Who Wants to Trade? Determinants of Country Support for the International Regulation of Arms

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Abstract

Against the established backdrop of increasing free trade, certain goods are still affected by international trade regulations. As a controversial good with harmful consequences that result from their free trade, arms are often the subject of such trade policy discussions. While some countries profess strong support for regulating the trade of weapons, others are more resistant. As an updated and modified replication study of Efrat (2010), this paper investigates the conditions under which countries are more or less likely to support the international regulation of arms. Countries that directly benefit from arms imports and exports are likely to be less supportive of international regulations while countries that experience societal harms from the trade of arms, such as armed conflict, are likely to be more supportive of international regulations. Using data between 2013 and 2017 on 173 UN member states, this study employs an ordered logit model to examine the impact of arms transfers, armed conflict, and other country-level predictors on the level of support for the Arms Trade Treaty. Results indicate that producer and consumer influences via arms exports and imports have a significant effect on regulation preferences; however, contrary to the findings of Efrat (2010), primary negative externalities do not appear to have an impact on a country's preference towards the international regulations of arms.

Introduction

Within the field of international political economy, a major focus has been the trend of increasing trade liberalization over the past several decades (Mansfield, Milner, and Rosendorff 2002; Kono 2006; Baker 2003; Milner 2010). Dominant theories suggest a strong relationship between democratization and free trade due to the incentives faced by democratic representatives to respond to liberal constituent preferences over protectionist interest group preferences (Baker 2003; Kono 2006; Milner 2010).

Although trade openness has drastically increased since World War II, this effect does not apply to all goods. Efrat (2010) addresses this "countertrend" and highlights how a growing number of goods (e.g. small arms, drugs, and antiquities) have become the subject of trade restrictions via international regulatory agreements. What makes these goods an exception to the rule of increasing trade liberalization? Efrat (2010) argues, "the purpose of international regulation is to reduce *negative externalities* for society resulting from free trade in these goods, such as fatalities and refugee flows stemming from the proliferation of small arms; crime associated with widespread drug abuse; and archaeological destruction caused by looting for antiquities" (98). In other words, goods that pose societal harms as a consequence of free trade are goods that are likely to be the target of stricter trade policies.

Negative externalities may motivate some countries to strongly support international regulations of such goods; however, we can observe that this is not the case for all countries. Looking particularly at small arms due to their extensive threat to human welfare, Efrat (2010) asks the important question of why certain governments favor "tight international regulation of the trade of small arms" while others "wish to maintain the trade uncontrolled" (99). He finds that government preferences appear to be in support of regulations when the state is democratic and experiencing greater primary and secondary negative externalities (Efrat 2010, 116). Alternatively, governments are less supportive of international regulation when they have state-ownership of arms exporters. Building off of Efrat's contribution, the present paper will run a similar empirical analysis utilizing improved, and more recent, measures.

This paper begins with a brief overview of previous research on trade liberalization, international regulations, and the current status of arms control more broadly. A section on theory will follow providing justification for why producer and consumer pressures as well as measures of negative externalities are likely to impact support for the international regulation of arms. The data and research design of this study is then outlined, followed by the results of the analysis. It concludes with a summary of the study and final remarks.

Background on international trade and regulation of arms

Trade liberalization

The global trend of increasing trade liberalization since World War II has been well documented (Mansfield, Milner, and Rosendorff 2002; Baker 2003; Milner 2010; Efrat 2010). Especially since the mid-1980s, a growing number of countries have "joined the world economy" with economic reforms that replace protectionism for free trade (Milner 2010, 107). Despite protests against neoliberal reforms in Latin America, Baker (2003) found that trade liberalization remained popular among survey participants. He argues that this is due to consumer appreciation for the prices, quality, and variety of goods available for purchase and consumption.
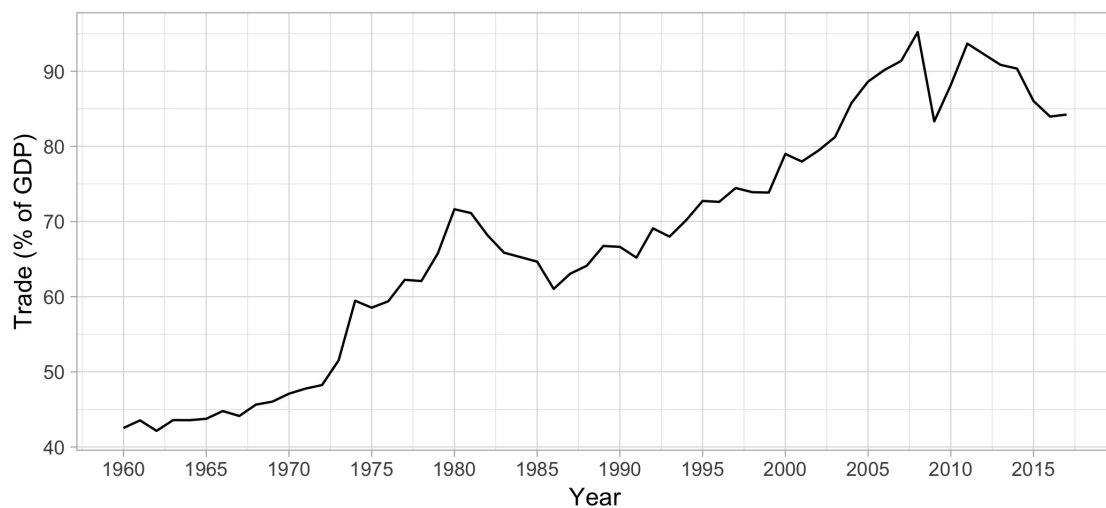
Figure 1: Trade, as a percent of GDP, over time. Yearly averages across all states. Data from The World Bank.

The view that mass publics prefer free trade over protectionist policies has been adopted in theories on democracy and international trade (Kono 2006; Milner 2010). As consumers prefer to maximize their incomes through access to cheaper goods, democratic representatives will respond to these consumer demands in order to gain votes and win elections (Kono 2006; Milner 2010). Voter preferences towards free trade generally have more influence over special interests who favor protectionist policies due to democratic institutions that enable larger winning coalitions (Kono 2006; Milner 2010; De Mesquita et al. 2002). This is argued to be an explanation as for why we observe increasing trade liberalization: with greater democracy comes greater trade openness (Milner 2010). However, Kono (2006) argues this relationship depends on the type of trade policy under examination. He finds that democracy discourages the use of tariffs but that it may actually

increase the use of less-transparent non-tariff barriers, concluding that the relationship between democracy and trade policy is more nuanced than previously thought (Kono 2006, 381).

Goods with consequences

Regardless of democracy's relationship with free trade, there remain certain goods that do not fully benefit from this trend of trade liberalization. Certain goods, such as small arms, drugs, and antiquities, are often the subject of international trade regulations (Efrat 2010). For goods that stimulate societal harms as a byproduct of their free trade, countries may agree to international trade regulations. Efrat (2010) argues, "the purpose of international regulation is to reduce *negative externalities* for society resulting from free trade in these goods, such as fatalities and refugee flows stemming from the proliferation of small arms; crime associated with widespread drug abuse; and archaeological destruction caused by looting for antiquities." (98) In other words, international regulatory policies of these goods aim to limit the consequences that arise from their trade.

