

Fast and Furious, or Slow and Steady? The Flow of Guns From the United States to Mexico

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ABSTRACT

This empirical legal study examines Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) trace data from crime guns seized in Mexico and traced back to their states of origin in the United States. It uses Ordinary Least Squares (OLS) regression to analyze the relationship between U.S. states' crime gun export rates to Mexico and state gun control laws. The presence of four state gun control laws—(1) limiting multiple sales, (2) requiring background checks for secondary transfers, (3) prosecuting straw purchasers, and (4) restricting the sale of assault weapons—significantly reduces a state's export rate of crime guns to Mexico as compared to states that have none of these laws in place. This relationship persists and is significant even when controlling for the state's distance from the border with Mexico.

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ACKNOWLEDGEMENTS

I owe Professor Joseph Doherty an enormous debt of gratitude for his input into the methodology employed herein and his tireless patience during the drawn-out process of teaching me (and other forlorn students) how to use Stata. I must thank Professor Adam Winkler for his sense of humor, guidance, and helpful comments throughout the writing process. Many thanks are also due to the suggestions I received from fellow law students in the Empirical Legal Studies program throughout the Fall of 2012 and the Spring of 2013. Leslie Schafer, Ph.D., generously shared her time and expertise with me to suggest various regression methodologies. Finally, I never would have walked the path leading to the publication of this Comment were it not for Fabricio Chavez, to whom I owe a lifelong "thank you" for his support.

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INTRODUCTION

From 2007 to 2012, more than 47,000 people were killed in Mexico by drug trafficking organizations waging a vicious war for control of the lucrative drug trade with the United States.¹ While drugs travel north to the United States from Mexico, guns arming the drug trafficking organizations travel south to Mexico from the United States: Nearly 70 percent of the 99,691 guns seized from violent crimes committed in Mexico and submitted for tracing to the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) between 2007 and 2011 came from U.S. manufacturers or were sourced from U.S. dealers.² The vast majority of guns traced back to the United States from Mexico were originally sold in one of the four states that border Mexico: Arizona, California, New Mexico, and Texas.³ According to the Mayors Against Illegal Guns, Arizona, New Mexico, and Texas—in that order—exported the most crime guns per capita to Mexico in 2009.⁴

In Mexico, strict gun control laws make it difficult for anyone but the police or the military to legally obtain most firearms, particularly the high-powered

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1. CORY MOLZAHN ET AL., TRANS-BORDER INST., DRUG VIOLENCE IN MEXICO: DATA AND ANALYSIS THROUGH 2012, at 13–14 (2013) (estimating that organized crime-style homicides linked to drug trafficking account for between 45,000 and 55,000 of Mexico's 120,000 homicides between 2007 and 2012); *see also* Pete Yost, *ATF: 68,000 Guns in Mexico Traced to U.S.*, WASH. POST, Apr. 27, 2012, http://www.washingtonpost.com/politics/atf-68000-guns-in-mexico-traced-to-us/2012/04/26/gIQAtSz9kT_story.html.
 2. OFFICE OF STRATEGIC INTELLIGENCE & INFO., BUREAU OF ALCOHOL, TOBACCO, FIREARMS & EXPLOSIVES, MEXICO (2012), <https://www.atf.gov/files/statistics/download/trace-data/international/2007-2011-Mexico-trace-data.pdf> (reporting data from the Firearms Tracing System (FTS)).
 3. *See* Administrative Record at 674, Nat'l Shooting Sports Found., Inc. v. Jones, 840 F. Supp. 2d 310 (D.D.C. 2012) (No. 1:11-cv-01401).
 4. MAYORS AGAINST ILLEGAL GUNS, ISSUE BRIEF: THE MOVEMENT OF ILLEGAL GUNS ACROSS THE U.S.-MEXICO BORDER (2010), http://www.mayorsagainstillegalguns.org/downloads/pdf/issue_brief_mexico_2010.pdf (indicating that, after adjusting for population size, the states with the greatest crime gun export rates to Mexico in 2009 were Arizona (10.5 crime guns exported for every 100,000 residents), New Mexico (8.6), Texas (8.4), Wyoming (3.1), and California (2.7)); *see also* Administrative Record, *supra* note 3, at 730 (presenting data from the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF) on the top five source states for firearms recovered and traced in Mexico in 2008, 2009 and 2010 based on total number of firearms recovered and traced). These numbers can be divided by state population to obtain crime gun export rates per state. According to calculations based on the ATF data and state population data obtained from the U.S. Census Bureau, in 2009 the three states with the greatest crime gun export rates to Mexico were Arizona, New Mexico and Texas, in that order; but in 2008 and 2010, the states with the greatest crime gun export rates to Mexico were Arizona, Texas, and New Mexico, in that order. *See infra* Table 1.

long guns that are popular with drug trafficking organizations.⁵ In contrast, in the United States, not only are firearms available for legal sale in every state, but three out of four of the states that border Mexico have some of the most lax gun regulations in the country. In Arizona, New Mexico, and Texas, there is no limit to the number of guns that a single buyer can purchase at a time from a dealer; there is no requirement for background checks to be conducted at gun shows; there are no restrictions on the sale of assault weapons; and straw purchasers (those who buy a gun with the intention of transferring it to a person who is prohibited from legally owning a gun) cannot be prosecuted as such.⁶ California, which has three out of four of these gun control measures in place,⁷ sources significantly fewer crime guns to Mexico per capita.⁸

This empirical legal study posits that there is a relationship between U.S. states' crime gun export rates to Mexico and state gun control laws, and analyzes that relationship using a regression analysis of crime gun tracing data from Mexico. Past empirical studies on crime guns in the United States have provided important information on the characteristics of crime guns and the sources through which they are obtained. Crime gun tracing data have also been used

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5. See Ley Federal de Armas de Fuego y Explosivos [LFAFE] [Federal Law of Firearms and Explosives], Diario Oficial de la Federación [DO], 11 de Enero de 1972 (Mex.); Código Penal Federal [CPF] [Federal Criminal Code], *as amended*, arts. 160–163, Diario Oficial de la Federación [DO], 14 de Agosto de 1931 (Mex.); see also David B. Kopel, *Mexico's Federal Law of Firearms and Explosives* (Univ. of Denver Sturm Coll. of Law Legal Research Paper Series, Working Paper No. 10-12, 2010), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1588296 (translating the law into English from Spanish).
 6. *Arizona State Law Summary*, LAW CENTER TO PREVENT GUN VIOLENCE, <http://smartgunlaws.org/arizona-state-law-summary> (last updated Dec. 9, 2013); *New Mexico State Law Summary*, LAW CENTER TO PREVENT GUN VIOLENCE, <http://smartgunlaws.org/new-mexico-state-law-summary> (last updated Dec. 9, 2013); *Texas State Law Summary*, LAW CENTER TO PREVENT GUN VIOLENCE, <http://smartgunlaws.org/texas-state-law-summary> (last updated Dec. 9, 2013). Because there is no federal statute specifically prohibiting firearms trafficking or straw purchasing, straw purchasing can only be prosecuted as such if prohibited by state and by local laws. See OFFICE OF THE INSPECTOR GEN., U.S. DEP'T OF JUSTICE, A REVIEW OF ATF'S OPERATION FAST AND FURIOUS AND RELATED MATTERS 17 (2012), <http://www.justice.gov/oig/reports/2012/s1209.pdf> [hereinafter OIG REPORT 2012].
 7. *California State Law Summary*, LAW CENTER TO PREVENT GUN VIOLENCE, <http://smartgunlaws.org/california-state-law-summary> (last updated Dec. 9, 2013). California prohibits falsifying buyer information, but does not criminalize straw purchases. See MAYORS AGAINST ILLEGAL GUNS, TRACE THE GUNS: THE LINK BETWEEN GUN LAWS AND INTERSTATE GUN TRAFFICKING 12, 14 (2010); *California State Law Summary*, *supra*.
 8. For crime gun traces from Mexico between 2006 and 2010, California was the source state for 106 guns per capita (in millions), while Arizona sourced 417 guns per capita, Texas sourced 347, and New Mexico sourced 244. This results in a ranking of Arizona, Texas, and New Mexico, in that order, as top crime-gun-exporting states to Mexico for this time period. See Administrative Record, *supra* note 3, at 548, 674–75, 718; see also *infra* Table 1 (calculating crime gun export rates for all 50 states and the District of Columbia).

to evaluate the effectiveness of gun control policies in limiting the supply of crime guns in the United States. This body of empirical research indicates that crime guns tend to move from areas of weaker regulation to areas of stronger regulation.⁹ Several state gun control measures in the United States have been associated with a reduction in the rate of export of crime guns to other states.

In contrast, data on crime guns recovered and traced in Mexico have been difficult to analyze to date because of restrictions on the ATF's ability to release such tracing data publicly. Most data from crime guns in Mexico traced back to the United States are classified as "Law Enforcement Sensitive," and the ATF only releases such data to other law enforcement agencies (and not the general public).¹⁰ However, in *National Shooting Sports Foundation, Inc. v. Jones*, 840 F. Supp. 2d 310 (D.D.C. 2012), the ATF submitted detailed tracing data on Mexican crime guns to the court, which then became part of the public record.

This is the first empirical legal study to analyze the ATF data submitted to the court in *National Shooting Sports Foundation*. This is also the first empirical study to focus on the relationship between state gun control laws in the United States and the states' crime gun export rates to Mexico. This study finds that four gun control measures in a state—(1) limiting multiple sales, (2) requiring background checks for secondary transfers, (3) prosecuting straw purchasers, and (4) restricting the sale of assault weapons—reduce a state's crime gun export rate to Mexico as compared to states that do not have one or more of these measures in place. This relationship persists and is significant even when controlling for distance from the border with Mexico.

Part I presents background information on gun policy and prevalence in the United States and in Mexico. Part II reviews the findings of past empirical research on crime guns and on cross-border trade. Part III presents the theory propelling this study: that gun control laws in the United States reduce gun trafficking from the United States to Mexico. Part IV discusses the sources of the data, the coding and measurement of variables, and the potential selection bias in the sample of crime guns recovered and traced in Mexico. Part V discusses the methodology, the regression model, and the key findings of this study, including regression results illustrating the relationship between the crime gun export

9. See *infra* Part II.B.

10. See U.S. DEPT OF DEF., DOD INFORMATION SECURITY PROGRAM: MARKING OF CLASSIFIED INFORMATION 87 (2013), available at www.dtic.mil/whs/directives/corres/pdf/520001_vol2.pdf (defining a designation of "Law Enforcement Sensitive," as used by the Department of Justice and Department of Defense, to "indicate that information was compiled for law enforcement purposes and should be afforded security in order to protect certain legitimate government interests" and thus restricted in its distribution).

rate and gun control laws, as well as characteristics of crime guns recovered and traced in Mexico. Part VI discusses the significance of these findings and recommends that U.S. states adopt gun control measures that the regression analysis has shown to reduce gun trafficking to Mexico.

I. BACKGROUND

A. Gun Policy and Prevalence in the United States

In the United States, federal law restricts the terms of firearms transactions, who may participate in them, and the types of weapons that may be manufactured, imported, and sold.¹¹ States are free to impose additional restrictions beyond those that federal law requires.¹² For example, because there is no federal statute prohibiting firearms trafficking or straw purchasing in the United States, straw purchasing per se can be prosecuted only if authorized by state and local laws.¹³ Several states have enacted much more extensive

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11. Omnibus Consolidated Appropriations Act, Pub. L. No. 104-208, 110 Stat. 3009 (1997) (banning the purchase or possession of firearms by any person convicted of a misdemeanor domestic violence offense); Public Safety and Recreational Use Firearms Protection Act, Pub. L. No. 103-322, 108 Stat. 1796 (1994) (codified as amended in scattered sections of 42 U.S.C. (2006)) (banning the “manufacture, transfer, and possession” of certain makes and models of semiautomatic assault weapons and their exact copies; banning any semiautomatic weapon with more than two military-style features); Federal Firearms License Reform Act of 1993, Pub. L. No. 103-159, 107 Stat. 1545 (codified at 18 U.S.C. §§ 922–924 (2012)) (increasing licensing requirements and fees for federal firearms licensees (FFL)); Brady Handgun Violence Prevention Act, Pub. L. No. 103-159, 107 Stat. 1536 (1993) (codified at 18 U.S.C. §§ 921–924, 925A (2012)) (requiring FFLs to conduct background checks on all handgun purchasers and mandating a one-week waiting period before making the transfer, extending the background check requirement to all long guns in 1998, and eliminating the one-week waiting period in favor of an instant check system in 1998); Firearms Owners Protection Act (FOPA), Pub. L. No. 99-308, 100 Stat. 449 (1986) (codified at 18 U.S.C. §§ 921–926A, 929 (2012) and 26 U.S.C. § 5845 (2012)) (limiting ATF to one compliance inspection per FFL per year without a warrant and prohibiting the establishment of a national firearms registry); Gun Control Act of 1968, Pub. L. No. 90-618, 82 Stat. 1213 (codified at 18 U.S.C. §§ 921–931 (2012)) (establishing federal licensing system for gun manufacturers, importers and dealers; prohibiting sales of handguns to out-of-state residents; banning importation of small, cheap handguns, but permitting domestic manufacture; designating categories of persons prohibited from purchasing firearms; establishing requirements and procedures to facilitate crime gun tracing); National Firearms Act of 1934, Pub. L. No. 474, 48 Stat. 1236 (codified in scattered sections of 26 U.S.C. (2012)) (restricting ownership of automatic weapons, hand grenades, and sawed-off shotguns).
 12. See 18 U.S.C. § 927 (2012); see also Philip J. Cook et al., *Underground Gun Markets*, 117 ECON.J. F588, F590 (2007).
 13. See OIG REPORT 2012, *supra* note 6, at 17–18. Because there is no federal statute prohibiting gun trafficking or straw purchasing, ATF instead investigates and refers these acts for prosecution under 18 U.S.C. § 922(a)(1)(A) (2012), willfully engaging in firearms

firearms regulations, including requirements for firearm registration, permit-to-purchase laws, and greater restrictions on firearm sales.¹⁴ For example, eighteen states prohibit certain misdemeanants from purchasing firearms,¹⁵ at least six states have enacted comprehensive tracing requirements for law enforcement,¹⁶ and at least four states have adopted one-gun-a-month laws.¹⁷ Of the four states that border Mexico, however, only California has enacted significant gun regulations, while Arizona, New Mexico, and Texas largely follow the minimum federal standards.

Per the Gun Control Act of 1968 and the Federal Firearms License Reform Act of 1993, all individuals “engaged in the business” of selling guns must have a Federal Firearms License (FFL),¹⁸ which includes Type 01 licenses (for dealers) and Type 02 licenses (for pawnbrokers).¹⁹ Potential dealers and pawnbrokers can obtain an FFL by paying an initial application fee of two hundred dollars and a renewal fee of ninety dollars every three years.²⁰ Applicants must be at least twenty-one years old and provide a social security number and the business name, location, and hours of operation.²¹ They must certify that they have not been convicted of a felony or of a misdemeanor crime of domestic violence, dishonorably discharged from the military, or committed to a mental institution; that they have not renounced their United States citizenship; and that they are not fugitives from justice, unlawful users of a controlled substance, or “alien[s] . . . illegally or unlawfully in the United States.”²² Within the Department of Justice, the ATF is the primary agency responsible for licensing and overseeing FFLs.²³

business without a license, 18 U.S.C. § 922(a)(6) (2012), knowingly making a false statement or presenting false identification in connection with a firearm purchase, 18 U.S.C. § 922(g)(1) (2012), knowing possession of a firearm by a convicted felon, and 18 U.S.C. § 924(a)(1)(A) (2012), knowingly making a false statement.

