



Instituto **SoudaPaz**

A paz na prática

**WHERE DO WEAPONS OF CRIME COME FROM?
AN ANALYSIS OF THE WEAPONS SEIZED IN
2011 AND 2012 IN SÃO PAULO**

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WHERE DO WEAPONS OF CRIME COME FROM? AN ANALYSIS OF THE WEAPONS SEIZED IN 2011 AND 2012 IN SÃO PAULO

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Presentation.....	05
1) General characteristics of weapons of crime.....	07
1.1) Industrially manufactured weapons.....	09
2) Year of manufacture.....	14
3) The weapons used in different crimes.....	18
3.1 The weapons of robbery.....	18
3.2 The weapons of homicide.....	22
4) Weapons of greater firepower.....	25
5) Conclusion.....	32
Annex I - Research Methodology.....	34
References.....	39

The 10th anniversary of the approval of the Disarmament Statute (Law 10.826/2003) in 2013 was much celebrated by society. This was a ground-breaking moment that brought a number of rules regarding, and definitions of who is accountable for controlling, the life cycle of weapons (from manufacturing, to marketing and registration, to destruction). Additionally, it banned the civilian carrier permit and established stricter criteria for access to weapons, resulting in concrete contributions to the prevention of crimes.

Moments like this are essential for the attainment of reflection-based diagnostics to enable a better understanding of progress, challenges and limitations on gun control in Brazil.

The present study analyzed the total amount of weapons seized in the city of São Paulo to identify the profile of the weapons used in crime, understanding that this is key information for public security organs in Brazil, so that they are able to design strategies to reduce violence.

This report, considering its depth and volume (more than 14.000 articles analyzed), is the most comprehensive study on weapons of crime performed in Brazil since the Parliamentary Investigative Commission on Arms Trafficking, conducted by the House of Representatives in 2006.

As a result of the effort undertaken by Instituto Sou da Paz staff and with the full support of the State of São Paulo Department of Public Safety, this report serves as the first stage of a study that will track all weapons carrying a full or partial serial number. The aim is to better understand how these weapons enter the legal market (date, Federation State in which it was commercialized, and the purchasers' category), as well as the dynamics of their diversion to the illicit market.

Methodological Note

This study is based on the collection done at the Ballistics Unit of the Superintendence of the São Paulo State Technical and Scientific Police, which is the depository of all weapons seized in crimes committed in the city of São Paulo and responsible for performing their identification and examination.

The Ballistics Unit was not chosen just because of its information on seized weapons, but also for the quality of their data on weapons in particular as one of the main ballistic centers in the country.

The data presented comprises all the input records of existing weapons between 2011 and 2012.

A total of 14,488 artifacts were analyzed. In some cases the analysis will fall only on industrially manufactured weapons (which exclude firearm replicas, toy weapons and handmade weapons), which comprise 10,666 weapons. Amounts were informed in all tables.

In Annex I we included a detailed description of the methodology, which explains all the choices made by the research team.

Approximately 74% of the weapons match only three crimes: robbery (34%), crimes under the Disarmament Statute (32%, e.g., unlawful possession, unlawful carrying, discharging, etc.) and homicide (9%). This finding reinforces the importance of the gun control law (Law 10.826/2003) in terms of crime prevention. The banning of the carrier permit made it easier for the police to identify and confiscate illegal weapons before crimes were committed. The results indicate that industrially manufactured weapons predominate among the total of seized weapons (74% of total), despite the alarming increase in the participation of firearm replicas which now accounts for over ¼ of the sample, half of them used in robberies.

Confirming what has already been shown in previous studies, the conclusion that the weapons that victimize society are hand guns (93% revolvers and pistols), of mostly domestic production (78%) and of permitted caliber remains true and in some cases is entrenched even more. Taurus, a company from the south of Brazil which holds a virtual monopoly on the legal arms market in Brazil, is also the most represented among the weapons confiscated from criminals (61%). Among the weapons of choice seized in crime (combining type, brand and size) Taurus holds first place in the ranking with the .38 Taurus revolvers, as well as 3 other positions.

TOP 5 - Crime Weapons



The following information is organized as follows: **1) General characteristics of weapons of crime**, which presents the profile of the seized weapons with an in-depth look at the industrially manufactured weapons; **2) Year of manufacture**, unpublished research on the year of manufacture of the seized weapons; **3) The weapons used in different crimes**, a deeper view on the weapons involved in robbery and homicide, which are two of the crimes that concern society the most; **4) The weapons of greater firepower**, a detailed study on the types of restricted-use rifles seized, submachine guns and carbines. Finally, the conclusion will summarize the main findings of this research.

1 - General characteristics of weapons of crime

Before a detailed presentation on the characteristics of the weapons examined after arrest by the police in the city of São Paulo, we find it important to describe the main characteristics of the examined artifacts, as well as to present the context in which they were seized. In this sense, the first relevant data refers to the category of those artifacts.

As shown in Table 1, over 74% of them were industrially manufactured, confirming the predominance of this type of instrument in crimes in which a gun is used. In the same table, it is possible to observe the variation in the number of artifacts used per year according to their category. This comparison highlights the increased use of firearm replicas¹ in 2012. This increase cannot be explained exclusively by the rise in the total number of examined artifacts. It also shows that there was a migration of the used artifacts - from industrially manufactured to firearm replicas².

Table 1 – Distribution of examined artifacts according to their category.

Category	TOTAL		2011		2012	
	Nº	%	Nº	%	Nº	%
1. Parts / Accessories	21	0,2%	7	0,1%	14	0,2%
2. Other weapons	3	0,0%	2	0,0%	1	0,0%
3. Replica firearms/airsoft /toy guns	3738	25,8%	1643	23,1%	2095	28,4%
4. Handmade weapons	60	0,4%	31	0,4%	29	0,4%
5. Industrial firearms	10666	73,6%	5438	76,4%	5228	71,0%
TOTAL	14488	100%	7121	100%	7367	100%

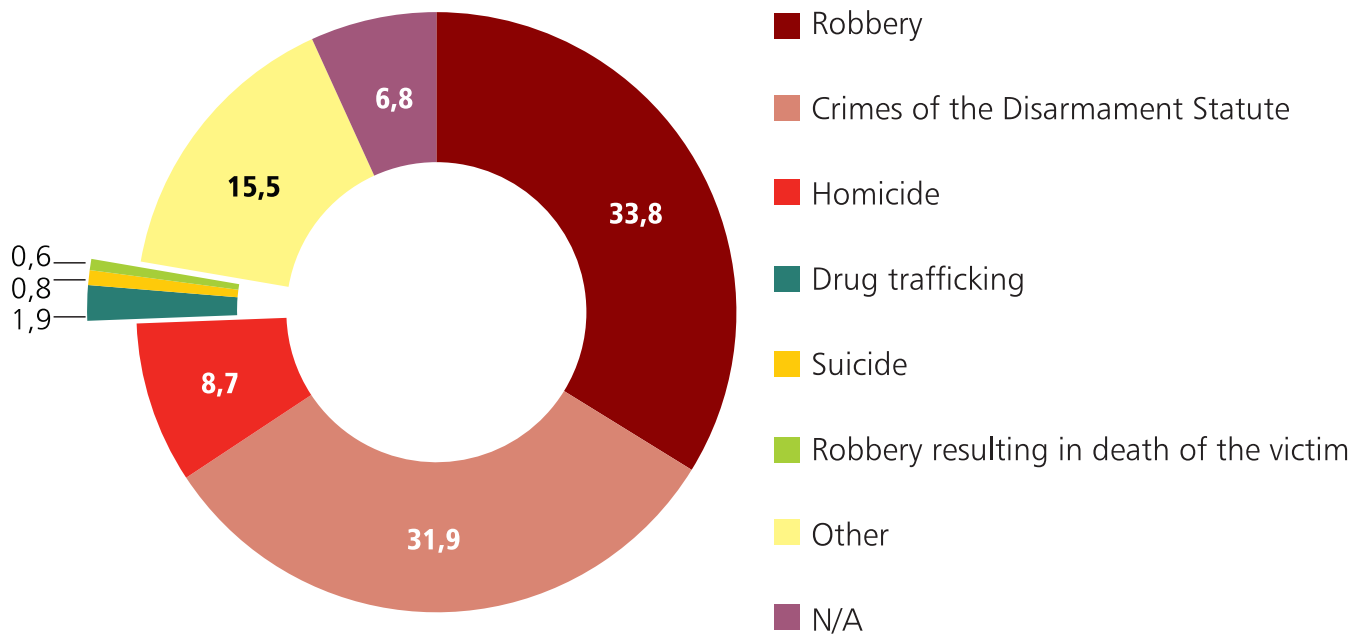
Scope: 14,488. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

The next figure refers to crimes or incidents in which these artifacts were seized, according to **Chart 1**. Approximately 74% of the weapons were related to only three crimes: robbery (34%), crimes under the Disarmament Act (32%, e.g., unlawful possession, unlawful possession and discharging of the weapon) and homicide (9%). In 74.2% of cases in which an artifact was seized in crimes under the Disarmament Act that was due to illegal possession or illegal carrying of a weapon.