Looking specifically at the global arms industry, early economic studies have tried to formally model imports, exports, and even the control of arms (Levine, Sen, and Smith 1994; Levine and Smith 2000; Smith and Tasiran 2005; Levine and Smith 1995). However, only recently have scholars attempted to study the arms trade using quantitative statistical methods (Kinsella 2006; Akerman and Seim 2014; Thurner et al. 2018). For example, Kinsella (2006), Akerman and Seim (2014), and Thurner et al. (2018) all utilized network analyses in order to examine the arms trade. Kinsella (2006) modeled the black market of small arms and succeeded in identifying locales of significant importance. Akerman and Seim (2014) examined the likelihood of trading arms between countries within the same polity and found that polity differences mattered more for the arms trade during the Cold War, but that these differences matter less now. Thurner at al. (2018) further found that geopolitical alliances have become "progressively less important as determinants of arms trade activity after the Cold War but regain influence after 2001," providing empirical support for the emergence of a "new international regime of security cooperation" (Thurner et al. 2018, 3).

In addition to these network analyses, other studies have highlighted the tangible consequences of the arms trade, such as the positive and significant impact of arms transfers on conflict occurrence in sub-Saharan African states (Craft and Smaldone 2002). After examining the impact of formal bilateral weapons cooperation agreements on arms imports and exports, Kinne (2016) warns that "the world is becoming more weaponized" and without effective controls, the flow of arms will continue to grow (Kinne 2016, 375). Indeed, the most recent annual report from the Stockholm International Peace Research Institute indicates that the volume of international arms transfers of major weapons has reached its highest level since the end of the Cold War, marking a "continuation of the steady upward trend that began is the early 2000s" (SIPRI 2018, 8). The

increase in both arms transfers and violent conflict are precisely the kind of consequences that international regulations such as the Arms Trade Treaty seek to target.

International regulation of arms

The Arms Trade Treaty is the most recent development in instituting international controls over the trade of arms. This treaty follows previous post-Cold War attempts such as the Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies of 1995 as well as the 2001 Program of Action to Prevent, Combat and Eradicate the Illicit Trade in Small Arms and Light Weapons in All Its Aspects. The Wassenaar Arrangement's objective is greater transparency and responsibility in arms transfers with the aim of "preventing destabilizing accumulations" and "[preventing] the acquisition of these items by terrorists" ("Wassenaar Arrangement" 2004). While this arrangement is still in effect today, it is considered by some to be ineffective in curbing arms transfers (Craft and Smaldone 2002).

In trying to more effectively target the black market of small arms and light weapons (SALW), the PoA was adopted in 2001 with the the the intent to "reduce the human suffering and devastating consequences caused by gun violence" ("Program of Action" 2001). Despite this noble aim, Efrat (2010) provides a thorough critique:

> First, the PoA has no legally binding force. Whereas arms control agreements typically take the shape of treaties, the PoA is merely a political declaration. Second, monitoring and verification arrangements are a cornerstone of arms control agreements such as the Nuclear Non-Proliferation Treaty (NPT); yet they are absent from the PoA. The PoA neither grants states the authority to monitor compliance, nor does it delegate verification authority to a third party. It merely asks states—on a voluntary basis—to provide information on implementation. (99)

In addition to this critique of the PoA, Bromley, Cooper, and Holtom (2012) also highlight the general challenge of placing human security at the center of international arms control agreements. They point out that arms-exporting countries such as China and Russia are "generally disdainful of any attempt to apply human security concerns to arms export decision-making" and view calls for humanitarian-based sanctions as an "intrusion into sovereign affairs and have dismissed human security claims as a Trojan horse for the pursuit of the West's security interests at the expense of their own" (Bromley, Cooper, and Holtom 2012, 1038). This clash of perspectives makes any international agreement on the regulation of arms more difficult to achieve.

Observing such weak international measures to regulate the trade of small arms in particular, Efrat (2010) sought to better understand the conditions under which countries are more or less likely to support an international arms trade agreement. Teasing out the preferences of states

toward these regulations may help to explain why small arms agreements have largely been ineffective. Using interview data of officials from 118 countries during and after the 2006 UN Review Conference on Small Arms, Efrat (2010) found that governments are more likely to support international regulation when democracy, humanitarian-aid provision, the number of refugees, and the homicide rate is high. When a country has state-owned arms exporters and has a high GDP, their support for regulation decreases. These findings support his theory about the role of negative externalities in shaping trade regulation preferences (Efrat 2010).

In December 2014, eight years since Efrat's (2010) data collection, the Arms Trade Treaty officially entered into force. It is a multilateral UN treaty that it is open to all members; currently, it has 130 signatories, of which 101 have ratified or acceded. From Article 1, it states that its objective is to, "establish the highest possible common international standards for regulating or improving the regulation of the international trade in conventional arms" as well as "prevent and eradicate the illicit trade in conventional arms." These objectives include both state and human security aims, including "contributing to international and regional peace, security and stability" and "reducing human suffering" ("Arms Trade Treaty" 2013). The treaty is wide in scope, applying to conventional weapons including battle tanks, armoured combat vehicles, large-calibre artillery systems, combat aircraft, attack helicopters, warships, missiles and missile launchers, and small arms and light weapons. Its overall effectiveness remains to be seen in the long-term; however, it offers the strongest international regulation of conventional arms to date.

This section has briefly described the stage in which the international regulation of conventional arms is set. Only recently have researchers begun to quantitatively study the arms trade, both its determinants and effects. As a new development, the Arms Trade Treaty offers an opportunity to better understand the predictors of states supporting or rejecting such regulatory agreements. The next section will outline and build off of Efrat's (2010) theory of regulation support in order to leverage this opportunity.

Considering the Role of Negative Externalities in Political Economy Theory

The theory motivating this paper is primarily based on the work put forth by Efrat (2010). After making the case that internationally regulated goods are often those that generate negative externalities, he proceeds to ask the following question: why would states choose to regulate goods internationally when they could simply strengthen national controls? With regard to small arms, he argues national regulations are quite limited in their effectiveness. "Even developed countries often struggle to fully enforce gun regulation, let alone developing countries where trained and equipped law enforcement personnel are scarce. Without the required technological, operational, and financial resources, gun-control laws are merely words on paper" (Efrat 2010, 101). He further

points out that policies that affect the demand of small arms (e.g. education, employment, community policing) are "costly and extremely complex," making such an approach less feasible (Efrat 2010, 101). Thus, Efrat (2010) argues that reducing arms-induced negative externalities requires international regulation that control and restrain small-arms exports.

As alluded to in the previous section, trade policy outcomes, specifically in democracies, are largely understood to be a balancing act between the preferences of special interest groups for protectionism and consumer (as well as producer) demands for free trade. Under democratic institutions and incentives, trade liberalization is favored, resulting in fewer controls. However, when examining trade policy in the context of goods with societal consequences, Efrat (2010) makes the case that this kind of political economy model is limited and inadequate. There is a difference between instituting trade barriers for the sake of protecting domestic industries and implementing trade controls for the sake of societal welfare, and Efrat (2010) argues that traditional models do not allow for such a distinction. He suggests a theoretical framework that takes negative externalities into consideration when analyzing international trade regulations (Efrat 2010, 102).

Efrat (2010) outlines two levels of negative externalities resulting from the production, sale, or use of these goods. Primary negative externalities are those that impact one's own country (as the importer or exporter) while secondary negative externalities are those that impact *other* countries. Efrat (2010) offers several reasons as to why governments may concern themselves with either type of externality. In the case of primary externalities, the unregulated trade of arms could: (1) threaten and undermine social welfare, (2) concern policymakers out of a sense of duty and responsibility, (3) negatively affect interest groups thus motivate government lobbying and, or (4) directly harm the government itself (Efrat 2010, 105). In the case of secondary externalities, a subset of countries may genuinely be concerned by the negative humanitarian effects of trade on other countries due to their own values and moral principles.

