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**ITALIAN SMALL ARMS EXPORTS: BETWEEN
INCENTIVES AND INTERNATIONAL SANCTIONS**

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Italian small arms exports: between incentives and international sanctions

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Abstract

This paper empirically investigates the main drivers of Italian Small Arms and Light Weapons (SALW) exports from 1990 to 2017. Italy is a major player in the international trade of SALW being the second largest exporter of these weapons, and the largest if considering only sporting SALW. We apply data on exports from Italy to 143 countries using a gravity framework. Findings highlight that SALW trade appears to be complementary with overall military spending. In fact, Italian exports increase towards countries that are increasing military spending. Specifically, an increase of 1% in the level of the importing country’s military expenditure causes an increase of 0.6% in Italian exports to that country. In addition, results show that international embargoes reduce SALW exports. In the presence of an arms embargo, exports to the target country decrease by 64%. However, our findings also indicate a negative correlation between exports and torture. In other words, SALW demand is negatively associated with violations of human rights.

Keywords: Small Arms, Arms trade, Gravity model

Jel Codes: F14; F51; H56

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1 Introduction

This paper focuses on Italian Small Arms and Light Weapons (SALWs) exports from 1990 to 2017. SALWs are an extensive category of weapons, involving small arms which are designed for personal use and light weapons which are planned for use by several persons serving as a crew”² (UN, 1997). The study of SALW contributes to a wide range of topics. In fact, SALW were used extensively during the wave of civil conflicts that broke out after the end of the Soviet Union (Krause and Mutimer, 2005; Benson and Ramsay, 2016). Furthermore, SALW have been linked with human rights violations and civil population repression (de Soysa, 2010). SALW are also associated with crime, homicide and suicide by firearms (Duggan, 2001; Cook and Ludwig, 2000; Siegel et al., 2013; Lang, 2013; Andrés and Hempstead, 2011)³. More generally, the spread of SALW contributes to long-term securitization of politics and society. They increase the perception of personal insecurity which in turn reinforces the need to acquire weapons for personal self-protection.

The growing awareness of the negative consequences of SALW’s proliferation has led many NGOs and civil society to demand tighter controls on trade in these weapons. Several high-profile campaigns, notably the Control Arms campaign jointly run by Oxfam, Amnesty International and International Action Network on Small Arms (IANSA), have increased public understanding of the link between SALW proliferation and the deterioration of democratic conditions in the importing countries. Although many governments have claimed to be aware of these issues, the question of whether countries actually control the end-users of the SALW they are exporting to is, however, still open. There are only a few norms regulating the trade, amongst which the most popular are multilateral arms embargoes.

This paper investigates Italian SALW exports in order to verify the drivers of such flows and whether Italy appears to comply with international norms and standards on arms exports control. In fact, Italy is a leader in the international trade of SALW, being

² Full definition states “Small arms include pistols, rifles, carbines and light machine guns; light weapons include heavy machine guns, grenade launchers, portable anti-aircraft and anti-tank systems, and mortars of less than 100 mm caliber. This category of weaponry also includes ammunition and explosives: cartridges, shells and missiles, anti-personnel and anti-tank grenades, landmines and other explosives” (UN, 1997, pp. 11–12).

³ About 200,000-270,000 people die annually from homicide and suicide using small arms in developed countries (Small Arms Survey, 2007).

the second largest world exporter of total SALW after the US and the largest exporter of sporting SALW. Needless to say, economic incentives from exports may be balanced by the need to respect international restrictions.

Specifically, our goal is twofold. First, we investigate the economic correlates of SALW trade. Then we question whether multilateral embargoes are effective in reducing Italian SALW exports. Arms embargoes are the most popular form of sanction, and they aim at preventing the flow of weapons to war zones or autocratic regimes. Since the end of the Cold War, this type of sanction has been frequently used by the international community as a response to civil conflicts and humanitarian crises. However, despite their popularity, arms embargoes are often deemed to fail. The debate over whether the enforcing countries (sender countries) should limit their import of arms to the sanctioned country (target country) is still ongoing. Non-compliant exporters can ignore the prohibitions and provide weapons to the target country. Previous empirical studies found evidence of compliance with arms embargoes (Martinez-Zarzoso and Johannsen, 2017; Schulze et al., 2017; Baronchelli et al., 2021).

Second, we also investigate the presence of sanction-busting mechanisms which are practices that overcome the prohibitions (Early, 2015; Caruso, 2003; and Van Bergeijk, 1995) and bring about their failure (Boucher and Holt, 2009; Tierney, 2005). In the case of arms embargoes, through these practices, non-compliant exporters provide the embargoed weapons to the target country. In this paper we investigate the existence of two sanction-busting mechanisms. On the one hand, we initially test if countries with neighbours under an embargo increase their SALW imports. SALW can be easily moved through porous borders and thus diverted to sanctioned countries from neighbouring countries (Erickson, 2013).

On the other hand, we also investigate if multilateral arms embargoes are effective in reducing Italian sporting SALW imports to target countries. In fact, according to many observers, embargoes could be avoided by dispatching SALW as “sporting arms” (Parker, 2009; Small Arms Survey, 2004). This is likely because many embargoes do not explicitly include or exclude this type of weapon. The EU embargo on China, for instance, uses the generic word “arms” when detailing the sanctioned categories. Therefore, several EU members, such as Austria, Finland, Germany, Italy, and Spain, interpret this as an indirect concession to export arms designed for sporting purposes

to China (Small Arms Survey, 2004, Ch. 4).⁴ Moreover, the EU Embargo targeting Belarus explicitly allows the export of sporting SALW.⁵ Therefore, we would expect an increase of sporting SALW in the target country or in the neighbouring countries as evidence of sanction-busting.

To fulfil our goal, we use a gravity framework on a panel data, reporting exports from Italy to 143 polities from 1990-2017. First, gravity variables highlight that SALW trade appears to be complementary with overall military spending. In fact, Italian exports increase towards countries that increase military spending. Specifically, an increase of 1% in the level of the importing country's military expenditure causes an increase of 0.6% in Italian exports to that country. In addition, results indicate that international embargoes reduce SALW exports. In the presence of an arms embargo, exports to the sanctioned country decrease by 64%. Furthermore, we found no evidence that sanction-busting mechanisms may be at play. First, exports of sporting SALW decrease by 52% when there is an arms embargo in the target country. This finding highlights that Italy seems to have a comprehensive implementation of arms embargoes including also sporting weapons. Second, there is no evidence of arms diversion toward neighbouring countries. Nevertheless, we also found a negative association between SALW exports and the practice of torture in the destination country. This means that if importers do not violate human rights the Italian exports of SALW appear to be lower.

The paper is organised as follows. Section 2 describes the previous literature. Section 3 shows some stylised facts about international trade in SALW, focusing on the role played by Italy. This section describes the evolution and main recipients of Italian export of these weapons during the period 1991-2017. Section four introduces the data and methodology used, while section 5 sets out the main results. Finally, section 6 concludes the paper.

2 Literature

This paper is grounded on literature about international trade in Major Conventional Weapons (MCW) and Small Arms and Light Weapons (SALW). The literature points out

⁴ The UK issued a formal communication explaining that its arms exports to China are indeed sporting arms (Small Arms Survey, 2004, Ch. 4, p.128).