14. D.W. Webster et al., *Relationship Between Licensing, Registration, and Other Gun Sales Laws and the Source State of Crime Guns*, 7 INJ. PREVENTION 184, 184 (2001).
15. Anthony A. Braga et al., *The Illegal Supply of Firearms*, 29 CRIME & JUST. 319, 344 (2002).
16. Philip J. Cook & Anthony A. Braga, *Comprehensive Firearms Tracing: Strategic and Investigative Uses of New Data on Firearms Markets*, 43 ARIZ. L. REV. 277, 286 (2001).
17. Christopher S. Koper, *Purchase of Multiple Firearms as a Risk Factor for Criminal Gun Use: Implications for Gun Policy and Enforcement*, 4 CRIMINOLOGY & PUB. POL’Y 749, 750 (2005).
18. FFL is also often used to refer to federal firearms licensees, or those who hold FFLs.
19. 18 U.S.C. §§ 921–931 (2012); see also Christopher S. Koper, *Federal Legislation and Gun Markets: How Much Have Recent Reforms of the Federal Firearms Licensing System Reduced Criminal Gun Suppliers?*, 1 CRIMINOLOGY & PUB. POL’Y 151, 152 (2002).
20. 18 U.S.C. § 923(a)(3)(B) (2012); see also Koper, *supra* note 19, at 157.
21. 18 U.S.C. § 923(d)(1); see also Koper, *supra* note 19, at 153.
22. *Id.* § 922(s)(3); see also Koper, *supra* note 19, at 153.
23. OIG REPORT 2012, *supra* note 6, at 9 (stating that the ATF has “primary jurisdiction over the administration and enforcement of the [Gun Control Act of 1968]”).

Federal law in the United States also establishes a set of requirements designed to allow enforcement officials to trace any firearm from its point of manufacture to its point of sale by an individual with an FFL.²⁴ To facilitate tracing, all guns are stamped with a unique serial number.²⁵ FFLs are required to keep a record of all firearms that come into and leave their possession, and must provide records of those transactions to the ATF in response to trace requests within twenty-four hours of receipt.²⁶ FFLs are required by statute to report all multiple handgun sales and stolen firearms to the ATF.²⁷ And when FFLs go out of business, they must transfer their sale records to the ATF so that they are accessible in case of future trace requests.²⁸

U.S. federal statutes also establish categories of persons prohibited from purchasing firearms. These include persons under the age of eighteen for long guns and under the age of twenty-one for handguns, out-of-state purchasers of handguns, undocumented “aliens,” drug users or addicts, persons convicted of domestic violence offenses, persons committed to a mental institution, and persons convicted of offenses “punishable by imprisonment for a term exceeding one year.”²⁹ Convicted felons whose civil rights have been restored or whose convictions have been pardoned, set aside, or expunged are allowed to purchase firearms.³⁰

Estimates place the number of privately owned firearms in 2007 in the United States at 294 million, and the total number of firearms available to civilians in 2009 at 310 million.³¹ The number of individual gun owners in the United States has remained largely steady from the 1980s to the present,³² but because of shifting demographic patterns, the percentage of households with guns has decreased: In 1980, 48 percent of American households had at least one gun, but by 1999, that had dropped to 36 percent.³³ Guns are also distributed unequally geographically: Rural residents are far more likely than urban residents to own guns (including handguns), and rates of gun ownership are

24. See 18 U.S.C. §§ 921–931.

25. *Id.* §923(i).

26. *Id.* §§ 923(g)(1)(A), 923(g)(7).

27. *Id.* §§ 923(g)(3)(A), 923(g)(6).

28. *Id.* § 923(g)(4).

29. *Id.* § 922(g)(1)–(9).

30. *Id.* § 921(a)(20); see also Braga et al., *supra* note 15, at 322.

31. WILLIAM J. KROUSE, CONG. RESEARCH SERV., GUN CONTROL LEGISLATION 8 (2012), available at <http://www.fas.org/sgp/crs/misc/RL32842.pdf>.

32. Approximately 28 percent of individuals owned guns in 1980, and in 1999, 44 percent of men and 12 percent of women reported gun ownership. Braga et al., *supra* note 15, at 325.

33. *Id.*

lower in the Northeast than in the Southern, Rocky Mountain, Midwest, and Pacific regions.³⁴

B. Gun Policy and Prevalence in Mexico

The Consulate General of the United States in Tijuana issues a warning to travelers on its official webpage that reads: “Guns Are Illegal in Mexico.”³⁵ Mexican federal law is far more restrictive than U.S. law regarding who may sell firearms, who may buy them, and what types of guns can be sold legally.³⁶ Prospective firearms dealers and manufacturers in Mexico must apply to the National Defense Secretariat for a permit, which it has the discretion to deny, suspend, or cancel in the interest of public order.³⁷ Licensed dealers must make a monthly report of their operations to the National Defense Secretariat.³⁸ Mexican law allows dealers to sell only one gun per transaction per purchaser, unless the dealer obtains special government permission in advance.³⁹

All civilians in Mexico must obtain a license and register with the Federal Gun Registry in order to legally possess a firearm.⁴⁰ Applicants must demonstrate a need to own a firearm for a permissible purpose, such as home defense, hunting, target shooting, collecting, or employment.⁴¹ A background check and character references are required.⁴² Civilians cannot legally possess firearms designated for

34. *Id.*

35. *Guns Are Illegal in Mexico*, CONSULATE GEN. U.S., <http://tijuana.usconsulate.gov/tijuana/warning.html> (last visited Mar. 7, 2014).

36. See Ley Federal de Armas de Fuego y Explosivos [LFAFE] [Federal Law of Firearms and Explosives], Diario Oficial de la Federación [DO], 11 de Enero de 1972 (Mex.); Código Penal Federal [CPF] [Federal Criminal Code], *as amended*, arts. 160–163, Diario Oficial de la Federación [DO], 14 de Agosto de 1931 (Mex.).

37. Ley Federal de Armas de Fuego y Explosivos [LFAFE] [Federal Law of Firearms and Explosives], arts. 37, 39, Diario Oficial de la Federación [DO], 11 de Enero de 1972 (Mex.); see also PERMANENT MISSION OF MEX. TO THE UNITED NATIONS, NATIONAL REPORT OF MEXICO REGARDING THE IMPLEMENTATION OF THE PROGRAMME OF ACTION TO PREVENT, COMBAT AND ERADICATE THE ILLICIT TRADE IN SMALL ARMS AND LIGHT WEAPONS IN ALL ITS ASPECTS 6 (2003).

38. Ley Federal de Armas de Fuego y Explosivos [LFAFE] [Federal Law of Firearms and Explosives], art. 68, Diario Oficial de la Federación [DO], 11 de Enero de 1972 (Mex.); see also PERMANENT MISSION OF MEXICO TO THE UNITED NATIONS, *supra* note 37, at 6.

39. Ley Federal de Armas de Fuego y Explosivos [LFAFE] [Federal Law of Firearms and Explosives], art. 49, Diario Oficial de la Federación [DO], 11 de Enero de 1972 (Mex.).

40. *Id.* arts. 7, 17, 24.

41. *Id.* arts. 9, 15, 21, 24–26; see also Código Penal Federal [CPF] [Federal Criminal Code], *as amended*, arts. 161, 163, Diario Oficial de la Federación [DO], 14 de Agosto de 1931 (Mex.).

42. Ley Federal de Armas de Fuego y Explosivos [LFAFE] [Federal Law of Firearms and Explosives], art. 26, Diario Oficial de la Federación [DO], 11 de Enero de 1972 (Mex.) (requiring that applicants for a firearms permit demonstrate that they have not been

exclusive use by the armed forces, which include all 9 mm or larger caliber handguns, .223 caliber, 7 mm, 7.62 mm, and .30 caliber rifles, and all automatic firearms.⁴³

Unlike in the United States, where federal law permits and does not regulate private transfers, private firearms transfers are prohibited in Mexico without a special permit, which is only granted in “extraordinary” cases.⁴⁴ Because Mexico prohibits all private sales of firearms not carried out through a licensed dealer, the secondary market for firearms in Mexico is de facto illegal.⁴⁵ Also, because of the variety of weapons banned from legal sale in Mexico, a number of firearms sold legally in the United States are illegal in Mexico.⁴⁶ Therefore, guns sold legally through the primary firearms market in the United States (meaning directly from FFLs) become part of the illegal firearms market in Mexico the moment they cross the border.

Despite these restrictions on gun ownership, Mexico has a supply of illegal firearms that is more than five times the size of its supply of legal firearms.⁴⁷ In 2010, Mexico also had one of the highest rates of gun violence in the world, with 10 out of 100,000 people dying from gun homicides.⁴⁸ The same year, the U.S. gun homicide rate was 3.2 per 100,000 people.⁴⁹ The number of homicides in Mexico increased dramatically after 2006, beginning with President Felipe Calderón’s declaration of a war on drugs and drug trafficking organizations in 2007. In 2006, there were 10,452 homicides in Mexico; in

convicted of a crime involving a firearm, that they maintain an honest living, and that they do not consume drugs, among other requirements).

43. *Id.* art. 11.

44. *Id.* arts. 53–54.

45. See *infra* Part II.B for the definition and discussion of primary and secondary firearms markets.

46. For example, .223 caliber rifles, 7.62 mm rifles, and 9 mm handguns, all of which can be sold legally in the United States, are illegal in Mexico. Compare 18 U.S.C. § 921–931 (2012), with Ley Federal de Armas de Fuego y Explosivos [LFAFE] [Federal Law of Firearms and Explosives], art. 11, Diario Oficial de la Federación [DO], 11 de Enero de 1972 (Mex.).

47. Compare Aaron Karp, *Estimating Civilian Owned Firearms*, SMALL ARMS SURV., Sept. 2011, http://www.smallarmssurvey.org/fileadmin/docs/H-Research_Notes/SAS-Research-Note-9.pdf (estimating the number of civilian owned firearms in Mexico at 15.5 million in 2007), with OAS Observatory on Citizen Security—Data Repository tbl9.1, ORG. AM. STATES, <http://www.oas.org/dsp/observatorio/database/indicadorsdetails.aspx?lang=en&indicador=29> (last visited Mar. 7, 2014) (listing the number of registered firearms in Mexico as 2.8 million in 2006).

48. UNITED NATIONS OFFICE ON DRUGS & CRIME, GLOBAL STUDY ON HOMICIDE 2011: HOMICIDES BY FIREARMS (2011), http://www.unodc.org/documents/data-and-analysis/statistics/Homicide/Homicides_by_firearms.xls.

49. *Id.*

2011, there were 27,213.⁵⁰ The homicide rate in Mexico has increased by an average of 24 percent each year from 2007 through 2012.⁵¹

Although drug trafficking in Mexico has been ongoing for decades, many analysts have linked the rise in homicides in the late 2000s to turf wars between drug trafficking organizations—wars caused by the splintering of once hegemonic cartels like the Sinaloa, Gulf, and Guadalajara in response to the Calderón administration’s aggressive targeting of these groups.⁵² As a result, new criminal organizations such as the Zetas and La Familia emerged in the mid-to-late 2000s and have employed increasingly brutal tactics in their fight for control of lucrative drug trafficking routes from Mexico to the United States.⁵³ The victims of this violence have increasingly included innocent bystanders as well as public officials, media, and members of civil society groups, who have been targeted for assassination because they dare to challenge the power and influence of “El Narco.”⁵⁴

C. Fast and Furious: Investigating and Prosecuting Gun Trafficking

The use of guns of U.S. origin by members of drug trafficking organizations and by other criminals in Mexico has been a contentious legal issue for governments on both sides of the border.⁵⁵ In 2011 President Calderón’s administration retained legal counsel in the United States to investigate the possibility of bringing a civil suit against firearms manufacturers and sellers because of the deadly effects of their products in Mexico.⁵⁶ At least since 2007, the ATF has

50. MOLZAHN ET AL., *supra* note 1, at 12–13 (analyzing statistics from Mexico’s Instituto Nacional de Estadística y Geografía (INEGI)).

51. *Id.*

52. *Id.* See generally IOAN GRILLO, EL NARCO: INSIDE MEXICO’S CRIMINAL INSURGENCY (2011) (discussing the history of drug trafficking and related violence in Mexico).

53. GRILLO, *supra* note 52, at 106, 127–28, 211.

54. See generally *id.* Numerous Mexican human rights organizations are engaged in advocacy on behalf of victims of the violence of Mexico’s drug war, including the Centro de Derechos Humanos Miguel Agustín Pro Juárez, CENTRO PRODH, <http://www.centroprodh.org.mx> (last visited Mar. 7, 2014), and the Red Solidaria Década contra la Impunidad, RED SOLIDARIA DÉCADA CONTRA LA IMPUNIDAD, <http://decadacontralaimpunidad.blogspot.com> (last visited Mar. 7, 2014). The Mexican government also has a human rights commission that accepts complaints linked to drug war violence, Comisión Nacional de los Derechos Humanos. COMISIÓN NACIONAL DE LOS DERECHOS HUMANOS MÉXICO, <http://www.cndh.org.mx> (last visited Mar. 7, 2014).

55. See generally Colby Goodman & Michel Marizco, *U.S. Firearms Trafficking to Mexico: New Data and Insights Illuminate Key Trends and Challenges*, in SHARED RESPONSIBILITY: U.S.-MEXICO POLICY OPTIONS FOR CONFRONTING ORGANIZED CRIME 167 (Eric L. Olson et al. eds., 2010).

56. *Mexico Wants to Sue U.S. Gun Makers*, CBS NEWS (Apr. 21, 2011, 10:14 PM), <http://www.cbsnews.com/news/mexico-wants-to-sue-us-gun-makers>.

been keenly aware of the role of straw purchasers in the United States in providing guns to the cartels in Mexico, and has attempted to investigate and prosecute individual purchasers and to identify and dismantle trafficking networks.⁵⁷ Under President George W. Bush's administration, ATF Order 3310.4B authorized ATF agents to investigate cases of possible straw purchasers, including straw purchasers suspected of obtaining guns for buyers in Mexico, to "see where the guns go, [and to look into] the people, the places, addresses, vehicles" involved, rather than arresting suspects on-site, questioning straw purchasers at their residences through immediate "knock and talks," or obtaining arrest and search warrants after believing there was probable cause to do so.⁵⁸ Under President Barack Obama's administration, ATF agents continued their work under the directive of ATF Order 3310.4B and expanded their efforts to combat cross-border trafficking under the overall rubric of a program named Project Gunrunner.⁵⁹

57. See *U.S. Obligations Under the Mérida Initiative: Hearing Before the Subcomm. on the W. Hemisphere of the H. Comm. on Foreign Affairs*, 110th Cong. 27–33 (2008) (statement of Hon. William Hoover, Assistant Dir. for Field Operations, Bureau of Alcohol, Tobacco & Firearms) [hereinafter Hoover Statement]; U.S. GOV'T ACCOUNTABILITY OFFICE, FIREARMS TRAFFICKING: U.S. EFFORTS TO COMBAT ARMS TRAFFICKING TO MEXICO FACE PLANNING AND COORDINATION CHALLENGES (2009) [hereinafter GAO REPORT 2009]; Memorandum from Michael J. Sullivan, Acting Dir., Bureau of Alcohol, Tobacco, Firearms & Explosives, to Alberto R. Gonzales, Att'y Gen. (Mar. 6, 2007) (describing the ATF Acting Director's visit to Mexico to discuss firearms trafficking under the Bush Administration in 2007).

58. OIG REPORT 2012, *supra* note 6, at 14–15 describes the procedure authorized by ATF Order 3310.4B, Chapter K, Section 148, which provides:

(1) In cases where probable cause exists to believe a violation of law has occurred and the special agent determines there is a need to intervene in the weapons transfer (e.g., the recipient of the firearms is a known felon; it is known the firearms will be used in a crime of violence), the special agent shall do so but should place concerns for public safety and the safety of the involved special agents as the primary determining factor in exercising this option.

(2) In other cases, immediate intervention may not be needed or desirable, and the special agent may choose to allow the transfer of firearms to take place in order to further an investigation and allow for the identification of additional coconspirators who would have continued to operate and illegally traffic firearms in the future, potentially producing more armed crime.

