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U.S. Security Strategy and the Gains from Bilateral Trade

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Abstract

The relationship between trade and foreign-policy goals has led to growing debates in the field of international economics and international relations. Most studies are cross-national and use interstate disputes to proxy the national security interests. We focus on the U.S., the world's largest trading nation and a global power. While the U.S. has deployed more forces abroad and in more countries than any other nation in the world history, it is also the largest contributor of military aid to foreign countries. Troops and weapons are expensive tools of foreign policy and can serve to explore the geo-strategic determinants of bilateral trade flows between the U.S. and the rest of the World, in times of peace and armed conflict. We develop a three-party model of security and trade patterns and validate its predictions through an augmented log gravity model and newly constructed data on U.S. troop deployments and bilateral foreign military financing (FMF) on the 1950-2010 period. We find that both tools have significant, positive impacts on the shares of bilateral trade between the U.S and the recipient country, results that are robust to other known causes of trade and endogeneity issues. Moreover, our corrected model specification leads to a stronger relationship between trade and foreign policy goals than in the traditional models.

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*The views expressed are purely those of the authors and may not in any circumstances be regarded as stating an official position of the European Commission

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1 Introduction

To what extent are bilateral economic ties affected by the type and quality of diplomatic relations? Our paper focuses on the effect of U.S. foreign-policy goals, in particular its security concerns, on the shares of bilateral trade between the U.S. and the rest of the world. The strategic, geopolitical relevance of a country extends beyond issues of militarized disputed. The U.S. has deployed more forces abroad and in more countries than any other military in the world history; it is also the largest contributor of military aid to friends and allies. Since their end-use concerns one of the most sensitive issues in international relations i.e. the security of the recipients, we can use them as a barometer of political relations between the U.S. and the recipient states and as an active component in influencing their relations.

We consider a three-party model of production and trade in a conflict setting and propose a "security-for-trade" exchange mechanism, where the provision of U.S. troops and weapons is encouraged through the manipulation of the recipient's trade policies. Our empirical analysis find that both instruments of foreign policy (troops and weapons) positively affect the shares of bilateral trade between the U.S and the recipient country, results that are robust to compelling issues of omitted variable bias and reverse causality.

Much previous research on the topic points at foreign policy goals as drivers of trade by looking at the relation between trade and the likelihood of military contests between pairs of countries. A growing empirical literature seems to confirm the Liberal "Kantian Peace" claim that trade among nations leads to peace (e.g. Dorussen, 2006; Dorussen & Ward, 2010; Gartzke, 2007; Hegre *et al.* , 2010; Jinjarak, 2009; Oneal & Russett, 1999; Russett & Oneal, 2001). Most of the findings suggest that countries that engage in trade are less likely to go to war with commercial partners.[1] Trade has equally been shown to spur the development of institutions, the destruction of which would generate sufficient costs for individuals to opt instead for peaceful livelihoods (Jha, 2012). Interestingly, Martin *et al.* (2008b) suggest that higher trade flows may not necessarily lead to more peaceful relations, because what matters ultimately is the geographical structure of trade and its balance between bilateral and multilateral openness. Also, Stefanadis (2010) demonstrates that the peace-promoting effect of trade is conditional on the presence of strong institutions, with trade openness in weak institutional settings spurring violent behavior. Finally,

[1] See Mansfield & Pollins (2001); Polachek (2011); Polachek & Seiglie (2007); Schneider *et al.* (2003) for exhaustive reviews of this literature.

Martin *et al.* (2012) maintain that trade benefits and the geopolitical factors that impede the initiation of conflict work as complements in the development of free trade agreements and in the production of peaceful outcomes.

In a similar vein, a smaller number of studies reverses the causal arrow and evaluates the effects that conflict has on trade. A trade-disrupting effect of war is empirically well grounded in both the economic literature (e.g. Blomberg & Hess, 2006; Glick & Taylor, 2010; Martin *et al.* , 2008a) and the political science literature (Keshk *et al.* , 2004; Mansfield & Bronson, 1997; Pollins, 1989). Yet, a consistent number of studies find that the effect of conflict on trade is not statistically significant (Mansfield & Pevehouse, 2000; Morrow *et al.* , 1998, 1999). As Glick & Taylor (2010) point out, the absence of any uniform conclusions may be attributable to methodological differences in terms of sample characteristics. These studies usually restrict their samples to politically relevant cases - i.e. country pairs involving one or more major powers or geographically contiguous states - and exclude country pairs that are unlikely to engage in conflict. This sample restriction introduces the possibility of bias in the selected sample.