⁵ <https://www.consilium.europa.eu/en/press/press-releases/2020/02/17/belarus-eu-prolongs-arms-embargo-and-sanctions-against-4-individuals-for-one-year/>

that the arms trade cannot be fully explained by economic incentives but largely by political, military and other non-economic factors. In fact, on the demand side, international security of states appears to be the main motivation for arms imports.

On the supply side, motivation for exporting arms is mainly linked to economic incentives. Arms exports, especially in countries where there is a large arms industry, impact on employment, the balance of trade, and government income through taxation. However, economic interests must be carefully balanced with other non-economic factors. Arms cannot be simply sold in any market where there is excess demand. In addition to economic incentives, arms can also be exported to support the security requirements of friends and allies, and to reinforce security links between allied countries.

Using data on the trade in MCW from 1950 to 2007, Akerman and Seim (2014) show that political similarity was a major factor in determining patterns of trade during the Cold War, but it lost its influence after this period. The authors explain this finding, arguing that when the world was divided into two blocks, countries felt safer in selling weapons to politically closer partners. Martinez-Zarzoso and Johannsena (2019) investigate the trade in MCW from 1950 to 2007, combining traditional economic factors with political and security determinants. Results indicate that, while political and security factors do affect the probability of two countries trading arms (extensive margins), they don't impact on the volume of trade (intensive margins). Furthermore, political factors are less relevant after the end of the Cold War.

Another important factor determining the supply side of the arms trade is the exporter's dependence on raw materials. Bove et al. (2018) claim that oil dependence is an important determinant of the volume of trade in MCW. Oil-dependent economies are more willing to export arms to oil-rich countries even in the absence of a direct bilateral oil-for-weapons exchange. Oil dependent exporters aim to preserve the political stability of the recipient and, in return, to stabilise the oil trade. Yang (2020) also points out that the presence of raw materials in the importing country is an important driver of Chinese exports of MCW during the period 2000-2014.

Domestic political rents may also impact on the supply of arms. Imports of both MCW and SALW are associated with the outbreak of conflicts (Pamp et al. 2018) and their intensity (Mehrl and Thurner, 2020), as well as with violations of human rights (De Soysa et al., 2010). Therefore, as public opinion in many countries becomes more

sensitive to the negative effects of the arms trade, ethical arms trade policies may be rewarded by the electorate. Using data from the top 20 major exporters during the period 1975–2004, Comola (2012) finds that incumbents serving the last year of their term and potentially running for re-election negatively influence arms exports. Since the end of the Cold War, many Western governments have established high normative standards to be key determinants of their arms exports. According to these standards, states violating human rights, repressing the civil population and/or at war should not be eligible destinations. However, the empirical evidence on whether these standards are respected is mixed.

Analysing the export decisions of 4 major suppliers of MCW (France, Germany, the UK and the US) over the period 1992–2004, Perkins and Neumayer (2002) show that these countries did not exclude autocratic countries or those abusing human rights from their arms trade. Studying US exports of MCW to developing countries over the period 1981–2001, Blanton (2005) finds that democratic conditions in the importer positively impact on both the likelihood of receiving the transfer of arms as well as on its volume. Focusing on German exports of MCW over the period 1953–2013, Schultze et al. (2017) show that despite the existence of norms promoting ethical arms trade policies, Germany still exports to countries with extensive human rights violations or those embroiled in military conflicts and civil wars. However, the authors also find that Germany fully complied with multilateral arms embargoes. Interestingly, they explained this finding because of the ambiguity of some norms and the opacity of the German domestic decision-making processes.

3 The Italian arms industry and its exports

Italy is a major producer of small arms. According to the data drawn from the AIDA databank, in 2019 there were 85 active small arms producers in Italy⁶. Most firms are SMEs. In fact, only 9% of these firms have more than 100 employees while the great majority of them (about 67%) employ less than 25 people. In spite of its minimal impact on the Italian economy, the Italian arms industry is a leading player in the international

⁶ On military industry in Italy see Caruso (2019), Caruso and Locatelli (2013) and Caruso and Addesa (2012).

trade of SALW⁷. Table 1 illustrates the top ten exporting countries of SALW over three periods: 1991-2000, 2001-2010, 2011-2017. The leading player in the trade over all the periods is the US, whose exports account for about half of world trade in SALW. Italy is the second highest exporter; however, its share of the total is considerably lower than the US, with Italian exports of less than 10%. Another important exporting country is Germany.

These figures, however, are different when distinguishing between the trade in military and sporting SALW. Table 2 and 3 report the top ten world exporters of military and sporting SALW, respectively. As far as military SALW exports are concerned, the US plays the dominant role. US exports of these weapons account for about half of the total exports. The US share, nonetheless, has decreased since the 2000s. There have also been changes in the other relevant players in the trade. Over the period 1991-2010, France was the second world exporter of military SALW, but the volume of its exports decreased significantly during the period 2011-2017. In this period, the Republic of Korea (ROK) become the second world exporter. Italy is also a leading exporter of military SALW and its share in the trade is about 5%. However, when observing the figures on international trade in sporting SALW over the period 1991-2017, Italy is in fact the top exporter of these arms. The Italian export share of the total of sporting SALW is more than 20%, reaching a peak of 28% during the period 2001-2010. The US is also a major exporter but its exports account for about 10% of the total trade of sporting SALW, even though its share increased to 14% during the period 2011-2017. Another important exporter of sporting SALW is Brazil, despite its share on total exports decreasing over the years.

Table 1. Top 10 exporters of SALW

1991-2000			2001-2010			2011-2017		
	<i>US\$</i>	%		<i>US\$</i>	%		<i>US\$</i>	%
US	35,120	56	US	29,970	42	US	30,570	45
Italy	3,776	6	Italy	5,447	8	Italy	4,146	6
Germany	2,601	4	France	4,065	6	Germany	3,151	5
France	2,389	4	Germany	3,405	5	Korea; South	2,765	4
Russia	1,593	3	Norway	3,278	5	Norway	2,306	3
Japan	1,475	2	Canada	2,267	3	Russia	2,303	3

⁷ For a detailed analysis about Italian exports and Italy's comparative advantage and position in the trade network see among others Benedictis (2005), Bugamelli et al. (2018), Cerulli et al. (2021), De Benedictis and Tajoli (2016).

Switzerland	1,348	2	Switzerland	2,024	3	Brazil	2,268	3
Brazil	1,310	2	Brazil	1,964	3	Canada	1,680	2
UK	1,152	2	Korea; South	1,507	2	Israel	1,626	2
Belgium	959	2	Israel	1,320	2	Switzerland	1,398	2

Source: own elaborations from NISAT (Norwegian Initiative on Small Arms Transfers); Data are expressed in millions 2010 constant dollars; Ratio are calculated on total world trade in SALW

Table 2. Top 10 exporters of military SALW

	1991-2000			2001-2010			2011-2017	
	US\$	%		US\$	%		US\$	%
US	34,504	61	US	29,073	47	US	33,274	49
France	2,327	4	France	4,002	7	ROK	3,003	4
Italy	2,279	4	Norway	3,276	5	Italy	2,820	4
Germany	2,150	4	Italy	2,804	5	Germany	2,805	4
Russia	1,445	3	Germany	2,580	4	Norway	2,734	4
Switzerland	1,314	2	Canada	2,086	3	Russia	2,137	3
UK	948	2	Switzerland	1,994	3	Israel	1,810	3
Israel	893	2	ROK	1,504	2	Switzerland	1,709	2
Canada	817	1	Israel	1,313	2	Canada	1,698	2