59. OFFICE OF THE INSPECTOR GEN., U.S. DEP'T OF JUSTICE, REVIEW OF ATF'S PROJECT GUNRUNNER (2010) [hereinafter OIG REPORT 2010]; see also Stephanie Erin Brewer, *Rethinking the Mérida Initiative: Why the U.S. Must Change Course in Its Approach to Mexico's Drug War*, 16 HUM. RTS. BRIEF, no. 3, 2009, at 9, 9–11 (discussing the terms of the Merida Initiative, an agreement made between Presidents George W. Bush and Felipe Calderón in 2007 for an anticipated \$1.4 billion in primarily security assistance to Mexico over the course of three years to fight drug trafficking, and efforts by President Barack Obama's administration beginning in 2009 to increase the number of ATF agents along the southwestern U.S. border to prevent gun trafficking).

The case against George Iknadosian, a licensed gun dealer in Phoenix, Arizona, is illustrative of the challenges to successfully investigating and prosecuting gun traffickers in the United States under existing statutes. Iknadosian sold more than seven hundred guns of the types popular with Mexican drug cartels, forty-seven of which were later traced back to him after being recovered from Mexican crime scenes.⁶⁰ The U.S. Attorney's Office declined to prosecute the case, but the Arizona Attorney General mounted a year-long investigation, which uncovered strong evidence that Iknadosian was knowingly selling guns to straw purchasers who intended to traffic the guns to Mexican drug cartels.⁶¹ After a lengthy trial, the state court judge presiding over the case dismissed it before it went to a jury because he thought the case was "overcharged," stating that "[t]here certainly was evidence that Iknadosian was selling to people who were not buying the guns for themselves, and that's a class-one misdemeanor."⁶² Because there is no federal statute defining and prohibiting gun trafficking, there is no uniform federal charge prosecutors can bring against unscrupulous gun dealers and straw purchasers, which leaves only a patchwork of federal and state laws that allow people like Iknadosian to slip through the cracks.

Despite these challenges, the ATF continued to investigate gun trafficking under the rubric of Project Gunrunner without much fanfare until December 14, 2010, when U.S. Customs and Border Patrol Agent Brian Terry was shot while patrolling in the desert along the U.S.-Mexico border outside of Nogales, Arizona.⁶³ Two guns found at the crime scene were traced back to an individual in Arizona who had been under investigation by ATF agents at the time of

60. See James V. Grimaldi & Sari Horwitz, *As Mexico Drug Violence Runs Rampant, U.S. Guns Tied to Crime South of Border*, WASH. POST, Dec. 15, 2010, <http://www.washingtonpost.com/wp-dyn/content/article/2010/12/12/AR2010121202663.html> (discussing the case against George Iknadosian); see also *Arizona v. Iknadosian*, No. CR2008-006471 (Ariz. Sup. Ct. May 6, 2008); Joel Millman, *Case Against Gun-Store Owner Dismissed*, WALL ST. J., Mar. 20, 2009, <http://online.wsj.com/news/articles/SB123750753535390327>. What is perhaps most telling about this episode is that Iknadosian did not violate any state laws regulating the sale of firearms because there are no such state laws in effect in Arizona; instead, he was charged with illegally conducting a business enterprise, fraud, forgery, assisting a criminal syndicate, and money laundering. See Complaint, *Arizona v. Iknadosian*, No. CR2008-006471 (Ariz. Sup. Ct. filed May 6, 2008), available at <https://www.azag.gov/sites/default/files/iknadosian%20gamez%20gamez%20direct%20complaint.pdf>.

61. Grimaldi & Horwitz, *supra* note 60.

62. *Id.* (quoting Judge Robert Gottsfeld).

63. See generally *Fast and Furious: News, Analysis and Opinion*, POLITICO, www.politico.com/pages/fast-and-furious (last visited Mar. 7, 2014).

the sale for suspected straw purchasing for transfer to Mexico.⁶⁴ Yet as part of the anti-firearms trafficking operation dubbed Fast and Furious, and still operating under the directive of ATF Order 3310.4B, ATF officials had not immediately arrested the suspected straw purchaser at the time of the sale of the gun later used to shoot Agent Terry, nor had they interdicted the gun.⁶⁵ Instead, ATF agents allowed this gun and others bought by suspected straw purchasers to continue on to their destinations—a practice later described as “gun-walking”—while the ATF focused on strategies to identify and to dismantle the broader trafficking networks.⁶⁶

In a real-life scenario that could have been ripped from the pages of Joseph Heller’s *Catch-22*, ATF agents found themselves under fire from the U.S. Congress for inadequately investigating something that Congress refused to pass a law to authorize them to investigate: gun trafficking. Indeed, the lack of any federal statute defining or prohibiting gun trafficking makes the process of investigating and prosecuting these acts much more difficult: No one can be prosecuted for an act that is not a crime, so persons engaged in gun trafficking are instead investigated and prosecuted under a number of different statutes that may or may not apply, depending on the circumstances.⁶⁷ The ATF is limited in the scope of its authority by the federal firearms statutes passed by Congress.⁶⁸ Despite the public outcry regarding Fast and Furious after Agent Terry’s death, and a longstanding recommendation from the U.S. Department of Justice that Congress reform the statutes,⁶⁹ neither the U.S. House

64. See OIG REPORT 2012, *supra* note 6, at 1–2 (discussing the circumstances and investigations surrounding Agent Terry’s death).

65. *Id.*

66. *Id.* at 96–97, 103 (discussing “gun-walking” and explaining the mechanics of Fast and Furious).

67. See *id.* at 17–18 (listing “a variety of criminal statutes” used to investigate and prosecute gun trafficking and straw purchasing in lieu of a statutory prohibition on those acts as such); see also Stewart M. Young, *Going Nowhere “Fast” (or “Furious”): The Nonexistent U.S. Firearms Trafficking Statute and the Rise of Mexican Drug Cartel Violence*, 46 U. MICH. J. L. REFORM 1 (2012).

68. The ATF has authority to access information on firearms purchases “only as authorized by statute or regulation.” *Nat’l Shooting Sports Found., Inc. v. Jones*, 840 F. Supp. 2d 310, 313–14 (D.D.C. 2012).

69. The Department of Justice had, before the death of Agent Terry, provided testimony and reports to Congress detailing the challenges of combating gun trafficking from the United States to Mexico and recommending reforms to improve ATF efforts in this area, first under the Bush administration and later under the Obama administration. See Hoover Statement, *supra* note 57; GAO REPORT 2009, *supra* note 57; OIG REPORT 2010, *supra* note 59; see also Harold Hongju Koh, *Lecture: A World Drowning in Guns*, 71 FORDHAM L. REV. 2333, 2354–60 (2003) (discussing challenges created by the lack of a federal anti-firearms trafficking statute and recommending reforms).

of Representatives nor the U.S. Senate has since passed an anti-firearms trafficking statute.⁷⁰

Meanwhile, many of the most vocal critics of Operation Fast and Furious mischaracterized the U.S. government's role as actively (rather than passively or by omission) providing criminals in Mexico with U.S. firearms, while ignoring the roles played by private gun buyers and sellers in firearms trafficking.⁷¹ Some media outlets even mistakenly portrayed Fast and Furious as a U.S. government-funded program to sell guns to drug cartels in Mexico, when in fact, the roughly two thousand guns sold during Fast and Furious were guns sold by private sellers to private buyers who were under investigation by the ATF for suspected gun trafficking.⁷² Focusing on these two thousand guns also obscured the true scale of the problem: Two thousand guns are less than 1 percent of the estimated 253,000 guns purchased annually in the United States to be trafficked to Mexico.⁷³

Three days after Agent Terry was shot, the ATF began the process of imposing new reporting requirements on multiple sales of high-powered long guns in the four U.S. states that border Mexico by publishing an official announcement in the Federal Register.⁷⁴ The ATF also released limited data

70. Legislators in both the House and the Senate introduced multiple bills during the 112th and the 113th sessions of the U.S. Congress that would have amended Section 18 of the U.S. Code to create an offense for trafficking in firearms. *See, e.g.*, Hadiya Pendleton and Nyasia Pryear-Yard Stop Illegal Trafficking in Firearms Act of 2013, H.R. 955, 113th Cong. (2013) (introduced by Rep. Bobby Rush of Illinois); Firearm Straw Purchasing and Trafficking Prevention Act, S.B. 730, 113th Cong. (2013) (introduced by Sen. Ted Cruz of Texas); Stop Illegal Trafficking in Firearms Act of 2013, S.B. 54, 113th Cong. (2013) (introduced by Sen. Patrick Leahy of Vermont); Detectives Nemorin and Andrews Anti-Gun Trafficking Act of 2013, H.R. 722, 113th Cong. (2013) (introduced by Rep. Peter King of New York); Gun Trafficking Prevention Act of 2012, S.B. 1973, 112th Cong. (2011) (introduced by Sen. Kirsten Gillibrand of New York); Stop Gun Trafficking and Strengthen Law Enforcement Act of 2011, H.R. 2554, 112th Cong. (2011) (introduced by Rep. Carolyn Maloney of New York). As of March 11, 2014, however, none of these measures had been put to a vote in either chamber. *See* Library of Cong., *Search Bill Text – 113th Congress*, THOMAS.GOV, <http://thomas.loc.gov/home/LegislativeData.php?&n=Bill+Text> (last visited Mar. 11, 2014) (using “firearms+trafficking” and “gun+trafficking” to search bills in the 112th and 113th sessions of the U.S. Congress for any “Bills with Floor Action”).

71. *See IG Report: The Department of Justice's Office of the Inspector General Examines the Failures of Operation Fast and Furious: Hearing Before the H. Comm. on Oversight & Gov't Reform*, 112th Cong. (2012).

72. OIG REPORT 2012, *supra* note 6, at 203–04.

73. *See* TOPHER MCDUGAL ET AL., IGARAPÉ INST. & UNIV. OF SAN DIEGO TRANS-BORDER INST., *THE WAY OF THE GUN: ESTIMATING FIREARMS TRAFFIC ACROSS THE U.S.-MEXICO BORDER* 5 (2013), *available at* http://catcher.sandiego.edu/items/peacestudies/way_of_the_gun.pdf.

74. Agency Information Collection Activities: Proposed Collection; Comments Requested, 75 Fed. Reg. 79,021 (proposed Dec. 17, 2010) (proposing reporting requirement for any FFL

on crime gun traces from Mexico and on gun trafficking from the United States, illustrating that most crime guns submitted for tracing in Mexico were sourced from the United States.⁷⁵ Gun manufacturers and dealers responded with a lobbying effort to block implementation of the reporting requirements,⁷⁶ and then, once the regulations went into effect, initiated a lawsuit to enjoin their enforcement.⁷⁷

There are certainly profits at stake for the gun industry. One study estimated the value of firearms sold in the United States and destined for Mexico to be \$127 million annually from 2010 to 2012, an increase from previous years.⁷⁸ If these estimates are accurate, guns purchased in the United States and destined for Mexico represent one of the few growing segments of the firearms

who sells “two or more rifles within any five consecutive business days with the following characteristics: (a) semi-automatic; (b) a caliber greater than .22; and (c) the ability to accept a detachable magazine”); *see also* Agency Information Collection Activities; Proposed Collection Comments Requested: Report of Multiple Sale or Other Disposition of Certain Rifles, 76 Fed. Reg. 24,058, 24,058–59 (proposed Apr. 29, 2011) (revising the reporting requirement to specify that it will only apply to FFLs in Arizona, California, New Mexico, and Texas).

75. U.S. DEP’T OF JUSTICE, BUREAU OF ALCOHOL, TOBACCO, FIREARMS & EXPLOSIVES, OFFICE OF STRATEGIC INTELLIGENCE & INFO., FIREARMS TRACING SYSTEM (2012), <http://www.atf.gov/files/statistics/download/trace-data/international/2007-2011-Mexico-trace-data.pdf>. The ATF began releasing such tracing data in 2010 and has subsequently updated the information available on the website while removing the ability to access the older data.

76. *See, e.g.*, Letter from Lawrence G. Keane, Senior Vice President & Exec. Counsel, Nat’l Shooting Sports Found., Inc., to the Office of Mgmt. & Budget, and Barbara Terrell, Firearms Indus. Programs Branch, Bureau of Alcohol, Tobacco, Firearms & Explosives (Feb. 14, 2011); Letter from Chris W. Cox, Exec. Dir., NRA Inst. for Legislative Action, to the Office of Mgmt. & Budget (Feb. 10, 2011); Letter from Seventeen U.S. Senators to the Hon. Kenneth E. Melson, Acting Dir., Bureau of Alcohol, Tobacco, Firearms & Explosives, and the Hon. Jacob Lew, Dir., Office of Mgmt. & Budget (Feb. 1, 2011) (expressing opposition to proposed reporting requirements); E-mail from EPS Directorate to Teresa Ficarella & Jim P. Ficarella (Dec. 29, 2010), *available at* Administrative Record, *supra* note 3, at 627–28 (circulating a mass email from a FFL to its database encouraging customers to contact ATF to express disapproval of the newly proposed multiple sale reporting requirements using talking points supplied by the National Shooting Sports Foundation); *see also* Memorandum from Vivian Chu et al., Cong. Research Serv., DOJ-ATF Multiple Rifle Sales Emergency Notice of Information Collection Request (Feb. 25, 2011), *available at* Administrative Record, *supra* note 3, at 706, 710 (discussing an amendment to the Full Year Continuing Appropriations Act, 2011, passed in the House but not the Senate, “that would prohibit funds from being used to require a FFL ‘to report information to the Department of Justice regarding the sale of multiple rifles or shotguns to the same person’”).

77. Nat’l Shooting Sports Found., Inc. v. Jones, 840 F. Supp. 2d 310 (D.D.C. 2012).

78. Topher McDougal et al., *Made in the U.S.A.: The Role of American Guns in Mexican Violence*, ATLANTIC, Mar. 18, 2013, <http://www.theatlantic.com/international/archive/2013/03/made-in-the-usa-the-role-of-american-guns-in-mexican-violence/274103> (estimating that 2.2 percent of demand for firearms sold in the United States annually originates south of the border in Mexico).

market.⁷⁹ The growth in FFLs along the U.S.-Mexico border also hints at the money to be made from selling guns destined for Mexico. As of November 2010, there were 8534 type 01 and type 02 FFLs operating in the four U.S. states that border Mexico, out of a total of 61,918 nationwide.⁸⁰ As of February 2013, there were 9154 such FFLs operating in Arizona, California, New Mexico, and Texas—a growth of 7.3 percent over three years—out of a total of 58,920 nationwide.⁸¹ Thus, the number of type 01 and type 02 FFLs along the U.S.-Mexico border grew during a time when the total number nationwide declined.

II. EMPIRICAL LITERATURE REVIEW: WHAT CAN TRACING DATA TELL US?

A. Tracing Data and Selection Bias

Several empirical studies on crime guns in the United States have used tracing data to glean information on the characteristics of crime guns and the means through which people prohibited from owning guns procure them. However, researchers recognize that tracing data may be subject to selection bias for two main reasons: first, because not all guns recovered from crimes are submitted for tracing, and second, because not all guns can be traced successfully.⁸² Because tracing data may be imbued with selection bias, studies

79. *Money, Guns, and Drugs: Are U.S. Inputs Fueling Violence on the U.S.-Mexico Border?: Hearing Before the Subcomm. on Nat'l Sec. & Foreign Affairs of the H. Comm. on Gov't Oversight & Reform*, 111th Cong. 41 (2009) (statement of Tom Diaz, Senior Policy Analyst, Violence Policy Ctr.) (discussing a shrinking U.S. base of firearms consumers resulting in gun industry marketing techniques aimed at repeat purchasers).

80. E-mail from B. Scott Mendoza to Arthur W. Herbert & Stephen B. Albro (Nov. 22, 2010), available at Administrative Record, *supra* note 3, at 448; see *Downloadable Lists of Federal Firearms Licensees (FFLs)*, BUREAU OF ALCOHOL, TOBACCO, FIREARMS & EXPLOSIVES, <http://www.atf.gov/about/foia/ffl-list-2010.html> (last visited Mar. 7, 2014).

