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LOST IN THE CROSSFIRE

Identifying Data on
U.S. Firearms and
Crime in the Western
Hemisphere

PRESENTED TO

U.S. Department of State

PRESENTED BY

Jessica Bakas, Julia Craig, Julien Hector, Emily Kuzel, Chloe Moss, Emma Olson, and Jack Tapay-Cueva

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TERMS LIST

Abbreviations and
acronyms repeated
throughout this report.

ATF – Bureau of Alcohol, Tobacco, Firearms and Explosives

AU – American University

BEST – U.S. Immigration and Customs Enforcement Border Enforcement Security Task Force

CICIG -- The International Commission against Impunity in Guatemala

CJNG – Jalisco New Generation Cartel, a Mexican criminal syndicate

CARICOM -- The Caribbean Community and Common Market

eTrace -- The ATF's internet-based system that allows participating law enforcement agencies to submit firearm traces to the ATF National Tracing Center (NTC)

ENVIPE -- Mexico's National Survey on Victimization and Perception of Public Safety, produced by the National Subsystem of Information on Government, Public Safety and Law Enforcement (SNIGSPIJ) and coordinated by the National Institute of Statistics and Geography (INEGI)

FARC -- The Revolutionary Armed Forces of Colombia

GAO -- U.S. Government Accountability Office

GI-TOC -- The Global Initiative Against Transnational Organized Crime (Global Initiative)

IAFQ -- UN Illicit Arms Flows Questionnaire

iARMS – The INTERPOL Illicit Arms Records and Tracing Management System

IBIS -- Integrated Ballistics Identification System

INEGI -- National Institute of Statistics and Geography, an autonomous agency of the Mexican Government

INL – The U.S. Department of State Bureau of International Narcotics and Law Enforcement Affairs

INTERPOL – The International Criminal Police Organization

NIBIN -- National Integrated Ballistic Information Network, an ATF program

OIG -- Office of Inspector General

PCC – First Capital Command, a Brazilian organized crime Syndicate

PSC -- Private security companies

RBPF -- The Royal Bahamas Police Force

UN Comtrade -- The United Nations Commodity Trade Statistics Database

UNODC -- The United Nations Office on Drugs and Crime

EXECUTIVE SUMMARY

The Bureau of Western Hemisphere Affairs at the U.S. Department of State asked a team of seniors from American University's School of International Service to research quantitative and qualitative linkages between firearms flows to key Western Hemisphere countries and crime occurrence in those countries. The countries identified for attention were divided into two groups: Tier 1 (Guatemala, Mexico, Jamaica, Trinidad and Tobago) and Tier 2 (Brazil, Ecuador, and The Bahamas).

One of the project's main objectives was to try to identify meaningful correlations between U.S. firearms flows to the Tier 1 and Tier 2 countries and crime in these countries. The project also sought to examine and evaluate existing data available on firearms trafficking to these countries.

The team's methodology included: a) doing background research on all the Tier 1 and Tier 2 countries to understand their criminal landscapes; b) interviewing experts on Latin America and the Caribbean, transnational crime, and arms trafficking to help coalesce a theoretical background for this report and identify data discrepancies; c) identifying significant indicators for gun violence based on the interviews and research; d) assessing data available on firearms trafficking and gun violence indicators in these countries; e) identifying reliable data sources measuring gun violence and firearms trafficking; f) attempting to use the reliable data found to run a data regression on the correlation of U.S. firearms trafficking and legal sales to the Tier 1 and Tier 2 countries and crime in those countries, which illuminated significant data gaps; g) identifying meaningful gaps in data through the data source assessments, attempted data regression, and interviews with experts who have worked in this field; and h) identifying potential domestic and international partners the State Department can coordinate with to address these data gaps.

The AU research team found that: 1) existing data sources do not capture a full picture of U.S. firearms trafficking to the Tier 1 and Tier 2 countries and the corresponding crime occurrences; 2) the serious data flaws encompass missing data, reliability concerns, longevity issues, consistency challenges, and lack of synthesized data; 3) other important gaps in data available on U.S. firearms trafficking to Tier 1 and Tier 2 countries and along with associated crime incidents include insufficient ammunition trace data, the absence of ghost gun trace data, limited data on non-homicide firearms incidents, and lack of data on "non-crime gun" seizures; and 4) addressing these data gaps will require a multi-pronged approach and underscore the need for more comprehensive data collection and collaboration across government and international agencies, countries and non-government entities researching these topic areas.

RECOMMENDATIONS

The team offers nine recommendations to improve data collection, synthesis, and reliability to address the identified gaps. The research team also provides a list of potential partners with whom the State Department and other relevant stakeholders could collaborate to help fill these identified data gaps, located in the final section.

01 — Partnerships

Improve the collection of reliable data on firearms and gun violence in Tier 1 and Tier 2 countries by partnering with international civil society organizations, universities, government agents, and international organizations.

02 — UN Questionnaire

Encourage Tier 1 and 2 countries to complete the UN Illicit Arms Flows Questionnaire thoroughly and assist countries to ensure accurate completion.

03 — Standardize Collection

Standardize the collection of seizure information, including manufacturer, date of seizure, end-user data, and source of firearm.

04 — Coalesced ATF Database

Enhance the accessibility of ATF data by consolidating seizure data from the agency into a single merged database.

05 — Improve Tracing

Expand tracing of ammunition seizures and of seized ghost guns and ghost kits.

06 — Data Analysts

Initiate or support programs to incorporate data analysts and related capacity into law enforcement and justice departments in the Tier 1 and Tier 2 countries.

07 — Conditional Capacity Building

Continue to provide aid for capacity-building and training contingent on countries enhancing firearm tracing efforts to achieve mutually agreed-upon targets over time.

08 — Resources

Provide necessary resources, such as crucial technology and equipment, to support capacity-building initiatives for arms tracing.

09 — Backlogs

Seek policy decisions and funding to boost personnel staffing to address the administrative and forensics backlogs domestically and abroad.

INTRODUCTION

On a late Saturday evening in Salvatierra, a city in Central Mexico, a Christmas gathering among friends took a horrific turn after the power went out and gunshots rang. Within minutes, assailants unloaded 195 bullets into the venue, killing 11 people and wounding 14 more.[1] One survivor recounted, “When the guys left, I got close, and there was already a pile of people. Some were already dead, and others were screaming for help.” The massacre in Salvatierra, which is being investigated for its linkages to territorial disputes between the Santa Rosa de Lima Cartel and the Jalisco New Generation Cartel, epitomizes the devastating impact of illicit and diverted licit firearms that not only perpetuates violence but also destabilizes entire communities across the region.

This report presents a detailed analysis of the arms trafficking landscape across Latin American countries identified for attention by the U.S. Department of State office requesting this work. The report leverages the most current data publicly available to map out the severity of the issue. Specifically, this report investigates the security environment, prevalent forms of organized crime, and available crime data in Tier 1 countries: Guatemala, Mexico, Jamaica, Trinidad and Tobago; and Tier 2 countries: Brazil, Ecuador, and The Bahamas. At the same time, this report explores the theoretical underpinnings of current trends in arms trafficking: the role of organized crime, the impact of weak state institutions, and the proliferation of weapons through licit and illicit channels.

Using experts’ theories on the contributors of licit and illicit arms flows in seven key countries, the team researched data sources that could potentially correlate violent crime to U.S.-sourced firearms. The team used that data to run a data regression, highlighting significant gaps in available data. The team analyzed the major gaps in data, spoke with experts to develop recommendations, and identified key partners the Department of State can contact to help fill these gaps. Through this analysis, the research team aims to contribute to a deeper understanding of the arms trafficking crisis and support efforts toward more secure and stable communities across Latin America and the Caribbean.

A team of student researchers from the School of International Studies at American University undertook this project as part of the State Department’s Diplomacy Lab program and, specifically, at the request of the Bureau of Western Hemisphere Affairs. The researchers are Jessica Bakas, Julia Craig, Julien Hector, Emily Kuzel, Chloe Moss, Emma Olson, and Jack Tapay-Cueva, working under the mentorship of Ambassador Earl Anthony Wayne, former United States Ambassador to Mexico and Diplomat In-Residence at American University.

THEORETICAL BACKGROUND

To identify data sources correlating U.S-sourced firearms to violent crime in Guatemala, Mexico, Jamaica, Trinidad and Tobago, Brazil, Ecuador, and The Bahamas, the team identified indicators for the prevalence of American firearms and data sources to capture crime levels in Tier 1 and Tier 2 countries. The research team utilized homicide rates as the primary metric to indicate levels of violent crime in a country, which is further discussed in the data section.

To understand the link between indicators, the researchers consulted the existing body of knowledge analyzing the cause of crime in the seven Western Hemisphere countries. The team did this by synthesizing the analysis produced by reliable think tanks, academic institutions, non-profit organizations, and government reports, while also interviewing experts in the field.

Following the background research process, the team decided that its work should focus on three key contributing factors: the prevalence of organized crime, the proliferation of weapons, and the weakness (or strength) of relevant institutions. In the following section, the team synthesizes the expert analysis of these key contributing factors' influence on the connection between firearms and crime in Tier 1 and Tier 2 countries. The team also included commonly used data sources that experts reference when attempting to explain and quantify the complex factors that cause high rates of violence in the region.