Source: own elaborations from NISAT; Data are expressed in millions 2010 constant dollars; Ratio are calculated on total world trade in military SALW

Table 3. Top 10 exporters of sporting SALW

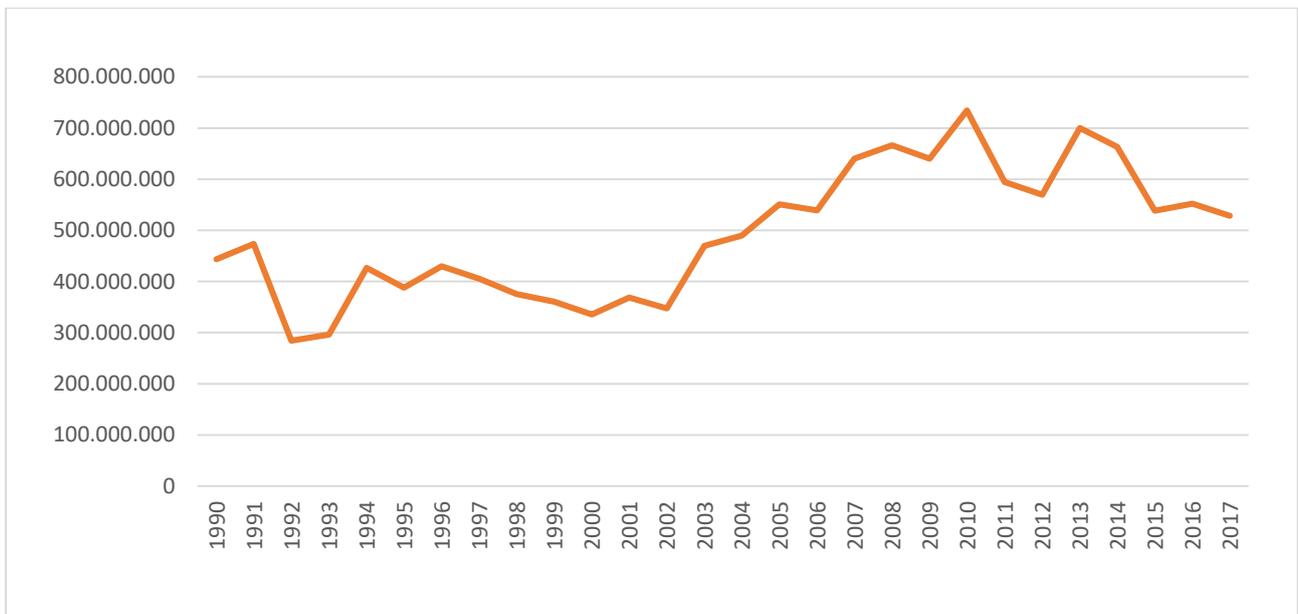
	1991-2000			2001-2010			2011-2017	
	US\$	%		US\$	%		US\$	%
Italy	1,497	25	Italy	2,643	28	Italy	1,820	22
Brazil	885	15	Brazil	1,023	11	US	1,121	14
Japan	667	11	US	900	10	Brazil	850	10
US	620	10	Germany	825	9	Turkey	741	9
Germany	451	7	Japan	555	6	Germany	685	8
Belgium	302	5	Belgium	491	5	Japan	360	4
Portugal	243	4	Turkey	422	5	Belgium	338	4
UK	204	3	Portugal	340	4	Finland	323	4
China	169	3	Russia	337	4	Canada	249	3
Russia	147	2	UK	291	3	Russia	226	3

Source: own elaborations from NISAT; Data are expressed in millions 2010 constant dollars; Ratio are calculated on total world trade in sporting SALW

Figures 1-3 show the evolution of Italian exports of total SALW, military and sporting SALW over the period 1990-2017. During the 1990s Italian exports decreased, to rise

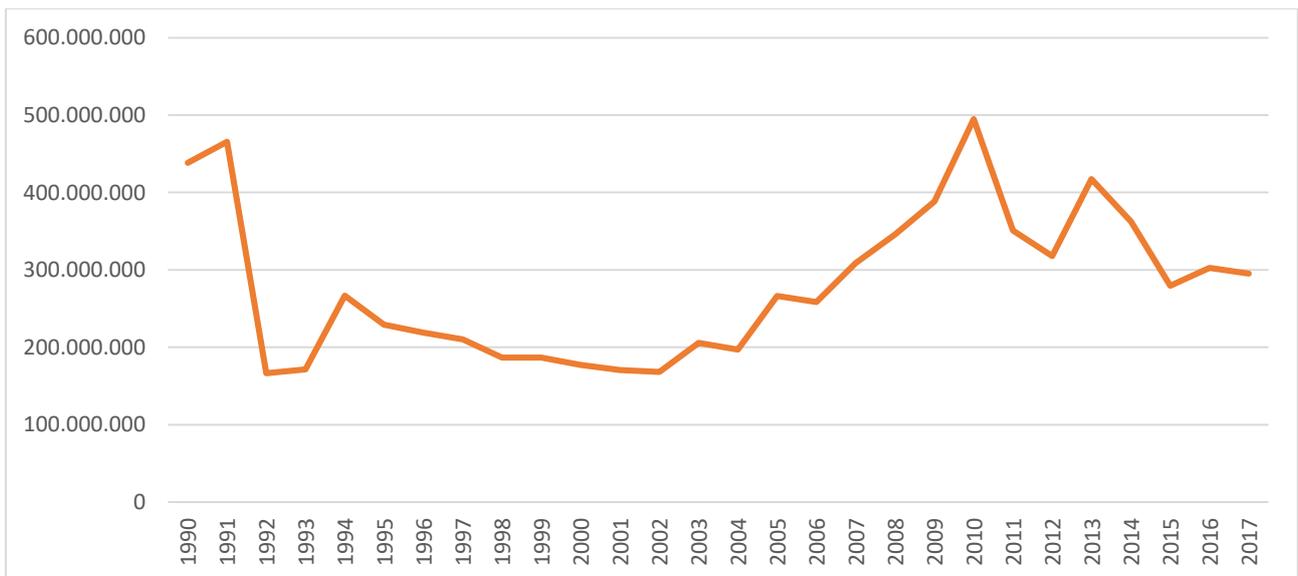
again in the 2000s. The decline in Italian exports was steeper for military SALW. Furthermore, exports of military SALW increased constantly until 2010, decreasing from that point on.

