISION LLC	3,179	0	3,179
STEYR ARMS, INC.	3,043	0	3,043
TALON ARMAMENT LLC	2,992	0	2,992
TROY INDUSTRIES INC	2,934	0	2,934
KIMBER MFG INC	2,784	0	2,784
FRANKLIN ARMORY, INC.	2,665	5	2,670
SPORTSWEREUS INC	2,473	0	2,473
DAVIDSON DEFENSE INC	2,400	0	2,400
TNW FIREARMS INC	2,388	0	2,388
FIERCE FIREARMS LLC	2,365	0	2,365
JAMES RIVER ARMORY INC	2,348	0	2,348
LUXUS ARMS LLC	2,278	0	2,278
HECKLER & KOCH, INC	2,269	0	2,269
FROG BONES LLC	1,774	440	2,214
AFMER TOTALS	2,761,297	476,682	3,237,979

NOTE: Manufacturers producing less than 2,100 long guns in 2020 are not displayed above, but all reported units are included in the total.

Top 25 Manufacturers of Firearms Manufactured in the U.S.

(Based on Total U.S. Production after 2020)

LICENSE NAME	PISTOLS	REVOLVERS	TOTAL HANDGUNS	RIFLES	SHOTGUNS	TOTAL LONG GUNS	TOTAL FIREARMS MANUFACTURED	% OF TOTAL 2018 U.S. HANGUN & LONG GUN PRODUCTION
SMITH & WESSON SALES COMPANY/ SMITH & WESSON INC.	1,559,856	267,651	1,827,507	493,257	199	493,456	2,320,963	23.8%
STURM, RUGER & COMPANY, INC	772,382	269,211	1,041,593	617,725	6	617,731	1,659,324	17.0%
SIG SAUER INC	1,018,063	0	1,018,063	58,956	0	58,956	1,077,019	11.1%
GLOCK INC	445,442	0	445,442	0	0	0	445,442	4.6%
SPRINGFIELD INC	161,991	0	161,991	232,108	0	232,108	394,099	4.0%
MAVERICK ARMS, INC	20,045	0	20,045	75,330	245,946	321,276	341,321	3.5%
HERITAGE MANUFACTURING, INC	0	306,159	306,159	0	0	0	306,159	3.1%
HENRY RAC HOLDING CORP	2,827	0	2,827	228,840	15,629	244,469	247,296	2.5%
KIMBER MFG INC	212,395	12,634	225,029	2,784	0	2,784	227,813	2.3%
KEL TEC CNC INDUSTRIES INC	80,315	0	80,315	66,823	38,516	105,339	185,654	1.9%
SCCY INDUSTRIES LLC	185,616	0	185,616	0	0	0	185,616	1.9%
LEGACY SPORTS INTERNATIONAL INC	10,917	1	10,918	38,070	108,265	146,335	157,253	1.6%
DIAMONDBACK FIREARMS LLC	19,086	0	19,086	111,504	0	111,504	130,590	1.3%
BERETTA USA CORP	91,663	0	91,663	0	16,326	16,326	107,989	1.1%
FN AMERICA, LLC	90,624	0	90,624	15,902	0	15,902	106,526	1.1%
TAURUS INTERNATIONAL MANUFACTURING, INC	100,678	0	100,678	0	0	0	100,678	1.0%
PALMETTO STATE ARMORY, LLC	29,619	0	29,619	60,438	0	60,438	90,057	0.9%
COLT'S MANUFACTURING COMPANY LLC	31,141	33,539	64,680	23,895	0	23,895	88,575	0.9%
STRASSELLS MACHINE INC	44,775	0	44,775	29,971	0	29,971	74,746	0.8%
RADICAL FIREARMS LLC	15,053	0	15,053	52,243	0	52,243	67,296	0.7%
AMERICAN TACTICAL INC	29,703	0	29,703	21,433	2,204	23,637	53,340	0.5%
DANIEL DEFENSE LLC	22,697	0	22,697	29,180	0	29,180	51,877	0.5%
NORTH AMERICAN ARMS INC	630	50,562	51,192	0	0	0	51,192	0.5%
BOND ARMS, INC	49,274	0	49,274	0	0	0	49,274	0.5%
KEYSTONE SPORTING ARMS LLC	641	0	641	46,461	953	47,414	48,055	0.5%
Total Produced in 2020 by Top-25 Manufacturers	4,995,433	939,757	5,935,190	2,204,920	428,044	2,632,964	8,568,154	88.0%
Percentage of 2020 Total Production	90.7%	94.6%	91.3%	79.9%	89.8%	81.3%	88%	88.0%

Source: AFMER

U.S. Manufacturers Direct Exports at a Glance (2020)

PISTOL MANUFACTURER	EXPORTS
SIG SAUER INC	252,601
GLOCK INC	74,299
SMITH & WESSON SALES COMPANY / SMITH & WESSON INC.	25,303
STURM, RUGER & COMPANY, INC	8,887
TAURUS INTERNATIONAL MANUFACTURING, INC	5,010
BERETTA USA CORP	3,335
BROWNING ARMS COMPANY	2,622
COLT'S MANUFACTURING COMPANY LLC	963
KIMBER MFG INC	952
ZEV TECHNOLOGIES INC	808
GUNFIGHTER TACTICAL, LLC	765
KEL TEC CNC INDUSTRIES INC	626
STI FIREARMS, LLC	599
RAINIER ARMS LLC	552
MAGNUM RESEARCH INC	456
TEXAS ARMAMENT & TECHNOLOGY LLC	414
SPRINGFIELD INC	409
KRISS USA, INC	384
DIAMONDBACK FIREARMS LLC	360
HENRY RAC HOLDING CORP	326
ANGSTADT ARMS LLC	321
STRAYER-VOIGT LLC	287
MAVERICK ARMS, INC	271
CENTRE FIREARMS CO INC	245
LES BAER CUSTOM INC	229
FMK FIREARMS INCORPORATED	190
SAEILO, INC	134
POLYMER80 INC	133
DANIEL DEFENSE LLC	114
WILSONS GUN SHOP INC	110
TIPPMANN ARMS COMPANY LLC	101
PISTOL TOTAL	**382,758**

REVOLVER MANUFACTURER	EXPORTS
SMITH & WESSON SALES COMPANY / SMITH & WESSON INC.	9,335
STURM, RUGER & COMPANY, INC	7,415
COLT'S MANUFACTURING COMPANY LLC	1,501
CHARCO 2000 INC	373
NORTH AMERICAN ARMS INC	273
KIMBER MFG INC	166
HERITAGE MANUFACTURING, INC	137
REVOLVER TOTAL	**19,264**

SHOTGUN MANUFACTURER	EXPORTS
MAVERICK ARMS, INC	16,401
BERETTA USA CORP	671
KEL TEC CNC INDUSTRIES INC	388
HENRY RAC HOLDING CORP	215
SHOTGUN TOTAL	**17,874**

RIFLE MANUFACTURER	EXPORTS
STURM, RUGER & COMPANY, INC	46,993
BEAR CREEK ARSENAL LLC	10,000
HENRY RAC HOLDING CORP	5,158
MAVERICK ARMS, INC	5,132
SMITH & WESSON SALES COMPANY / SMITH & WESSON INC.	4,698
LEGACY SPORTS INTERNATIONAL INC	3,408
KEL TEC CNC INDUSTRIES INC	2,718
BP FIREARMS COMPANY LLC	2,626
DIAMONDBACK FIREARMS LLC	1,685
COLT'S MANUFACTURING COMPANY LLC	1,516
SIG SAUER INC	1,418
KRISS USA, INC	1,413
TIPPMANN ARMS COMPANY LLC	1,341
TEXAS ARMAMENT & TECHNOLOGY LLC	1,245
TDJ BUYER, LLC	831
FREEDOM ORDNANCE MANUFACTURING INC	775
JUST RIGHT CARBINES LLC	659
BARRETT FIREARMS MFG INC	653
TNW FIREARMS INC	615
M+M INC	576
DANIEL DEFENSE LLC	558
TROY INDUSTRIES INC	539
WEATHERBY INC	513
STRATEGIC ARMORY CORPS LLC	389
DESERT TECH LLC	376
SPRINGFIELD INC	215
WINDHAM WEAPONRY INC	213
BROWNING ARMS COMPANY	206
RAINIER ARMS LLC	153
PNEU DART INC	153
FEDERAL ARMAMENT LLC	150
AERO PRECISION LLC	137
MAX LLC	136
MASTERPIECE ARMS HOLDING COMPANY	136
LEWIS MACHINE & TOOL CO	129
CGS SUPPRESSORS LLC	110
SAEILO, INC	107
RIFLE TOTAL	**99,454**

Source: Annual Firearms Manufacturing and Export Report (AFMER) 2020
NOTE: A manufacturer that reported exporting less than 100 units does not appear in the tables above. TOTAL includes all reported exports.

Source: AFMER

Industry Statistics (current Snapshot)

The data listed on this page is sourced from the most current Census Bureau report. At this time it is the 2020 Annual Survey of Manufacturers. NAICS (North American Industry Classification System) code 332992 represents "Small-Arms Ammunition," and NAICS code 332 represents "Fabricated-Metal-Product Manufacturing."

DEFINITION OF TERMS

Employees: includes all full-time and part-time employees on the payroll of operating manufacturing establishments.

Production workers: includes workers (up through the line-supervisor level) actively engaged in the manufacturing process.

Payroll: includes the gross earnings of all employees paid in a calendar year.

Value added: measure of manufacturing activity derived by subtracting the cost of materials and supplies from the value of shipments (finished products and services rendered).

Capital expenditures: represents the total new and used expenditures reported by establishments in operation and any known plants under construction.

Inventories: includes products and materials held outside of the establishment, such as in warehouses (private or public).

INDUSTRY STATISTIC	(332) Fabricated Metal Product Manufacturing (2020)	(332992) Firearms Ammunition Manufacturing (2020)	Ammunition Manufacturing as Percent of Total Fabricated Metal Product Manufacturing
Employment & Labor Costs			
Total number of employees	1,343,492	10,977	0.8%
Number of production workers	1,011,030	9,426	0.9%
Production workers annual hours worked	1,887,939,000	19,831,000	1.1%
Production workers annual wages	$47,933,026,000	$519,570,000	1.1%
Total annual payroll	$75,469,174,000	$643,155,000	0.9%
Total fringe benefits	$20,380,892,000	$233,587,000	1.1%
Total annual compensation	**$95,850,066,000**	**$876,742,000**	**0.9%**
Purchased Fuels and Electric Energy Used for Heat and Power			
Electric energy purchased (kWh)	37,932,679,000	411,526,000	1.1%
Cost of electric energy	$3,252,674,000	$33,983,000	1.0%
Cost of purchased fuels	$1,109,860,000	$16,244,000	1.5%
Total cost of fuels and electric energy	**$4,362,534,000**	**$50,227,000**	**1.2%**
Capital Expenditures for Plant and Equipment			
Capital expenditures for buildings and other structures	$2,309,378,000	$8,403,000	0.4%
Rental or lease payments (buildings and equipment)	$5,055,694,000	$27,162,000	0.5%
Capital expenditures for machinery and equipment	$8,820,818,000	$49,746,000	0.6%
All other operating expenses	$27,992,353,000	$334,686,000	1.2%
Total capital expenditures for plant and equipment	**$44,178,243,000**	**$419,997,000**	**1.0%**
Value of Manufacturers' Inventories by Stage of Fabrication			
Beginning of Year			
Finished products	$19,237,446,000	$319,370,000	1.7%
Work-in-process	$13,509,587,000	$190,649,000	1.4%
Materials and supplies inventories	$20,004,732,000	$211,271,000	1.1%
Total	**$52,751,765,000**	**$721,290,000**	**1.4%**
End of Year			
Finished products	$18,222,956,000	$279,561,000	1.5%
Work-in-process	$12,616,987,000	$208,664,000	1.5%
Materials and supplies inventories	$19,275,587,000	$242,536,000	1.1%
Total	**$50,115,530,000**	**$730,761,000**	**1.5%**
Manufacturing Activity			
Total value of shipments	**$347,335,687,000**	**$4,847,392,000**	**1.4%**
Total cost of materials	**$155,012,288,000**	**$2,199,271,000**	**1.4%**
Value added	**$190,416,311,000**	**$2,626,326,000**	**1.4%**

Source: 2020 Annual Survey of Manufacturers (ASM)

**NOTE: The fabricated metal product manufacturing (NAICS code 332) subsector consists of all of these industry groups. Forging and Stamping: NAICS 3321; Cutlery and Handtool Manufacturing: NAICS 3322; Architectural and Structural Metals Manufacturing: NAICS 3323; Boiler, Tank, and Shipping Container Manufacturing: NAICS 3324; Hardware Manufacturing: NAICS 3325; Spring and Wire Product Manufacturing: NAICS 3326; Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing: NAICS 3327; Coating, Engraving, Heat Treating, and Allied Activities: NAICS 3328; Other Fabricated Metal Product Manufacturing: NAICS 3329.

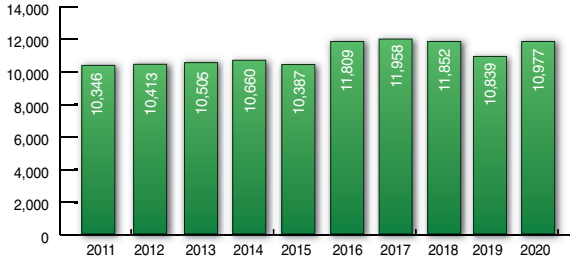
Manufacturing Trends

Small Arms Ammunition (NAICS 332992)

ALL EMPLOYEES (NUMBER)

10-Year Average

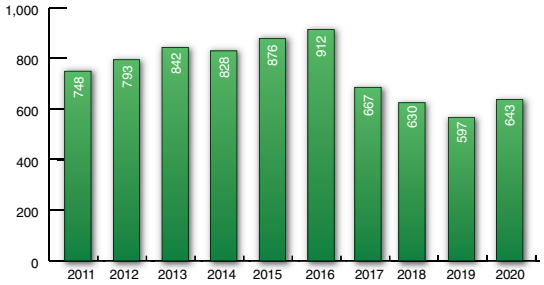
Small Arms Ammunition: 10,975



PAYROLL ($ IN MILLIONS)

10-Year Average

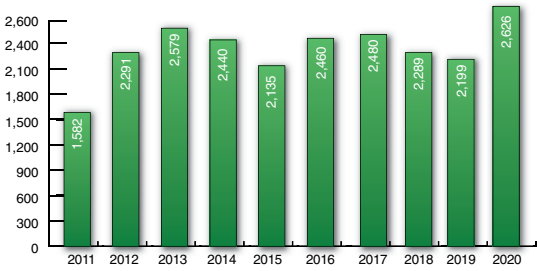
Small Arms Ammunition: $754M



VALUE ADDED ($ IN MILLIONS)

10-Year Average

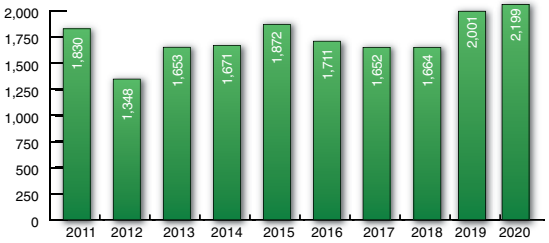
Small Arms Ammunition: $2,308M



COST OF MATERIALS ($ IN MILLIONS)

10-Year Average

Small Arms Ammunition: $1,760M



Source: U.S. Census Bureau Annual Survey of Manufacturers (ASM) and Economic Census reports

U.S. Ammunition Consumer Market Unit Estimate			
Category	**2012**	**2015**	**2018**
Shotshell	1.4 billion	1.4 billion	1.0 billion
Rimfire	4.5 billion	5.4 billion	4.1 billion
Centerfire	3.6 billion	3.7 billion	3.6 billion
TOTALS	**9.5 billion**	**10.5 billion**	**8.7 billion**

Source: USITC and NSSF Estimates
Note: Update is not available

Firearm Imports By Country (2011 – 2020) (in actual units of quantity)

Pistols: HTS 9302000040 [PISTOLS, SEMIAUTOMATIC EXCEPT OF HEADING 9303 OR 9304] --or-- HTS 9302000090 [PISTOLS, EXCEPT OF HEADING 9303 OR 9304, NESOI (not elsewhere specified or included)]

COUNTRY	YEAR 2011	YEAR 2012	YEAR 2013	YEAR 2014	YEAR 2015	YEAR 2016	YEAR 2017	YEAR 2018	YEAR 2019	YEAR 2020	TOTALS
Argentina	71,838	76,184	82,635	43,310	42,304	75,834	33,676	39,969	25,625	29,030	520,405
Austria	515,396	821,522	932,117	794,540	923,986	1,318,204	1,198,719	927,168	811,116	1,278,624	9,521,392
Belgium	9,769	10,754	14,493	18,214	18,648	25,299	21,616	25,364	26,084	14,108	184,349
Brazil	339,386	422,986	446,033	208,102	482,444	656,892	703,753	664,698	695,584	849,207	5,469,085
Bulgaria	1,450	4,586	8,397	270	6,245	3,290	1,114	1,293	592	6,932	34,169
Canada	2	12	36	132	15	1	5	1	110	20	334
Croatia	211,001	389,014	451,657	441,337	338,535	574,486	326,653	295,107	185,241	521,932	3,734,963
Czechia	18,671	38,551	37,337	46,924	71,675	107,665	140,695	184,984	142,126	237,153	1,025,781
Finland	0	1	0	0	0	4	3	128	320	8	464
France	0	452	350	163	19	454	519	261	755	481	3,454
Georgia	0	0	0	0	0	0	0	0	0	608	608
Germany	258,512	389,896	508,422	291,705	236,800	432,297	341,068	322,489	257,061	264,475	3,302,725
Hungary	311	695	777	898	1,521	852	488	883	1,884	1,148	9,457
Israel	9,995	20,017	23,979	13,189	15,618	22,342	15,174	11,979	23,742	41,346	197,381
Italy	91,367	195,219	224,278	154,982	94,737	180,018	174,295	154,181	149,696	135,948	1,554,721
Montenegro	0	1,000	48	0	52	0	0	0	60	2,627	3,787
Pakistan	0	0	161	250	575	175	400	0	0	0	1,561
Philippines	54,247	80,096	140,813	71,021	79,457	97,166	87,161	123,470	93,612	113,399	940,442
Poland	20,892	9,806	8,406	12,141	10,783	11	45	5,426	5,937	10,286	83,733
Romania	13,775	3,579	3,655	5,800	9,460	5,272	9,911	23,562	22,094	22,145	119,253
Russia	16,900	11,486	772	0	0	60	17	0	0	0	29,235
Serbia	720	28,504	50,658	10,180	18,066	12,823	16,470	5,575	8,925	22,703	174,624
Slovakia	640	1,281	1,204	417	1,075	1,223	2,196	1,996	2,864	2,987	15,883
Slovenia	0	0	0	0	1,058	7,083	6,014	3,232	1,750	4,902	24,039
South Korea	0	1,021	3,879	62	0	47	0	70	0	34	5,113
Spain	322	376	262	10,359	234	1,208	22,793	21,022	551	960	58,087
Sweden	0	45	0	9	0	8	4	35	130	45	276
Switzerland	839	2,970	4,337	1,894	3,914	2,262	6,992	10,657	15,436	17,943	67,244
Turkey	11,908	24,208	84,981	15,253	58,870	83,046	80,090	68,921	86,406	344,782	858,465
Ukraine	5,500	0	4,000	0	0	0	0	0	0	0	9,500
United Arab Em	285	8,809	909	47	0	110	300	0	0	0	10,460
United Kingdom	4,355	0	1	83	58	85	7	111	41	65	4,806
TOTALS:	1,677,656	2,543,118	3,034,636	2,141,282	2,416,210	3,608,722	3,191,235	2,892,630	2,557,911	3,923,974	27,987,374

Revolvers: HTS 9302000020 [REVOLVERS, EXCEPT OF HEADING 9303 OR 9304]

COUNTRY	YEAR 2011	YEAR 2012	YEAR 2013	YEAR 2014	YEAR 2015	YEAR 2016	YEAR 2017	YEAR 2018	YEAR 2019	YEAR 2020	TOTALS
Austria	0	0	0	0	0	0	0	0	15	1	16
Brazil	198,249	228,876	236,270	98,480	211,847	201,544	238,101	162,703	173,515	186,796	1,936,381
Czechia	83	38	0	0	0	115	42	58	480	1,741	2,557
France	0	2	350	163	8	420	497	233	743	442	2,858
Germany	9,423	11,416	11,747	11,906	12,010	15,383	15,724	16,223	17,652	19,234	140,718
Italy	27,847	40,238	53,152	48,617	45,843	50,665	49,889	56,311	55,432	44,796	472,790
Philippines	5,339	6,666	8,915	8,198	13,049	18,852	19,034	22,816	16,884	23,120	142,873
Russia	11,500	11,486	0	0	0	0	0	0	0	0	22,986
Slovakia	640	480	0	0	0	0	0	0	0	424	1,544
Spain	0	0	0	0	156	586	0	0	0	446	1,188
Switzerland	12	0	268	0	18	5	28	63	298	39	731
Ukraine	5,500	0	4,000	0	0	0	0	0	0	0	9,500
United Kingdom	0	0	1	83	0	20	5	56	19	50	234
TOTALS:	258,878	304,397	316,582	167,646	283,438	287,723	323,572	258,464	265,038	277,089	2,742,827

Source: Data from U.S. International Trade Commission (USITC).
NOTE: Countries with limited activity over this 10-year period are not shown; however, the totals do include the units from all countries.

More detail on import and export data is available through the USITC website at dataweb.usitc.gov/. To obtain the highest level of product definition, use the HTS (Harmonized Tariff Schedule) 10-digit codes whenever possible.

Refer to the most current 'Harmonized Tariff Schedule' for IMPORT codes and to 'Schedule B' for EXPORT codes. Note that import and export codes do not always match.

DataWeb for 2019-2021 Census Bureau. have been updated as of June 29, 2022, based on the latest official revisions from the Census Bureau. (The first official revisions for 2022 data will not be available until June 2023).

For posted corrections pertaining to years prior to 2010, go to: census.gov/foreign-trade/statistics/corrections/index.html

Firearm Imports By Country (2011 – 2020) (in actual units of quantity)

Shotguns: HTS 930320 [SPORTING, HUNTING OR TARGET-SHOOTING SHOTGUNS, INCLUDING COMBINATION SHOTGUN-RIFLES, EXCEPT MUZZLELOADING FIREARMS]

Country	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	TOTALS
Austria	1,507	783	618	34	716	65	19	1,264	145	30	5,181
Belgium	114	157	9	1,377	715	546	120	3,768	68	212	7,086
Brazil	105,676	125,891	119,090	58,729	38,225	39,225	36,947	61,082	57,851	46,066	688,782
Canada	13	26	5	0	192	148	0	0	1,415	982	2,781
China	90,952	154,446	234,486	112,095	164,818	149,091	140,171	111,696	116,767	205,462	1,479,984
Croatia	0	0	0	0	0	0	0	0	295	0	295
Czechia	6	0	142	50	109	22	15	43	80	34	501
France	10	6,284	10	9	23	84	116	79	8	62	6,685
Germany	2,204	3,467	1,370	1,224	1,547	2,371	2,284	3,589	2,177	2,374	22,607
Hong Kong	0	0	0	0	0	0	0	0	100	0	100
Israel	0	0	0	0	0	0	0	0	0	7,697	7,697
Italy	137,767	170,460	212,557	206,773	199,231	182,368	138,323	168,368	175,215	175,756	1,766,818
Japan	1,834	2,875	1,525	652	907	766	733	931	828	620	11,671
Pakistan	0	0	19	0	335	0	250	0	320	0	924
Philippines	950	5,500	9,800	6,496	6,400	7,100	3,100	8,050	100	0	47,496
Portugal	2,115	2,384	6,415	3,465	4,175	78	10	33	31	72	18,778
Russia	50,837	47,360	34,904	21,830	5,150	12,420	7,410	14	182	0	180,107
Spain	1,328	1,692	1,620	1,746	839	2,637	4,191	1,554	601	515	16,723
Sweden	0	238	143	228	2	183	91	27	0	259	1,171
Turkey	122,682	174,212	306,312	233,371	220,310	335,190	295,362	342,184	382,794	1,045,615	3,458,032
United Arab Em	0	0	0	0	0	0	0	0	0	750	750
United Kingdom	8,251	8,836	8,922	490	578	4,042	2,847	3,850	4,460	4,209	46,485
TOTALS	530,564	704,828	937,952	648,592	644,274	736,443	631,998	706,634	743,474	1,490,783	7,775,542

Source: Data on this page have been compiled from the U.S. Department of Commerce and the U.S. International Trade Commission (USITC).
NOTE: The bottom-line total accounts for all imports under the HTS code listed, but countries with limited activity over the period shown are not displayed.

Rifles: HTS 930330 [SPORTING, HUNTING OR TARGET-SHOOTING RIFLES, EXCEPT MUZZLELOADING FIREARMS AND COMBINATION SHOTGUN-RIFLES] (Adjusted to EXCLUDE HTS codes 9303304010 & 9303308005 - Telescopic Sights Imported with Rifles)

Country	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	Year 2018	Year 2019	Year 2020	TOTALS
Australia	23	1	1	0	0	61	0	820	90	0	996
Austria	6,192	6,319	8,966	2,988	1,109	3,387	3,113	4,774	7,534	5,218	49,600
Belgium	16,317	20,634	29,920	34,067	54,497	58,129	40,268	29,651	24,984	8,525	316,992
Brazil	156,847	316,577	404,234	56,411	78,585	31,204	19,317	138,931	74,537	120,864	1,397,507
Bulgaria	0	10,790	31,087	12,900	5,100	290	1,816	3,000	1,500	13,653	80,136
Canada	156,860	267,993	292,404	258,803	276,821	225,108	202,119	172,406	131,866	212,218	2,196,598
Croatia	0	0	0	0	0	0	0	0	183	0	183
Czechia	20,236	23,264	25,507	25,412	28,125	31,385	27,080	27,877	27,137	28,238	264,261
Denmark	169	0	0	0	0	0	81	0	0	2	252
Estonia	0	0	0	0	0	0	0	0	0	26	26
Finland	23,417	33,536	43,858	40,183	50,492	56,614	35,285	34,728	46,576	46,506	411,195
France	64	64	47	50	482	307	739	544	306	51	2,654
Georgia	0	0	0	0	0	0	0	0	1	1,500	1,501
Germany	42,116	96,013	134,305	39,376	16,008	30,229	9,976	15,034	40,406	44,429	467,892
Hungary	354	0	0	0	0	0	0	350	87	509	1,300
Israel	0	1	18,502	27,771	4,302	24,965	6,615	3,678	3,366	7,839	97,039
Italy	12,222	20,705	53,115	27,943	26,981	18,873	14,526	18,276	12,087	17,848	222,576
Japan	59,471	71,538	76,399	89,657	87,012	98,324	76,676	67,754	77,310	78,239	782,380
Norway	25	22	0	36	0	0	0	0	0	2	85
Peru	0	0	0	0	0	0	4	0	5	0	9
Philippines	1,430	2,437	5,909	7,435	5,603	4,847	3,725	7,430	8,974	3,818	51,608
Poland	1,081	2,170	510	1,454	527	5	778	2,576	4,266	8,291	21,658
Portugal	0	250	4	1,298	2,117	1,842	8,037	6,287	24,322	33,796	77,953
Romania	37,648	46,533	44,734	14,039	17,870	8,220	5,735	7,053	20,575	15,911	218,318
Russia	87,681	74,512	71,230	29,864	4,404	28,832	8,430	0	3,500	1,485	309,938
Serbia	7,562	20,320	44,672	12,720	17,357	18,139	8,394	154	5,551	24,096	158,965
South Africa	14	0	0	0	4	8	2	10	3	0	41
Spain	10,015	18,989	17,403	9,411	25,393	26,679	39,632	56,182	57,549	57,506	318,759
Sweden	138	114	375	758	113	552	298	75	2,551	819	5,793
Switzerland	441	163	3,607	3,889	510	526	674	1,917	1,786	2,121	15,634
Taiwan	0	919	1,396	0	0	0	0	0	0	3,140	5,455
Turkey	1,153	475	0	15	339	2,428	1,330	2,020	2,115	29,450	39,325
United Kingdom	3,979	3,575	4,243	5,028	4,683	6,019	4,748	5,680	12,978	9,752	60,685
TOTALS:	656,256	1,039,716	1,313,678	706,362	708,436	676,987	519,400	607,209	592,146	775,852	7,596,042

Source: Data on this page have been compiled from the U.S. Department of Commerce and the U.S. International Trade Commission (USITC). NOTE: The bottom-line total accounts for all imports under the HTS code listed, but countries with limited activity over the period shown are not displayed.

Muzzleloaders: HTS 930310 [MUZZLELOADING]

Country	Year 2011	Year 2012	Year 2013	Year 2014	Year 2015	Year 2016	Year 2017	YEAR 2018	YEAR 2019	YEAR 2020	TOTALS
Austria	0	0	0	0	0	0	4	0	0	0	4
Canada	0	0	0	2	0	0	0	0	1	0	3
China	1,500	0	0	0	0	0	0	150	0	2,830	4,480
France	0	0	2,300	0	2	0	0	2,355	0	0	4,657
Germany	4,183	0	0	0	401	0	0	60	0	0	4,644
India	21	90	135	26	28	0	0	0	0	0	300
Italy	32,613	40,559	44,007	51,730	42,077	37,499	38,472	31,060	33,959	35,942	387,918
Japan	0	0	0	0	0	0	400	0	0	0	400
Poland	0	0	0	0	0	0	0	0	0	2	2
Spain	128,778	124,509	133,189	122,861	111,834	112,951	107,112	104,701	96,682	118,475	1,161,092
Taiwan	0	0	0	0	0	65	0	87	0	0	152
United Kingdom	0	0	0	0	498	1	1	1,934	0	0	2,434
TOTALS	167,095	165,158	179,631	174,919	154,848	150,518	145,989	140,347	130,642	157,249	1,566,396

Source: Data on this page have been compiled from the U.S. Department of Commerce and the U.S. International Trade Commission (USITC).
NOTE: The bottom-line total accounts for all imports under the HTS code listed, but countries with limited activity over the period shown are not displayed.