Efrat's (2010) addition of these externalities to previous trade policy models results in varied government preferences for international regulation. The heavier the negative externalities, the more likely a country's support for international regulation will increase; the greater the influence of consumers and producers, the more likely a country's support for international regulation will decrease. A visual representation of this theoretical framework can be seen in Figure 2. With the pressure of externalities to strengthen international regulation and the pressure of consumer/producer influences to weaken international regulation, governments can be expected to vary in their preferences in four different ways. A more detailed breakdown of these expected preferences is provided in the original paper (Efrat 2010, 107).

A critical component of Efrat's (2010) theoretical framework is the power distribution with regard to the variation of these preferences. In any endeavor that requires international agreement, the preferences of powerful actors will matter the most. Consequently, these preferences will most

**Influence of primary/secondary
negative externalities**

		Low	High
Exporter/ consumer influence	Low	I. Weakly affected governments (Moderate regulation)	II. Pro-regulation governments
	High	III. Anti-regulation governments	IV. Cross-pressured governments (Support for regulation varies)

Figure 2: Reproduced figure of proposed theoretical expectations (see Efrat 2010, 107)

likely be reflected in the final agreement. The weakness of prior small arms control agreements can be attributed, then, to the preferences of these powerful states (Efrat 2010, 108).

Conditions under which governments support regulation

Using this framework, Efrat (2010) laid out and empirically tested five hypotheses with respect to these possible government preferences. Those hypotheses and their rationales can be found in his paper from pages 110-114. Here, I will offer similar hypotheses albeit with slightly different measurements.

EXPORTERS

Governments that profit from arms exports directly benefit from unregulated trade; thus, arms-exporting countries are less likely to support international regulations that establish export controls. This exporter influence can manifest in two ways. First, it may be the case that arms exporters are state-owned (Efrat 2010). Export restrictions would thereby directly cut into government revenue. Second, in the case that arms exporters are not state-owned, they may be politically organized in such a way to exert pressure on policymakers, resulting in profits for the government in exchange for policy positions. Additionally, arms transfers can be used as a foreign policy tool by states to advance their own security interests (Byman and Cliff 1999; Klieman 1992; as cited by Efrat 2010). Controls on arms transfers would shrink a state's foreign policy toolbox. In each of these scenarios, the outcome is likely to be less government support for the international regulation of arms.

H1: Governments of arms-exporting countries are less likely to support the international regulation of arms.

CONSUMERS

Efrat (2010) identifies a wide variety of small-arms consumers, including non-state armed groups, law-abiding civilians, and governments. However, the present paper looks not only at small arms but conventional arms more broadly. Consequently, the primary consumer that would affect state support for the international regulation of all conventional arms would be arms-importing countries who purchase arms from exporters. Efrat (2010) essentially uses regime type as a proxy to measure the demand for small arms (e.g. nondemocracies rely on small arms to maintain their repressive capacity). However, when looking at overall arms imports, regime type does not appear to be correlated with demand (correlation = -0.22). Rather than use democracy to measure consumer influence, I use arms imports. A country that imports heavily in arms will likely resist international regulations that restrict such behavior.

H2: Governments of arms-importing countries are less likely to support the international regulation of arms.

PRIMARY NEGATIVE EXTERNALITIES

Countries that directly suffer from negative externalities resulting from the unregulated trade of conventional weapons are more likely to support international controls. Observable externalities include instances of armed conflict (e.g. civil war, terrorism, repression, insurgency, intracommuncal violence). Other negative externalities could include crimes associated with illegal trafficking of weapons.

H3: High occurrence of armed conflict increase governments' support for the international regulation of arms

Following Efrat (2010), state capacity may also impact the extent to which countries experience primary negative externalities. With a strong security apparatus to enforce the rule of law and prevent armed conflict and illegal trafficking, the effect of these externalities may be minimized, thus reducing support for international regulations.

H4: Weak state capacity increases governments' support for the international regulation of arms.

SECONDARY NEGATIVE EXTERNALITIES

Governments that hold values and moral principles that motivate genuine concern for the negative impacts faced by other countries are more likely to support international regulations of arms. Efrat (2010) uses provision of humanitarian aid as an indicator that a government has a humanitarian foreign policy agenda; I continue to do the same here.

H5: The greater its provision of humanitarian aid, the stronger the government's support for the international regulation of arms.

These hypotheses seek to better understand the role of consumer/exporter demand and negative externalities in shaping the preferences of governments towards the international regulation of conventional arms. They are very similar to the hypotheses proposed by Efrat (2010); however, some differ slightly in their measurement. The next section will outline the research design of this study in greater detail.

Research Design

Using the most recent data on the Arms Trade Treaty, arms transfers, conflict occurrence, humanitarian aid, and other controls, this study implements an ordered logit model to test the discussed hypotheses. Results will indicate whether or not exporter/consumer pressures and negative externalities influence a country's preference to strongly support, weakly support, or not support the international regulation of conventional arms.
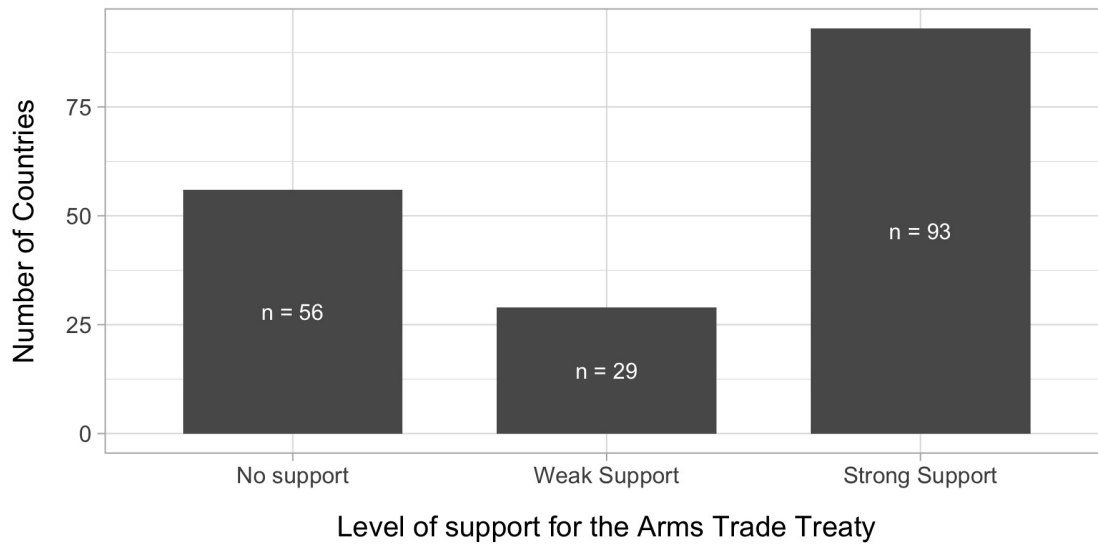
Dependent Variable

This study seeks to explain the variation in support for international arms regulations. It was previously established that the Arms Trade Treaty is the latest – and most comprehensive – attempt to institute international regulations on arms transfers. Rather than using interviews from government officials to measure government positions, this paper posits that actions speak louder than words; thus, support for international arms regulation will be measured using a country's status regarding the Arms Trade Treaty, hereafter referred to as ATT status.