81. BUREAU OF ALCOHOL, TOBACCO, FIREARMS & EXPLOSIVES, U.S. DEP'T OF JUSTICE, REPORT OF ACTIVE FEDERAL FIREARMS LICENSEES - LICENSE TYPE BY STATE STATISTICS (2013), <https://www.atf.gov/sites/default/files/assets/inside-atf/2013/0213-ffl-type-by-state1.pdf>.

82. See Cook & Braga, *supra* note 16, at 290; see also Gary Kleck & Shun-Yung Kevin Wang, *The Myth of Big-Time Gun Trafficking and the Overinterpretation of Gun Tracing Data*, 56 UCLA L. REV. 1233, 1274 (2009) (“[S]amples of guns successfully traced or submitted for tracing overrepresent guns that look like they were trafficked.”). But see Anthony A. Braga et al., *Interpreting the Empirical Evidence on Illegal Gun Market Dynamics*, 89 J. URB. HEALTH 779, 781 (2012) (arguing that Kleck & Wang set up and refute a “straw man” argument of big-time gun trafficking that is neither the model of gun trafficking as understood by crime gun researchers nor supported by empirical evidence).

using tracing data have a limited capacity to yield inferences about the entire population of crime guns.⁸³

Researchers Philip J. Cook and Anthony A. Braga, who have studied and written extensively on the characteristics and supply of illegal firearms, point to three ways that tracing data—even when imbued with selection bias—can be used responsibly and effectively: first, to uncover and interdict illegal firearms supply networks; second, to identify specific dealers as targets for enforcement measures due to noncompliance with regulations; and third, to provide a basis for evaluating the effects of changes in gun control laws on the supply of illegal firearms.⁸⁴

Furthermore, the two types of selection bias at work on the sample of crime guns recovered in Mexico and successfully traced back to a state of origin in the United States arguably interact to underrepresent the number of crime guns sourced from the United States: First, although Mexican officials may be more likely to submit guns for tracing that are not legally manufactured or sold in Mexico, this would not necessarily favor any one foreign source country over another. Second, because so few firearms are actually manufactured in Mexico, the effect of such selection bias is arguably minimal. And third, because guns with obliterated serial numbers are less likely to be traced successfully to a point of origin, and because guns that are trafficked are more likely to have obliterated serial numbers,⁸⁵ it follows that the population of guns successfully traced back to the United States is likely underrepresenting the number of guns trafficked from the United States.⁸⁶

B. Characteristics and Sources of Crime Guns

Past empirical research on crime guns in the United States suggests that guns tend to move from areas of weaker regulation to areas of stronger regulation.⁸⁷ Weaker gun regulation is also associated with greater gun prevalence,

83. See Lee Epstein & Gary King, *The Rules of Inference*, 69 U. CHI. L. REV. 1 (2002).

84. Cook & Braga, *supra* note 16, at 278.

85. Braga et al., *supra* note 15, at 333–34.

86. Cf. Koh, *supra* note 69, at 2352 (recommending that the United States implement a marking and tracing system to clearly identify guns manufactured in the United States, as some other countries have done, to address the problem of untraceable guns in international commerce, particularly because the United States is “the major supplier of small arms in the world”).

87. Braga et al., *supra* note 15, at 331 (“The ATF’s analyses of . . . trace data suggest[s] that many handguns recovered in cities with restrictive state and local firearms laws (e.g., Boston and New York) were first purchased in states with less restrictive firearms laws. Conversely, in those jurisdictions with lenient gun laws (e.g., Atlanta and Dallas), most recovered firearms were first purchased in-state.”); Cook & Braga, *supra* note 16, at 294 (“In states that have the

and vice versa. Gun regulation and gun prevalence are negatively correlated, yet it is unclear which causes the other, if causation is reciprocal, or if an unknown third factor explains both variables.⁸⁸

Because U.S. federal law does not restrict private sales of firearms,⁸⁹ the legal market for firearms in the United States includes sales that occur through FFLs, which are termed the *primary market*, and sales that do not, which are called the *secondary market*.⁹⁰ Both the primary and the secondary market are sources of crime guns.⁹¹ In the primary market, straw purchasers who meet the legal buyer requirements purchase guns from FFLs with the intention of transferring them to traffickers or ineligible persons, while negligent or scofflaw FFLs may sell guns directly to prohibited persons.⁹² In the secondary market, meanwhile, purchasers often need not worry about passing a background check to obtain a firearm at a gun show or through a private sale.⁹³ The primary and secondary markets for crime guns are interrelated, as

most stringent regulations, a majority of crime guns (including those that are quite new) are first sold out of state.”); Philip J. Cook et al., *Regulating Gun Markets*, 86 J. CRIM. L. & CRIMINOLOGY 59, 72 (1995) (discussing East Coast cities “where the prevalence of gun ownership is low because legal transactions are subject to onerous regulations or are banned, prices in the secondary market are higher than in other East Coast locales. . . . [S]treet prices of guns are actually higher than prices in gun stores. As a result, dealers [are] able to make a profit by buying guns [in states with less regulation] and running them [to states with more regulation].”); Koper, *supra* note 17, at 9; Daniel W. Webster et al., *Effects of State-Level Firearm Seller Accountability Policies on Firearm Trafficking*, 86 J. URB. HEALTH 525 (2009).

88. For example, the gun prevalence measure (the gun suicide rate in 2008) and the gun control measures (four laws) analyzed herein were strongly negatively correlated with each other: A state’s having one of these gun control laws in place was negatively correlated with the gun prevalence measure at -0.61. (A perfect correlation on this scale equals 1.) It is possible that the ease of enacting local gun control laws depends on the prevalence of gun ownership, that the prevalence of gun ownership depends on local gun control laws, that both relationships obtain, or that both are caused by a third, unknown factor.
89. “Under current federal law, unlicensed private citizens are permitted to sell firearms without initiating a criminal-history background check or even establishing the identity of the prospective buyer and are not required to keep any record of the transaction.” Braga et al., *supra* note 15, at 323.
90. Cook et al., *supra* note 87, at 68.
91. Glenn L. Pierce et al., *Characteristics and Dynamics of Illegal Firearms Markets: Implications for a Supply-Side Enforcement Strategy*, 21 JUST. Q. 391, 394 (2004); cf. Cook et al., *supra* note 87, at 69 (estimating a sixty-forty split in market share between the primary and secondary markets for all guns).
92. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, U.S. DEP’T OF THE TREASURY, COMMERCE IN FIREARMS IN THE UNITED STATES 19–20, 22 tbl.12 (2000) (discussing diversions from FFLs as a source of crime guns, and listing various methods through which youth and juveniles under investigation by the ATF obtain guns).
93. For a listing of those fourteen states that do require some form of background check on secondary transfers, see Part V(b). See also Braga et al., *supra* note 15, at 323 (estimating that 30 to 40 percent of all gun transactions do not involve an FFL or a background check).

purchasers move back and forth between them depending on price and transaction costs.⁹⁴ Theft is another source of crime guns in the United States, although researchers differ in their estimations of the percentage of crime guns sourced through theft.⁹⁵

Crime guns in the United States share several characteristics that have been identified and corroborated by researchers using tracing data. Handguns predominate in the sample of crime guns, while long guns such as rifles, including semiautomatic rifles, are rarely used in crimes in the United States.⁹⁶ Handguns that are part of a multiple sale are more likely to be used in crimes than handguns sold alone.⁹⁷ Researchers and law enforcement interpret a time-to-crime (TTC)—the time from purchase of a gun until its use in a crime—of three years or less as a sign that the gun was likely purchased by a straw purchaser with the intent to transfer it to a prohibited individual.⁹⁸ Guns with obliterated serial numbers are also more likely to have been trafficked: Removing the serial number is one way to prevent the gun from being traced, and thereby covers the tracks of the suppliers.⁹⁹

Meanwhile, information on the characteristics of crime guns in Mexico is more often available from inside sources rather than from independent analysis of empirical data.¹⁰⁰ Firsthand accounts from observers and secondhand

94. Cook et al., *supra* note 87, at 71.

95. Surveys of prisoners have found that between 9 percent and 32 percent of inmates report theft as the means by which they obtained a gun. Braga et al., *supra* note 15, at 329 tbl.1 (collecting various surveys); cf. Kleck & Wang, *supra* note 82, at 1290 (arguing that tracing data support a gun theft model rather than a gun trafficking model as the primary means through which crime guns are sourced). But see Braga et al., *supra* note 82 (refuting Kleck & Wang, *supra* note 82).

96. Braga et al., *supra* note 15, at 323 (“Since handguns account for the vast majority of firearms used in crime, states typically regulate them more closely than long guns.”); Pierce et al., *supra* note 91, at 399 (noting that handguns are the most frequently traced weapon in the United States).

97. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 92, at 22 n.37; Koper, *supra* note 17, at 769; G.J. Wintemute, *Disproportionate Sales of Crime Guns Among Licensed Handgun Retailers in the United States: A Case-Control Study*, 15 INJ. PREVENTION 291, 296–97 (2009) (finding that multiple sales of handguns are correlated with increased crime gun traces).

98. BUREAU OF ALCOHOL, TOBACCO & FIREARMS, *supra* note 92, at 2; Braga et al., *supra* note 15, at 331–33 (reviewing past studies on time-to-crime and firearms trafficking).

99. Braga et al., *supra* note 15, at 333.

100. Some media sources have referenced tracing data, but those data have been limited (for example, to lists of the top twelve FFLs supplying crime guns traced from Mexico, or to a small number of the total crime guns traced) and obtained from anonymous sources that cannot be cross-checked. See, e.g., Dan Freedman, *California Gun-Control Laws Cut Flow to Mexico*, S.F. GATE (May 28, 2011, 4:00 AM), <http://www.sfgate.com/news/article/California-gun-control-laws-cut-flow-to-Mexico-2369383.php>; Grimaldi & Horwitz, *supra*

reports from government officials with access to tracing data have indicated that long guns, including high-powered rifles, are common crime guns in Mexico.¹⁰¹ U.S. government documents state that crime guns in Mexico, like crime guns in the United States, are more likely to have been part of a multiple sale.¹⁰² There is some evidence that the average TTC of Mexican crime guns has decreased significantly between 2006 and 2009.¹⁰³ It is also widely reported that the majority of Mexican crime guns from the United States originate in the four states that border Mexico, namely Arizona, California, New Mexico, and Texas.¹⁰⁴

C. Implications for Gun Control Policy

The extent to which legal firearms markets are a source of crime guns is highly relevant to policy considerations of the effectiveness and need for gun control measures. Those who argue against gun control measures tend to emphasize theft as a source of crime guns, while those who argue in favor of gun regulation emphasize the role of the legal markets, both primary and secondary, as a source of guns used in crime.¹⁰⁵ Almost all crime gun researchers agree that diversions from the primary and secondary markets for firearms are a significant source of crime guns in the United States, and can point to examples of gun control policy having a negative impact on the supply of crime guns.¹⁰⁶

Several studies on crime guns in the United States have found that gun control regulations reduce the exportation of crime guns from those states that have enacted them. For example, Cook & Braga (2001) found evidence that the Brady Handgun Violence Prevention Act reduced interstate gun

note 60. *But see* MAYORS AGAINST ILLEGAL GUNS, *supra* note 4 (analyzing crime gun traces from Mexico obtained exclusively from ATF for the years 2006–2009).

101. Hoover Statement, *supra* note 57, at 25; Grimaldi & Horwitz, *supra* note 60 (discussing the popularity of AK-47s and other high-powered rifles among drug trafficking organizations in Mexico).

102. GAO REPORT 2009, *supra* note 57, at 39.

103. MAYORS AGAINST ILLEGAL GUNS, *supra* note 4, at 4 (stating that the average time-to-crime for crime guns recovered in Mexico in 2009 was less than three years).

104. Nat'l Shooting Sports Found., Inc. v. Jones, 840 F. Supp. 2d 310, 315 (D.D.C. 2012); MAYORS AGAINST ILLEGAL GUNS, *supra* note 4, at 2.

105. *See, e.g.*, Braga et al., *supra* note 15, at 327; Braga et al., *supra* note 82; Cook et al., *supra* note 87, at 90; Cook et al., *supra* note 12, at F590–91; Philip J. Cook & Jens Ludwig, *Principles for Effective Gun Policy*, 73 FORDHAM L. REV. 589, 607 (2004); Koper, *supra* note 17. *But see* Kleck & Wang, *supra* note 82, at 1240 (minimizing the importance of diversions from legal commerce as a source of crime guns, and instead emphasizing the role played by theft in the procurement of crime guns).

106. *See* sources cited *supra* note 105.

trafficking to Chicago.¹⁰⁷ Koper (2005) found that guns sold in multiple sales in Maryland made up 25 percent of guns from Maryland later recovered in crimes, and were at elevated risk of being trafficked outside of Maryland, particularly to neighboring Washington, DC; when Maryland enacted a one-gun-a-month law, the number of guns from Maryland used in out-of-state crimes dropped.¹⁰⁸ Koper & Roth (2002) found that the Assault Weapons Ban of 1994 resulted in a 20 percent reduction in the number of guns on the list of prohibited firearms being recovered and submitted for tracing after use in a crime.¹⁰⁹ Webster et al. (2006) found that one Milwaukee gun dealer's decision to stop selling "Saturday night specials," cheap handguns popular as crime guns, resulted in a 96 percent reduction in that dealer's number of subsequent crime gun traces.¹¹⁰ Webster et al. (2009) found that, of fifty-four U.S. cities participating in a pilot program to trace all guns recovered from crimes, those cities in states with tougher regulations on gun dealers had much lower intrastate trafficking indicators.¹¹¹ Finally, Mayors Against Illegal Guns (2010) studied ten state gun control measures and the relationship between those laws and states' crime gun export rates. They found that the ten states that supply crime guns at the highest rates in the United States have an average of only 1.6 of these gun control laws in place, while the ten states with the lowest crime gun export rates have an average of 8.4 such laws in place.¹¹²

There are at least four state-level gun control measures that merit greater examination here, due to their potential relationship with a state's crime gun export rate to Mexico: (1) limiting multiple sales, (2) requiring background checks for secondary transfers, (3) prosecuting straw purchasers, and (4) restricting the sale of assault weapons. I chose to examine these four gun control measures in particular because each either restricts the sale of guns of a particular type that are believed to be popular as Mexican crime guns, or relates to the modus operandi through which sources suggest these guns are acquired.

Limiting Multiple Sales: Guns that are part of a multiple sale, particularly handguns, are more likely to become crime guns in the United States than

107. Cook & Braga, *supra* note 16, at 304.

108. Koper, *supra* note 17.

109. Christopher S. Koper & Jeffrey A. Roth, *The Impact of the 1994 Federal Assault Weapons Ban on Gun Markets*, 18 J. QUANTITATIVE CRIMINOLOGY 239, 258 tbl.V (2002).

110. Daniel W. Webster et al., *Effects of a Gun Dealer's Change in Sales Practices on the Supply of Guns to Criminals*, 83 J. URB. HEALTH 778, 782–83 (2006).

