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BACKGROUND PAPER

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AGAINST TRANSNATIONAL ORGANIZED CRIME

MEASURING THE SCOPE AND SCALE OF ILLICIT ARMS TRAFFICKING

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ABOUT THE SERIES

With the launch of the second iteration of the Global Organized Crime Index in September 2023, we are publishing a series of 13 discussion papers. These cover each illicit market considered during the development of the Index. The papers, written by international experts, have been commissioned to help move forward the debate around definitions and measurements used in analyzing transnational organized crime markets, and thus support responses to organized crime.

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CONTENTS

INTRODUCTION

The illicit trade in arms and ammunition not only is a serious criminal market but also strengthens and expands other illicit economies around the globe, increasing the potential or actual use of violence in the commission of crimes. With weapons recycled from conflicts in the past, illegally produced, diverted from state or private stockpiles, or smuggled (in parts or whole) from areas in which supply is abundant, arms trafficking has become the fourth most prevalent criminal market globally, and is particularly prevalent in the Americas and Africa.[1]

According to the Small Arms Survey database, global firearms-related deaths have decreased by 30% between 2016 and 2020 (from 3.9 per 100 000 in 2016 to 2.7 per 100 000 in 2020).[2] However, the organization also estimated that, as of 2017, there were still 857 million firearms in civilian hands worldwide, of which only 12% were registered.[3] These weapons can pose enormous threats to civil society and regional stability.

Illicit arms enable organized crime and underpin criminal markets. Firearms trafficking can also have a severe destabilizing effect, as the conflicts in which they are used can fuel others in a region, along with further crime and violence. For example, civil wars in Central America in the late twentieth century led to the availability of weapons in the region multiplying. Many of the 30 000 M-16 rifles and the 260 000 M-67 grenades sent to the Salvadoran authorities by the US government are still in circulation and have been used by the Mara Salvatrucha-13 and Barrio 18 gangs and criminal organizations abroad.[4]

Estimating the number of illegal weapons in circulation and the value of illicit arms trafficking is complex. The concealed nature of the illicit arms trade and limited information available on the types, quantities and value of illicit arms circulating worldwide add up to a difficult process of estimating the size of this market.[5] Global Financial Integrity has estimated that for 2017, the total value of small arms and light weapons trafficked globally was US$1.7–3.5 billion.[6]

Despite the methodological challenges, measuring the size and value of the illicit firearms market is important to understand how it influences other criminal markets, violence and crime around the world.

Sustainable Development Goal (SDG) 16 acknowledges the links between development and governance, and thus the negative impact of violence, conflict, state fragility, corruption and poor governance on development. Target 16.4 and its related indicators[7] articulate the globally agreed objective in arms control, namely the achievement of a significant reduction in illicit arms flows by 2030. In particular, indicator 16.4.2 seeks to measure the 'proportion of seized, found or surrendered arms whose illicit origin or context has been traced or established by a competent authority in line with international instruments'.[8]

Assessing progress on indicator 16.4.2 is challenging. The UN Statistics Division classified it a Tier II indicator as it has a clear methodology but inadequate data. This means that there is insufficient official data or inadequate statistical capacity across countries, which hinders clear results for this indicator being obtained. Furthermore, variations in interpreting this indicator raise the question as to whether a change (whether an increase or decrease) in this indicator reflects a change in the size and flows of this market, a change in law enforcement, or both.[9] Data from 14 countries suggests that the illicit origin or context of firearms could be established for only 28% of the listed categories. In addition, countries registering high success rates in tracing firearms reported low seizure levels, whereas some countries reported high levels of seizures but limited tracing success.[10]

Based on a growing body of literature that examines this shadow trade, this paper presents some important concepts that should be considered when defining the illicit arms trade and reviews attempts at measuring the market given a major shortcoming in data.

DEFINITIONS AND DEBATES AROUND ILLICIT ARMS TRAFFICKING

Illicit firearms and organized crime

The Small Arms Survey defines illicit firearms as 'weapons that are produced, transferred, held, or used in violation of national or international law'.[11] Although simple, this definition acknowledges the many possible uses, trajectories and sources of illicit arms. The term 'used', in particular, might also refer to legally owned firearms that, after being used to commit a crime, are classified as illicit weapons. However, the definition overlooks the inclusion of firearm parts, accessories and ammunition, which are crucial elements of the illicit market.

In the context of illicit economies and organized crime, illicit weapons are described by the UNODC 'as a tool for gaining and maintaining power, as an instrumentality for the commission of a crime, and as a commodity to be trafficked'.[12] More specifically, the International Tracing Instrument, adopted by the United Nations General Assembly on 8 December 2005, defines small arms and light weapons (SALW) as 'any man-portable lethal weapon that expels or launches, is designed to expel or launch, or may be readily converted to expel or launch a shot, bullet or projectile by the action of an explosive, excluding antique small arms and light weapons or their replicas'.[13] Small arms are designed for individual use (such as revolvers, self-loading pistols, rifles, carabines, submachine guns, assault rifles, etc.), whereas light weapons are designed for use by two or three persons serving as a crew (heavy machine guns, handheld under-barrel or mounted grenade launchers, etc.) although some might also be used by a single person.[14]

Such weapons can become tools of systematic violence by organized crime groups, whether in competing with each other, confronting state authorities, or exerting violence and intimidation against the population in their territories of influence. They are a key enabler of instability and endemic crime. This is why it is paramount to understand, measure and, ultimately, contain the illicit trafficking of firearms.