The ATT was opened for signature on June 3, 2013 and entered into force on December 24, 2014. During this period, member states had the possibility to sign and become signatories of the treaty. One hundred and thirty states did so, and these states have the option to ratify the treaty at any point in time. Of the 60 states that did not sign, if they wish to join the ATT, they may undergo the process of accession. Five countries have acceded so far. Once a signatory has ratified the treaty and a non-signatory has acceded the treaty, they will be legally bound by the terms of the

agreement. These 102 countries are considered to "strongly support" the international regulation of conventional arms. The 28 other signatories that have not ratified the treaty are considered to "weakly support" the international regulation of conventional arms, as their signature declared an intent to join the ATT in the future. The 60 countries that have neither signed nor acceded are considered to withhold their support for the international regulation of arms. To summarize, the dependent variable of support for international arms regulation, measured as ATT status, has three ordered categories: no support, weak support, and strong support.

According to the United Nations Office of Disarmament Affairs, "only Heads of State, Heads of Government or Ministers for Foreign Affairs are empowered, by virtue of their functions, to sign multilateral treaties on behalf of States without having to produce full powers to that effect. Other representatives wishing to sign the Treaty must be in possession of appropriate full powers signed by one of these authorities" (United Nations Office for Disarmament Affairs n.d.). This means that the ATT status is a strong indicator for state preferences as it requires approval from the highest level of government.

Figure 3: Distribution of countries who have not signed the Arms Trade Treaty (no support), who have signed but not ratified the treaty (weak support), and who have signed and ratified the treaty (strong support).

Independent Variables

The previous section has discussed the theoretical motivation behind the five main explanatory variables examined in this study: arms-exporting countries, arms-importing countries, armed conflict, state capacity, and humanitarian-aid provision. These variables aim to measure the influence

of consumers and producers to weaken support for regulations and of primary and secondary negative externalities to strengthen support for regulations.

Both arms-exporting countries and arms-importing countries are measured using SIPRI trend-indicator values, known as TIV (SIPRI Arms Transfers Database, n.d.). Rather than measuring arms transfers using financial values, SIPRI uses a system that, "measure[s] the volume of international transfers of major conventional weapons using a common unit...based on the known unit production costs of a core set of weapons and is intended to represent the transfer of military resources rather than the financial value of the transfer" (SIPRI, n.d.). Since these values do not represent the actual price paid for weapons or the current dollar value of the arms transfer, they should not be compared to any financial value, such as GDP or military expenditure (SIPRI, n.d.). The advantage of this is that these values are comparable across countries over time.

Rather than taking measures from the most recent year, I calculate the 5-year average over the most recent data available. For these TIVs, that is an average from 2014 to 2018. Efrat's approach transformed these measures into dummy variables based on a cutoff point. However, due to the loss of information that occurs from dichotimizing a continuous variable as well as the arbitrary nature of selecting an appropriate cutoff point, I instead maintain the TIVs as they are (Altman and Royston 2006).

To measure primary negative externalities of the unregulated trade of conventional arms, I use the occurrence of armed conflict using the UCDP Georeferenced Event Dataset (Sundberg and Meland 2013). This dataset contains information on individual armed conflict events worldwide from 1989 through 2017, excluding Syria. The codebook defines an event as, "an incident where armed force was used by an organized actor against another organized actor, or against civilians, resulting in at least 1 direct death at a specific location and a specific date" (Croicu and Sundberg 2013, 2). They consider the use of arms to be of "any material means," be that manufactured weapons or otherwise. An organized actor can be a government of an independent state, a formally organized group (non-governmental), or an informally organized group. This definition excludes individual-level armed violence, such as homicides, as it is theoretically less likely for civilians to acquire conventional weapons beyond small arms for independent use outside of an organized group. While Efrat's (2010) focus was on small arms, this study is wider in scope and includes all conventional arms. A most recent 5-year average (2013-2017) is calculated as the final value.

The effects of these primary negative externalities may be mitigated by a strong state capacity. To measure state capacity with regard to security and law enforcement, I utilize the "security apparatus" indicator from the Fragile States Index developed by the Fund for Peace. This variable "considers the security threats to a state, such as bombings, attacks and battle-related deaths, rebel movements, mutinies, coups, or terrorism" and "also takes into account serious criminal factors, such as organized crime and homicides, and perceived trust of citizens in domestic security" (The

Fund for Peace, n.d.). A state with a strong security apparatus is likely more able to enforce the rule of law and resist the onset of armed conflict as well as fallout from illicit arms transfers. I average this indicator value over the years 2014-2018.

States with a humanitarian foreign policy agenda may genuinely care about the secondary negative externalities experienced by other states, thus resulting in more support for international regulations. Similar to Efrat (2010), I utilize the Organization for Economic Development (OECD) data on "official development assistance" which is defined as "government aid designed to promote the economic development and welfare of developing countries" (OECD 2019). These foreign aid values are measured as the percentage of a country's gross national income in million USD constant prices. Higher values identify countries that may be guided more by humanitarian values and moral principles as they show greater commitment to international development. Again, a most-recent 5-year average (2013-2017) is taken as the final measure.
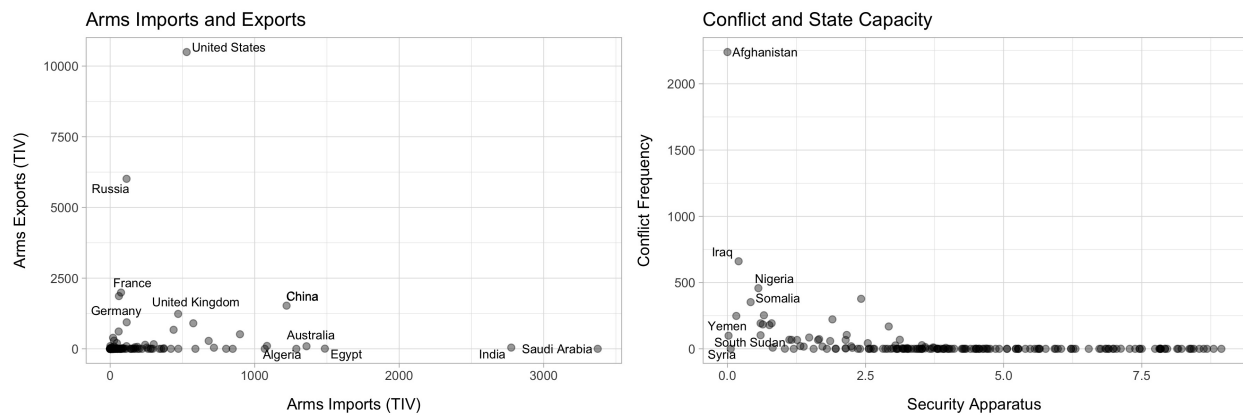
Figure 4: Relationship between arms exports and imports (left) and occurence of conflict and state capacity (right). All values are 5-year averages between 2014-2018 (conflict is 2013-2017).

Control Variables

To account for other factors that may explain the variation we currently see in ATT status, I incorporate two theoretically-motivated control variables: the country's legal system and prior UN treaty behavior. Elkins, Guzman, and Simmons (2006) found that countries with a common law system are more cautious about making international legal commitments. Just as Efrat (2010) does, I utilize a dummy variable indicating whether a country's system is based on common law.

Additionally, I include a variable that counts the total number of treaties a state is already party to. This variable intends to control for a country's prior behavior in the UN. If a country rarely signs international UN treaties, it is likely, then, that not ratifying the ATT is less about withholding

support for international arms regulations and more about avoiding international commitments entirely. Data for this variable comes from the UN Treaty Series online database.

Altogether, these explanatory and control variables will be used in an ordered logit model to determine the conditions under which a state is more or less likely to support the international regulation of arms via support for the Arms Trade Treaty. Due to missing values, the total sample of UN member states is restricted to 176.