PREVALENCE OF ORGANIZED CRIME

Organized crime directly increases the demand for firearms. Criminal groups regularly use drug trafficking routes to bring arms back into their countries of operation. The fragmentation of criminal groups also significantly contributes to the demand for firearms, experts told the research team. In criminal inter-group conflicts, firearms are used to defend and amplify economic assets and territory, leading to turf wars and retribution killings.[2] By increasing rates of violence and the demand for firearms, criminal groups create an overabundance of weapons in communities, which escalates firearm usage in social frictions or interpersonal conflicts.[3] Drug trafficking, a significant source of income for organized crime, flows north, while firearms in response flow south.[4]

The splintering of criminal groups increases demand for firearms as groups fight to maintain or gain control of territory. For example, in Brazil, the 2019 homicide rates per 100,000 people were 31.43 in Rio de Janeiro and 6.5 in Sao Paulo.[5] This can be attributed to the high competition of criminal groups in Rio compared to Sao Paulo's relatively centralized criminal control under the Primeiro Comando da Capital (PCC). [6]

Mexico has experienced a similar trend after removing crucial cartel leaders that started during the presidency of Felipe Calderon.[7] Following an escalation in homicide rates, cartel fragmentation, and criminality rates from 2017 to 2022, the ATF and the Mexican Attorney General of the Republic identified an overall increase in American firearms flowing to Mexico using ATF trace data, finding increases of 75% in pistols, 105% in rifles, 85% in shotguns, 14% in revolvers, and 95% in other types of weapons.[8]

Over the last few decades, the increasing strength of criminal networks has exacerbated the ineffectiveness of weak state institutions, allowing organized crime to expand in size and influence. The limited capacity of institutions—such as law enforcement, border patrol, judicial systems, and the military—means that many governments struggle to prevent corrupt individuals from aiding in arms trafficking through licit leakages and conducting seizures illegally or improperly.

PROLIFERATION OF WEAPONS

The proliferation of weapons is fueled by organized criminal actors. This trend is driven by the fragmentation of criminal groups seeking dominance in illicit markets and territorial disputes.[9] Organized crime entities, seeking to expand their operations and assert control over lucrative trades, arm themselves with advanced weaponry through illicit markets.[10] This acquisition of arms is facilitated by the substantial profits generated from illicit activities, such as drug trafficking, human trafficking, and extortion.[11]

A smaller but still important factor in the proliferation of weapons, private security companies have grown in popularity in response to increased criminal activity and violent crime in the seven countries assigned.[12] In Mexico, some 8,000 private security companies, or up to 80 percent of the total, work outside government regulation.[13] For example, over 30 percent of all weapons belonging to private security firms in Rio de Janeiro end up in the hands of criminals, authorities say.[14] Further complicating the accountability of PSCs within these countries is the lack of firms' registration. Every Latin American country has laws on registering PSCs, but they are unevenly enforced.[15] Some PSCs avoid registration because of the expensive fees involved. However, due to lax enforcement of laws, PSCs obtain their weapons through illicit markets.[16]

Each Tier 1 and Tier 2 country studied in this report possesses a large number of unregistered firearms, with countries like Mexico and Brazil estimating nearly 13 million and 9.6 million, respectively. The Small Arms Survey indicates that out of

approximately 857 million civilian-held firearms worldwide by the end of 2017, around only 100 million were reported as registered.[17] Likely due to the abundance of weapons in illicit markets, unregistered guns are more affordable when compared to licit prices.[18]

Looking at the distribution of civilian, law enforcement, and military firearms data from the Small Arms Survey, and combined with the prevalence of organized crime and weak institutions, civilian firearms seem more susceptible to theft and subsequent use by members of organized crime than commercial or government-owned arms.[19] This makes a majority-holding of weapons in civilian hands dangerous in countries already struggling with organized crime and weak institutions.

To clarify, the proliferation of weapons is not a direct indicator of high criminality. The U.S. possesses 120 weapons per 100 people, but its overall rule of law system provides it with the ability to deter crimes. This ability to respond to and prevent crime is captured by the Global Index on Transnational Crime (see the next section) in what they label as a resilience score. The U.S.'s resilience score is much higher than those of the Tier 1 and 2 countries in this study.[20] The team thus concluded that it is vital to include resilience[21] and corruption[22] indicators in this analysis.

WEAK INSTITUTIONS

Institutions involved in law enforcement and criminal justice in Latin America and the Caribbean often face significant challenges in managing and mitigating the flow of illegal arms. These challenges stem from systemic and often longstanding deficiencies, such as resource allocation, inter-agency coordination, and sustained government commitment.[23] These deficiencies provide exploitable gaps for organized crime networks. High levels of corruption, including bribery of critical officials and collusion with criminal entities, exacerbate the arms trafficking issue by facilitating the illegal import, export, and distribution of firearms.[24] The Arms Trade Treaty Monitor, an initiative that assesses compliance with the Arms Trade Treaty, finds that this corruption is not limited to lower-level officials but can often extend to higher positions of power, shielding arms traffickers and significantly hindering efforts to combat the trade.[25]

Inadequate security protocols at maritime and land ports also allow traffickers to smuggle weapons into the region with relative impunity. The lack of robust oversight and enforcement at these critical junctures poses a significant challenge to curbing the arms trade. The smuggling methods employed are often rudimentary yet effective. According to Matt Schroeder of the Small Arms Survey, weapons are frequently smuggled in small batches, concealed within benign shipments like clothing or food. For instance, last year, Haitian police intercepted a shipment that included 18 assault rifles hidden among relief supplies such as powdered milk.[26]

The lack of basic security infrastructure along ports provides criminal networks with vulnerabilities to exploit—leaving ports to become high-risk points for arms trafficking.

Inefficiencies and corruption often undermine the judicial system's role in addressing arms trafficking. Cases of arms trafficking frequently encounter obstacles from investigation to prosecution, leading to a low rate of conviction.[27] This inefficiency is exacerbated by the fear of retribution among witnesses and officials, making it difficult to secure convictions against traffickers.[28] Consequently, many involved in the arms trade face minimal consequences, if any, encouraging the perpetuation of the crisis.

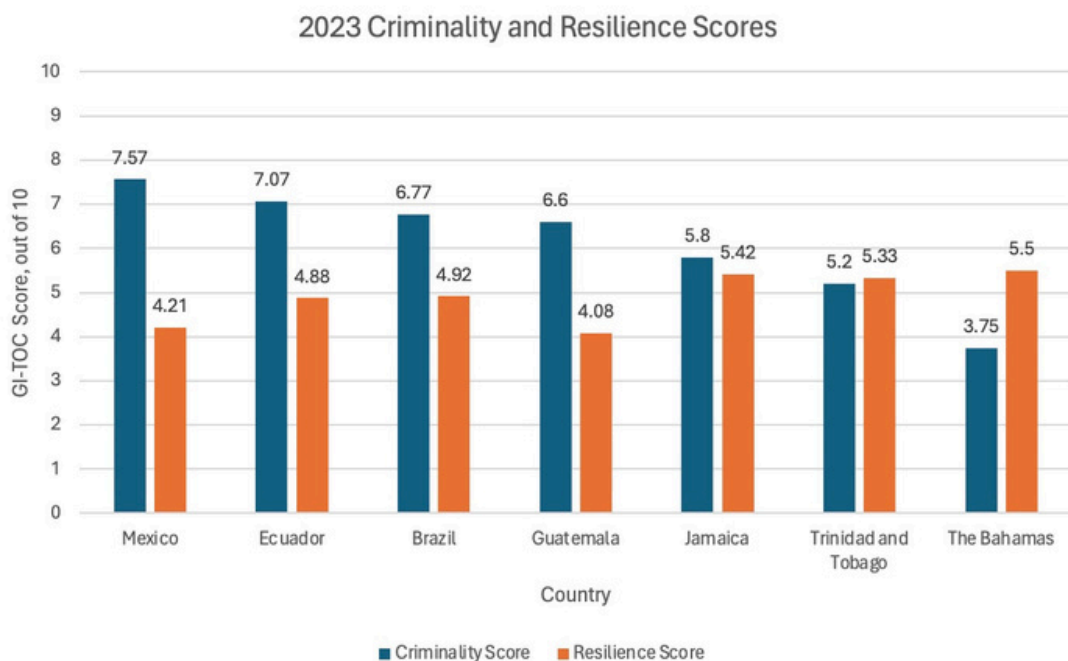
The region requires updated legislative and administrative frameworks for arms control. According to research published in the Latin American Research Review, even basic regulatory classifications too often lack clarity, hindering effective arms control and enabling the proliferation of illegal firearms throughout the region.[29] This lack of effective written regulation is exacerbated by political inertia and insufficient enforcement mechanisms, making comprehensive reform challenging.