Illicit trafficking in firearms can occur for several reasons and in various formats. Organized crime groups can engage in this activity for the pursuit of profit or to defend their territory, routes and goods from other groups or the state.[15] For example, criminal organizations in Mexico have historically had access to illicit firearms and thus have been well armed, but the expiration of the US federal assault weapon ban in 2004 greatly facilitated the supply of assault weapons south of the border and contributed to the increase of violence and the fragmentation of criminal organizations from a handful in the 1990s to 37 by 2019.[16] In Brazil, the relaxation of the 2003 gun control laws in 2019 have resulted in 78% of intentional homicides being committed with a firearm, an increase in gender-based violence and double the number of arrests of possession of arms, ammunition or explosives between 2016 and 2021.[17]

Weapons are not only assets smuggled or exchanged for money or to control a territory through violence, but also tools used to protect many illicit activities.[18] A positive link has been found between arms trafficking and violence, as well as with other criminal markets, such as human smuggling, human trafficking and non-renewable resource crimes.[19] Furthermore, violent crime in the Latin American region and drug trafficking in Europe have often been observed in association with vibrant illicit firearms markets.[20]

Firearms are also a durable good. A well-maintained assault rifle (e.g. an AK-pattern rifle) can keep on working for many decades. Some estimates show that the number of new small arms purchased each year is only about 1% of those already in circulation.[21] Stockpiles can be fairly stable around the world, and weapons can move from one stockpile to another, rather than high volumes of new weapons being acquired.

However, the Arab Spring and subsequent uprisings and civil wars also showed that severe instability generates demand for new weapons, first among soldiers and later by organized crime groups in search of profit, as has been seen in the conflict in Syria[22] and the situation in Afghanistan after 2021, and which may also develop in Ukraine owing to the current war. In the first two days of the Russian invasion of Ukraine, the Zelensky administration distributed over 25 000 automatic rifles, 10 million rounds of ammunition and an unknown number of rocket-propelled grenade launchers to civilians, with an ID card being the only requirement for issue.[23] Officials estimate there may be up to 5 million unregistered weapons in the country now.[24]

Most illicit weapons initiate their lifecycle legally, so data on authorized transfers and the estimated number of firearms circulating worldwide is crucial. Manufacturing is conducted by many producing countries and factories across the globe.[25] However, initially legally produced firearms can become illicit through many instances of diversion, grey (unclear) and black (illicit) transfers, theft or loss and falsification of end-user certificates.

However, it is difficult to establish the proportion of these weapons classified as illicit. For example, firearms can travel back and forth between the legal and illicit space, as guerrillas and gangs capture government or civilian stockpiles of weapons and may later surrender them during a disarmament process. Data on national estimates of illicit weapons is scarce and shaky at best.[26]

State and private security groups have also become illicit suppliers of firearms. Weak or inadequate registration of state-owned or seized weapons has resulted in firearms being sold or rented illegally to criminal actors. For example, in South Africa, about 30 000 police-issued firearms have been reported lost or stolen in the period 2003 to 2023, and private security companies have been known to be involved in illicit operations, such as illicit procurement of licenses in collaboration with high-ranking police officers.[27]

The following sections discuss two different approaches to defining illicit arms transfers: one according to the concept of trafficking and the other according to the concept of flows. Although they are similar, the approach focused on trafficking considers movements across borders only, whereas the one focused on flows considers other movements (such as internal transfers within a country) as well.

Defining illicit trafficking of firearms

The terms 'illicit trafficking' and 'smuggling' are often used interchangeably and refer to the illicit transfer of weapons across national borders.[28] Several definitions, all with a similar key focus, can be found in literature, as briefly described here.

- **Report of the Panel of Governmental Experts on Small Arms, 1997:** The illicit trade in SALWs is defined as 'international trade in conventional weapons [that] is contrary to the laws of States and/or international law'.[29]
- **Firearms Protocol, adopted by the UN General Assembly, 2001:** Article 3 defines illicit trafficking in firearms as the 'import, export, acquisition, sale, delivery, movement or transfer of firearms, their parts and components and ammunition from or across the territory of one State Party to that of another State Party if any one of the States Parties concerned does not authorize it in accordance with the terms of this Protocol or if the firearms are not marked in accordance with article 8 of this Protocol'.[30]
- **Fighting Illicit Firearms Trafficking Routes and Actors at European Level, 2017:** This report proposes the definition of illicit firearms trafficking as 'every case in which the illicit acquisition, sale, delivery, movement or transfer of firearms, their parts or ammunition occur from, to, or within the territory of the EU, if any one of the Member States concerned does not authorize it in accordance with the terms of the EU's Firearms Directive or pertinent national legislation, or if the firearms are not marked in line with the EU's Firearms Directive or pertinent national legislation'.[31]

These definitions have in common that they describe illicit trafficking as the movement of firearms, parts and ammunition across national borders, with the transaction being in defiance of laws and regulations of at least one state.

Illicit arms flows

Definitions of illicit trafficking have some limitations related to firearms moving between legal and illegal channels within state borders, which makes definitions focused on flow useful to consider too.

Illicit arms flows have been defined not only with regard to the forms of illicit transfers of weapons but also with reference to their manufacture, acquisition, possession, use and storage. Such a focus further explains how the 'illicit arms trade is (wittingly or unwittingly) sourced from government arsenals, legal producers and gun holders, war booty, arms caches in areas of conflict; as well as by illicit manufacturers'.[32] Illicit arms flows is therefore understood to include 'intentional diversion of firearms from legal to illegal commerce, without involving the movement of items across physical borders', which adds an important component related to arms moving from the licit to the illicit realm to a potential definition.[33]

Flows include the concept of transfers, which can be defined as 'the reallocation of small arms from the possession, either de facto or *de jure*, of one actor to another. There are always at least two actors involved, the originator and the recipient. These actors can be individuals, groups such as firms or rebel bands, or states'.[34] Transfers can thus occur between individuals, within a state border, and still be illicit in nature.