111. Webster et al., *supra* note 87.

112. MAYORS AGAINST ILLEGAL GUNS, *supra* note 7, at 3.

firearms purchased individually.¹¹³ Because of this, beginning in 1968, Congress explicitly required FFLs to report multiple sales of handguns to the ATF.¹¹⁴ There is, however, no federal statutory reporting requirement in place for multiple sales of long guns. Some states surpass the federal reporting requirements and actually prohibit certain types of multiple sales. For example, a few states have one-handgun-a-month laws, while others limit multiple sales transactions.¹¹⁵ Many of the guns sourced from the United States and later used in crimes in Mexico were originally part of a multiple sale.¹¹⁶ Thus, I hypothesize that state laws in the United States that restrict purchases of multiple guns, either long guns or handguns, might deter buyers from sourcing guns with the intent to transfer those guns to Mexico.¹¹⁷

Requiring background checks for secondary transfers: Research on gun trafficking in the United States indicates that a significant number of crime guns are obtained through the secondary gun market, including at gun shows.¹¹⁸ As previously mentioned, gun transactions between private parties in the United States do not require a background check under federal law. Some states, however, impose additional requirements on private sales of firearms. These requirements range from mandatory background checks at gun shows, to permit-to-purchase laws that require that a potential buyer of a handgun first pass a background check before buying a gun from any party (whether a private seller or an FFL).¹¹⁹ Studies on interstate firearms trafficking in the United States suggest that states that do not require background checks on private sales export crime guns to other states at a rate that is more than 2.5 times greater than the

113. BUREAU OF ALCOHOL, *supra* note 92, at 22 n.37; Koper, *supra* note 17, at 769; Wintemute, *supra* note 97, at 296–97.

114. 18 U.S.C. § 923(g)(3)(A) (2012); 27 C.F.R. § 478.126a (2013).

115. See *Search Gun Laws by State*, LAW CENTER TO PREVENT GUN VIOLENCE, <http://smartgunlaws.org/search-gun-law-by-state> (last visited Mar. 7, 2014); see also *infra* Part IV.B.

116. U.S. GOV'T ACCOUNTABILITY OFFICE, GAO-09-709, FIREARMS TRAFFICKING: U.S. EFFORTS TO COMBAT ARMS TRAFFICKING TO MEXICO FACE PLANNING AND COORDINATION CHALLENGES (2009) [hereinafter GAO] (discussing trends in gun trafficking to Mexico, including multiple sales in U.S. border states linked to violent crimes in Mexico, and recommending the reporting requirements on multiple sales of rifles in border states that were later implemented by the ATF).

117. Multiple sales restrictions on handguns are more common in the United States than multiple sales restrictions that apply to long guns. See *infra* Part IV.B. Although long guns are rarely used in crimes in the United States, they make up approximately half of crime guns recovered and traced in Mexico. Administrative Record, *supra* note 3, at 671.

118. Hoover Statement, *supra* note 57, at 28; Braga et al., *supra* note 15, at 347; Grimaldi & Horwitz, *supra* note 60.

119. For a list of various state background check requirements, see *infra* Part IV.B.

rate of states that do.¹²⁰ ATF officials have testified before Congress about the role of the secondary market, including gun shows and online retailers in the United States, as a source of guns for Mexican drug trafficking organizations.¹²¹ Thus, I hypothesize that background checks that apply to sales on the secondary market might deter the export of crime guns from U.S. states to Mexico.

Prosecuting straw purchasers: Because there is no federal statute specifically prohibiting firearms trafficking or straw purchasing, a basis for prosecution exists if the practice is prohibited by state or local law.¹²² Straw purchasing is believed to be one of the primary means through which crime guns are obtained in the United States, and there is evidence of a deterrent effect of state and local laws that prohibit gun trafficking: One empirical study concluded that U.S. states that do not allow local prosecution of straw purchasers have a crime gun export rate that is 64 percent greater than states that do.¹²³ Straw purchasing is believed to be one of the main means through which Mexican criminals obtain guns from the United States.¹²⁴ Therefore, I hypothesize that states in the United States that criminalize straw purchasing and make it possible to prosecute straw purchasers locally might also export fewer guns to Mexico than states that do not.

Restricting the sale of assault weapons: Restrictions on the sale of firearms classified as assault weapons were a part of U.S. federal law from 1994 until 2004, when the Violent Crime Control and Law Enforcement Act (commonly known as the “assault weapons ban”) was in place.¹²⁵ There is some evidence that the 2004 expiration of the assault weapons ban contributed to a subsequent significant rise in the prevalence of these types of weapons in Mexico.¹²⁶ Currently only eleven states restrict the sale of firearms they classify

120. MAYORS AGAINST ILLEGAL GUNS, *supra* note 7, at 14 (discussing handgun sales and background check requirements at gun shows).

121. Hoover Statement, *supra* note 57 (discussing how the Mexican cartels source guns from “the secondary market such as gun shows, flea markets and private sales”).

122. Depending on the circumstances, other federal statutory grounds may be available as bases for criminal prosecution. OIG REPORT 2012, *supra* note 6, at 17.

123. See MAYORS AGAINST ILLEGAL GUNS, *supra* note 7, at 11.

124. Hoover Statement, *supra* note 57, at 28 (discussing factors that have influenced the increase in firearms trafficking to Mexico, including “[i]llegal ‘straw purchases’ of firearms from FFLs who are often unwitting participants in these schemes”).

125. Violent Crime Control and Law Enforcement Act of 1994, Pub. L. No. 103-322, tit. XI, 108 Stat. 1796 (codified as amended in scattered sections of 42 U.S.C. (2006)) (banning the manufacture, transfer, and possession of certain semiautomatic weapons).

126. Arindrajit Dube et al., Cross-Border Spillover: U.S. Gun Laws and Violence in Mexico (Aug. 13, 2012) (Am. Pol. Sci. Ass’n 2012 Annual Meeting Paper), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2108854 (finding that the expiration of the assault weapons ban in the United States in 2004 “induced 60% more homicides . . . and caused at least 239

as assault weapons.¹²⁷ While gun industry lobbying groups have (largely successfully) opposed regulation of long gun sales in the United States, including on the ground that they are seldom used in crimes,¹²⁸ long guns that the ATF classifies as high-powered rifles and semiautomatic weapons are commonly recovered and traced as crime guns in Mexico.¹²⁹ Given this, I hypothesize that state laws that restrict or prohibit the sale of certain types of assault weapons might reduce the export rate of those guns from those states to Mexico.

D. Gun Trafficking and Spatial Trade Analysis

Gun trafficking between the United States and Mexico is a form of international commerce, which straddles boundaries between legal and illegal markets: The goods exchanged are legal at their source, but illegal at their destination. Insofar as aspects of this trade mirror other aspects of legal commerce, the findings of past empirical research on the determinants of cross-border trade are also relevant here, particularly to determine which other variables to include in a regression model of trade patterns.

In the spatial trade analysis literature, the volume of trade across international borders is negatively correlated with distance and positively correlated with gross domestic product.¹³⁰ Distance functions as a proxy for transportation costs:

additional deaths annually” in Mexico, with the exception of municipalities directly across the border from California, which retained its own assault weapons ban); *cf.* Koper & Roth, *supra* note 109 (discussing the effects of the assault weapons ban in the period 1994–1996 within the United States).

127. See *infra* Part V.B for a list of states that restrict the sale of assault weapons, and examples of their restrictions.
128. See, e.g., Kopel: *Guns, Mental Illness and Newtown*, NRA INST. FOR LEGIS. ACTION (Dec. 20, 2012), <http://www.nraila.org/news-issues/in-the-news/2012/12/kopel-guns,-mental-illness-and-newtown.aspx> (reposting an article from the *Wall Street Journal* that states that “[n]one of the guns that the Newtown murderer used was an assault weapon under Connecticut law . . . illustrat[ing] the uselessness of bans on so-called assault weapons”); Larry Keane, *ATF to Require Multiple Sales Reports for Long Guns*, NAT’L SHOOTING SPORTS FOUND. BLOG (Dec. 17, 2010), www.nssfblog.com/atf-to-require-multiple-sales-reports-for-long-guns (encouraging readers to contact the ATF to oppose the proposed reporting requirements, and recommending as one of the talking points that “[l]ong guns are rarely used in crime (Bureau of Justice Statistics)”).
129. Administrative Record, *supra* note 3, at 673 (tracing more than seventeen thousand .22 caliber weapons recovered after being used in violent crimes in Mexico between 2006 and 2010; more than nine thousand 7.62mm weapons; and more than seven thousand .223 caliber weapons).
130. John McCallum, *National Borders Matter: Canada-U.S. Regional Trade Patterns*, 85 AM. ECON. REV. 615, 615 (1995) (“Trade between any two countries is a function of each country’s gross domestic product, the distance between them, and possibly other variables.”); Volker Nitsch, *National Borders and International Trade: Evidence From the European Union*, 33 CANADIAN J. ECON. 1091, 1092 (2000) (discussing the “long-established and empirically

as distance increases between two points, presumably so do transportation costs.¹³¹ Researchers have used a number of different methods to calculate the distance between trading partners, including the distance between the economic center of a country and its closest international border, or the distance between capital cities of two countries.¹³²

Although these studies on cross-border trade measure legal commerce, if we assume that buyers and sellers of both licit and illicit goods will attempt to maximize profits by minimizing transportation costs wherever possible, we should expect illegal commerce to demonstrate a similar relationship between distance and volume of trade. All other things being equal, we would expect the volume of trade in both legal and illegal goods to decrease between population centers across borders as the distance (and therefore transportation costs) between them increases.

One might argue that the illegal firearms market is actually more analogous to the illegal drug market, in which distance does not seem to limit trade volume: Centers of production are often on the other side of the globe from centers of consumption, and the transportation networks to move goods between them are complex and costly. Differences in the conditions within countries, including climate, geography, security, and rule-of-law, can affect which areas are the most fertile ground, metaphorically and literally, to manufacture illegal drugs. But the analogy between illegal firearms trafficking and illegal drug trafficking breaks down in this case because it is not illegal per se to manufacture or sell firearms. Guns are manufactured and sold legally in the United States; it is their presence and use within Mexico that is illegal. Because of this, the factors that push goods like illegal drugs to be produced in corners of the globe that are located far from their centers of demand are not present in this case.

Thus, given that it is legal to produce and sell guns in the United States, the analogy to the findings of the spatial trade literature remains relevant here. We might expect the trade in guns between the United States and Mexico to mirror legal commerce, with distance between population centers negatively correlated with the volume of trade between them.

highly successful gravity equation, wherein the volume of trade between any two countries is related to the economic size of these countries and the geographic distance between them"); Esteban Rossi-Hansberg, *A Spatial Theory of Trade*, 95 AM. ECON. REV. 1464, 1465 (2005) ("Empirical studies that use the gravity equation have shown that trade flows decrease with distance . . .").

131. Jean François Brun et al., *Has Distance Died? Evidence From a Panel Gravity Model*, 19 WORLD BANK ECON. REV. 99, 99–100 (2005).

132. Nitsch, *supra* note 130, at 1095 (reviewing past literature measuring distance and trade).

III. THEORY

As discussed in Part II, crime guns tend to move from areas of weaker regulation to areas of stronger regulation.¹³³ Areas of weaker regulation also tend to be areas of greater firearms prevalence.¹³⁴ The relationships among the strength of gun control regulations, the prevalence of guns, and the movement of crime guns between the United States and Mexico seems to mirror the patterns observed in interstate gun movements within the United States. Because of this, I hypothesize that states with weaker gun control regulations in the United States will have higher crime gun export rates to Mexico than states with stronger gun control regulations.

Past empirical research on the relationship between gun control measures and gun trafficking in the United States, together with information on the characteristics of crime guns in Mexico and the modus operandi through which a significant proportion of those guns are believed to be sourced from the United States, lead me to hypothesize that the four gun control measures examined in Part II will negatively correlate with a state's crime gun export rate to Mexico. Those four gun control measures are (1) limiting multiple sales, (2) requiring background checks for secondary transfers, (3) prosecuting straw purchasers, and (4) restricting the sale of assault weapons.

If we observe a reduced crime gun export rate to Mexico for those U.S. states with these four gun control measures in place, that would tend to support the underlying theory that gun control measures are effective in reducing gun trafficking, and also the theory of the modus operandi through which Mexican crime guns are procured from the United States. This may manifest itself in one of two ways: We might observe that, all other things being equal, states that have any one of these four gun control laws in place source fewer crime guns to Mexico than those that do not; or, alternatively, we may observe that, all other things being equal, states that have a minimum number of these laws in place—whether two, three or four laws—source fewer crime guns to Mexico than those states that do not. If the underlying theory that gun control measures reduce gun trafficking is correct, however, we should not expect to observe that, all other things being equal, there is no relationship between gun control laws and the export rate of crime guns to Mexico.

133. See Braga et al., *supra* note 15, at 330–31; Cook & Braga, *supra* note 16, at 294; Webster et al., *supra* note 87, at 533–34.

134. See, e.g., Cook et al., *supra* note 87, at 71–72.

IV. DATA COLLECTION

The data set is structured as fifty-one observations—one for each state and the District of Columbia—in a state-level analysis of crime gun export rates. The number of crime guns per person from that state recovered and traced in Mexico between 2006 and 2010 serves as the dependent variable. The independent variable is the presence or lack of each of the four state gun control laws. Data on a number of control variables were also collected, although not all were used in the final regression model(s), as discussed in Part V. Control variables include state population, distance from Mexico, gun prevalence, and economic indicators.

A. Dependent Variable(s): Crime Guns Recovered and Traced in Mexico

The tracing data analyzed herein were submitted by ATF as part of the Administrative Record of *National Shooting Sports Foundation, Inc. v. Jones*, 840 F. Supp. 2d 310 (D.D.C. 2012). The data include four sets of ATF tracing data on Mexican crime guns broken down by U.S. state of origin: (1) firearms recovered and traced in Mexico between 12/1/2006 and 11/30/2010, (2) firearms recovered and traced in Mexico between 12/1/2006 and 11/30/2010 with a TTC of three years or less, (3) firearms recovered in Mexico between 10/1/2007 and 9/30/2010 with a TTC of three years or less, and (4) firearms recovered in Mexico between 1/1/2010 and 12/31/2010 with a TTC of three years or less.¹³⁵

The format of the available tracing data from *National Shooting Sports Foundation* imposed some constraints on my methodology of this study. For example, the data on characteristics of crime guns recovered and traced in Mexico—gun type, TTC, caliber, make, and model—are presented in *National Shooting Sports Foundation* as mean, median, or mode information rather than individual data points (for example, the mean values for TTC and the top ten most popular makes and models of guns are listed in table format, without providing individual data points). Furthermore, the data on characteristics of crime guns are not sorted by country of origin, let alone by U.S. state of original sale. The methodology for this study was developed to work within the constraints imposed by the available data.

This study looks primarily at 20,828 guns that were successfully traced back to an original point of sale *state* in the United States, out of a total of

135. See Administrative Record, *supra* note 3, at 548, 674–75, 718.

78,571 total crime guns recovered by law enforcement in Mexico and submitted for tracing between 12/1/2006 and 11/30/2010.¹³⁶ Although many more than 20,828 guns were identified as being sourced from the United States, not all of those guns could be traced back to an original state of sale. Because of this, selection bias is inherent in this sample of traces, as with many other tracing data. However, the effect of such selection bias in this sample is likely to underrepresent, rather than overrepresent, guns trafficked from the United States in Mexico. See Part II for a more in-depth discussion of selection bias in tracing data in general and this sample in particular.

Unlike the tracing data linked to U.S. state of origin, most of the available ATF data on characteristics of crime guns—including firearm type, caliber, make, and model—include all crime guns submitted for tracing in Mexico, without excluding those guns that were not sourced from the United States or could not be traced to their original point of sale. Thus, this sample may include selection bias due to discretionary submission for tracing by Mexican law enforcement, but it avoids selection bias linked to untraceable firearms. The difference in the samples for the data sets also means that conclusions drawn herein about the characteristics of crime guns are representative of the entire population of Mexican crime guns submitted for tracing, not only of those crime guns sourced from the United States.

B. Independent Variable(s): State Gun Control Laws

Information about state gun control laws for all fifty U.S. states and the District of Columbia was sourced from the Law Center to Prevent Gun Violence.¹³⁷ For each of the four state gun control measures analyzed, I created a dummy variable and coded it for each of the fifty states and the District of Columbia as either “1” if the restriction was in place and “0” if not.