GI-TOC COUNTRY COMPARISON

The Global Index on Transnational Organized Crime (GI-TOC) relies on hundreds of experts across various disciplines to develop an index of scores that rate criminality and resilience, with multiple sub-scores used as indicators for those two categories. Criminality is measured on a 1-10 scale, with 10 meaning higher crime. Resilience is measured on a 1-10 scale, with 10 indicating stronger institutions. Organized Crime is defined as “illegal activities, conducted by groups or networks acting in concert, by engaging in violence, corruption or related activities in order to obtain, directly or indirectly, a financial or material benefit”.[30] Resilience is defined as “the ability to withstand and disrupt organized criminal activities as a whole, rather than individual markets, through political, economic, legal and social measures.”[31] This index reviews 193 countries around the world against the same criteria and was most recently updated in 2023. Given its timeliness and breadth of analysis, the team decided to use the Global Index’s regional criminality and resilience rankings to compare scores across the 35 countries in the Americas.

The following graph displays the 2023 criminality and resilience scores for the 7 key Western Hemisphere countries. There is a visible trend where higher criminality scores are associated with lower resilience scores, and vice versa, lower criminality scores are associated with higher resilience scores. This visual illustrates that the relationship between the prevalence of organized crime, represented by the criminality score, and weak institutions, represented by the resilience score, are interrelated across these countries.

COUNTRY BACKGROUNDS



TIER 1 COUNTRIES

GUATEMALA

GI-TOC criminality score: 6.60; GI-TOC resilience score: 4.08

GI-TOC regional criminality ranking: 9/35; GI-TOC regional resilience ranking: 26/35

Guatemala's location along the Mexican border makes it a prime spot for trafficking between the Americas. Guatemala's weak institutions, corruption, and gun abundance have facilitated the proliferation of organized crime. Guatemala's primary forms of organized crime are drug trafficking and gang violence.[32] MS-13 and Barrio-18 are the largest organized crime actors in the country, although smaller street gangs have become more common in recent decades. These groups are known to partner with cartels operating out of Mexico to traffic small arms and narcotics into the country.[33] Guatemala has attempted to combat rising crime rates with mass arrests, although this has led to prison overcrowding. The prison system cannot manage high population numbers, so gangs use prisons as recruitment and training grounds. Guatemala submitted trace requests for about 60-70% of the firearms it recovered in 2020.[34]

MEXICO

GI-TOC criminality score: 7.57; GI-TOC resilience score: 4.21

GI-TOC regional criminality ranking: 3/35; GI-TOC regional resilience ranking: 25/35

Mexico's precarious security environment is dominated by cartel and gang violence, which is concentrated in states with two or more cartels competing for control. Major cartel fragmentation has led to increased violent rivalry between the Sinaloa Cartel and CJNG, in particular, and the increased emergence of smaller violent criminal organizations.[35] Mexico's landscape includes over 70 active armed groups vying for control of illicit economies, including human trafficking, kidnapping, extortion, arms trafficking, agribusiness, and more.[36] To maintain control of their territories, organized crime groups have increased their demand for firearms in general and higher caliber firearms, like the .50 caliber.[37]

Mexico's National Institute of Statistics and Geography (INEGI) reports that homicide rates hit a peak of 29.1 homicides per 100k people in 2018, which decreased up to 10% in following years to the present—although they remain at a historic high. The most current figure on homicides per 100,000 people is 25.6 at the close of 2022.[38] Despite having two stores run by the military and some of the strictest gun laws in the Hemisphere, more than two-thirds of all homicides in Mexico were committed with firearms from 2010-2022.[39][40] Over 70% of guns reported recovered in Mexico are from the U.S., and as much as 85% of cartel guns found at crime scenes were sourced from the U.S.[41][42][43] There has been a dramatic increase in assault rifles and military-grade weapons being trafficked from the U.S. to Mexico, specifically AR-15s, AK-47s, and the .50 caliber have become preferred by cartels to outgun Mexican law enforcement.[44]

JAMAICA

GI-TOC criminality score: 5.8; GI-TOC resilience score: 5.42

GI-TOC regional criminality ranking: 14/35; GI-TOC regional resilience ranking: 11/35

Jamaica serves as a transshipment hub for drug trafficking. Because of its relative proximity to the United States, the rest of the Caribbean, and Latin America, arms traffickers use Jamaica to distribute weapons to neighboring countries. The U.S. is the primary source for Jamaica's illegal gun market, with approximately 75% of firearms recovered and submitted to ATF sourced from the U.S.[45] In addition, Jamaica is the Caribbean's largest source of illicit marijuana destined for the United States, as well as a transit point for cocaine en route to North America and Europe. [46] While the amount of marijuana being produced in Jamaica has gone down, the level of gang-related violence has stayed high, with 2021 gang activity accounting for 71% of murders.[47] In 2020, InSight Crime reported that the illegal weapons and drug trade between Haiti and Jamaica was worth roughly \$1.5 million.[48]

TRINIDAD AND TOBAGO

GI-TOC criminality score: 5.2; GI-TOC resilience score: 5.33

GI-TOC regional criminality ranking: 18/35; GI-TOC regional resilience ranking: 14/35

Trinidad and Tobago's location 6.8 miles off of the northeast coast of Venezuela makes it a common transit hub for firearms and drugs moving between Latin America, the Caribbean, and the United States. The most popular trafficking route in the country is through Port of Spain, which has seen increased rates of firearm violence and homicides recently. In 2023 approximately 10% of crimes were reported around the Port of Spain.[49] Between 2015 and 2016 the location of most homicides shifted from Port of Spain to the Northern police division. Hence, in 2022, 20.5% of homicides occurred within the Northern police division.[50] In 2022 there were 30,640 reports to the police, of those 10,698 prosecutions were instituted and only 1,319 convictions secured.[51] Meaning that only 12% of individuals who were prosecuted were convicted. At the same time homicide rates are rapidly increasing within Trinidad and Tobago. In 2022, 605 individuals were murdered which is a 34% increase from 2021 (405 homicides).[52] At the same time 755 individuals had felonious wounding which is a 11.9% increase from 2021 (657 cases of wounding).[53]

TIER 2 COUNTRIES

BRAZIL

GI-TOC criminality score: 6.77; GI-TOC resilience score: 4.92

GI-TOC regional criminality ranking: 7/35; GI-TOC regional resilience ranking: 18/35

Brazil faces a profound challenge posed by gun-related violence, primarily driven by individual homicides, organized crime, and domestic disputes. Handguns, particularly pistols and revolvers, are the most widely used firearms, accounting for over 90% of all reported gun-related incidents.[54] However, this data was collected by the Small Arms Survey in 2018 before the boom in gun ownership caused by Bolsonaro loosening firearm restrictions.[55] Roughly 1,500 guns seized since 2014 originated in the United States, often traveling through another country before arriving in Brazil.[56] Efforts to combat organized crime and arms trafficking are hindered by the country's high levels of criminality and low levels of resilience, as reflected in Brazil's Global Organized Crime Index scores.[57]

ECUADOR

GI-TOC criminality score: 7.07; GI-TOC resilience score: 4.88

GI-TOC regional criminality ranking: 4/35; GI-TOC regional resilience ranking: 19/35

Since the dissolution of the Revolutionary Armed Forces of Colombia (FARC) in 2016, Ecuador has emerged as a significant transit route in the flow of illegal arms trafficking within Latin America. The heavy weaponry sourced through Chile and Peru is then distributed among dissident factions of the FARC in Colombia and Ecuadorian gangs.[58] This trade is exacerbated by the involvement of powerful international cartels which fuel gang conflicts by supplying arms in exchange for help distributing and selling narcotics.[59] This intertwining of drug and arms trafficking has internationalized Ecuador's gang conflicts and contributed to a surge in violence and crime across the country after the power vacuum left by the Colombian Peace Accords.

Ecuador's struggle with violence is evident in its homicide rates, where a staggering proportion of violent deaths are committed with firearms—jumping by 897% in 2023 compared to 2019.[60] In response to this trend, Ecuador has implemented strict measures, including authorizing civilian firearm use under strict conditions and introducing the Phoenix Plan, spearheaded by President Noboa.[61] This includes establishing a new intelligence unit, providing tactical weapons to security forces, and enacting stricter penalties for drug traffickers following overwhelming support from a nationwide referendum.[62]

THE BAHAMAS

GI-TOC criminality score: 3.75; GI-TOC resilience score: 5.5

GI-TOC regional criminality ranking: 26/35; GI-TOC regional resilience ranking: 10/35

The Bahamas' primary security threat is the gang-on-gang violent crime that results in a high homicide rate, as retaliatory gang violence has been reported as the leading motive for murder.[63] The 2022 Annual Report released by the Royal Bahamas Police Force (RBPF), reports that 128 homicides were recorded, and 113 of these homicides occurred on the island of New Providence where the capital city of Nassau is located.[64] Of the total homicides in 2022, the RBPF reported that firearms were used in the commission of 117, meaning more than 90% of homicides were committed with firearms in 2022. The solvency rate for homicides in 2022 was 69%. The RBPF reported that 370 firearms and 5,506 rounds of ammunition were either found and/or seized throughout The Bahamas in 2022. The seized firearms included 280 pistols, 22 revolvers, 38 rifles, and 30 shotguns.[65] Two surveys conducted in The Bahamas in 2010 and 2014 by CARICOM and the Small Arms Survey reported that 23% of households acknowledged the presence of firearms in their home.