There are many paths to the illicit realm for firearms, their parts and accessories, and ammunition. Deactivated firearms can be reactivated (as was the case during the 2015 Paris attacks), and licit firearms can be lost, stolen or even rented for illicit purposes, which is common in Africa and Latin American countries and has been documented by GI-TOC.[35] Arms purchased legally can also easily be diverted, which can be understood as 'the transfer of controlled items authorized for export to one end user but delivered to an unauthorized end user or used by the authorized end user in unauthorized ways'.[36]

The illicit manufacturing of weapons, parts and accessories and ammunition is an additional source of firearms across the globe. Article 3 of the UN Protocol against the Illicit Manufacturing of and Trafficking in Firearms, their parts and components and ammunition, includes provisions against the illicit manufacturing of firearms, defining this as being carried out using components illicitly trafficked, without a licence or authorization from a competent authority or without marking the firearms at the time of manufacture.[37] For example, rudimentary handmade weapons that expel a projectile using gas are used for poaching in Asia and in Africa locally manufactured firearms can be purchased by civilians at prices well below the legal and illegal markets. In addition, 3D printers enable criminals to access fully functional weapons or parts of them in the privacy of their homes.[38]

In contrast to cross-border trafficking, arms flows can cover firearms that are purchased from local illicit markets, diverted from the legal holdings of security agencies or private individuals, or produced locally and illicitly. As such, the concept of flows does not necessarily imply transnational trafficking, as illicit flows of firearms can often occur within state borders. They can be diverted from legal stockpiles (own by the state or private entities) to illicit hands, with such 'diversion to an unauthorized recipient or for unlawful end use occur[ring] in defiance of national and/or international law'.[39]

In addition, weapons that are initially diverted within national borders may remain with criminal groups at this level or later be smuggled across borders to other groups and actors, as has been seen in Central America.[40] Expanding the definition to include parts, accessories and ammunition of firearms is useful as these are fundamental elements for illicit weapons to operate.

Key takeaways

Despite the efforts of the UNODC's 2020 Firearms Report to estimate the global size and scope of the illicit arms trade, more needs to be known about aspects such as cross-border trafficking (most common form of transfers), sea shipments (larger volumes but less frequent) and the way seizures can reflect the intended use of the firearms.[41] The report thus acknowledges that the illicit arms trade is a concept that requires a much broader approach than focusing only on international or cross-border trafficking. Intentional trafficking of weapons, parts, accessories and ammunition within a country, as well as new forms of illicit manufacture, also needs to be considered in the discussion to better understand this illicit market.

A full understanding of illicit arms flows needs to be part of the research and data collection, and should also consider:

- national and international diversion (including sale, end-user frauds and theft)
- conversion or reactivation of deactivated firearms
- theft and loss from private security companies and security forces
- illicit craft, clandestine factories and 3D technology for unauthorized local production
- transnational and domestic illicit trade of firearms, parts, accessories and ammunition
- data on the proportion of legal versus illegal firearms used in crimes or in violation of national or international laws.

MEASURING ILLICIT ARMS TRAFFICKING

This section reviews past and present efforts to assess the scope and scale of illicit trafficking in SALW. Five broad approaches are identified:

- research based on seizure and tracing data
- research focusing on illicit market prices and supply and demand factors
- detailed studies on routes and methods of trafficking
- household surveys and qualitative fieldwork to systematically collect the perceptions and perspectives of different categories of actors
- attempts at calculating market values and volumes of the illicit trade in small arms and light weapons.

There can be some overlap between these methods. For example, seizure data is used to extrapolate volumes and values of illicit trade. In other cases, surveys or qualitative fieldwork is used to map routes and methods of trafficking or to estimate the volume of small arms in circulation. However, these general groups are considered a useful tool to organize the existing research, findings and recommendations for measuring the scale and scope of this particular activity linked to organized crime.

Each section contains a short assessment of the type of information a method provides, and the quality or trustworthiness of the conclusions that can be drawn from it.

Finally, each section will provide some recommendations regarding what the measurement should focus on, who should be involved and how it should be performed. Limitations of each method, along with recommendations for improvement, are provided.

Seizure and tracing data

Seizures of firearms occur in various contexts. Arms and ammunition can be seized at a crime scene, during routine police checks of people and vehicles, at border crossings and land or seaports, or in the context of conflict and the recovery of weapons from armed groups.

Seizure data is usually reported by state security forces, based on the activities of the different agencies that can seize within a territory. These include the police, military, border control and customs agencies, and judicial or investigative police.

This data, if well recorded and sufficiently precise, provides information on the country of origin and status of the weapons, including whether a weapon was legally held in the territory or illegally introduced. With good seizure (and tracing) data, the share of weapons used in crime or held illegally can be established, and it can be determined how many of these were originally legally declared within the territory or beyond. Good seizure data means that it includes complete data from all security forces within a state and is sufficiently detailed and disaggregated by type of offence to facilitate categorical analysis. For example, good seizure data has to show whether a firearm was used in crime, illicitly imported or an unregistered (or even sometimes legal) weapon that was seized as part of an investigation but not used in the crime being investigated.

The proportion of illicit arms among all seized weapons has been used as a proxy to estimate the total volume of illicit firearms. The method involves applying the proxy ratio to the entire stock of legal weapons and then calculating an estimate of the national stock of illicit arms.

This exercise has been conducted previously in Peru and Honduras. In Honduras, weapons seizures indicate that 60% of these firearms were never legally registered in the country, and were most probably trafficked from countries such as Brazil, Guatemala, the Russian Federation and the United States.[42] On the contrary, in Peru, most arms used by criminal groups originate from legitimate sources, including private owners and security forces. Authorities reported that 1 767 firearms were declared lost or stolen in 2013 alone.[43] Only a minority of weapons seized in relation to a crime were of an entirely illicit origin and may have been trafficked to the country.