We focus on one country, the United States, which is the world's largest trading nation and one of the hegemonic powers since the end of World War II (WWII). While there is much observable evidence to attest to this hegemonic role (e.g. voting power at the IMF, veto power in the UN Security Council, the size of its economy and its defense budget), the U.S. foreign policy has been the subject of much debate, praise and criticism, both domestically and abroad. Among others, two particularly expensive diplomatic tools signal U.S. commitment to a particular region: the deployment of troops and the disbursement of military aid in the form of money and weapons to friends and allies.

Much of what has been written in recent years on the subject of U.S. troop deployments abroad and U.S. military aid deals with the original aims, strategic needs and decision-making processes (Kemp, 1994; Meernik *et al.* , 1998; Poe & Meernik, 1995). Relevant and novel exceptions are Biglaiser & DeRouen Jr (2007), Biglaiser & DeRouen Jr (2009) and Jones & Kane (2012), who look at the impact of U.S. troop deployments on trade, foreign direct investment and growth. However, as we will see in the next paragraphs, both our theoretical approach and our empirical strategy stand in sharp contrast to their works on troop deployment.[2]

[2]In fact, we do not use the levels of bilateral trade but the relative flow and differentiate between the shares of total import and export; offer alternative measures of foreign policy (i.e. security provision like military aid); provide a formal

How exactly does the U.S. security strategy affect the level of bilateral trade? Before getting to the data, we analyze a simple three-party model of production and trade in a conflict setting. While earlier research has proposed theories linking trade to conflict ((Anderson & Marcouiller, 2005; Garfinkel *et al.* , 2008; Skaperdas & Syropoulos, 2001, 2002), our framework differs significantly in the way trade maps into conflict. A host[3] country's government faces a strategic opponent and decides its trade tariffs policy, anticipating how it impact military assistance and therefore regime stability. We identify two channels through which the U.S. security strategy affects the level of bilateral trade: the "security for trade" and the "business enhancing" effects.

The former mechanism underlines an asymmetric exchange mechanism, where the host country offers more favorable trade policies in return for increased U.S. security guarantees. This mechanism reminds of Berger *et al.* (forthcoming)'s intuition that increased political influence - in that case arising from CIA interventions during the Cold War - created a larger foreign market for American products in the intervened country. However, while instances of foreign leaders directly installed by CIA or covert support for the regime once in power show a form of subjection of the intervened country, we theorize a much different mechanism, where the U.S. overt security provision to a country is directly encouraged by the manipulation of trade policies. Moreover, we find important effects of security provision on the shares of export from the intervened country to the U.S., in contrast to their findings. Finally, we do not use dummies for intervention but time varying measures (i.e. the quantity of troops and weapons), which are a more robust way to rank the intimacy of relations between the U.S. and the recipient countries. Along similar lines, Head *et al.* (2010) explore the erosion of colonial trading ties after colonies reached independence, thus shedding light on the colonial commercial subjection of these territories.

The "business-enhancing" mechanism is related to the nature of U.S. assistance and its security dimension. To distinguish between these two mechanisms, notice that the business enhancing mechanism affects the level of total trade, only the "security for trade" relation is expected to affect the *share* of total trade that the host country conducts with the U.S..

The effects of security on international trade are estimated using an augmented gravity model of

framework to clearly identify the channels and the main causal mechanism linking the provision of security to trade; deal with the problem of omitted variables bias and reverse causality through a novel identification strategy and instrumental variables; and focus on all the world's countries (i.e. not only developing countries) vis-a-vis the U.S.

[3]We use "host country" and "recipient country" interchangeably, to indicate the place where U.S. troops are stationed and/or the beneficiary of military assistance.

international trade, whose standard form is the benchmark empirical model for this kind of exercise in the international economics literature. We augment it with a number of important explanatory variables to increases the predictive power of the model. A fair criticism would be to point at the endogeneity problems plaguing the trade to military assistance dynamics. We address this issue by controlling for co-determinants of security and trade; by including fixed effects and time effects; and, finally, by implementing an instrumental variable strategy.