¹ In this research firearm replicas, toy weapons and air weapons were included in the simulations category. More information can be found in Annex I.

² This data confirms the increased participation of firearm replicas that had already been reported by the Military Police of São Paulo on a news article by Diário de Sao Paulo, February 2013. <http://diariosp.com.br/noticia / detalhe/43401/Armas + of + toy + station + at +2%26ordm%3B + in + seizure>

Chart 1 – Distribution of items according to crime



Scope: 14,488. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

The growth in the use of firearm replicas

The data presents a significant portion of firearm replicas seized in crime. Nothing less than $\frac{1}{4}$ of the total seized artifacts corresponds to firearm replicas, which were used mostly for the commission of robbery. Of the total seized firearm replicas, almost half were used in this type of crime. Several institutions have reported increased seizure of this artifact in criminal situations. If on the one hand the use of firearm replicas could be good news, because it displays a decrease in terms of available weapons and a reduction of the potential lethality of violence against citizens, on the other hand, its growth should be closely monitored and tackled.

Despite the fact that the Disarmament Act forbids the manufacture, import and sale of this type of artifact, there is no administrative or criminal con-

sequence to the noncompliance.

One can only be arrested with a firearm replica if they are apprehended in the context of a crime such as robbery, for example. Still, the use of a firearm replica cannot be used to increase the penalty for robbery. Hence, besides the difficulty in obtaining a weapon, another hypothesis for the use of the firearm replicas could be that they cause fewer consequences in terms of criminal penalties to those who carry them.

From the victim's perspective, however, the loss of assets and psychological trauma stemmed from a robbery committed with a weapon or a firearm replica are the same and require an adequate response from the government.

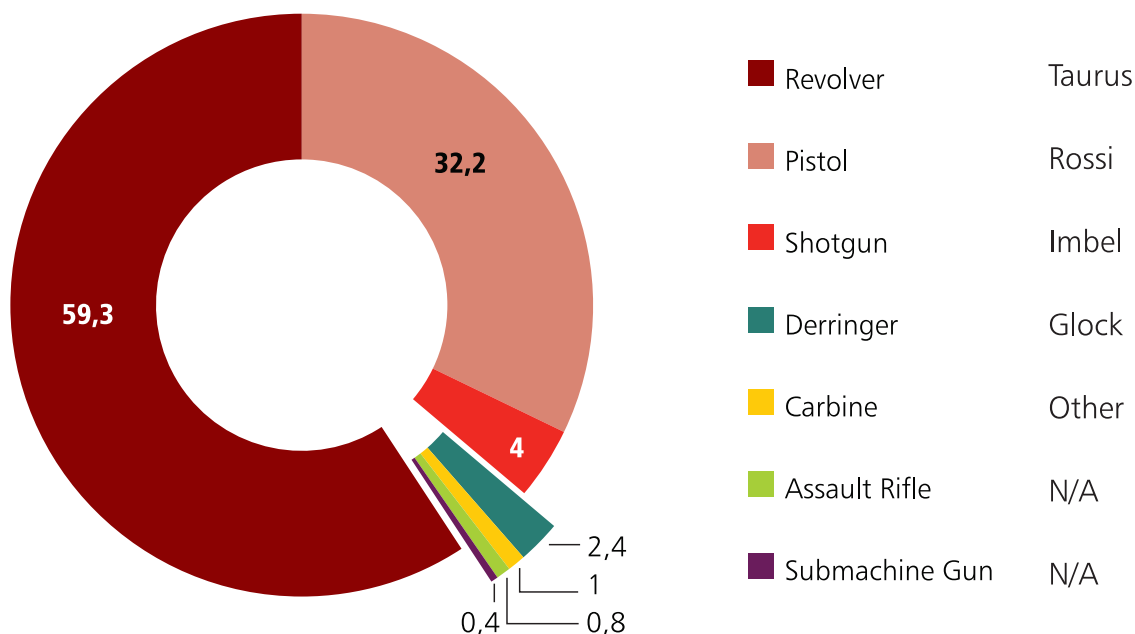
1.1 - Industrially manufactured weapons

This section presents information and characteristics of the industrially manufactured weapons. This is an important part of the research since they represent the vast majority of artifacts seized in criminal cases (74%). In addition, they have a central role in homicides and other violent crimes that happen in Brazil³.

The first step to draw a reliable diagnostic on the profile of weapons being used to commit crimes is to know in detail such characteristics, besides allowing the improvement of the arms control policy, which affects the reduction of violent crimes.

The data demonstrate that the revolver is the main type of weapon used in the commission of crimes (59%) followed by the pistols (32%) and shotgun (4%) - **chart 2**. As for the caliber of the weapon, the .38 is the most used (42%), followed by the 32 (14%), as shown in **table 3**, reinforcing what has already been disseminated in several other studies that used different sources and samples. Obviously there are the short-barreled weapons and authorized caliber being widely used in crimes in the city of São Paulo.

Chart 2 – Distribution of industrial firearms according to type



Scope: 10,666. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

³ According to the Violence Map 2013, which is based on data from the Ministry of Health, in 2010 38,892 died due to weapon episodes.

⁴ These data coincide with the results of the Parliamentary investigative Commission held by the House of Representatives in 2006, which revealed that over 80% of seized weapons in the city of Rio de Janeiro between 1993 and 2003 were revolvers or pistols. In the same vein is the study "Crime Weapons" released by Instituto Sou da Paz in 2013, which met with a sum of 89.5% of revolvers and pistols among the seized weapons in prisons in flagrante delicto in São Paulo.

Despite such evidence, even today you can see that in some circles there is still the myth that crimes are mainly committed with weapons of high firepower such as rifles. Not only is this information wrong, but it is often used to undermine the efforts of arms control, favoring private interests, exclusively.

Table 2 – Distribution of industrial firearms according calibre.

Caliber	%
.38	41,5
.32	13,6
.40	12,2
.380	10,3
.22	5,4
7,65mm	2,5
9mm	1,9
6,35mm	1,7
.45	1,6
12 gauge	1,5
Other	2,3
N/A	5,5
TOTAL	100%

Once the type of weapon and caliber are identified, another fundamental point to be highlighted is the brand of these weapons. The analyzed scope shows that the weapons that were mostly used by criminals belong to Forjas Taurus (61%), followed by Amadeo Rossi⁵ (13%), a brand that was bought by Taurus in 1997. These figures are surprising because they are even higher than that identified in the study “The crime weapons”, released by Instituto Sou da Paz, in August 2013⁶.

This difference may relate to the sample universe used in both surveys. In the previous study, the sample consisted of 466 weapons seized by the police between April and June 2011, in the context of in flagrante delicto arrests. The present study has a much broader sample, which covers all weapons examined in São Paulo, with 10,666 industrially manufactured weapons, besides the weapons involved in all types of crime, unlike the previous study, which did not include cases of murder, for example.

Based on these data, we can say that more than ¾ of the weapons seized during crimes are manufactured in Brazil and that Taurus, besides virtually monopolizing the legal domestic market has also a dominant share in the illegal market.

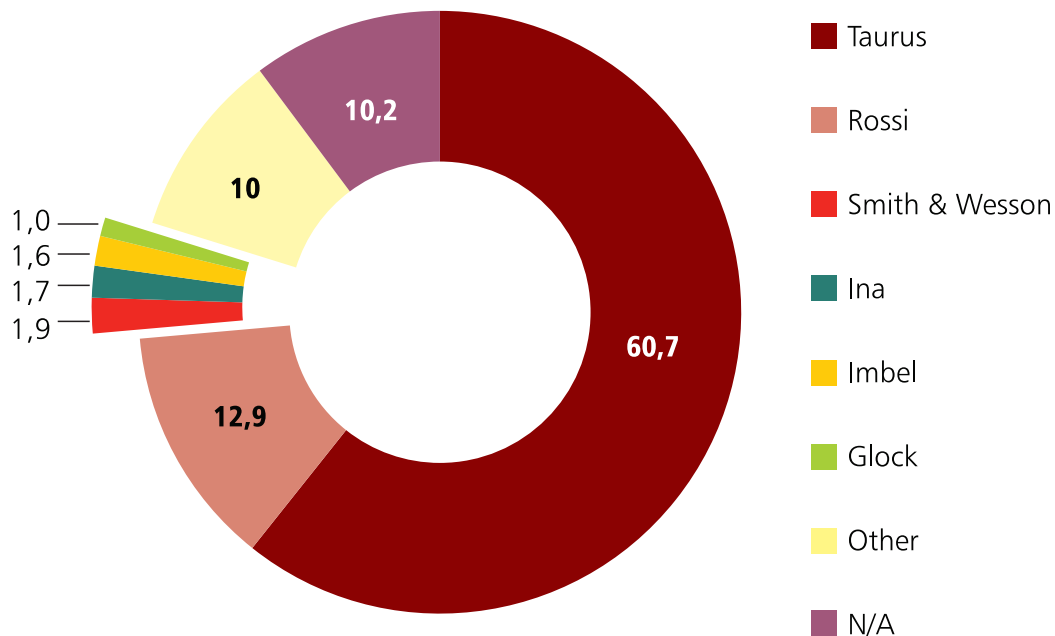
Once again, this finding strengthens the close relationship between legal and illegal markets, and as a result, the urgency to control the internal market, the weapons entering the market and the categories that are allowed to have access to weapons, not focusing strictly on the removal of the illegal weapons in circulation.