Results

Results of this analysis provide mixed support for the proposed hypotheses. Figure 1 illustrates the simulated predicted probabilities of a country supporting international regulation of arms over a range of values for each explanatory variable (excluding the "common law" control). As arms exports and imports increase, that is, as producer and consumer demands increase, the probability of supporting the Arms Trade Treaty decreases. This lends support to both H1 and H2, at least with regard to the direction of the effect.

Contrary to expectations, as the occurrence of armed conflict increases, support for the Arms Trade Treaty actually decreases. This implies that experiencing primary negative externalities from the arms trade may not be a driver for supporting international regulation, as proposed by H3. Additionally, states with a weak security apparatus may actually be less likely overall to support the ATT, not more; thus, both H3 and H4 are not supported and, in fact, find the converse effect.

Concern for secondary negative externalities, on the other hand, does appear to positively influence a country's support for the international regulation of arms, lending support to H5. Countries that appear to have humanitarian foreign policy agendas through the provision of humanitarian aid are more likely to exhibit strong support for the Arms Trade Treaty.

These results offer interesting insights into the directional effect these variables have on support for the international regulation of conventional arms. However, it is important to know whether these effects are substantively and statistically meaningful. Figure 3 and Table 1 offer both a visual and numerical representation of these effects. Predicted probabilities are simulated twice for each variable set to its minimum and maximum value, keeping all other variables at their observed values. The average difference between these two scenarios (and their 95% confidence intervals) for each covariate can be interpreted as the effect of this explanatory variable on the likelihood of supporting the international regulation of arms. If the confidence interval does not include 0, we can gather that there may be a real effect that is statistically and possibly substantively significant.

In reading Figure 3, there is a statistical difference in the likelihood of withholding support for the ATT between a country that exports no arms (minimum) and a country that exports arms at the level of the United States (maximum). However, this difference is not statistically significant for
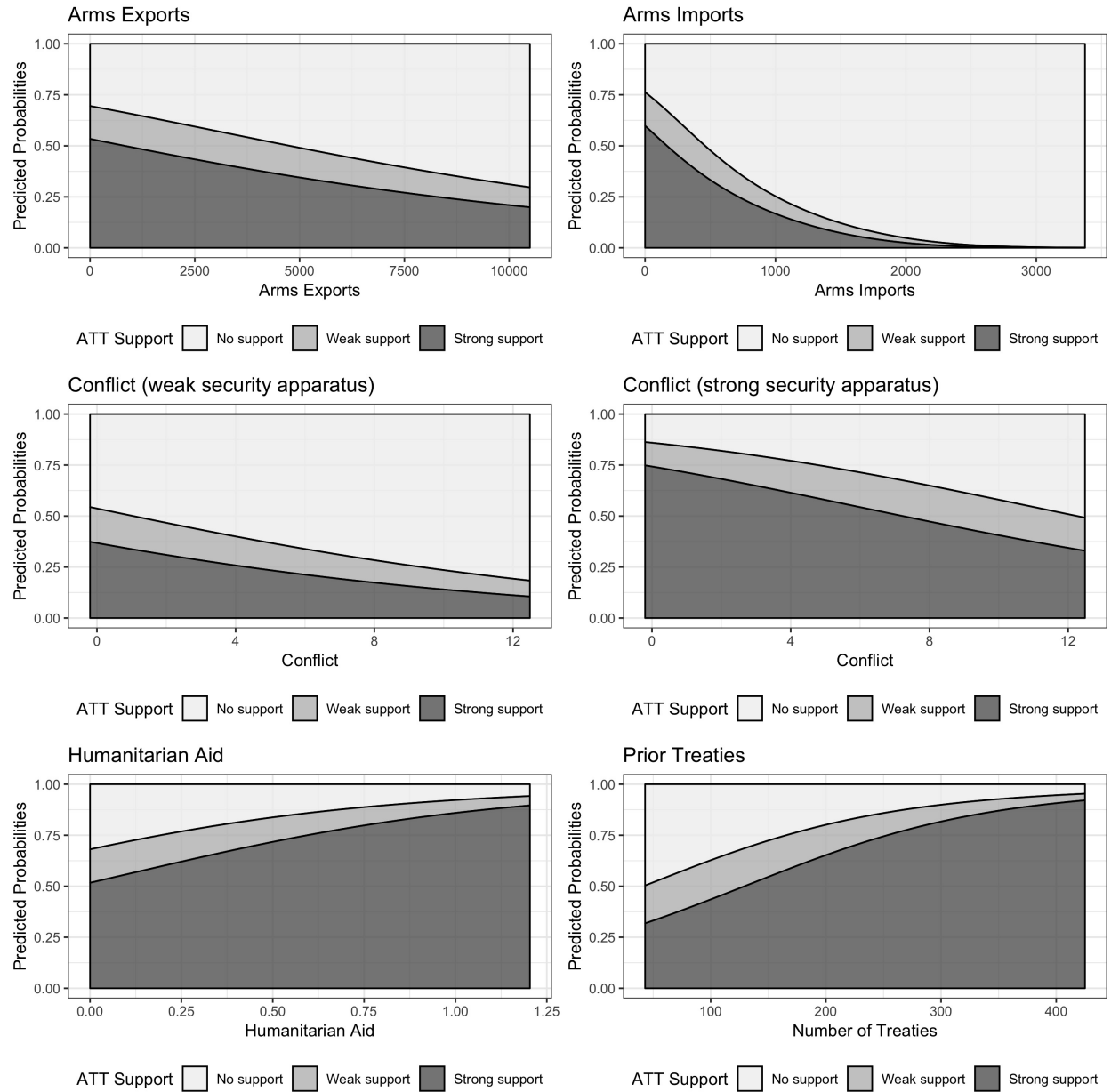
Figure 5: Simulated effects over a range of each covariate set to its maximum and minimum, keeping all other variables at their observed values. Conflict values were scaled.

the likelihood of exhibiting weak support or strong support. We can also see that the occurrence of conflict does not appear to have any statistically significant effect on ATT support probabilities. Meanwhile, every other variable exhibits significant effects for "no support" and "strong support". A high level of uncertainty around the effects on "weak support" is consistent across all variables.

Table 1 provides more detail as to the substantive effects of these results. The probability of not supporting the ATT increases by 32.6 percentage points [0.3, 43] when a country changes from exporting no arms to exporting arms at the level of the United States. However, since the United States is an extreme case regarding arms exports, another simulation was run using Germany's arms exports as the maximum value. The magnitude of the effect dropped to 10 percentage points [1.8, 12.3]; however, it remains statistically significant, along with the probability of strongly supporting the ATT decreasing by 7.7 percentage points [-11.5, -0.4]. See Figure 7 in the appendix for a visual comparison.

The probability of not supporting the ATT increases by 75.1 percentage points [41.2, 96.2] when a country changes from importing no arms to importing arms at the level of Saudi Arabia. Likewise, the probability of strongly supporting the ATT decreases by 50.8 percentage points [-96, -22.8] as the level of arms imports reaches its observed maximum.

The probability of strongly supporting the ATT increases by 39.5 percentage points [6.7, 44.7] when a country changes from providing no humanitarian aid to spending 1.2% of their gross national income on humanitarian aid, as is the level of United Arab Emirates, followed closely by Sweden and Norway. For the same scenario, the probability of not supporting the ATT decreases by 24.7 percentage points [-50.2, -0.8].

Both control variables appear to have an effect that is statistically different from zero, especially that of prior treaty participation. Similar to what Efrat (2010) found, a country that has a legal system based on common law is more likely by 31.5 percentage points [0.9, 36.5] to strongly support the ATT. A stronger effect was found in the prior number of UN treaties a country is already party to: a country with the same number of treaties as the Netherlands is more likely by 66.8 percentage points [14.4, 74.6] to strongly support the ATT than a country with the same number of treaties as Eritrea.