The next section provides an overview of troop deployment and military aid and explains why they better reflect U.S. national security goals than counts of militarized interstate disputes. Section 3 develops a model to formalize the possible channels linking security provision to trade while Section 4 presents the data, discusses the empirical strategy and reports our main empirical results. Lastly, Section 5 concludes.

2 Beyond MIDs: Weapons, Aid and Troops

Since the late nineteenth century, the "provision of security" - to use a catchall phrase for all defense material and troops - has become one of the key elements influencing the nature of international relations. In order to establish a theoretical and empirical base from which to analyze the impact of the U.S. security strategy on the level of bilateral trade, we first need to determine some of the "U.S. security supplies" since the end of WWII. Our inventory covers military aid, including weapons transfers, training programs and support services, and the deployment of troops.

U.S. arms transfers are of particular interest: "most American statesmen have traditionally regarded arms transfers as a necessary adjunct of national policy and strategic doctrine. They would argue that, from a long-term historical perspective, arms sales and military assistance programs have been beneficial to American strategic interests" (Kemp, 1994, p.147). In fact, with few exceptions, sophisticated weapons are usually given only to close allies. Cases of arms denial - i.e. when the U.S. turns down a request for arms - and the constraints on arms transfers are a natural way to rank the intimacy of relations between countries. This means that the instances of no assistance contain important information. An anecdotal example dates back to 1981, under the Regan administration, when "the political elite in Pakistan wanted to put the United States on the line and test U.S. friendship by seeing if America would alienate the Indians and go ahead with the F-16 transfer. They won the day, and U.S.-Indian relations entered a very tricky

period" (Kemp, 1994, p.151). Things did not substantively improve until 1987, when the U.S. finally agreed to let India buy high technology military items (Kemp, 1994).

The U.S. uses three major channels to deliver major weaponry to foreign countries: foreign military sales ("FMS"), in which a government-to-government agreement is negotiated by the Pentagon; direct commercial sales ("DCS"), in which the industry negotiates directly with the purchasing country and must apply for a license from the State Department; and military aid, which allows the U.S. government to give away weapons from U.S.military stocks for free or at greatly reduced prices by resorting to what is know as the Excess Defense Articles (EDA). The United States equally provides military training to many foreign countries under the military funding program.[4] The stated goal is to promote U.S. national security by contributing to regional and global stability, strengthening military support for democratically-elected governments and containing transnational threats, including terrorism and trafficking in narcotics, weapons, and persons. These grants enable allies and friends to improve their defense capabilities and foster closer military relationships between the U.S. and recipient nations. According to the relevant literature on foreign military financing, this type of military aid can be effective in inducing states to adhere to U.S. foreign policy objectives (Alesina & Dollar, 2000; Palmer & Morgan, 2010). In exchange for military equipment or training, the USA could require recipient states to support U.S. foreign policy (Meernik *et al.* , 1998). Indeed, strategic and political priorities are shown to be among the main drivers of the U.S. military aid decision-making process (Poe & Meernik, 1995). While military aid has been shown to undermine the quality of institutions in the particular in the context of Colombia (Dube & Naidu, 2010), recent findings suggest that despite military aid may not being effective at disarming terrorist groups, it can be effective at keeping terrorist groups out of power (Bapat, 2011), thus making this tool one of the most persuasive in matters of foreign policy.

In the aftermath of WWII, only the U.S. retained the strength to challenge the expansion of the Soviet power. The massive rearmament program of the Western world was largely financed by the U.S, and is expression of American foreign policy. During the Cold War, the U.S. used foreign aid to counter international threats by granting assistance to win or maintain allies and to help countries fighting Soviet proxies. Throughout this period, the U.S. competed with the Soviet Union for arms provisions to the

[4]USAID Economic Analysis and Data Services (2012): US Overseas Loans and Grants, Obligations and Loan Authorizations Greenbook `http://gbk.eads.usaidallnet.gov/`