Scope: 10.666. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

⁵ In 1997, Forjas Taurus acquired the commercial rights of the Rossi hand weapons. According with Tocchetto and Weingaertner (2013), “The production of ROSSI revolvers, manufactured by Taurus started in 1998. The identification of these revolvers is made through the engraving of their brand as in ‘BY TAURUS’ “.

⁶ In the mentioned study which used a smaller sample (466 weapons), Forjas Taurus Forges answered for 56.2% of the weapons and Amadeo Rossi, 11.9% of the total weapons seized in the capital.

Chart 3 – Distribution of industrial firearms according to brand



Scope: 10.666. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

From the identification of the manufacturer, we can extract information about nationality, i.e., in which country these weapons were manufactured. This allows the identification of which gun control policy strategies should be enhanced. For example, if most of the weapons were manufactured outside the country, the types of measures to be adopted should follow a certain path, searching for flows and bypass routes. If the weapons are Brazilian, the necessary control strategies should follow another direction.

In the analyzed sample, it was possible to identify the nationalities of a little over 85% of all examined weapons. According to table 3, one can observe that in the case of weapons used in crimes in São Paulo, the vast majority of them (78%) were locally manufactured. Although it was found that weapons from a variety of countries are present in crimes in Sao Paulo, this volume is negligible. In addition to the nationalities presented in Table 3, 1% of the seized weapons come from ten different countries: Belgium, Germany, Israel, Spain, Czech Republic, China, Switzerland, France, Russia and Serbia. When analyzing the nationality of handguns (revolvers, pistols and derringers/pocket pistol), this is even more concentrated: 81% are Brazilian. In the rest of the identified sample, 7% comes from 14 different countries.

Table 3 – Distribution of industrial firearms according to nationality.

Nationality	%
Brazil	77,9
USA	3,7
Austria	1
Italy	0,9
Argentina	0,7
Other	1,2
N/A	14,4
TOTAL	100

Scope: 10.666. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

The data presented in Table 4 on the existence or not of serial numbers on the seized weapons deepens the relevance of the information revealed in the study from August 2013. Half of the examined weapons can be traced back to their origins, not only in terms of country of manufacturer, but also in terms of the whole path followed by the weapon before its use in crime and seizure.

Table 5 allows us to understand the existence and distribution patterns of serial numbers among the types of weapons. It appears that there is no well-established pattern in what concerns the existence and distribution of serial numbers among the weapons. Higher percentages of weapons carrying serial numbers belong to the submachine guns and pistols category, with approximately 66%. The study “The weapons used in crime” already pointed out that a significant amount of weapons carried serial numbers, which is confirmed by the data presented in this research.

Understanding how these weapons reached the hands of criminals is fundamental if we expect the police to perform intelligently. Moreover, because the weapons’ serial numbers are intact in at least half of them, this should be a State mandatory procedure - the development of systematic studies on the direction followed by the weapons used in crimes.

This is also the focus of the second stage of this research, which aims to answer these exact questions: How did these weapons come into circulation? How and under which circumstances of their cycle have they become illegal?

The Importance of Tracking:

For any weapons seizure, it is essential to know what the weapon’s last known legal registry was and check for notification of robbery. When available, this information is crucial so that the person who was arrested with the gun can also be charged for the crime of receiving stolen goods (which

is the crime committed by those who buy stolen products). In the absence of such notification, it is essential to investigate the possible participation of the former owner (person or entity), since it is his obligation to notify the diversion to the authorities (Civil Police and Federal Police).

The profile information of a seized weapon (type, size, brand, manufacturer, year of manufacture, owner profile) is critical to establish a solid base of reliable information for police use. This could help in the identification and tackling of the most frequent diversion channels, help to increase the amounts of seized weapons and disrupt gangs that operate in the weapons trafficking business.

And this is feasible, once all public officials have or should have access to INFOSEG, an information system created by the Ministry of Justice, that enables the consultation to SINARM weapons database (which gathers information on civilian weapons and is managed by the Federal Police) and to SIGMA (which brings together military weapons and is managed by the Brazilian Army).

Table 4 – Distribution of industrial firearms according to the presence of serial number.

Serial number	%
Removed	50,5
Existing	49,5
TOTAL	100

Scope: 10.666. Source: Ballistic Center of the São Paulo Criminology Institute, Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

Table 5 – Distribution of types of industrial firearms according to the presence of serial number.

Type	Existing Number %	Number removed %
Revolver	41,8	58,2
Pistol	66	34
Derringer	26,2	73,8
Shotgun	42,7	57,3
Carbine	53,6	46,4
Assault rifle	54,7	45,3
Submachine gun	66,7	33,3

Scope: 10.666. Source: Ballistic Center of the São Paulo Criminology Institute, Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

2 - Year of manufacture

For those who criticize Law 10.826/2003, what 'proves' it inefficient is the fact that 'criminals are still armed' and have easy access to weapons. Surveys point to the decrease in the number of seized weapons in the illegal market, despite the fact that levels of police activity remain the same, seeming to contradict this thesis. The significant increase in the use of firearm replicas observed by this research and confirmed by other sources also seems to show the fragility of the criticism towards the Disarmament Statute.

Those who are interested in committing crimes anywhere in the world will seek all possible means to gain access to a weapon. The elaboration and adoption of measures that impose obstacles to such access is a State responsibility, once it has all the means to prevent it from happening.

The perception of many different public security officials working in the area of arms control was that after the Statute went into effect, the number of illegal arms apprehended actually decreased. Furthermore, the types of firearms captured by the police changed, in general the new era of apprehended guns fitting an older profile⁸.

Therefore, checking the year of manufacture, i.e. the moment the arm enters the legal market, is an important efficiency parameter in what concerns the ability of the Statute towards restricting criminal's access to weapons.

Because of this, they extracted a sample of weapons⁹ carrying serial numbers that indicated they were produced by Taurus, the most represented brand in the hands of criminals (61% of all seized industrially manufactured weapons), that also carry serial numbers identifying the year of production¹⁰.

7 This data can be checked in the figures released by the Analysis and Planning Coordination of the Department of Public Safety. From 2000 to 2003, the annual average of weapons seized in the capital was 13,000. In 2012, this number did not reach 6,000. A reduction of 56%.

8 In a statement to Agência Pública, the Federal Police Chief Marcus Vinicius da Silva Dantas, of the Division for Repression of Illicit Arms (DARM) says: "Most of the weapons that ended up illegal were old. Many of them were bought by 'good citizens', who sold them to acquaintances, who later sold them to strangers. This is how weapons end up in the hands of criminals."

9 From the weapons carrying serial numbers, we were able to extract an identifiable sample with more than three thousand weapons, consisting of revolvers and pistols representing almost 30% of all industrial fire weapons and nearly half of all seized Taurus weapons.

10 ANNEX I - Research Methodology

Lifecycle of weapons:

Weapons are extremely durable goods. With simple maintenance and a low rate of shots, these artifacts can last for decades, keeping their shooting ability intact. This is why gun control is such a challenging task in Brazil.

Among these Taurus weapons carrying serial numbers that allow the identification of the year of manufacture, it was possible to identify many

weapons from the 80s and 90s and weapons that are over 50 years old. We also found many other Brazilian brands like Ina, Caramuru and Castelo (largely present within the samples), which ended their activities in the 1970s, confirming the long lifecycle of weapons and the impact that the uncontrolled entry of arms into circulation in Brazil brings to public safety today.

It is common knowledge that weapons are extremely durable objects, but the fact that it was possible to find Taurus weapons produced in the 50s that were still being used in crimes drew the team's attention. Weapons manufactured before 1979 were 14% of the sample.

Weapons manufactured before 2003, before the entry into force of the Disarmament Statute, represented 64% of the sample. Based on these data, we can infer that Brazil still suffers the impact of the lack of weapons control that ruled the country before 2003.

The above data further reinforces how important it is for the State to keep an open channel with its citizens and encourage the conveying of weapons. Old weapons acquired by deceased relatives, whose records are no longer regulated, follow two possible destinations: the unintended deviation to crime

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Weapons Advertising - published in the newspaper Estado de São Paulo in 1929, 1959 and 1985 respectively.
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or destruction after voluntary surrendering, under the Disarmament Campaign. It is the State's responsibility to work on raising awareness so that these weapons find their way to destruction

Table 6 – Distribution of weapons made by Forjas Taurus according to production period.