A state is coded as limiting multiple sales if the state restricts all multiple sales or only multiple sales of handguns. For example, CA, DC, and MD are coded as “1” because they prohibit multiple sales of handguns. Using this coding system, a total of five states restrict multiple sales of firearms, and forty-six do not.¹³⁸

A state is coded as requiring background checks for secondary transfers if the state requires background checks for any private sales of firearms. For

136. *See id.* at 669, 674.

137. *Search Gun Laws by State*, *supra* note 115.

138. California, the District of Columbia, Maryland, Michigan, and New Jersey limit multiple sales. *Id.*

example, CO, IL, NY, and OR are coded as “1” because they require background checks at gun shows. States are also coded as “1” if they have a licensing and registration system in place that requires a background check in order to purchase any firearm, including on the secondary market. For example, HI, MA, MI, and NJ are coded as “1” because they require a license and registration to purchase a handgun, including on the secondary market. PA is coded as “1” because it requires a background check for private transfers of handguns. MI and NH, among others, are coded as “0” because, although they have state background check systems in place for handgun purchases from licensed dealers, these do not apply to private transfers of firearms. Under this coding system, a total of fourteen states require some sort of background check for private sales, while thirty-seven require none.¹³⁹

A state is coded as prosecuting straw purchasers if the state allows for either the prosecution of straw purchasers of all firearms or only straw purchasers of handguns. For example, IA is coded as “1” because it criminalizes straw purchases of handguns, but not long guns. Under this coding system, there are nine states that prosecute straw purchasers, and forty-two that do not.¹⁴⁰

Finally, a state is coded as restricting the sale of assault weapons if the state in some way prohibits the sale or transfer of firearms that it classifies as assault weapons, including weapons capable of receiving high-capacity magazines, high-capacity magazines themselves, or both. For example, MD is coded as “1” because it prohibits the transfer of some assault handguns and some high-capacity magazines, and VA is coded as “1” because it prohibits the transfer or possession of one type of semiautomatic shotgun. Under this system, a total of eleven states restrict assault weapons sales, while forty do not.¹⁴¹

I also created an ordinal variable for the cumulative total of gun laws present in each state. A state was coded as either “0”, “1”, “2”, “3”, or “4” based on the total number of gun control measures in place. Under this coding system, a total of three states have four of these gun control measures in place,¹⁴²

139. California, Colorado, Connecticut, the District of Columbia, Hawaii, Illinois, Maryland, Massachusetts, Michigan, New Jersey, New York, Oregon, Pennsylvania, and Rhode Island require background checks for secondary sales. *Id.*

140. The District of Columbia, Hawaii, Illinois, Iowa, Maryland, Massachusetts, New Jersey, New York, and North Carolina allow for the prosecution of straw purchasers. *Id.*

141. California, Connecticut, the District of Columbia, Hawaii, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New York, and Virginia restrict the sale of assault weapons. *Id.*

142. The District of Columbia, Maryland, and New Jersey each have all four of these gun control measures in place. *Id.*

five states have three,¹⁴³ two states have two,¹⁴⁴ eight states have one,¹⁴⁵ and thirty-three states have none of these gun control measures in place.¹⁴⁶ Thus, eighteen states have at least one of these four gun control measures in place, while thirty-three states have none.

C. Control Variable(s): Economy, Demography, Gun Prevalence, and Distance

Each of the fifty states and the District of Columbia was also coded for control variables of four different classifications: (1) economic indicators, such as Gross Domestic Product (GDP); (2) demographic indicators, such as total state population; (3) gun prevalence; and (4) distance from Mexico. What follows is an explanation of each variable within these categories and the reasons for their potential inclusion as control variables.

Economic indicators: Control variables that fit into this group include the total value of exports to Mexico for each of the fifty states and the District of Columbia for the year 2008, and GDP for each of the fifty states and the District of Columbia for 2009. Both sets of data were obtained from the U.S. Census Bureau. The U.S. Census Bureau tracks the total value of exports annually to Mexico originating in each of the states and the District of Columbia. Spatial trade research predicts that the size of the economy of two geographic areas as measured by GDP is positively correlated with the volume of trade between those two areas.¹⁴⁷ This means that the size of the economy of each U.S. state could be correlated with the volume of trade in firearms between that state and Mexico.

Demographic indicators: Control variables measuring demographic characteristics within a state include the total population per U.S. state, and the percentage of population of Mexican ancestry per U.S. state. Both sets of data were obtained from the U.S. Census Bureau for the year 2008. The total state population was ultimately used as a denominator in a fraction with the de-

143. California, Hawaii, Massachusetts, Michigan, and New York each have three out of four of these gun control measures in place. *Id.*

144. Connecticut and Illinois both have two out of four of these gun control measures in place. *Id.*

145. Colorado, Iowa, Minnesota, North Carolina, Oregon, Pennsylvania, Rhode Island, and Virginia each have one out of four of these gun control measures in place. *Id.*

146. Alabama, Alaska, Arizona, Arkansas, Delaware, Florida, Georgia, Idaho, Indiana, Kansas, Kentucky, Louisiana, Maine, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Ohio, Oklahoma, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming each have none of these gun control measures in place. *Id.*

147. See sources cited *supra* note 130.

pendent variable of crime gun traces as the numerator, to turn the dependent variable into a crime gun export rate per person per state. Other variables that were highly correlated with state population, like GDP, were also converted to rates per person by dividing by population size, to standardize measures across states. Data on the population of Mexican ancestry were initially collected and thought to be relevant to this study because prior studies on straw purchasing suggest that friends and family members play an important role in supplying crime guns for those otherwise unable to purchase them.¹⁴⁸ The population of Mexican ancestry in a state was thought to be the most accurate available proxy for the number of U.S. residents in a given state who have friends and family living in Mexico. However, this measure is also, unsurprisingly, correlated with distance from Mexico, another one of the control variables.

Gun prevalence: The crude gun suicide rate was used as the measure of gun prevalence. The gun suicide rate is commonly used as a proxy for gun prevalence in a given geographic area.¹⁴⁹ Data on gun suicide rates per U.S. state and the District of Columbia for 2008 were sourced from the Office of Statistics and Programming, National Center for Injury Prevention and Control, Centers for Disease Control, and the National Center for Health Statistics Vital Statistics System.

Distance from Mexico: Finally, the driving distance in miles from each state to Mexico was calculated using Google Maps.¹⁵⁰ Within each state, I selected the city closest to the border with Mexico with a population of at least two hundred thousand. I then calculated the distance from that city to the city in Mexico across from the closest border crossing point along the U.S.-Mexico border.¹⁵¹ Prior studies on cross-border trade have used the distance

148. Braga et al., *supra* note 15, at 337 (“In those instances where straw purchasers were working for traffickers, they were often friends or relatives of the firearms traffickers.”); Cook et al., *supra* note 87, at 87 (“Surveys suggest that family and friends play a key role in supplying proscribed individuals with firearms.”).

149. See, e.g., Webster et al., *supra* note 87, at 528.

150. Cities in Mexico across from U.S. border crossing points were Ciudad Juárez, Mexicali, Nogales, Nuevo Laredo, and Tijuana. See Austin Rose & David Davidson, *Atlas of the Land Entry Ports on the U.S.-Mexico Border*, BORDER POL’Y BRIEF, Fall 2010, at 1–2, available at http://www.wvu.edu/bpri/files/2010_Fall_Border_Brief.pdf.

151. For Hawaii, I used Honolulu and calculated its distance over water from the Pacific Coast and then driving distance to the closest land border with Mexico. For Florida, I used Jacksonville as it was the city with a population over two hundred thousand closest in driving distance to the land border with Mexico. For states that did not have a city with a population over two hundred thousand, I used the largest city. This methodology applied to Arkansas, Connecticut, Delaware, Maine, Mississippi, Montana, New Hampshire, North Dakota, Rhode Island, South Carolina, South Dakota, Utah, Vermont, West Virginia, and Wyoming.

from major cities or economic centers to the closest international border as the measure of distance to proxy transportation costs.¹⁵²

TABLE 1. Crime Gun Export Rates by U.S. State
(in order from greatest to least)
for Crime Guns Recovered and Traced in Mexico from 2006 to 2010¹⁵³

Rank	State	Crime Gun Ex- port Rate (per 100,000 residents)	Gun Control Laws in Place? (√ if yes, blank if no)				Gun Suicide Rate	Distance from Mexico (in miles)
			Limits Multiple Sales	Requires 2ndary Bkgd. Checks	Prosecutes Straw Purchasers	Restricts Assault Weapons		
1	AZ	41.66					8.60	72
2	TX	34.69					6.20	2
3	NM	24.39					9.70	271
4	CA	10.63	√	√		√	4.04	13
5	NV	10.19					10.97	303
6	OK	9.12					9.43	630
7	WY	8.64					15.90	737
8	CO	6.99		√			7.91	569
9	ID	6.50					9.71	945
10	KS	5.35					6.59	787
11	WA	4.76					6.69	1272
12	AK	4.59					16.87	3538
13	OR	4.43		√			8.46	1100
14	AR	4.31					9.57	756
15	LA	3.92					7.91	592
16	NE	3.70					5.46	1023
17	IL	3.52		√	√		3.44	1362
18	UT	2.89					7.36	842
19	MT	2.79					13.52	1188

152. See sources cited *supra* note 130. Distance functions as a proxy for transportation costs: As the distance between two areas increases, so does the cost of transporting goods between them.

153. Data on crime gun traces sourced from Administrative Record, *supra* note 3, at 548, 674–75, 718.

Rank	State	Crime Gun Ex- port Rate (per 100,000 residents)	Gun Control Laws in Place? (√ if yes, blank if no)				Gun Suicide Rate	Distance from Mexico (in miles)
			Limits Multiple Sales	Requires 2ndary Bkgd. Checks	Prosecutes Straw Purchasers	Restricts Assault Weapons		
20	AL	2.75					8.99	977
21	MS	2.72					7.11	762
22	FL	2.60					7.54	1191
23	SD	2.49					8.51	1266
24	GA	2.36					6.48	1114
25	IN	2.12					7.00	1308
26	KY	1.97					9.18	1272
27	MN	1.95				√	5.51	1378
28	NC	1.92			√		7.19	1359
29	DE	1.83					4.64	1837
30	TN	1.80					9.75	889
31	IA	1.73			√		5.97	1130
32	ND	1.72					8.36	1504
33	MO	1.69					7.11	936
34	WV	1.65					9.35	1486
35	OH	1.54					5.94	1370
36	SC	1.43					7.57	1323
37	WI	1.40					6.10	1426
38	VA	1.29				√	6.69	1721
39	MI	1.26	√	√		√	5.73	1616
40	CT	0.94		√		√	3.07	2039
41	PA	0.94		√			6.11	1659
42	ME	0.84					7.74	2263
43	NH	0.76					6.46	2198
44	HI	0.70		√	√	√	2.10	4075
45	MD	0.55	√	√	√	√	4.63	1766
46	VT	0.48					7.05	2182
47	MA	0.32		√	√	√	1.82	2163

Rank	State	Crime Gun Ex- port Rate (per 100,000 residents)	Gun Control Laws in Place? (√ if yes, blank if no)				Gun Suicide Rate	Distance from Mexico (in miles)
			Limits Multiple Sales	Requires 2ndary Bkgd. Checks	Prosecutes Straw Purchasers	Restricts Assault Weapons		
48	NY	0.31		√	√	√	2.23	1948
49	NJ	0.21	√	√	√	√	2.01	1939
50	RI	0.19		√			2.18	2128
51	DC	0.17	√	√	√	√	2.07	1729

V. METHODS AND ANALYSIS

A. Methodology

This study used an Ordinary Least Squares (OLS) regression model on a data set of fifty-one observations of state characteristics, including the state's crime gun export rate to Mexico. To determine the regression model that best fit the data, I used a nested regression approach, the most basic form of which included only two variables: (1) the dependent variable of crime gun traces per person, and (2) the independent variable of gun control measures present in the state.¹⁵⁴ One by one, an additional control variable was added to each subsequent regression model, so that each new model was the same as the one before it, with the exception of one new variable. This allowed me to use a Likelihood-Ratio Test and Chi-Squared values to compare each subsequent, more complicated regression model to the one before it, to determine whether the addition of that variable created a model that was a better fit for the data than the prior one. This approach was necessary given the problem of multicollinearity among the variables, which is explained in greater detail in Part V.B.

B. Treatment of Variables

OLS regression is designed to be performed on variables that are normally distributed. However, a number of the variables in this data set were abnormally

154. All data analysis was completed using Stata v12 software.

distributed in their raw form, including the dependent variable as well as several control variables. In order to input these variables into an OLS regression model, I had to normalize their distribution by taking their natural logs.¹⁵⁵

A number of the variables were also strongly correlated with one another. For example, both the dependent variable (number of traces) and several control variables (including state GDP) were strongly correlated with state population size.¹⁵⁶ Strong correlation suggests that these variables are not truly independent of one another, yet independence of explanatory variables is one of the assumptions upon which the OLS regression model is built. If variables that are actually not independent are introduced as independent variables in the OLS regression model, this can distort the effect of the dependent variable. This problem is termed multicollinearity.¹⁵⁷ In order to control for state population size without introducing the problem of multicollinearity into the regression, I divided both the dependent variable and the control variables correlated with population by population.¹⁵⁸ This, plus the transformation of the variables by taking their natural logs, turned the dependent variable into a log rate of traces per person, or a crime gun export rate.

After dividing by population size and logging the variables that were abnormally distributed, I checked for correlation again among the variables. Several variables that were part of the same or similar constructs were highly correlated with one another, such as the gun suicide rate and the value of gun sales, both of which were intended to measure gun prevalence.¹⁵⁹ Some variables intended to measure different constructs were also highly correlated with one another. For

155. Variables logged were crime gun traces in Mexico from 2006 to 2010, state Gross Domestic Product (GDP), state value of exports to Mexico in 2008, the value of firearms sales in state in 2007, and the gun suicide rate in 2008.

156. Total traces from 2006 to 2010 were correlated with state population at 0.64; state GDP was correlated with state population at 0.99; and total traces from 2006 to 2010 were correlated with state GDP at 0.62.

157. Donald E. Farrar & Robert R. Glauber, *Multicollinearity in Regression Analysis: The Problem Revisited*, 49 REV. ECON. STAT. 92, 92–93 (1967) (discussing the structural “requirement” of the least squares regression model “that explanatory variables be truly independent of one another,” and explaining that “[m]ulticollinearity, on the other hand, is . . . an interdependency condition” that “constitutes a threat—and often a very serious threat—both to the proper specification and the effective estimation of the type of structural relationship commonly sought through the use of regression techniques”).

158. These included state GDP, state value of exports to Mexico in 2008, value of firearms sales in state in 2007, and state residents of Mexican ancestry in 2010.

159. The log of the gun suicide rate and the log of the population-adjusted gun sales variables were correlated with one another at 0.81.

example, the percentage of the population of Mexican ancestry in the state was strongly negatively correlated with state distance from the border with Mexico.¹⁶⁰

In an attempt to avoid multicollinearity in the regression, I selected one variable from each thematic grouping of control variables. The resulting group of control variables included state distance from Mexico (because of the previously documented relationship between distance and cross-border trade volume); total state population (rather than population of Mexican ancestry, because of the need to control for total population with both the dependent and control variables); the gun suicide rate (used in previous empirical studies as a proxy for gun prevalence); and state GDP (because of the previously documented relationship in the spatial trade literature between GDP and distance in determining trade volumes across borders).

TABLE 2. Variables and Their Distribution

Variable	Mean	SD	Final Unit in Regression
Crime Gun Traces in Mexico			
All Guns Recovered & Traced Back to U.S. State of Origin (12/1/06–11/30/10)	408	1318	Log of guns per person
State Gun Laws			
Multiple Sales Limitations	5 = 1 46 = 0	N/A	Law present / not present
Straw Purchasing Prohibited	9 = 1 42 = 0	N/A	Law present / not present
Background Check on Secondary Transfers	14 = 1 37 = 0	N/A	Law present / not present
Assault Weapons Restrictions	11 = 1 40 = 0	N/A	Law present / not present
State Population			
Total population (2008)	6.0 million	6.7 million	Used as denominator for other variables per person
Population of Mexican Ancestry (2010)	0.6 million	1.9 million	N/A

160. The log of the percent of the population of Mexican ancestry and the distance from Mexico variables were correlated with one another at -0.63.