Middle East and South Asia (see Figure 1). In most of the wars fought between the 1960s and the 1970s (e.g. the Vietnam, the Indo-Pakistan, the Arab-Israeli and the Algerian-Morocco wars), foreign arms, or restrains on arms supplies, played a central role in determining the fortune of the combatants. Central American countries were also of particular concern to U.S. foreign policy-makers, in part because of their location, but also owing to the perceived threat of increasing Cuban and Soviet influence in the region (e.g. in Nicaragua). In fact, U.S. military supplies were instrumental in winning the Cold War, to assure Israel's qualitative edge and to deny the Arab coalitions any prospect of military victory (Kemp, 1994). The reductions in aid disbursements in the former Eastern Bloc were driven by the disappearance of a main motive, the containment of communism (see e.g. Boschini & Olofsgård, 2007). Following the end of the Cold War, several types of aid were granted to states under this program; from counter-narcotics assistance provided to Colombia to the provision of helicopters to Pakistan's military. Arms supplies and military assistance are interesting because they entail a long lasting relationship between the supplier and the buyer, in particular when the client has power but lacks technological skills: the recipient needs continuing and intensive support from the provider to maintain and operate advanced equipments. Thus, the size of military assistance conveys important information about the quality of bilateral relations between the U.S. and the recipient country.

Each year since 1950, the U.S. Department of Defense has provided on its web site detailed information about the deployment of American troops around the world. The Heritage foundation collected and analyzed the data (Kane, 2006). A thorough analysis of the dataset shows how the size and scope of U.S. military has changed over the past 60 years, going from its peak in 1969 as a conscripted force of 2.4 million troops, heavily overstretched around the globe, to today's all-volunteer force of only 1.4 million, concentrated in a handful of countries. On average, a stunning 22% of all U.S. Servicemen were stationed in foreign countries during 1950-2005, most of them in non-combat duties. Almost every nation on earth, 181 out of 185, hosted American forces to some degree. Over the same period, 53 countries have hosted at least 1000 American troops at one point. Some of these deployments have existed for nearly 50 years, in countries like Japan, Germany, and South Korea, while other deployments have more recent origins such as is the case of the current deployments in Australia and around the Horn of Africa.

Broken down by geopolitical areas, this data reveals how different administrations have approached in-

stabilities. Troops sent to Korea in the early 1950s, to Vietnam during the 1960s and Iraq and Afghanistan in the 2000s saw active combat, yet in most instances the U.S. military performed a variety of non-combat duties, from anti-piracy operations, to peacekeeping and training with foreign militaries. The bulk of U.S. troops have been concentrated in Europe (52% of troops deployed) and Asia (41%), while Africa and Middle East have hosted a smaller share of troops. For the most part, U.S. troops were stationed in allied countries, such as Japan, South Korea, and NATO members in the Cold War system of deterrence to contain communism. Forces in Europe were reduced by two-thirds after the fall of the Berlin Wall (see Figure 2).

Even if, much like MIDs, troop deployments were often a response to acute crises (e.g. Panama, Kuwait), most deployments evolved slowly and with mutual consent between the U.S. and the host countries (e.g. Italy, South Korea). Although troops may be brought in during unstable situations, troops are mainly stationed abroad during peaceful times. Frequent deployments and joint military exercises during peacetime in the past in Italy, Germany, Morocco, Thailand, and currently in Egypt, Panama, Saudi Arabia, Singapore, South Korea, Turkey, and the United Arab Emirates indicate positive relations between the U.S. and host countries. More recently, Australia has agreed to host a full U.S. Marine task force. The deployment is being seen as a move to counter China's growing influence in the Pacific region. Since the general objective is to confront perceived contemporary threats and extend a security guarantee over a strategic region, we use the presence of troops to proxy the foreign-policy goals of the U.S. towards the country harboring troops. Troop deployments reveal national interests that go beyond militarized disputes and more often reflect cordial relations between countries.

Accepting to host U.S. troops is a difficult political decision, which can cause domestic backlash if the benefits are not clear-cut. The opposition can easily gather domestic support against the "imperialistic ambitions" of the U.S. and the threats to national sovereignty. To support the security needs of friends and allies and strengthen security links, the U.S. can resort to alternative, less invasive, foreign policy tools. Foreign military aid could be thought as an effective substitute for this costlier policy and can be used to cross-check the validity of our theory. Before exploring whether an economic region over which the U.S. extended its security guarantees is more likely to shift its trade balance towards the U.S. and away from the rest of the world, and to what extent this special relation affects its exports towards the

U.S., we propose a theoretical framework to clarify the exact causal mechanisms.