The Small Arms Survey, the UNODC and the World Customs Organization (WCO) are among the few entities that conduct systematic efforts to collect, compile and analyze data on seized firearms, but they rely on data shared by security and law enforcement agencies in each country.

The UN Programme of Action to Prevent, Combat and Eradicate the Illicit Trade in Small Arms and Light Weapons in all its aspects is a tool through which governments agree to improve national small arms laws, import/export controls, stockpile management and engage in cooperation and assistance. In 2005, as part of the programme, governments also adopted the International Tracing Instrument (ITI), which, in addition to requiring states to ensure that weapons are properly marked and records are kept, also provides a cooperation framework in weapons tracing. Updated country reports (from 2002 to 2022) are available, together with statistics and visualization of data on points of contact, manufacture of SALWs in a territory, international transfers, stockpile management, collection of these weapons, and marking of all-state owned firearms.[44]

The UNODC Firearms Study (2020) includes data on firearms trafficking from 81 countries between 2016 and 2017. During this period, over half a million firearms were seized, but data showed that quantities seized ranged from fewer than 10 to more than 300 000. The report also acknowledges that the figure is likely to be much higher as some countries underreported their figures for administrative reasons, the quality of data varied significantly between countries and many countries did not provide any information.[45]

Most firearms were seized in the Americas, with pistols accounting for more than 50% of the weapons. In Africa and Asia, shotguns were most prevalent. However, the report also states these regions appear to have less capacity to intercept and report trafficked firearms, which may lead to underreporting.[46]

The World Customs Organization's annual reports on illicit trafficking are a further source on weapons seizures, specifically for those related to illicit trafficking. These reports, published since 2012, are based on customs seizures data submitted to the Customs Enforcement Network and emphasize the role of customs authorities as the first line of defence in a country's ability to prevent dangerous goods such as explosives and weapons from illegally entering its territory.[47]

In the latest of these reports (2023), the combined data from 81 reporting WCO member countries highlighted a total of 5 676 unique weapon cases (11 175 seizures) in 2022 and 2023, with 2 388 036 items interdicted (2 054 605 were ammunition). Seizures reportedly dropped by 13% year-on-year, from 6 323 in 2022 to 4 852 in 2023. However, an increase was observed in lethal small arms, particularly in categories for semi-automatic pistols, assault rifles, shotguns and realistic imitation handguns. Conversely, both seizures and quantities interdicted decreased for other components, including parts and accessories of small arms (e.g. aiming devices and magazines) and other SALW types, including their ammunition.[48]

This source is certainly of interest for expanding knowledge on the scope and scale of illicit arms trafficking. However, trends highlighted in the report may reflect not only alterations in routes and methods but also changes in enforcement effectiveness or policy shifts. In general, 14 WCO member countries constituted 80% of the total number of cases reported over two years.[49]

Tracing data is usually considered restricted information and few countries publish information on their tracing efforts, although the Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) does publish data on tracing requests and identified origins of firearms domestically and abroad.

In the United States, the ATF offers information on the top calibres recovered, ages of possessors, number of firearms sourced and recovered and time-to-crime data (time from purchase until weapon is recovered from a crime scene). Internationally it provides information on traces in Canada (2016–2021), Caribbean countries (2021), Central American countries (2021) and Mexico (2016–2021).[50]

For the period between January and December 2021, a total of 361 587 firearms have been recovered and traced back to their state of origin through queries in the ATF Firearms Tracing System. Illegal weapons appear to be sourced and recovered mostly from Texas, Florida and Georgia.[51]

For the period 2016–2021 between 86.2% and 92.6% of all firearms recovered in Canada were traced back to the United States. In Mexico, approximately 68% of all recovered firearms could be traced back to the United States. For Central American countries, tracing percentages to the United States in 2021 were as follows: El Salvador — 53.4%; Guatemala – 37.3%; Honduras – 57.7%; and Panama – 57.7%.[52]

The ATF data can only analyze requests submitted for tracing and identify weapons that originated in the United States: it does not reflect the full universe of weapons seized within a country, as the country may receive illicit flows from other sources (domestic or foreign). However, the ATF tracing data does provide an idea of trafficked weapons originating (or not) in the United States, but it should not be considered an exhaustive view of what is being trafficked to the countries sending requests.

A final set of research on seizures in broad terms focus on the use of physical inspection and photographic or video evidence collected from open sources, social media or in the field. This type of source is often used during in-depth studies and research on routes and methods of arms trafficking (see later). For example, in the case of the Central African Republic, the Democratic Republic of the Congo and Libya, the UN Panel of Experts gathered photographic evidence while conducting interviews with state actors and conflict parties.[53] These research techniques have also been used by the Global Initiative Against Transnational Organized Crime (GI-TOC) to gather on-site information about illicit firearms markets, flows, prices and impacts in South Africa, Nigeria, the Western Balkans, Ukraine, Brazil and Central America.

Discussion

Seizure data provides one of the most important sources for estimating the size of the market. However, there are several caveats that need to be raised.

First, many experts agree that seizures are often a measure of law enforcement presence and capacity, rather than an indication of a criminal market's reach and real impact over a certain territory. This is the case, for example, with drugs. The number and volume of seizures of a substance are not necessarily a perfect proxy for the presence and spread of that substance in the local drug market. Although this might not be case with drugs, this method does appear to be fairly suitable in relation to arms, as most licitly produced weapons have serial numbers, which makes it easier to trace their source and consequently estimate the size of the illicit market.