U.S. Imports for Consumption (1990 – 2020)

IMPORTS

Year	Revolvers & Pistols (930200)	Rifles (930330)	Shotguns (930320)	Muzzleloaders (930310)	TOTAL FIREARMS
1990	682,974	272,709	81,228	170,282	**1,207,193**
1991	692,282	348,765	98,645	179,674	**1,319,366**
1992	876,314	407,643	325,345	148,679	**1,757,981**
1993	1,169,123	749,433	132,502	197,899	**2,248,957**
1994	1,383,279	733,277	142,590	259,975	**2,519,121**
1995	825,127	286,218	136,733	331,168	**1,579,246**
1996	663,801	234,931	145,676	221,585	**1,265,993**
1997	1,316,931	266,869	142,067	185,145	**1,911,012**
1998	590,661	229,051	163,663	186,514	**1,169,889**
1999	677,757	313,980	335,489	155,764	**1,482,990**
2000	712,661	321,316	332,704	259,315	**1,625,996**
2001	710,958	322,201	428,308	345,534	**1,807,001**
2002	971,135	458,684	498,535	380,499	**2,308,853**
2003	762,764	517,509	498,677	353,673	**2,132,623**
2004	838,856	491,932	507,050	379,883	**2,217,721**
2005	878,172	448,862	546,261	244,564	**2,117,859**
2006	1,164,973	516,127	607,894	208,279	**2,497,273**
2007	1,387,428	612,837	725,635	222,404	**2,948,304**
2008	1,468,062	538,283	535,960	170,998	**2,713,303**
2009	2,184,417	697,800	558,679	141,656	**3,582,552**
2010	1,747,635	466,799	509,792	155,818	**2,880,044**
2011	1,707,313	656,256	530,564	167,095	**3,061,228**
2012	2,591,117	1,039,716	704,828	165,158	**4,500,819**
2013	3,055,329	1,313,678	937,952	179,631	**5,486,590**
2014	2,151,591	706,362	648,592	174,919	**3,681,464**
2015	2,423,182	708,436	644,274	154,848	**3,930,740**
2016	3,614,057	676,987	736,443	150,518	**5,178,005**
2017	3,194,599	519,400	631,998	145,989	**4,491,986**
2018	2,896,353	607,209	706,634	140,347	**4,350,543**
2019	2,560,935	592,146	743,474	130,642	**4,027,197**
2020	3,996,554	775,852	1,490,783	157,249	**6,420,438**
AVERAGE					
5-year (2016 – 2020)	3,252,500	634,319	861,866	144,949	**4,893,634**
10-year (2011 – 2020)	2,819,103	759,604	777,554	156,640	**4,512,901**
15-year (2006 – 2020)	2,409,570	695,193	714,233	164,370	**3,983,366**
20-year (2001 – 2020)	2,015,272	633,354	659,617	208,485	**3,516,727**
25-year (1996 – 2020)	1,770,690	561,329	572,477	207,121	**3,111,617**
30-year (1991 – 2020)	1,640,446	551,952	504,925	209,847	**2,907,170**

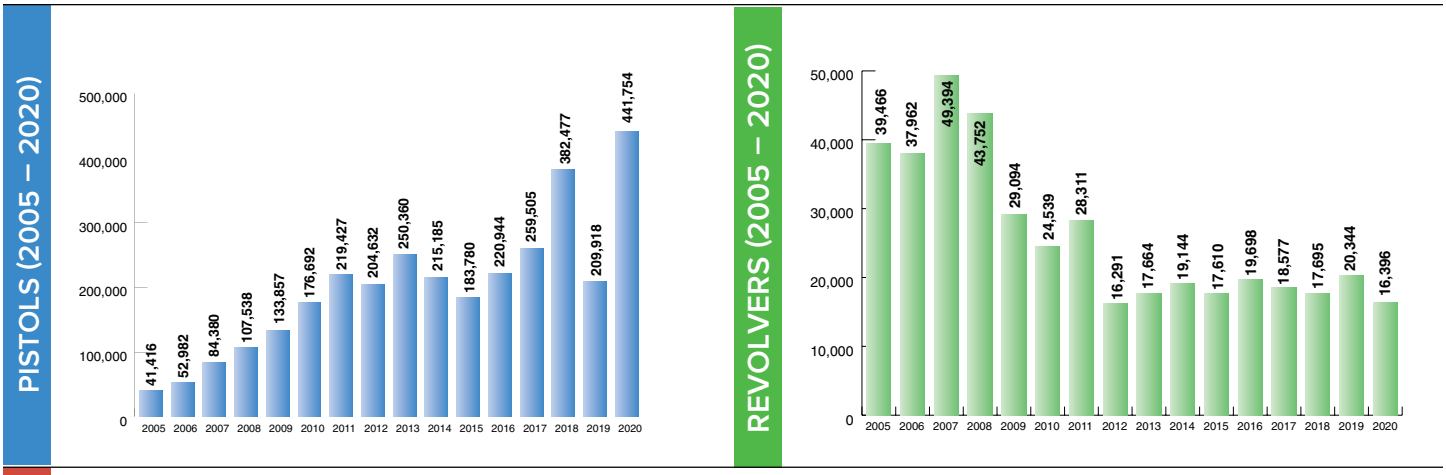
Total U.S. Exports (1990 – 2020)

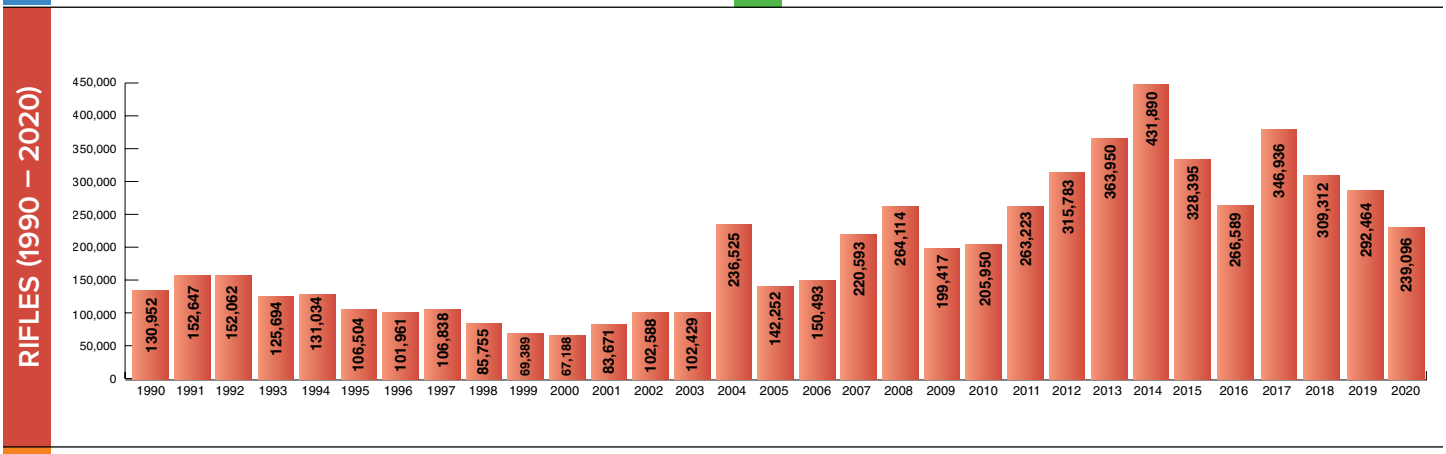
EXPORTS

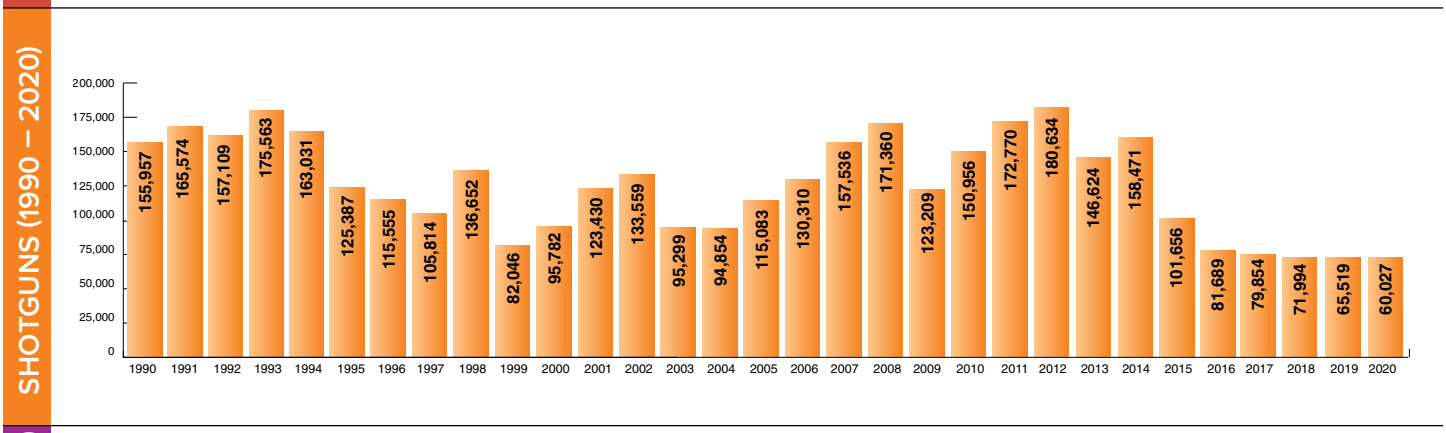
Year	Revolvers & Pistols (930200)	Rifles (930330)	Shotguns (930320)	Muzzleloaders (930310)	TOTAL FIREARMS
1990	191,446	130,952	155,957	4,198	**482,553**
1991	223,248	152,647	165,574	4,823	**546,292**
1992	210,358	152,062	157,109	5,065	**524,594**
1993	170,378	125,694	175,563	29,930	**501,565**
1994	195,031	131,034	163,031	31,872	**520,968**
1995	218,826	106,504	125,387	4,589	**455,306**
1996	193,647	101,961	115,555	15,908	**427,071**
1997	146,846	106,838	105,814	30,785	**390,283**
1998	124,295	85,755	136,652	11,248	**357,950**
1999	116,467	69,389	82,046	7,680	**275,582**
2000	80,249	67,188	95,782	6,063	**249,282**
2001	86,041	83,671	123,430	19,361	**312,503**
2002	82,338	102,588	133,559	8,290	**326,775**
2003	73,337	102,429	95,299	7,294	**278,359**
2004	69,316	236,525	94,854	10,035	**410,730**
2005	80,882	142,252	115,083	12,587	**350,804**
2006	90,944	150,493	130,310	9,536	**381,283**
2007	133,774	220,593	157,536	13,439	**525,342**
2008	151,290	264,114	171,360	11,849	**598,613**
2009	162,951	199,417	123,209	11,185	**496,762**
2010	201,231	205,950	150,956	12,842	**570,979**
2011	247,738	263,223	172,770	8,786	**692,517**
2012	220,923	315,783	180,634	9,841	**727,181**
2013	268,024	363,950	146,624	5,664	**784,262**
2014	234,329	431,890	158,471	9,180	**833,870**
2015	201,390	328,395	101,656	5,693	**637,134**
2016	240,642	266,589	81,689	10,603	**599,523**
2017	278,082	346,936	79,854	5,159	**710,031**
2018	400,172	309,312	71,994	35,711	**817,189**
2019	230,262	292,464	65,619	5,273	**593,618**
2020	458,150	239,096	60,027	4,248	**761,521**
AVERAGE					
5-year (2016 – 2020)	321,462	290,879	71,837	12,199	**696,376**
10-year (2011 – 2020)	277,971	315,764	111,934	10,016	**715,685**
15-year (2006 – 2020)	234,660	279,880	123,514	10,601	**648,655**
20-year (2001 – 2020)	195,591	243,284	120,747	10,829	**570,450**
25-year (1996 – 2020)	182,933	211,872	118,031	11,530	**524,367**
30-year (1991 – 2020)	186,372	198,825	124,582	12,151	**521,930**

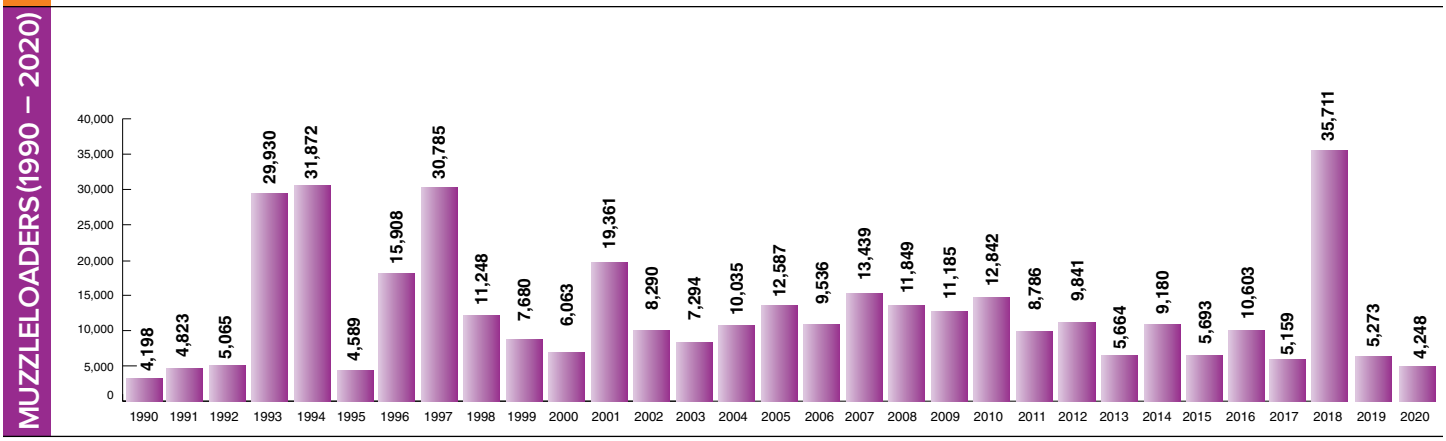
Source: U.S. International Trade Commission (USITC)
NOTE: Rifle imports adjusted to exclude HTS codes 9303304010 and 9303308005 (telescopic sights imported with rifles.)

U.S. Firearms Total Exports (1990 – 2020) (in actual units of quantity)







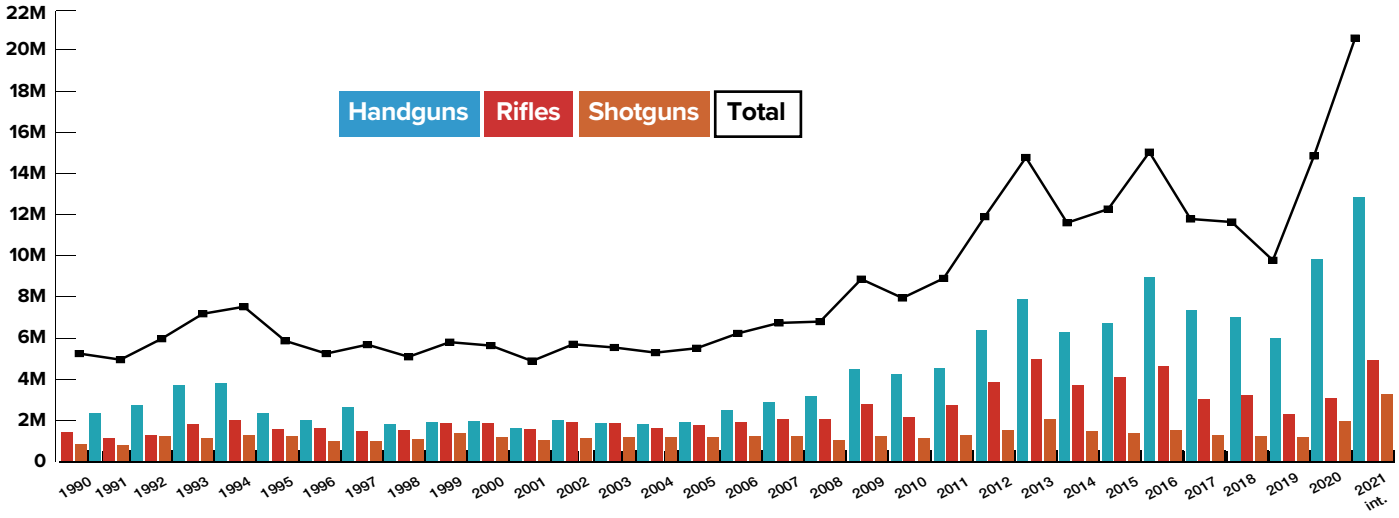


Source: U.S. International Trade Commission (USITC)

Total Firearm Units Produced for the United States Market Annually

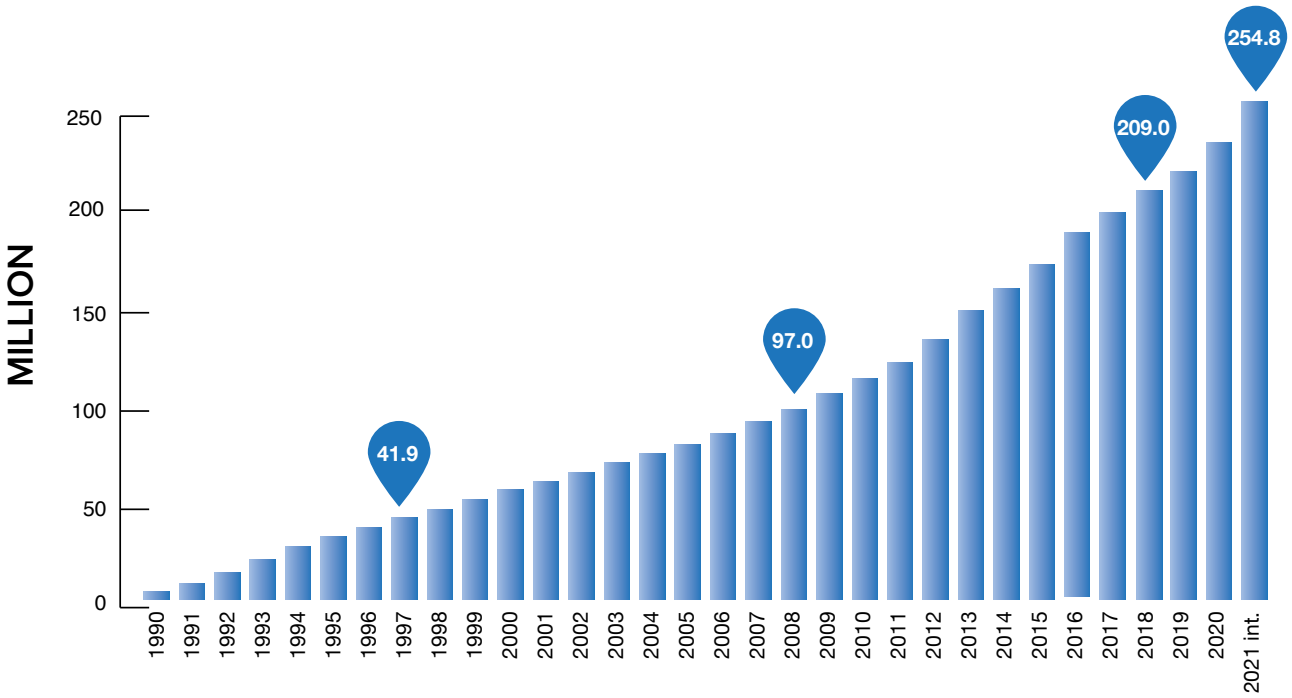
YEAR	Handguns Produced in U.S.		Handguns Imported into U.S.		Handguns Exported out of U.S.		Total Hand-guns	Rifles Produced in U.S.		Rifles Imported into U.S.		Rifles Exported out of U.S.		Total Rifles	Shotguns Produced in U.S.		Shotguns Imported into U.S.		Shotguns Exported out of U.S.		Total Shotguns	TOTAL HANDGUNS, RIFLES & SHOTGUNS	% Change Yoy	YEAR
1990	1,841,922	+	682,974	-	191,446	=	2,333,450	1,211,664	+	272,709	-	130,952	=	1,353,421	855,970	+	81,228	-	155,957	=	781,241	4,468,112	-	1990
1991	1,835,218	+	692,282	-	223,248	=	2,304,252	883,482	+	348,765	-	152,647	=	1,079,600	828,426	+	98,645	-	165,574	=	761,497	4,145,349	-7.2%	1991
1992	2,138,950	+	876,314	-	210,358	=	2,804,906	1,001,833	+	407,643	-	152,062	=	1,257,414	1,018,204	+	325,345	-	157,109	=	1,186,440	5,248,760	26.6%	1992
1993	2,655,654	+	1,169,123	-	170,378	=	3,654,399	1,173,694	+	749,433	-	125,694	=	1,797,433	1,148,939	+	132,502	-	175,563	=	1,105,878	6,557,710	24.9%	1993
1994	2,590,748	+	1,383,279	-	195,031	=	3,778,996	1,316,607	+	733,277	-	131,034	=	1,918,850	1,254,924	+	142,590	-	163,031	=	1,234,483	6,932,329	5.7%	1994
1995	1,722,948	+	825,127	-	218,826	=	2,329,249	1,441,120	+	286,218	-	106,504	=	1,620,834	1,176,958	+	136,733	-	125,387	=	1,188,304	5,138,387	-25.9%	1995
1996	1,486,472	+	663,801	-	193,647	=	1,956,626	1,424,315	+	234,931	-	101,961	=	1,557,285	925,732	+	145,676	-	115,555	=	955,853	4,469,764	-13.0%	1996
1997	1,406,505	+	1,316,931	-	146,846	=	2,576,590	1,251,341	+	266,869	-	106,838	=	1,411,372	915,978	+	142,067	-	105,814	=	952,231	4,940,193	10.5%	1997
1998	1,284,755	+	590,661	-	124,295	=	1,751,121	1,345,899	+	229,051	-	85,755	=	1,489,195	1,036,520	+	163,663	-	136,652	=	1,063,531	4,303,847	-12.9%	1998
1999	1,331,230	+	677,757	-	116,467	=	1,892,520	1,569,685	+	313,980	-	69,389	=	1,814,276	1,106,995	+	335,489	-	82,046	=	1,360,438	5,067,234	17.7%	1999
2000	1,281,861	+	712,661	-	80,249	=	1,914,273	1,583,042	+	321,316	-	67,188	=	1,837,170	898,442	+	332,704	-	95,782	=	1,135,364	4,886,807	-3.6%	2000
2001	946,979	+	710,958	-	86,041	=	1,571,896	1,284,554	+	322,201	-	83,671	=	1,523,084	679,813	+	428,308	-	123,430	=	984,691	4,079,671	-16.5%	2001
2002	1,088,584	+	971,135	-	82,338	=	1,977,381	1,515,286	+	458,684	-	102,588	=	1,871,382	741,325	+	498,535	-	133,559	=	1,106,301	4,955,064	21.5%	2002
2003	1,121,024	+	762,764	-	73,337	=	1,810,451	1,430,324	+	517,509	-	102,429	=	1,845,404	726,078	+	498,677	-	95,299	=	1,129,456	4,785,311	-3.4%	2003
2004	1,022,610	+	838,856	-	69,316	=	1,792,150	1,325,138	+	491,932	-	236,525	=	1,580,545	731,769	+	507,050	-	94,854	=	1,143,965	4,516,660	-5.6%	2004
2005	1,077,630	+	878,172	-	80,882	=	1,874,920	1,431,372	+	448,862	-	142,252	=	1,737,982	709,313	+	546,261	-	115,083	=	1,140,491	4,753,393	5.2%	2005
2006	1,403,329	+	1,164,973	-	90,944	=	2,477,358	1,496,505	+	516,127	-	150,493	=	1,862,139	714,618	+	607,894	-	130,310	=	1,192,202	5,531,699	16.4%	2006
2007	1,610,998	+	1,387,428	-	133,774	=	2,864,652	1,610,923	+	612,837	-	220,593	=	2,003,167	645,231	+	725,635	-	157,536	=	1,213,330	6,081,149	9.9%	2007
2008	1,819,024	+	1,468,062	-	151,290	=	3,135,796	1,746,139	+	538,283	-	264,114	=	2,020,308	630,710	+	535,960	-	171,360	=	995,310	6,151,414	1.2%	2008
2009	2,415,815	+	2,184,417	-	162,951	=	4,437,281	2,253,103	+	697,800	-	199,417	=	2,751,486	752,699	+	558,679	-	123,209	=	1,188,169	8,376,936	36.2%	2009
2010	2,646,504	+	1,747,635	-	201,231	=	4,192,908	1,830,556	+	466,799	-	205,950	=	2,091,405	743,378	+	509,792	-	150,956	=	1,102,214	7,386,527	-11.8%	2010
2011	3,037,112	+	1,707,313	-	247,738	=	4,496,687	2,305,854	+	656,256	-	263,223	=	2,698,887	862,401	+	530,564	-	172,770	=	1,220,195	8,415,769	13.9%	2011
2012	3,978,438	+	2,591,117	-	220,923	=	6,348,632	3,109,940	+	1,039,716	-	315,783	=	3,833,873	949,010	+	704,828	-	180,634	=	1,473,204	11,655,709	38.5%	2012
2013	5,039,832	+	3,055,329	-	268,024	=	7,827,137	3,996,673	+	1,313,678	-	363,950	=	4,946,401	1,203,072	+	937,952	-	146,624	=	1,994,400	14,767,938	26.7%	2013
2014	4,346,624	+	2,151,591	-	234,329	=	6,263,886	3,379,009	+	706,362	-	431,890	=	3,653,481	935,411	+	648,592	-	158,471	=	1,425,532	11,342,899	-23.2%	2014
2015	4,437,613	+	2,423,182	-	201,390	=	6,659,405	3,701,443	+	708,436	-	328,395	=	4,081,484	777,273	+	644,274	-	101,656	=	1,319,891	12,060,780	6.3%	2015
2016	5,562,218	+	3,614,057	-	240,642	=	8,935,633	4,198,692	+	676,987	-	266,589	=	4,609,090	848,615	+	736,443	-	81,689	=	1,503,369	15,048,092	24.8%	2016
2017	4,411,923	+	3,194,599	-	278,082	=	7,328,440	2,821,945	+	519,400	-	346,936	=	2,994,409	667,350	+	631,998	-	79,854	=	1,219,494	11,542,343	-23.3%	2017
2018	4,507,176	+	2,896,353	-	400,172	=	7,003,357	2,905,178	+	607,209	-	309,312	=	3,203,075	536,119	+	706,634	-	71,994	=	1,170,759	11,377,191	-1.4%	2018
2019	3,626,610	+	2,560,935	-	230,262	=	5,957,283	2,062,966	+	592,146	-	292,464	=	2,362,648	480,735	+	743,474	-	65,619	=	1,158,590	9,478,521	-16.7%	2019
2020	6,502,261	+	3,996,554	-	458,150	=	10,040,665	2,761,297	+	775,852	-	239,096	=	3,298,053	476,682	+	1,490,783	-	60,027	=	1,907,438	15,246,156	60.8%	2020
2021 Int.	7,911,658	+	5,214,791	-	320,163	=	12,806,286	3,933,398	+	1,140,642	-	83,962	=	4,990,078	675,450	+	2,816,308	-	246,849	=	3,244,909	21,041,273	38.0%	2021 Int.
TOTAL	88,090,225	+	55,111,131	-	6,102,770	=	137,098,586	65,302,977	+	17,971,910	-	6,179,656	=	77,095,231	26,654,140	+	18,045,283	-	4,140,253	=	40,559,170	254,752,987		

Total Firearm Units Produced for the United States Market Annually



Source: AFMER and U.S. International Trade Commission (USITC)

Firearms to U.S. Market (1990 – 2021 Interim)



CUMULATIVE ANNUAL FIREARM PRODUCTION PLUS (+) IMPORTS LESS (-) EXPORTS

Source: AFMER and U.S. International Trade Commission (USITC)

FACT

From 1990 to 2020, more than 254.8 million firearms have been made available to the U.S. market.

Estimated Number of Semi-Automatic Firearms for U.S. Market 1990 - 2020	
Estimated Semi-Automatic Handguns	100,000,000
Estimated Semi-Automatic Shotguns	13,000,000
Estimated Semi-Automatic Rifles	44,500,000
ESTIMATED TOTAL SEMI-AUTOMATIC FIREARMS 1990 - 2020	**157,500,000**
Sources: USITC, ATF AFMER & NSSF estimates	

During the 31-year period covered in this report (1990 – 2020),

the violent crime rate has decreased by → **29.8** percent

and unintentional firearm-related fatalities have declined by → **66.2** percent

Sources: 2020 FBI Uniform Crime Reports and National Safety Council Injury Facts (online, for 2020 data)

INDUSTRY INTELLIGENCE REPORTS

KEY FINDINGS

- The latest figures show that 71.1% of U.S. pistol production fell into either the “up to” 9mm calibers (58.3%) or the “up to”.50 calibers (12.8%).
- The 2020 top-25 U.S. firearm manufacturers accounted for 88.0% of the U.S. production total for the year.
- Smith & Wesson Inc. topped the list in 2020 accounting for 23.8% of total firearm production in the U.S. reported, followed by Sturm, Ruger & Company, Inc. 17.0%; Sig Sauer Inc. 11.1%; Glock Inc. 4.6%; Springfield Inc. 4.0%; and Maverick Arms, Inc. 3.5%.
- Firearm-ammunition manufacturing accounted for nearly 11,000 employees producing over $4.8 billion in goods shipped in 2020.
- In 2020, the greatest number of imported pistols came from Austria (1,278,624) representing 32.6% of all imported pistols. Austria was followed by Brazil with 849,207 or 21.6%, Croatia 13.3% with 521,932 units, and 8.8% were imported from Turkey (344,782).
- Brazil was the source of the greatest number of revolvers imported in 2020 (186,796), followed by Italy with 44,796, Philippines 23,120, and 19,234 imported from Germany .
- The greatest number of shotguns imported in 2020 came from Turkey (1,045,615), China (205,462) and Italy (175,756); and for rifles, Canada (212,218), Brazil (120,864) and Japan (78,239). Spain (118,475) was the source of the highest of number of muzzleloaders imported, followed by Italy (35,942).
- According to USITC data, the U.S. exported 761,521 total firearms in 2020 as compared with 593,618 in 2019 — an increase of 28.3 percent.
- According to data in reports such as ATF Firearms Commerce in the United States, ATF Annual Firearms Manufacturing and Exportation Reports and Congressional Research Service, the estimated total number of overall firearms in civilian possession is 473.7 million.

SOURCES

Total Production	Detail data source: The 2020 Annual Firearms Manufacturing and Export Report (AFMER). This annual report is prepared by the office of Firearms and Explosives Services Division (FESD), Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), Washington D.C. (Historical analysis conducted by NSSF.) For purposes of this report only, “Production” is defined as firearms, including separate frames, receivers, actions or barreled actions, manufactured and disposed of in commerce during each calendar year. The ATF’s latest full AFMER is for calendar year 2020, since the agency embargoes the data for a period of one year. Production totals data source: The AFMER 2020 as reported through March 10, 2021 -- reviewed/adjusted by NSSF (adjustments are noted on page 2). **For more information visit** atf.gov/content/about/statistics
Manufacturing Trends	U.S. Census Bureau: Economic Census, 2020 Annual Survey of Manufactures: Tables. The 2020 data is available through the U.S. Census Bureau website: https://www.census.gov/programs-surveys/asm/data/tables.html Historical analysis conducted by NSSF.
Firearm Imports for Consumption / Total Exports	U.S. Department of Commerce and the U.S. International Trade Commission (USITC) - Interactive Tariff and Trade DataWeb: dataweb.usitc.gov U.S. Census Bureau for corrections to import/export data prior to year 2010 may be found at census.gov/foreign-trade/statistics/corrections/index.html
Manufacturers Export	The 2020 Annual Firearms Manufacturing and Export Report (AFMER) atf.gov/content/about/statistics

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Item #30336-22 10/22

Exhibit B

2021 National Firearms Survey

William English, PhD

Georgetown University

Draft Report: July 13, 2021

Abstract

This report summarizes the findings of a national survey of firearms ownership and use conducted between February 17th and March 23rd, 2021 by the professional survey firm Centiment. This survey, which is part of a larger book project, aims to provide the most comprehensive assessment of firearms ownership and use patterns in America to date. This online survey was administered to a representative sample of approximately fifty-four thousand U.S. residents aged 18 and over, and it identified 16,708 gun owners who were, in turn, asked in-depth questions about their ownership and their use of firearms, including defensive uses of firearms.

Consistent with other recent survey research, the survey finds an overall rate of adult firearm ownership of 31.9%, suggesting that in excess of 81.4 million Americans aged 18 and over own firearms. The survey further finds that approximately a third of gun owners (31.1%) have used a firearm to defend themselves or their property, often on more than one occasion, and it estimates that guns are used defensively by firearms owners in approximately 1.67 million incidents per year. Handguns are the most common firearm employed for self-defense (used in 65.9% of defensive incidents), and in most defensive incidents (81.9%) no shot was fired. Approximately a quarter (25.2%) of defensive incidents occurred within the gun owner's home, and approximately half (53.9%) occurred outside their home, but on their property. About one out of ten (9.1%) defensive gun uses occurred in public, and about one out of twenty (4.8%) occurred at work.

A majority of gun owners (56.2%) indicate that they carry a handgun for self-defense in at least some circumstances, and about 35% of gun owners report carrying a handgun with some frequency. We estimate that approximately 20.7 million gun owners (26.3%) carry a handgun in public under a "concealed carry" regime; and 34.9% of gun owners report that there have been instances in which they had wanted to carry a handgun for self-defense, but local rules did not allow them to carry.

The average gun owner owns 5 firearms, and handguns are the most common type of firearm owned. 48.0% of gun owners have owned magazines that hold over 10 rounds, and 30.2% of gun owners – totaling about 24.6 million individuals – have owned an AR-15 or similarly styled rifle. Demographically, gun owners are diverse. 42.2% are female

and 57.8% are male. Approximately 25.4% of Blacks own firearms, 28.3% of Hispanics own firearms, 19.4% of Asians own firearms, and 34.3% of Whites own firearms.

1 Introduction

This report summarizes the main findings of a national survey of firearms ownership and use conducted between February 17th and March 23rd, 2021 by the professional survey firm Centiment. This survey, which is part of a larger book project, aims to provide the most comprehensive assessment of firearms ownership and use patterns in America to date.

Before this survey, the most authoritative resource for estimating details of gun ownership in the U.S. has been the "Comprehensive National Survey on Firearms Ownership and Use" conducted by Cook and Ludwig in 1994 (Cook and Ludwig, 1996), and the most authoritative resource for estimating defensive gun use in the U.S. has been the "National Self-Defense Survey" conducted by Kleck and Gertz in 1993 (Kleck and Gertz, 1995, 1998). While valuable resources, they are both now a quarter century old, and no surveys of similar scope and depth have documented firearms ownership and use in more recent years.