DATA SOURCE ASSESSMENTS

ASSESSING DATA QUALITY AND AVAILABILITY

To link American licit and illicit firearms exports to crime in seven key Western Hemisphere countries, the team differentiated the types of data sources necessary to connect the two phenomena. This resulted in three categories:

- The first category identifies data sources that can provide quantitative information on the presence of firearms in key countries.
- The second category identifies data sources that provide quantitative information on crime in these countries.
- The third category identifies data sources with indicators that could be used to predict the relationship between firearms exports and homicide rates in these countries.

The team searched for sources to provide indicators capturing the presence of firearms, the levels of crime, and the key contributors to the relationship between firearms and crime. The research team collected various data sources covering various aspects of this complex phenomenon and then compiled them into a list. The team then went through the data sources and grouped them into categories based on what that data could measure: firearms, crime, and contributors. With a comprehensive collection of potential sources, the researchers evaluated the quality and availability of each data source.

THE TEAM'S EVALUATION CRITERIA INCLUDED:

- *What organization manages this source? Is it considered reputable by experts?*
- *How often is this source updated? What year is the most recent data from?*
- *Is the methodology used to collect this data empirically sound?*
- *What are the applications of this source in linking firearms to crime?*
- *What are the limitations of this source in linking firearms to crime?*

After the team systematically evaluated each source by creating a data source assessment matrix, the most reliable sources corresponding to the project objective were selected to be included in this report. The team displays the data source assessment matrix tables for the key data sources below. These tables are organized and ordered based on their value-added as determined by the team's evaluation.

DATA SOURCES ON FIREARMS

Within the category of data sources that provide information on firearms, the team attempted to identify a variety of sources that could capture “American licit and illicit firearms exports”. To capture licit American firearms exports, the team identified Department of Commerce and United Nations Commodity Trade Statistics Database (UN Comtrade) as the providers of data on the legal U.S. exports to the key countries.

Identifying data sources that can capture the presence of illicit firearms is more complex. After careful consideration, the team determined that crime gun seizure data collected by the UNODC Illicit Arms Flows Questionnaire (IAFQ) is the major source used to assess firearms trafficking and illicit firearm possession internationally. The Small Arms Survey estimates firearm holdings in a country, broken down into civilian, law enforcement, and military categories. It also provides unregistered and registered firearm estimates for each country.

The only source that can supply data on American illicit firearm exports is the international firearms trace data from the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF), as no other source ties firearms seized in other countries to the United States. The ATF data can also be used to estimate the prevalence of diversions of American licit firearms exports. Of the crime guns determined to be “U.S. Sourced,” the ATF provides statistics for the firearms that were determined to be “Traced to a Foreign Country,” meaning the firearm was transferred from a U.S. federal firearms licensee to a foreign government, law enforcement, dealer, or entity, indicating that the diversion, or leakage from legal holdings occurred in another country.

DATA SOURCES ON VIOLENCE AND CRIME:

As it is difficult to measure the rate of crime in a country, for this project, the team focused on utilizing homicide rates to represent the level of violent crime. While homicide rates do not represent the totality of crime or even the totality of violent crime, homicide rates are a widely used indicator because homicides are the most reliably recorded type of crime. It was determined that the best metric to use as an indicator of crime is a country’s homicide rate per 100,000 people and when available, statistics on gun-related deaths or homicides involving firearms.

The team analyzed numerous studies and determined the reliability and ranking of the data sources on homicides. First, the UNODC Global Study on Homicide categorizes intentional homicide rates worldwide and offers valuable insights into the context of homicide. It relies on the International Classification of Crime for Statistical Purposes to ensure high data consistency, and many other data sources, such as the World Bank Intentional Homicides Databases, utilize its data.

The Global Burden of Disease database is a solid database to use in conjunction with UNODC's database since it provides a thorough assessment of injuries globally, which can grant insights into global causes of death. However, its broader scope may slightly diminish its precision in capturing homicide data.

FIREARMS

Title	The ATF and National Tracing Center (NTC)
Owner	Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF)
Date	Updated annually. Most recent report released in 2022.
Applications of the Data	ATF eTrace data is the only source that can supply data on American illicit firearm exports, as no other source can link crime guns seized in Central America, the Caribbean, and Mexico to the U.S. This can also be used to estimate the prevalence of diversions of American licit firearms exports. Of the crime guns determined to be "U.S. Sourced," the ATF provides statistics for the firearms that were determined to be "Traced to a Foreign Country", meaning the firearm was transferred from a U.S. federal firearms licensee to a foreign government, law enforcement, dealer, or entity, indicating that the diversion, or leakage from legal holdings, occurred in another country.
Limitations of the Data	ATF does not report on trace data from Brazil or Ecuador. The Caribbean report includes only the data for the top five reporting Caribbean nations, which were The Bahamas, Barbados, the Dominican Republic, Jamaica, and Trinidad and Tobago. The data is organized by the year the firearm was recovered and does not represent when the firearm trace was submitted, initiated, or completed. The trace data is a byproduct of the ATF's firearms tracing operation, which serves as a tool for law enforcement investigations. Law enforcement agencies submit firearms to the ATF for tracing without reporting a reason for the trace. National authorities can also choose not to submit trace requests for a recovered firearm. The "ATF Firearms Trace Data Disclaimer" states that not all firearms are traced or related to crime and that traced firearms are not representative of all firearm cases.

Title	Global Study on Firearms Trafficking 2020
Owner	United Nations Office on Drugs and Crime (UNODC)
Date	Data collected annually, reports released in 2015 and 2020.
Applications of the Data	The UNODC Global Study relies on data collected by the Illicit Arms Flows Questionnaire (IAFQ), which is distributed annually to UN Member States to collect comprehensive firearms data. The IAFQ was designed to generate uniform and standardized data relevant to illicit firearms. In addition to other relevant categories, respondents are asked to record the total number of firearms seized in their country for the requested year.
Limitations of the Data	The responses covering 2016-2017 were available for 80 countries, though 6 countries did not provide the total number of seizures and the breakdown of seizures by firearm type. Since the IAFQ is a questionnaire-style report filled out by a national authority and provided to the UN, the authority might choose not to answer a question or may not have collected the requested data. As a result, analysis of the data is restricted by incomplete national reports.

Title	Global Firearms Holdings Database
Owner	The Small Arms Survey
Date	Updated annually. Most recent report covering 2017-2021
Applications of the Data	The data highlights differences between civilian, law enforcement, and military firearms in each country. It documents a country's population and number of registered and unregistered guns. It estimates the rate of civilian firearms per 100 residents. This database estimates civilian gun ownership by country using data from firearms registration, surveys, and internal analysis.
Limitations of the Data	The data is reliant on voluntary reporting, surveys, seizure reports, and expert estimates. There are data gaps in countries where firearm tracking is incomplete. Limitations in fully accounting for informal or unregistered guns lead to potential underestimations of firearms ownership. To address this, the database utilizes proxies, expert estimates, and averages in available data, though uncertainty remains. A common pitfall in expert firearms estimation is the inclination to favor specific estimates from sources like military records, for example, potentially influenced by confirmation bias. This practice of "data picking" risks distorting the true picture of firearms prevalence and can undermine the accuracy of analyses and policy decisions.

VIOLENCE & CRIME

Title	Global Study on Homicide
Owner	United Nations Office on Drugs and Crime (UNODC)
Date	Updated annually. Most recent report released in 2023.
Applications of the Data	Examines homicide rates, measured as victims of intentional homicide per 100,000 population. Highlights regional/subregional trends & demographic aspects: age & gender profiles of victims. Categorization of homicides into distinct areas: organized crime/gang-related incidents, intimate partner/family-related cases, other crime-related incidents, and overall homicide rates. The database is highly reliable due to its meticulous methodologies and international oversight.
Limitations of the Data	Relies on data reported by individual countries which may lead to underreporting or misclassification. Its regional disparities and limited scope of analysis may hinder a comprehensive understanding of homicide trends.

Title	Global Burden of Disease Study (GBD)
Owner	The Institute for Health Metrics and Evaluation (IHME) at the University of Washington
Date	Updated annually. Report covering 1950-2021.
Applications of the Data	Quantifies the impact of diseases, injuries, and risk factors on global populations, with 11,000+ researchers from 160+ countries. It is the largest global effort to quantify health levels and trends. The GBD database offers detailed insights on health conditions' prevalence, morbidity, mortality, and disability across regions. This leverages longitude analysis capabilities of health impacts and trends globally, enabling aid in tracking arms trafficking and regional homicide rates.
Limitations of the Data	Certain regions may lack reliable data sources, leading to gaps in coverage and accuracy. Variations in data quality can introduce biases and inaccuracies, affecting the reliability of estimates in regions with limited healthcare infrastructure. Changes in disease definitions or classification systems over time can affect the comparability of estimates across different years of study.