Figure 1. Evolution of Italian exports 1990-2017



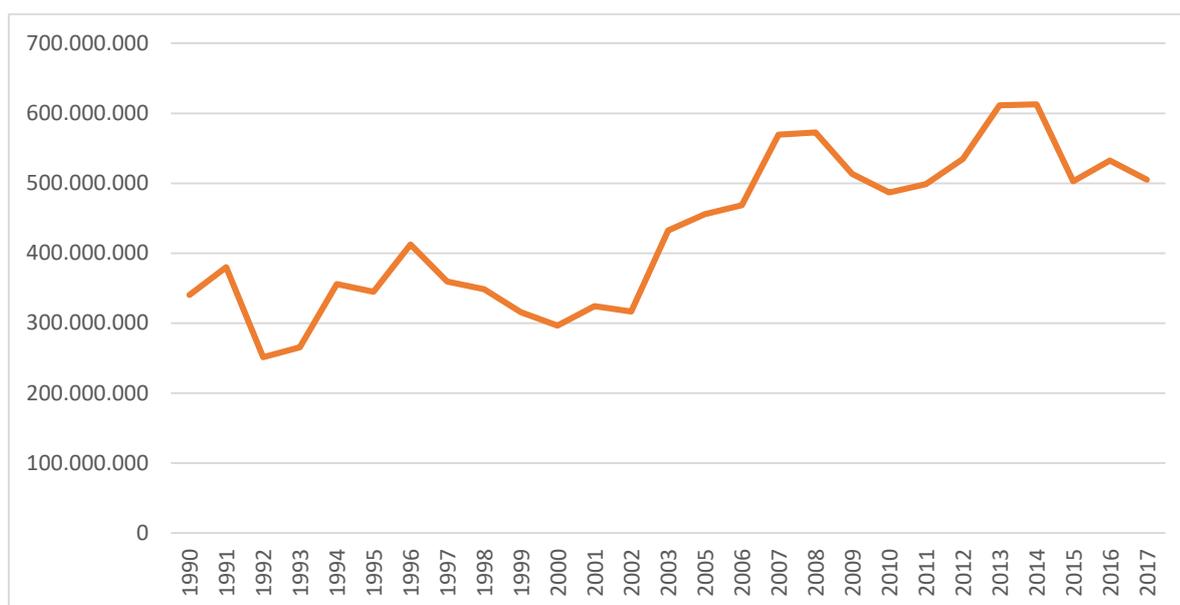
Source: own elaborations from NISAT

Figure 2. Evolution of Italian exports (military SALW) 1990-2017



Source: own elaborations from NISAT

Figure 3. Evolution of Italian, (Sporting SALW) 1990-2017



Source: own elaborations from NISAT

Finally, tables 4-6 report the most important recipients of Italian SALW over the three periods: 1991-2000, 2001-2010, 2011-2017. The US is the main importer of Italian SALW. The share of US imports on total Italian exports has constantly increased over the decades reaching 39% in the period 2011-2017. The US is Italy's principal partner for trade in both military and sporting SALW. However, the share of US imports on total Italian exports is larger for sporting SALW. Almost half of Italian trade in sporting weapons is directed towards the US market.

Among the other significant destinations of Italian exports, there are also many European countries such as Germany, France, Spain, Greece and Norway. France, in particular, is a relevant destination for Italian exports of SALW, accounting for about 9% of Italian exports. It is noteworthy, however, that there are also a few non-European countries among Italy's trade partners. These countries are mainly recipients of Italian military SALW.

Table 4. Top 10 partners of Italy

	1991-2000		2001-2010		2011-2017			
	US\$	%	US\$	%	US\$	%		
US	1,104	29	US	1,744	32	US	1,606	39
France	345	9	UK	589	11	UK	323	8
Germany	294	8	France	440	8	France	312	8

UK	263	7	Spain	312	6	Germany	199	5
Spain	189	5	Germany	224	4	Spain	151	4
Turkey	144	4	Russia	166	3	Russia	137	3
Greece	130	3	Malaysia	150	3	Turkey	112	3
Portugal	124	3	Greece	137	3	Canada	86	2
Belgium	82	2	Turkey	109	2	Belgium	68	2
Japan	81	2	Belgium	82	2	Australia	61	1

Source: own elaborations from NISAT; Data are expressed in millions 2010 constant dollars; Ratio are calculated on total Italian exports in SALW

Table 5. Top 10 partners of Italy (military SALW)

	1991-2000		2001-2010		2011-2017			
	US\$	%	US\$	%	US\$	%		
US	440	19	US	492	18	US	735	32
UK	204	9	UK	363	13	UK	186	8
France	196	9	France	211	8	France	172	7
Germany	190	8	Spain	166	6	Germany	139	6
Turkey	136	6	Malaysia	148	5	Spain	116	5
Spain	99	4	Germany	135	5	Turkey	90	4
Belgium	72	3	Turkey	100	4	Belgium	62	3
Egypt	66	3	Belgium	69	2	UAE	52	2
Portugal	58	3	Greece	68	2	Algeria	39	2
Greece	58	3	Chile	50	2	Greece	31	1

Source: own elaborations from NISAT; Data are expressed in millions 2010 constant dollars; Ratio are calculated on total Italian exports in military SALW

Table 6. Top 10 partners of Italy (sporting SALW)

	1991-2000		2001-2010		2011-2017			
	US\$	%	US\$	%	US\$	%		
US	664	44	US	1,251	47	US	871	48
France	149	10	France	229	9	France	140	8
Germany	104	7	UK	226	9	UK	137	8
Spain	91	6	Spain	146	6	Russia	108	6
Greece	72	5	Russia	124	5	Canada	64	4
Portugal	66	4	Germany	89	3	Germany	60	3
UK	59	4	Greece	69	3	Australia	39	2
Sweden	32	2	Canada	37	1	Spain	35	2
Japan	31	2	Norway	35	1	Sweden	22	1
Australia	22	1	Australia	28	1	Turkey	22	1

Source: own elaborations from NISAT; Data are expressed in millions 2010 constant dollars; Ratio are calculated on total Italian exports in sporting SALW

4 Data and the econometric model

In what follows we analyse the drivers of Italian SALW exports. Our dependent variable is the value of Italian exports of SALW to 143 destinations over the period 1990 to 2017. The data are drawn from the NISAT (Norwegian Initiative on Small Arms Transfers) which record bilateral transfers of SALW among 250 countries and territories based on different sources⁸. Exports are deflated at constant 2010 US\$ by using the CPI deflator.⁹

Data about the independent variables are collected from several sources (see table 7 for descriptive statistics). Data on GDP per capita (constant 2010 US\$) and the level of military expenditure in current US\$ are from the World Bank. Data on military expenditure are then deflated at constant 2010 US\$. Information on multilateral arms embargoes is taken from SIPRI which lists arms embargoes imposed by the UN, the EU and other groups of countries. Based on SIPRI, we first create a dummy variable, reporting whether the destination country is the target of an arms embargo in a given year. We then construct two other dummies including only embargoes enforced either by the UN or by the EU. Finally, we also generate three variables showing the number of the importer's neighbouring countries which are subjected to an arms embargo (total, EU, UN). We collect data on neighbouring countries from COW Direct Contiguity Data, Version 3.20.

Information on civil conflict is taken from the Center for Systemic Peace (CSP), Major Episodes of Political Violence, 1946-2018 (Marshall, 2020). Here, armed conflict is described as “the systematic and sustained use of lethal violence by organised groups that result in at least 500 directly-related deaths over the course of the episode” (Marshall, 2020, p.1). Drawing from CPS, we construct a dummy variable reporting whether a state underwent civil violence and/or a civil war in a given year. We also generate a dummy showing the number of the importer's neighbouring countries undergoing civil unrest.