Despite that, estimating the size of the weapons market based on seizures remains problematic as it requires reliable and complete data from the moment of manufacture of a weapon, part or ammunitions to the moment these items are disposed of, and of all transactions in between. Such data is not always readily available owing to insufficient capacity of state or private actors to adequately manage weapon stockpiles or enforcing gun laws; state or private actors being involved in illicit trade of weapons, parts and ammunition; gas-propelled or illicitly manufactured weapons not having serial numbers; or firearms or ammunitions of which the serial numbers have been erased to prevent tracing. These instances do not necessarily invalidate the reliance on seizure data as a source of information to estimate the scale and scope of illicit flows of arms, but the limitations do affect the potential of the estimation methods to produce realistic figures.

Other factors also undermine the potential of such data to represent truthfully the entire pool of illicit arms circulating in a country or crossing borders. Seizures are inherently subject to changes in law enforcement (e.g. owing to budget changes or a change in focus of operations) and to the willingness of security institutions to report on the weapons seized a territory. Demand and supply of illicit firearms can vary and shifts may occur from one region or country to another; thus, seizures can vary in quantity over time. Changes in seizures should by no means be interpreted as a correlated change in illicit arms flows, as these are subject to government policies and resources available to the relevant agencies.

In addition, seizures do not only include illicitly held or trafficked weapons. Seizures occur in a range of circumstances, including administrative faults of legally registered owners (e.g. not renewing licences for a weapon on time). Therefore, data should always contain information on the circumstances in which the seizure occurred.

Finally, note that seizure data will contain a mix of weapons seized at border crossings and ports (land, sea or air), as well as weapons seized by law enforcement within the national territory linked to criminal activities or administrative issues. The exact share of seizures that are linked to trafficking is difficult to establish and should be considered more as a proxy of weapons trafficked than an actual indication of the scale and scope of illicit trafficking taking place. Data should be collected by law enforcement and security agencies that operate on the ground. Whenever possible, a national office (e.g. a national statistics office) should compile the data collected by operational agencies on the ground.

Key takeaways

Seizure and trace data provides crucial information on the types of weapon linked to illicit use and armed actors and their origins. However, the quantities of recorded in seizures tend to reflect conjuncture, institutional priorities, available funds for the enforcement of gun laws and technical capacity to spot and adequately report illicit shipments Trends and patterns (increases or decreases in seizures) should not be considered an actual change in trafficking trends. Seizures will also fail to represent the full gamut of weapons trafficked, as only a fraction of these items will be apprehended by law enforcement, and many more shipments and items will remain undetected.

Yet, despite these limitations, records on seizures of SALWs are considered to provide a solid basis for analyzing trends and patterns of illicit arms flows and to determine origins and entry points into illicit situations. Useful information includes:

- type, model, calibre, serial numbers of small arms, light weapons, and ammunitions seized by security forces
- circumstances of the seizures, such as date, location, reason for the seizing of the items (e.g. type of offence)
- country of manufacture of the seized weapons and country in which the seizure took place.

If data collection on seizure is weak, the potential of such information providing an estimate of illicit arms in a country is limited. Other potential sources for information and measuring scale and scope are therefore described in subsequent sections.

Proxies should complement seizure data to assess the scale and scope of illegal weapons flows. Recommended additional information includes: the number of cases that involve weapons being diverted from national stockpiles; the number of civilian-owned weapons reported stolen or lost; the number of seized weapons which are produced outside of state control (e.g. craft weapons);[54] and the cases of misuse (e.g. firearms-related crimes) of SALWs.

Illicit market prices

Illicit market prices show not only how demand and supply can shape conflict and crime, but also how the illicit markets thrive or suffer depending on how control measures restrict access to illicit goods. Firearms sold at low prices on the illicit market can indicate that control measures are ineffective, or that there is a solid supply of easily accessible illegal goods.

Prices may also rise in contexts of rising violence in illicit markets, particularly drugs, which, in turn, increase demand for weapons. Local purchasing power also plays a role – firearms may be more expensive in wealthier countries (especially which host lucrative illicit markets) than in countries with lower levels of spending power. Higher demand triggered by deteriorated security (perceived or real), ongoing crises and the outbreak of conflict and intensified fighting can also push prices up from a demand side pressure on this illicit market.

In other cases, however, state regulation (and official prices and taxes) is unable to stem a steady flow of readily available illicit weapons into a country, which may lead to low illicit market prices of firearms, as has been seen in Honduras. Price differences indicate that illicit prices can be up to 10 times lower here than the legal market prices,[55] and despite strong demand by criminal organizations and citizens perceiving their safety as weak without a firearm, authorities and official measures have not managed to restrain prices and control availability of firearms.[56]

Discussion

Price data and surveys of illicit markets provide important information on the interaction between demand and supply for specific types of product (weapons and ammunition). The case study highlighted in this section sheds light on security dynamics and abrupt changes in demand for and supply of illicit goods, but more analysis would be beneficial. Pricing data not only can serve as a predictor of deteriorating security but also is a crucial element to estimate the size of such markets. Price data is therefore an important addition to research that aims to estimate the scope and scale of illicit arms flows.

However, there are important limitations in such data collection. Firstly, ethical aspects need to be considered. Sending informants into the field to monitor and report information of such nature poses security risks for the researchers involved and could rise legal questions depending on the context and country in which research is performed. Secondly, if there is no actual illicit marketplace where regular monitoring and interaction is possible, it becomes difficult to monitor illicit prices. Finally, although such data can be an important input for estimating scope and scale and to understand fluctuations in markets, it will only shed light on a small sample of the illicit movements of arms and is therefore limited in its potential to give insight to the actual arms flows within a territory or region.

Key takeaways

Monitoring illicit market prices is a tricky undertaking. Firstly, the same goods, at the same place, need to be regularly monitored. Secondly, there are ethical and legal issues, which depend on the context and country in which the informants are monitoring such markets (who may be criminals or exposed to legal risks and or harm). Finally, this is not official data and therefore countries may consider such information as invalid and discard it.