Hepburn et al. (2007) conducted a more limited survey to ascertain the "gun stock" in 2004, a version of which was repeated in 2015 (Azrael et al., 2017). However, as they explain in introducing their latter survey, data sources on firearms ownership and use remain scarce:

> Although the National Opinion Research Center's General Social Survey and other surveys have asked respondents whether they personally own a firearm or live in a home with firearms, few have asked about the number of guns respondents own, let alone more detailed information about these firearms and the people who own them, such as reasons for firearm ownership, where firearms were acquired, how much firearms cost, whether they are carried in public, and how they are stored at home (Smith and Son 2015; Gallup 2016; Morin 2014). Because of this, the best and most widely cited estimates of the number of firearms in civilian hands are derived from two national surveys dedicated to producing detailed, disaggregated, estimates of the U.S. gun stock, one conducted in 1994, the other in 2004 (Cook and Ludwig 1997, 1996; Hepburn et al. 2007).

Richer survey data on firearms ownership and use has been collected by industry association such as the National Shooting Sports Foundation (NSSF).[1] However, these surveys generally aim at assessing industry trends and market segmentation and are not necessarily designed to be nationally representative. In 2017, the Pew Research Center conducted one of the most recent and detailed surveys of the demographics of gun ownership (Brown, 2017).[2] Although it did not ask detailed questions concerning defensive use of firearms and the types of firearms owned, this recent Pew survey serves as a helpful benchmark for corroborating the general ownership estimates of the present survey.

Advances in survey research technologies make it possible to reach large, representative respondent populations today at a much lower cost than a quarter century ago. One of the limitations of the Cook and Ludwig survey, which sought to be nationally representative, was that the survey sample was relatively small, with about 2,500 respondents of whom only about 600, or (24.6%), owned a firearm when the survey was administered. As the investigators noted in their report, some sub-questions were not sufficiently well powered to make confident inferences, particularly concerning the defensive use of firearms. Similarly, Kleck and Gertz's survey was limited to 4,977 respondents, and the more recent surveys by Pew, Hepburn, and Azrael are all based on less than 4,000 respondents.

Today, professional survey firms like Centiment[3] cultivate large pools of survey respondents, enabling representative sampling, and have techniques that encourage high response and completion rates while also ensuring the integrity of responses.[4] The online survey summarized here was presented to a nationally representative sample (excluding residents of Vermont who had already responded to a pilot version of this survey) of 54,244 individuals aged 18 or over who completed an initial questionnaire that included an indirect question indicating whether they owned a firearm (respondents were presented with a list of items commonly owned for outdoor recreational purposes, including firearms, and were asked to

[1] See https://www.nssf.org/research/

[2] See Pew Research Center, June 2017, "America's Complex Relationship With Guns" https://www.pewresearch.org/social-trends/wp-content/uploads/sites/3/2017/06/Guns-Report-FOR-WEBSITE-PDF-6-21.pdf

[3] See https://www.centiment.co/

[4] See https://help.centiment.co/how-we-safeguard-your-data

select all items that they own).

This question identified 16,708 individuals as gun owners, who were then transferred to the main survey, which then asked detailed questions about their ownership and use of firearms. Given the length and detail of the survey, there was a slight amount of attrition, as 7.5%, or 1,258 individuals, did not make it through all questions to the end of the survey. However, 92.5% of the responding firearms owners (15,450) did proceed through all of the survey questions.

This survey thus contains what we believe is the largest sample of firearms owners ever queried about their firearms ownership and firearms use in a scientific survey in the United States. This survey was approved by Georgetown University's Institutional Review Board. Of note, this survey was conducted just after a period of widespread social unrest across the U.S. and a contentious presidential election, which background check data suggests led to record gun sales (approximately 39.7 million in 2020, up 40% from the prior year).[5] It is thus a comprehensive and timely assessment of the state of firearms ownership and use in the United States. Finally, the extraordinarily large size of this sample enables us to make well-powered, statistically informative inferences within individual states, which considerably extends the value of this data.

The initial sample of respondents achieved excellent demographic representation across all 49 states and DC, excluding Vermont (see Appendix A and B). For the purpose of estimating firearms ownership rates for the general U.S. population we employed raked weighting on gender, income, age, race, and state of residence. Note that there was a brief period in the first two days after the soft launch of the survey that comprehensive demographic data was not collected from those respondents who did not indicate firearms ownership, and thus did not proceed to the main survey (approximately 300 respondents). Although the survey company, Centiment, maintained demographic data on these panel respondents, it was determined that this data was not as comprehensive as the data collected by the survey, at which point the demographic questions were moved to the front of the survey, and

[5]See McIntyre, Douglas A."Guns in America: Nearly 40 million guns were purchased legally in 2020 and another 4.1 million bought in January" https://www.usatoday.com/story/money/2021/02/10/this-is-how-many-guns-were-sold-in-all-50-states/43371461/

asked of all respondents, including those who did not indicate firearms ownership. For the purpose of calculating statistics on national firearms ownership rates, we exclude the entire sample of both firearms owners and non-firearms owners from these first two days (410 respondents), leaving us with 53,834 respondents after this date for whom we have comprehensive demographic data. Firearms-owning respondents from the first two days are included in subsequent analysis of firearms owners, and we do possess comprehensive demographic information for these individuals.

Appendix B contains tables reporting the demographic sampling rates and the Census demographics used for raked weighting of the national survey. Note that the overall effect of weights is minimal given the high representativeness of the initial sample. For the purposes of analyzing responses within the sub-sample of firearms owners, we do not employ weighting schemes, in part because the "true" demographics of gun ownership are not knowable from an authoritative source analogous to the U.S. Census Bureau. However, as a robustness exercise, using weights based on estimates derived from the larger survey response rates yields results that are substantially identical for the analysis of responses from firearms owners.

One of the challenges in asking questions about firearms is eliciting truthful responses from firearms owners who may be hesitant to reveal information about practices that are associated with public controversy. The "tendency to respond to questions in a socially acceptable direction" when answering surveys is often referred to as "social desirability bias" (Spector, 2004), and there is evidence that it can influence survey responses to questions regarding firearms. For example, when Rafferty et al. (1995) conducted a telephone survey of Michigan residents who had purchased a hunting license or registered a handgun, only 87.3 percent of the handgun registrants and 89.7 percent of hunting license holders reported having a gun in their household. Similarly, Ludwig et al. (1998) have documented a large gender gap in reporting of firearms ownership, finding that "in telephone surveys, the rate of household gun ownership reported by husbands exceeded wives' reports by an average of 12 percentage points." Asking questions via an anonymous survey instrument on the internet is likely to cause less concern or worry than traditional phone-based questionnaires with a live person on the other end or during face-to-face interviews, which is how the General Social Survey – one of the most prominent national surveys that regularly asks

about firearm ownership – is conducted.[6] Even when presented in the more impersonal setting of a computer interface, however, a survey must be worded thoughtfully so as to assure anonymity, and not give respondents reason to worry about answering truthfully.

This survey employs five common devices to encourage more truthful responses. First, it uses an indirect "teaser" question to pre-screen respondents in order to select those who own firearms. The initial question prompt presents the survey as concerned with "recreational opportunities and related public policies" and asks respondents if they own any of the following items, presented in a random order: Bicycle, Canoe or Kayak, Firearm, Rock Climbing Equipment, None of the Above. Only those who select "Firearm" are then presented the full survey. We also ask demographic questions at the outset, which allows us to assess the representativeness of the sample, including those who do not indicate firearms ownership. Second, the survey was carefully phrased so as to not suggest animus towards gun owners or ignorance of firearms-related terminology. Third, the survey assures respondents of anonymity. Fourth, in order to ensure that respondents are reading the survey questions carefully, and then responding with considered answers thereto, a "disqualifying" question (sometimes referred to as a "screening" question) was embedded a little over half of the way through the survey instructing respondents to select a particular answer for that question, which only those who read the question in its entirety would understand. Anyone registering an incorrect answer to this question was disqualified from the survey and their responses to any of the survey questions were neither considered nor tallied.

Finally, while responses were required for basic demographic questions, if questions of a sensitive nature were left blank, the software would first call attention to the blank response and prompt the respondent to enter a response. However, if a respondent persisted in not responding and again tried to progress, rather than kick them out of the survey, they would be allowed to progress to the next section in the interest of obtaining the maximum amount of information that they were willing to share. Respondents were not made aware of this possibility in advance, and in practice such "opting out" of a particular question was seldom done (less than 1% of responses for the average question). This is the reason that small

[6]For a description of the methods of the General Social Survey see: https://www.nsf.gov/pubs/2007/nsf0748/nsf0748_3.pdf

variations are sometimes observed in the total number of respondents for certain questions.

A pilot version of this survey was first fielded in Vermont as part of a research project aimed at documenting firearms ownership and firearms use rates in that specific state. The Vermont survey served as a proof of concept for the national version, demonstrating that this survey is a viable instrument for eliciting responses from firearms owners with both high response rates and low disqualification rates. The results of the Vermont survey are presented separately in Appendix A of this report and closely mirror national results.

This report focuses on providing descriptive statistics of answers to the major questions asked in the survey. Future research will examine responses, and relationships between them, in more detail. The report proceeds as follows: the next (second) section summarizes national firearms ownership estimates and demographics; the third section examines defensive uses of firearms; the fourth section examines question regarding carrying for self-defense; the fifth section summarizes ownership statistics, and the sixth section concludes.

2 Gun Ownership Demographics

- About a third of adults in the U.S. report owning a firearm, totaling about 81.4 million adult gun owners.
- 57.8% of gun owners are male, 42.2% are female.
- 25.4% of Blacks own firearms.
- 28.3% of Hispanics own firearms.
- 19.4% of Asians own firearms.
- 34.3% of Whites own firearms.

With raked weighting employed for gender, state, income, race, and age we find that 32.5% of US adults age 21 and over own a firearm. Expanding the sample population to include those age 18-20, who are restricted in some states from purchasing firearms, 31.9% of US adults age 18 and over own firearms. This is slightly above, but consistent with, the

most recent in-depth survey of firearms ownership conducted by Pew in 2017, which reports that 30% of adults in America own a firearm (Brown, 2017).

As a benchmark to assess the accuracy of the teaser question used to ascertain firearm ownership, we can also compare ownership rates of other items reported by respondents for this question. We find 52% of respondents indicating owning a bicycle, which closely matches Pew's finding that 53% of Americans own a bicycle, according to a poll conducted in 2014.[7]

The distribution of gun owners surveyed by state is illustrated in Figure 1, and ranges from 1,287 in California and 1,264 in Texas to 26 in Washington, DC and 24 in North Dakota.

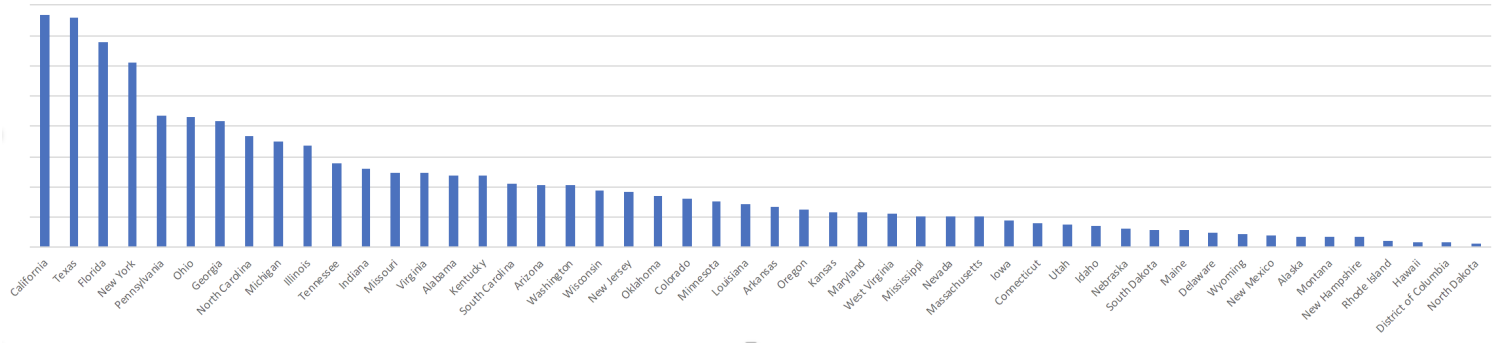

Figure 1: Distribution of Firearms Owners Surveyed

Regarding the demographics of gun ownership, we find that 57.8% of gun owners are male and 42.2% are female, the average age of gun owners is 46-50 years old, and the average annual household income is $80,000-$90,000. Approximately 18% of gun owners do not identify as White (alone). Overall, approximately 10.6% of gun owners identify as Black, 3.6% identify as Asian, 1.6% identify as American Indian, .2% identify as Pacific Islander, 82.0% identify as White, and 2.0% identify as Other. When analyzed within racial groups, we find that 25.4% of Blacks own firearms, 28.3% of Hispanics own firearms, 19.4% of Asians own firearms, and 34.3% of Whites own firearms.

According to the latest (2019) census estimates, there are approximately 255,200,373 individuals age 18 and over in the U.S., which implies that there are about 81.4 million

[7]See https://www.pewresearch.org/fact-tank/2015/04/16/car-bike-or-motorcycle-depends-on-where-you-live/

adult gun owners.[8] Note that this figure does not include those under the age of 18 who may use or possess firearms for purposes such as hunting or shooting sports.

In sum, firearms ownership is widespread, and firearms owners are diverse.

3 Defensive Use of Firearms

- 31.1% of gun owners, or approximately 25.3 million adult Americans, have used a gun in self-defense.
- In most cases (81.9%) the gun is not fired.
- There are approximately 1.67 million defensive uses of firearms per year.
- The majority of defensive gun uses take place outside of the home (74.8%), and many (51.2%) involve more than one assailant.
- Handguns are the firearm most commonly used in defensive incidents (65.9%), followed by shotguns (21.0%) and rifles (13.1%).

Defensive use of firearms was assessed through a series of questions that asked for increasingly detailed information from those who indicated that they had used a firearm in self-defense.

First, all gun owners were asked, "Have you ever defended yourself or your property with a firearm, even if it was not fired or displayed? Please do not include military service, police work, or work as a security guard." About a third (31.1%) answered in the affirmative, and they were then asked how many times they defended themselves with a firearm (from "once" to "five or more times"). As Figure 2 shows, a majority of gun owners who have used a firearm to defend themselves have done so on more than one occasion.

Given that 31.1% of firearms owners have used a firearm in self-defense, this implies that approximately 25.3 million adult Americans have defended themselves with a firearm. Answers to the frequency question suggest that these gun owners have ever been involved

[8] Census date is available at https://www2.census.gov/programs-surveys/popest/tables/2010-2019/national/asrh/nc-est2019-syasexn.xlsx

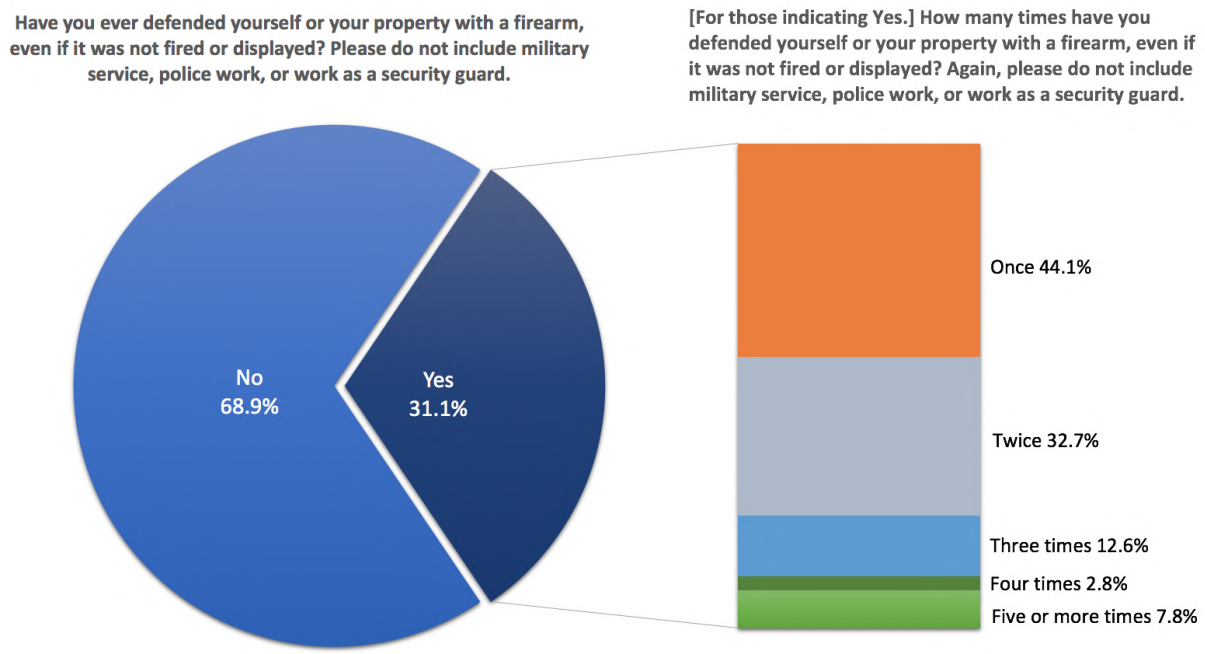

Figure 2: Defensive Gun Use: 31.1% of firearms owners have defended themselves of their property with a gun, and a majority have done so more than once.

in approximately 50 million defensive incidents. Assuming that defensive uses of firearms are distributed roughly equally across years, this suggests at least 1.67 million defensive uses of firearms per year in which firearms owners have defended themselves or their property through the discharge, display, or mention of a firearm (excluding military service, police work, or work as a security guard).[9]

[9]This is calculated by taking the total number of defensive incidents represented by the survey responses (50 million) and dividing by the number of adult years of the average respondent, which is 30. According to U.S. Census data, the average age of U.S. adults (i.e. the average age of those in the set of everyone 18 years or older) is 48, which also matches our survey data. Thus, the average respondent of the survey has 30 years of adult experience (48 years - 18 years = 30 adult years), over which the defensive incidents captured in this survey are reported.

Note that this estimate is inherently conservative for two reasons. First, it assumes that gun owners possessed firearms, or had access to firearms, from the age of 18. In so far as firearms were only first acquired/accessed by some respondents in later years, this would reduce the number of adult firearms owning years represented by the survey responses and result in a higher estimate of the number of defensive incidents per year. Second, this figure only captures defensive gun uses by those currently indicating firearms

Gun owner respondents were asked to answer detailed questions regarding each defensive incident that they reported. As Figure 3 shows, in the vast majority of defensive gun uses (81.9%), the gun was not fired. Rather, displaying a firearm or threatening to use a firearm (through, for example, a verbal threat) was sufficient. This suggests that firearms have a powerful deterrent effect on crime, which, in most cases, does not depend on a gun actually being fired or an aggressor being injured.

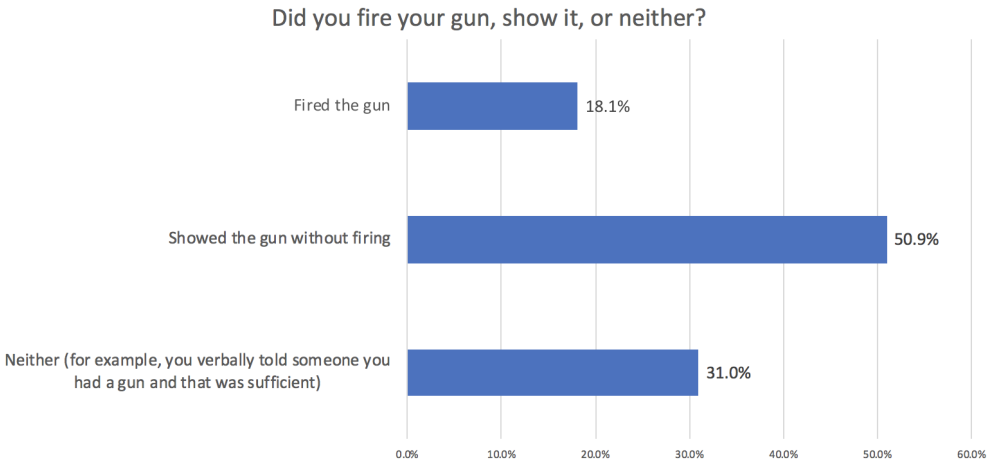

Figure 3: How Guns are Employed in Self-defense: In most defensive incidents no shots are fired.

Figure 4 shows where defensive gun uses occurred. Approximately a quarter (25.2%) of defensive incidents took place within the gun owner's home, and approximately half (53.9%) occurred outside their home but on their property. About one out of ten (9.1%) of defensive

ownership. According to Kleck and Gertz (1995), only 59.5% of respondents who reported a defensive gun use personally owed a gun (p.187). This would suggest that the true number of defensive gun uses, if those who do not personally own firearms are included in the estimate, could be substantially higher - perhaps as high as 2.8 million per year.

Finally, note that our overall approach assumes that children are not employing firearms for self-defense with any meaningful frequency. However, for the purpose of sensitivity analysis, if we lower the age used for calculating defensive incident frequency to assume that children as young as 12 years old are commonly possessing and using firearms for self-defense (and no non-firearms owning adults used firearms for self-defense), this would still imply 1.39 million defensive uses of firearms per year (48 years - 12 years = 36 years over which 50 million defensive incidents took place).

gun uses occurred in public, and about one out of twenty (4.8%) occurred at work.

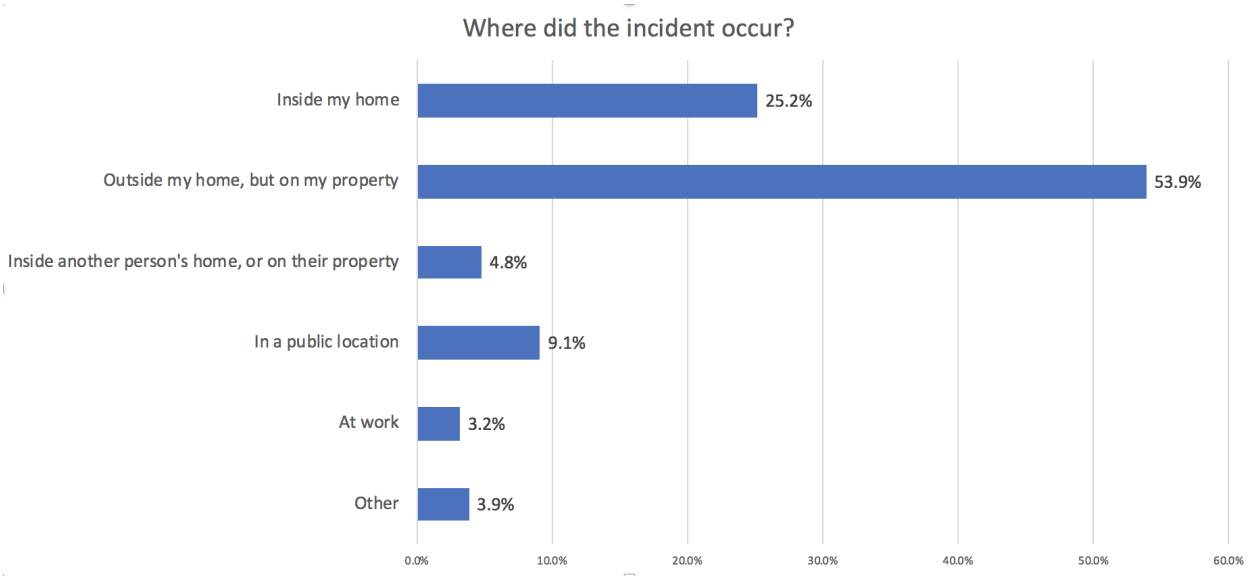

Figure 4: The Location of Defensive Incidents: Most take place outside the home.

For each incident, respondents were asked to indicate what sort of firearm was used. Figure 5 show the distribution of types of firearms employed in defensive incidents. Handguns were the most commonly used firearm for self-defense, used in nearly two-thirds (65.9%) of defensive incidents, followed by shotguns (21.0%) and rifles (13.1%).

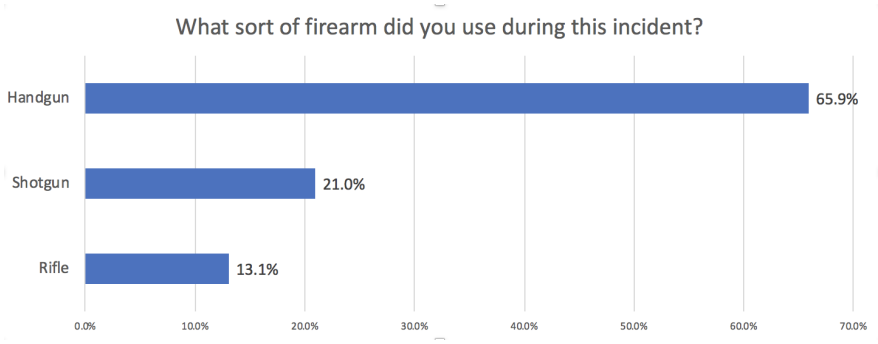

Figure 5: Type of Gun Used for Defense: Handguns are the most common type of firearm used in defensive encounters, followed by shotguns and rifles.

Respondents were also asked to indicate how many assailants were involved in each defensive incident. As Figure 6 illustrates, about half of defensive encounters (51.2%) involved

more than one assailant. Presumably, part of the value of using a firearm in self-defense is that it serves as a force multiplier against more powerful or more numerous assailants. Survey responses confirm that encountering multiple assailants is not an infrequent occurrence in defensive incidents. 30.8% of defensive incidents involved two assailants, and 20.4% involved three or more, while slightly less than half (48.8%) involved a single assailant.

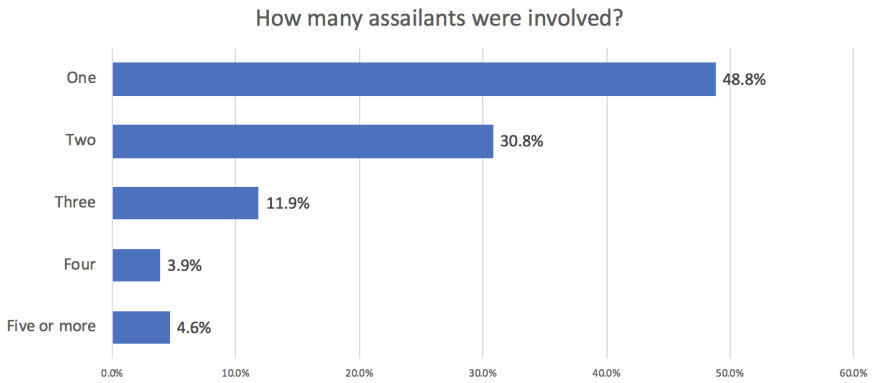

Figure 6: Distribution of the Number of Assailants Involved in a Defensive Incident: Multiple assailants are common.

Finally, after respondents answered these detailed questions about each defensive incident, which all flowed from their initial affirmative answer to the question, "Have you ever defended yourself or your property with a firearm, even if it was not fired or displayed?", all gun owners were asked, "Separate from any incident in which you directly used a gun to defend yourself, has the presence of a gun ever deterred any criminal conduct against you, your family, or your property?" Respondents answering in the affirmative could indicate how many time such deterrence occurred, from once to five or more occasions. As Figure 7 illustrates, separate from the self-defense incidents summarized earlier, 31.8% of gun owners reported that the mere presence of a gun has deterred criminal conduct, and 40.2% of these individuals indicated that this has happened on more than one occasion. Extrapolated to the population at large, this suggests that approximately 25.9 million gun owners have been involved in an incident in which the presence of a firearm deterred crime on some 44.9 million occasions. This translates to a rate of approximately 1.5 million incidents per year for which the presence of a firearm deterred crime.

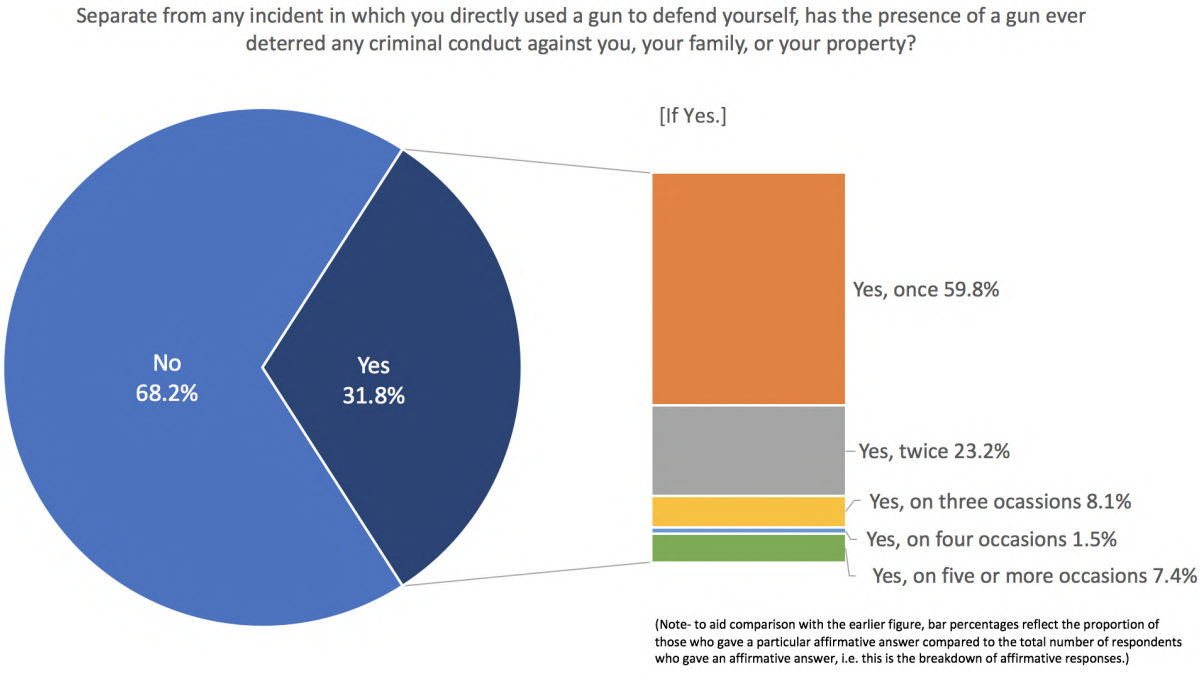

Figure 7: Frequency with which Firearms Deter Crime: 31.8% of firearms owners report that the presence of a firearm has deterred criminal conduct against them, often on more than one occasion.

4 Carry Outside of the Home

- A majority of gun owners (56.2%) indicate that there are some circumstances for which they carry a handgun for self-defense.
- Approximately 26.3% of gun owners, or 20.7 million individuals, carry handguns for defensive purposes under a "concealed carry" regime.
- About a third of gun owners (34.9%) have wanted to carry a handgun for self-defense in a particular situation but local rules prohibited them from doing so.

As Figure 8 illustrates, a majority of gun owners (56.2%), or about 45.8 million, indicate that there are some circumstances in which they carry a handgun for self-defense (which can include situations in which no permit is required to carry, such as on their own property);

and about 35% of gun owners report carrying a handgun with some frequency (indicating that they carry "Sometimes," "Often," or "Always or almost always."). Moreover, as Figure 9 summarizes, 34.9% of gun owners report that there have been instances in which they wanted to carry a handgun for self-defense, but local rules did not allow them to carry.

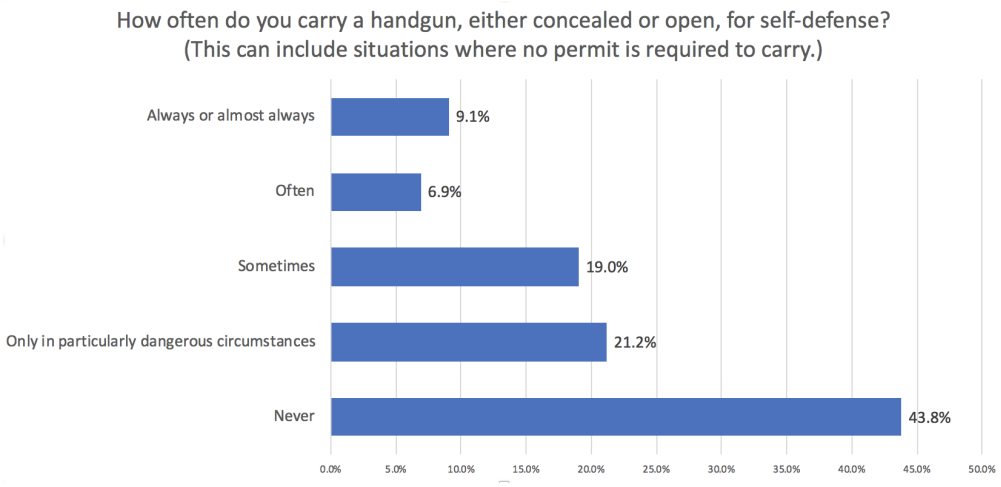

Figure 8: Frequency of Defensive Carry: Carrying a handgun for self-defense is common.