Title	Global Violent Deaths (GVD) Database
Owner	The Small Arms Survey
Date	Updated annually. Report covering 2017-2021.
Applications of the Data	It compiles data on intentional homicides, unintentional deaths, conflict-related fatalities, and killings during legal interventions in 222 countries and territories, combining them into a violent deaths indicator. It is disaggregated by victims' sex and killing mechanism with a focus on firearms-related killings. Also shows the difference in violent death rate per 100,000 population by subregion between 2015 and 2021.
Limitations of the Data	The data source relies on multiple sources such as the Armed Conflict Location and Event Data Project (ACLED), the Uppsala Conflict Data Program (UCDP), and national sources. Since the reliability and accuracy vary, this leads to inconsistencies and biases. This database excludes suicides, which is a significant contributor to understanding violent mortality patterns, especially firearms. Comprehensive data on violent deaths, especially conflict-related fatalities are often published long after the year under consideration, likely underestimating violent death figures.

Title	World Bank Intentional Homicides (per 100,000 people)
Owner	The World Bank
Date	Updated annually. Report covering 1990-2021.
Applications of the Data	Provides annual data on reported intentional homicides per 100,000 people from 1990-2021 in Member countries. The World Bank utilizes UNODC's regular collections of crime data from Member states, publicly available data from government sources, and data compiled by other international agencies, including Interpol, Eurostat, WHO, the Organization of American States, and UNICEF. The World Bank aggregates the data through weighted averages.
Limitations of the Data	Limited longevity as the most recent year reported is 2021, which may weaken conclusions about homicide trends. Some years are missing for countries: Bahamas is missing 1998-1999, Ecuador is missing 2003-2006, and Guatemala is missing 2015-2016. The primary source of data is derived from Member authorities' reporting to the UN and other collecting organizations. Different countries can classify "intentional homicide" differently and have different capabilities in their legal systems to record it.

CONTRIBUTORS

Title	The Global Organized Crime Index
Owner	Global Initiative Against Transnational Organized Crime
Date	Updated bi-annually. Report covers 2021 and 2023.
Applications of the Data	The database was created under the expertise of 480 individuals, a mix of researchers, reviewers, and experts in various fields. The index covers all 193 UN member states, including all Tier 1 and 2 countries. The short country profile available for each nation situates the data in its current context to make it more accessible. The index's built-in analysis facilitates cross-country comparisons of important indicators, such as criminality and resilience. Since the research methodology is the same for each country, the scores are more reliable since they have been evenly evaluated.
Limitations of the Data	GI-TOC data is only available for 2021 and 2023, which limits the ability to draw conclusions about regional patterns.

Title	Corruption Perception Index
Owner	Transparency International
Date	Updated annually. Report covering 1995-2023.
Applications of the Data	The CPI offers a comprehensive global overview of public sector corruption by comparing levels of corruption across countries—it serves as a critical tool for governments, policymakers, and researchers to understand and analyze corruption trends globally. The methodology averages multiple data sources to mitigate the impact of bias or error from any single source, aiming for a balanced and reliable overall score.
Limitations of the Data	The CPI measures perceptions of corruption rather than actual instances. Critics argue that the CPI's methodology may not fully capture the complex and multifaceted nature of corruption, leading to oversimplification. The CPI's reliance on 13 different data sources from 12 institutions may introduce variability in methodology and coverage, impacting the uniformity of the data collected.

Title	Rule of Law Index
Owner	World Justice Project
Date	Updated annually. Report covering 2015-2023.
Applications of the Data	Evaluates 142 countries. Provides worldwide, regional, and country specific rankings. It also measures changes in scores and rankings over time. Covers 44 indicators. Questions are developed by experts and the averages are cross-checked with the results of more than 60 third-party sources. The Econometrics and Applied Statistics Unit of the European Commission's Joint Research Centre assesses the statistical reliability of the results by conducting sensitivity analysis.
Limitations of the Data	Notable inconsistencies as the data from 2017 and 2018 are combined.

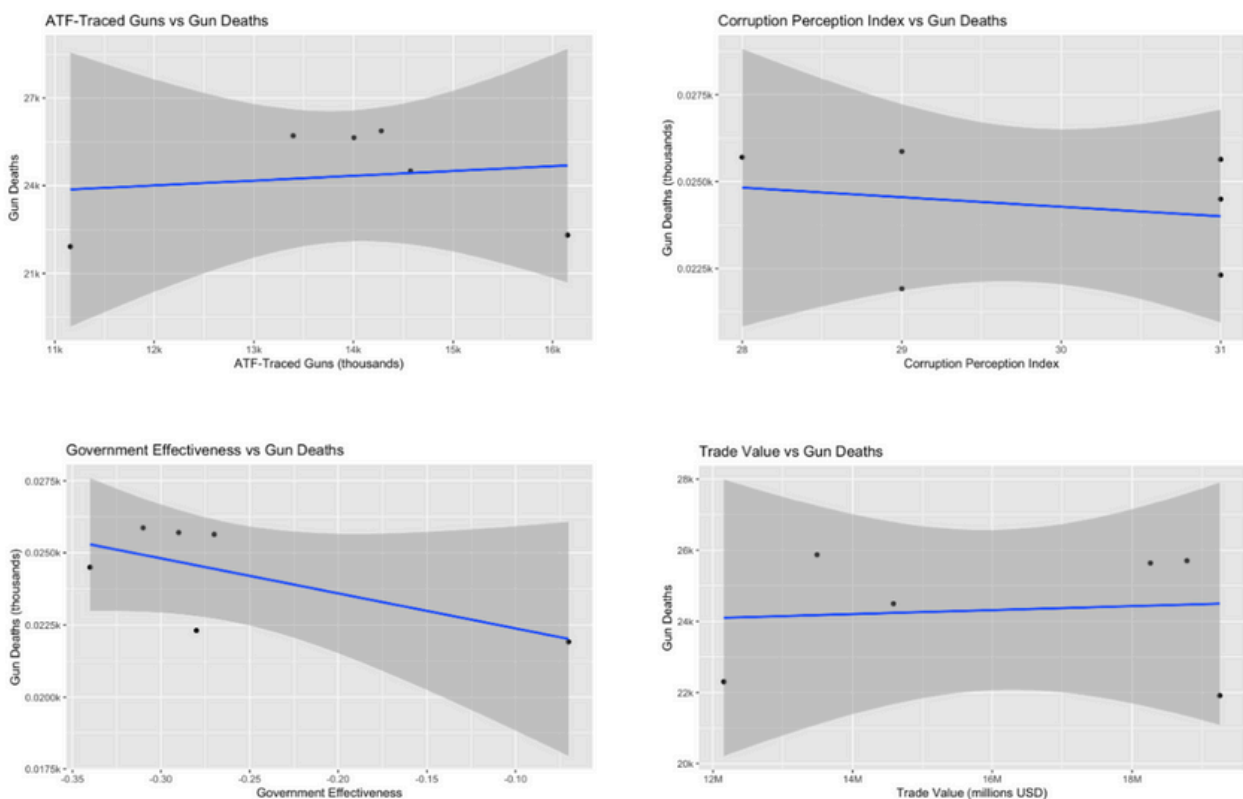
Title	Vance Center Anti-Corruption Index
Owner	Cyrus R. Vance Center for International Justice
Date	Updated annually. Report covering 2020-2022.
Applications of the Data	This study assesses the anti-corruption landscape in Latin America. The data is collected through questionnaires filled out by legal experts in Latin American countries. They provide a corruption score for countries from 0-10, where 0 is the lowest and 10 is the highest, through an assessment of the questionnaire responses covering three main categories: legislation, implementation and authorities. Each category within the index is assigned a specific weight: Legislation (30%), Authorities (40%), and Implementation (30%). Each subcategory is assigned a weight relative to the total weight of its parent category.
Limitations of the Data	This study possibly contains a self-reporting bias, since individual organizations and experts may have a vested interest in portraying their country's anti-corruption efforts in a positive light. Certain aspects of anti-corruption efforts may be difficult to quantify or assess, such as culture of transparency or informal agreements, leading to gaps in data. Confidentiality or legal constraints may prevent full disclosure of information in the questionnaires. Political pressures or considerations may also impact respondents' willingness to provide candid responses. Focus on legislation, authorities, and implementation overlooks key indicators, such as organized crime and proliferation of weapons.

DISCUSSION SECTION

STATISTICAL ANALYSIS HIGHLIGHTS LACK OF DATA COLLECTION

When conducting a statistical analysis of factors influencing gun-related homicides in Mexico from 2017 to 2022, the team initially aimed to identify the impact of variables like ATF-traced guns, gun trade value, government effectiveness, and corruption perception. However, the team's findings revealed significant challenges with the data and raised questions about the validity of the available data.

The regression results indicated that an increase in ATF-traced guns was associated with a decrease in homicide rates, which is counterintuitive and contradicts insights from qualitative research, for example. This negative correlation was not statistically significant ($p\text{-value} = 0.752$), suggesting that caution should be taken when interpreting these results as meaningful. Similarly, the correlation between gun deaths, trade value of guns, and the Corruption Perception Index aligned with expectations—with deaths increasing as trade value increased but decreasing as CPI increased—but neither factor was statistically significant. Although the model suggested that improved government effectiveness might lead to fewer homicides, this variable also lacked statistical significance ($p\text{-value} = 0.340$). This is likely due to a lack of available data points. Although the statistical model initially suggested that 82.69% of the variance in data could be explained through the regression (Multiple R-squared = 0.8269), this fell to 13.45% once non-significant variables were removed from the model (Adjusted R-squared = 0.1345). This change, combined with an overall $p\text{-value}$ of 0.5881, indicates that the model is unreliable for predicting homicide rates.