To summarize these empirical results, this study finds support for the traditional international political economy view that producer and consumer demands have a negative effect on supporting international regulations, in particular, the international regulations of arms. Testing the theory originally laid out by Efrat (2010) regarding the role of negative externalities offered mixed results. Societal harms resulting from the trade of conventional arms (i.e. armed conflict) does not appear to increase a country's support for arms control measures. In fact, the effect was the exact opposite, indicating more armed conflict may actually decrease one's support for arms regulations. However, this effect is not statistically significant. A state's ability to mitigate such harms does

Simulated First Differences by Covariate
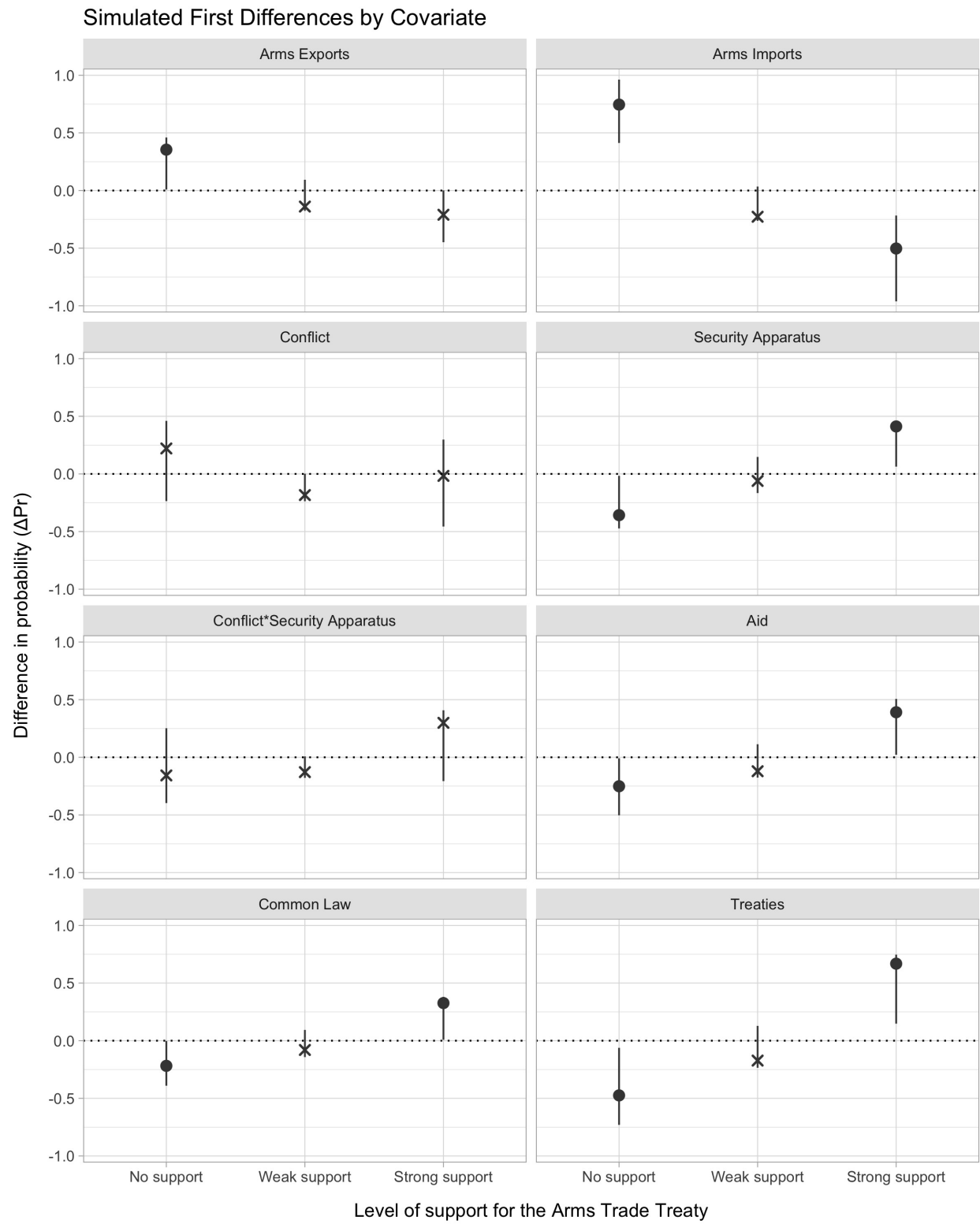
Figure 6: First difference calculations. See raw data and more details in Table 1. Point ranges marked with an "X" shape indicate 0 falls within the confidence interval and is thus insignificant.

not appear to have any effect, either. This analysis did find support for the idea that countries who concern themselves with negative externalities faced by *other* countries may indeed be more likely to support the international regulation of arms.

SUBSTANTIVE EFFECTS: FIRST DIFFERENCE CALCULATIONS

	ΔPr(No Support)	ΔPr(Weak Support)	ΔPr(Strong Support)
ARMS EXPORTS: 0 → United States	0.326** [0.003, 0.43]	-0.136 [-0.178, 0.089]	-0.183 [-0.42, 0.008]
ARMS IMPORTS: 0 → Saudi Arabia	0.751** [0.412, 0.962]	-0.220 [-0.255, 0.031]	0.508** [-0.960, -0.228]
CONFLICT: 0 → Afghanistan	0.212 [-0.254, 0.456]	-0.189 [-0.250, 0.003]	0.008 [-0.453, 0.322]
SECURITY APPARATUS: Afghanistan → Iceland	-0.349 [-0.464, 0.017]	-0.061 [-0.168, 0.149]	0.394** [0.067, 0.447]
CONFLICT: Nigeria + SECURITY APPARATUS: Afghanistan → Iceland	-0.157 [-0.397, 0.252]	-0.129 [-0.178, 0.008]	0.299 [-0.207, 0.408]
HUMANITARIAN AID: 0 → United Arab Emirates	-0.247** [-0.502, -0.008]	-0.121 [-0.181, 0.114]	0.395** [0.022, 0.501]
COMMON LAW: No → Yes	-0.207** [-0.371, -0.003]	-0.080 [-0.139, 0.086]	0.315** [0.009, 0.365]
PRIOR TREATIES: Eritrea → Netherlands	-0.471** [-0.732, -0.061]	-0.175 [-0.238, 0.131]	0.668** [0.144, 0.746]

Table 1: Following Efrat (2010), this table reports the change in predicted probability for each level of support for the Arms Trade Treaty between minimum and maximum values for every explanatory variable. The R package 'Zelig' was used on model 1 to simulate probabilities using an observed value approach (Choirat et al. 2018). Each country observation was simulated 1000 times. The averages of these simulations were calculated and subtracted between the "max" and "min" scenarios to determine the predicted difference in probability if this country change were to occur. The 95% confidence intervals are included in parentheses. Values where the difference appears to be statistically different from 0 are accompanied by two stars (**). This data provides the bases for Figure 6.

Model Selection and Robustness

In order to test the robustness of the model and measures used, I use an alternative operationalization of the primary negative externalities variables. I replaced the occurrence of armed conflict with the number of refugees and replaced security apparatus with a "government effectiveness" measure. Refugee counts are measured using data from the UN Refugee Agency (UNHCR 2019). "Government effectiveness" estimates come from the Worldwide Governance Indicators project (Kaufmann and Kraay 2019). Additionally, I include two more control variables that are commonly used in political science models and were similarly used in Efrat's (2010) model specification: regime type using the Polity IV index (Marshall and Jaggers 2002) and logged per capita GDP (The World Bank 2019). The ordered logit results can be found in Table 2 in the appendix.