Decade of production	%
50	2
60	6,8
70	6
80	13,5
90	24,8
2000	36
2010/2011/2012	10,9
TOTAL	100

Scope: 3.131. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

According to Table 6, the 2000s is the period that stands out the most, with 36% of the weapons seized in crimes produced, followed by the 90s with 25%:

Summary of the history of gun control laws in the country:

Before 1980, when the Ministerial Decree 1,261 was published, there was no regulation in Brazil concerning the acquisition of weapons by civilians. The decree, though simple was a major breakthrough towards establishing a requirement for the purchase of weapons by citizens, whose age limit was 21 years old. This decree had the disadvantage of leaving the registry responsibility to the States, making it impossible to organize a unified register for consultation by security agencies. Citizens could own up to 6 arms and acquire 50 units of ammunition per gun, per month.

The first legal framework since the Brazilian democratic era was Law 9.437/1997. This was when the National Weapons System (organ of the Federal Police, under the Ministry of Justice) was created. As a big breakthrough at this period, we highlight the national criteria for the registration of weapons and the creation of a single federal registration process to consolidate the citizen's weapons. The carry permit for civilians became more restricted, and it started to be issued by the Federal Police with a limited validity period, only for applicants that met the requirements, including evidence of need, technical handling capabilities and a psychological permit (requirements that were later incorporated in the current legislation).

On December 9, 2003, after 6 months of Congressional discussions, the Disarmament Statute (Law 10.826/2003) was approved and contains 37 articles, which set rules and responsibilities concerning gun control in Brazil. It changed the way crimes were defined and sentenced, and it instituted new crimes such as discharging and international trafficking of weapons.

Both the gun registry and the carrier permit (accessible to civilians only in cases of proven need) began to be issued by the Federal Police with a limited validity period, i.e., requiring renewal, once they realized it was essential that citizens' information was kept updated.

(DIAS, 2005)

The relevance of the 80s and 90s as periods when a large amount of weapons entered into circulation in Brazil is reported in many researches such as IPEA's (Institute of Applied Economic Research) "Map of weapons in the Brazilian Micro regions", which points out:

"After the increase in crime rates in Brazil, from the early '80s on, followed by the deep economic problems in the country [as discussed in Cerqueira (2010)], a real arms race started, in which the population, who didn't believe the State could ensure their physical nor their asset security, tried to ensure their protection in their own terms. During this period, there was a rapid expansion of the private security industry, as well as a diffusion of weapons..."

(CERQUEIRA, COELHO, SIQUEIRA; 2013)

The analysis of the weapons year of manufacture, separating the samples into revolvers and pistols, also reveals interesting information. It is possible to observe how diverse the year of manufacture of these handguns is, making it clear that the seized revolvers are proportionally older, especially considering that Taurus only started producing pistols in the early 80s¹¹.

Looking at the seized weapons that were manufactured after 2000, 14% are revolvers and 57% are pistols. A larger number of weapons manufactured in the last decade ended up in the hands of criminals. Concerning these weapons manufactured in Brazil and diverted to crime, it is necessary to investigate how they came into circulation and the time of the last known record. Accurate conclusions will be available when the results of the second stage of this research are released tracking these serial numbers within the existing databases (SINARM and SIGMA).

Table 7 – Distribution of Forjas Taurus Revolvers and Pistols according to production period.

Decade of production	Revolver %	Pistol %
50	4	0
60	13,8	0
70	12,3	0
80	26,4	0,8
90	27,3	22,5
2000	14,1	57,2
2010/2011/2012	2	19,5
TOTAL	100	100

Scope: 3.131. Source: Ballistic Center of the São Paulo Criminology Institute, Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

¹¹ The manufacturing started after the purchase of Beretta Public Limited Companies, in June 1980 (TOCCHETTO; WEINGAERTNER: 2013, p.153)

3 - The weapons used in different crimes

This section will present and analyze the data of the weapons seized under two types of crime: robbery and homicide. We selected these two types of crimes because they are the ones with the greatest volume of seized weapons, under the “violent crimes” classification.

3.1 - The weapons used in robberies

In the last decade, the state of São Paulo experienced a decrease of over 70% in the number of homicides. This trend was not followed by other crimes. Robbery, for example, is at very high levels in the capital, as well as in the state. If we add up the number of burglaries and vehicle thefts registered in 2011 and 2012 (same period of this study), we will see that there are over 300 thousand registered.

Although there is no exact data on the percentage of robberies¹² carried out with weapons, this type of crime committed with violence or serious threat is facilitated by weapons. Instituto Sou da Paz, besides demanding clearer assessments on this criminal phenomenon, has also contributed with analysis and research on this type of crime, which certainly involves identifying the weapons that were used, which will be revealed in this section.

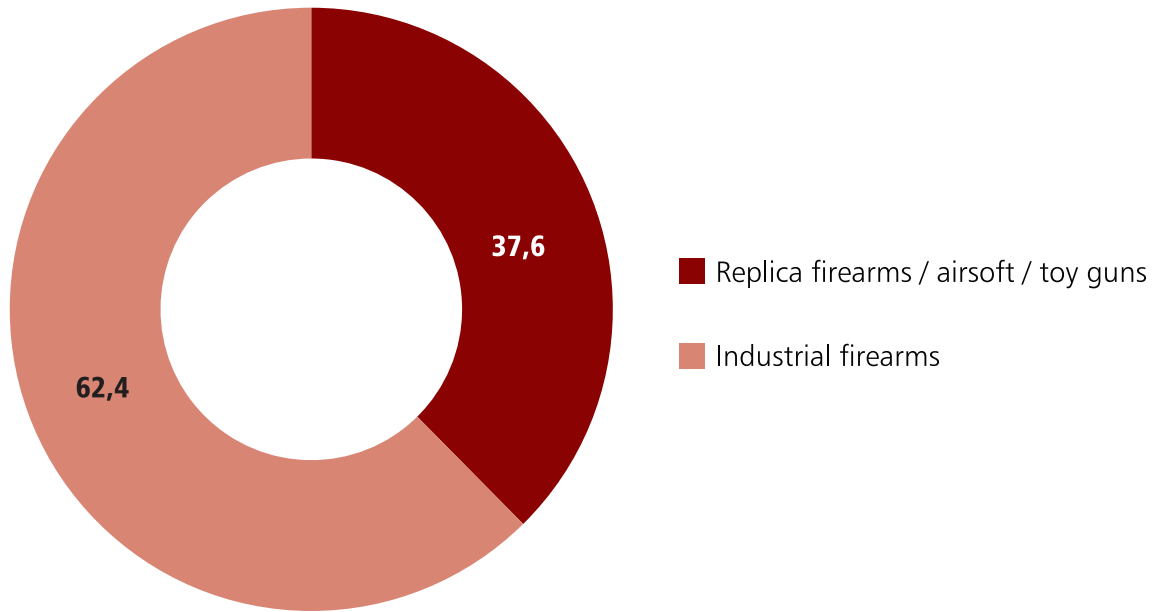
The total amount of examined artifacts seized during the robberies was 4,899. They fall into two main categories: industrially manufactured weapons, which are the majority (62%) in the analyzed sample, and firearm replica/impression/toy, which features a significant amount, reaching 37%. Within the examined ones, only 10 handmade artifacts were involved in this type of crime.

The amount of firearm replicas seized during robberies is a fact that draws attention. It is important to analyze this, because it may indicate a decrease in the number of weapons in circulation, making it difficult to supply the illegal market. As known, weapons have a very long life cycle and, according to the data collected, a significant percentage of seized weapons were manufactured before the implementation of mechanisms that control the entry of weapons into circulation. All this information reinforces the same point of view: it is essential to implement a strict gun control system in the country in order to reduce the amount of violent crimes.

Thus, the increasing use of firearm replicas in robberies may reveal a change in the pattern followed by this crime, noting that half of all examined firearm replicas were linked to it. It is also worth remembering that the Disarmament Statute prohibits the manufacture and trade of firearm replicas. However, the law does not apply sanctions to those who violate the law, which hinders the surveillance mechanism and weakens the control system.

12 In the Instituto Sou da Paz research “Arrest in flagrante delicto in São Paulo - 2012” which examined 4,559 prisoners caught in the act in São Paulo, it is reported that 28.5% of the crimes committed by these prisoners involved weapons (without specifying the type). Table 35, p.43.

Chart 4 – Distribution of items involved in robbery by category



Scope: 4.899. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

Analyzing the sample of industrially manufactured weapons, we can also observe the prevalence of revolvers (65%) and pistols (31%), with the predominance of the allowed calibers .38 (45%) and .32 (16%). In summary, we concluded that almost all the weapons used in cases of robbery are short (98%) and the overwhelming majority are allowed caliber (about 3/4).

Table 8 – Distribution of industrial firearms used in robbery according to type.