STATISTICAL ANALYSIS HIGHLIGHTS LACK OF DATA COLLECTION

These issues underscore the necessity of improving data collection and validation in studies of this nature. Contradictions between the statistical findings and qualitative research are likely the result of limitations with data—Mexico was the only country with consecutive gun-related homicides in years that matched with the variables of interest from the same year. This restricted dataset may not provide a comprehensive view, potentially skewing the analysis and leading to conclusions that do not accurately reflect broader trends or conditions.

The previous graphs illustrate the direct linear relationships between gun deaths and each factor included in the full regression model. Although each graph aligns with expectations from qualitative research once isolated solely against gun deaths, such as its positive correlation with ATF-traced guns, the wide margins of error, represented by the shaded gray areas on the graphs, show that no correlation accurately represents a direct correlation, and no factor has a p-value that achieves statistical significance. The narrow scope of the available data underscores the importance of expanding research to include more diverse and comprehensive datasets. By incorporating data from multiple countries or extending the range of years studied, future research could achieve a more accurate and generalizable understanding of the dynamics at play. Further research should focus on enhancing the accuracy and depth of the data to ensure more reliable and meaningful results. This is crucial for developing informed policies to effectively address the complexities of firearms tracing and gun-related violence.

GAPS IN DATA

Limitations of the Available Data

While the ATF firearms trace data is undoubtedly the best source to link American licit and illicit firearms to crime in foreign countries, the ATF data applications are restricted by the limitations inherent in the way the data is collected. The ATF's firearms trace data is a byproduct of the ATF's firearms tracing operation, which serves as a tool for law enforcement investigations. As a result, this data was collected and organized for purposes broader than to analyze the patterns and trends of American firearms seized in foreign countries.

Under this reality, there are several limitations on extrapolating this data to capture a larger picture of the relationship between U.S.-sourced firearms, including both licit and illicit flows, and crimes committed in other countries. Law enforcement agencies submit firearms to the ATF for tracing without reporting a reason for the investigation, and national authorities can also choose not to submit trace requests to the ATF for a recovered firearm, perhaps if they can trace the firearm to their own country. From 2011-2014, for example, Mexican authorities would routinely only submit data covering some of the arms seized.[66] This made Mexican trace data during that period extremely unreliable.

The “ATF Firearms Trace Data Disclaimer” states, “Not all firearms used in crime are traced, and not all firearms traced are used in crime”.[67] Furthermore, the same disclaimer explicitly states that the “firearms selected do not constitute a random sample and should not be considered representative of the larger universe of all firearms used by criminals, or any subset of that universe”.

While the ATF data provides an otherwise unavailable glimpse of the big picture, the methodology underlying the statistics produced could not compare to a source with methods specifically designed to collect and analyze this data. The ATF firearms trace data of ‘U.S. Sourced Firearms’ has a category titled “Unable to Determine a Purchaser”, which refers to firearms that can be determined to have been legally in the United States where “ATF was unable to determine the first retail purchaser through the trace process”. The typical reasons that the ATF cannot identify the purchaser include “incomplete firearms identifying data on the trace request form”, which seems to be an avoidable barrier when improving the data. Depending on the reasons that submitted trace request forms are filled out incorrectly or incompletely, this could be an area where the State Department could provide support to foreign law enforcement authorities to ensure that mistakes or misunderstandings do not limit the data.

Additionally, most of the firearms seizure data used in this report comes from the ATF through their eTrace system. The fact that ATF eTracing is voluntary by participating countries and relies on foreign law enforcement are the two main limitations of this data. A former ATF Assistant Director told the research team that, while ATF always advocates for comprehensive data collection from foreign law enforcement, law enforcement partners do not trace all the firearms they receive.[68] One reason for this, they suggest, is that there are some corruption issues and sometimes political incentives not to trace all the firearms seized.[69] An example they gave was a foreign law enforcement force putting seized firearms into service instead of tracing them. [70] Moreover, they expressed that guns reported as “lost or stolen” from law enforcement should be investigated further.[71] Are there internal controls in the country to prevent corruption of seized firearms from occurring? Are there legal/policy mechanisms to deal with this? Alternatively, foreign law enforcement partners may not have enough resources or capacity to trace all the firearms they seize.

Even well-developed data sources need more longevity. The Small Arms Survey, one of the most comprehensive data sources on weapons proliferation and flows in the world, fails to capture the political contexts of the present day. For example, their data on Ecuador analyzes a period before the country’s rapid destabilization and increased security threats, including the homicide rate, which has nearly quadrupled in two years.[72]

The Global Organized Crime Index has its own arms trafficking score that can help fill this gap, but the data is only updated every two years and was first produced in 2021. That data also fails to capture the complete change in Ecuador in the last six years. Without consistent, thorough data-tracking efforts, drawing any definitive conclusions from the existing data alone becomes difficult.

The lack of steady government reporting greatly impedes the amplification of reliable databases. Many data sources and databases include inconsistent data when compared to other sources, skip years, and/or rely on voluntary reporting. For example, the World Prison Brief maintains a database on prison systems in various countries using official sources to update information regularly, depending on the availability of information. While data regarding Mexico's prison population rate was updated in 2024, the prison population rate for Trinidad and Tobago has not been adjusted since 2018. Many relevant indicators and data points that help outline crime trends are left unstudied and unreported. Were governments to make this data available, researchers might be able to produce quantifiable correlations between firearms flows and violent crime.

The reliability of available data must be improved by tracking and better understanding the flow of arms from the U.S. to neighboring countries in the Western Hemisphere. Mexico, the Tier 1 country with the amplest data, provides an interesting case study on how data discrepancies lead to unreliable figures. Mexico's homicide data for 2021 was reported by both the UNODC and Small Arms Survey, but with different figures. The UNODC calculates 28.2 homicides per 100,000 people, while the Small Arms Survey reports 32.71 homicides per 100,000 people.[73][74] For such a discrepancy to appear in homicide data, a key factor in crime analytics, in a country with ample data, speaks to the issue of unreliable data, regardless of the quality of the study or analytic methods used.

High-level corruption also disrupts tracing efforts. Consider the case of Guatemala. La Comisión Internacional Contra la Impunidad en Guatemala (International Commission against Impunity in Guatemala, CICIG) was tasked by the UN with investigating and prosecuting corruption in the Guatemalan government in 2006. [75] During its time, the solved homicide rate increased from 7% in 2006 to 28% in 2013, and the murder rate declined by 5% annually after it doubled from 1999 to 2006. [76] However, in 2019, former president Otto Pérez Molina ended the CICIG due to its success in spotlighting corruption in his administration. This example highlights how even well-structured, productive organizations cannot effectively trace weapons trafficking if the institutions they serve are not resilient enough to resist corruption and political pressure.

Disruptions in data availability can be attributed to shifting government policies, especially with changes in administration, as the case of Guatemala illustrates. Depending on leadership, there may not be sustained interest in reporting reliable data on firearms, crime, or corruption. Brazil, for example, saw a boom in gun ownership encouraged by Bolsonaro's loosened firearm restrictions and reduced taxes on imported weapons.[77] As the distribution of licenses for hunters, marksmen, and collectors (CACs) increased under President Bolsonaro, there was an increase in school shootings (5/12) and shootings in clubs (2,000).[78] The Brazilian Public Security Forum found that 6,000 deaths could have been prevented if guns had not become more accessible.[79] This example demonstrates that short-term policy shifts can endanger efforts to reduce crime.

Missing Data

Most studies analyzing gun violence with a firearm focus on homicide data, thereby neglecting any non-fatal firearm violence related to organized crime. The team found three potential sources that could fill this gap, although these sources only cover Mexico, Jamaica, and Brazil, respectively.

The ENVIPE, created by the National Institute of Statistics and Geography in Mexico, includes non-fatal firearm violence in their survey, but this relies on self-reporting through direct interviews and spotty law enforcement data.[80] It also only surveys those over 18, which excludes the large population of adolescents involved in gun violence and organized crime.

Furthermore, non-fatal firearm injuries make up a large proportion of people affected by firearms. For example, in 2004, 0.4% of unintentional injuries in Jamaican hospitals were from gunshot wounds and 26.9% were from accidental lacerations.[81] Despite the large number of those with non-fatal firearm injuries, they are not analyzed or tracked with the same rigor. As in some countries such as Mexico, published statistics rely solely on self-reporting, meaning that even the limited data available is not entirely reliable as a representation as it likely only represents a fraction of the actual number of non-fatal firearm injuries.

Fatal homicide data can also be misleading. For example, in Mexico, femicide is now counted separately from homicide numbers, and not all of Mexico's states report uniformly. Similarly, some 100,000 people were reported as "missing" in Mexico, and many of them are likely homicide victims.[82] This results in a substantial misrepresentation of homicide rates.

Deficiencies in record-keeping practices, notably the prevalence of missing or falsified documentation, impede the identification of illicit arms traffickers.[83] Many distortions between data reporting at the national and international level can be attributed to low-level discrepancies, with weapons being reported multiple times or not at all.[84] Some of these deficiencies can be attributed to the inadequacy of forensic capabilities, impairing the effectiveness of forensic analyses in tracing firearms employed in criminal activities.[85] This means that the data regarding firearms, crime rates, and homicides is not uniform or complete. Researchers must recognize these gaps and analyze these sources responsibly.