However, illicit market prices provide important information on demand and supply factors that affect the illicit market, such as availability of weapons, effects of control measures and policies, and the willingness of people to arm themselves for security reasons or linked to outbreak and intensity of conflict.

Studies of the mechanics of small arms trafficking

Several in-depth and localized case studies focus on the mechanics of small arms trafficking. This type of research is usually based on anthropological, qualitative and in-depth fieldwork, implemented with a set of methodological tools aimed at collecting data on modus operandi, items trafficked, involved actors and preferred routes of trafficking. These tools range from semi-structured interview guides to closed key-informant questionnaires. In some cases, fieldwork is carried out mainly with the intention to reach actors who are knowledgeable or involved in such activities. In these cases, discussions surrounding the topic of interest are held with low visibility in an informal way. Focus group discussions can also shed light on what communities perceive and know about such activities. In addition, photographic evidence of items trafficked can be collected and complement this type of fieldwork.

These methods provide rich and detailed information on specific settings and cases of trafficking. Routes and methods of arms trafficking can be uncovered, as well as actors (state, private, illicit actors, etc.) involved in this trade. By building trusted relationships with informants, key aspects of illicit arms flows and their relationship to security and stability within porous border areas or in conflict-affected regions can be uncovered and understood in detail.

Interesting examples of interviews and fieldwork yielding insight into trafficking routes and actors involved can be found in reports based on lengthy and repeated field research missions.[57] Interviews were confidential, and access to smugglers, armed actors and local leaders and civil society was key to the success of such exercises.

The GI-TOC has previously documented and analyzed how illicit trade of firearms takes place in northern and southern Africa. In Nigeria, analysis of extensive fieldwork in multiple regions, and 149 interviews, a survey of more than 800 participants and analysis of official data, showed how the arms market accelerates and spreads violence and, for example, how religious affiliations shape arms flows.[58]

In northern Central American countries, illicit arms flows have been an enabler of extortion and gang violence, which has become one of the main drivers of violence. There are an estimated 4.8 million firearms in civilian possession in the region, of which 64% are held illegally. Approximately a third are in Guatemala alone. Diversion from government and private security stockpiles, along with an abundance of weapons from previous civil wars, are all sources from which spillovers to the illicit market occur in the region and within each countries' borders. Furthermore, interviews with local stakeholders show how criminal actors value firearms for their illicit purposes and even have weapons managers to distribute them and safeguard them when needed.[59]

A further method to investigate details about actors, routes, and methods of arms trafficking is to focus on court documents linked to prosecution of cases of arms trafficking. One study provides a detailed analysis of 159 prosecutions of arms trafficking cases in US courts, focusing on modes of transport, concealment methods and smuggling techniques. This approach provides key insights into the 'mechanics' of illicit trafficking and uncover the types of items that are currently smuggled in different regions.[60]

Discussion

The cases described here illustrate experiences of measuring arms trafficking through qualitative research. In-depth fieldwork provides detailed information on trafficking routes, items trafficked, prices across borders and regions and actors involved. Such detailed data is crucial for understanding how illicit arms flow and can help with interpreting seizure and pricing data by shedding light on local and regional dynamics.

However, in-depth case studies can be expensive and time consuming. The wealth of information collected requires lengthy analysis and validation through triangulation with other data and discussion with experts and knowledgeable stakeholders. In some cases, however, it is the only available source of information.

Key takeaways

Research on the modus operandi, specific routes and actors involved in arms trafficking are a key piece to understanding illicit arms flows. Despite not being the primary recommended method to produce global estimates, it will feed fine-tuned information and analysis into overall assessments. Therefore, routes and methods data shows that:

- in-depth case studies can provide relevant information to better understand demand, supply and flows of illicit weapons, despite the complexity of understanding illicit arms trafficking;
- understanding what types of firearms and ammunition and how they are being trafficked is relevant to policy development; and
- because the approach does not focus on quantities, the data does not necessarily assist in understanding scope and scale of illicit markets.

Surveys and qualitative fieldwork

Given the covert nature of organized crime and associated activities such as firearms trafficking, data collection and sources for measurement can be scarce. In this context, surveys applied to households or key informants, such as law enforcement agencies, are relevant methods to investigate illicit arms flows.

A first important source of information lies within household surveys. They 'offer a unique glimpse into the attitudes, perception, beliefs, and knowledge of local communities, the voices of whom would otherwise remain silent in desk-based research or research with a select number of individuals representing the entire community'.[61] Household surveys on SALWs have been successfully applied in many fragile, conflict-affected and data-poor environments by the Small Arms Survey. The goal has been to get information on topics such as people's perceptions towards firearms, ownership of firearms and experiences or victimization with firearms.

Key questions to ask in surveys relate to firearms ownership, whether in a direct or indirect manner. Direct questions ask surveyed households whether firearms (registered or not) are owned by the household and if so, how many and what types. Indirect questions enquire about households' perception of firearm prevalence in a particular area, the perceived threat these weapons pose in a specific place or the type of security providers present in a specific area. Different combinations of these questions help map out areas where firearms are prevalent, perceived as a threat to security or are reportedly frequently owned.

In the Western Balkan region, a 2014 survey showed that the number of households that own firearms 'can be estimated to be between 530 000 and 1.62 million'.[62] In this case, the survey did not differentiate between licit and illicit arms, nor enquire about possible trafficking sources, route or actors. Updates would be desirable, as violent cases involving firearms continue to generate heated debates in the region.