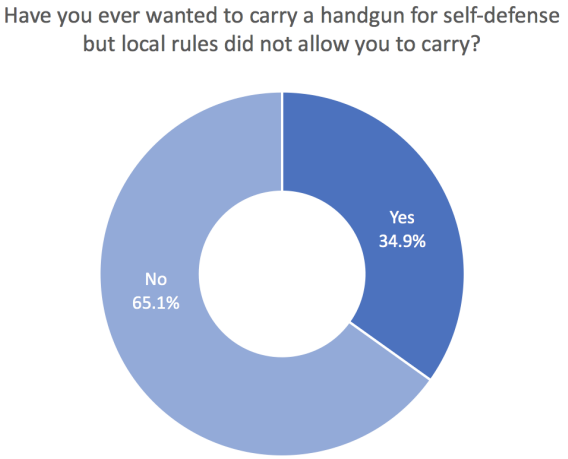

Figure 9: Prohibition of Carry: About a third of gun owners have wanted to carry a handgun for self-defense in a particular situation but local rules prohibited them from doing so.

Assessing the number of people who carry a concealed handgun in public is complicated due, in part, to the proliferation of so-called "constitutional carry" or "permitless carry"

states in recent years. These states - about 18 at the time this survey was conducted - generally allow adults in good legal standing (often restricted to those age 21 and older) to carry a concealed weapon without a permit. Most of these states previously had a permitting process for concealed carry and required permits to be renewed at regular intervals in order to remain valid. Under constitutional carry, law abiding adults in these states are permitted to carry concealed without an official "permit." However, most of these states continue to issue permits to residents who desire them because such permits can be useful for reciprocal carry benefits in other states. For example, a person acquiring a Utah carry permit would be entitled to carry a handgun in a number of other states such as neighboring Colorado and Nevada.[10] Thus, while basically all gun owners age 21 and over are "permitted" to carry a handgun for self-defense in constitutional carry states, many individuals may also possess a "permit," even though it is redundant for in-state carry.

Unsurprisingly, when asked "Do you have a concealed carry permit?" gun owning residents of many constitutional carry states respond in the affirmative at high rates. Also complicating this question about concealed carry permits is the fact that many states refer to such permits by different names, the fact that the right to carry a handgun can be conferred in certain circumstances by hunting or fishing licenses in some states,[11] and the existence of other related permits, some of which do not license concealed carry (e.g. standard pistol permits in North Carolina or New York, eligibility certificates in Connecticut) and some of which do (most License To Carry permits required for handgun ownership in Massachusetts, state pistol permits in Connecticut, and LEOSA permits available to current and retired law enforcement officers nationwide). Finally, it is also possible for individuals to obtain concealed carry permits in states other than the one in which they reside.

In order to provide a robust but conservative estimate of those who actually carry in public, we code as "public carriers" those individuals who indicated both that they have a

[10] See https://bci.utah.gov/concealed-firearm/reciprocity-with-other-states/

[11] For example, a number of states such as California, Georgia, and Oregon allow those with a hunting or fishing license to carry concealed while engaged in hunting or fishing or while going to or returning from an expedition. See: https://oag.ca.gov/sites/all/files/agweb/pdfs/firearms/pdf/cfl2016.pdf, https://law.justia.com/codes/georgia/2010/title-16/chapter-11/article-4/part-3/16-11-126/, https://codes.findlaw.com/or/title-16-crimes-and-punishments/or-rev-st-sect-166-260.html

concealed carry permit and that they carry a handgun for self-defense at least "sometimes." We also restrict analysis and population estimates to those age 21 and over given that most states restrict those under 21 from carrying concealed in public.

Using this simple definition, we find that 26.3% of gun owners are "public carriers," which translates to approximately 20.7 million individuals who carry handguns in public under a concealed carry regime. Note that this could include current and former law enforcement officers who may be represented in the survey. However, the number of active law enforcement officers in the U.S. is well under a million (approximately 700,000 in 2019).[12]

5 Types of Firearms Owned

- 82.7% of gun owners report owning a handgun, 68.8% report owning a rifle, and 58.4% report owning a shotgun.
- 21.9% of gun owners own only one firearm.
- The average gun owner owns 5 firearms.
- 30.2% of gun owners, about 24.6 million people, have owned an AR-15 or similarly styled rifle.
- 48.0% of gun owners have owned magazines that hold over 10 rounds.

6 Conclusion

This report summarizes the main findings of the most comprehensive survey of firearms ownership and use conducted in the United States to date. While many of its estimates corroborate prior survey research in this area, it also provides unique insights that are relevant to timely public policy debates - particularly regarding the defensive use of firearms. Moreover, it does so in the wake of a period of social unrest, which has led to rising crime rates and record gun sales. This report has focused on presenting top-line results and summary

[12] See https://ucr.fbi.gov/crime-in-the-u.s/2019/crime-in-the-u.s.-2019/tables/table-74

statistics, but the breadth and detail of this survey equip it to be a valuable resource for further research. This data will be analyzed in greater depth within a larger book-length project and ultimately made available for public use.

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Appendix A: Vermont Pilot Survey

An initial version of this survey was fielded in Vermont. We report below the top line results from the Vermont survey, which closely mirror the results of the national survey.

In sum, 572 Vermont residents were surveyed, of which 163 indicated owning firearms. The survey sample represented the demographics of Vermont well on all dimensions except gender, as women were overrepresented and comprised 65.2% of respondents. Thus, weights were employed for gender.

With weighting employed, we find that 30% of Vermont residents own a firearm. Given that the adult population of Vermont is approximately 486,000, this suggest that there are over 145,600 firearms owners in Vermont. 42.1% of Vermont firearms owners are estimated to be female and 57.9% male.

As Figure 10 illustrates, almost a third of gun owners (29.3%) reported having used a firearm to defend themselves or their property (not counting incidents that were due to military service, police work, or work as a security guard). In nearly half of these defensive gun uses (45.9%), respondents reported facing multiple assailants. 85.8% of all incidents were resolved without the firearm owner having to fire a shot (e.g. by simply showing a firearm or verbally threatening to use it).

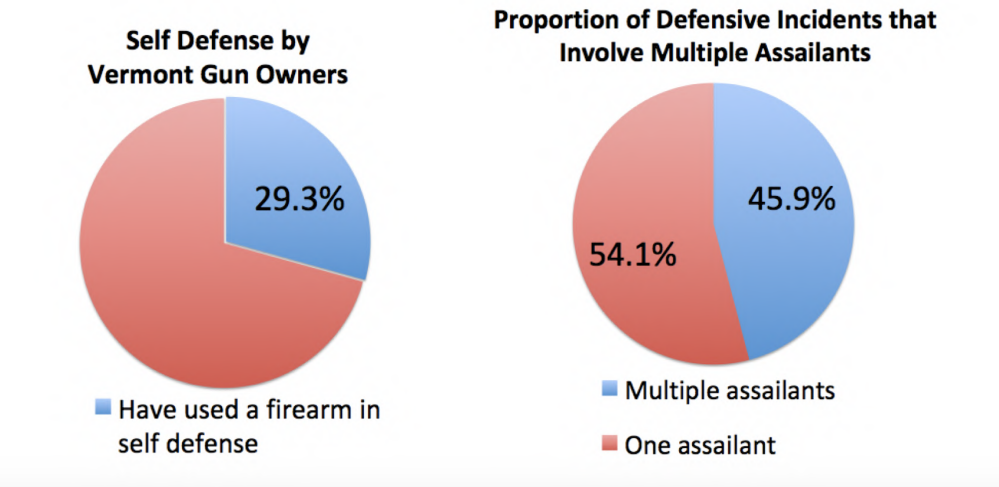


Figure 10: Proportion of gun owners in Vermont who have use a firearm in self-defense and number of assailants involved.

Appendix B: Sampling Proportions With and Without Weights for National Survey

Gender	Initial Sample Proportions	Census Based Weighted Proportions
Male	49.32%	49.23%
Female	50.68%	50.77%

Age Range	Initial Sample Proportions	Census Based Weighted Proportions
18-20	7.89%	5.04%
21-25	8.11%	8.58%
26-30	7.30%	9.24%
31-35	11.67%	8.67%
36-40	12.66%	8.44%
41-45	8.49%	7.70%
46-50	6.46%	8.09%
51-55	6.37%	8.13%
56-60	7.39%	8.52%
61-65	7.67%	7.87%
66-70	8.03%	6.59%
71-75	5.07%	5.13%
76-80	1.94%	3.50%
Over 80	0.93%	4.49%

Annual Household Income	**Initial Sample Proportions**	**Census Based Weighted Proportions**
Less than $10,000	8.87%	3.40%
$10,000-20,000	8.95%	4.89%
$20,000-30,000	9.69%	6.26%
$30,000-40,000	8.78%	7.06%
$40,000-50,000	7.44%	7.21%
$50,000-60,000	7.72%	6.96%
$60,000-70,000	6.00%	6.96%
$70,000-80,000	6.37%	6.37%
$80,000-90,000	4.51%	5.76%
$90,000-100,000	5.89%	5.76%
$100,000-150,000	17.67%	19.11%
Over $150,000	8.12%	20.23%

State of Residence	Initial Sample Proportions	Census Based Weighted Proportions
Alabama	1.83%	1.52%
Alaska	0.39%	0.22%
Arizona	2.10%	2.16%
Arkansas	1.10%	0.91%
California	9.75%	11.95%
Colorado	1.59%	1.75%
Connecticut	1.23%	1.09%
Delaware	0.56%	0.30%
District of Columbia	0.27%	0.21%
Florida	7.29%	6.51%
Georgia	3.67%	3.24%
Hawaii	0.36%	0.44%
Idaho	0.44%	0.56%
Illinois	4.14%	3.87%
Indiana	2.13%	2.05%
Iowa	0.91%	0.96%
Kansas	0.92%	0.89%
Kentucky	1.61%	1.36%
Louisiana	1.23%	1.41%
Maine	0.51%	0.41%
Maryland	1.67%	1.87%
Massachusetts	1.88%	2.13%
Michigan	3.21%	3.05%
Minnesota	1.36%	1.73%
Mississippi	0.83%	0.90%
Missouri	1.93%	1.86%
Montana	0.25%	0.33%
Nebraska	0.53%	0.59%
Nevada	0.90%	0.94%
New Hampshire	0.40%	0.42%
New Jersey	2.97%	2.81%

Race	Initial Sample Proportions	Census Based Weighted Proportions
White	81.26%	76.30%
Black	9.85%	13.40%
Asian	3.98%	5.90%
Native American	2.19%	1.30%
Pacific Islander	0.49%	0.20%
Other	2.22%	2.90%

EXHIBIT C

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

Civil Action No. 22-cv- 2680

ROCKY MOUNTAIN GUN OWNERS,
NATIONAL ASSOCIATION FOR GUN RIGHTS,
CHARLES BRADLEY WALKER,
BRYAN LAFONTE,
CRAIG WRIGHT,
GORDON MADONNA,
JAMES MICHAEL JONES, and
MARTIN CARTER KEHOE,

Plaintiffs,

v.

THE TOWN OF SUPERIOR,
CITY OF LOUISVILLE, COLORADO, CITY
OF BOULDER, COLORADO, and
BOARD OF COUNTY COMMISSIONERS OF BOULDER COUNTY,

Defendants.

Expert Report of Louis Klarevas

EXPERT REPORT OF LOUIS KLAREVAS

I, Louis Klarevas, declare:

1. I have been asked by the Defendants to prepare an Expert Report addressing recent trends in mass shootings in the United States, the use of assault weapons and large-capacity magazines (LCMs) in mass shootings and the impact on fatalities and harm caused, and how restrictions on assault weapons and LCMs have affected mass shooting violence. This Report is based on my own personal knowledge and experience, and, if I am called as a witness, I could and would testify competently to the truth of the matters discussed in this Report ("Report" hereinafter).

PROFESSIONAL QUALIFICATIONS

2. I am a security policy analyst and, currently, Research Professor at Teachers College, Columbia University, in New York. I am also the author of the book *Rampage Nation*, one of the most comprehensive studies on gun massacres in the United States.[1]

3. I am a political scientist by training, with a B.A. from the University of Pennsylvania and a Ph.D. from American University. During the course of my nearly 25-year career as an academic, I have served on the faculties of George Washington University, the City University of New York, New York University, and the University of Massachusetts. I have also served as Defense Analysis Research Fellow at the London School of Economics and Political Science and as United States Senior Fulbright Scholar in Security Studies at the University of Macedonia.

4. My current research examines the nexus between American public safety and gun violence, including serving as an investigator in a study funded by the National Institutes of Health that focuses on reducing intentional shootings at elementary and secondary schools.

5. In addition to having made over 100 media and public-speaking appearances, I am the author or co-author of more than 20 scholarly articles and over 70 commentary pieces. In

[1] Louis Klarevas, *Rampage Nation: Securing America from Mass Shootings* (2016).

2019, my peer-reviewed article on the effectiveness of restrictions on LCMs in reducing high-fatality mass shootings that result in six or more victims killed was published in the *American Journal of Public Health*.[2] This study found that jurisdictions with LCM bans experienced substantially lower gun massacre incidence and fatality rates when compared to jurisdictions not subject to similar bans. Despite being over 3 years old now, this study continues to be one of the highest impact studies in academia. It was recently referred to as "the perfect gun policy study," in part due to the study's "robustness and quality."[3]

6. Since January 1, 2019, I have been deposed, testified in court, or testified by declaration in the following cases (all in federal court), listed alphabetically by state:

California – Central District	
Rupp v. Bonta	8:17-cv-00746-JLS-JDE
California – Eastern District	
Wiese v. Bonta	2:17-cv-00903-WBS-KJN
California – Southern District	
Duncan v. Bonta	17-cv-1017-BEN-JLB
Jones v. Bonta	19-cv-01226-L-AHG
Miller v. Bonta	3:19-cv-1537-BEN-JBS
Nguyen v. Bonta	3:20-cv-02470-WQH-MDD
Colorado	
Gates v. Polis	1:22-cv-01866-NYW-SKC
Connecticut	
National Association for Gun Rights v. Lamont	3:22-cv-01118-JBA
Hawaii	
National Association for Gun Rights v. Lopez	1:22-cv-404-DKW-RT

[2] Louis Klarevas, et al., "The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings," 109 *American Journal of Public Health* 1754 (2019), *available at* https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2019.305311 (last accessed February 11, 2023).

[3] Lori Ann Post and Maryann Mason, "The Perfect Gun Policy Study in a Not So Perfect Storm," 112 *American Journal of Public Health* 1707 (2022), *available at* https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2022.307120 (last accessed February 11, 2023). According to Post and Mason, "Klarevas et al. employed a sophisticated modeling and research design that was more rigorous than designs used in observational studies. Also, they illustrated the analytic steps they took to rule out alternative interpretations and triangulate their findings, for example examining both state bans and federal bans. They helped build the foundation for future studies while overcoming the limitations of previous research." *Ibid.*

Illinois – Northern District	
Viramontes v. Cook County	1:21-cv-04595
National Association for Gun Rights v. Highland Park	22-cv-04774
Herrera v. Raoul	1:23-cv-00532
Illinois – Southern District	
Harrel v. Raoul[*]	23-cv-141-SPM
Langley v. Kelly[*]	23-cv-192-SPM
Barnett v. Raoul[*]	23-cv-209-SPM
Federal Firearms Licensees of Illinois v. Pritzker[*]	23-cv-215-SPM
Kenneally v. Raoul	3:23-cv-50039
Massachusetts	
National Association for Gun Rights v. Campbell	1:22-cv-11431-FDS
Oregon	
Oregon Firearms Federation v. Kotek[†]	2:22-cv-01815-IM
Fitz v. Rosenblum[†]	3:22-cv-01859-IM
Eyre v. Rosenblum[†]	3:22-cv-01862-IM
Azzopardi v. Rosenblum[†]	3:22-cv-01869-IM
Washington – Eastern District	
Brumback v. Ferguson	1:22-cv-03093-MKD

[*]Non-Consolidated Cases on the Same Briefing Schedule / [†]Consolidated Cases

7. In 2021, I was retained by the Government of Canada in the following cases which involved challenges to Canada's regulation of certain categories of firearms: *Parker and K.K.S. Tactical Supplies Ltd. v. Attorney General of Canada*, Federal Court, Court File No.: T-569-20; *Canadian Coalition for Firearm Rights, et al. v. Attorney General of Canada*, Federal Court, Court File No.: T-577-20; *Hipwell v. Attorney General of Canada*, Federal Court, Court File No.: T-581-20; *Doherty, et al. v. Attorney General of Canada*, Federal Court, Court File No.: T-677-20; *Generoux, et al. v. Attorney General of Canada*, Federal Court, Court File No.: T-735-20; and *Eichenberg, et al. v. Attorney General of Canada*, Federal Court, Court File No.: T-905-20. I testified under oath in a consolidated court proceeding involving all six cases in the Federal Court of Canada.

8. I have also submitted declarations in the following state court cases: *People of Colorado v. Sgaggio*, District Court, El Paso County, Colorado, 2022M005894 (Criminal); and *Guardian Arms v. Inslee*, Superior Court, Grant County, Washington, 23-2-00377-13 (Civil).

9. A true and correct copy of my current curriculum vitae is attached as **Exhibit A** to this Report.

10. I am being compensated at a rate of $480/hour for my work on this Report, $600/hour for any testimony in connection with this matter, and $120/hour for travel required to provide testimony.

OPINIONS

11. It is my professional opinion, based upon my extensive review and analysis of the data, that (1) in terms of individual acts of intentional criminal violence, mass shootings presently pose the deadliest threat to the safety of American society in the post-9/11 era, and the problem is growing nationwide; (2) high-fatality mass shootings involving assault weapons and/or LCMs, on average, have resulted in a substantially larger loss of life than similar incidents that did not involve assault weapons and/or LCMs; (3) mass shootings resulting in double-digit fatalities are relatively modern phenomena in American history, largely related to the use of assault weapons and LCMs; (4) assault weapons are used by private citizens with a far greater frequency to perpetrate mass shootings than to stop mass shootings; (5) handguns, as opposed to rifles (let alone rifles that qualify as assault weapons), are the most commonly owned firearms in the United States; and (6) states that restrict both assault weapons and LCMs experience fewer high-fatality mass shooting incidents and fatalities, per capita, than states that do not restrict assault weapons and LCMs. Based on these findings, it is my opinion that restrictions on assault weapons and LCMs have the potential to save lives by reducing the frequency and lethality of gun massacres.[4]

[4] For purposes of this Report, mass shootings are defined in a manner consistent with my book *Rampage Nation*, *supra* note 1 (*see* Excerpt Attached as **Exhibit B**). "Mass shootings" are shootings resulting in four or more victims being shot (fatally or non-fatally), regardless of location or underlying motive. As a subset of mass shootings, "high-fatality mass shootings" (also referred to as "gun massacres") are defined as shootings resulting in 6 or more victims being shot to death, regardless of location or underlying motive. The data on high-fatality mass shootings is from a data set that I maintain and continuously update. This data set is reproduced

I. MASS SHOOTINGS ARE A GROWING THREAT TO PUBLIC SAFETY

12. Examining mass-casualty acts of violence in the United States since 1991 points to two disturbing patterns.[5] First, as demonstrated in Table 1, the deadliest individual acts of intentional criminal violence in the United States since the terrorist attack of September 11, 2001, have all been mass shootings. Second, as displayed in Figures 1-2, the problem of high-fatality mass shooting violence is on the rise. To put the increase over the last three decades into perspective, between the 1990s and the 2010s, the average population of the United States increased approximately 20%. However, when the number of people killed in high-fatality mass shootings in the 1990s is compared to the number killed in such incidents in the 2010s, it reflects an increase of 260%. In other words, the rise in gun massacre violence has far outpaced the rise in national population—by a factor of 13. The obvious takeaway from these patterns and trends is that mass shootings pose a significant—and growing—threat to American public safety.

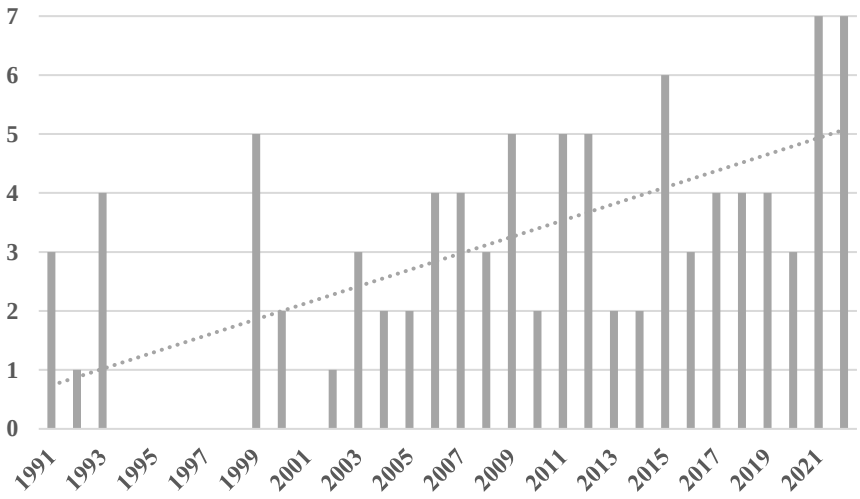
Table 1. The Deadliest Acts of Intentional Criminal Violence in the U.S. since 9/11

	Deaths	Date	Location	Type of Violence
1	60	October 1, 2017	Las Vegas, NV	Mass Shooting
2	49	June 12, 2016	Orlando, FL	Mass Shooting
3	32	April 16, 2007	Blacksburg, VA	Mass Shooting
4	27	December 14, 2012	Newtown, CT	Mass Shooting
5	25	November 5, 2017	Sutherland Springs, TX	Mass Shooting
6	23	August 3, 2019	El Paso, TX	Mass Shooting
7	21	May 24, 2022	Uvalde, TX	Mass Shooting

in **Exhibit C**. Unless stated otherwise, all of the data used to perform original analyses and to construct tables and figures in Sections I, II, and VI of this Report are drawn from **Exhibit C**.

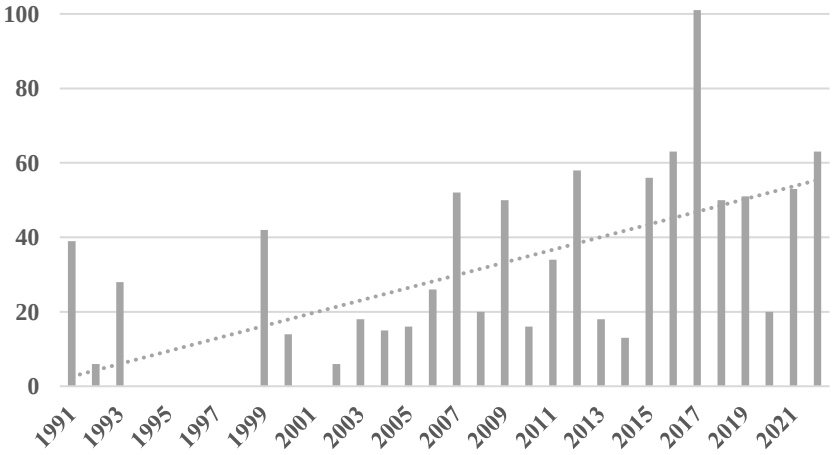
[5] Because the analysis in Section VI of this Report necessarily uses data from 1991 through 2022, for purposes of consistency (and to avoid any confusion), the analyses in Sections I and II also use data from 1991 through 2022.

Figure 1. Annual Trends in High-Fatality Mass Shooting Incidents, 1991-2022



Note: The dotted line is a linear trendline. A linear trendline is a straight line that captures the overall pattern of the individual data points. When there is a positive relationship between the x-axis and y-axis variables, the trendline moves upwards from left to right. When there is a negative relationship between the x-axis and y-axis variables, the trendline moves downwards from left to right.

Figure 2. Annual Trends in High-Fatality Mass Shooting Fatalities, 1991-2022



Note: The dotted line is a linear trendline. A linear trendline is a straight line that captures the overall pattern of the individual data points. When there is a positive relationship between the x-axis and y-axis variables, the trendline moves upwards from left to right. When there is a negative relationship between the x-axis and y-axis variables, the trendline moves downwards from left to right.

II. THE USE OF ASSAULT WEAPONS AND LCMS ARE MAJOR FACTORS IN THE RISE OF MASS SHOOTING VIOLENCE

13. In addition to showing that the frequency and lethality of high-fatality mass shootings are on the rise nationally, the data point to another striking pattern: both assault weapons and LCMs are being used with increased frequency to perpetrate gun massacres.[6] As shown in Figures 3-4, based on high-fatality mass shootings where details allow a determination on the use of assault weapons and LCMs are available, over half of all incidents in the last four years involved assault weapons and all incidents in the last four years involved LCMs having a capacity greater than 10 bullets. As shown in Figures 5-6, a similar pattern emerges when examining deaths in high-fatality mass shootings in the last four years, with 62% of deaths resulting from incidents involving assault weapons and 100% of deaths resulting from incidents involving LCMs having a capacity greater than 10 bullets. These trends demonstrate that, among perpetrators of gun massacres, there is a growing preference for using assault weapons and LCMs to carry out their attacks.[7]

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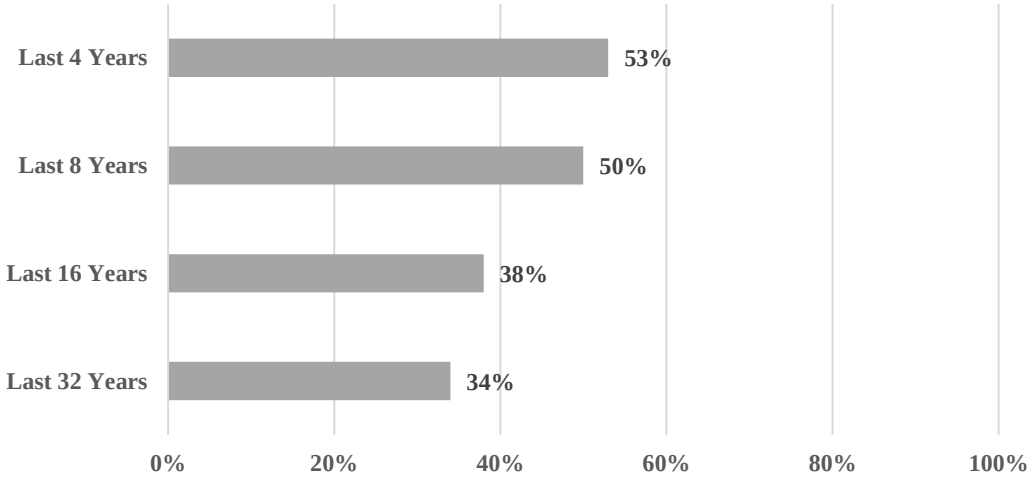
[6] Assault weapons are generally semiautomatic firearms that fall into one of the following three categories: assault pistols, assault rifles, and assault shotguns. For purposes of this Report, unless otherwise stated, assault weapons are defined and coded in a manner consistent with **Exhibit C**. Per the 1994 federal ban definition, LCMs are generally ammunition-feeding devices with a capacity greater than 10 bullets. The ammunition threshold of the 1994 federal definition (greater than 10 bullets) is identical to that of the definition of LCMs in the ordinances of all four jurisdictions that are parties in the present case. For purposes of this Report, unless otherwise stated, LCMs will be defined in a manner consistent with the 1994 federal ban on LCMs, which defined them as ammunition-feeding devices with a capacity greater than 10 bullets. While the term "assault weapons" as referenced in the present case is defined by law, the modern-day roots of the term can be traced back to the 1980s, when gun manufacturers branded military-style firearms with the label in an effort to make them more marketable to civilians. *See*, Violence Policy Center, *Assault Weapons and Accessories in America* (1988) (Attached as **Exhibit D**); Violence Policy Center, *Bullet Hoses: Semiautomatic Assault Weapons—What Are They? What's So Bad about Them?* (2003) (Attached as **Exhibit E**); Phillip Peterson, *Gun Digest Buyer's Guide to Assault Weapons* (2008) (Relevant Excerpt Attached as **Exhibit F**); and Erica Goode, "Even Defining 'Assault Rifles' Is Complicated," *New York Times*, January 16, 2013, *available at* https://www.nytimes.com/2013/01/17/us/even-defining-assault-weapons-is-complicated.html (last accessed January 24, 2023).

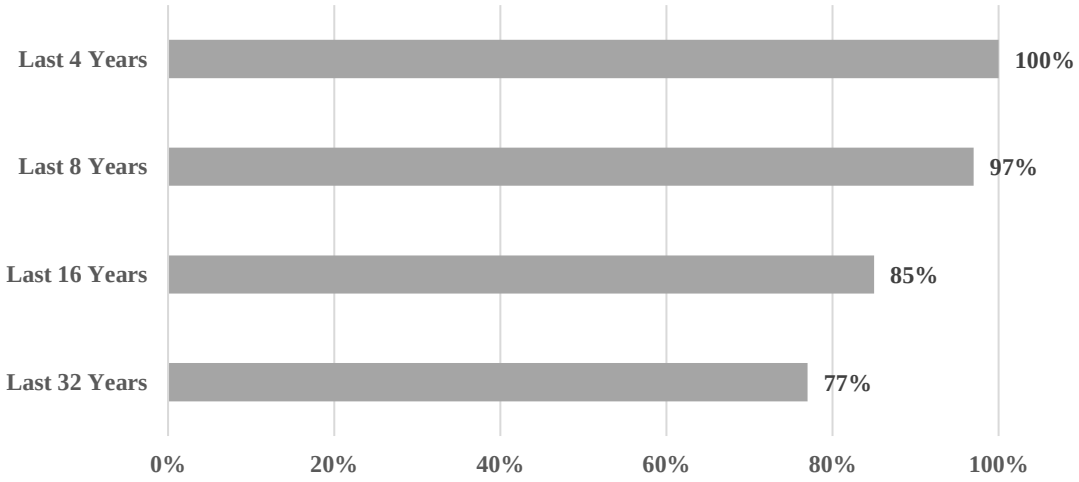
[7] Out of all 93 high-fatality mass shootings in the United States between 1991 and 2022, it cannot be determined whether LCMs were used in 14 of those incidents. Furthermore, for two

Figure 3. Share of High-Fatality Mass Shooting Incidents Involving Assault Weapons, 1991-2022



Note: The calculations in Figure 3 exclude incidents in which the firearms used are unknown.

Figure 4. Share of High-Fatality Mass Shooting Incidents Involving LCMs (Ammunition Capacity Greater Than 10 Rounds), 1991-2022



Note: The calculations in Figure 4 exclude incidents in which it is unknown if LCMs were used.