Variable	Mean	SD	Final Unit in Regression
State Distance from Mexico			
Distance to U.S.-Mexico Border	1,332	770	Distance per 1,000 miles
State Economic Indicators			
Annual GDP (2009)	275 billion	333 billion	Log of dollars per person
Value of Exports to Mexico (2008)	275 million	333 million	N/A
State Gun Prevalence			
Crude Gun Suicide Rate (2008)	7.1 per 100,000	3.2 per 100,000	Log of gun suicides per person
Value of Annual Gun Sales (2007)	79 million	69 million	N/A

C. Regression Model and Results

The nested regression model that best fit the available data and research design was thus constructed as follows: The base model regressed (1) the crime gun export rate to Mexico per state as the dependent variable and (2) state gun control laws as the independent variable. Subsequent models added one additional control variable at a time, in order of anticipated importance according to the background literature, first (3) state distance from the border with Mexico, then (4) gun prevalence in the state as measured by the gun suicide rate, and finally (5) total state GDP.

TABLE 3. Nested Regression: Variables Included Per Regression Model

	Crime Gun Export Rate (dependent variable)	Gun Control Laws (independent variable)	Distance from Mexico (control variable)	Gun Prevalence (control variable)	GDP (control variable)
Model 1	√	√			
Model 2	√	√	√		
Model 3	√	√	√	√	

	Crime Gun Export Rate (dependent variable)	Gun Control Laws (independent variable)	Distance from Mexico (control va- riable)	Gun Prevalance (control variable)	GDP (control variable)
Model 4	√	√	√	√	√

The results of the Likelihood-Ratio Test and the Chi-Squared values of these four regression models—comparing Model 1 to Model 2, Model 2 to Model 3, and Model 3 to Model 4—revealed that each subsequent model improved the fit to the data, up until Model 4. Once state GDP was added as the fifth variable, in Model 4, the fit of the model decreased.

This same nested regression approach was used to calculate coefficients for the relationship between individual gun control measures in a state and the state's crime gun export rate to Mexico, as well as the relationship between the cumulative number of gun control laws present in the state and the state's crime gun export rate to Mexico. In both cases—when testing the effects of individual gun control measures, and when testing the effects of a cumulative number of gun control measures—the Likelihood-Ratio Test, Chi-Squared and Adjusted R-Squared values revealed that the best fit for the data was Model 3, which included both distance from Mexico and gun prevalence as control variables, but not state GDP. Results from Model 2, which included distance from Mexico as the only control variable, are also reported below to compare to Model 3. In all of these models, the Variance Inflation Factor (VIF) values did not suggest any issues with multicollinearity.¹⁶¹

TABLE 4. Results for OLS Regression of Individual
Effects of Gun Control Laws on Crime Gun Export Rate

Individual Gun Control Laws	Model 2 <i>Controlling for Distance</i>	Model 3 <i>Controlling for Distance and Gun Prevalence</i>
Limiting Multiple Sales	-1.07*	-0.49
Requiring Background Checks for Secondary Transfers	-0.67*	0.17

161. Variance Inflation Factor (VIF) is a measure of multicollinearity. VIF values for all of the variables in all of these regression models never exceeded 3.5 and average VIF values for all variables per regression model were always less than 3.

Individual Gun Control Laws	Model 2 <i>Controlling for Distance</i>	Model 3 <i>Controlling for Distance and Gun Prevalence</i>
Prosecuting Straw Purchasers	-0.82*	-0.05
Restricting the Sale of Assault Weapons	-0.74*	0.05
* Significant at $P < \text{or} = .05$	N = 51	N = 51

As illustrated in Table 4, Model 2, the correlation coefficients for each of the four gun control laws were negative and significant at a P value of less than or equal to 0.05 when controlling only for distance from the border with Mexico. This means that the presence of any one of these four gun control measures in a state was correlated with a reduction in the state's crime gun export rate to Mexico when controlling for distance from the border. The effect ranged from -1.07 for multiple sales restrictions to -0.67 for a mandatory background check requirement. However, the strength of the relationship between individual gun control laws and a state's crime gun export rate diminished and was no longer significant when both distance from the border with Mexico and gun prevalence were included as control variables (Table 4, Model 3).

Table 5 reports the relationship between the cumulative number of gun control laws in a state and the state's crime gun export rate to Mexico. The correlation coefficients for the presence of either one, two, three, or four gun control laws were all negative and significant at a P value of less than or equal to 0.05 when controlling only for distance from the border (Table 5, Model 2). This means that the presence of one, two, three, or four gun control laws was correlated with a reduction in the state's crime gun export rate to Mexico, when controlling for distance from the border. The strongest effect on the state's crime gun export rate was seen with at least four gun control measures in place, as compared to states with no gun control measures in place, which resulted in a coefficient of -1.88 when controlling for distance from the border (Table 5, Model 2). This relationship lessened somewhat and was no longer significant when controlling for both distance from the border and gun prevalence (Table 5, Model 3).

TABLE 5. Results for OLS Regression of Cumulative
Effects of Gun Control Laws on Crime Gun Export Rate

Cumulative Total Gun Control Laws	Model 2 <i>Controlling for Distance Only</i>	Model 3 <i>Controlling for Distance and Gun Prevalence</i>
At least 1 out of 4 gun control laws vs. states with 0 laws N = 51	-0.65* -1.17 -0.13	0.01 -0.59 0.61
At least 2 out of 4 gun control laws vs. states with 0 laws N = 43	-0.86* -1.54 -0.17	0.24 -0.80 1.28
At least 3 out of 4 gun control laws vs. states with 0 laws N = 41	-1.06* -1.80 -0.32	-0.02 -1.08 1.12
At least 4 out of 4 gun control laws vs. states with 0 laws N = 36	-1.88* -2.86 -0.89	-0.59 -1.88 0.70

* Significant at $P < \text{or} = .05$

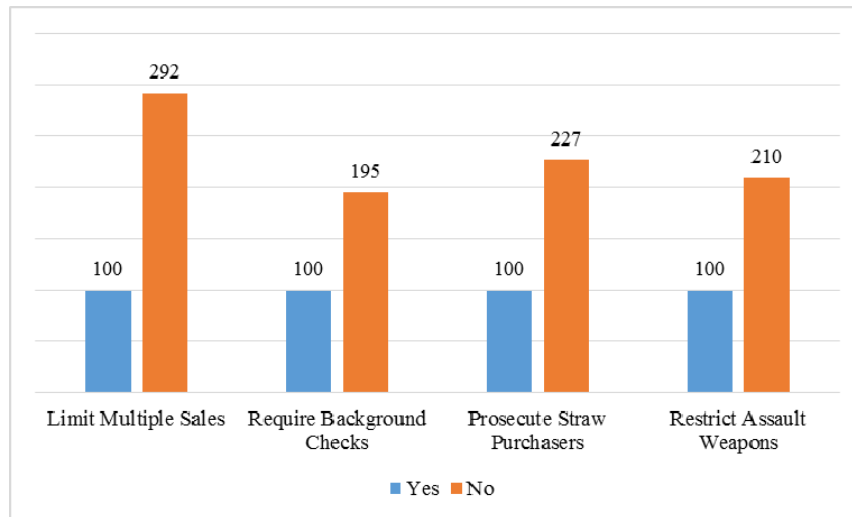
D. Analysis: Gun Control Laws and Crime Gun Export Rates

Each of the four state gun control laws I examined—(1) limiting multiple sales, (2) requiring background checks for secondary transfers, (3) prosecuting straw purchasers, and (4) restricting the sale of assault weapons—was negatively correlated with a state’s crime gun export rate to Mexico when controlling for the state’s distance from the border. That correlation was significant at a P value of .05 or less for all four of these measures.¹⁶² The strength of that nega-

162. See WILLIAM M.K. TROCHIM & JAMES P. DONNELLY, RESEARCH METHODS KNOWLEDGE BASE 295–97 (3d ed. 2008) (explaining significance testing of statistical results and the accepted practice that “a statistical result [can] be considered significant if it could be shown that the probability [or p value] of the result being due to chance was 5 percent or less,” which translates into the “5% rule, or the ‘ p is less than or equal to .05’ cutoff”—although the “estimate of the effect and the p value associated with it will reflect the sample size,” so p values should be supplemented with other “estimates of the precision and importance of our results, formally known as *confidence intervals* and *effect sizes*”).

tive correlation ranged from -1.07 for the limitation on multiple sales, to -0.67 for the requirement of background checks for secondary transfers. In other words, distance from Mexico being equal, states without multiple sales restrictions exported crime guns to Mexico at a rate 292 percent greater than states that do restrict multiple sales; states without background check requirements for secondary transfers exported crime guns at a rate 195 percent greater than states that do require background checks; states that allow for prosecution of straw purchasers export crime guns at a rate 227 percent greater than states that do not; and states that do not restrict the sale of assault weapons exported crime guns at a rate 210 percent greater than states that do.¹⁶³ This phenomena is illustrated in Figure 1 below, which presents the crime gun export rates for states that have these gun control laws in place as the baseline rate (or 100%) and then compares the increase in crime gun export rates for states that do not have these gun control laws in place (between 195% and 292% greater than the baseline rate).

FIGURE 1. Differences in U.S. States' Crime Gun Export Rates to Mexico Per Type of Gun Control Law
(when controlling for state distance from the border with Mexico)



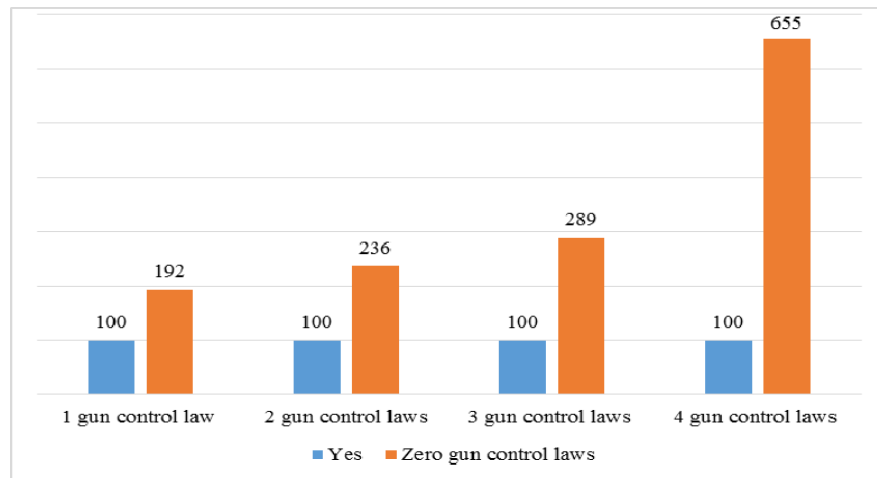
163. These rate differences are calculated by interpreting the coefficient in light of the transformations performed on the dependent variable, which was the log of the number of traces divided by population. Therefore, the coefficient is the comparison of the means of the log of crime gun export rates of groups with and without the law in question.

However, the relationship between individual gun control measures and a state's crime gun export rate disappeared when both distance from Mexico and gun prevalence in the state were used as control variables. The relationship that seemed to be present when controlling only for distance from the border disappeared once the variable for gun prevalence was also included in the regression. This does not necessarily mean that there is no relationship between individual gun control measures and a state's crime gun export rate to Mexico. Instead, the marginal impact of any one gun control measure acting in isolation may be too small to measure once gun prevalence is included in the regression. Or, it may be that the strong negative correlation between gun control measures and gun prevalence (more gun control measures are associated with lower gun prevalence, and vice versa) makes it difficult to disaggregate the effects of these two variables on the crime gun export rate.

The strongest negative correlation between gun control measures and a state's crime gun export rate was apparent when examining the cumulative effect of multiple gun control measures. Having all four gun control measures in place was correlated with a -1.88 reduction in a state's crime gun export rate to Mexico compared to states with none of these laws in place when controlling for distance from the border (Table 5, Model 2). In other words, when controlling for distance from the border with Mexico, states that had none of these gun control measures in place had a crime gun export rate 655 percent greater than states that had all four of these gun control measures in place.¹⁶⁴ This phenomena is illustrated in Figure 2 below, which presents the crime gun export rates for states that have a certain number of gun control laws in place as the baseline rate (or 100%) and then compares this to crime gun export rates for states that have none of the gun control laws in place (between 192% to 655% greater than the baseline rate) when controlling for distance from the border with Mexico. However, when controlling for both distance from the border with Mexico and gun prevalence within the state, the results were no longer statistically significant (Table 5, Model 3). The importance of these findings is discussed further in Part VI.

164. See *supra* text accompanying note 163.

FIGURE 2. Differences in U.S. States' Crime Gun Export Rates to Mexico Per Number of Gun Control Laws Studied (when controlling for state distance from the border with Mexico)



E. Analysis: Characteristics of Crime Guns Recovered and Traced in Mexico

Crime guns recovered and traced in Mexico differ in several important ways from U.S. crime guns. First, the majority of crime guns recovered and traced in Mexico are long guns, while crime guns recovered and traced in the United States are predominantly handguns. Second, the average TTC for crime guns recovered and traced in Mexico is longer than the average TTC for crime guns recovered and traced in the United States during the same period. Third, the calibers, makes, and models of crime guns recovered and traced in Mexico indicate a preference for higher-powered guns, including assault weapons, whereas these weapons are infrequently used as crime guns in the United States.

A total of 78,571 firearms and other destructive devices linked to crimes in Mexico were recovered by law enforcement and submitted for tracing to the ATF between December 1, 2006 and November 30, 2010.¹⁶⁵ Of these, a slight majority (51.1 percent) were long guns, including rifles, shotguns, and

165. Administrative Record, *supra* note 3, at 669.

machine guns, and most of the rest (48.5 percent) were handguns. The remaining 0.4 percent included tear gas launchers and other destructive devices or unclassified firearms. See Figure 3.

Crime guns recovered and traced in Mexico have a longer average TTC (14.9 years) than crime guns recovered and traced in the United States (10.6 years) for those guns recovered and traced in both countries between 2006 and 2010.¹⁶⁶ Yet one in five or 19.2 percent of crime guns recovered and traced in Mexico during that period has a TTC of three years or less. See Figure 4.

More than 75 percent of the guns recovered and traced in Mexico from 2006 to 2010 are .22 caliber or greater (59,505 out of 78,571).¹⁶⁷ The available data do not indicate whether all of the guns of these larger calibers are capable of receiving detachable magazines, although some of the most popular makes and models of guns recovered are. See Figures 5 and 6.

The most popular caliber, at 22 percent of the total recovered and traced guns, is a .22, which can be either a rifle or a pistol. The next most popular, at 11.8 percent, is a 9 mm, which, although best known as a handgun caliber, can also come as a rifle. The third most popular caliber, 7.62 mm, is the size of the barrel of the AK-47 and other similar semiautomatic rifles, although it is also the caliber of some handguns. The fifth most popular caliber, .223, is the size of the barrel of the AR-15 and other similar semiautomatic rifles.¹⁶⁸ Shotguns made up 8.4 percent of recovered and traced guns from Mexico in this time period. An additional seventy-eight calibers not listed here account for the remaining 15.9 percent of guns recovered and traced in Mexico between 2006 and 2010.

Additional data on the ten most popular makes and models recovered and traced in Mexico help to clarify the caliber data. See Figure 4. The named 7.62mm rifles on the top ten list are various cheaper versions of the AK-47 type semiautomatic rifle. The named types of .22 and .223 caliber guns that made the top ten list are all semiautomatic rifles as well. The .38 and .45 caliber guns that made the top ten list are handguns. All of the

166. *Id.* at 676.

167. *Id.* at 673.