Missing data on ammunition flows highlights a significant data gap. According to the Government Accountability Office (GAO), transnational crime organizations use firearms, ammunition, and explosives to protect their trafficking routes, drug processing locations, geographic drug trafficking areas, and illicit profits.[86] Because ammunition is needed for firearms, identifying the suppliers and end-users, patterns of licit and illicit travel routes, and locations of firearms discharges is just as important as identifying these factors of seized firearms and crime guns.

The ATF does trace ammunition, although the data on ammunition flows to the Tier 1 and Tier 2 countries is sparse. What does exist, provided by the U.S. Immigration and Customs Enforcement's Border Enforcement Security Task Force (BEST), only reports on ammunition seizures along the U.S.-Mexico Border, and is limited in scope and capacity for helpful analysis. Because the BEST data only captures seizures from the U.S. to Mexico and no ammunition seizure data is available for other Tier 1 and Tier 2 countries, it is limited in scope. Furthermore, because the BEST data does not provide information on end-users and destinations of the ammunition seizures and is focused on the domestic side of seizures, it fails to capture necessary aspects of ammunition tracing that would aid researchers and law enforcement in addressing ammunition flows.[87]

Leakages from licit arms sales are also key in determining if the United States should sell weapons to foreign countries, but data regarding licit leakages is lacking. The team found research suggesting Guatemala's licit leakage rates sit around 44%, meaning that 44% of licit sales to Guatemala are redirected to criminal groups.[88] The team could not find licit leakage data for any of the other Tier 1 and 2 countries, nor was the team able to calculate these rates using U.S. export data, which was the team's initial hope. Previously discussed problems, such as incomplete records and corruption, make licit leakages extremely difficult to determine. The team hopes that in addressing other gaps in data, licit leakages will become easier to identify.

Types of Data Not Collected

Having a wide range in the types of data collected is also important in drawing conclusions that hold more authority. For example, a former Assistant Director in the Office of Intelligence Operation for the ATF told the team that collecting tracing data on non-crime guns is still very important because it shows the pattern in connection to the path from the U.S.–which can further work to identify sources and end-user patterns of firearms overall.[89]

Ghost Guns: The former ATF official also said that it is important to collect even limited information on ghost guns when the source country is unknown because it can still work to identify, for example, patterns of end-user locations and hubs.[90] Thus, maintaining more types of, even limited, data on firearms seizures is still important as it supplements the full traces that the ATF can make to identify firearms trafficking trends. Ghost guns provide an additional, less conspicuous channel for trafficking. Unlike conventional firearms, which enter Latin America through smuggling routes from legal markets in the United States and other countries, ghost guns can be manufactured locally using imported kits or 3D printers.[91] This reduces the reliance on cross-border smuggling, making it harder for authorities to intercept and trace these weapons. Without a tracing system for these guns, data on firearms fails to account for a rapidly growing section of the illicit market.

Considering that many countries in the region already struggle with enforcing existing gun laws, the ambiguous legal status of ghost guns adds to these challenges. Since these items are not classified as firearms until fully assembled, they often bypass standard import and export regulations, which creates additional obstacles for governments to implement effective controls.[92] Because of this, ghost guns are particularly attractive to gangs, drug cartels, and paramilitary groups, who may use them to arm themselves efficiently and cost-effectively while avoiding detection from law enforcement.[93]

As ghost guns do not exist in official records, they are a blind spot within data collection. This obscurity hampers the ability of policymakers to accurately assess the scope of gun violence, track trends, and devise informed strategies. Without a clear understanding of how many ghost guns are in circulation, efforts to combat gun violence and arms trafficking in the region remain incomplete, undermining public security initiatives in the process.

Ballistic fingerprinting: The absence of compulsory ballistic fingerprinting protocols also exacerbates the issue in the United States and abroad, thereby limiting the efficacy of arms verification measures.[94]

Despite initiatives like the United States National Integrated Ballistic Information Network (NIBIN), which aims to link firearms used in crime, its effectiveness is hindered by inconsistent utilization and processing delays.[95] An audit by the United States Office of the Inspector General (OIG) uncovered disparities in NIBIN terminal availability across states, which greatly inhibits tracing efforts.[96]

Additional hurdles, such as difficulty in registering ballistic fingerprints of bullet samples into fiber casings, have complicated efforts. Technicians struggled to distinguish between fiber and bullet ballistics fingerprints under microscopes, leading to nearly eight years of samples being lost between 2013-2021.[97] During these eight years, law enforcement allowed the license for the United States Integrated Ballistics Identification System (IBIS)—the sophisticated software managing bullet samples—to lapse, further hindering investigative capabilities.[98] Addressing these issues domestically and across the Western Hemisphere could advance comprehensive data collection and rapid analysis of ballistic evidence, closing loopholes exploited by traffickers and strengthening arms verification measures regionally.

Lack of Synthesis

Some gaps in data occur due to a lack of synthesis rather than a lack of collection, experts told the team. A former Assistant Secretary of State for International Narcotics and Law Enforcement (INL) provided the team with some suggestions to address this along the U.S.-Mexico border. He argued that there should be one single database that consists of all available information on firearms leaving the U.S. legally. [99] This could significantly amplify trace data, facilitating organizations' ability to track buyers, frequency of purchases, and quantities of firearms purchased at once.

A specialist for InSight Crime, however, argued in an interview with the team that such a database would not address all the root causes of data gaps.[100] Recognizing that “the data the ATF has put out is great, but it still is only a fraction of the total weapons seized”, the specialist recommends encouraging the hiring of data technicians in law enforcement and prosecutor's offices, following the advice of fellow journalist Stephen Dudley.[101] The specialist admitted, “I think [hiring data technicians in police forces and related offices] would be a fantastic idea. Data tracing is one of the biggest blackholes”.[102] It is worth noting that the U.S., via INL, tried to encourage this in Mexico under the Mérida Initiative, but ran into consistent problems implementing it. In many cases, there is a large judicial backlog of criminal cases tied to firearms in Tier 1 and 2 countries due to a lag in forensics processing, institutional capacity, and crime gun reporting, among other problems in the local justice systems.

Multiple retired ATF agents who worked on tracing efforts in Mexico emphasized that this issue and others can be attributed to a lack of personnel with the proper forensics training to identify necessary information on seized firearms and a lack of administrative personnel working to report lab findings and crime scene firearm information.[103] These problems persist despite programs like the Mérida Initiative, where the U.S. trained hundreds of forensic experts and encouraged Mexico to amplify its training programs.[104]

Such backlogs prevent timely reporting of crime guns that would expedite the judicial process and help convict end-users of firearms trafficking, as well as identify the traffickers. These inefficient judicial processes often result in higher impunity for crimes committed with trafficked firearms. An example of this is Mexico, where more than two-thirds of all homicides are committed with firearms, and the country experiences high impunity. For example, the National Survey on Victimization and Perception of Public Safety in Mexico conducted by its own statistical agency (INEGI) in 2022 revealed that only 1.1% of crimes committed in the country were reported, investigated, and resolved.[105] The World Justice Project's Rule of Law Index also highlights that Mexico, with astronomical impunity and not enough personnel working on firearms tracing and reporting, ranks extremely low on "timely and effective" criminal adjudication (at 0.27 out of 1) and on "effective" criminal investigation system (at 0.19 out of 1).[106]

As was previously mentioned, the Illicit Arms Flows Questionnaire (IAFQ) that the UNODC uses to collect firearms seizure data from countries was designed by experts to collect comprehensive standardized data on firearms. The purpose of the IAFQ is to track illicit firearm flows so that action can be taken to reduce them. Since this questionnaire-style form is supplied to the UN by national authorities, a country may choose not to answer a question or may not have collected the necessary data to answer a question. Although this UN questionnaire has not produced comprehensive data thus far, this reporting instrument was diligently developed to be effective if countries improve their data collection capabilities and increase the completeness of responses.

To procure higher-quality firearms data, the U.S. Department of State could utilize UN reporting instruments by partnering with the national authorities of key Western Hemisphere countries to ensure that these forms are filled out correctly and completely. Additionally, the U.S. could support these countries in overcoming the barriers they face in collecting and supplying the requested information for these questionnaires.

CONCLUSION

In conclusion, the existing data sources do not capture the full picture of the relationship between American licit and illicit firearms exports and crime in the key Western Hemisphere countries of Guatemala, Mexico, Jamaica, Trinidad and Tobago, Brazil, Ecuador, and The Bahamas. There are various gaps in the data available that hinder tracing efforts, regardless of the size or quality of the study.

To address the limitations of the current data, missing data, indicators not collected, and a lack of synthesis, a multi-pronged approach will be required. The research team determined that filling these gaps in data will necessitate improving data collection capabilities and facilitating collaboration throughout U.S. agencies and Western Hemisphere countries. As a result, the team provided nine specific and actionable recommendations and developed a list of potential partner institutions for the U.S. government to work with on these endeavors.