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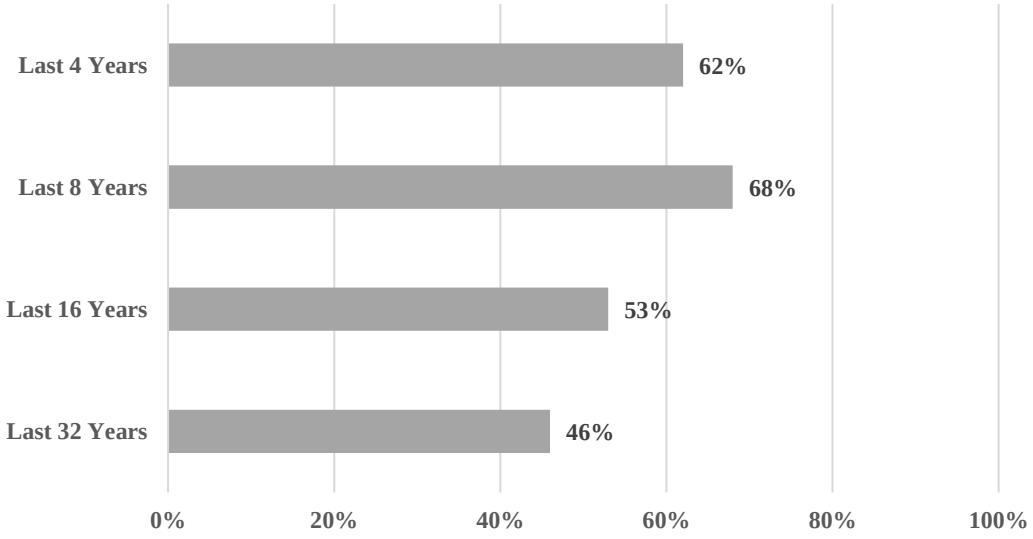
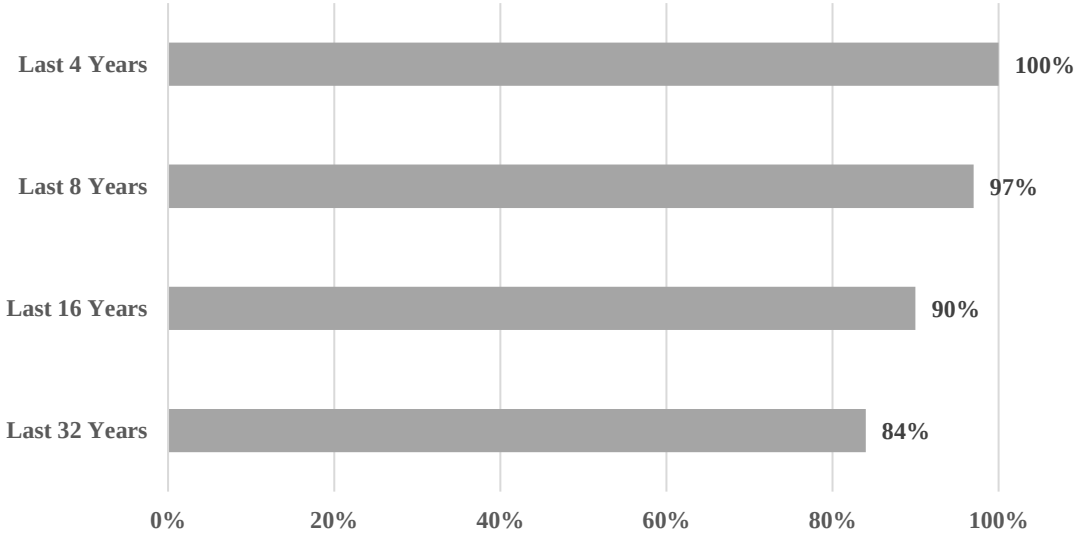
of these 14 incidents, it is also not possible to determine whether they involved assault weapons. Therefore, the tables, figures, and percentages discussed in this section of the Report are based on calculations that only use data points from the incidents in which the involvement of assault weapons and/or LCMs could be determined.

Figure 5. Share of High-Fatality Mass Shooting Deaths Resulting from Incidents Involving Assault Weapons, 1991-2022



Note: The calculations in Figure 5 exclude incidents in which the firearms used are unknown.

Figure 6. Share of High-Fatality Mass Shooting Deaths Resulting from Incidents Involving LCMs (Ammunition Capacity Greater Than 10 Rounds), 1991-2022



Note: The calculations in Figure 6 exclude incidents in which it is unknown if LCMs were used.

14. The growing use of assault weapons to carry out high-fatality mass shootings is an obvious theme reflected in the data. The *disproportionate* resort to assault weapons by perpetrators of high-fatality mass shootings is another clear theme. Based on National Sport Shooting Foundation (NSSF) and federal government data, "modern sporting rifles"—which is a firearm industry term for AR-15-platform and AK-47-platform firearms—make up approximately 5.3% of all firearms in circulation in American society, according to the most recent publicly available data (24.4 million out of an estimated 461.9 million firearms).[8] And, in all likelihood, this is an over-estimation because the figures appear to include firearms belonging to law enforcement agencies in the United States.[9] But even using this estimate, if assault weapons were used in proportion to the percentage of modern sporting rifles in circulation, approximately 5% of all high-fatality mass shootings would involve assault weapons. However, as seen in Figure 3 above, civilian ownership rates and mass-shooter use rates are not similar. Indeed, the current difference is approximately ten-fold, with the rate at which assault weapons

[8] The 5.3% ownership rate for modern sporting rifles was calculated using NSSF and Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) data. The NSSF estimates that there are approximately 24.4 million modern sporting rifles in civilian hands in the United States as of the end of 2020 (when the most recent data are available). NSSF, "Commonly Owned: NSSF Announces over 24 Million MSRs in Circulation," July 20, 2022, *available at* https://www.nssf.org/articles/commonly-owned-nssf-announces-over-24-million-msrs-in-circulation (last accessed January 3, 2023). In a 2020 report that captured data through the end of 2018, the NSSF estimated that there were 433.9 million total firearms in civilian circulation in the United States. NSSF, *Firearm Production in the United States with Firearm Import and Export Data*, Industry Intelligence Report, 2020, at 18, *available at* https://www.nssf.org/wp-content/uploads/2020/11/IIR-2020-Firearms-Production-v14.pdf (last accessed January 3, 2023). According to ATF data, in 2019 and 2020, an additional 28.0 million firearms entered the civilian stock nationwide. ATF, *National Firearms Commerce and Trafficking Assessment: Firearms in Commerce* (2022), at 181, 188, 193, *available at* https://www.atf.gov/firearms/docs/report/national-firearms-commerce-and-trafficking-assessment-firearms-commerce-volume/download (last accessed January 3, 2023). Assuming these figures reported by the NSSF and ATF are accurate, this brings the estimated number of firearms in civilian circulation through the end of 2020 to approximately 461.9 million. The ownership rate is calculated as follows: 24.4 million modern sporting rifles divided by 461.9 million total firearms equals approximately 5.3%.

[9] ATF, 2022, *supra* note 8, at 12; NSSF, 2020, *supra* note 8, at 2-3.

are now used to commit gun massacres far outpacing the rate at which modern sporting rifles circulate amongst civilians in the United States.[10]

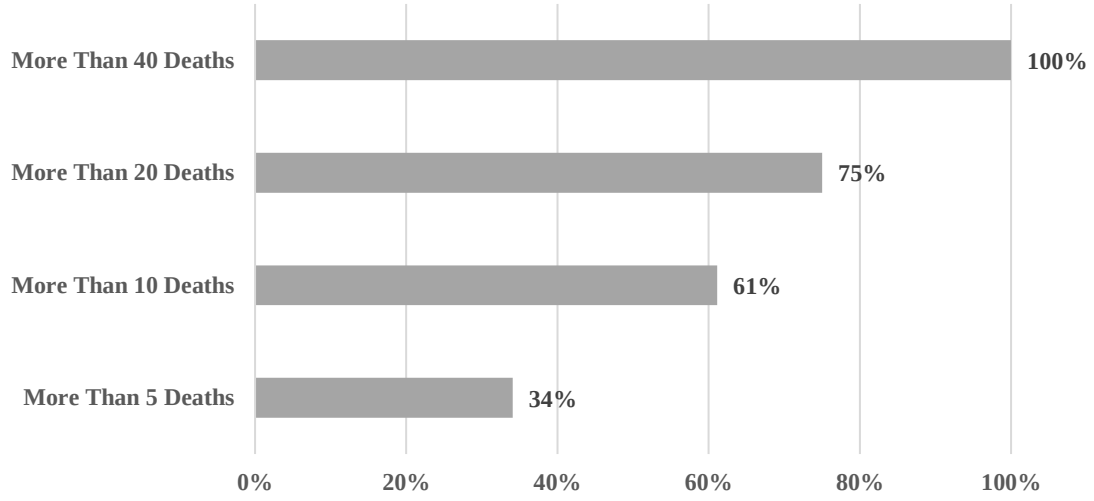
15. Another pattern that stands out when examining the relationship between assault weapons use and gun massacre violence reflects the disproportionately greater lethality associated with the use of assault weapons and LCMs. For instance, returning to the aforementioned list of the seven deadliest individual acts of intentional criminal violence in the United States since the coordinated terrorist attack of September 11, 2001, besides all seven of the incidents being mass shootings, six of the seven incidents (86%) involved assault weapons and LCMs, as shown in Table 2. When examining all high-fatality mass shootings since 1991, the relationship between assault weapons use, LCM use, and higher death tolls is striking. In the past 32 years, assault weapons and LCMs with an ammunition capacity greater than 10 rounds have been used, respectively, in 34% and 77% of all high-fatality mass shootings. However, as the fatality thresholds of such incidents increase, so too do the shares of incidents involving assault weapons and LCMs. For instance, assault weapons and LCMs were used, respectively, in 75% and 100% of all mass shootings resulting in more than 20 deaths (Figures 7-8). As the data show, there is an association between mass shooting lethality and the use of assault weapons and LCMs.

[10] Due to the lack of accurate data on the number of LCMs in civilian circulation, there is no way to perform a similar comparison using LCMs instead of modern sporting rifles.

Table 2. The Use of Assault Weapons and LCMs in the Deadliest Acts of Intentional Criminal Violence in the U.S. since 9/11

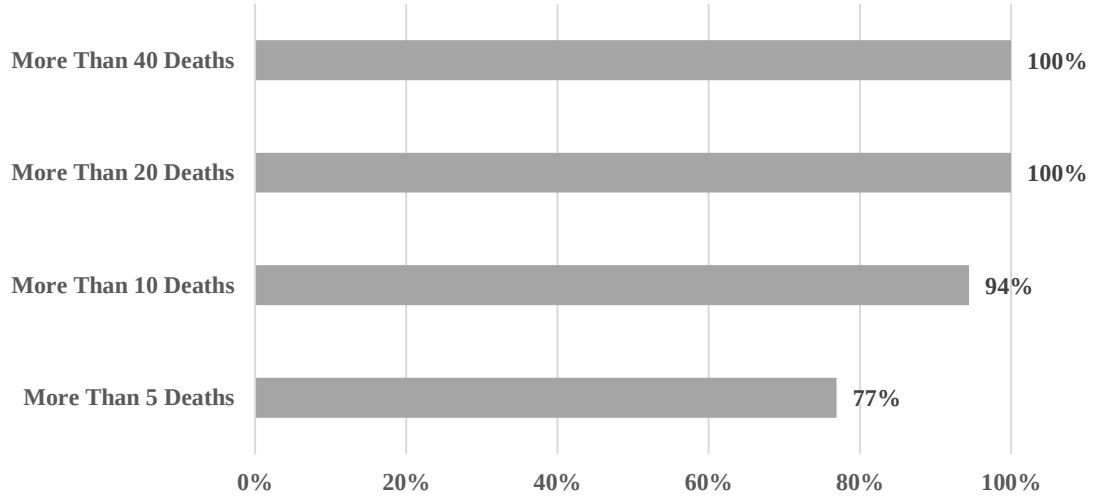
Deaths	Date	Location	Involved Assault Weapons	Involved LCMs (> 10 Rounds)
60	10/1/2017	Las Vegas, NV	✓ (AR-15)	✓
49	612/2016	Orlando, FL	✓ (AR-15)	✓
32	4/16/2007	Blacksburg, VA		✓
27	12/14/2012	Newtown, CT	✓ (AR-15)	✓
25	11/5/2017	Sutherland Springs, TX	✓ (AR-15)	✓
23	8/3/2019	El Paso, TX	✓ (AK-47)	✓
21	5/24/2022	Uvalde, TX	✓ (AR-15)	✓

Figure 7. Percentage of High-Fatality Mass Shootings Involving Assault Weapons by Fatality Threshold, 1991-2022



Note: The calculations in Figure 7 exclude incidents in which the firearms used are unknown.

Figure 8. Percentage of High-Fatality Mass Shootings Involving LCMs (Ammunition Capacity Greater Than 10 Rounds) by Fatality Threshold, 1991-2022



Note: The calculations in Figure 8 exclude incidents in which it is unknown if LCMs were used.

16. Of the 91 high-fatality mass shootings since January 1, 1991, in which the type of firearm used is known, 31 involved assault weapons, resulting in 425 deaths. The average death toll for these 31 incidents is 13.7 fatalities per shooting. By contrast, the average death toll for the 60 incidents in which it is known assault weapons were not used (which resulted in 490 fatalities) is 8.2 fatalities per shooting (Table 3). Furthermore, of the 79 high-fatality mass shootings since January 1, 1991, in which LCM use was determined, 61 involved LCMs with an ammunition capacity greater than 10 rounds, resulting in 704 deaths. The average death toll for these 61 incidents is 11.5 fatalities per shooting. The average death toll for the 18 incidents in which it is known LCMs were not used (which resulted in 132 fatalities) is 7.3 fatalities per shooting (Table 4). In other words, in the last 32 years, the use of assault weapons and LCMs in gun massacres has resulted, correspondingly, in 67% and 58% increases in average fatalities per incident (Tables 3-4).

17. Table 5 shows the average death tolls per high-fatality mass shooting incident that are attributable to assault weapons beyond deaths associated with the use of LCMs. When

LCMs with an ammunition capacity greater than 10 rounds are not used, the average death toll is 7.3 fatalities. When LCMs are used, but not in conjunction with assault weapons, the average death toll is 9.2 fatalities. When LCMs are used with assault weapons, the average death toll is 14.0 fatalities. The data show that using LCMs without an assault weapon resulted in a 26% increase in the average death toll. However, using LCMs with an assault weapon resulted in a 52% increase in the average death toll associated with incidents that involved LCMs without assault weapons and a 92% increase in the average death toll associated with incidents that involved neither LCMs nor assault weapons.

17. This review of the data suggests that assault weapons and LCMs are force multipliers when used in mass shootings.

Table 3. The Average Death Tolls Associated with the Use of Assault Weapons in High-Fatality Mass Shootings in the U.S., 1991-2022

	Average Death Toll for Incidents That Did Not Involve the Use of Assault Weapons	Average Death Toll for Incidents That Did Involve the Use of Assault Weapons	Percent Increase in Average Death Toll Associated with the Use of Assault Weapons
1991-2022	8.2 Deaths	13.7 Deaths	67%

Note: The calculations in Table 3 exclude incidents in which the firearms used are unknown.

Table 4. The Average Death Tolls Associated with the Use of LCMs (Ammunition Capacity Greater Than 10 Rounds) in High-Fatality Mass Shootings in the U.S., 1991-2022

	Average Death Toll for Incidents That Did Not Involve the Use of LCMs	Average Death Toll for Incidents That Did Involve the Use of LCMs	Percent Increase in Average Death Toll Associated with the Use of LCMs
1991-2022	7.3 Deaths	11.5 Deaths	58%

Note: The calculations in Table 4 exclude incidents in which it is unknown if LCMs were used.

Table 5. The Average Death Tolls Associated with the Use of LCMs (Ammunition Capacity Greater Than 10 Rounds) and Assault Weapons in High-Fatality Mass Shootings in the U.S., 1991-2022

Average Death Toll for Incidents Not Involving LCMs or AWs	Average Death Toll for Incidents Involving LCMs but Not AWs	Percent Increase	Average Death Toll for Incidents Involving LCMs but Not AWs	Average Death Toll for Incidents Involving LCMs and AWs	Percent Increase	Average Death Toll for Incidents Not Involving LCMs or AWs	Average Death Toll for Incidents Involving LCMs and AWs	Percent Increase
7.3	9.2	26%	9.2	14.0	52%	7.3	14.0	92%

Note: The calculations in Table 5 exclude incidents in which it is unknown if assault weapons and/or LCMs were used.

III. DOUBLE-DIGIT-FATALITY MASS SHOOTINGS ARE A POST-WORLD WAR II PHENOMENON IN AMERICAN HISTORY AND THEY INCREASINGLY INVOLVE ASSAULT WEAPONS

18. I have also examined the historical occurrence and distribution of mass shootings resulting in 10 or more victims killed since 1776 (Table 6 and Figure 9).[11] In terms of the origins of this form of extreme gun violence, there is no known occurrence of a mass shooting resulting in double-digit fatalities during the 173-year period between the nation's founding in 1776 and 1948. The first known mass shooting resulting in 10 or more deaths occurred in 1949. In other words, for 70% of its 247-year existence as a nation, the United States did not experience a

[11] I searched for firearm-related "murders," using variations of the term, setting a minimum fatality threshold of 10 in the Newspaper Archive online newspaper repository, *available at* www.newspaperarchive.com (last accessed October 2, 2022). The Newspaper Archive contains local and major metropolitan newspapers dating back to 1607. Incidents of large-scale, inter-group violence such as mob violence, rioting, combat or battle skirmishes, and attacks initiated by authorities acting in their official capacity were excluded.

single mass shooting resulting in double-digit fatalities. They are relatively modern phenomena in American history.[12]

19. After the first such incident in 1949, 17 years passed until a similar mass shooting occurred in 1966. The third such mass shooting then occurred nine years later, in 1975. And the fourth such incident occurred seven years after, in 1982. Basically, the first few mass shootings resulting in 10 or more deaths did not occur until the post-World War II era. Furthermore, these first few double-digit-fatality incidents occurred with relative infrequency, although the temporal gap between these first four incidents shrank with each event (Table 6 and Figure 10).[13]

[12] Using the Constitution's effective date of 1789 as the starting point would lead to the conclusion that, for 68% of its 234-year existence as a nation, the United States did not experience a mass shooting resulting in double-digit fatalities.

[13] Figures 9-10 are reproduced in larger form as **Exhibit G** of this Report.

Table 6. Mass Shootings Resulting in Double-Digit Fatalities in U.S. History, 1776-2022

	Date	Location	Deaths	Involved Assault Weapon(s)	Involved LCM(s)
1	9/6/1949	Camden, NE	13	N	N
2	8/1/1966	Austin, TX	14	N	Y
3	3/30/1975	Hamilton, OH	11	N	N
4	9/25/1982	Wilkes-Barre, PA	13	Y	Y
5	2/18/1983	Seattle, WA	13	N	N
6	4/15/1984	Brooklyn, NY	10	N	N
7	7/18/1984	San Ysidro, CA	21	Y	Y
8	8/20/1986	Edmond, OK	14	N	N
9	10/16/1991	Killeen, TX	23	N	Y
10	4/20/1999	Littleton, CO	13	Y	Y
11	4/16/2007	Blacksburg, VA	32	N	Y
12	3/10/2009	Geneva County, AL	10	Y	Y
13	4/3/2009	Binghamton, NY	13	N	Y
14	11/5/2009	Fort Hood, TX	13	N	Y
15	7/20/2012	Aurora, CO	12	Y	Y
16	12/14/2012	Newtown, CT	27	Y	Y
17	9/16/2013	Washington, DC	12	N	N
18	12/2/2015	San Bernardino, CA	14	Y	Y
19	6/12/2016	Orlando, FL	49	Y	Y
20	10/1/2017	Las Vegas, NV	60	Y	Y
21	11/5/2017	Sutherland Springs, TX	25	Y	Y
22	2/14/2018	Parkland, FL	17	Y	Y
23	5/18/2018	Santa Fe, TX	10	N	N
24	10/27/2018	Pittsburgh, PA	11	Y	Y
25	11/7/2018	Thousand Oaks, CA	12	N	Y
26	5/31/2019	Virginia Beach, VA	12	N	Y
27	8/3/2019	El Paso, TX	23	Y	Y
28	3/22/2021	Boulder, CO	10	Y	Y
29	5/14/2022	Buffalo, NY	10	Y	Y
30	5/24/2022	Uvalde, TX	21	Y	Y

Note: Death tolls do not include perpetrators. An incident was coded as involving an assault weapon if at least one of the firearms discharged was defined as an assault weapon in (1) the 1994 Federal Assault Weapons Ban or (2) the statutes of the state where the gun massacre occurred. An incident was coded as involving an LCM if at least one of the firearms discharged had an ammunition-feeding device holding more than 10 bullets.

Figure 9. Mass Shootings Resulting in Double-Digit Fatalities in U.S. History, 1776-2022

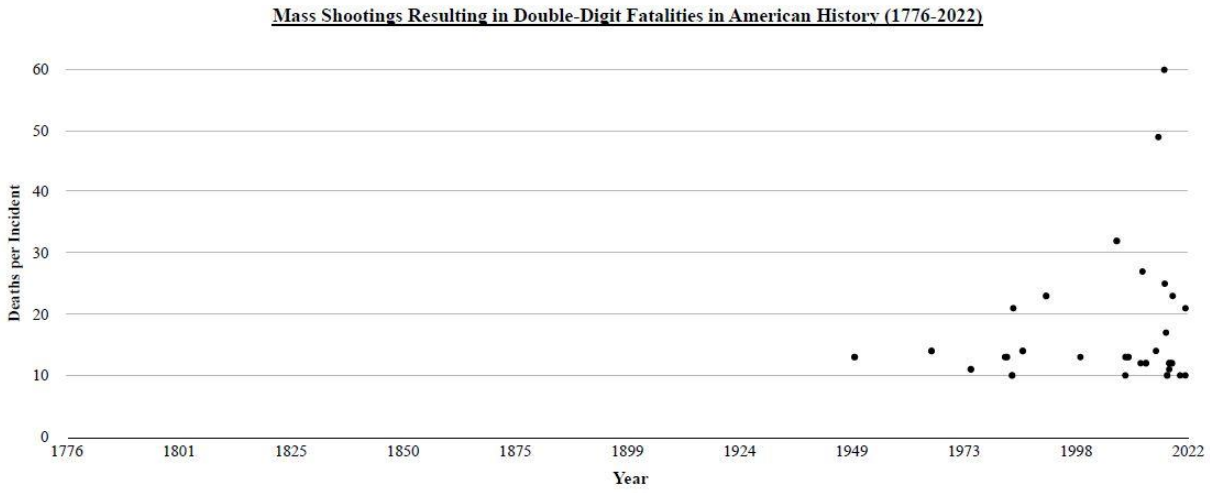
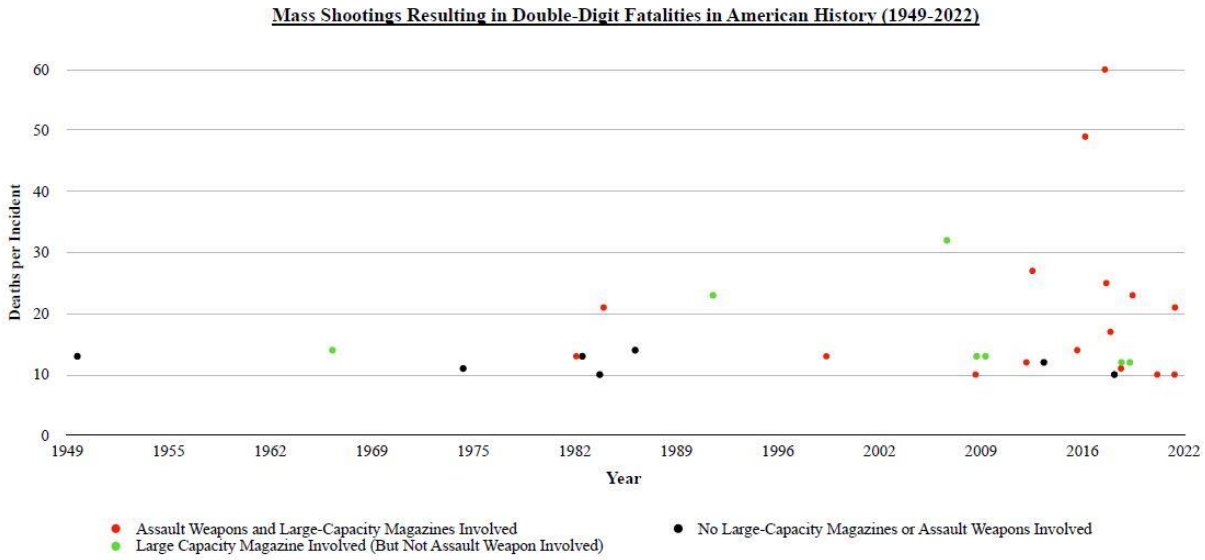


Figure 10. Mass Shootings Resulting in Double-Digit Fatalities in U.S. History, 1949-2022



20. The distribution of double-digit-fatality mass shootings changes in the early 1980s, when five such events took place in a span of just five years (Table 6 and Figure 10). This timeframe also reflects the first time that assault weapons were used to perpetrate mass

shootings resulting in 10 or more deaths: the 1982 Wilkes-Barre, PA, massacre (involving an AR-15 rifle and resulting in 13 deaths) and the 1984 San Ysidro, CA, massacre (involving an Uzi pistol and resulting in 21 deaths). But this cluster of incidents was followed by a 20-year period in which only two double-digit-fatality mass shootings occurred (Figure 10). This period of time from 1987-2007 correlates with three important federal firearms measures: the 1986 Firearm Owners Protection Act, the 1989 C.F.R. "sporting use" importation restrictions, and the 1994 Federal Assault Weapons Ban.

21. It is well-documented in the academic literature that, after the Federal Assault Weapons Ban expired in 2004, mass shooting violence increased substantially.[14] Mass shootings that resulted in 10 or more deaths were no exception, following the same pattern. In the 56 years from 1949 through 2004, there were a total of 10 mass shootings resulting in double-digit fatalities (a frequency rate of one incident every 5.6 years). In the 18 years since 2004, there have been 20 double-digit-fatality mass shootings (a frequency rate of one incident every 0.9 years). In other words, the frequency rate has increased over six-fold since the Federal Assault Weapons Ban expired (Table 6 and Figure 10). (The 1994 Federal Assault Weapons Ban and its impact on mass shooting violence is discussed in further detail in Section VI of this Report.)

22. Over three-quarters of the mass shootings resulting in 10 or more deaths involved assault weapons and/or LCMs (Table 6). As also shown in the analyses of mass shootings in Section II, death tolls in double-digit-fatality mass shootings are related to the use of firearm

[14] *See*, for example, Louis Klarevas, *supra* note 1 (Relevant Excerpt Attached as **Exhibit H**); Louis Klarevas, et al., *supra* note 2 (Attached as **Exhibit I**); Charles DiMaggio, et al., "Changes in US Mass Shooting Deaths Associated with the 1994-2004 Federal Assault Weapons Ban: Analysis of Open-Source Data," 86 *Journal of Trauma and Acute Care Surgery* 11 (2019) (Attached as **Exhibit J**); Lori Post, et al., "Impact of Firearm Surveillance on Gun Control Policy: Regression Discontinuity Analysis," 7 *JMIR Public Health and Surveillance* (2021) (Attached as **Exhibit K**); and Philip J. Cook and John J. Donohue, "Regulating Assault Weapons and Large-Capacity Magazines for Ammunition," 328 *JAMA*, September 27, 2022 (Attached as **Exhibit L**).

technologies like assault weapons and LCMs that, in terms of mass shootings, serve as force multipliers.

IV. ASSAULT WEAPONS ARE ALMOST NEVER USED BY PRIVATE CITIZENS IN SELF-DEFENSE DURING ACTIVE SHOOTINGS

23. An important question that, until now, has gone unanswered is: Are assault weapons used as frequently to stop mass shootings as they are to perpetrate them? As shown above in Section II, assault weapons have been used to perpetrate approximately one-third of high-fatality mass shootings in the past 32 years (Figure 3). And in the past eight years, the share of high-fatality mass shootings that have been perpetrated with assault weapons has risen to approximately half (Figure 3).

24. The Federal Bureau of Investigation (FBI) has been documenting active shooter incidents since 2000.[15] According to the FBI, active shootings are violent attacks that involve "one or more individuals actively engaged in killing or attempting to kill people in a populated area."[16] A simple way to conceptualize active shooter incidents is to think of them as attempted mass shootings. As part of its analysis of attempted mass shootings, the FBI identifies incidents that involved armed civilians using their personal firearms to intervene, regardless of whether the interventions were successful in stopping the attacks and/or neutralizing the perpetrator(s).

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[15] All of the information in this section, including definitions and data, are publicly available from the FBI. *See* FBI, "Active Shooter Safety Resources," *available at* https://www.fbi.gov/how-we-can-help-you/safety-resources/active-shooter-safety-resources (last accessed January 2, 2023).

[16] FBI, *Active Shooter Incidents in the United States in 2022*, April 2023, at 1, *available at* https://www.fbi.gov/file-repository/active-shooter-incidents-in-the-us-2022-042623.pdf/view (last accessed May 4, 2023). The FBI adds, "Implicit in this definition is the shooter's use of one or more firearms. The *active* aspect of the definition inherently implies the ongoing nature of the incidents, and thus the potential for the response to affect the outcome." *Ibid.* (emphasis in original). In addition to the report on incidents in 2022, the FBI has published seven other reports on active shooter incidents covering the following seven time periods: 2000-2013, 2014-2015, 2016-2017, 2018, 2019, 2020, and 2021. All of these reports are available at the FBI's "Active Shooter Safety Resources" website, *supra* note 15.

25. In the 23 years between January 1, 2000 and December 31, 2022, the FBI has identified 456 active shootings occurring in the United States. Out of these 456 active shooter incidents, 18 incidents (3.9%) involved defensive gun uses (DGUs) by civilians, excluding law enforcement or armed security.[17] Of these 18 DGUs, the firearm used by an armed private citizen intervening was identifiable in 17 incidents; 14 involved handguns and the remaining three involved long guns (one shotgun, one bolt-action rifle, and one assault rifle).[18] In other words, out of the 17 incidents where an armed civilian intervened and it was possible to identify the DGU firearm, only one incident (5.9%) involved an assault weapon.[19] Within the broader context of all active shooter incidents, only one incident out of 456 in the past 23 years (0.2%) is known to have involved an armed civilian intervening with an assault weapon.[20]

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[17] In 17 of the 18 DGU-involved active shooter incidents, there was an exchange of gunfire. For the one incident that did not involve an exchange of gunfire, the gun (a handgun) was used to detain the active shooter after the shooting had ceased. FBI, *supra* notes 15 and 16.

[18] All 14 DGU incidents that involved handguns also involved armed civilians who held valid concealed-carry permits or were legally carrying their handguns. *Ibid*. In 12 of these 14 incidents, details about the types of handguns used in self-defense were available in news media accounts or in news media photographs of the crime scene. In two of the 14 incidents, the use of concealed handguns was inferred based on details about the shooting reported in news media accounts. There is no evidence that either of these two DGU incidents involved an assault pistol.

[19] The FBI also identifies an incident in which an armed individual (a local firefighter) subdued and detained a school shooter, but there is no evidence that the armed firefighter drew his handgun during the incident. *Ibid*. Moreover, local authorities have refused to comment on whether the firefighter ever drew his handgun. *See* Carla Field, "Firefighter Was Armed During Takedown of Shooting Suspect, Sheriff Says," WYFF, October 3, 2016, *available at* https://www.wyff4.com/article/firefighter-was-armed-during-takedown-of-shooting-suspect-sheriff-says/7147424 (last accessed January 3, 2023). Adding this incident to the 17 DGU-involved incidents would mean that 5.6% (as opposed to 5.9%) of the active shooter incidents, where an armed civilian intervened, involved an assault weapon.

[20] FBI, *supra* notes 15 and 16. The one DGU that involved an assault weapon was the 2017 church massacre in Sutherland Springs, Texas. In that incident, an armed private citizen used an AR-15-style assault rifle to wound the perpetrator as he was attempting to flee the scene. While the perpetrator was still able to flee the scene despite being shot, minutes later, he crashed his vehicle trying to escape and then took his life with his own firearm before law enforcement could apprehend him. *See* Adam Roberts, "Man Who Shot Texas Gunman Shares His Story," KHBS/KHOG, November 7, 2017, *available at* https://www.4029tv.com/article/man-who-shot-texas-church-gunman-shares-his-story/13437943 (last accessed January 3, 2023).

26. The bottom line is that assault weapons are used by civilians with a far greater frequency to perpetrate mass shootings than to stop mass shootings.[21]

V. OWNERSHIP RATES OF "MODERN SPORTING RIFLES" IN THE U.S.

27. As noted above in Para. 13, based on the most recent publicly available NSSF and federal government data, modern sporting rifles—such as AR- and AK-platform firearms—appear to make up as many as 5.3% of all firearms in circulation in American society (24.4 million out of an estimated 461.9 million firearms, although this is likely an overestimate due to the apparent inclusion of modern sporting rifles possessed by law enforcement agencies). Furthermore, in its most recent survey data (2022), the NSSF found that civilian owners of modern sporting rifles own, on average, 3.8 such rifles, with 24% of these owners possessing only one such rifle.[22] Based on this data, only 6.4 million gun owners—out of an estimated 81 million Americans who own at least one personal firearm—own modern sporting rifles.[23] In other words, less than 8% of all civilian gun owners in the United States own modern sporting

[21] Given the limitations of the active shooter incident data reported by the FBI, it is not possible to discern whether any of the civilian DGUs involved an armed civilian using a firearm with an LCM at the time of the intervention. As such, it is not possible to perform a similar comparison between mass shootings perpetrated with LCM-equipped firearms and mass shootings thwarted with LCM-equipped firearms.