3 The Theory

We consider a setting featuring a host country under the rule of a government g and a third party, e. The host country and country e have some trade relationship such that the imports from and exports to country e are denoted by the functions $m(t, \delta)$, and $x(\delta)$. The imports $m(t, \delta)$ are a function of import tariffs t. Moreover, a conflict may be occurring in the host country, in which case the transportation and production costs inside the country rise. We therefore impose that both imports $m(t, \delta)$ and exports $x(\delta)$ be a decreasing function of the conflict-related costs δ. Using expression $M(t, \delta)$ to designate the government's total tax proceeds, we have $M(t, \delta) = tm(t, \delta)$. Given the focus of the paper, we are disregarding other sources of public funding such as other forms of taxation or nationally controlled businesses. We impose the following functional form on $m(t, \delta)$:

$$m(t, \delta) = \frac{(1 - t)\tilde{m}}{1 + \delta}$$

Regarding function $x(\delta)$ we impose:

$$x^{'}(\delta) < 0$$

The partial derivatives with respect to δ capture the reduced incentives of foreign and local producers, respectively, to export goods in the presence of an ongoing civil war. Accordingly, more trade-hampering conflicts will have a larger trade-reducing effect. Using lower case letters to designate partial derivatives, the sign of the cross-partial derivative m_{12} captures the increased reactivity of imports to tariffs in the presence of more trade-hampering conflicts.

The government of the host country faces some threat from a group denoted r, which can be seen as an internal or an external threat. To defend itself against the threat, the government decides the optimal security level s_g given a marginal cost of security investments c. Likewise, the opposition forces can deploy forces s_r at the same unit cost. The U.S., e, has the choice of intervening or not in this conflict (or equally to provide troops and weapons in the context of regional instability). The amount of available troops that e is willing to supply is given by $d \geq 0$, which captures the geopolitical importance of a region.

We assume that the probability of e intervening in this conflict is given by $\phi(d)$, with $\phi(d) \in [0,1]$ and $\phi(d)^{'} < 0$. In words, the larger the importance of an area of the world to e's security strategy, the more likely that a military assistance occurs. The intervention takes the form of improved fighting efficiency of the government forces (i.e. U.S. troops and weapons are taken to be of higher effectiveness). We next assume that the government's relative fighting efficiency, α, is a function of the trade policy of g towards e (i.e. t). More specifically, g can decide to reduce the degree of protectionism towards e to convince the latter to increase its efforts in supporting the regime. Alternatively, e can demand more favorable trade terms in exchange for more generous military assistance. The foreign support is taken to be an increasing function of t, with $\alpha(1) = 1$ and $\alpha^{'}(t) < 0$. Using the notation M^i to designate the government's tax proceed with $(i = a)$ and without $(i = b)$ intervention, and with a slight abuse of notation depicting the players' identity with lower-case letters g and r, the utility of the government and of the opposition forces is therefore given by the following expressions:

$$u_g = \phi(d)\frac{\alpha(t)s_g}{\alpha(t)s_g + s_r}M^a + (1-\phi(d))\frac{s_g}{s_g + s_r}M^b - cs_g \tag{1}$$

$$u_r = \phi(d)\frac{s_r}{\alpha(t)s_g + s_r}M^a + (1-\phi(d))\frac{s_r}{s_g + s_r}M^b - cs_r \tag{2}$$

Having presented the contestants' security levels, the increases in production and transportation costs due to conflict, δ, can now be better apprehended. We assume that δ is an increasing function of the forces involved in the conflict. Hence $\delta(s_g, s_r)$ is such that $\delta_1 > 0$ and $\delta_2 > 0$.

The timing of the game is sequential. In a first stage the government decides the import tariffs to be implemented under third party intervention, t^a, and without, t^b. Then local and foreign firms decide their production/trade levels. Lastly, in stage 3 the government and opposition forces choose their security levels given the uncertainty on the reaction of the third party intervener. We solve the game backwardly.