Type	%		%
Revolver	65,3	Hand Guns	97,9
Pistol	31,1		
Derringer	1,5		
Shotgun	1,3	Long Guns	2,1
Carbine	0,4		
Assault Rifle	0,2		
Submachine Gun	0,2		
TOTAL	100		

Scope: 3.051. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

The overwhelming majority of weapons seized in robbery situations (82%) were produced in Brazil, confirming the data already disclosed in other studies. Among the brands, Taurus leads in volume, being accountable for 64% of the total, followed by Rossi weapons, with 14%. According to **table 10** it is possible to note that Taurus is the flagship brand of the weapons seized in robberies in the city.

Table 9 – Distribution of industrial firearms used in robbery according to calibre.

Caliber	%
.38	44,7
.32	16,4
.40	14,4
.380	8,7
.22	4,9
7,65mm	2,4
9mm	1,6
.45	1,3
6,35mm	1,0
Other	1,5
N/A	3,1
TOTAL	100

Scope: 3.051. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

Table 10 – Distribution of industrial firearms used in robbery according to brand.

Brand	%
Taurus	64,0
Rossi	13,5
Ina	2,3
Smith & Wesson	1,7
Imbel	1,6
Other	8,2
N/A	8,7
TOTAL	100

Scope: 3.051. Source: Ballistic Center of the São Paulo Criminology Institute, Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

Table 11 – Distribution of industrial firearms used in robbery according to the presence of serial number.

Serial Number	%
Removed	54,6
Existing	45,4
TOTAL	100

Scope: 3.051. Source: Ballistic Center of the São Paulo Criminology Institute, Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

About the existence of serial numbers, it is possible to observe that the examined weapons in robbery situations presented a slightly lower presence of serial numbers than the overall arms in the study. Anyhow, 45% of the weapons carry serial numbers and therefore could be traced back to the diversion moment. As already mentioned, this will be the second stage of this research that will identify sources of diversion and contribute to the improvement of gun control in the country and, consequently, to the decrease of robbery cases.

The information collected in the survey allowed the identification of the year of manufacture of a significant portion (30%) of the volume of industrial firearms seized during robbery.

It is possible to observe that the vast majority of weapons (57%) were manufactured before the enforcement of the Disarmament Statute, i.e. before 2003. There are significant differences when comparing weapon types. Despite the fact that revolvers were the most used weapons in robberies, it was possible to identify the year of manufacture in just 19% of them. Of those, 92% were produced before 2003.

As for the pistols samples, more than half carried serial numbers (56%). Unlike revolvers, most of them were produced more recently, 68% after 2003. This figure is alarming and shows that we still need to improve the implementation of the Disarmament Statute. Diagnoses as presented in this report are key in order to achieve this goal.

3.2 - The homicide weapons



This section will be devoted to the analysis of the profile of examined weapons that are linked to homicides. Since this is the main device used in homicides in Brazil, it is essential to get to know these weapons in order to create prevention policies. It is true that a large reduction was observed in the state of São Paulo, in the last decade. However, some features remain.

The study “Homicides in the city of São Paulo: diagnosis of registered incidents between January 2012 and June 2013”¹³ shows that 60% of the homicides in the city of São Paulo were committed with weapons. Despite the fact that this percentage has been higher, the gun remains the main instrument used to commit murders. The creation of a profile with information about these weapons would contribute to building a more accurate diagnosis on homicides and to the formulation of prevention programs that may result in fewer deaths.

The analyzed sample contains 1,261 weapons linked to homicides and among these, 98% are industrially manufactured weapons. The difference in the concentration of this type of artifact when compared to the weapons seized during robbery is remarkable, given the type of crime itself. The industrial weapon is an artifact meant to kill and when used, in most cases, achieves this goal. Therefore, it is not surprising that almost all of the examined artifacts related to homicides are industrially manufactured weapons.

Another fact that is not new to this research is that the weapon that kills the most is the handgun (97%). The volume of pistols identified in the sample, 55% of the total, according to table 12, is surprising though. One possible explanation refers to the analyzed sample and the methodology applied. As stated in Annex I - Research Methodology, the Ballistic Center of the São Paulo Criminology Institute, source of data used in this research, conducts examinations of weapons used in cases of resistance followed by death, that is, when civilians are killed during police¹⁴ action. Since the objective of this study was to analyze the crime weapons, we opted to exclude from the survey cases related to resistance followed by death, when it was possible to identify that a police gun was connected to this type of occurrence.

However, as the information on occurrences of resistance followed by death are not always classified as such at the moment of examination request, it is possible that some weapons linked to this type of occurrence have been kept in the analyzed sample. However, this hypothesis still needs to be further investigated.

Of the total arms seized in homicides 28% are Taurus .40-caliber pistols, which can either belong or not to police¹⁵ and may have been used by the police or not¹⁶. Each of these combinations requires different measures, which demands a thorough diagnosis on cases involving lethality within police actions, including information on the used weapon.

14 Since April 2011 under the SSP Resolution 45/2011 the resistance followed by death cases started to be investigated by the DHPP, which according to information obtained by the research team began to request examinations from all weapons involved in the occurrences, once it recognized that this is fundamental to clarify this type of case.

15 The .40 caliber is restricted and its use is allowed to the civil and military police (institutional and private weapons), as well as to judges and prosecutors. Taurus weapons of such caliber are the weapons used by the Military and Civil Police in São Paulo and in other states of Brazil.

16 According to information obtained by Instituto Sou da Paz through the Access to Information Act, 2009 to 2011, the Military Police of São Paulo lost 744 institutional weapons (stolen or lost), having recovered 162 of them in the same period. The Civil Police could not inform any data on the institutional weapons that were lost. The number of diverted weapons, despite not being high in relative terms when we bear in mind that the corporation counts on almost 100 thousand men and women, are quite significant and may help to explain the high number of .40 caliber pistols found in the research.

In a more detailed analysis as to the caliber of the weapons used in murders it was found that one third of them are .38 (Table 13), once again confirming the prevalence of such caliber in the commission of crimes. As already mentioned, the .40 caliber may be overrepresented in this sample, affecting the analysis. Therefore, it is important to be careful when analyzing the volume of weapons of a restricted caliber, in which the .40 caliber pistol is included, in cases of homicide.

Table 12 – Distribution of industrial firearms used in homicides according to type

Type	%		%
Revolver	41,6	Hand Guns	96,7
Pistol	54,9		
Derringer	0,2		
Shotgun	1,9	Long Guns	3,3
Carbine	0,8		
Assault Rifle	0,4		
Submachine Gun	0,2		
TOTAL	100	TOTAL	100

The same is true when analyzing the brands. Taurus comes first, as in all other crimes but with a much higher frequency compared to the total sample, 78% against 61%.

Even when we consider possible institutional weapons in this sample, we can see that Brazilian arms are the most used in homicides, which indicates how important it is not to close this kind of investigation after the collection of data on authorship, as well as to collect information about the origin of the weapon that caused the death.

Scope: 3.051. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

Table 13 – Distribution of industrial firearms used in homicides according to caliber.

Caliber	%
.38	34,3
.40	28,1
.380	16,6
.32	3,6
.22	1,2
7,65mm	1,4
.45	1,9
Other	3,6
N/A	9,2
TOTAL	100

Scope: 1.238. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

Table 14 – Distribution of industrial firearms used in homicides according to brand.

Brand	%
Taurus	77,8
Rossi	8,3
Imbel	1,7
Glock	1,0
Other	5,4
N/A	5,8
TOTAL	100

Scope: 1.238. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

Table 15 – Distribution of industrial firearms used in homicides according to the presence of serial number

Brand	%
Removed	39,6
Existing	60,4
TOTAL	100

Scope: 1.238. Source: Ballistic Center of the São Paulo Criminology Institute. Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

The data on **Table 15** show that most of the weapons seized in homicides have serial numbers, allowing the identification of the date the weapon entered in circulation.

It was possible to identify the weapons year of manufacture for 45% of them, which is a considerable share of the total seized weapons that related to homicides. As in the situation around weapons used for robbery, there is a difference between the information availability that enables the identification of the manufacturing year among revolvers and pistols. Concerning revolvers, the identification ability doubled when compared to robbery (36%) and they were predominantly manufactured before 2003 (88%). In the pistols situation, the year of manufacture was identified in a very similar volume to the case of robberies (54%). Pistols are relatively newer - 63% of them were manufactured after 2003.

The second stage of this research which will look at the mechanisms through which a gun transits from the legal to the illegal market will also draw explanations on the difference between patterns involving revolvers and pistols.

4 - Weapons of greater firepower

The weapons of greater firepower are, in general, the category of long weapons and have in common their great destructive power. Examples of such weapons include submachine guns and rifles. These and other weapons included in this section are classified as restricted use, which means, according to the Disarmament Statute, that their use is exclusive to the Armed Forces, to the public security institutions and to empowered individuals and institutions duly authorized by the Army Command. This means, also, that the sale of such weapons to civilians is prohibited.

Access to restricted-use weapons use by civilians

While these weapons are meant for the use of security and military institutions, the law has an important inconsistency: it allows civilians the possibility of acquiring a license to use them. These weapons belong to the shooters, hunters and collectors category (CAC). This gap is quite reckless because it allows civilians to have access to weapons with great destructive power. However, the biggest problem refers to the supervising of this category.