In order to consider the status of the importer country with respect to human rights, we employ a variable drawn from the set of V-dem indicators which records whether there is freedom from torture in the country. Torture is defined as “*the purposeful inflicting of extreme pain, whether mental or physical, with an aim to extract*

⁸ Further details are provided in Baronchelli et al. (2021)

⁹ The formula used to deflate SALW transfers is $SALW_{2010} = (SALW_t * CPI_{2010}) / CPI_t$. CPI is drawn from <http://www.multpl.com/cpi/table>

information or intimidate victims, who are in a state of incarceration, practised by state officials or other agents of the state (e.g., police, security forces, prison guards, and paramilitary groups)” (Coppedge et al, 2021, p. 173). This variable provides country–year point estimates from the V-Dem measurement model (see Pemstein et al. 2019) and its scale is comparable to a normal ("Z") score that is between -5 and 5, with 0 approximately representing the mean for all country–years in the sample. Low values indicate that torture is systematically used and is encouraged and accepted by the leaders of government. Instead, higher values indicate that torture is not in existence in the country. In our dataset, values for this variable range from -2.8 to 3.5. Over this period (1990-2017), Germany, for instance, has a score ranging from 3.365 to 2.559. Conversely, the score of Saudi Arabia ranges from 0.99 to 1.234. Bilateral variables are gathered from the CEPII database (Head et al., 2010).

Table 7. Descriptive statistics

	N	Mean	Std. Dev.	min	max
SALW _{ij} (ln)	3207	12.534	2.752	-.061	19.452
Embargo _j	3207	.048	.214	0	1
Neighbours embargo _j	3207	.436	.792	0	5
EU embargo _j	3207	.041	.199	0	1
Neighbours EU embargo _j	3207	.38	.712	0	5
UN embargo _j	3207	.02	.139	0	1
Neighbours UN embargo _j	3207	.208	.481	0	3
GDP per capita _j (ln)	3032	8.894	1.437	5.157	11.626
Milex _j (ln)	2707	21.046	2.106	14.722	27.274
Civil conflict _j	3207	.053	.224	0	1
Neighbours civil conflict _j	3207	.251	.534	0	3
Torture _j	2960	1.243	1.436	-2.848	3.509
Common currency _{ij}	3187	.087	.282	0	1
RTAs _{ij}	2953	.36	.48	0	1

To analyse Italian exports of SALW to various destinations, we use a gravity approach. This model dates back to Isard (1954) and Tinbergen (1962) and its use is now standard practice in literature to estimate the effect of several economic, cultural and political factors on trade (Head and Mayer, 2014; Benedictis and Taglioni, 2011; Salvatici, 2013). Formally, our gravity equation has the following form:

$$\begin{aligned}
\ln SALW_{ijt} = & \beta_0 + \beta_1 EMB_{jt} + \beta_2 Neighbor's EMB_{jt} + \beta_3 GDP_{jt} + \beta_4 Milex_{jt} + \beta_5 Conflict_{jt} \\
& + \beta_6 Neighbor's conflict_{jt} + \beta_7 Torture_{jt} + \beta_8 G_{ijt} + \beta_9 MRTs_{ijt} + \delta_j + \tau_t \\
& + \varepsilon_{ijt}
\end{aligned}$$

Here $SALW_{ijt}$ denotes bilateral exports of SALW from Italy (country i) to a trading partner (country j) at time point t . Bilateral exports of SALW can be total exports or either military or sporting SALW.

GDP_{jt} refers to the importer's GDP per capita (constant 2010US\$), which traditionally proxies for the importer's economic size. $Milex_{jt}$ is the level of military expenditure controlling for likely complementarity. $Conflict_{jt}$ indicates whether there is a civil conflict in the importing country. As noted above, civil and small-scale conflicts are often fought with the use of small weapons and, thus, they are a key factor in explaining the demand for SALW. $Neighbour's conflict_{jt}$ reports the number of the importer's neighbouring countries fighting civil wars, which we use as further control on SALW demands. EMB_{jt} is a dummy variable reporting whether country j is the target of an arms embargo. As noted in the introduction, arms embargoes are the most popular form of sanctions, and they are often enforced to reduce arms imports in countries where human rights are not respected or an armed conflict has taken place.

$Neighbour's EMB_{jt}$ shows the number of the importer's neighbours under embargo. This variable indirectly controls for the occurrence of arms diversion from neighbouring countries to the target. As previously mentioned, arms diversion is one of those sanction-busting mechanisms that can bring about the failure of an embargo (Vines, 2005; Rogers, 1996; Dreyfus and Marsh; 2006). In the case of arms diversions, weapons are illegally trafficked through borders from neighbouring countries to an embargoed state. Finally, $Torture_{jt}$ indicates if torture is systematically practiced in the country. G_{ijt} is a vector of time-variant gravity variables which includes two dummies, indicating if i and j have a common currency or have regional trade agreements (RTAs). δ_j are destination fixed effects controlling for time-invariant bilateral factors, influencing arms trade flows. τ_t represents year-fixed effects and ε_{ijt} the error term. The vector

$MRT_{s_{ijt}}$ includes multilateral resistance terms (MRTs) based on bilateral factors.¹⁰ To control for these terms, we follow Baier and Bergstrand (2009), who derive theory-consistent MRTs from a first-order Taylor series expansion of the Anderson and Van Wincoop (2003) gravity equation. This approach is frequently used in literature as in Berger et al. (2013), Agostino and Trivieri (2014), Atalay et al. (2019). Following these studies, MRTs are calculated as follows:

$$MRT_{s_{ijt}} = \sum_{k=1}^{N_k} (\theta_{kt} x_{ik}) + \sum_{m=1}^{N_m} (\theta_{mt} x_{jm}) \sum_{k=1}^{N_k} \sum_{m=1}^{N_m} (\theta_{kt} \theta_{mt} x_{km}) \quad (2)$$

where the indices k and m are the commercial partners of exporter i and importer j , respectively; x_{ij} represents the observed controls for bilateral trade costs; θ_{kt} and θ_{mt} indicate the share of exporter and importer GDP out of worldwide GDP (with subscript w standing for world) i.e., respectively, $\theta_{kt} = \frac{GDP_k}{GDP_w}$ and $\theta_{mt} = \frac{GDP_m}{GDP_w}$. GDP weights are used in several papers (Andersson, 2016; Crivelli and Gröschl, 2016; Ramasamy and Yeung, 2019; Agarwal and Wang, 2018; Agostino and Trivieri, 2014).

5 Results

5.1 Baseline Results

The baseline results are reported in table 8 below. Results show evidence of complementarity between Italian exports and the importer's military expenditure. Specifically, an increase of 1% in the level of the importing country's military expenditure is associated with an increase of 0.6% in Italian exports to that country. Interestingly, we found no evidence of a correlation between trade in SALW and the importer's GDP. This finding contradicts the traditional empirical evidence of the gravity model, indicating that the trade flows between two countries is positively associated with their economic dimensions. If we look at the variables on international sanctions, findings point out a negative association between the imposition of a

¹⁰ Namely, MR indexes are calculated using the weighted distance between capitals, contiguity, common language, colonial heritage, common religion, common currency, regional trade agreement, and differences in democracy between exporter and importer.

multilateral arms embargo and Italian exports to the target country. In the presence of an embargo, exports to the target country decrease by 64%. There is, however, a difference in the magnitude of the coefficient when we analyse EU or UN embargoes separately. In the first case, the reduction in Italian exports to the target is 60%, while in the latter the decrease is almost 80%. This suggests that UN sanctions have a greater impact on Italian exports than on those from the EU. A possible explanation may be the close alliance between Italy and the US. In light of this alliance and the long-standing cooperation in military industry between the two countries, Italian exporting firms may be very responsive to decisions that concern American interests.