[22] NSSF, *Modern Sporting Rifle: Ownership, Usage and Attitudes Toward AR- and AK-Platform Modern Sporting Rifles*, Comprehensive Consumer Report, 2022, at 12, *available at* https://www3.nssf.org/share/PDF/pubs/NSSF-MSR-Comprehensive-Consumer-Report.pdf (last accessed January 16, 2023).

[23] The estimate that approximately 6.4 million gun owners possess what the NSSF considers to be modern sporting rifles is calculated by dividing the 3.8 average number of such rifles that each modern sporting rifle owner possesses into the 24.4 million such rifles estimated to be in civilian circulation. This calculation (24.4 million divided by 3.8) equals 6.4 million. Based on survey data, 81 million American adults are estimated to own guns. Andy Nguyen, "Proposed Assault Weapons Ban Won't Turn Gun Owners into Felons Overnight," PolitiFact, The Poynter Institute, August 3, 2022, *available at* https://www.politifact.com/factchecks/2022/aug/03/instagram-posts/proposed-assault-weapons-ban-wont-turn-gun-owners- (last accessed January 16, 2023).

rifles.[24] In terms of the total population of the United States, estimated by the Census Bureau to be approximately 333 million people in 2022, less than 2% of all Americans own a modern sporting rifle.[25]

28. In deriving its estimates, the NSSF often relies on United States government data, particularly ATF data.[26] According to the ATF, from 1986 through 2020 (which reflects the most currently available data), the civilian stock of firearms in the United States has been made up predominantly of handguns.[27] As Figure 11 shows, handguns account for 50% of the civilian stock of firearms, rifles account for 33%, and shotguns account for 17%.

29. According to ATF data, handguns are the most commonly owned firearms; not rifles, and most certainly not modern sporting rifles that qualify as assault weapons.[28]

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[24] The finding that less than 8% of all gun owners possess modern sporting rifles is calculated by dividing the 6.4 million modern sporting rifle owners by the 81 million American adults estimated to be gun owners. Taking 6.4 million and dividing it by 81 million equals 7.9%.

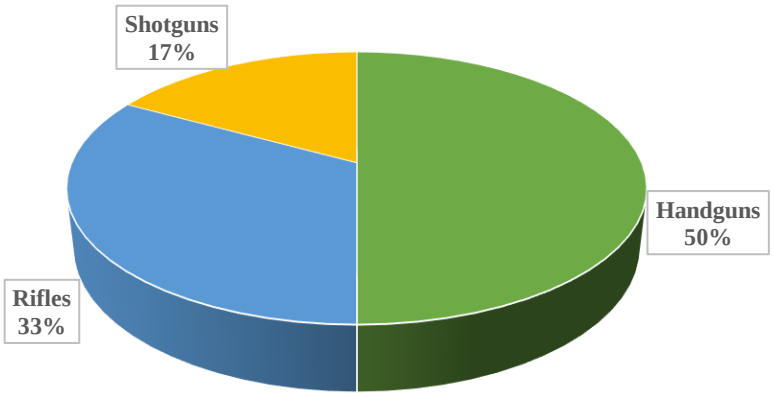
[25] The Census Bureau's total population estimate for 2022 is 333,287,557 persons. U.S. Census Bureau, "Growth in U.S. Population Shows Early Indication of Recovery Amid COVID-19 Pandemic," December 22, 2022, *available at* https://www.census.gov/newsroom/press-releases/2022/2022-population-estimates.html#:~:text=DEC.,components%20of%20change%20released%20today (last accessed January 16, 2023). The finding that less than 2% of all Americans possess modern sporting rifles is calculated by dividing the 6.4 million modern sporting rifle owners by the 333 million persons in the United States. Taking 6.4 million and dividing it by 333 million equals 1.9%.

[26] NSSF, 2020, *supra* note 8.

[27] For data on the number of firearms manufactured, imported, and exported, by category of firearm, from 2000-2020, *see* ATF, *supra* note 8. For similar data covering 1986-1999, *see* ATF, *Firearms Commerce in the United States: Annual Statistical Update, 2021*, *available at* https://www.atf.gov/firearms/docs/report/2021-firearms-commerce-report/download (last accessed January 16, 2023).

[28] Due to the lack of accurate data on the number of LCMs in civilian circulation, there is no way to perform a similar analysis of ownership rates using LCMs instead of modern sporting rifles.

Figure 11. Share of Firearms in Civilian Circulation in the United States, 1986-2020

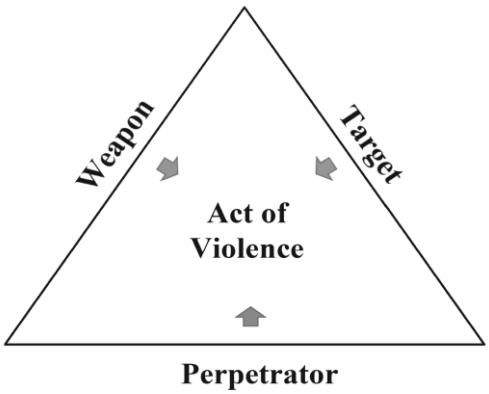


VI. RESTRICTIONS ON ASSAULT WEAPONS AND LCMS REDUCE THE INCIDENCE OF GUN MASSACRES, RESULTING IN LIVES SAVED

VI.A. THE OPERATIVE MECHANISM OF ASSAULT WEAPONS BANS: SUPPRESSION AND SUBSTITUTION EFFECTS

30. As conceptualized in the Trinity of Violence model that I developed in my book on mass shootings, every act of violence involves three elements: a perpetrator, a weapon, and a target (Figure 12).[29] The key to mitigating violence is to "break the trinity" by hindering at least one of the three elements. This is accomplished by dissuading the potential offender(s), denying the potential instrument(s) of violence, or defending the potential victim(s).[30]

Figure 12. The Trinity of Violence



[29] Klarevas, *supra* note 1, at 27-29, 229-238.

[30] *Ibid.*

31. Bans are law-based concepts that prohibit certain behaviors by criminalizing them.[31] Bans on assault weapons and LCMs generally make it illegal to manufacture, import, transfer, own, or possess certain firearms and certain magazines. Bans work in relation to two of the three elements of the Trinity of Violence: dissuasion and denial. With regard to perpetrators, bans use the threat of criminal penalty to *deter potential offenders* from engaging in the prohibited behavior. In the case of bans on assault weapons and LCMs, they threaten conviction, imprisonment, and/or fines should an individual build or otherwise acquire a prohibited assault weapon or LCM. The primary mechanism at work here centers around dissuading potential shooters from trying to acquire banned firearm technologies. But there is also a secondary mechanism at work, focused on the assault weapon or LCM itself: *deprive potential instruments of violence*. Knowing that someone who is willing to commit murder might not be deterred from violating another criminal law, like possessing a prohibited item, bans on assault weapons and LCMs also threaten punishment against anyone who tries to transfer (through sale, gift, or loan) a restricted item to someone who is prohibited from acquiring it. This, in essence, reinforces the strategy of dissuading the offender with the strategy of denying the instruments of violence.

32. Ideally, someone intent on committing a mass shooting with an assault weapon and/or LCM would be dissuaded from going on a rampage by the fact that their means of choice are not available. In such a scenario, the attack would be quashed. This *suppression effect* is akin to what economists and psychologists refer to as a positive spillover effect, where one desirable outcome produces a second, loosely related desirable outcome.[32] A real-world example

[31] Philip J. Cook, "Research in Criminal Deterrence: Laying the Groundwork for the Second Decade," 2 *Crime and Justice* 211 (1980) (Attached as **Exhibit M**); and Daniel S. Nagin, "Deterrence in the Twenty-First Century," 42 *Crime and Justice* 199 (2013) (Attached as **Exhibit N**).

[32] Paul Dolan and Mateo M. Galizzi, "Like Ripples on a Pond: Behavioral Spillovers and Their Implications for Research and Policy," 47 *Journal of Economic Psychology* 1 (2015) (Attached as **Exhibit O**); K. Jane Muir and Jessica Keim-Malpass, "Analyzing the Concept of Spillover Effects for Expanded Inclusion in Health Economics Research," 9 *Journal of Comparative Effectiveness Research* 755 (2020) (Attached as **Exhibit P**).

of this is the so-called "Matrix Killings," where a 19-year-old Virginia man blamed *The Matrix* film for driving him to murder his parents with a shotgun (that did not have an LCM). At the time of the crime in 2003, the Federal Assault Weapons Ban was in effect, preventing him from obtaining an assault rifle and LCMs. In a 2013 jailhouse interview, he told CNN, "If I had an assault weapon, things would have been much worse." He added that had he had an AR-15 instead of a shotgun, he is positive that, after killing his parents, he would have gone on a rampage and "killed as many people as I possibly could." As he noted, "because I didn't have an assault weapon, that didn't happen."[33] In this case, the unavailability of an assault weapon due to the federal ban appears to have suppressed the perpetrator's impulse to commit a mass shooting.

33. Of course, some potential mass shooters will not be discouraged from going on a killing spree just because their means of choice are unavailable. They will instead replace their desired instruments of violence with available alternatives. This is commonly referred to as the *substitution effect*, wherein an act of violence is still perpetrated, but with a different, less lethal instrument of violence.[34] A real-world example of the substitution effect at work is the 2019 synagogue rampage in Poway, California. In that attack, the gunman appears to have been unable to acquire an assault rifle and LCMs due to California's ban on both. Instead, he acquired what is known as a California-compliant semiautomatic rifle (which lacked features such as a pistol grip and a forward hand grip) and 10-round magazines. As a result, the gunman quickly ran out of bullets, and while pausing to reload—which appears to have been extremely difficult given that he did not have assault weapon features on his rifle that facilitated fast reloading—a

[33] "Inside the Mind of a Killer," CNN (Transcripts), August 23, 2013, *available at* https://transcripts.cnn.com/show/pmt/date/2013-08-23/segment/01 (last accessed January 24, 2023).

[34] Philip J. Cook, "The Effect of Gun Availability on Violent Crime Patterns," 455 *Annals of the American Academy of Political and Social Science* 63 (1981) (Attached as **Exhibit Q**); Anthony A. Braga, et al., "Firearm Instrumentality: Do Guns Make Violent Situations More Lethal?" 4 *Annual Review of Criminology* 147 (2021) (Attached as **Exhibit R**).

congregant chased him away, preventing him from continuing his attack.[35] In this incident, which resulted in one death, California's ban on assault weapons and LCMs worked exactly as intended. It deprived the active shooter of the mechanisms that might have allowed him to kill enough people to surpass the fatality threshold of a mass shooting. Stated differently, if you examine data sets that identify shootings resulting in mass murder, you will not find the Poway synagogue attack on their lists.

34. It might seem perverse to think that restrictions on certain instruments of violence operate on the premise that, if an act of violence cannot be averted, then it will proceed with an alternative instrument. Nevertheless, this is exactly how bans on assault weapons and LCMs work in theory. They suppress the inclinations of potential mass shooters to go on killing rampages in the first place because their means of choice are unavailable. And, should deterrence fail, bans force perpetrators to substitute less lethal instruments for more dangerous, prohibited ones, reducing the casualty tolls of attacks when they do occur.

VI.B. THE OPERATIVE MECHANISM OF LCM BANS: FORCING PAUSES IN ACTIVE SHOOTINGS

35. Restrictions on assault weapons and LCMs also address the multiple advantages LCMs provide to active shooters. Offensively, LCMs increase kill potential. Basically, the more bullets a shooter can fire at a target within a finite amount of time, the more potential wounds they can inflict. Furthermore, the more bullets that strike a victim, the higher the odds that that person will die. These two factors—sustained-fire capability and multiple-impact capability—allow LCMs to increase a shooter's kill potential.

36. When inserted into either a semiautomatic or fully automatic firearm, an LCM facilitates the ability of an active shooter to fire a large number of rounds at an extremely quick

[35] Elliot Spagat and Julie Watson, "Synagogue Shooter Struggled with Gun, Fled with 50 Bullets," Associated Press, April 30, 2019, *available at* https://apnews.com/article/shootings-north-america-us-news-ap-top-news-ca-state-wire-8417378d6b934a8f94e1ea63fd7c0aea (last accessed January 24, 2023).

rate without pause. This phenomenon—sustained-fire capability—comes in handy when a target is in a gunman's line of sight for only a few seconds. For example, sustained-fire capability allows a reasonably competent shooter to fire three rounds per second with a semiautomatic firearm and ten rounds per second with an automatic firearm. That results in numerous chances to hit a target in a short window of opportunity, especially when ammunition capacity is large.

37. LCMs also facilitate the ability of a shooter to strike a human target with more than one round. This phenomenon—multiple-impact capability—increases the chances that the victim, when struck by multiple rounds, will die. At least two separate studies have found that, when compared to the fatality rates of gunshot wound victims who were hit by only a single bullet, the fatality rates of those victims hit by more than one bullet were over 60 percent higher.[36] The implication is straightforward: being able to strike human targets with more than one bullet increases a shooter's chances of killing their victims. In essence, LCMs are force multipliers when it comes to kill potential—and the evidence from gun massacres supports this conclusion (*see* Section II).

38. In addition to offensive advantages, LCMs also provide the defensive advantage of extended cover. During an active shooting, a perpetrator is either firing their gun or not firing their gun. While pulling the trigger, it is difficult for those in harm's way to take successful defensive maneuvers. But if the shooter runs out of bullets, there is a lull in the shooting. This precious downtime affords those in the line of fire with a chance to flee, hide, or fight back.

39. There are several examples of individuals fleeing or taking cover while active shooters paused to reload. For instance, in 2012, several first-graders at Sandy Hook Elementary School in Newtown, Connecticut, escaped their attacker as he was swapping out magazines,

[36] Daniel W. Webster, et al., "Epidemiologic Changes in Gunshot Wounds in Washington, DC, 1983–1990," 127 *Archives of Surgery* 694 (June 1992) (Attached as **Exhibit S**); Angela Sauaia, et al., "Fatality and Severity of Firearm Injuries in a Denver Trauma Center, 2000–2013," 315 *JAMA* 2465 (June 14, 2016) (Attached as **Exhibit T**).

allowing them to exit their classroom and dash to safety.[37] Other well-known examples include the 2007 Virginia Tech and the 2018 Borderline Bar and Grill rampages.[38] There is also the possibility that someone will rush an active shooter and try to tackle them (or at the very least try to wrestle their weapon away from them) while they pause to reload.[39] In recent history, there have been numerous instances of gunmen being physically confronted by unarmed civilians while reloading, bringing their gun attacks to an abrupt end. Prominent examples include the 1993 Long Island Rail Road, the 2011 Tucson shopping center, the 2018 Nashville Waffle House, and the 2022 Laguna Woods church shooting rampages.[40] When there are pauses in the shooting to reload, opportunities arise for those in the line of fire to take life-saving action.

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[37] *See* Dave Altimari, et al., "Shooter Paused and Six Escaped," *Hartford Courant*, December 23, 2012 (Attached as **Exhibit U**).

[38] Virginia Tech Review Panel, Mass Shootings at Virginia Tech, April 16, 2007: Report of the Virginia Tech Review Panel Presented to Governor Kaine, Commonwealth of Virginia, Revised with Addendum, November 2009, *available at* https://scholar.lib.vt.edu/prevail/docs/April16ReportRev20091204.pdf (last accessed February 1, 2023); "California Bar Shooting: Witnesses Describe Escaping as Gunman Reloaded," CBS News, December 7, 2018, *available at* https://www.cbsnews.com/news/borderline-bar-shooting-thousand-oaks-california-12-dead-witnesses-describe-gunman-storming-in (last accessed February 1, 2023).

[39] The longer a shooter can fire without interruption, the longer they can keep potential defenders at bay. The longer potential defenders are kept from physically confronting a shooter, the more opportunity there is for the shooter to inflict damage.

[40] *See*, Rich Schapiro, "LIRR Massacre 20 Years Ago: 'I Was Lucky,' Says Hero Who Stopped Murderer," *New York Daily News*, December 7, 2013, *available at* http://www.nydailynews.com/new-york/nyc-crime/lirr-massacre-20-years-lucky-hero-stopped-murderer-article-1.1540846 (last accessed February 1, 2023); Sam Quinones and Nicole Santa Cruz, "Crowd Members Took Gunman Down," *Los Angeles Times*, January 9, 2011, *available at* https://www.latimes.com/archives/la-xpm-2011-jan-09-la-na-arizona-shooting-heroes-20110110-story.html (last accessed February 1, 2023); Brad Schmitt, "Waffle House Hero: Could You Rush Toward a Gunman Who Just Killed People?" *The Tennessean*, April 24, 2018, *available at* https://www.tennessean.com/story/news/crime/2018/04/24/waffle-house-hero-could-you-rush-toward-gunman-who-just-killed-people/543943002 (last accessed February 1, 2023); "Parishioners Stop Gunman in Deadly California Church Attack," NPR, May 16, 2022, *available at* https://www.npr.org/2022/05/16/1099168335/parishioners-stop-gunman-in-california-church-shooting (last accessed February 1, 2023).

VI.C. BANS ON ASSAULT WEAPONS AND LCMS IN PRACTICE

40. In light of the growing threat posed by mass shootings, legislatures have enacted restrictions on assault weapons and LCMs in an effort to reduce the occurrence and lethality of such deadly acts of firearm violence. Prominent among these measures was the 1994 Federal Assault Weapons Ban. In September 1994, moved to action by high-profile shooting rampages that occurred the previous year at a San Francisco law firm and on a Long Island Rail Road commuter train, the U.S. Congress enacted a ban on assault weapons and LCMs that applied to all 50 states plus the District of Columbia, bringing the entire country under the ban.[41]

41. Like the state bans on assault weapons and LCMs that were implemented before it, the federal ban was aimed primarily at reducing mass shooting violence—an objective the ban sought to achieve by prohibiting the manufacture, importation, possession, and transfer of assault weapons and LCMs not legally owned by civilians prior to the date of the law's effect (September 13, 1994).[42] Congress, however, inserted a sunset provision in the law which allowed the federal ban to expire in exactly 10 years, if it was not renewed beforehand. As Congress ultimately chose not to renew the law, the federal ban expired on September 13, 2004. In the aftermath of the federal ban's expiration, mass shooting violence in the United States increased substantially.[43]

42. The legislative intent of the Town of Superior, the City of Boulder, the City of Louisville, and Boulder County in enacting the laws being challenged in the present case is similar to that of other legislative bodies that have restricted assault weapons and LCMs:

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[41] Pub. L. No. 103-322, tit. XI, subtit. A, 108 Stat. 1796, 1996-2010 (codified as former 18 U.S.C. § 922(v), (w)(1) (1994)).

[42] Christopher Ingraham, "The Real Reason Congress Banned Assault Weapons in 1994—and Why It Worked," *Washington Post*, February 22, 2018, *available at* https://www.washingtonpost.com/news/wonk/wp/2018/02/22/the-real-reason-congress-banned-assault-weapons-in-1994-and-why-it-worked (last accessed January 2, 2023).

[43] *See* sources cited *supra* note 14.

reducing gun violence, especially the frequency and lethality of mass shootings. Because, on average, the use of assault weapons and LCMs results in higher death tolls in mass shootings, the rationale for imposing restrictions on assault weapons and LCMs is to reduce the loss of life associated with the increased kill potential of such firearm technologies.

43. Currently, 32% of the U.S. population is subject to a ban on both assault weapons and LCMs. The following is a list of the eleven state-level jurisdictions that presently restrict both assault weapons and LCMs: New Jersey (September 1, 1990); Hawaii (July 1, 1992, assault pistols only); Maryland (June 1, 1994, initially assault pistols but expanded to long guns October 1, 2013); Massachusetts (July 23, 1998); California (January 1, 2000); New York (November 1, 2000); the District of Columbia (March 31, 2009); Connecticut (April 4, 2013); Delaware (August 29, 2022); Illinois (January 10, 2023); and Washington (April 25, 2023).[44] As a reminder, from September 13, 1994 through September 12, 2004, the entire country was also subject to a federal ban on both assault weapons and LCMs.

44. In the field of epidemiology, a common method for assessing the impact of laws and policies is to measure the rate of onset of new cases of an event, comparing the rate when and where the laws and policies were in effect against the rate when and where the laws and policies were not in effect. This measure, known as the incidence rate, allows public health experts to identify discernable differences, while accounting for variations in the population, over a set period of time. Relevant to the present case, calculating incidence rates across states, in a manner that captures whether or not bans on both assault weapons and LCMs were in effect during the period of observation, allows for the assessment of the effectiveness of such bans. In addition, fatality rates—the number of deaths, per population, that result from particular events

[44] The dates in parentheses mark the effective dates on which the listed states became subject to bans on both assault weapons and LCMs.

across different jurisdictions—also provide insights into the impact bans on assault weapons and LCMs have on mass shooting violence.[45]

45. Since September 1, 1990, when New Jersey became the first state to ban both assault weapons and LCMs, through December 31, 2022, there have been 93 high-fatality mass shootings in the United States (**Exhibit C**).[46] Calculating incidence and fatality rates for this time period, across jurisdictions with and without bans on both assault weapons and LCMs, reveals that states subject to such bans experienced a 56% decrease in high-fatality mass shooting incidence rates. They also experienced a 66% decrease in high-fatality mass shooting fatality rates, regardless of whether assault weapons or LCMs were used (Table 7).[47]

46. When calculations go a step further and are limited to mass shootings involving assault weapons or LCMs, the difference between the two jurisdictional categories is even more pronounced. In the time period from January 1, 1991 through December 31, 2022, accounting for population, states with bans on both assault weapons and LCMs experienced a 62% decrease in the rate of high-fatality mass shootings involving the use of assault weapons or LCMs. Similarly, jurisdictions with such bans in effect experienced a 72% decrease in the rate of deaths resulting from high-fatality mass shootings perpetrated with assault weapons or LCMs (Table 7).

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[45] For purposes of this Report, incidence and fatality rates are calculated using methods and principles endorsed by the Centers for Disease Control. *See* Centers for Disease Control and Prevention, *Principles of Epidemiology in Public Health Practice: An Introduction to Applied Epidemiology and Biostatistics* (2012), *available at* https://stacks.cdc.gov/view/cdc/13178 (last accessed January 3, 2023).

[46] There were no state bans on both assault weapons and LCMs in effect prior to September 1, 1990. Therefore, January 1, 1991, is a logical starting point for an analysis of the impact of bans on assault weapons and LCMs. As there were no high-fatality mass shootings in the last four months of 1990, extending the analysis back to September 1, 1990 would make no difference.

[47] Between September 13, 1994 and September 12, 2004, the Federal Assault Weapons Ban was in effect. During that 10-year period, all 50 states and the District of Columbia were under legal conditions that restricted assault weapons and LCMs. As such, the entire country is coded as being under a ban on both assault weapons and LCMs during the time frame that the Federal Assault Weapons Ban was in effect.

47. All of the above epidemiological calculations lead to the same conclusion: when bans on assault weapons and LCMs are in effect, per capita, fewer high-fatality mass shootings occur and fewer people die in such shootings—especially incidents involving assault weapons or LCMs, where the impact is most striking.

48. The main purpose of bans on assault weapons and LCMs is to restrict the availability of assault weapons and LCMs. The rationale is that, if there are fewer assault weapons and LCMs in circulation, then potential mass shooters will either be dissuaded from attacking or they will be forced to use less-lethal firearm technologies, resulting in fewer lives lost.

49. Moreover, forcing active shooters to reload creates critical pauses in an attack. These pauses provide opportunities for people in the line of fire to take life-saving measures (such as fleeing the area, taking cover out of the shooter's sight, and fighting back), which in turn can help reduce casualties.

50. The epidemiological data lend support to the policy choices of the Town of Superior, the City of Boulder, the City of Louisville, and Boulder County that seek to enhance public safety through restrictions on civilian access to certain firearms and magazines. While imposing constraints on assault weapons and LCMs will not prevent every mass shooting, the data suggest that legislative efforts to restrict such instruments of violence should result in lives being saved.

Table 7. Incidence and Fatality Rates for High-Fatality Mass Shootings, by Whether or Not Bans on Assault Weapons and LCMs Were in Effect, 1991-2022

	Annual Average Population (Millions)	Total Incidents	Annual Incidents per 100 Million Population	Total Deaths	Annual Deaths per 100 Million Population
All High-Fatality Mass Shootings					
Non-Ban States	162.0	68	1.31	720	13.89
Ban States	135.8	25	0.58	208	4.79
Percentage Decrease in Rate for Ban States			56%		66%
High-Fatality Mass Shootings Involving Assault Weapons or LCMs					
Non-Ban States	162.0	47	0.91	575	11.09
Ban States	135.8	15	0.35	135	3.11
Percentage Decrease in Rate for Ban States			62%		72%

Note: Population data are from U.S. Census Bureau, "Population and Housing Unit Estimates Datasets," *available at* https://www.census.gov/programs-surveys/popest/data/data-sets.html (last accessed January 3, 2023).

Executed on May 5, 2023, at Nassau County, New York.

/s/ Louis Klarevas

U.S. Department of Justice
Office of Justice Programs
Bureau of Justice Statistics

Exhibit D

Revised October 4, 2016

Program Report

April 2016 | NCJ 249681

National Sources of Law Enforcement Employment Data

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The United States has three national data resources that collect law enforcement employment statistics along with other information unique to each collection. The FBI, U.S. Census Bureau, and the Bureau of Justice Statistics (BJS) data collections programs have different purposes, data definitions, respondent universes, and data collection procedures. This report details the similarities and differences among these three collections and discusses when the use of one may be preferred over the others.

Law enforcement in the United States is made up of about 18,000 federal, state, county, and local agencies. Each agency has varying legal and geographic jurisdictions, ranging from single-officer police departments to those with more than 30,000 officers. The most common type of agency is the small town police department that employs 10 or fewer officers. The decentralized, fragmented, and local nature of law enforcement in the United States makes it challenging to accurately count the number of agencies and officers.

The three primary data sources provide comprehensive information about the nature and scope of law enforcement employment in the United States:

- The FBI collects data on the number and type of law enforcement employees as part of its Uniform Crime Reporting (UCR) Program.
- The Census Bureau collects data on all government agency employees, including police agencies, as part of its Annual Survey of Public Employment and Payroll (ASPEP).
- BJS collects law enforcement employment data through its periodic Census of State and Local Law Enforcement Agencies (CSLLEA).

These three sources provide information about the number of sworn and nonsworn officers at the state and national levels. The sources vary in the type of information they provide about law enforcement employees and in the number and size of law enforcement agencies that report the information. This report describes and compares the three data sources, including the information collected and how different agencies and personnel are defined and enumerated.

[1]The findings in this report are those of the Bureau of Justice Statistics and not of the United States Sentencing Commission.

Uniform Crime Reporting Program, Police Employee Data

Federal Bureau of Investigation

The FBI has administered the UCR Program since 1930. State and local law enforcement agencies voluntarily report to the UCR Program crimes known to law enforcement, arrest information, and law enforcement employee data. The UCR Program provides information on the level of crime in the United States, including the number and type of crimes reported to state and local law enforcement agencies, and arrests made by these agencies. More detailed incident-based information for selected crimes and jurisdictions is provided through the Supplementary Homicide Reports and the National Incident-Based Reporting System.[2,3]

The UCR Program also collects data on law enforcement employees from reporting agencies, including the number, type, and characteristics of these employees. In addition, the FBI collects information about the number of law enforcement officers killed and assaulted, including demographics, patrol assignments, and other characteristics of these officers. FBI police employee data are reported in the *Crime in the United States* series, available at https://www.fbi.gov/about-us/cjis/ucr/ucr-publications.

[2] Supplementary Homicide Reports provide more detailed information on the circumstances surrounding homicides and the characteristics of victims and offenders. See *The Nation's Two Measures of Homicide* (NCJ 122705, BJS web, May 2003).

[3] The National Incident-Based Reporting System (NIBRS) provides more details about crime incidents in selected states and jurisdictions that report to NIBRS. See http://www.fbi.gov/about-us/cjis/ucr/nibrs and http://www.fbi.gov/about-us/cjis/ucr/nibrs/2012/resources/nibrs-participation-by-state.

Each year, state and local law enforcement agencies across the United States voluntarily report to the UCR Program the total number of sworn law enforcement officers and civilians employed by their agencies as of October 31. Law enforcement employees include sworn law enforcement officers and nonsworn (or civilian) personnel. Sworn employees carry a firearm and a badge, have full arrest powers, and are paid from government funds set aside specifically for sworn law enforcement staff. Full-time nonsworn staff include clerks, radio dispatchers, meter attendants, stenographers, jailers, correctional officers, and mechanics. Employees who do not perform primary law enforcement functions or officers who are not paid out of police funds are excluded, as are employees who primarily serve the civil justice system, provide courtroom security, or provide staffing at jail facilities. Law enforcement employees of federal agencies are also excluded.

UCR law enforcement employee data include information on the number and characteristics of employees responsible for performing primary law enforcement functions. Data are also available for nonsworn employees. The data provide information on the size of the population uniquely served by the reporting agency, the rate of officers per 1,000 population (calculated by the FBI), and the sex of employees.[4] An analysis of the UCR law enforcement employee data archived at the University of Michigan's Inter-university Consortium for Political and Social Research (ICPSR) indicates that there were 750,340 sworn law enforcement officers employed by the state and local agencies that reported law enforcement employee data to the UCR in 2012. The annual national estimate of sworn officers per 1,000 U.S. residents ranged from 2.23 in 1992 to 2.51 in 2008 **(table 1)**.[5]

[4] The UCR allocates population served to the agency that has primary law enforcement responsibility for that population. In most instances, it is a municipal police department or a county sheriff. There are occasional exceptions depending on the state. Some agencies serve populations that are primarily served by other agencies (e.g., a transit police department). In such cases, the agency is classified as a "zero population agency." However, a zero population is never assigned to an agency in the UCR because of missing information.

[5] Counts provided from the UCR police employee data are based on a convenience sample of agencies that voluntarily reported to the FBI and do not represent a national sample. Agencies that reported no employees to the UCR were eliminated from the sample so their populations would not affect population-based officer rates.

TABLE 1
Number and rate of full-time officers reported to the UCR, by sworn status, 1992–2012

	Total full time		Sworn		Nonsworn	
Year	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents
1992	779,914	3.05	569,703	2.23	210,211	0.82
1993	799,373	3.09	579,488	2.24	219,885	0.85
1994	838,109	3.19	603,099	2.30	235,010	0.89
1995	873,356	3.29	629,762	2.37	243,594	0.92
1996	892,262	3.32	640,492	2.38	251,770	0.94
1997	890,389	3.28	642,753	2.36	247,636	0.91
1998	930,310	3.38	666,492	2.42	263,818	0.96
1999	962,122	3.46	680,934	2.45	281,188	1.01
2000	975,511	3.46	690,195	2.45	285,316	1.01
2001	1,003,441	3.52	705,559	2.48	297,882	1.05
2002	1,011,967	3.52	705,871	2.45	306,096	1.06
2003	1,017,718	3.51	712,371	2.46	305,347	1.05
2004	1,039,931	3.55	725,334	2.48	314,597	1.07
2005	1,044,228	3.53	727,084	2.46	317,144	1.07
2006	1,066,024	3.57	740,592	2.48	325,432	1.09
2007	1,095,989	3.64	751,526	2.49	344,463	1.14
2008	1,099,463	3.62	762,944	2.51	336,519	1.11
2009	1,102,599	3.59	764,635	2.49	337,964	1.10
2010	1,089,054	3.52	758,854	2.45	330,200	1.07
2011	1,098,778	3.53	768,287	2.47	330,491	1.06
2012	1,076,054	3.43	750,340	2.39	325,714	1.04

Note: Totals provided for Uniform Crime Reporting (UCR) Program law enforcement employee data are the counts reported by the convenience sample of agencies that reported at least one employee to the FBI that year and do not represent a national estimate. All rates are calculated from state-level Census population statistics for the reference year. Because reporting to the UCR is voluntary and information on the number of sworn officers is based on a convenience sample of the agencies that reported, the number and rate of sworn officers in this report are likely to be lower than the actual number and rate of officers nationally.

Sources: Bureau of Justice Statistics, based on data from the FBI, Uniform Crime Reporting (UCR) Program police employee data, 1992–2012; and U.S. Census Bureau, Intercensal Estimates of the Resident Population for the United States, 1992–2012.

The FBI estimates that the approximately 18,000 agencies that report annually to the UCR cover 98% of the U.S. population.[6] In 2012, a total of 17,379 agencies, or 95% of the agencies that participated in the UCR Program that year (N = 18,290), reported at least one law enforcement employee.[7] In each year from 1992 through 2012, more than two-thirds of the agencies that reported employment data served jurisdictions with a population of less than 10,000 **(table 2)**.