Operationalizing "primary negative externalities" as the number of refugees rather than the occurrence of armed conflict did not change the results. This variable retained the same directional effect from the first model and was not significant when calculating the difference between scenarios with a high and low number of refugees. However, using "government effectiveness" to operationalize a state's capacity to maintain the rule of law and resist the negative externalities of the arms trade appeared to be a more substantively significant measure. A change from Somolia's level of government effectiveness to Singapore's results in an increase of 85.5 percentage points [51, 86.7] in strongly supporting the ATT. The direction of this effect is the same as what was found by model 1 and is thus similarly contrary to H4. While valid arguments could be made for how best to operationalize "state capacity", these changes did not alter the overall results from the main model, ensuring some robustness of model 1 (see Figure 8 in the appendix for simulated effects).

Moving on to the added control measures, only the effect of regime type on support for the ATT is statistically significant. Again, this does not drastically alter the original results. The probability of supporting the ATT increases by 43.7 percentage points [13.0, 50.0] as a country moves from a strong autocracry to a strong democracy. As has been found with international organization membership, democratizing states may seek to ratify treaties in order to establish credibility (Mansfield and Pevehouse 2008). Solid democracies may be more compelled to support the ATT due to shared norms and values. Thus, democracies and democracy-leaning countries may be more likely to exhibit strong support for the ATT which would explain the findings presented here. In contrast to Efrat (2010), these results indicate GDP per capita does not have any effect on support for the internatonal regulation of arms (see Figure 9 in the appendix for simulated effects).

I calculated the percentage of accurate predictions over all three models. The results were extremely similar, only differing by fractions of a percentage point (66.9%, 66.3%, and 67.1% respectively for models 1, 2 and 3). I conclude that the selection of model 1 is a fairly robust choice between these options as substantive and statistical differences are minimal.

Conclusion

In contrast to the findings of Efrat (2010) which found evidence for the role of societal harms in explaining country support for the international regulation of small arms, this study found mixed results with regard to conventional arms more broadly. While the theory behind secondary negative externalities held (i.e. a country's concern for the welfare of other countries), no such support was found for the effect of *primary* negative externalities (i.e. a country experiencing societal harms internally). However, the traditional political economy theory suggesting the role of producers and consumers matters greatly in the context of trade regulations was further supported by the results of this study. As a country's arms exports and imports increase, so too does their likelihood to withhold support for the international regulations of arms.

While these findings offer interesting insights, the model used in this paper suffers from important limitations. How to adequately measure societal harms that directly result from the trade of arms is a difficult question to answer. Including a variable to measure arms trafficking would have been an excellent addition, for example. A dataset on illicit arms transfers does exist; unfortunately, I was unable to acquire access. An improved model specification with more adequate measurements may result in better predictive accuracy with potentially different results.

Additionally, access to data used in Efrat's original study on whether arms exporters are private or state-owned was also restricted by a paywall. His argument about the role of state ownership of arms exporters was not heavily emphasized in this paper; however, ownership in this context could be very important. Overall, future research ought to include measures such as these in order to better capture the economic dynamics as well as the negative externalities countries face as a result from the arms trade.

Being that the Arms Trade Treaty is the most recent and most comprehensive attempt to institute international regulations on the trade on arms, this study sought to update and improve upon the study conducted by Efrat (2010) addressing trade restrictions on societally-harmful goods in the modern era of increasing trade liberalization. While the findings presented here diverged from those of Efrat, it highlights the need to better understand the conditions under which countries support or reject controls on certain goods – in particular, goods that may cause great harm as a result of their free trade.