We found no evidence of an association between Italian exports and the presence of a civil conflict in the importing country. Finally, we find that SALW exports decrease as the importing country practises less torture. In other words, as the importer country increases its respect for human rights, it also decreases the demand of Italian SALW.

Table 8. Baseline results

	(1)	(2)	(3)	(4)	(5)	(6)
Embargo jt	-1.028***	-1.035***				
	(0.378)	(0.373)				
Neighbours embargo jt	-0.036	-0.037				
	(0.117)	(0.118)				
EU embargo jt			-0.929**	-0.928**		
			(0.403)	(0.392)		
Neighbours EU embargo j			-0.053	-0.055		
			(0.122)	(0.122)		
UN embargo jt					-1.562***	-1.587***
					(0.342)	(0.346)
Neighbours UN embargo j					-0.291	-0.301
					(0.191)	(0.195)
GDP per capita jt	0.359	0.322	0.367	0.332	0.305	0.265
	(0.448)	(0.444)	(0.448)	(0.444)	(0.435)	(0.434)
Milex jt	0.644***	0.641***	0.642***	0.637***	0.608***	0.599***
	(0.172)	(0.170)	(0.175)	(0.174)	(0.175)	(0.174)

Civil conflict jt	0.268 (0.237)	0.262 (0.239)	0.253 (0.237)	0.246 (0.238)	0.276 (0.241)	0.270 (0.242)
Neighbours civil conflict jt	-0.197 (0.127)	-0.206 (0.125)	-0.209 (0.128)	-0.218* (0.126)	-0.187 (0.124)	-0.194 (0.123)
Torture jt	-0.367*** (0.103)	-0.373*** (0.103)	-0.345*** (0.110)	-0.351*** (0.110)	-0.358*** (0.101)	-0.364*** (0.100)
Constant	-3.569 (3.095)	-3.134 (4.393)	-3.616 (3.146)	-3.323 (4.397)	-2.393 (3.036)	-2.472 (4.360)
Importer FE	YES	yes	yes	yes	yes	yes
Year FE	YES	yes	yes	yes	yes	yes
MRT	no	yes	no	yes	no	yes
Gravity controls	yes	yes	yes	yes	yes	yes
Observations	2,441	2,441	2,441	2,441	2,441	2,441
Number of pairs	144	144	144	144	144	144
R2 within	0.105	0.109	0.103	0.106	0.109	0.113
R2 overall	0.508	0.075	0.511	0.075	0.510	0.078
R2 betweenness	0.612	0.143	0.613	0.143	0.615	0.135

Notes: robust standard errors in parentheses are clustered at the importer level. Gravity controls are time-variant and they include common currency and RTAs (see table 7). *** p<0.01, ** p<0.05, * p<0.1

5.2 Sporting and Military SALW

To deepen our analysis on Italian exports of SALW, we replicate the baseline estimates, separating military and sporting SALW. This distinction is relevant. Sporting weapons are usually destined for hunting and other sports. However, there is evidence that these weapons may be diverted to military use. Under the label of sporting SALW, arms can be sent to countries involved in an armed conflict. Furthermore, exports control regimes as well as arms embargoes often exclude sporting SALW from their regulations. Therefore, different patterns may be at play when separately analysing the trade in military and sporting SALW. However, results show very little difference in the trade of these two types of weapons.

The imposition of an embargo on the importing country is associated with the reduction of Italian exports both of military and sporting SALW to that country. This figure seems to suggest that Italian exporters also respect arms embargoes when

trading sporting SALW. There are, however, differences in the magnitude of the coefficients between exports of sporting SALW and military SALW. In the presence of an embargo, the reduction of Italian exports of sporting SALW is 52%, while exports of military SALW decrease by 65%. These differences deepen when analysing UN embargoes. Whereas the imposition of a UN embargo causes a reduction of 83% in the volume of military SALW exports towards the sanctioned country, the decline in sporting SALW exports is 59%. Close cooperation between Italy and the US in the military industry may explain this result. On the other hand, the estimated impact of an EU embargo on SALW exports is similar for both military and sporting SALW.

As above, results show complementarity between military expenditure of the importer country and Italian exports of both military and sporting SALW. An increase of 1% in the importer's military expenditure is associated with an increase of 0.4% in the export of sporting SALW and of 0.6% in the export of military SALW. This result indicates that there is also a positive association between sporting SALW and the level of military expenditure in the importing country.

Finally, there is a negative association between military SALW and the practice of torture in the importing country. However, the coefficient of this variable is not significant when analysing sporting SALW.

Table 9. Sporting SALW

	(1)	(2)	(3)	(4)	(5)	(6)
Embargo jt	-0.698***	-0.733***				
	(0.242)	(0.238)				
Neighbours embargo jt	-0.097	-0.096				
	(0.105)	(0.105)				
EU embargo jt			-0.770***	-0.804***		
			(0.250)	(0.248)		
Neighbours EU embargo j			-0.059	-0.057		
			(0.106)	(0.105)		
UN embargo jt					-0.865***	-0.898***
					(0.248)	(0.244)
Neighbours UN embargo j					-0.487***	-0.464**

					(0.173)	(0.178)
GDP per capita jt	0.806	0.756	0.784	0.735	0.802	0.751
	(0.507)	(0.498)	(0.507)	(0.498)	(0.498)	(0.491)
Milex jt	0.408***	0.452***	0.408***	0.452***	0.361**	0.395***
	(0.145)	(0.146)	(0.145)	(0.146)	(0.148)	(0.151)
Civil conflict jt	0.322	0.313	0.325	0.315	0.341	0.333
	(0.274)	(0.277)	(0.273)	(0.275)	(0.272)	(0.277)
Neighbours civil conflict jt	-0.085	-0.106	-0.084	-0.105	-0.064	-0.084
	(0.143)	(0.138)	(0.144)	(0.139)	(0.143)	(0.140)
Torture jt	0.039	0.026	0.044	0.031	0.053	0.041
	(0.103)	(0.102)	(0.103)	(0.102)	(0.104)	(0.103)
Constant	-6.837	-3.089	-6.662	-2.966	-5.822	-3.182
	(4.456)	(6.539)	(4.475)	(6.571)	(4.204)	(6.363)

Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
MRT	no	YES	no	YES	no	YES
Gravity controls	YES	YES	YES	YES	YES	YES

Observations	1,996	1,996	1,996	1,996	1,996	1,996
Number of pairs	132	132	132	132	132	132
R2 within	0.328	0.332	0.328	0.332	0.332	0.335
R2 overall	0.541	0.120	0.543	0.117	0.530	0.129
R2 betweenness	0.615	0.237	0.619	0.233	0.592	0.252

Notes: robust standard errors in parentheses are clustered at the importer level. Gravity controls are time-variant and they include common currency and RTAs (see table 7). *** p<0.01, ** p<0.05, * p<0.1

Table 10. Military SALW

	(1)	(2)	(3)	(4)	(5)	(6)
Embargo jt	-1.031**	-1.038**				
	(0.419)	(0.414)				
Neighbours embargo jt	0.059	0.053				
	(0.108)	(0.107)				
EU embargo jt			-0.859**	-0.858**		
			(0.428)	(0.419)		