The UCR Program does not impute missing law enforcement employee data. It eliminates duplicate entries and conducts data quality checks. Data are published on an annual basis approximately 1 year after the reference year through the *Crime in the United States* report. Public use data files are available within 18 months after the reference year. Files from 1998 are archived and available for download at the ICPSR. Data from all years are available upon request from the FBI's Criminal Justice Information Services Division, Crime Statistics Management Unit.

TABLE 2
Number of agencies reporting to the UCR, by size of population served, 1992–2012

	Size of population served				
Year	9,999 or fewer[a]	10,000–24,999	25,000–99,999	100,000 or more	Total
1992	9,992	2,724	1,684	320	14,720
1993	10,134	2,734	1,706	333	14,907
1994	10,283	2,741	1,708	336	15,068
1995	10,351	2,766	1,723	339	15,179
1996	10,411	2,798	1,740	346	15,295
1997	10,502	2,798	1,751	350	15,401
1998	10,543	2,808	1,801	365	15,517
1999	10,675	2,818	1,819	368	15,680
2000	10,827	2,838	1,892	382	15,939
2001	10,983	2,851	1,914	384	16,132
2002	11,297	2,859	1,920	387	16,463
2003	11,477	2,852	1,946	396	16,671
2004	11,514	2,862	1,966	405	16,747
2005	11,597	2,875	1,985	410	16,867
2006	11,679	2,887	2,005	414	16,985
2007	11,875	2,886	2,028	418	17,207
2008	11,726	2,872	2,041	429	17,068
2009	11,847	2,874	2,049	434	17,204
2010	11,950	2,862	2,078	434	17,324
2011[b]	12,479	2,914	2,167	453	18,013
2012	12,028	2,852	2,067	451	17,398

Note: Agencies that reported zero employees to the UCR in the reference year were excluded from all reported counts.

[a]Some agencies were classified by the UCR as a metropolitan statistical area (MSA) state police or non-MSA police and were assigned no population by the FBI because all the population under their jurisdiction was served primarily by other law enforcement agencies.

[b]The number of small agencies (those serving populations of 9,999 or fewer) reporting police employee data to the UCR in 2011 was greater than that reported in any other year examined. Targeted analyses revealed that agencies reporting in 2011, but not in 2010 or 2012, were often specialized agencies (e.g., transit police) or agencies that may be covered by others (e.g., county-level reports from state agencies).

Source: Bureau of Justice Statistics, based on data from the FBI, Uniform Crime Reporting (UCR) Program police employee data, 1992–2012.

Annual Survey of Public Employment and Payroll

U.S. Census Bureau, Governments Division

Since 1957, the Census Bureau's Governments Division has conducted the ASPEP to measure the number of federal, state, and local civilian government employees and their gross monthly payroll for March of the survey year. The ASPEP collects employment information for the federal government and for state and local governments.

The ASPEP tracks 28 defined government functions.[8] Of these functions, police protection provides the most complete information on law enforcement employees. Employees classified as police protection by the ASPEP conduct all activities concerned with the enforcement of law and order, including local police departments, sheriffs' offices, state police, coroners' offices, police training academies, investigation bureaus, and temporary holding or lockup facilities.[9]

Information on employees who provide police protection is collected from payroll records for agencies that include general police, sheriff, state police, and other government departments that preserve law and order; protect persons and property from illegal acts; and work to prevent, control, investigate, and reduce crime.

Police protection employee statistics do not provide information on special jurisdiction agencies such as park rangers or fish and game wardens, federal postal inspectors, campus police, and transit police; law enforcement employees of legal offices; traffic control and engineering performed by nonpolice agencies; police jails that hold people beyond arraignment; and civil or bailiff activities of sheriffs' offices.

[6] FBI. (2014). Summary of the Uniform Crime Reporting (UCR) Program. *Crime in the United States, 2013*. Available at: http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2013/crime-in-the-u.s.-2013/about-ucr/aboutucrmain_final.pdf.

[7] FBI. (2013). *FBI Releases 2012 Crime Statistics*. Available at: http://www.fbi.gov/news/pressrel/press-releases/fbi-releases-2012-crime-statistics.

[8] Government functions include elementary and secondary education, higher education, police protection, fire protection, financial administration, central staff services, judicial and legal services, highways, public welfare, solid waste management, sewerage, parks and recreation, health, hospitals, water supply, electric power, gas supply, transit, natural resources, correction, libraries, air transportation, water transport and terminals, other education, state liquor stores, social insurance administration, and housing and community development. Three functions apply only to the federal government and have no counterpart at the state and local government levels: national defense and international relations, postal service, and space research and technology.

[9] Temporary holding or lockup facilities typically detain individuals for no more than 72 hours and are not part of a larger correction facility that holds inmates for longer periods of time.

The ASPEP provides information on all employees, full-time employees, full-time-equivalent employees, and total March payroll by government function.[10] Information about police protection employees is provided separately for police officers (i.e., employees who have the power of arrest) and other (i.e., nonsworn) employees. In 2012, the ASPEP reported a total of 687,657 sworn and 891,289 total police protection employees in the United States at a rate of 2.19 sworn officers per 1,000 U.S. residents. The number of sworn police protection employees ranged from a low of 516,418 in 1992 to 695,981 in 2009 **(table 3)**.

The ASPEP is completed annually by government agencies that handle payroll at the federal, state, and local levels.[11] The survey collects information about employees in all federal and state jurisdictions in each survey year, and about employees in all local jurisdictions in years ending in 2 or 7. The ASPEP is distributed to a sample of local government jurisdictions in all other years.[12] Data are collected on all civilian employees of all federal government agencies (except the Central Intelligence Agency, the National Security Agency, and the Defense Intelligence Agency), all agencies of the 50 state governments, and more than 90,000 local governments (including the District of Columbia), representing counties, municipalities, townships, special districts, and school districts.[13] In 2012, the federal government and all 50 states had ASPEP unit response rates of 100%, and the local government response rate was 81% (2012 was a census year for local governments).

The Census Bureau imputes missing ASPEP data due to nonresponse. The imputation procedure relies on historical data from the same reporting agency or, if the agency's data are not available, it uses data from a similar agency. Historical data are adjusted by current growth trends in government employment numbers and payroll to impute the missing information.

The Census Bureau releases data from the ASPEP about 2 years after the reference year. A summary report, summary tables, online analysis, and downloadable data from 1992 (excluding 1996) are available for each level of government at http://www.census.gov/govs/apes/. Data prior to 1992 can be obtained by contacting the Census Bureau Outreach and Education Branch directly.

[10] Prior to 1996, the reference month was October.

[11] The ASPEP was not conducted with state and local agencies in 1996, when the reference month for payroll was changed from October to March.

[12] Local government jurisdictional boundaries do not always coincide with the geography served by the law enforcement agencies. As a result, it is difficult to compare local ASPEP data to those collected by the CSLLEA or UCR law enforcement employee program data.

[13] Prior to 2005, the District of Columbia was included with state governments. Since 2005, the District of Columbia has been categorized as a local government.

TABLE 3
Number and rate of full-time officers reported to the ASPEP, by sworn status, 1992–2012

	Total full time		Sworn		Nonsworn	
Year	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents
1992	669,445	2.62	516,418	2.02	153,037	0.60
1993	692,469	2.67	533,816	2.06	158,653	0.61
1994	716,563	2.73	551,764	2.10	164,799	0.63
1995	743,805	2.80	574,802	2.16	169,003	0.64
1996[a]						
1997	766,811	2.82	592,940	2.18	173,871	0.64
1998	784,138	2.85	606,064	2.21	178,074	0.65
1999	809,674	2.91	623,844	2.24	185,830	0.67
2000	825,659	2.93	635,043	2.25	190,616	0.68
2001	844,191	2.96	646,744	2.27	197,447	0.69
2002	846,605	2.94	645,973	2.25	200,632	0.70
2003	854,026	2.94	649,596	2.24	204,430	0.70
2004	853,254	2.91	648,629	2.22	204,625	0.70
2005	861,441	2.92	655,966	2.22	205,475	0.70
2006	878,007	2.94	669,206	2.24	208,801	0.70
2007	893,078	2.96	677,357	2.25	215,721	0.72
2008	912,592	3.00	692,887	2.28	219,705	0.72
2009	913,532	2.98	695,981	2.27	217,551	0.71
2010	902,372	2.92	687,817	2.22	214,555	0.69
2011[b]	901,850	2.89	691,498	2.22	210,352	0.68
2012	891,289	2.84	687,657	2.19	203,632	0.65

[a]The Annual Survey of Public Employment and Payroll (ASPEP) was not conducted with state and local agencies in 1996, when the reference month for payroll was changed from October to March.

[b]Data collected from Illinois in 2011 were determined to be unreliable. Therefore, statistics reported for 2011 use an average of the 2010 and 2012 estimates for Illinois.

Sources: U.S. Census Bureau, Annual Survey of Public Employment and Payroll, 1992–2012; and Intercensal Estimates of the Resident Population for the United States, 1992–2012.

Census of State and Local Law Enforcement Agencies

Bureau of Justice Statistics

In 1983, BJS awarded a grant to the University of Maryland to review existing law enforcement data collections, focusing on both the quality and the utility of the data. To assess the utility of the data, two user surveys were conducted: (1) a survey of 152 large police departments (i.e., those serving 100,000 persons or more) and (2) telephone interviews of police, researchers, and policymakers. The police department survey produced information about the availability and desirability of various data items, while the interviews revealed differences in the perceived utility of data items for the police as compared to researchers and policymakers. The final report recommended that BJS continue to develop a national-level data collection, and outlined eight steps toward this goal.[14] An initial sample survey, conducted in 1987, used the *Directory Survey of Law Enforcement Agencies* as a sampling frame and was identified as the first Law Enforcement Management and Administrative Statistics Survey conducted by BJS.[15] The basic structure of recurring BJS law enforcement data collections includes two parts. The CSLLEA is conducted about every 4 years and collects a limited and essential core set of measures regarding police agencies and provides an accurate sampling frame for the second part of the collection. A more detailed Sample Survey of Law Enforcement Agencies is conducted in years between the census years.[16]

BJS has conducted the CSLLEA since 1992. CSLLEA surveys were administered in 1992, 1996, 2000, 2004, and 2008.[17] Data are used to measure the number and type of state and local law enforcement and special jurisdiction agencies in the United States, along with some characteristics of those agencies, including the number of sworn and nonsworn employees in each agency. CSLLEA agency employee data can be disaggregated by full-time or part-time status, population served, and patrol assignments.

The CSLLEA universe is made up of all state and local law enforcement agencies in the United States, including primary state police, sheriffs' offices, local police departments, tribal police, special jurisdiction agencies, and other agencies. Federal agencies were excluded from the CSLLEA. In 2008, there were an estimated 461,063 sworn officers in local agencies, 182,979 in sheriffs' offices, and 60,772 in state police agencies. Across all agency types, the CSLLEA reported 2.52 sworn officers per 1,000 U.S. residents in 2008 **(table 4)**.

[14] Uchida, C. D., Bridgeforth, C., & Wellford, C. F. (1984). *Law Enforcement Statistics—The State of the Art.* College Park, MD: University of Maryland, Department of Criminal Justice and Criminology.

[15] *Profile of State and Local Law Enforcement Agencies, 1987* (NCJ 113949, BJS web, March 1989). See also *Police Departments in Large Cities, 1987* (NCJ 119220, BJS web, August 1989).

[16] The sample survey is now part of BJS's Law Enforcement Management and Administrative Statistics series.

[17] The 2014 Census of Federal, State, and Local Law Enforcement Agencies was in the field at the time of this report.

TABLE 4
Estimated number and rate of full-time officers reported to the CSLLEA, by agency type and sworn status, 1992, 1996, 2000, 2004, and 2008

Agency type and sworn status	1992		1996		2000*		2004		2008	
	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents
All agencies	841,099	3.29	931,977	3.47	1,019,496	3.61	1,076,949	3.54	1,133,915	3.73
Sworn	603,954	2.36	663,535	2.47	708,022	2.51	731,895	2.50	765,246	2.52
Nonsworn	237,145	0.93	268,442	1.00	311,474	1.10	345,054	1.18	368,669	1.21
Local	476,261	1.86	518,964	1.93	561,903	1.99	573,199	1.96	593,013	1.95
Sworn	373,061	1.46	408,875	1.52	438,123	1.55	446,974	1.53	461,063	1.52
Nonsworn	103,200	0.40	110,089	0.41	123,780	0.44	126,225	0.43	131,950	0.43
Sheriffs' offices	225,342	0.88	257,712	0.96	293,823	1.04	326,538	1.12	353,461	1.16
Sworn	136,542	0.53	152,922	0.57	164,711	0.58	175,018	0.60	182,979	0.60
Nonsworn	88,800	0.35	104,790	0.39	129,112	0.46	151,520	0.52	170,482	0.56
State police	78,570	0.31	83,742	0.31	87,028	0.31	89,265	0.30	93,148	0.31
Sworn	52,980	0.21	54,587	0.20	56,348	0.20	58,190	0.20	60,772	0.20
Nonsworn	25,590	0.10	29,155	0.11	30,680	0.11	31,075	0.11	32,376	0.11
All other	60,926	0.24	71,559	0.27	76,742	0.27	87,947	0.30	94,293	0.31
Sworn	41,371	0.16	47,151	0.18	48,840	0.17	51,713	0.18	60,432	0.20
Nonsworn	19,555	0.08	24,408	0.09	27,902	0.10	36,234	0.12	33,861	0.11

Note: Based on full-time employees. Excludes federal agencies.

*Statistics for 2000 combine employees classified as nonsworn and officers without arrest powers. This distinction was not made in other Census of State and Local Law Enforcement Agencies (CSLLEA) administrations.

Sources: Bureau of Justice Statistics, Census of State and Local Law Enforcement Agencies, 1992, 1996, 2000, 2004, and 2008; and U.S. Census Bureau, Intercensal Estimates of the Resident Population for the United States, 1992, 1996, 2000, 2004, and 2008 .

BJS develops a roster of all state and local law enforcement agencies in the United States for each survey administration. The roster is developed from the previous survey administration list along with a thorough review of FBI lists, consultation with various police membership organizations, and lists provided by State Peace Officer Standards and Training offices and other state agencies. BJS realizes that this list may not be comprehensive because it is difficult to identify all small agencies.

Surveys are then mailed or distributed electronically to all agencies on the roster (about 20,000 in 2008), with extensive nonresponse follow-up. Responding agencies are screened for eligibility to be included in the final CSLLEA database. Agencies are determined to be ineligible if they (1) employ only part-time officers and the total combined hours of those officers average less than 35 hours a week, (2) contract or outsource to another agency for the performance of all services, (3) are private (i.e., they do not operate with funds from a state, local, or special district, or a tribal government), (4) have officers that are unpaid volunteers only, or (5) were not fully operational at the time of the survey administration. Some agencies in the CSLLEA universe are not included in the UCR law enforcement employee data. Since the CSLLEA was first administered in 1992, about 18,000 responding agencies met these inclusion criteria, ranging from 17,358 agencies in 1992 to 18,769 agencies in 1996 **(table 5)**.

CSLLEA data are reported voluntarily, and unit response rates have historically been close to 100% due to a number of nonresponse follow-up efforts. Data quality checks are performed by survey staff, and item nonresponses for critical measures are replaced with agency data from the previous survey administration and flagged as such.

BJS releases information from the CSLLEA through several agency publications and downloadable datasets. BJS bulletins present summary findings from each CSLLEA administration, and periodic special reports based on CSLLEA data provide information on topics such as tribal law enforcement. Data are available at the agency level and can be aggregated to the city, county, state, and national levels. Data are available from ICPSR and are released about 2 to 3 years after the reference year.

TABLE 5
Number of agencies reporting to the CSLLEA, by number of full-time sworn officers, 1992, 1996, 2000, 2004, and 2008

Year	All agencies	0–1	2–4	5–9	10–24	25–49	50–99	100–249	250 or more
1992	17,358	3,116	3,506	3,393	3,701	1,838	968	525	311
1996	18,769	3,409	3,663	3,624	4,018	2,028	1,085	604	338
2000	17,784	2,138	3,453	3,623	4,124	2,237	1,177	669	363
2004	17,875	2,202	3,286	3,512	4,213	2,304	1,259	714	385
2008	17,985	2,125	3,225	3,446	4,300	2,402	1,300	778	409

Source: Bureau of Justice Statistics, Census of State and Local Law Enforcement Agencies (CSLLEA), 1992, 1996, 2000, 2004, and 2008.

Comparing the three sources

The three national sources of law enforcement employment data have a number of similarities, but also differ in coverage, timing, and level of detail **(figure 1)**. For example, the CSLLEA is generally conducted every 4 years, while the ASPEP and UCR data are available annually. The ASPEP is the only source for comparing the number of employees and payroll of those serving in police protection functions to other government employee functions. These and other differences may indicate that one source has more advantages than others for certain research or policy purposes.

Each source relies on voluntary reporting from government agencies. The FBI follows up with the largest nonresponding agencies to encourage them to provide complete data. In 2012, 95% of the state and local law enforcement agencies that participated in the UCR reported at least one law enforcement employee. Although the FBI conducts data quality checks and follow-up, it does not adjust for missing data. The CSLLEA has a high local agency response rate (100% in 2008), likely due to the extensive nonresponse follow-up procedures. The ASPEP has a 100% response rate at the state and federal levels, and about an 80% response rate for local jurisdictions. The ASPEP imputes data missing due to agency nonresponse, while the CSLLEA imputes missing information due to unit nonresponse and item nonresponse for critical categories.

All UCR and CSLLEA program data are reported voluntarily; therefore, coverage may vary from year to year, although the extent to which the programs cover all law enforcement agencies in the United States is unknown. An estimate of the extent to which the law enforcement employment data from the UCR and CSLLEA include information from all eligible law enforcement agencies in the United States is needed; however, a comprehensive and current roster of all law enforcement agencies in the United States is currently unavailable.

FIGURE 1
Comparing the three national sources of law enforcement employment data

	Uniform Crime Reporting	Annual Survey of Public Employment and Payroll	Census of State and Local Law Enforcement Agencies
Administered by	FBI.	Census Bureau, Governments Division.	BJS.
Periodicity	Annually.	Annually.	Every 4 years.
Agencies included	Government agencies having statutory power of arrest whose primary function is that of apprehension and detention.	General police, sheriff, state police, and other government departments that preserve law and order; protect persons and property from illegal acts; and work to prevent, control, investigate, and reduce crime.*	State and local law enforcement and special jurisdiction agencies, such as campus police.
Federal agencies	Excluded.	Included.	Excluded through 2008.
Agencies that do not employ any sworn officers	Excluded.	Included, provided they are classified as having a police protection function.	Excluded.
Campus police	Included.	Excluded, categorized as having an education function.	Included.
Transit police	Included.	Excluded, categorized as having a transit function.	Included.
Employees of agencies that perform primarily jail- or court-related functions	Excluded.	Included, provided they work for an agency defined as having a police protection function.	Included, provided they work for an agency that meets the CSLLEA definition of a state or local law enforcement agency.
Definition of sworn employees	Individuals who carry a firearm and a badge, have full arrest powers, and are paid from government funds specifically set aside for sworn law enforcement representatives.	Employees with arrest powers in agencies designated as having a police protection function.	Employees of eligible agencies with general arrest powers.
Sex and race/Hispanic origin of employees	Sex available.	Not available.	Not available.
Payroll of employees	Not available.	Available.	Not available.
Patrol assignments	Available for officers killed or assaulted only: Day, evening, night, or other shifts. One- or two-man patrol. Vehicle, foot, or other patrol.	Not available.	By primary capacity (e.g., responding to citizen calls for service, or a school resource officer). By operational area (e.g., law enforcement duties only or jail-related duties only).

*The ASPEP police protection category excludes sheriffs' agencies that primarily conduct civil or bailiff functions as opposed to police protection functions.

Each source provides information on sworn officers or those with general arrest powers who carry a firearm, although the sources differ in how they categorize sworn employees. Unlike the UCR and CSLLEA, the ASPEP excludes sworn officers who are employed by transit police or school police agencies and instead categorizes these employees with arrest powers under other government functions. UCR data are limited to employees of agencies that primarily have law enforcement functions. UCR data exclude officers employed by agencies that serve court- and jail-related functions, while these officers are included in CSLLEA data.

There are also differences in how each source defines nonsworn or civilian law enforcement employees. The ASPEP definition of police protection employees other than police (sworn) officers includes employees working for agencies that may not employ any sworn officers, such as coroners' offices. The UCR and CSLLEA define nonsworn employees as those who work for agencies that primarily conduct law enforcement functions.

The ASPEP provides a national source of information on federal law enforcement employees, while the CSLLEA and UCR include state and local law enforcement agencies only. BJS conducted a separate collection, the Census of Federal Law Enforcement Officers, every 2 years between 1996 and 2008, and it was discontinued after the 2008 administration. Measures of federal law enforcement employees are now included in the 2014 CSLLEA, which was in the field at the time of this report. These data are similar to the ASPEP coverage of federal law enforcement in that they include supervisory and nonsupervisory personnel with federal arrest authority who were also authorized to carry firearms while on duty. Both the ASPEP and BJS definitions of federal law enforcement employees exclude U.S. Armed Forces agencies and the Central Intelligence Agency.

Agency-level data are only available from the UCR and CSLLEA. Although the ASPEP data are collected at the local level, information on police protection employees is not available for individual law enforcement agencies that serve local jurisdictions. The ASPEP provides information about the number of police protection employees in a specific local jurisdiction but does not allocate those employees to the multiple law enforcement agencies that may have jurisdiction in that locality.

The CSLLEA provides additional information on agency functions and other agency characteristics, including employee functions and assignment types. It provides detailed information on patrol assignments, with measures related to patrol capacity (e.g., uniformed officers with regularly assigned duties that include responding to citizen calls for services, community policing officers, or school resource officers) and patrol operational area (e.g., law enforcement duties only, jail-related duties only, court-related duties only, other single operational area, or multiple operational areas that include or exclude law enforcement duties).

Compared to the UCR and ASPEP data collections, the CSLLEA may provide a more complete frame for enumerating all agencies with sworn law enforcement officers because it relies on multiple sources, including the UCR, to compile a list of agencies to survey in each CSLLEA administration. Specific data elements collected during the survey administration are analyzed to determine if those agencies meet the CSLLEA definition of a law enforcement agency. The CSLLEA may also offer more complete agency-level data for small agencies. It includes more agencies that report at least one full-time sworn employee compared to the UCR, although the gap decreased from 3,474 agencies in 1996 to 917 agencies in 2008. The number of agencies is different because the CSLLEA captures more agencies with one employee (**table 6** and **table 7**).

TABLE 6

Number of agencies reporting employees, by number of full-time sworn officers employed, 1992, 1996, 2000, 2004, and 2008

	1992		1996		2000		2004		2008	
Size of agency reporting	UCR	CSLLEA	UCR	CSLLEA	UCR	CSLLEA	UCR	CSLLEA	UCR	CSLLEA
All agencies	14,720	17,358	15,295	18,769	15,939	17,784	16,747	17,875	17,068	17,985
0–1	1,340	3,116	1,269	3,409	1,282	2,138	1,447	2,202	1,494	2,125
2–4	2,854	3,506	2,782	3,663	2,738	3,453	2,948	3,286	2,998	3,225
5–9	3,256	3,393	3,331	3,624	3,454	3,623	3,459	3,512	3,360	3,446
10–24	3,688	3,701	3,973	4,018	4,120	4,124	4,316	4,213	4,419	4,300
25–49	1,854	1,838	2,012	2,028	2,202	2,237	2,316	2,304	2,398	2,402
50–99	929	968	1,049	1,085	1,150	1,177	1,207	1,259	1,270	1,300
100–249	508	525	553	604	636	669	684	714	735	778
250 or more	291	311	326	338	357	363	370	385	394	409

Note: Agencies that reported zero employees to the UCR in the reference year were excluded from all reported counts. The CSLLEA universe excludes by definition all agencies that report less than the equivalent of one full-time sworn officer.

Sources: Bureau of Justice Statistics, Census of State and Local Law Enforcement Agencies (CSLLEA), 1992, 1996, 2000, 2004, and 2008; and FBI, Uniform Crime Reporting (UCR) Program police employee data, 1992, 1996, 2000, 2004, and 2008.

TABLE 7

Percent of agencies reporting employees, by number of full-time sworn officers employed, 1992, 1996, 2000, 2004, and 2008

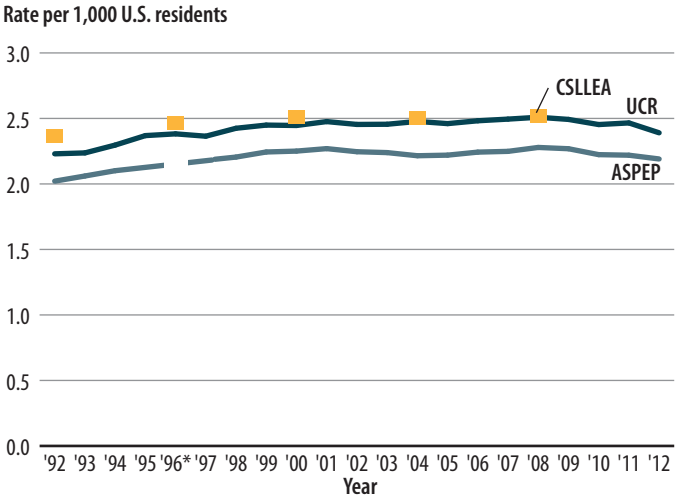
	1992		1996		2000		2004		2008	
Size of agency reporting	UCR	CSLLEA	UCR	CSLLEA	UCR	CSLLEA	UCR	CSLLEA	UCR	CSLLEA
All agencies	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
0–1	9	18	8	18	8	12	9	12	9	12
2–4	19	20	18	20	17	19	18	18	18	18
5–9	22	20	22	19	22	20	21	20	20	19
10–24	25	21	26	21	26	23	26	24	26	24
25–49	13	11	13	11	14	13	14	13	14	13
50–99	6	6	7	6	7	7	7	7	7	7
100–249	3	3	4	3	4	4	4	4	4	4
250 or more	2	2	2	2	2	2	2	2	2	2

Note: Agencies that reported zero employees to the Uniform Crime Reporting (UCR) Program in the reference year were excluded from all reported counts.

Sources: Bureau of Justice Statistics, Census of State and Local Law Enforcement Agencies (CSLLEA), 1992, 1996, 2000, 2004, and 2008; and FBI, Uniform Crime Reporting (UCR) Program police employee data, 1992, 1996, 2000, 2004, and 2008.

Differences in how the three sources defined sworn law enforcement employees and in the number and type of agencies reporting to each source likely drove differences in the number and rate of sworn law enforcement officers that each reported. The CSLLEA and UCR consistently reported more full-time sworn officers than the ASPEP; however, all three sources followed similar trends over the time period studied. The rate of officers per 1,000 U.S. residents increased in the early 1990s, but has remained relatively consistent since 2000 at about 2.5 officers per 1,000 U.S. residents according to the UCR and CSLLEA data, and at 2.25 per 1,000 according to the ASPEP. The 2012 ASPEP and UCR data show a decrease in the number of sworn officers per 1,000 U.S. residents, compared to 2011 **(table 8, figure 2)**.

FIGURE 2
Rate of full-time sworn officers per 1,000 U.S. residents reported, by source, 1992–2012



Note: ASPEP = Annual Survey of Public Employment and Payroll.

*The ASPEP was not collected in 1996.

Sources: Bureau of Justice Statistics, Census of State and Local Law Enforcement Agencies (CSLLEA), 1992, 1996, 2000, 2004, and 2008; FBI, Uniform Crime Reporting (UCR) Program police employee data, 1992–2012; and U.S. Census Bureau, Intercensal Estimates of the Resident Population for the United States, 1992–2012.

TABLE 8
Number and rate of full-time sworn officers reported, by source, 1992–2012

	UCR		CSLLEA		ASPEP	
Year	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents
1992	569,703	2.23	603,954	2.36	516,418	2.02
1993	579,488	2.24			533,816	2.06
1994	603,099	2.30			551,764	2.10
1995	629,762	2.37			574,802	2.16
1996	640,492	2.38	663,535	2.47		
1997	642,753	2.36			592,940	2.18
1998	666,492	2.42			606,064	2.21
1999	680,934	2.45			623,844	2.24
2000	690,195	2.45	708,022	2.51	635,043	2.25
2001	705,559	2.48			646,744	2.27
2002	705,871	2.45			645,973	2.25
2003	712,371	2.46			649,596	2.24
2004	725,334	2.48	731,895	2.50	648,629	2.22
2005	727,084	2.46			655,966	2.22
2006	740,592	2.48			669,206	2.24
2007	751,526	2.49			677,357	2.25
2008	762,944	2.51	765,246	2.52	692,887	2.28
2009	764,635	2.49			695,981	2.27
2010	758,854	2.45			687,817	2.22
2011*	768,287	2.47			691,498	2.22
2012	750,340	2.39			687,657	2.19

Note: Blank cells indicate that the source did not collect law enforcement employment data for that year. Totals provided for Uniform Crime Reporting (UCR) Program law enforcement employee data are the counts reported by the convenience sample of agencies that reported at least one employee to the FBI that year and do not represent a national estimate. All rates are calculated from state-level census population statistics for the reference year. Because reporting to the UCR is voluntary and information on the number of sworn officers is based on a convenience sample of the agencies that reported, the number and rate of sworn officers are likely to be lower than the true number and rate of officers nationally.

*Annual Survey of Public Employment and Payroll (ASPEP) data collected from Illinois in 2011 were determined to be unreliable. Therefore, statistics reported for 2011 use an average of the 2010 and 2012 estimates for Illinois.

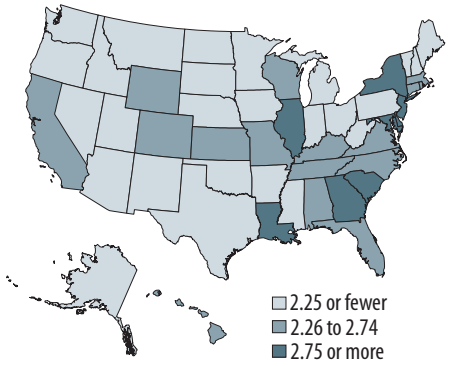
Sources: Bureau of Justice Statistics, Census of State and Local Law Enforcement Agencies (CSLLEA), 1992, 1996, 2000, 2004, and 2008; FBI, Uniform Crime Reporting (UCR) Program police employee data, 1992–2012; and U.S. Census Bureau, Annual Survey of Public Employment and Payroll, 1992–2012.

Differences across sources are also evident at the state level. In 2008, estimates derived from the convenience sample of agencies that reported police employee data to the UCR indicated that most states (26) reported fewer than 2.25 sworn officers per 1,000 U.S. residents **(figures 3, 4,** and **5)**.[18] According to all three sources, the District of Columbia, Illinois, Louisiana, New Jersey, and New York each reported more than 2.75 sworn officers per 1,000 U.S. residents in 2008. In addition, 10 states have a rate of 2.0 officers or fewer per 1,000 U.S. residents: Alaska, Iowa, Maine, Minnesota, Montana, Oregon, Utah, Vermont, Washington, and West Virginia.

Nationally, the rate of officers per 1,000 U.S. residents was similar according to the CSLLEA and UCR, and slightly lower according to the ASPEP. However, in 2008 the ASPEP sworn officer rates for Arizona (2.5) and Massachusetts (3.3) were higher than the state rates reported by the CSLLEA (2.3 in Arizona and 2.8 in Massachusetts) and the UCR (2.1 in Arizona and 2.7 in Massachusetts). Differences across the three sources were most pronounced in Delaware (from 2.0 in the ASPEP to 3.3 in the UCR), the District of Columbia (from 5.3 in the ASPEP to 8.7 in the UCR), and Georgia (from 2.2 in the ASPEP to 4.0 in the UCR).

[18] State rates were calculated by dividing the total number of sworn officers reported to each data source by the total state population for a given year, multiplied by 1,000. State population estimates were retrieved from the Census Bureau's State Intercensal Estimates for 1992 to 2012 (July 1 estimates), available at http://www.census.gov/popest/data/intercensal/. Because reporting to the UCR is voluntary and information on the number of sworn officers is based on a convenience sample of the agencies that reported, the number and rate of sworn officers presented here are likely to be lower than the true number and rate of officers nationally.