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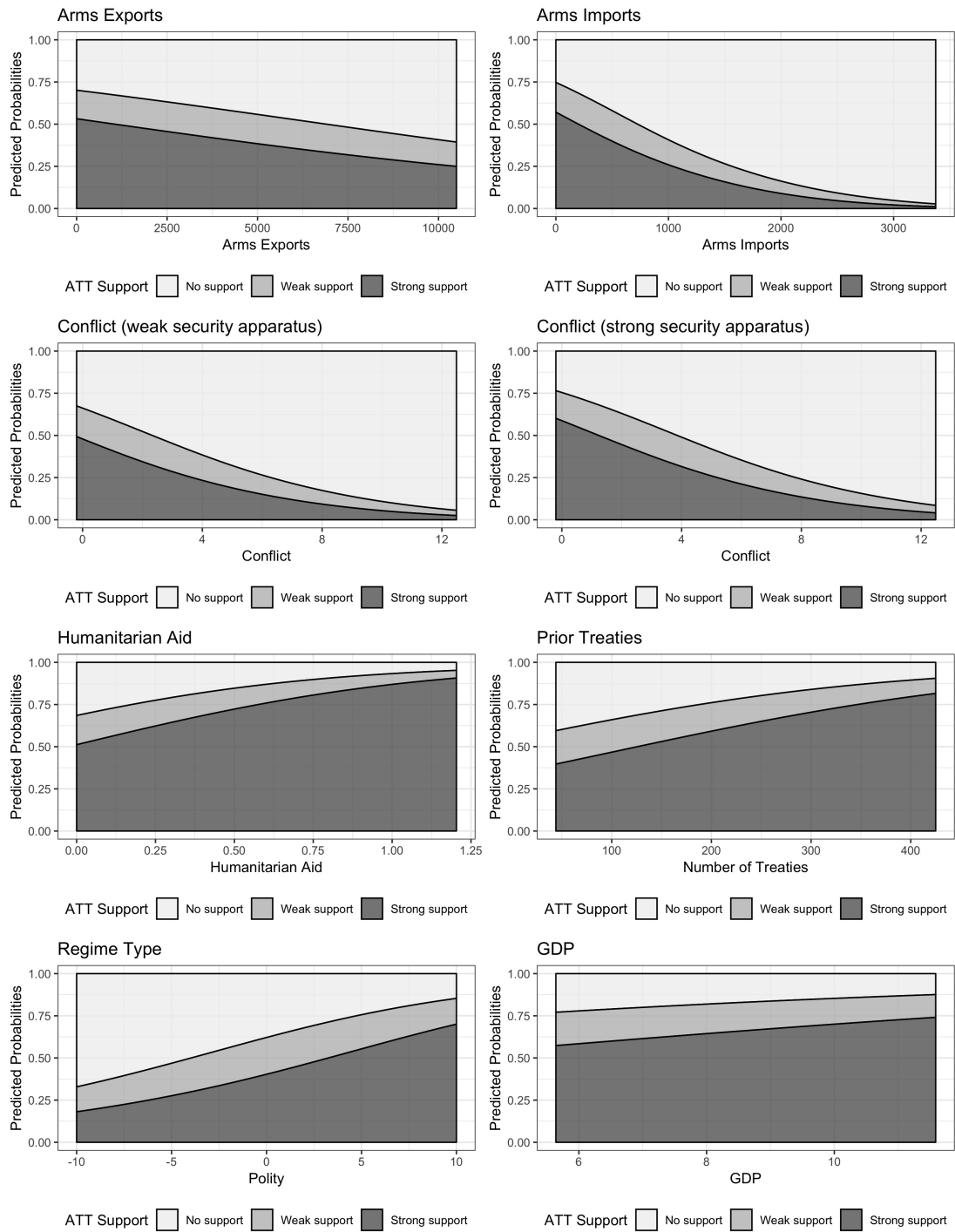
Appendix
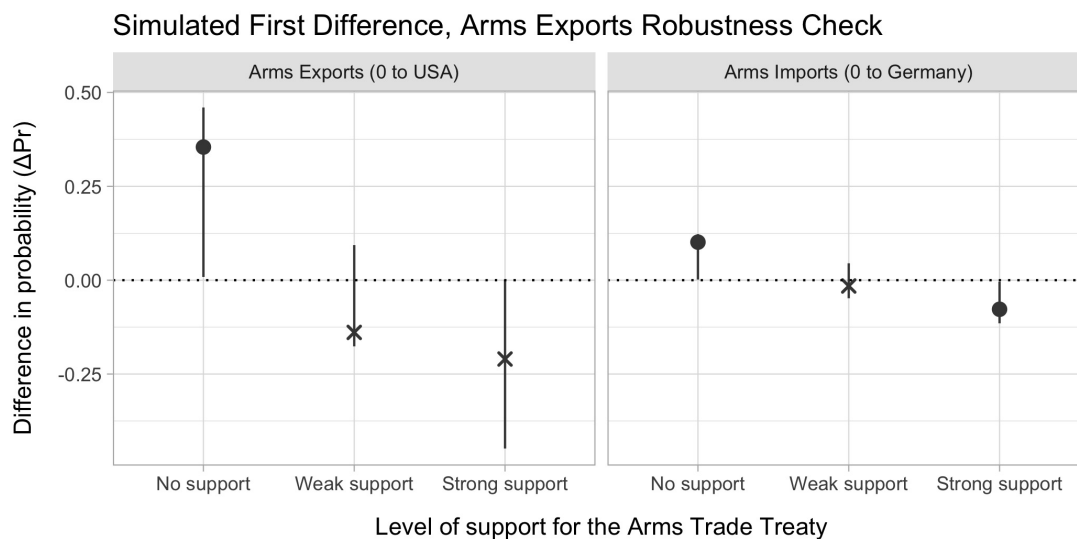
Figure 7: Comparison between the effect of arms exports on ATT support at US-export levels and German-export levels; effect remains statistically significant.
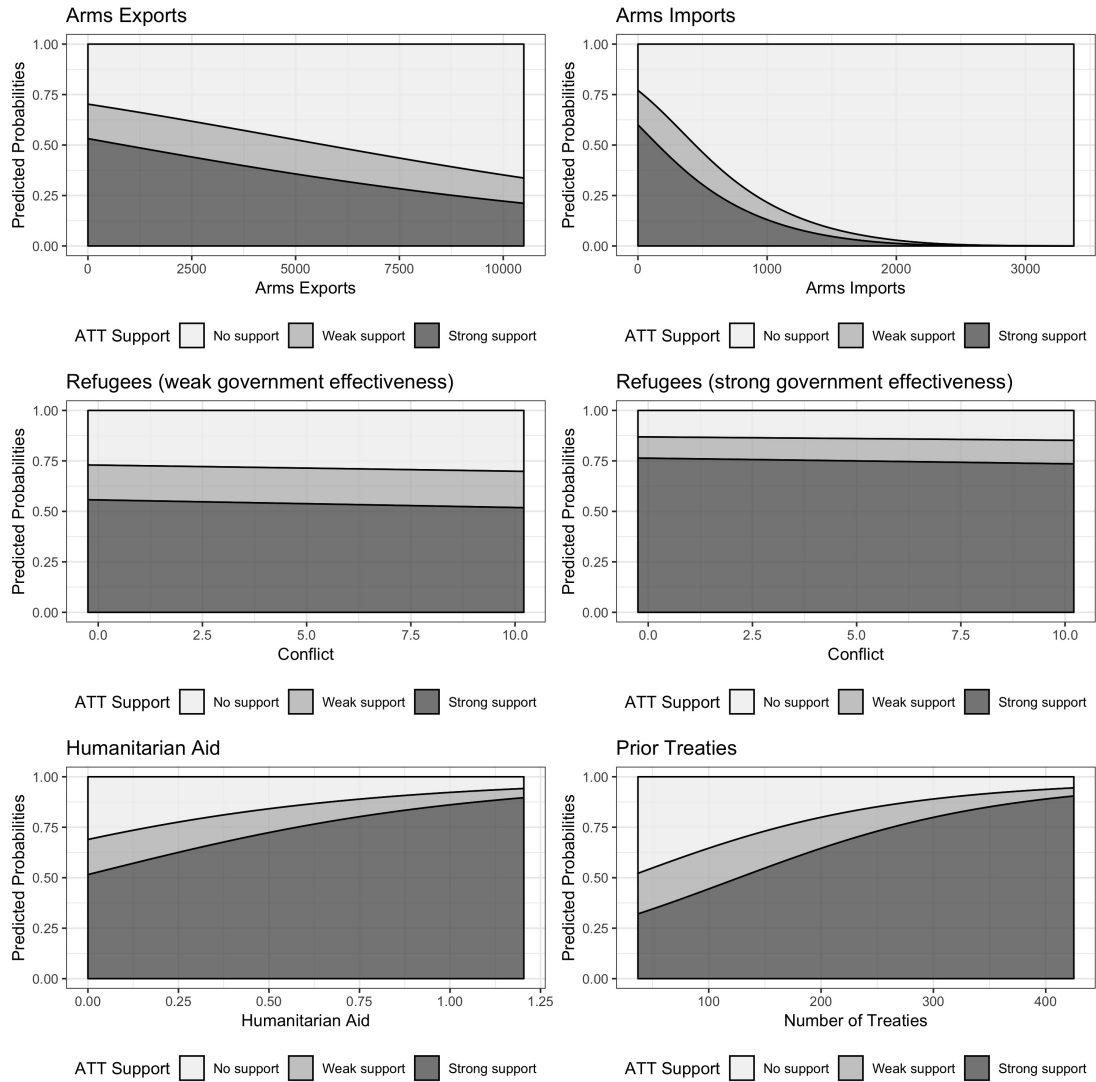
Figure 8: Simulated effects of model 2; alternative measures

Figure 9: Simulated effects of model 3; additional controls

Ordered Logit Results

	Model 1	Model 2	Model 3
ARMS EXPORTS	−0.0003	−0.0002	−0.0002
	(0.0003)	(0.0003)	(0.0003)
ARMS IMPORTS	−0.003***	−0.004***	−0.002**
	(0.001)	(0.001)	(0.001)
CONFLICT	−0.200		−0.455
	(0.377)		(0.612)
SECURITY APPARATUS	0.250		0.108
	(0.184)		(0.185)
REFUGEES		−0.021	
		(0.146)	
GOVERNMENT EFFECTIVENESS		0.589***	
		(0.223)	
HUMANITARIAN AID	2.498*	2.601*	2.933**
	(1.356)	(1.362)	(1.349)
COMMON LAW	1.864*	1.233**	−0.128
	(0.986)	(0.577)	(1.057)
PRIOR TREATIES	0.011***	0.011***	0.008**
	(0.003)	(0.003)	(0.003)
POLITY IV			0.157***
			(0.038)
GDP (PER CAPITA)			0.031
			(0.200)
CONFLICT*SECURITY APPARATUS	0.039		−0.107
	(0.563)		(0.525)
REFUGEES*GOVERNMENT EFFECTIVENESS		0.637	
		(0.443)	
Observations	178	190	161
Residual Deviance	272.1	295.7	231.7
AIC	292.1	315.7	255.7

Note: $^{*}p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table 2: Effect of trade dynamics and negative externalities on level of country support for the international regulation of arms via the Arms Trade Treaty

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30 June 2019