Unlike security agencies, from which stricter control is expected via internal affairs and ombudsmen, these categories are not subject to the same rigorous inspection.

Contrary to common sense, the gun collector has access not only to historical weapons. It is also possible for them to access modern weapons such as automatic rifles. The blocking of the gun's shooting capability is not required from the collector. Finally, it is possible for the collector to buy ammunition. Therefore, despite being a private hobby practiced by a well-intentioned majority, it brings unnecessary risks to public safety.

The Parliamentary Investigative Commission on Arms Trafficking organized by the Rio de Janeiro State Legislative Assembly exposed this problem revealing that 269 collectors of Rio de Janeiro owned together almost 3000 weapons, with the smallest arsenal gathering 27 weapons, and the largest 254. It was found that one of those collections consisted of three rifles of identical brand and caliber, which brings up the dubious nature of this collection.

Hunters are supposed to ask the Army for a permit to acquire weapons of limited use for sport hunting. However, hunting is a prohibited practice in Brazil. Moreover, the authorization is granted without the Environment Ministry's statement on the areas of temporary management by state (where hunting particular species is allowed in certain periods).

In this sense, it is not surprising that we have seen recent cases of shooters, hunters and collectors suspected of being involved in crimes, or that have had their weapons robbed from their houses.

Although these are weapons with far more restricted access, criminals can still get them through various ways. Whether for its greater power of destruction or for being unusual in occurrences where they are present, weapons of greater firepower receive more media exposure and come to inhabit the popular imagination, spreading a feeling of great insecurity and the perception that the access to these weapons is widespread among criminals.

The data in this research shows, however, that this perception is mistaken and that the proportion of greater firepower weapons seized is small. Of the total sample of weapons seized in 2011 and 2012, a tiny fraction (1.6%) refers to weapons of greater firepower. Among the more than 14,000 analyzed weapons, only 231 belong to this profile. Even in Rio de Janeiro, where the image of heavily armed criminals is common, the 2006 Parliamentary Investigative Commission on Arms Trafficking revealed that only 4.4% of weapons seized between 1993 and 2003 were rifles. These data are extremely important as they help guide public policies towards the control and seizure of weapons.

While representing a small number of weapons in circulation, the seizure of weapons of greater firepower is crucial and needs to be strengthened, since the highest power of these weapons brings eminent public safety risks in an even greater scale than those resulting from most common weapons. Moreover, the presence of such weapons among criminals results in the need for police institutions to adapt their tactics and actions, often purchasing special equipment for this sort of confrontation.

Added to the power of destruction and tactical power of such arms is the symbolic power provided to the criminals that own them as a means to cope with the forces of the state. Because of these characteristics and their scarcity on the illegal market, the price of these weapons can reach tens of thousands of dollars. All these factors make it crucial for these weapons to be stored with greater zeal by criminals, making them more difficult to seize.

Another surprising result of this study was the large amount of handmade weapons of high firepower. The proportion of handmade weapons among weapons with greater firepower is significantly higher than in the total sample of weapons analyzed. Handmade weapons represent only 0.4% of the weapons analyzed in this investigation, but they correspond to 17% of the weapons of greater firepower. In the present sample, all submachine guns were handmade. This reveals a new and extremely disturbing practice among the criminals of São Paulo: due to the difficult supply of such weapons, local production arose with evidence of scale production.

Handmade Submachine guns

The number of handmade submachine guns accounts for 48% of total seized submachine guns and draws attention to the need for more effective measures.

Almost all of these weapons came in calibers 9mm and 380 and carried false registration and similar numbers. Among the inscriptions, the most common was 'Beretta, made in Italy'. In the fake serial numbers there

was a repeating number pattern (1333, 1444, 1777, 5555, etc.), which could indicate that they came from the same illegal plant.

The question is whether this problem had already been identified by the authorities or not and what is being done to deal with it. Adding up the 2013 results (which sample was not part of the research)¹⁷ it is possible to find more than 40 automatic submachine guns with similar characteristics.

As shown in Table 16, there are 3 basic types of weapons with greater firepower: submachine guns, carbines and rifles¹⁸. The most frequent types of weapons in this category are the rifle (37%) and the submachine gun (36%). The carbine holds the third position, with 27% of the weapons in this sample. The rifles and carbines have more powerful ammunition because of the amount of gunpowder (load or projection), with projectiles that are shot with great force¹⁹, reaching longer distances and presenting enormous destructive power. The submachine guns, with similar participation to rifles, also have great destructive power, because they are automatic weapons capable of producing bursts. If we only consider industrial weapons, the proportion of rifles becomes even more significant, reaching 45% of the analyzed sample.

Table 16 – Distributions of weapons of greater firepower according to type and category

Category	Assault Rifle (%)	Submachine Gun (%)	Carbine (%)	Total
Industrial firearm	37,2	18,2	27,3	82,7
Handmade	0,0	17,3	0,0	17,3
Subtotal / Type	37,2	35,5	27,3	100

Scope: 231. Source: Ballistic Center of the São Paulo Criminology Institute, Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

¹⁷ Concerning the 2013 period, we only have data related to the first half of the year. This is why the data from these months were not included in the survey.

¹⁸ During data collection, some weapons have been reclassified to conform their exact categorization, attested by the experts of the Ballistic Center of the Science and Technology Police. The machine weapons, which had been classified this way by request of the civil police were reclassified as submachine guns after examination. The rifles were reclassified as "fuzis" (similar kind of rifle). It is clear, finally, that the .38 and .22 caliber weapons were extracted from the sample, once their caliber is allowed.

¹⁹ The exit velocity of a projectile from a .223 caliber rifle, similar to those seized in the sample, is 980 m/s or 4 times faster than a .38 caliber revolver (TOCCHETO; 2013).

It is worth mentioning that other weapons of great destructive power that underlie people's imagination, like machine weapons, are not part of the research, as there was no seizure of such weapons in the years 2011 and 2012. Generally used by military or special police operations, the machine weapons are extremely powerful weapons that are able to shoot hundreds of rounds per minute. However, their use may require accessories such as a stand, making it difficult to handle, which may explain why there were no specimens found in the analyzed sample.

When discussing the brand of weapons of greater firepower, one can observe a large difference concerning the pattern found in the wider sample of analyzed arms. Adding up Taurus (61%) and Rossi (13%), one obtains over 70% of all industrial weapons seized in the city of São Paulo. As for industrial weapons of greater firepower, it is possible to note a wide dispersion in the distribution of brands because none has achieved more than 11% of the total. Anyway, the most frequently present brand is the Brazilian Taurus, which is responsible for this very percentage. Then, we find respectively, Colt (11%) and Bushmaster (10%), two US-based brands.

Like many others, this study showed that the industrial firearms in the hands of criminals are mostly national (78%). This is especially true for the small and light ones, the main product of the domestic industry. It is so true that the percentage of national weapons becomes even more robust considering only revolvers and pistols (81%).

When defining the scope around weapons of greater firepower, the expectation would be to find a predominance of foreign weapons. The results confirm this hypothesis, since 56% of the rifles, submachine guns and carbines seized are foreign. Whereas it was not possible to identify the brands of 19.4% of the weapons of greater firepower, the percentage of foreign weapons of greater firepower is quite high.

Table 17 – Distribution of industrial firearms of greater firepower according to brand.

Brand	%
Taurus (BRA)	11,0
Colt (USA)	10,5
Bushmaster (USA)	9,9
Dirección General de Fabricaciones Militares (ARG)	4,7
FN (BEL)	3,7
Imbel (BRA)	3,7
Cobray (USA)	2,6
Ruger (USA)	2,6
IWI (ISR)	2,6
Mekanika (BRA)	2,1
Norinco (CHI)	2,1
Other	25,1
N/A	19,4
Total	

Scope: 191. Source: Ballistic Center of the São Paulo Criminology Institute, Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

These data are quite illustrative of the connection between the legal and illegal markets. Brazilian small arms, accessible to civilians in the legal market, are the most commonly found in the hands of criminals, which denote extant channels of diversion. The weapons of greater firepower, in a definitely smaller number and restricted to a few civilian categories (hunters, collectors and shooters) are much less accessible to criminals in the country.

The United States stands out as the main supplier of greater firepower weapons²⁰ to crime, with 36% of the analyzed sample. Still, the Brazilian arms industry ranks second, with an amazing 21% of all weapons of greater firepower, which calls our attention, once again, to the weapons manufactured by Taurus, encompassing 11% of the total. Argentina is third with 4.7% of the total. Despite the small representation, what draws attention is the fact that all these weapons contained the coat of arms of the Argentine Army, which reiterates the importance of regulation concerning international arms trade, as the arms often sold to institutions that are supposedly prepared to strictly control them, end up diverted to crime. The remaining countries account for 15%, according to Table 18, with emphasis on Belgium (4%), Germany (3%) and Italy (2%).