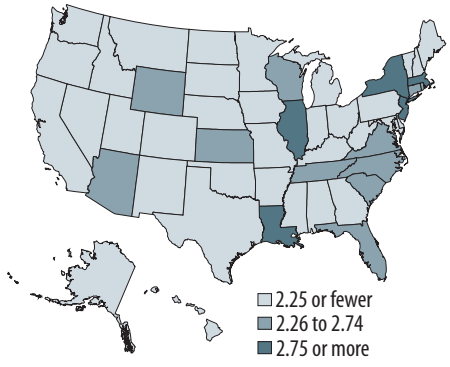
FIGURE 3
Number of full-time sworn officers per 1,000 U.S. residents, according to the UCR, 2008



Note: Estimates provided for the Uniform Crime Reporting (UCR) Program are based on a convenience sample of agencies that reported to the FBI and do not represent a national sample. Agencies that reported zero employees to the UCR were eliminated from the sample.

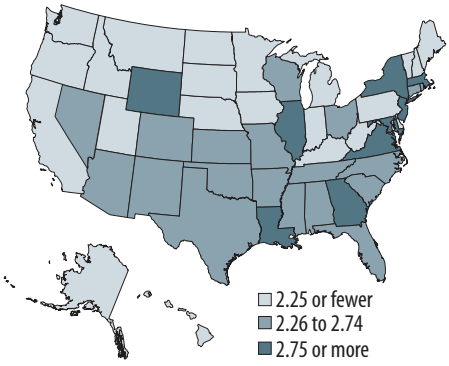
Sources: Bureau of Justice Statistics, based on data from the FBI, Uniform Crime Reporting (UCR) Program police employee data, 2008; and U.S. Census Bureau, Intercensal Estimates of the Resident Population for the United States, 2008.

FIGURE 4
Number of full-time sworn officers per 1,000 U.S. residents, according to the ASPEP, 2008



Sources: Bureau of Justice Statistics, based on data from the U.S. Census Bureau, Intercensal Estimates of the Resident Population for the United States, 2008; and Annual Survey of Public Employment and Payroll (ASPEP), 2008.

FIGURE 5
Number of full-time sworn officers per 1,000 U.S. residents, according to the CSLLEA, 2008



Sources: Bureau of Justice Statistics, Census of State and Local Law Enforcement Agencies (CSLLEA), 2008; and U.S. Census Bureau, Intercensal Estimates of the Resident Population for the United States, 2008.

Conclusion

The CSLLEA likely captures more comprehensive information on the number of law enforcement officers employed by small agencies and appears to have the most complete coverage of agencies and the most complete data, with a typical 100% response rate. It is also likely to provide the most complete information on agencies serving specialized functions or jurisdictions because these agencies are excluded from the ASPEP police protection function and may be less likely to participate in the UCR.

UCR data may be best suited to compare the number of law enforcement officers to reported crime rates because this is the only source that collects both types of information directly from participating agencies. However, UCR coverage may be limited because about 1,000 fewer agencies participated in the UCR than the CSLLEA in 2008.

A comparison of CSLLEA and ASPEP data for local agencies only (excluding employees of state and special district agencies) shows that the CSLLEA captures a greater number of nonsworn officers employed by local law enforcement agencies **(table 9)**. This difference is likely due to variations in scope between the two collections. The CSLLEA includes employees of all agencies with at least one full-time-equivalent sworn law enforcement officer, while the ASPEP police protection category excludes a number of agencies that would fall into the CSLLEA scope (e.g., special forces of nonpolice agencies such as park rangers, fish and game wardens, campus police, and transit police). Therefore, the CSLLEA may be better suited to examine the purpose and functions of nonsworn officers in law enforcement agencies.

The percentages of total local employees who were sworn officers reported to the CSLLEA and ASPEP were similar in most states, with the ASPEP sworn percentage within 10 percentage points of the CSLLEA's sworn percentage in 40 states and the District of Columbia. In the remaining 10 states, the ASPEP percentages of sworn local employees were within 15 percentage points of the CSLLEA sworn percentages. Due to different ASPEP and CSLLEA classifications, the reported number of nonsworn officers differed significantly between the two collections in states in which local sheriffs' offices had little law enforcement functions. Some states relied on sheriffs' offices to perform sworn law enforcement functions, while sheriff employees in other states were primarily responsible for nonsworn functions.

Therefore, state-level differences in law enforcement organizations and functions should also be considered when determining which data source is best suited for various research purposes. The most complete law enforcement employment data source may vary across states, depending on the organizational structure and functions of law enforcement agencies in the state, whether the state's reporting systems are compatible with the UCR, and how closely law enforcement agency definition by source aligns with the law enforcement structure in the state. As stated previously, the ASPEP's ratio of sworn law enforcement officers to 1,000 U.S. residents in Massachusetts and Arizona were greater than in the other two collections. This was contrary to the national rate of sworn law enforcement officers, which found the ASPEP rate to be lower than those produced by the UCR and CSLLEA. Massachusetts and Arizona may have fewer specialized law enforcement agencies that were excluded from the ASPEP, such as school districts that employ police officers.

UCR and CSLLEA data may be used in combination with other sources, such as the National Directory of Law Enforcement Agencies, to develop a comprehensive roster of law enforcement agencies in the United States. It has been difficult to develop and maintain this roster from one source alone because of—

- the voluntary nature of submitting data to the UCR along with reporting methods that resulted in one agency reporting for multiple agencies
- the fact that ASPEP data were not maintained at the agency level
- the 4-year interval between CSLLEA administrations, during which time a number of smaller agencies were likely to be created or subsumed under larger agencies
- the need to develop and follow one common definition of what constitutes a law enforcement agency and a sworn law enforcement officer.

To answer key policy and research questions, it is critical to have a national and regularly updated roster of law enforcement agencies in the United States. For example, the currently available data cannot be used to compare the number and functions of law enforcement officers to public safety and indicators of social and economic health. Also, there is currently no thorough accounting of the number and type of agencies that serve the same or overlapping jurisdictions. Such information could greatly inform research on the overlapping or supporting role of tribal and local police agencies, explore the extent to which concurrent jurisdictional responsibilities are outlined in agency policies or memoranda of understanding, and lead to a better understanding of the nature and extent of conflicts that may occur between state and local agencies with overlapping jurisdictions.

TABLE 9

Number of local law enforcement agency employees reported to the CSLLEA and ASPEP, by agency type and sworn status, 2008

	Local police departments only			Local police departments and sheriffs' offices					
	CSLLEA			CSLLEA			ASPEP		
State	All employees	Sworn	Nonsworn	All employees	Sworn	Nonsworn	All employees	Sworn	Nonsworn
Total	597,044	464,527	132,517	950,505	647,506	302,999	805,786	625,668	180,118
Alabama	9,652	7,314	2,338	15,348	9,945	5,403	11,779	9,329	2,450
Alaska	1,262	793	469	1,262	793	469	1,269	821	448
Arizona	14,998	10,518	4,480	22,701	12,771	9,930	19,491	14,629	4,862
Arkansas*	5,111	3,934	1,177	8,748	5,511	3,237	6,823	5,528	1,295
California	55,900	39,692	16,208	107,783	67,399	40,384	94,499	66,866	27,633
Colorado*	9,232	6,891	2,341	15,847	10,618	5,229	13,042	9,649	3,393
Connecticut	8,094	6,668	1,426	8,094	6,668	1,426	8,357	6,838	1,519
Delaware	1,413	1,188	225	1,435	1,196	239	1,365	1,087	278
District of Columbia	4,647	3,742	905	4,647	3,742	905	3,643	3,070	573
Florida	31,563	22,506	9,057	73,177	40,673	32,504	62,962	41,714	21,248
Georgia*	16,485	13,151	3,334	33,710	23,177	10,533	24,769	20,277	4,492
Hawaii	3,604	2,807	797	3,604	2,807	797	3,811	2,983	828
Idaho	1,952	1,498	454	4,705	2,773	1,932	3,693	2,701	992
Illinois	33,743	28,358	5,385	47,413	37,531	9,882	40,445	33,004	7,441
Indiana	9,432	7,881	1,551	16,919	11,065	5,854	15,155	11,138	4,017
Iowa	3,956	3,284	672	7,459	4,807	2,652	5,763	4,483	1,280
Kansas	5,400	4,191	1,209	9,300	6,302	2,998	8,099	6,054	2,045
Kentucky	5,571	4,713	858	7,723	6,370	1,353	7,412	6,280	1,132
Louisiana	7,824	6,318	1,506	22,308	15,886	6,422	15,999	12,556	3,443
Maine	2,011	1,592	419	3,029	1,935	1,094	2,452	2,000	452
Maryland	12,590	10,494	2,096	16,041	12,660	3,381	14,409	11,016	3,393
Massachusetts	16,530	13,703	2,827	21,467	15,178	6,289	18,340	15,461	2,879
Michigan	13,515	11,408	2,107	22,239	16,317	5,922	18,569	15,748	2,821
Minnesota	7,291	5,947	1,344	13,595	8,572	5,023	10,099	7,887	2,212
Mississippi	5,322	3,960	1,362	9,658	5,908	3,750	7,552	5,662	1,890
Missouri	12,766	9,810	2,956	17,607	12,683	4,924	15,676	11,773	3,903
Montana	1,024	802	222	2,539	1,514	1,025	2,031	1,460	571
Nebraska	2,603	2,111	492	4,365	3,135	1,230	3,827	2,921	906
Nevada	6,885	4,497	2,388	8,479	5,558	2,921	7,670	5,323	2,347
New Hampshire	2,941	2,322	619	3,185	2,449	736	3,179	2,514	665
New Jersey	26,801	21,875	4,926	31,891	25,783	6,108	29,025	24,459	4,566
New Mexico	4,143	2,882	1,261	5,611	4,004	1,607	5,170	3,825	1,345
New York	72,380	54,145	18,235	84,051	58,166	25,885	73,902	64,578	9,324
North Carolina	15,197	11,933	3,264	29,724	19,634	10,090	22,790	18,671	4,119
North Dakota	773	629	144	1,479	1,066	413	1,246	1,024	222
Ohio	20,755	16,944	3,811	32,127	22,692	9,435	28,861	22,785	6,076
Oklahoma*	7,105	5,551	1,554	10,526	6,990	3,536	8,975	6,220	2,755
Oregon	4,848	3,640	1,208	8,270	5,946	2,324	7,628	5,285	2,343
Pennsylvania	21,691	19,122	2,569	23,637	20,715	2,922	24,556	20,572	3,984
Rhode Island	2,783	2,258	525	2,783	2,258	525	3,044	2,527	517
South Carolina	6,153	4,934	1,219	13,103	9,391	3,712	11,238	9,431	1,807
South Dakota	1,194	900	294	2,039	1,328	711	1,597	1,299	298
Tennessee	10,986	8,620	2,366	21,682	13,691	7,991	17,003	13,411	3,592
Texas*	49,294	37,837	11,457	78,519	50,177	28,342	60,690	45,582	15,108
Utah	3,482	2,653	829	7,118	3,936	3,182	4,824	3,788	1,036
Vermont	746	587	159	925	713	212	829	647	182
Virginia	13,808	10,947	2,861	24,255	19,359	4,896	20,271	16,008	4,263
Washington	8,767	6,635	2,132	14,509	9,622	4,887	13,052	9,877	3,175
West Virginia	1,662	1,427	235	3,059	2,443	616	2,642	2,201	441
Wisconsin	10,149	8,171	1,978	18,438	12,334	6,104	14,488	11,439	3,049
Wyoming	1,010	744	266	2,372	1,315	1,057	1,775	1,267	508

Note: Annual Survey of Public Employment and Payroll (ASPEP) data cannot be disaggregated by local law enforcement agency type, so Census of State and Local Law Enforcement Agencies (CSLLEA) data only are presented for local law enforcement agencies, excluding local sheriffs' offices.

*Estimates include agencies classified as constable/marshal.

Sources: Bureau of Justice Statistics, Census of State and Local Law Enforcement Agencies, 2008; and U.S. Census Bureau, Annual Survey of Public Employment and Payroll, 2008.

APPENDIX TABLE 1

Number and rate of full-time sworn officers reported to the UCR, by state, 1992, 1996, 2000, 2004, 2008, and 2012

	1992		1996		2000		2004		2008		2012	
State	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents
Total*	569,703	2.23	640,492	2.38	690,195	2.45	725,334	2.48	762,944	2.51	750,340	2.39
Alabama	8,642	2.08	9,513	2.20	10,298	2.31	10,589	2.34	11,201	2.37	11,209	2.32
Alaska	1,024	1.74	1,156	1.90	1,158	1.84	1,252	1.90	1,299	1.89	1,330	1.82
Arizona	7,588	1.94	9,025	1.97	10,455	2.03	11,418	2.02	13,128	2.09	13,082	2.00
Arkansas	3,874	1.60	5,004	1.95	5,573	2.08	5,924	2.15	6,094	2.12	6,465	2.19
California	60,696	2.03	66,339	2.11	73,095	2.15	76,432	2.15	83,889	2.29	78,062	2.05
Colorado	8,232	2.35	9,284	2.37	10,663	2.46	11,485	2.51	12,597	2.58	12,407	2.39
Connecticut	7,166	2.17	7,484	2.24	7,788	2.28	7,925	2.27	8,659	2.44	8,501	2.37
Delaware	1,903	2.74	2,108	2.84	2,649	3.37	2,880	3.47	2,908	3.29	2,313	2.52
District of Columbia	4,424	7.40	3,632	6.35	4,247	7.42	4,764	8.39	5,076	8.75	4,936	7.81
Florida	31,480	2.31	37,350	2.51	41,283	2.57	45,130	2.59	45,637	2.46	47,887	2.48
Georgia	18,887	2.77	31,452	4.19	24,828	3.02	35,438	4.04	38,284	4.03	39,145	3.95
Hawaii	3,002	2.59	2,879	2.39	3,285	2.71	3,133	2.46	3,418	2.57	3,363	2.42
Idaho	2,071	1.93	2,400	1.99	2,576	1.98	2,696	1.94	3,003	1.96	3,082	1.93
Illinois	29,626	2.53	32,579	2.69	36,807	2.96	36,624	2.91	37,470	2.94	34,534	2.68
Indiana	9,225	1.63	9,706	1.64	11,185	1.84	11,509	1.85	11,821	1.84	11,753	1.80
Iowa	4,403	1.56	4,717	1.64	5,107	1.74	5,038	1.71	5,258	1.74	5,231	1.70
Kansas	5,875	2.32	6,331	2.42	6,843	2.54	7,550	2.76	7,625	2.72	7,617	2.64
Kentucky	6,802	1.81	7,204	1.84	8,016	1.98	9,436	2.28	9,899	2.31	10,013	2.29
Louisiana	13,141	3.06	14,132	3.21	17,248	3.86	17,597	3.87	17,933	4.04	17,768	3.86
Maine	1,994	1.61	2,040	1.63	2,221	1.74	2,259	1.72	2,304	1.73	2,308	1.74
Maryland	12,638	2.57	13,658	2.67	14,941	2.81	16,936	3.05	16,141	2.84	17,537	2.98
Massachusetts	14,626	2.43	16,325	2.64	16,955	2.67	16,358	2.55	17,563	2.71	16,898	2.54
Michigan	18,999	2.00	20,087	2.06	21,262	2.14	22,719	2.26	22,071	2.22	19,830	2.01
Minnesota	6,798	1.51	7,917	1.68	8,449	1.71	8,693	1.71	8,977	1.71	8,947	1.66
Mississippi	4,289	1.63	5,220	1.90	5,900	2.07	6,005	2.08	6,086	2.06	6,119	2.05
Missouri	10,059	1.93	11,386	2.10	12,136	2.16	13,660	2.38	15,754	2.66	15,466	2.57
Montana	1,471	1.78	1,591	1.80	1,549	1.71	1,738	1.87	1,811	1.85	2,016	2.01
Nebraska	2,965	1.84	3,174	1.90	3,348	1.95	3,575	2.04	3,615	2.01	3,707	2.00
Nevada	3,365	2.49	3,948	2.37	4,828	2.39	4,777	2.04	5,747	2.17	5,697	2.06
New Hampshire	1,971	1.76	2,138	1.82	2,388	1.93	2,499	1.94	2,775	2.11	2,751	2.08
New Jersey	27,402	3.48	28,429	3.49	30,718	3.64	31,761	3.68	32,486	3.73	29,511	3.33
New Mexico	3,451	2.16	3,835	2.19	4,206	2.31	4,231	2.22	4,385	2.18	4,610	2.21
New York	58,019	3.18	68,511	3.69	67,737	3.56	64,518	3.37	65,611	3.42	62,962	3.22
North Carolina	17,058	2.47	19,164	2.55	20,711	2.56	22,261	2.60	23,972	2.58	24,948	2.56
North Dakota	1,016	1.59	1,053	1.62	1,121	1.75	1,216	1.89	1,251	1.90	1,482	2.12
Ohio	20,159	1.83	21,728	1.93	23,974	2.11	23,682	2.07	25,319	2.20	23,005	1.99
Oklahoma	6,308	1.96	6,707	2.01	7,069	2.05	7,132	2.02	7,846	2.14	8,085	2.12
Oregon	4,756	1.59	5,320	1.64	5,685	1.66	5,571	1.56	6,787	1.80	6,942	1.78
Pennsylvania	23,246	1.93	24,389	2.00	25,862	2.11	26,394	2.13	27,156	2.15	26,726	2.09
Rhode Island	2,249	2.22	2,345	2.30	2,459	2.34	2,482	2.31	2,592	2.46	2,467	2.35
South Carolina	7,603	2.10	8,478	2.23	10,798	2.68	11,834	2.81	12,628	2.79	12,448	2.64
South Dakota	1,049	1.47	1,145	1.54	1,211	1.60	1,379	1.79	1,448	1.81	1,622	1.95
Tennessee	9,902	1.96	11,342	2.09	15,362	2.69	16,578	2.80	16,515	2.64	17,376	2.69
Texas	38,735	2.18	43,359	2.24	47,042	2.25	49,379	2.21	53,420	2.20	54,353	2.09
Utah	3,370	1.83	3,615	1.75	4,753	2.12	4,682	1.95	4,829	1.81	5,091	1.78
Vermont	888	1.55	910	1.53	982	1.61	1,084	1.75	1,088	1.74	1,238	1.98
Virginia	13,808	2.15	15,217	2.25	16,704	2.35	17,721	2.37	19,130	2.44	19,331	2.36
Washington	8,146	1.58	8,755	1.57	9,635	1.63	9,901	1.60	10,706	1.63	10,271	1.49
West Virginia	2,699	1.49	3,045	1.67	3,165	1.75	3,228	1.78	3,121	1.70	3,581	1.93
Wisconsin	11,288	2.25	12,093	2.31	12,701	2.36	12,951	2.35	13,182	2.34	12,825	2.24
Wyoming	1,315	2.82	1,273	2.61	1,219	2.47	1,310	2.57	1,429	2.62	1,492	2.59

Note: Totals provided for Uniform Crime Reporting (UCR) Program law enforcement employee data are the counts reported by the convenience sample of agencies that reported at least one employee to the FBI that year and do not represent a national estimate.

*Excludes territories and agencies that did not report at least one full-time sworn or civilian employee.

Source: Bureau of Justice Statistics, based on data from the FBI, Uniform Crime Reporting (UCR) Program police employee data, 1992, 1996, 2000, 2004, 2008, and 2012.

APPENDIX TABLE 2

Number and rate of full-time sworn officers reported to the ASPEP, by state, 1992, 1997, 2000, 2004, 2008, and 2012

	1992		1997		2000		2004		2008		2012	
State	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents
Total	516,418	2.01	592,940	2.18	635,043	2.25	648,629	2.22	692,887	2.28	687,657	2.18
Alabama	7,291	1.76	9,181	2.10	9,924	2.23	9,407	2.08	10,015	2.12	10,873	2.25
Alaska	1,016	1.73	969	1.58	1,073	1.71	1,044	1.58	1,074	1.56	1,203	1.64
Arizona	7,875	2.01	10,828	2.29	12,235	2.37	13,407	2.37	15,896	2.53	14,169	2.16
Arkansas	3,680	1.52	4,885	1.88	5,615	2.10	5,578	2.03	6,121	2.13	6,218	2.11
California	58,358	1.95	63,845	2.01	64,036	1.88	65,465	1.84	74,427	2.03	70,773	1.86
Colorado	6,931	1.98	8,266	2.06	8,726	2.02	9,579	2.09	10,447	2.14	10,456	2.02
Connecticut	7,065	2.14	7,576	2.26	8,058	2.36	8,341	2.39	8,311	2.34	7,584	2.11
Delaware	1,391	2.00	1,486	1.98	1,680	2.14	1,724	2.08	1,795	2.03	1,880	2.05
District of Columbia	4,369	7.31	3,655	6.44	3,585	6.27	3,646	6.42	3,070	5.29	3,797	6.00
Florida	29,971	2.20	34,215	2.25	36,350	2.27	39,630	2.28	43,905	2.37	41,241	2.13
Georgia	13,563	1.99	16,562	2.16	19,058	2.32	19,621	2.24	21,342	2.25	21,415	2.16
Hawaii	2,795	2.41	2,615	2.16	2,788	2.30	2,807	2.20	2,983	2.24	2,898	2.08
Idaho	1,920	1.79	2,058	1.68	2,352	1.81	2,603	1.87	2,976	1.94	2,772	1.74
Illinois	28,721	2.46	31,975	2.62	33,440	2.69	35,724	2.84	35,285	2.77	36,720	2.85
Indiana	9,347	1.65	10,527	1.77	11,254	1.85	12,034	1.93	12,429	1.93	11,634	1.78
Iowa	4,204	1.49	4,787	1.66	5,163	1.76	5,623	1.90	5,128	1.70	5,166	1.68
Kansas	4,725	1.87	5,550	2.11	6,594	2.45	6,039	2.21	6,450	2.30	6,127	2.12
Kentucky	5,147	1.37	5,845	1.48	6,838	1.69	7,286	1.76	7,269	1.69	7,427	1.70
Louisiana	8,661	2.02	9,523	2.15	11,273	2.52	12,102	2.66	13,758	3.10	12,696	2.76
Maine	1,964	1.59	2,112	1.68	2,240	1.75	2,177	1.66	2,343	1.76	2,159	1.62
Maryland	11,736	2.38	12,817	2.49	12,452	2.34	11,891	2.14	12,566	2.21	13,444	2.28
Massachusetts	13,704	2.27	15,057	2.42	18,785	2.95	18,654	2.91	21,425	3.31	21,423	3.22
Michigan	17,620	1.86	19,015	1.94	19,671	1.98	18,943	1.88	17,483	1.76	16,458	1.67
Minnesota	6,296	1.40	7,509	1.58	7,713	1.56	7,403	1.46	8,425	1.61	8,418	1.56
Mississippi	3,957	1.51	5,620	2.02	5,750	2.02	5,821	2.01	6,373	2.16	6,825	2.29
Missouri	9,492	1.82	11,656	2.13	11,839	2.11	13,010	2.26	12,971	2.19	13,328	2.21
Montana	1,325	1.60	1,494	1.68	1,479	1.64	1,596	1.72	1,678	1.72	1,710	1.70
Nebraska	2,667	1.65	3,069	1.82	3,232	1.89	3,551	2.03	3,416	1.90	3,586	1.93
Nevada	3,187	2.36	3,479	1.97	3,983	1.97	4,255	1.81	5,748	2.17	5,033	1.82
New Hampshire	1,965	1.76	2,289	1.92	2,730	2.20	2,599	2.01	2,840	2.16	2,667	2.02
New Jersey	23,119	2.93	22,063	2.68	24,071	2.86	25,813	2.99	27,394	3.14	24,978	2.82
New Mexico	3,347	2.10	3,745	2.11	3,913	2.15	4,185	2.20	4,400	2.19	4,385	2.10
New York	56,383	3.09	68,457	3.67	71,457	3.76	69,462	3.62	69,440	3.61	71,290	3.64
North Carolina	13,527	1.96	16,415	2.14	17,833	2.21	18,286	2.14	21,251	2.28	21,939	2.25
North Dakota	943	1.48	1,077	1.66	1,097	1.71	1,113	1.73	1,157	1.76	1,329	1.90
Ohio	18,110	1.64	21,754	1.93	24,413	2.15	23,958	2.09	24,267	2.11	22,198	1.92
Oklahoma	5,953	1.85	7,100	2.11	7,812	2.26	7,109	2.02	7,255	1.98	7,748	2.03
Oregon	4,767	1.59	5,327	1.61	6,051	1.76	5,850	1.64	5,945	1.58	5,909	1.52
Pennsylvania	20,585	1.71	23,291	1.90	24,316	1.98	23,967	1.93	25,634	2.03	25,479	2.00
Rhode Island	2,197	2.17	2,219	2.16	2,426	2.31	2,159	2.01	2,742	2.60	2,564	2.44
South Carolina	6,848	1.89	8,136	2.11	9,905	2.46	9,872	2.34	10,884	2.40	10,592	2.24
South Dakota	1,098	1.54	1,210	1.63	1,250	1.65	1,310	1.70	1,489	1.86	1,483	1.78
Tennessee	9,267	1.84	11,615	2.11	13,535	2.37	13,143	2.22	14,559	2.33	15,640	2.42
Texas	33,552	1.89	41,289	2.09	42,915	2.05	45,668	2.04	47,869	1.97	53,197	2.04
Utah	2,734	1.49	3,170	1.50	3,692	1.64	3,829	1.59	4,204	1.58	4,259	1.49
Vermont	808	1.41	824	1.38	883	1.45	903	1.46	947	1.52	967	1.54
Virginia	11,867	1.85	13,408	1.96	14,336	2.02	15,327	2.05	18,290	2.33	16,986	2.08
Washington	7,573	1.47	8,645	1.52	9,741	1.65	9,631	1.56	10,890	1.66	10,269	1.49
West Virginia	2,208	1.22	2,748	1.51	2,941	1.63	2,716	1.50	2,832	1.54	3,055	1.65
Wisconsin	9,564	1.90	10,900	2.07	11,412	2.12	11,508	2.09	12,032	2.13	11,839	2.07
Wyoming	1,025	2.20	1,082	2.21	1,128	2.28	1,260	2.47	1,457	2.67	1,451	2.52

Source: U.S. Census Bureau, Annual Survey of Public Employment and Payroll (ASPEP), 1992, 1997, 2000, 2004, 2008, and 2012.

APPENDIX TABLE 3

Number and rate of full-time sworn officers reported to the CSLLEA, by state, 1992, 1996, 2000, 2004, and 2008

	1992		1996		2000		2004		2008	
State	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents	Number	Per 1,000 U.S. residents
Total	603,954	2.36	663,535	2.47	708,022	2.51	731,895	2.50	765,246	2.52
Alabama	8,771	2.11	9,767	2.26	10,655	2.39	10,920	2.41	11,631	2.47
Alaska	1,057	1.80	1,254	2.06	1,348	2.15	1,409	2.14	1,298	1.89
Arizona	7,900	2.02	10,088	2.20	11,533	2.23	12,659	2.24	14,591	2.32
Arkansas	4,475	1.85	5,819	2.26	6,157	2.30	6,325	2.30	6,779	2.36
California	65,797	2.20	69,134	2.20	73,662	2.17	75,622	2.13	79,431	2.17
Colorado	8,726	2.50	9,896	2.52	10,309	2.38	11,086	2.42	12,069	2.47
Connecticut	7,639	2.31	8,525	2.55	8,327	2.44	8,008	2.29	8,281	2.34
Delaware	1,572	2.26	1,660	2.24	1,774	2.26	1,982	2.39	2,131	2.41
District of Columbia	5,213	8.72	3,909	6.83	3,963	6.93	4,423	7.79	4,262	7.35
Florida	32,879	2.41	37,395	2.52	39,452	2.46	45,267	2.60	46,105	2.49
Georgia	16,792	2.46	19,115	2.55	21,173	2.57	23,499	2.68	26,551	2.79
Hawaii	2,783	2.40	2,989	2.48	2,914	2.40	3,002	2.36	3,234	2.43
Idaho	2,157	2.01	2,524	2.10	2,749	2.12	2,964	2.13	3,146	2.05
Illinois	35,674	3.05	38,192	3.16	39,847	3.20	39,714	3.15	41,277	3.24
Indiana	10,038	1.77	10,931	1.85	11,900	1.95	12,083	1.94	13,171	2.05
Iowa	4,703	1.67	5,043	1.75	5,333	1.82	5,424	1.84	5,830	1.93
Kansas	5,631	2.22	6,183	2.36	6,563	2.44	7,141	2.61	7,450	2.65
Kentucky	6,085	1.62	6,466	1.65	7,144	1.76	7,655	1.85	7,833	1.83
Louisiana	15,049	3.51	16,125	3.67	18,548	4.15	17,996	3.95	18,050	4.07
Maine	2,267	1.83	2,318	1.86	2,367	1.85	2,571	1.96	2,569	1.93
Maryland	12,601	2.56	13,828	2.71	15,221	2.87	15,144	2.73	16,013	2.82
Massachusetts	16,014	2.66	17,935	2.90	18,082	2.84	18,174	2.83	18,342	2.84
Michigan	19,642	2.07	20,568	2.11	21,673	2.18	20,762	2.06	19,009	1.91
Minnesota	7,365	1.64	7,994	1.70	8,606	1.74	9,018	1.77	9,667	1.84
Mississippi	4,675	1.78	5,813	2.12	6,562	2.30	7,013	2.43	7,707	2.61
Missouri	11,266	2.16	12,998	2.39	13,630	2.43	14,073	2.45	14,554	2.46
Montana	1,410	1.71	1,682	1.90	1,760	1.95	1,912	2.06	1,950	2.00
Nebraska	3,084	1.91	3,297	1.97	3,486	2.03	3,786	2.16	3,765	2.10
Nevada	3,052	2.26	4,363	2.62	5,252	2.60	5,976	2.55	6,643	2.50
New Hampshire	2,139	1.91	2,305	1.96	2,542	2.05	2,805	2.17	2,936	2.23
New Jersey	26,688	3.39	28,058	3.44	29,062	3.45	31,812	3.68	33,704	3.87
New Mexico	3,420	2.14	4,134	2.36	4,456	2.45	4,894	2.57	5,010	2.49
New York	68,208	3.74	71,221	3.83	72,853	3.83	66,037	3.44	66,472	3.46
North Carolina	14,586	2.11	16,953	2.26	18,903	2.34	20,973	2.45	23,442	2.52
North Dakota	1,060	1.66	1,141	1.75	1,293	2.01	1,307	2.03	1,324	2.01
Ohio	20,929	1.90	23,811	2.12	25,082	2.21	25,856	2.26	25,992	2.26
Oklahoma	6,458	2.01	7,232	2.17	7,622	2.21	8,007	2.27	8,639	2.35
Oregon	5,495	1.84	6,064	1.87	6,496	1.89	6,339	1.78	6,695	1.78
Pennsylvania	23,700	1.97	24,873	2.04	26,373	2.15	26,629	2.15	27,413	2.17
Rhode Island	2,389	2.36	2,422	2.37	2,688	2.56	3,071	2.86	2,828	2.68
South Carolina	7,752	2.14	8,675	2.29	9,741	2.42	10,762	2.56	11,674	2.58
South Dakota	1,145	1.61	1,464	1.97	1,708	2.26	1,621	2.10	1,636	2.05
Tennessee	10,379	2.06	12,152	2.24	14,494	2.54	15,248	2.58	15,976	2.56
Texas	41,349	2.33	47,767	2.47	51,478	2.46	54,780	2.45	59,219	2.44
Utah	2,979	1.62	3,699	1.79	4,179	1.86	4,573	1.90	4,782	1.80
Vermont	978	1.71	981	1.65	1,034	1.70	1,156	1.86	1,103	1.77
Virginia	16,365	2.55	18,448	2.73	20,254	2.85	21,655	2.90	22,848	2.92
Washington	8,192	1.59	9,292	1.67	9,910	1.68	10,821	1.75	11,411	1.74
West Virginia	2,622	1.45	2,977	1.63	3,150	1.74	3,207	1.77	3,382	1.84
Wisconsin	11,594	2.31	12,678	2.42	13,237	2.46	13,072	2.37	13,730	2.43
Wyoming	1,210	2.60	1,377	2.82	1,477	2.99	1,662	3.26	1,691	3.10

Source: Bureau of Justice Statistics, Census of State and Local Law Enforcement Agencies (CSLLEA), 1992, 1996, 2000, 2004, and 2008.

The Bureau of Justice Statistics of the U.S. Department of Justice is the principal federal agency responsible for measuring crime, criminal victimization, criminal offenders, victims of crime, correlates of crime, and the operation of criminal and civil justice systems at the federal, state, tribal, and local levels. BJS collects, analyzes, and disseminates reliable and valid statistics on crime and justice systems in the United States, supports improvements to state and local criminal justice information systems, and participates with national and international organizations to develop and recommend national standards for justice statistics. Jeri M. Mulrow is acting director.

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April 2016, NCJ 249681

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