The Europol Serious and Organized Crime Threat Assessment (SOCTA) is based on operational intelligence held in its databases on serious and organized crime. Almost 4 000 questionnaires on criminal activities and criminal networks were submitted by member states (the amount of data provided for the SOCTA 2021 has increased by around 60 % compared with the survey of 2017).[63]

Discussion

Household surveys are frequently used to conduct national assessments of the proliferation of illicit arms and can serve as an estimate of illicit small arms stocks in a particular setting at a specific time. In addition, law enforcement agencies can be surveyed to determine trends and patterns in illicit trafficking, items trafficked and seizures conducted. Caution is advised, as resulting estimates might vary dramatically. Further analysis and discussion should take place to offer possible explanations or limitations to the methodology of the survey.

Surveys can be expensive, especially national statistically representative household surveys. Smaller versions of surveys among specialists can provide an interesting alternative. However, household surveys conducted among a representative sample will be the only method to establish actual national estimates of illicit arms stocks.

If the focus is on flows only, law enforcement surveys can be considered a good alternative, with the caveat that response rates can be low and responses can sometimes be imprecise. Good preparation of the questionnaires and a solid accompaniment to the use of questionnaires are key to secure some degree of success.

Key takeaways

Surveys are an important source of information on illicit trafficking and the proliferation of illicit SALWs. However, household surveys can be lengthy and expensive.

- Sending questionnaires to specialists and law enforcement agencies appears to yield results fairly quickly and can be an efficient use of time and finances.
- Surveys such as those of Europol, the UNODC Firearms Study and the Small Arms Survey could be replicated through relevant regional organizations.
- Perceptions of law enforcement agencies on trafficking and illicit international arms trade could provide valuable insights, particularly through enhanced collaboration with national firearms focal points to maximize intelligence sharing and investigative opportunities.
- Perceptions of experts, along with SALW trafficking professionals' surveys, represent another effective method for improving data collection.

Attempts at calculating market values and volumes

This section provides an overview of attempts at estimating market size and values using methods such as the ones described in earlier sections. Note that in most cases, seizure data serves as the point of departure to approximate the size of an illicit market using various multipliers.

According to the Arms Transfers Database of the Stockholm International Peace Research Institute (SIPRI), 'states that produce official data on the financial value of their arms exports account for over 90% of the total volume of major arms'. The use of different definitions and methodologies, which affects comparability, and several states not releasing data on arms exports are limitations acknowledged by SIPRI. Nonetheless, from the data that states have made available on the financial value of their arms exports, as well as estimates for those that only provide data on arms export licences, agreements or orders, the organization estimates the financial value of the global arms trade to have been at least US$112 billion in 2020.[64]

The Rand Corporation has also analyzed the ways in which the dark web is an enabler for the circulation of illegal weapons already on the black market, as well as a potential source of diversion for legally owned weapons. Through a literature review, dark web community discussion forums, investigation of crypto markets to identify sellers and traces of transactions and consultations with law enforcement experts, it was estimated that the overall value of the arms trade on the dark web was US$80 000 per month. According to the analysis, trade on the dark web may include a certain percentage of fake listings or transactions among vendors of firearms, which makes it even estimating the extent and value of this illicit market even more challenging.[65]

Based on the estimate that illicit arms trafficking represents 10–20% of the legal arms trade market,[66] the Global Financial Integrity report on Transnational Crime and the Developing World produced an estimate of the illicit trade in small arms as between US$1.7 billion and US$3.5 billion.[67]

The Study to Support an Impact Assessment on Options for Combatting Illicit Firearms Trafficking in the European Union proposes two approximations of the scale and scope of illicit firearms trafficking in the EU.[68]

- The first approach (considered a 'narrow' indicator) proposes to extrapolate the size of the market through the proxy of seizures of illicit weapons, as a proportion of the entire stock of legally and illegally held weapons. The report assumes that the number of illicit weapons seized amount to 1% of the overall pool of illicit weapons in the EU. The 1% ratio stems for the number of illicit weapons reported in seizures in seven member states of the EU as a proportion of the entire weapons stock in each of these countries. It continues with an EU-wide estimate of 81 million weapons circulating. By applying the 1% estimator of the illicit firearms market, the report estimates the market at 81 000 weapons being trafficked every year.[69]
- The second indicator proposed (considered a 'broad' indicator) is based on the value of unregistered firearms in the EU, estimated at US$67 million. However, there are no indications provided as to how to extrapolate illicit trafficking scale from this figure and this appears to be a gross overestimation of the market.[70]

Another report estimates the size of the illicit trade in small arms based on the 10–20% range for the illicit share of all SALW traded.[71] Given the legal market (production, imports and exports for all EU countries), the report approximates the value of trafficked arms to have been between €247 million and €493 million in 2012.

A different approach to estimate the volume of illicit trafficking in firearms between the United States and Mexico is based on using the number of federal firearm licences granted to retail dealers and pawnbrokers for selling small arms as a proxy to estimate the demand of firearms, and the estimation of the demand from Mexico for trafficked weapons in the establishments authorized for sales.[72] The model found that nearly 2.2% (between 0.9% and 3.7%) of US domestic arms sales could be attributed to the US–Mexico traffic in the period 2010–2012, representing 212 887 firearms to a value of US$102 million.[73]

Estimating an illicit market value and volume, such as for the trafficking of small arms, is a complex exercise and requires extrapolating from known data points, such as seizures or registered weapons, on the basis of estimated ratios. Different methods are used to produce such ratios, for example the number of weapons seized versus the overall weapons held in a territory, or the number of seized weapons that are illicit versus the number of seized weapons that have a licit origin within the country. Other calculations apply a generic ratio of 10% illicit transfers being captured. In sum, there is a serious lack of data to produce more robust and sophisticated ratios or proxies to calculate illicit arms flows in a territory at a specific time.

Owing to the lack of transparency in records of the legal firearms markets, as well as the inherent absence of records from illegal transactions, volumes and values will remain estimations. A first step towards better figures is to enhance transparency and the quality of information on legal markets: legal transfers, sales and numbers of firearm licences would enable better capacities to estimate the illicit side of this market.