168. A .223 caliber AR-15 type semiautomatic rifle was used at the 2012 Newtown massacre and during the 2002 Beltway sniper shootings. See Lee Ferran & Shushannah Walshe, *Newtown Massacre: What Is a Bushmaster .223?*, ABC NEWS (Dec. 17, 2012), <http://abcnews.go.com/Blotter/newtown-massacre-bushmaster-223/story?id=18000884>; see also Sari Horwitz, *Guns Used in Conn. Shooting Are Among Firearms Favored by Law Enforcement*, WASH. POST, Dec. 15, 2012, http://articles.washingtonpost.com/2012-12-15/national/35847098_1_assault-rifle-bushmaster-firearms-medical-examiner.

named rifles on the list are semiautomatic firearms capable of receiving detachable magazines, all of which would likely have fit the definition of assault weapons in the assault weapons ban of 1994.¹⁶⁹

FIGURE 3. Crime Guns Recovered and Traced in Mexico
Between 12/1/2006 and 11/30/2010

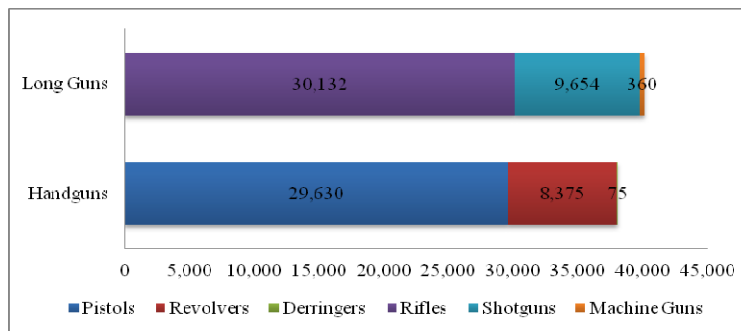
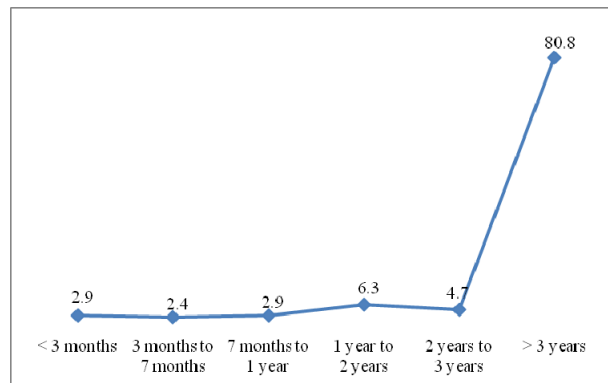
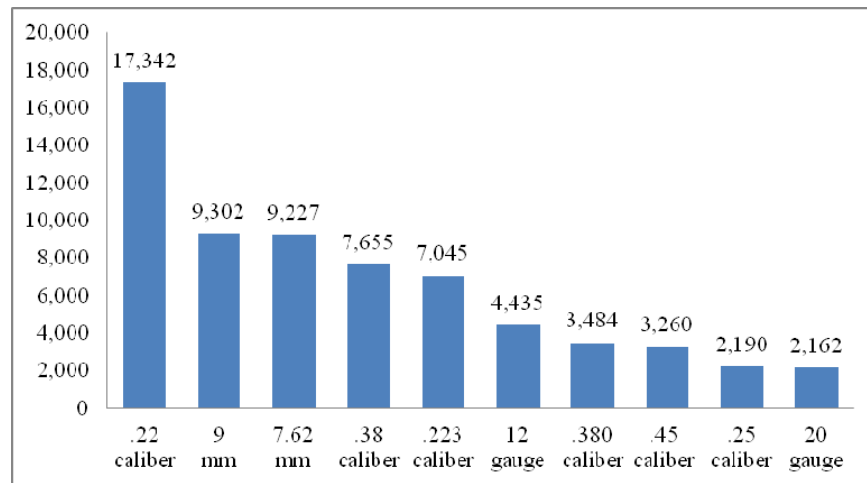


FIGURE 4. Time-to-Crime by Percentage of Guns Recovered and Traced in Mexico
Between 12/1/2006 and 11/30/2010

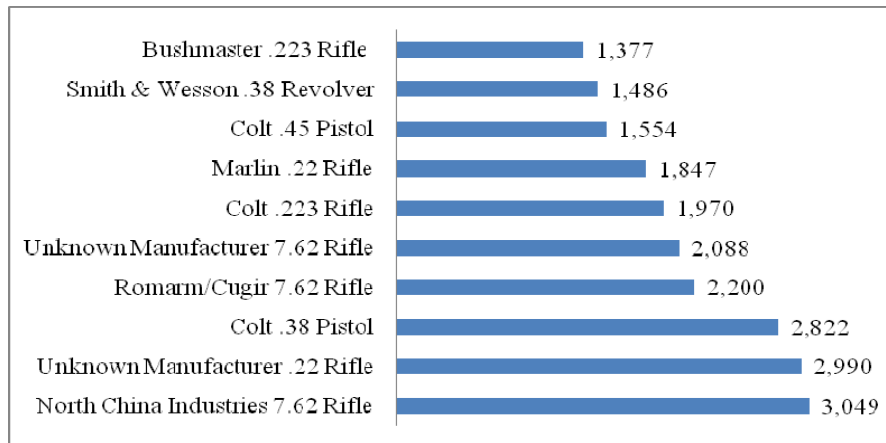


169. See Violent Crime Control and Law Enforcement Act of 1994, Pub. L. No. 103-322, tit. XI, 108 Stat 1796, 1996–98 (codified as amended in scattered sections of 42 U.S.C. (2006)) (banning the sale, importation and use of nineteen firearms classified as assault weapons by virtue of their make and model—including AK-47s and AR-15s—and then providing a list of features, whereby any semiautomatic weapon with two or more of the features from the list that is capable of receiving a detachable magazine is classified as an assault weapon and subject to the restrictions therein).

**FIGURE 5. Top Firearm Calibers Recovered and Traced in Mexico
Between 12/1/2006 and 11/30/2010**



**FIGURE 6. Top 10 Firearm Make and Models Recovered and Traced in Mexico
Between 12/1/2006 and 11/30/2010**



VI. DISCUSSION

A. Characteristics of Crime Guns Recovered and Traced in Mexico

The majority of crime guns recovered and traced in Mexico are long guns, while the majority of crime guns in the United States are handguns. This difference in the type of crime guns preferred in Mexico is relevant to policy considerations regarding regulations of gun sales in the United States. Although current U.S. federal gun control regulations include a mandatory reporting requirement for all multiple sales of handguns, arguably because these guns are more common crime guns, such a reporting requirement on multiple sales of long guns is lacking, arguably because long guns are uncommonly used in crimes in the United States. Yet the higher prevalence of long guns among crime gun traces in Mexico lends support to the current ATF practice of imposing analogous administrative reporting requirements on multiple sales of long guns made in one of the four U.S. states that border Mexico. The high prevalence of long guns among crime guns in Mexico could also be used to support potential legislative efforts at either the federal or the state level in the United States to impose a statutory reporting requirement on multiple sales of long guns, particularly in the southwestern border states.

Crime guns recovered and traced in Mexico between 2006 and 2010 and sourced from the United States have a longer average TTC than crime guns recovered and traced in the United States during the same period. Yet almost 20 percent of crime guns from the United States recovered and traced in Mexico during that period have a TTC of three years or less. The longer average TTC suggests that a significant proportion of crime guns from the United States used in Mexico are older, used guns, which might suggest that they are being sourced from the secondary market rather than from FFLs. At the same time, the shorter TTC statistic suggests that a significant proportion of all crime guns from the United States in Mexico were purchased new from FFLs.

When interpreting the time-to-crime data in the Mexican context, it is important to remember that the possession of most guns traced back to the U.S. is de facto illegal under Mexican law, because of their caliber and other characteristics.¹⁷⁰ Thus, in the Mexican context, a longer TTC on a gun should not be taken as an indicator that it has not been trafficked. To the contrary, a gun that crossed the border into Mexico may have been older at

170. See *supra* note 43 and accompanying text.

the time it crossed, or it may have crossed as a new gun and then been held for a long period of time in Mexico before being used in a crime. But either way, at some point it crossed the border between the two countries illegally, which makes it a trafficked gun.

Additionally, more than 80 percent of guns recovered and traced in Mexico with a TTC of four years or less were originally purchased by U.S. citizens.¹⁷¹ The nationality of the purchasers of guns in the United States destined for trafficking to Mexico is relevant to the modus operandi of how and through whom these guns are procured. Since it is highly unlikely that U.S. citizens are purchasing guns in the United States and then moving en masse to Mexico with those guns, it can be inferred that these guns are being transferred to other users across the border after first being purchased in the United States.

The fact that the list of the top ten most popular crime guns recovered and traced in Mexico includes seven semiautomatic rifles that would be classified as assault weapons¹⁷² simultaneously supports and undermines the popular narrative about crime guns in Mexico. The media persistently name the AK-47 as the weapon of choice used by violent criminals in Mexico.¹⁷³ Indeed, three out of the top five firearms recovered and traced are AK-47 style rifles (the 7.62 mm model rifles). But also popular are the AR-15 type rifles (the .22 and .223 caliber rifles) and certain types of higher-powered handguns (the Colt .45 and two types of .38 caliber handguns, which are unlike cheaper and smaller “Saturday night specials” that are popular crime guns in the United States).

The data on popular calibers, makes and models of crime guns recovered and traced in Mexico are also relevant to a consideration of the types of gun control measures that might be effective at curbing the supply of Mexican crime guns from the United States. Assault weapons are much more commonly recovered in crimes in Mexico than in the United States. This suggests that gun control measures aimed at restricting the sale of assault weapons may be more effective at restricting the supply of guns to criminals in Mexico than to criminals in the United States. One of the policy arguments used by the gun lobby in the United States to contest the imposition of regulations on the sale of assault weapons—that few crimes are committed with assault weapons¹⁷⁴—does not hold true when applied to the supply of U.S. guns to criminals in Mexico, where assault weapons are popular crime guns.

171. Administrative Record, *supra* note 3, at 211.

172. *Supra* Figure 4; *see also supra* note 168 and accompanying text.

173. *See, e.g.,* GRILLO, *supra* note 52, at 215; Grimaldi & Horwitz, *supra* note 60.

174. *See* sources cited *supra* note 128.

The data on the characteristics of crime guns recovered and traced in Mexico also tend to confirm the assumptions about the *modus operandi* of trafficking that led to this study's focus on these four state gun control laws regarding multiple sales, background checks, straw purchasers, and assault weapons. These data also help to explain the observed relationship between these four gun control measures acting in consortium and a reduction in a state's crime gun export rate to Mexico. Firearms that were originally part of a multiple sale are common among the sample of crime guns recovered and traced in Mexico. Thus, it is reasonable to infer that multiple sales restrictions may be effective at limiting the supply of crime guns from the United States to Mexico. The older average age of crime guns in Mexico, coupled with their sourcing from outside of Mexico, suggests that many of these crime guns sourced from the United States were purchased on the secondary market. State laws mandating background checks for secondary transfers may impose an additional burden on those purchasers who seek out guns on the secondary market in the United States with the intent to transfer them illegally to buyers in Mexico. Meanwhile, the nearly 20 percent of crime guns in Mexico sourced from the United States with a TTC of three years or less are likely to have been sourced by straw purchasers directly from sellers with FFLs. For those purchasers, the possibility of local prosecution for straw purchasing may have a deterrent effect. Finally, the predominance of assault weapons among crime guns in Mexico suggests that restrictions on the sale of assault weapons in U.S. states may also depress the crime gun export rate from those states to Mexico.

B. State Distance From Mexico and Gun Prevalence

Both distance from the border with Mexico and gun prevalence within a state were significantly correlated with crime gun exports to Mexico at all specifications of the regression model. Distance was negatively correlated with traces, while gun prevalence was positively correlated with traces. Thus, as a state's distance from the border with Mexico increased, its rate of export of crime guns to Mexico decreased. This is logical and fits the assumption in the spatial trade literature: States closer to Mexico source more crime guns to Mexico, probably because transportation costs for the transfers are lower. Meanwhile, as gun prevalence within a state increases, its rate of export of crime guns to Mexico increases. This also seems logical: More guns within the state are more guns available to be exported. Neither of these two relationships alone is unexpected. These relationships do, however, yield interesting results

when examined in conjunction with the relationship between state gun control measures and those states' crime gun export rates to Mexico.

C. State Gun Control Laws and Crime Gun Export Rates

When distance from Mexico was included as a control in the regression model, the individual gun control laws examined—(1) limiting multiple sales, (2) requiring background checks for secondary transfers, (3) prosecution straw purchasers, and (4) restricting the sale of assault weapons—was associated with a reduction in a state's crime gun rate to Mexico: States without multiple sales restrictions exported crime guns to Mexico at a rate 291 percent greater than states that do restrict multiple sales; states without background check requirements on secondary transfers exported crime guns at a rate 195 percent greater than states that do require background checks; states that allow for prosecution of straw purchasers export crime guns at a rate 227 percent greater than states that do not; and states that do not restrict the sale of assault weapons exported crime guns at a rate 210 percent greater than states that do. When both distance from the border with Mexico and gun prevalence within the state were included in the regression model, however, there was no longer a detectable relationship between state gun control measures and crime gun export rates.

The same is true for the cumulative impact of having one, two, three, or four of these gun control laws in place: States with incrementally more gun control laws had incrementally lower crime gun export rates than did states with no gun control laws, when controlling for distance from the border with Mexico. The presence of all four of these gun control laws was associated with a particularly drastic reduction in the state's crime gun export rate to Mexico: States that had none of these gun control laws sourced 655 percent more crime guns to Mexico than states that had all four of these gun control laws, even when controlling for distance from the border. However, when distance from the border and a measure of gun prevalence within the state were both included as control variables, a relationship between the number of gun control laws and the crime gun export rate was no longer detectable.

The inability of this study's model to measure the relationship between state crime gun export rates and gun control laws when including a variable for gun prevalence is likely due to the fact that gun prevalence and gun control laws are negatively correlated with one another: States with fewer gun control laws have more guns, and vice versa. Although this negative correlation says nothing about the directionality of that relationship—whether a lack

of gun control laws leads to a high prevalence of guns, or whether a high prevalence of guns prevents the passage of gun control laws, either or both of which could plausibly be true—it does explain why a standard regression equation may be unable to pick up the marginal difference between the effects of gun control laws and gun prevalence on crime gun export rates.

CONCLUSION

Crime guns recovered and traced in Mexico differ in three important ways from U.S. crime guns. First, a small majority of crime guns recovered and traced in Mexico are long guns, including rifles, shotguns, and machine guns. Second, nearly 20 percent of crime guns recovered and traced in Mexico have a time-to-crime of three years or less, yet the average age of crime guns recovered and traced in Mexico is older than in the United States, suggesting there are both very young and very old guns in the sample. Third, the most popular calibers, makes, and models of crime guns recovered and traced in Mexico are AK-47 type semiautomatic assault rifles and AR-15 type semiautomatic assault rifles, despite the infrequency of these weapons as crime guns in the United States.

The presence of four state gun control measures in a state—(1) limiting multiple sales, (2) requiring background checks for secondary transfers, (3) prosecuting straw purchasers, and (4) restricting the sale of assault weapons—significantly reduces the state's exports of crime guns to Mexico compared to states that have none of these gun control measures in place, when controlling for distance from the border. These findings suggest that states in the United States might limit their exports of crime guns to Mexico if they put in place these four gun control laws.

Further research is needed to determine if there are other gun control laws not analyzed herein that are similarly correlated with a reduction in the rate of export of crime guns to Mexico and if there are other ways to explain the relationships amongst the variables observed herein. If the ATF were to release crime gun trace data from Mexico in their raw form, it would facilitate even more granular and sophisticated analysis of the characteristics of Mexican crime guns sourced from the United States and their relationship with state characteristics, such as gun control laws and gun prevalence.