We begin by differentiating the players' objective function with respect to the relevant decision variables, s_g for (1) and s_r for (2) and this yields the following FOCs:

$$\frac{\partial u_g}{\partial s_g} = \phi(d)\frac{\alpha(t)s_r}{(\alpha(t)s_g + s_r)^2}M^a + (1-\phi(d))\frac{s_r}{(s_g + s_r)^2}M^b - c = 0 \tag{3}$$

$$\frac{\partial u_r}{\partial s_r} = \phi(d)\frac{\alpha(t)s_g}{(\alpha(t)s_g + s_r)^2}M^a + (1-\phi(d))\frac{s_g}{(s_g+s_r)^2}M^b - c = 0 \tag{4}$$

Notice that the variable $\delta(s_g, s_r)$ is impacted by the decisions of the government and opposition forces. Yet, since this variable feeds back into the production decisions that are undertaken at an earlier stage, neither the government, nor the opposition forces can influence the effect of their security decisions on M^a and M^b.

Combining these expressions yields $s_g^* = s_r^* = s^*$ and we therefore have:

$$s^* = \left[\frac{\phi(d)\alpha(t)}{(1+\alpha(t))^2}M^a + \frac{(1-\phi(d))}{4}M^b\right]\frac{1}{c} \tag{5}$$

Combining the above values with (1), we obtain:

$$u_g^* = \left[\frac{\phi(d)\alpha(t)^2}{(1+\alpha(t))^2}M^a + \frac{(1-\phi(d))}{4}M^b\right]\frac{1}{c} \tag{6}$$

In stage 2, the domestic and foreign firms take their production decisions, given the production and transportation costs $\delta(s^*, s^*)$.

Lastly, in stage 1 the government decides the import tariffs levels. Since the government aims at maximizing its expected tariffs' proceeds, it will set $t^b = t^*(\delta) = \arg\max_t t(1-t)\frac{\tilde{m}}{1+\delta} = 1/2$, while t^a is obtained after optimizing (6) w.r.t. t:

$$\frac{\phi(d)2\alpha(t^a)}{(1+\alpha(t^a))^3}\alpha'(t^a)M^a + \frac{\phi(d)\alpha^2(t^a)}{(1+\alpha(t^a))^2}\frac{(1-2t)}{\delta}\tilde{m} = 0 \tag{7}$$

Simplifying, we obtain:

$$\frac{2\alpha'(t^a)}{1+\alpha(t^a)}M^a + \alpha(t^a)\frac{(1-2t)}{\delta}\tilde{m} = 0 \tag{8}$$

To show that the solution to (8) is indeed a maximum, we verify the SOC which, after substituting for the FOC as given by (8) reads as:

$$\frac{2\alpha''}{1+\alpha}M^a + \frac{\alpha^2\frac{(1-2t)}{\delta}\tilde{m}}{1+\alpha}(2-\alpha) - \alpha\frac{\tilde{m}}{\delta} < 0 \tag{9}$$

Where the sign of this expression follows from the middle term being necessarily negative since $a^{'} < 0$ and by the FOC we have that $\frac{(1-2t)}{\delta}\tilde{m} > 0$.

Comparative statics:

In this paper we are interested in the signs of $\partial m^a(t^a, \delta)/\partial d$, and $\partial m^b(t^b, \delta)/\partial d$.

Computing the first expression we obtain:

$$\frac{\partial m^a(t^a, \delta)}{\partial d} = m_1 t_d + m_2 \left(\delta_1 + \delta_2\right) s_d^* \tag{10}$$

The sign of s_d^* is obtained as follows:

$$s_d^* = \phi(d)^{'} \left(\frac{\alpha^2(t^a)}{(1+\alpha(t^a))^2} M^a - \frac{1}{4} M^b \right) \frac{1}{c} > 0$$

With the sign of the expression being the consequence of $\alpha(t) \geq 1$ and $M^a > M^b$.

We can now compute the sign of t_d^{a*} by applying the implicit functions' theorem on (8):

$$t_d^{a*} = -\frac{\left[\frac{2\alpha^{'}(t^a)}{1+\alpha(t^a)} M_\delta^a + \alpha(t) M_{t\delta}^a \right] s_d^* \left(\delta_1 + \delta_2\right)}{SOC_{t^a}} \tag{11}$$

To sign this expression, notice that (i) the SOC is satisfied, and (ii) $\delta_1, \delta_2 > 0$ and $s_d^* > 0$. It follows that the sign of the expression is positive if the squared-bracketed term is positive. Using (8) in the squared-bracketed term, we deduce that the above expression is positive valued if:

$$-\frac{\alpha(t)(m + tm_1)}{tm} tm_2 + \alpha(t)(m_2 + tm_{12}) \geq 0$$

Simplifying this is equivalent to

$$\alpha(t) t \left(m_{12} - \frac{m_1 m_2}{m} \right) \geq 0$$

Replacing by the analytical values of the derivatives, we obtain that the LHS of this expression is equal to zero.