Detailed, high-quality seizure data is a second step to improving estimations of the scope and scale of illicit arms flows. Such data will help to assess the legal versus illicit share of seized weapons, their origin (foreign or domestic and possibly trafficked items), and from whom such weapons are seized. Despite remaining approximations, figures based on enhanced legal ownership and seizure data can provide important insights into the scope and scale of illicit trafficking in firearms.

Finally, global data on legal transfers, registered weapons and seizures is generally weak. (For example, in Africa such data is almost non-existent and in the Americas it is poor). Therefore, a serious effort to strengthen capacities for generating such data (for example under the SDG16.4.2 impetus) is required.

Key takeaways

The review of efforts to estimate the size and value of the market of illicit arms and the associated scale and scope of illicit trafficking provides important insights for estimating this criminal economy, as follows:

- Pushing for better and more transparent reporting on transfers, weapons registries and weapons seizures is key to developing good data on illicit arms flows, especially in Africa and the Americas.
- Legal transfers should be estimated from ComTrade data.

- Researchers should search for available estimates of the size of illicit trafficking based, for example, on the share of legal versus illegal firearms in seizure data, or estimates of seizures versus successful transaction in other illegal markets.
- Efforts should focus on using as precise as possible values of firearms in different regions on the illicit markets.
- The volume and value of illicit trafficking should ideally be calculated per subregion.
- In addition, household surveys, qualitative field research and in-depth case studies will help produce important insights on the scope and scale of illicit arms flows.
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- Legal transfers should be estimated from ComTrade data.
- Researchers should search for available estimates of the size of illicit trafficking based, for example, on the share of legal versus illegal firearms in seizure data, or estimates of seizures versus successful transaction in other illegal markets.
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- The volume and value of illicit trafficking should ideally be calculated per subregion.

In addition, household surveys, qualitative field research and in-depth case studies will help produce important insights on the scope and scale of illicit arms flows.

DISCUSSION

Challenges in measuring the scope and scale of illicit arms trafficking and proposed recommendations

The illicit trafficking in firearms is a hidden and concealed activity, with a serious lack of transparency characterizing the legal trade. Only a few producing countries (mostly in Europe) provide clear reports on the nature and size of their production and the destinations of exports. Even fewer receiving countries produce reports on what has been imported and the value of these imports. Africa and Latin America in particular are regions for which good data and statistics are scarce, and therefore they provide an even greater challenge to measure the legal and illegal markets of small arms.

Reporting fatigue in relation to different international and regional processes and instruments on SALWs may affect the quality of data. Efforts to measure the scale and scope of illicit arms flows should focus on existing data collection obligations and efforts and assist states in strengthening of their capacities to report to these instruments and processes. Many of the reporting mechanisms, for example reporting to the Arms Trade Treaty, the Programme of Action, the UNODC Firearms Study, the ECOWAS Convention, the CIFTA agreement and others, will provide important data for measurement, and collaborating with states to build up these reporting capacities would provide a good basis of data.

In August 2022, the Stimson Center released a report to assess the Arms Trade Treaty annual report submissions from state parties. Its main finding was that European countries have better capacity to submit reports than those from Africa or the Americas. The main challenges countries reported in submitting reports to the Arms Trade Treaty are uncertainties about what, how and when to report; limited time, personnel or information management systems; obstacles posed by poor coordination across government offices or agencies to access, compile and assess relevant information; concerns related to what information is shared and with whom; and competing government priorities.[74]

However, solutions that draw either on existing data or on data supplied through further research efforts are possible. The following recommendations are provided to build on existing options and expand on further research and data collection efforts to approximate the scale and scope of illicit firearms trafficking.

Although seizure data is key to identifying trends and patterns of trafficking, it is not always collected in a systematic and reliable way. Regional observatories of the GI-TOC are in a privileged position to conduct efforts to collect the existing data, and perhaps pursue the strengthening of capacity and supporting structures producing robust information on licit and illicit transfers and seizures.

Monitoring illicit market prices and their dynamics also reveals important trends and can help elucidate fluctuations in supply and demand in illicit markets. Price data, if collected systematically, allows changes in demand or supply or changes in the overall control frameworks in place to be inferred. Price data is particularly relevant in areas with high criminality, where countries have borders with territories witnessing conflict, losing control over state stockpiles, or where disarmament and demobilization are in progress. The GI-TOC, through its network of observatories, has been able to collect data across the African continent, in Central America and Mexico, and in Eastern Europe. Monitoring prices is a complex endeavour, but recent examples of prices of custom-made illicit weapons and trafficking routes are offered for some countries in Africa[75] and Central America.[76] This model should be replicated and expanded to cover more geographical locations.

Law enforcement and border agencies surveys and qualitative fieldwork are other areas in which the GI-TOC can expand its operations. Questionnaires on illicit trafficking trends and enquiries into seizures of firearms can be elaborated and quite easily sent out to regional organizations, national focal points, law enforcement agencies and other stakeholders who can respond from an expert's standpoint. Such questionnaires can be part of a broader enquiry among relevant institutions and actors and shared through the regional observatories. The most recent round of the UNODC Firearms Study and its renewed set of questions to law enforcement agencies across the globe gather better data on illicit arms, and especially seizures, despite opportunities for updated data (the report provides information for the period 2016–2017).

Lastly, with regard to the mapping of routes and methods used by criminal organizations engaged in the illicit trafficking of firearms, in-depth fieldwork can complement the overall outreach for data through the planned observatories and data collection mechanisms. Such information will allow for a more fine-grained analysis and so add to the understanding of trends and patterns, and also assist in the analysis of the scale and scope of illicit trafficking by providing pivotal information on what is being trafficked, how and by whom.

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