RECOMMENDATIONS:

1. Improve the collection of reliable data on firearms and gun violence in Tier 1 and Tier 2 countries by partnering with international civil society organizations, universities, government agents, and international organizations.
2. Encourage Tier 1 and 2 countries to complete the UN Illicit Arms Flows Questionnaire thoroughly and assist countries to ensure accurate completion.
3. Standardize the collection of seizure information, including manufacturer, date of seizure, end-user data, and source of firearm.
4. Enhance the accessibility of ATF data by consolidating seizure data from the agency into a single merged database.
5. Expand tracing of ammunition seizures and of seized ghost guns and ghost kits.
6. Initiate or support programs to incorporate data analysts and related capacity into law enforcement and justice departments in Tier 1 and 2 countries.
7. Continue to provide aid for capacity-building and training contingent on countries enhancing firearm tracing efforts to achieve mutually agreed-upon targets over time.
8. Provide necessary resources, such as crucial technology and equipment, to support capacity-building initiatives for arms tracing.
9. Seek policy decisions and funding to boost personnel staffing to address the administrative and forensics backlogs domestically and abroad.

POTENTIAL PARTNERS

Throughout the research, the team discovered various domestic and international organizations that appeared to do reliable work related to this project. These partners could contribute to improved data collection and research that could track American licit and illicit arms exports to Western Hemisphere countries. These partners are listed below, with a brief description of each one:

DOMESTIC:

- [University of California, San Diego Joan B. Kroc School of Peace Studies](#) – UC San Diego Kroc School of Peace Studies conducts evidence-based, justice-centered research and solutions to ending violence. In March 2013 the school published a highly-cited report, [“The Way of the Gun: Estimating Traffic Across the U.S.-Mexico Border,”](#) in partnership with the Igarapé Institute based in Brazil. DOS (or DHS or DOJ) might be able to partner with the Kroc School of Peace Studies to produce an updated report on arms trafficking across the U.S.-Mexico Border and perhaps develop a new report on arms trafficking to Latin America and the Caribbean.

INTERNATIONAL

- [The Small Arms Survey](#) – The Small Arms Survey provides expertise on all aspects of small arms and armed violence. Two of their main databases report on Global Firearms Holdings and Global Violent Deaths (homicides committed by firearm), which have not been updated since 2018. If provided with more resources, updated databases would be very useful in identifying trends in homicides committed by firearms and firearms holdings. The Small Arms Survey has a project in the early development stages, which the team spoke to them about, called, “Mapping the Transnational Circulation and Control of Small Arms in Latin America,” funded by the Swiss Network for International Studies (SNIS), which may be of DOS interest.

- [INTERPOL iArms](#) – INTERPOL’s Illicit Arms Records and Tracing Management System (iArms) is a database that contains over 1.3 million records of seized firearms, which police worldwide can query to determine if seized firearms have been reported as lost or stolen by other countries. The database is currently funded by the European Union.

POTENTIAL PARTNERS

- **Semáforo Delictivo (“Crime Spotlight”)** – Semáforo Delictivo is a Mexican civil society organization dedicated to reporting on crime. Their dashboard includes crime data for each month comparing each Mexican state by crime type: Domestic violence, Assault, Vehicle Theft, Small-scale drug dealing, Business burglary, House burglary, Homicide, Rape, Extortion, Femicide, and Kidnapping. They have gathered crime data from January 2017 to the most recent January 2024. They obtain their data from the Executive Secretariat of the National Public Security System and have been used by Statista.
 - **México Evalúa** – México Evalúa is an analysis center that focuses on the evaluation and monitoring of government operations to raise the quality of its results. They conduct expert research and produce policy briefs on relevant issues relating to organized crime in Mexico, including a March 2024 Policy Brief, “Empresas Bajo Fuego: Victimización y resiliencia del sector empresarial en México,” on the impact organized crime groups have had on the formal business sector in Mexico. DOS and/or DOC could partner with México Evalúa to collect more data on end-users of firearms trafficking and the illicit and licit economies they are engaged in.
 - **The Global Initiative Against Transnational Organized Crime (The Global Initiative)** – The Global Initiative is an independent civil society organization headquartered in Geneva, Switzerland that provides a platform to promote greater debate and innovative approaches, which serve as the building blocks to an inclusive global strategy against organized crime. They have a network of experts, including prominent law enforcement, governance, and development practitioners, who produce reports on the state of international organized crime and propose strategies and responses. One of their reports, “Arms Trafficking and Organized Crime,” published in August 2022 demonstrates their relevance and capacity to help the DOS on the issue of arms trafficking to the Western Hemisphere.
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POTENTIAL PARTNERS

- **Institute for Economics & Peace (IEP)** – IEP’s peace and data consulting services cater to an esteemed clientele, including the United Nations, World Bank, OECD, and the Australian Department of Foreign Affairs (DFAT). They are headquartered in Sydney, Australia, and have offices in New York City, Mexico City, Brussels, Nairobi, and The Hague. Their team of expert researchers, data scientists, and communication specialists excels in distilling complex data into clear, actionable insights, demonstrating a profound capacity to navigate intricate scenarios. IEP generates a Global GPI report annually and also for Mexico specifically. DOS could partner with IEP to produce reports on the rest of this project’s countries.

- **Diálogo Americas** – Dialogo Americas is an online publication focused on defense, security, and military affairs in the Americas region. They could provide expert analysis on arms trafficking trends and emerging threats in the Americas region for the State Department. They could facilitate dialogue and exchange among defense and security professionals, government officials, and civil society organizations for knowledge sharing. They could also report on successful initiatives and best practices in combating arms trafficking.

- **Igarapé Institute** - The Igarapé Institute is a Brazilian think tank focused on security, justice, and development issues. It does research, analysis, and advocacy on gun violence, crime prevention, and drug policy. It addresses the root causes of violence including urban marginalization and weak gun control laws. To support the State Department, the Institute could provide in-depth research on arms trafficking trends, routes, and actors in Brazil. They could also support the capacity of law enforcement agencies and border security forces in Brazil as well.

- **Campaign Against Arms Trade (CAAT)** – The Campaign Against Arms Trade (CAAT) is a United Kingdom-based organization dedicated to ending the international arms trade and advocates for peace and human rights. Through research, advocacy, and campaigns CAAT aims to expose the negative impact of arms sales and lobby for stricter arms export controls. To support the State Department, CAAT could provide research and analysis on trafficking trends.

POTENTIAL PARTNERS

- **National Integrity Action (NIA)** - The National Integrity Action (NIA) is a Jamaican non-profit organization that is dedicated to combating corruption and promoting integrity in governance. Their work includes advocacy, research, and promoting good governance practices across Jamaica. To partner with the State Department, NIA could collaborate by leveraging its expertise in transparency to advocate for stronger regulatory frameworks and enforcement mechanisms to combat arms trafficking. They could also work with the State Department to strengthen anti-corruption measures with law enforcement and border control authorities to prevent the diversion of weapons into illicit channels in Jamaica.
 - **Jamaicans for Justice (JFP)** - Jamaica for Justice (JFP) is a human rights organization in Jamaica dedicated to promoting justice, accountability, and transparency. They conduct research, advocacy, and legal interventions to address human rights violations and systemic injustices in the country. To contribute further to the State Department's data collection and research on the Western Hemisphere on arms trafficking, they could collaborate with local communities, law enforcement agencies, and civil society organizations. They could provide valuable data and analysis to inform policy decisions and diplomatic initiatives aimed at combating arms trafficking.
 - **Instituto Sou da Paz** - Sou da Paz (I am Peace) is a Brazilian organization that works to enhance public security policies, promote human rights and advocate for social justice. Their initiatives include research, advocacy, and community engagement to eliminate gun violence and improve law enforcement practices. To contribute to further data collection, Sou da Paz could utilize their expertise in violence prevention and public security to gather information on arms trafficking dynamics in Brazil and beyond. They could conduct research on the sources, routes, and destinations of illicit arms.
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POTENTIAL PARTNERS

- **International Action Network on Small Arms (IANSA)** – The International Action Network of Small Arms (IANSA) is a global movement committed to preventing the proliferation and misuse of small arms and light weapons. They advocate for stronger arms control measures, promoting disarmament, and reducing armed violence. IANSA engages in research and capacity building. To contribute further to data collection, IANSA could leverage its global network of member organizations and partners to gather information on arms trafficking trends, routes, and actors. They research sources and destinations on arms trafficking on human rights, security, and development.

- **Acción Ciudadana** – Acción Ciudadana is the Guatemalan branch of Transparency International dedicated to preventing and reducing corruption in Guatemala. Transparency International works in over 100 countries to end corruption by promoting transparency, accountability, and integrity through research and legal and advocacy centers reporting corruption. DOS has donated to Transparency International already. DOS could work with Transparencia Mexicana by directly supporting in-country projects and research initiatives to prevent and stop corruption in Guatemala.

- **Transparencia Mexicana** – This is the Mexican branch of Transparency International dedicated to preventing and reducing corruption in Mexico. Transparency International works in over 100 countries to end corruption by promoting transparency, accountability, and integrity through research and legal and advocacy centers reporting corruption. DOS has donated to Transparency International already. DOS could work with Transparencia Mexicana by directly supporting in-country projects and research initiatives to prevent and stop corruption in Mexico.

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