Neighbours EU embargo j			0.008	0.001		
			(0.116)	(0.116)		
UN embargo jt					-1.781***	-1.802***
					(0.508)	(0.511)
Neighbours UN embargo j					-0.017	-0.031
					(0.183)	(0.185)
GDP per capita jt	0.167	0.124	0.192	0.149	0.191	0.147
	(0.488)	(0.487)	(0.489)	(0.489)	(0.486)	(0.486)
Milex jt	0.656***	0.649***	0.651***	0.642***	0.631***	0.621***
	(0.193)	(0.191)	(0.197)	(0.195)	(0.196)	(0.194)
Civil conflict jt	0.341	0.334	0.339	0.331	0.323	0.316
	(0.323)	(0.323)	(0.324)	(0.323)	(0.328)	(0.326)
Neighbours civil conflict jt	-0.005	-0.011	-0.020	-0.027	0.001	-0.004
	(0.133)	(0.130)	(0.134)	(0.131)	(0.132)	(0.129)
Torture jt	-0.417***	-0.423***	-0.394***	-0.400***	-0.417***	-0.423***
	(0.121)	(0.119)	(0.127)	(0.126)	(0.120)	(0.117)
Constant	-2.118	-3.589	-2.232	-3.751	-1.808	-3.404
	(3.768)	(5.496)	(3.828)	(5.519)	(3.743)	(5.443)
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
MRT	no	YES	no	YES	no	YES
Gravity controls	YES	YES	YES	YES	YES	YES
Observations	2,239	2,239	2,239	2,239	2,239	2,239
Number of pairs	140	140	140	140	140	140
R2 within	0.095	0.099	0.092	0.096	0.099	0.103
R2 overall	0.342	0.035	0.359	0.034	0.357	0.042
R2 betweenness	0.463	0.084	0.476	0.080	0.481	0.095

Notes: robust standard errors in parentheses are clustered at the importer level. Gravity controls are time-variant and they include common currency and RTAs (see table 7). *** p<0.01, ** p<0.05, * p<0.1

6 Robustness checks

6.1 Excluding democratic importers

To check the robustness of our results, we replicate our baseline estimates excluding either the EU countries or the US from our sample. As shown in section 3, these countries are the most important Italian partners, and Italian exports toward these economies are a relevant part of total Italian exports. Therefore, we exclude these destinations from our sample to avoid our estimates being driven by these outliers. Thus, in the sample without the EU countries, we omit 451 observations. Results, however, are robust. Tables 11-12 report the estimated coefficients when excluding from the sample Italian exports to the USA and to EU countries respectively. The statistical significance of the coefficients, as well as their magnitude, are similar to baseline results (see table 7). We find confirmation of the positive association between Italian exports of SALW and the importer's military expenditures. An increase of 1% in the level of military expenditure in the destination country is associated with a rise of 0.6% in the exports to that country. Moreover, the imposition of an embargo decreases exports towards the target country by 64% when omitting exports to the USA and by 67% when omitting exports to EU destinations. The magnitude of the coefficient is higher for UN embargoes than EU embargoes in both cases. In the presence of a UN embargo, exports to the target fall by 80% (sample excluding USA) and by 81% (sample excluding EU countries). On the other hand, when sanctions are imposed by the EU, exports to the sanctioned country reduce by 61% (sample excluding USA) and 64% (sample excluding EU countries). Finally, as in the baseline results, we found evidence that SALW exports decline as the destination country practises less torture.

Table 11. Excluding US

	(1)	(2)	(3)	(4)	(5)	(6)
Embargo jt	-1.031***	-1.038***				
	(0.379)	(0.375)				
Neighbours embargo jt	-0.034	-0.035				
	(0.117)	(0.118)				
EU embargo jt			-0.930**	-0.929**		
			(0.404)	(0.394)		
Neighbours EU embargo j			-0.051	-0.053		

			(0.122)	(0.123)		
UN embargo jt					-1.562***	-1.587***
					(0.344)	(0.349)
Neighbours UN embargo j					-0.289	-0.297
					(0.190)	(0.195)
GDP per capita jt	0.362	0.326	0.370	0.336	0.308	0.269
	(0.450)	(0.446)	(0.450)	(0.447)	(0.438)	(0.436)
Milex jt	0.647***	0.647***	0.645***	0.643***	0.611***	0.605***
	(0.172)	(0.170)	(0.175)	(0.174)	(0.175)	(0.174)
Civil conflict jt	0.262	0.255	0.247	0.240	0.270	0.264
	(0.237)	(0.239)	(0.236)	(0.238)	(0.240)	(0.241)
Neighbours civil conflict jt	-0.206	-0.217*	-0.219	-0.229*	-0.195	-0.204
	(0.131)	(0.130)	(0.133)	(0.131)	(0.129)	(0.127)
Torture jt	-0.379***	-0.385***	-0.356***	-0.362***	-0.369***	-0.376***
	(0.107)	(0.107)	(0.114)	(0.114)	(0.104)	(0.103)
Constant	-3.665	-3.114	-3.714	-3.300	-2.493	-2.487
	(3.092)	(4.417)	(3.142)	(4.420)	(3.033)	(4.383)
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
MRT	no	YES	no	YES	no	YES
Gravity controls	YES	YES	YES	YES	YES	YES
Observations	2,415	2,415	2,415	2,415	2,415	2,415
Number of pairs	143	143	143	143	143	143
R2 within	0.105	0.109	0.103	0.106	0.109	0.113
R2 overall	0.481	0.088	0.485	0.088	0.483	0.092
R2 betweenness	0.591	0.158	0.593	0.158	0.594	0.149

Notes: robust standard errors in parentheses are clustered at the importer level. Gravity controls are time-variant and they include common currency and RTAs (see table 7). *** p<0.01, ** p<0.05, * p<0.1

Table 12. Excluding Italian exports to EU countries

	(1)	(2)	(3)	(4)	(5)	(6)
Embargo jt	-1.113***	-1.134***				
	(0.366)	(0.364)				

Neighbours embargo jt	-0.094 (0.141)	-0.104 (0.142)				
EU embargo jt			-1.005** (0.390)	-1.015*** (0.381)		
Neighbours EU embargo j			-0.116 (0.150)	-0.128 (0.152)		
UN embargo jt					-1.648*** (0.354)	-1.683*** (0.353)
Neighbours UN embargo j					-0.309 (0.200)	-0.337* (0.203)
GDP per capita jt	0.066 (0.468)	0.062 (0.469)	0.072 (0.469)	0.064 (0.470)	0.008 (0.458)	0.002 (0.461)
Milex jt	0.645*** (0.178)	0.635*** (0.174)	0.643*** (0.182)	0.633*** (0.178)	0.593*** (0.183)	0.576*** (0.179)
Civil conflict jt	0.254 (0.233)	0.245 (0.236)	0.238 (0.232)	0.229 (0.235)	0.253 (0.237)	0.245 (0.239)
Neighbours civil conflict jt	-0.192 (0.127)	-0.206* (0.124)	-0.207 (0.128)	-0.221* (0.125)	-0.180 (0.124)	-0.193 (0.121)
Torture jt	-0.412*** (0.107)	-0.430*** (0.109)	-0.386*** (0.114)	-0.402*** (0.117)	-0.405*** (0.105)	-0.422*** (0.105)
Constant	-1.478 (3.320)	0.494 (5.912)	-1.513 (3.394)	0.263 (5.845)	0.050 (3.229)	4.061 (5.351)
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
MRT	no	YES	no	YES	no	YES
Gravity controls	YES	YES	YES	YES	YES	YES
Observations	1,990	1,990	1,990	1,990	1,990	1,990
Number of pairs	134	134	134	134	134	134
R2 within	0.098	0.101	0.095	0.098	0.101	0.105
R2 overall	0.409	0.011	0.412	0.011	0.389	0.012
R2 betweenness	0.474	0.013	0.477	0.015	0.457	0.024