The Arms Trade Treaty

The Arms Trade Treaty (a.k.a ATT), approved by the UN in April 2013, is the first global legal instrument to regulate the international arms trade, a market worth about \$ 70 billion per year. The ATT lays out, on a global level, the connection of responsibility between arms exports and the potential adverse humanitarian effects that they may have. Thus, the Treaty foresees that, when deciding to export weapons, countries should perform a risk analysis, considering criteria such as respect for human rights, the possibility of their use in terrorism or organized crime, as well as likelihood of diversion.

If a country is identified as a possible channel of weapons diversion, the Treaty stipulates that the

re should be no transfer of weapons to it. Therefore, the ATT has the potential to reduce problems such as diversion from the Armed Forces of neighboring countries, which eventually supply the Brazilian black market, i.e. a country with frequent records of institutional weapons misuse, may have its weapons purchases refused in case it does not demonstrate adequate conditions of custody.

Hence, the importance that the Treaty enters into force as soon as possible, becoming an international law. To that end, 50 ratifications are required. Brazil signed the ATT at the UN, in June 2013, and must now ratify it internally .

20 It is broadly known that the United States is one of the most permissive countries in relation to gun control; this situation was exacerbated by the expiration of the "Assault Weapons Ban" law passed in 1994 and expired in 2004 banning the access of civilians to rifles. This has facilitated the diversion of these weapons to the organized crime and Brazil was not the only one to receive these arms. Reports from the American agency ATF (U.S. Bureau of Alcohol, Tobacco, weapons and Explosives), which tracked weapons seized with the Mexican cartels pointed out that 90% of the weapons came from the USA. This American liberality brings substantial gains to private industries and terrible results for the armed violence of its Latin American neighbors (SERRANO, 2008 apud McDouglas 2013,).

Despite the confirmation of the hypothesis that weapons of greater firepower are usually foreign, surprisingly, a Brazilian brand, again Taurus, is the most representative, with²¹ of these weapons. This national company is on top of the rankings, above traditional North American brands like Colt, Bushmaster and Winchester. This unprecedented and surprising information helps reinforce the importance of strict control over such artifacts legal manufacture and marketing, as well as a broader supervision of their use by institutions, companies and individuals who have access to them.

The calibers of weapons of greater firepower also present great variety among the analyzed weapons²². Even so, there is a predominance of the 9mm caliber, which accounts for a little over a quarter (26%) of the observed sample. Secondly, we find caliber .223 / 5.56 mm, common in many rifles. Let us just recall that in this section, all weapons are restricted use, if not for the caliber, for the type of weapon²³.

Table 18 – Distribuição das armas industriais de maior poder de fogo segundo a nacionalidade.

Country	%
USA	35,6
Brazil	21
Argentina	4,7
Belgium	3,7
Germany	2,6
Israel	2,6
China	2,1
Italy	1,5
Austria	1,1
Other	2,1
N/A	23
Total	100

Scope: 191. Source: Ballistic Center of the São Paulo Criminology Institute, Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

Table 19 – Distribution of firearms of greater firepower according to Calibre.

Caliber	%
9mm	26,0
.223/5,56mm	22,1
7,62mm	12,1
.40	6,9
.44	6,5
.30	3,9
.380	3,5
Other	4,7
N/A	14,3
Total	100

Scope: 231. Source: Ballistic Center of the São Paulo Criminology Institute, Superintendent of the Technical and Scientific Police. Prepared by: Instituto Sou da Paz

²¹ More information about the importance of the Treaty and its approval process can be found on Instituto Sou da Paz's site (www.soudapaz.org).
²² For the gauge analysis, we once again used the 231 weapons sample, i.e., handmade and industrially manufactured weapons.
²³ This is the case with caliber 380, allowed for pistols, but restricted for submachine guns, such as the ones in the sample.

In relation to whether or not they carry serial numbers, the pattern among the arms of greater firepower is quite similar to the one among more common weapons. If in the general sample, half (50%) of weapons carried serial numbers, in the weapons of greater firepower case, this percentage has slightly increased, reaching 52%. Such information comes as a surprise, since no one would expect that these weapons, despite being rarer and restricted use, would be a prime target for the numbering suppression, in order to hide their origins. The significant number of weapons carrying serial numbers demands a stronger role from the authorities in using the Army database (which includes the military and restricted use weapons) to track and verify registers that could allow the identification of the origin and the possible channels of diversion followed by these weapons. Even in what concerns the foreign weapons, which are not recorded in the Army database, the analysis of these seizures should prompt a discussion at the international level to collectively fight the transnational crime represented by arms trafficking.

Another interesting finding in this research is that major crimes, such as the ones related to the analyzed arms of greater firepower are violations under the Disarmament Statute (42%). This fact demonstrates that the Disarmament Statute has been an essential tool for retiring not only hand weapons but also weapons of greater firepower. (followed by drug trafficking²⁴, representing 32% of the seizures. These weapons are less used to commit crimes such as robbery (10%) and homicide (7%). It is reasonable to assume that, because of their greater value, these weapons are linked to criminal organizations that have the resources to buy them and they are used to defend strategic points for these organizations. As expected, this pattern differs from that of the total of the analyzed arms, in which the most committed crime using weapons is robbery, followed closely by some violations under the Disarmament Statute, while drug trafficking represents less than 2% .

24 In other studies, such as “Caught in Prison in the city of São Paulo”, performed by Instituto Sou da Paz, it was observed that the overwhelming majority of those people arrested for drug trafficking were arrested without weapons. In this study, less than 2% of the weapons seized in 2011 and 2012 was related to drug trafficking situations. Looking at the weapons of greater firepower sample, the drug trafficking participation rises to the second largest associated crime (within the general sample, it is the 4th).

This research sought to better understand and clarify the characteristics of the weapons used in crime. There are few studies with this approach, even if we consider that weapons have a central role in violent crimes. The Parliamentary Investigative Commissions produced the latter during investigations into arms trafficking, in 2006, at the National Congress²⁵ and in 2011 in the Rio de Janeiro Legislative Council²⁶. The only exception is the newsletter “The weapons used in crime”, released by Instituto Sou da Paz, in August 2013.

Conducting systematic surveys is essential for the enhancement of gun control policies. 10 years after the adoption of the Disarmament Statute, which established a paradigm of strict control, it is possible to observe a significant reduction of the weapons in circulation in São Paulo. This alone, is a reason to celebrate, but the gains go far beyond this: there was a decrease of over 70% in the homicide rates in the city and part of it is due to gun control. Moreover, the data revealed by this research demonstrate that the Disarmament Statute, if well implemented, is a very effective tool to remove weapons from circulation, including greater firepower weapons. The weapons seized and examined by Ballistic Center were arrested under the Disarmament Statute in almost one third of the cases (32%), making this statute one of the major allies in preventive police action.

Some of the information revealed only reinforces what was already known through past research: the weapons used in crime are short, produced in Brazil and of permitted calibers. These empirical evidences are the greatest allies in the strengthening of the Disarmament Statute, which unfortunately, year after year, has suffered constant attacks in Congress, driven by the economic power of the weapons industry. In the 2010 elections, no fewer than²⁸ elected MPs and senators received direct contributions from one the weapons companies or ANIAM - National Association of weapons and Ammunition Industry (integrated by companies like Taurus Forjas and the Brazilian Cartridges Company, which hold the virtual monopoly on these weapons and ammunition sales in the country).

Other information has never before been released: 64% of the weapons used in crime were manufactured before the Disarmament Statute, showing the size of the consequences suffered by the previous absolute lack of control with respect to weapons.

²⁵ The report can be found at: http://www.comunidadessegura.org/files/active/0/relatorio_final_CPI_armas.pdf

²⁶ The report can be found at: <http://marcelofreixo.com.br/portal/docs/RelatorioCPIArmas.pdf>

²⁷ The exit velocity of a projectile from a .223 caliber rifle, similar to those seized in the sample, is 980 m/s or 4 times faster than a .38 caliber revolver (TOCCHETO; 2013).

²⁷ (Cerqueira, 2010).

²⁸ The worst of these MPs is Mr. Peninha Mendonça, who proposed Bill 3722/2012 meant to repeal the Disarmament Statute replacing it with another law that gives civilians access to carry permits, eliminates the need for renewal of the gun registry and allows the purchase of up to 9 weapons and 5.400 units of ammunition per year, per person.

Despite this disturbing scenario, the current public policies already provide tools to remove the broad arsenal that came into circulation mainly in the 80s and 90s. The voluntary surrender of weapons, through the National Campaign for Disarmament is widely known and available to States and the Federal Government to prevent arms from going from the legal market to crime.

Information about weapons of greater firepower, which often inhabits the imagination of people, was never before released. The study showed that less than 2% of the total of seized weapons belongs to this category. In this universe, foreign weapons are the majority, though the involvement of Brazilian arms is surprising: at least 1 in 5 weapons seized was manufactured in Brazil.

The next step in this research intends to add another piece to the puzzle: understanding how the weapons ended up in crime. Therefore, it is essential to involve other actors, such as the Federal Police and the Army, which are fundamental pillars in what concerns arms control policies and which will certainly be interested in participating, since such information is central to the design of more effective policies to be performed by these bodies towards the promotion of public safety.