Notes: robust standard errors in parentheses are clustered at the importer level. Gravity controls are

time-variant and they include common currency and RTAs (see table 7). *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

6.1 Excluding inaccuracies

To further check the robustness of our results, we also consider some inaccuracies reported in data collected from the NISAT¹¹. Here, it is indicated that some transfers refer to shipment which include not only SALW but other military equipment and devices. For instance, when describing the export of munitions and explosives from Italy to the US in 2014 (value: 143,548 US dollars), the NISAT explains that the shipment may also contain arms not strictly defined as SALW. This imprecision in the data is quite relevant. About 17% of the total records may have included conventional weapons and other equipment, while the remaining 83% is categorized exclusively as cases of SALW transfers. In light of such sizeable divergence, we take these inaccuracies into account. Specifically, we re-estimate our empirical models using an alternative sample which excludes inaccuracies. Our main results remain robust. When the level of the importer's military expenditures increases by 1%, there is a rise of about 0.5% in the exports to that destination. Furthermore, the presence of an embargo in the destination country reduces exports to that country by 63% (59% in the case of an EU embargo and 76% in the case of a UN embargo). We also found that there is a decrease in exports as the practice of torture becomes less frequent in the importer country.

¹¹ Original data report information about the value and the type of different SALW shipments from country *i* to country *j* in year *t*. Data were aggregated to obtain the value of SALW exports from country *i* to country *j* in year *t*. See Baronchelli et al. (2021) for any details.

Table 13. Excluding inaccuracies

	(1)	(2)	(3)	(4)	(5)	(6)
Embargo jt	-1.001***	-0.995***				
	(0.366)	(0.362)				
Neighbours embargo jt	-0.027	-0.021				
	(0.111)	(0.113)				
EU embargo jt			-0.910**	-0.895**		
			(0.391)	(0.383)		
Neighbours EU embargo j			-0.038	-0.034		
			(0.116)	(0.118)		
UN embargo jt					-1.432***	-1.448***
					(0.337)	(0.338)
Neighbours UN embargo j					-0.242	-0.250
					(0.179)	(0.185)
GDP per capita jt	0.925**	0.914*	0.933**	0.924*	0.887*	0.874*
	(0.463)	(0.467)	(0.465)	(0.469)	(0.466)	(0.472)
Milex jt	0.536***	0.503***	0.531***	0.497***	0.499***	0.462***
	(0.167)	(0.169)	(0.170)	(0.173)	(0.171)	(0.173)
Civil conflict jt	0.610***	0.612***	0.601***	0.604***	0.612***	0.617***
	(0.213)	(0.210)	(0.213)	(0.210)	(0.217)	(0.214)
Neighbours civil conflict jt	-0.296**	-0.287**	-0.308**	-0.298**	-0.288**	-0.277**
	(0.122)	(0.120)	(0.123)	(0.121)	(0.120)	(0.118)
Torture jt	-0.390***	-0.389***	-0.368***	-0.367***	-0.380***	-0.380***
	(0.108)	(0.109)	(0.114)	(0.114)	(0.106)	(0.106)
Constant	-6.347**	-11.573***	-6.341**	-11.678***	-5.287*	-11.008**
	(2.985)	(4.300)	(3.046)	(4.308)	(3.087)	(4.341)
Country FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES
MRT	no	YES	no	YES	no	YES
Gravity controls	YES	YES	YES	YES	YES	YES

Observations	2,416	2,416	2,416	2,416	2,416	2,416
Number of pairs	144	144	144	144	144	144
R2 within	0.140	0.144	0.137	0.141	0.142	0.147
R2 overall	0.519	0.101	0.517	0.102	0.522	0.107
R2 betweenness	0.603	0.173	0.601	0.175	0.603	0.144

Notes: robust standard errors in parentheses are clustered at the importer level. Gravity controls are time-variant and they include common currency and RTAs (see table 7). *** p<0.01, ** p<0.05, * p<0.1

Conclusions

This paper is a preliminary study on Italian SALW trade. Italy is a major exporter of SALW, being second only to the USA. First, we analyse the economic drivers of Italian exports of SALW. Furthermore, we also investigate Italy's compliance to international norms and standards when exporting SALW. To address this issue, we implement a gravity framework, also adding to traditional gravity controls variables that proxy for factors that are specific to SALW trade. Our aim is to understand if economic incentives to export arms where there is demand are balanced by the need to adhere to the standard imposed by the international community.

First, our analysis shows that there is a positive association between the importer's military expenditure and Italian exports of SALW to that country. This result is valid for both military and sporting SALW. Second, we also find evidence that Italy appears to comply with international embargoes on SALW. First, embargoes dramatically reduce exports of Italian SALW. Interestingly, the magnitude of the coefficient is larger for UN embargoes than EU embargoes. Contrary to previous literature arguing that EU sanctions are more effective, we found the opposite for Italian exports of SALW.

Furthermore, results also seem to show that sanction-busting mechanisms are not at play. First, we found no evidence of arms diversion from neighbouring countries. Second, estimates indicate that the presence of a multilateral arms embargo seems to reduce military as well as sporting SALW. The latter result is quite interesting because previous literature found evidence that international norms are less stringent for sporting small arms. Thus, exporting these weapons may be a way to send arms to a sanctioned country. Finally, we found a negative association between SALW imports

from Italy and the practice of torture in the importing country. In other words, SALW demand is negatively associated with violation of human rights.

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Appendix

Table A.1. Correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) SALW _{ij} (ln)	1.000													
(2) Torture _j	0.340	1.000												
(3) Embargo _j	-0.108	-0.260	1.000											
(4) Neighbours embargo _j	-0.156	-0.433	0.239	1.000										
(5) EU embargo _j	-0.069	-0.201	0.902	0.257	1.000									
(6) Neighbours EU embargo _j	-0.141	-0.401	0.252	0.950	0.272	1.000								
(7) UN embargo _j	-0.119	-0.187	0.651	0.121	0.545	0.109	1.000							
(8) Neighbours UN embargo _j	-0.162	-0.394	0.177	0.754	0.185	0.672	0.113	1.000						
(9) GDP per capitaj (ln)	0.619	0.628	-0.129	-0.383	-0.115	-0.358	-0.110	-0.304	1.000					
(10) Milex _j (ln)	0.680	0.154	0.050	0.026	0.071	0.050	-0.035	-0.026	0.557	1.000				
(11) Civil conflict _j	-0.035	-0.257	0.084	0.100	0.058	0.111	0.111	0.093	-0.183	0.043	1.000			
(12) Neighbours civil conflict _j	-0.193	-0.395	0.216	0.308	0.228	0.320	0.070	0.293	-0.336	0.021	0.055	1.000		
(13) Common currency _{ij}	0.249	0.356	-0.071	-0.176	-0.064	-0.169	-0.046	-0.144	0.373	0.135	-0.078	-0.155	1.000	
(14) RTA _{sij}	0.428	0.500	-0.104	-0.166	-0.081	-0.146	-0.038	-0.106	0.493	0.214	-0.072	-0.300	0.422	1.000