Finally, as supported by all evidences, the biggest problem in Brazil is that weapons are manufactured in the country and to what extent, the Brazilian government is fully able to tackle this problem. It is urgent to get the available measures off the ground, some of which are vital and had little or no progress in the past decade, such as the integration between the Army and the Federal Police databases. The effective implementation of the Disarmament Statute is more urgent than ever. It is proven that some of the results of the arms control are long term, which is why it is necessary to invest in it now, so that future generations will not suffer even worse consequences than the ones we are experiencing today.

Using a quantitative methodological approach, the study aimed to produce an accurate and updated picture of the profile and origin of the weapons seized in crime in the city of São Paulo, considering that this information is fundamental to the design of strategies to increase the number of seized weapons in the possession of criminals. This would help to reduce weapons circulation, as well as the identification of possible diversion channels, in order to reduce the number of weapons in the hands of criminals.

This study was held at the Ballistic Center of the Superintendence of the Forensic Institute, an organ that integrates the State of São Paulo Technical Scientific Police. The data presented comprises all the input records of existing weapons between 2011 and 2012. This center receives the totality of the weapons seized in crimes²⁹ in São Paulo for identification and examination purposes. In general, the vast majority of weapons are subject to at least three procedures: the gun identification (when the expert identifies the gun, brand, size, features and serial numbers), the effectiveness testing (when the expert verifies whether the gun is able to shoot or not) and a test to check for recent shooting. In some cases, particularly in cases of legal interventions³⁰ and in cases of shooting, a more complex test called ballistic showdown is required. In this examination, which is more time consuming, comparisons are made to verify whether cartridges or projectiles were fired or not by a certain weapon, a decisive information for crime solving. As this confrontation examination is not performed in many regions of the State, the Ballistic Center also receives arms from other regions, when required. Despite containing the full amount of arms from the city of São Paulo and metropolitan area, it is possible that this sample includes also a number of weapons from other regions (although greatly reduced, since they refer only to the above-mentioned cases).

Instituto Sou da Paz, authorized by the São Paulo Department of Public Safety, made copies of the arms registry books, which were then entered into a database specifically created for this research and were also scanned, making it possible to check these data.

This registry book gathers information about:

- Date of entry of the artifacts sent for examination
- Crime/occurrence
- Date of exit of the gun
- Description of the weapon (category, brand, type, size, serial number)

²⁹ Weapons must go through examination, as indicated in article 25 of Law 10.826/2003.

³⁰ Since April 2011 under the SSP Resolution 45/2011 the resistance followed by death cases started to be investigated by the DHPP, which according to information obtained by the research team began to request tests from all weapons involved in the occurrence understanding that this is fundamental to clarify this type of case.

- Requesting unit
- Receiving Unit
- Police report number or equivalent
- Number of the examination report

For purposes of this research, the main data used were crime/occurrence and characteristics of the weapons.

The sample analyzed enclosed 14.488 artifacts. In some cases the analysis will fall only on industrial weapons (which exclude firearm replicas, toys and handmade weapons), which comprehends 10,666 weapons.

Crime:

The field related to crime in the entry book is not standardized and because of that, it demands more processing time. All data had to be reclassified, in order to standardize the entries.

In addition to that, in some of the occurrences two or more crimes were listed, which led to a reclassification of these methodological option, respecting two main criteria:

- Election of the most serious crime (considering the abstract sentence assigned to the crime).
- If any crime under the Disarmament Statute (unlawful possession, unlawful carrying, discharging, etc.) would show up alone or along with a less serious offense under the above criteria (e.g., threat, injury, verbal offense, theft, damage), a second crime reclassification was created.

The crimes under the Disarmament Statute, which appeared alone, were reclassified at first as 'Disarmament Statute' and subsequently with more detailed information. Because of faults made in the completion of the 'crime' field, an option was made as to group the offenses of possession and carrying of a weapon in the second reclassification.

Weapons:

The arms data were drawn from the Ballistics Center registry book, which uses information from the examinations requests, which is usually provided by the Civil Police and is checked by one of the Center's expert against the displayed artifact. For the most usual types and brands, there was

no need for major corrections, but in some cases, it was necessary to resort to the gun reports, a source of more detailed and reliable information.

Because of the diversity found in weapons of greater firepower, in this category, we decided to check the thoroughness of the submachine guns, rifles and carbines reports, which resulted in six visits to the files sector by the research team and the consultation of 339 reports that were also photographed for any additional checking, if necessary.

To classify the types of weapons, the R-105, Decree No. 3,665, of November 20, 2000 was used as reference. This decree was created by the Army and presents concepts and descriptions of controlled items including the concept of weapons and firearm replicas, as well as weapons of restricted and permitted use.

Firearm replicas: Because of the existing confusion, including in the security field, which implies the requisition of exams with misleading descriptions, we decided to unify a category that encompassed air weapons, toy weapons and replicas.

Handmade weapons: handmade and disguised arms were grouped in this category, the latter with only one input, bearing in mind that both are able to produce or aim to produce firing.

Industrial weapons: We used the R-105 concept of a weapon, gathering exclusively the weapons produced on an industrial scale, identified with brand or not or the ones classified as handcraft³¹.

Parts/Accessories: Gun parts such as grips, pipes, or accessories such as silencers, scopes, etc. are grouped in this category.

Other weapons: A few weapons that were involved in some episode of weapon seizure and therefore were recorded as such and are grouped into this category: Crossbow, Archery, etc.

Institutional weapons:

The focus of this research was the weapons used in crime, because that work was done to identify and exclude institutional arms from the security forces. This was done in two ways. First, we chose to exclude the occurrence along with all weapons linked to it whenever there were elements to identify police participation in the description of the occurrence. Secondly, whenever arms carrying serial numbers, coat of arms or any other indication that these were institutional weapons used by police officers were identified in the examination, these arms were also excluded from the sample.

Nevertheless, due to the inconsistency of the crime registry field, the high number of weapons exclusions in the consulted examination reports and the high number of similar weapons to those used by the police, we have reasons to believe that, especially in what concerns the Taurus .40-caliber pistols sample, there is probably a higher amount of institutional weapons than the identified ones, which probably caused an overrepresentation of weapons with these characteristics.

Calibers and use: The army is in charge of classifying restricted use weapons and calibers, based on R- 105. This classification is quite complex, even for law enforcement officers, but in a simplified way we could say that objective criteria are used as parameters for this classification: Identical or similar weapons to those employed by the military and security forces are classified as restricted use (and so is any type of automatic weapon that produces bursts of shots). In addition, a classification based on the caliber and on the output power of the ammunition is made in Joules. To make the report easy to understand, some choices were made, e.g. most .38 caliber hand weapons are permitted use, even though weapons that use .38 Super Auto (also classified as .38 + P) ammunition are restricted use. Because of this, we chose to classify all .38 weapons as permitted use.

The work of Dr. Domingos Tocchetto explains that the classification of calibers is done under 3 main metric systems, the American, expressed in hundredths of an inch (example: .22 E.32), the English, expressed in thousandths of an inch (.380 and .357 example) and the European expressed in millimeters (e.g. 7.62 mm and 9mm). The caliber of smooth bore weapons is generally expressed in a fourth system, namely gauge calculated by the number of spherical lead shots obtained from a British pound (453.8 g). A 12-gauge shotgun is an example of this fourth caliber system³².

Serial Numbers: In this research, in order to calculate the total number of weapons carrying serial numbers, we only considered weapons carrying full numbering or that had their serial numbers fully recovered by the Ballistics Center experts. Clear faults in the numbering or partly recovered ones were considered as “deleted numbering”.

Year of Manufacture:

One of the big differences between this research and the previously available studies, besides the sample of arms analyzed, is the identification of the weapons year of manufacture.

The weapons serial number is essential to identify them. Some companies worry about maintaining a serial number pattern that not only individualizes each gun, but also brings additional information to facilitate their identification.

32 (TOCCHETTO; 2013)

Among domestic companies, the best serial number pattern belongs to Forjas Taurus, which since the 80s adopts an alphanumeric pattern that includes the year and month of manufacture of weapons, as well as the caliber identification of³³ their pistols.

Based on the tables with information on the serial numbers pattern followed by Forjas Taurus, it was possible to identify the year of manufacture of 3,131 weapons (1,537 revolvers and 1,594 pistols), which data was presented in this report.

Concerning revolvers, even before the adoption of the alphanumeric standard, a list was organized by caliber with the serial numbers related to each year of manufacture. Because of this, it was possible to identify revolvers that were manufactured in the 1950s.

Nationality: There are many arms factories in the world that license part of their products, so that other factories can produce them. For standardization purposes, the team decided to consider the country of manufacture as the host country of the identified manufacturer.

³³ For their pistols, the serial number is composed of three letters and five numbers. The first letter identifies the caliber; the second shows the year and the third, the month of manufacture.

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