Turning next to the effect of d on the exporting industry, since $\delta_d > 0$, it follows that $\partial x/\partial d < 0$.

Combining the findings of this section, we obtain the following testable prediction:

Proposition 1. *The higher the geostrategic importance of a region, the higher the military support from the third party intervener (TPI) in local conflicts, and the lower the overall conflict intensity. This results in higher trade flows - imports and exports - between the host country and third party intervener.*

This proposition highlights the trade-enhancing effect of the military assistance of a third party intervener in a geographical region. More specifically, geostrategic salience implies that the TPI is more likely to actively support the host country's government in its attempt to repel attackers. Given that such support is a function of the host country's trade policy towards the third party's products, it follows that the more involved is the TPI in a specific region, the higher the incentives of a local government to tilt its trade policy in favor of the TPI so as to attract its support, since the likelihood of actually being granted military support is higher. Consequently, the power differential between the host country's government and its opponents grows, and this incentivizes the opponents to reduce their fighting efforts. The government and the opposition' investments being strategic complements, it follows that the overall conflict intensity decreases, hence reducing the production and transportation costs. Trade is therefore favored by a double token since, on the one hand the import tariffs are purposefully kept at low levels, and on the other hand, the negative effects of conflict are contained. While the business-enhancing effect leads to an increase in the level of trade with *all* trading partners, the security for trade dynamic (i.e. the asymmetric exchange of U.S. security transfers for more favorable trade policies) has an obvious and testable impact on the *shares* of total import and export that the host country conducts with the U.S. and vice versa.

4 Empirical analysis

4.1 Data sources

Bilateral trade is drawn from the Correlates of War Dataset (COW), assembled by Barbieri *et al.* (2009). The dyadic trade dataset describes import and export data in current U.S. dollars for pairs of sovereign states. Per capita military expenditure is also taken from the Correlates of War. Information on GDP and

per capita GDP are taken from the Penn World Tale dataset (version 7.1).[5] The list of gravity controls includes the classical impediments or facilitating factors such as bilateral distances, contiguity, colonial linkages, and common language dummies. All these variables come from the CEPII distance database.[6] Free Trade Agreements data come from Baier & Bergstrand (2007) and are supplemented by data from the WTO web site.[7] U.S. troop deployment data come from the Department of Defense and are based on counts taken in the last month of the fiscal year. The dataset was assembled by Kane (2006). Data on military aid are drawn from the U.S. Agency for International Development.[8] All nominal variable, including data on military spending and trade, which are in current USD, are transformed into constant USD using the U.S. GDP deflator, with 2005 as the base year. The GDP deflator is calculated by the US Bureau of Economic Analysis.

4.2 Benchmark model

The gravity model has long been one of the most successful empirical models in economics to analyze trade patterns between states.[9] The good fit and relatively tight clustering of the coefficients in the vast empirical literature suggest that underlying economic laws are at work. However, given that potentially each sale has multiple possible destinations and each purchase has multiple possible origins, a theory of the bilateral flows must account for the relative attractiveness of origin-destination pairs. Indeed, the fit of traditional gravity improves when supplemented with proxies for trade frictions, such as the effect of political borders and common language (Anderson, 2010, provides an excellent review of the theoretical and empirical issues behind the gravity model). Yet, common sense tells us that the diplomatic, strategic and military relationship between countries should also be among the strongest predictors of the trade flow. Political factors along with economic conditions encourage countries to trade with each other.

We begin the estimation of the effect of security provision on U.S. bilateral trade by using the conventional gravity model of international trade. The formulation used in this paper is the benchmark empirical

[5] `https://pwt.sas.upenn.edu/php_site/pwt_index.php`

[6] `http://www.cepii.fr/anglaisgraph/bdd/distances.htm`

[7] `http://www.wto.org/english/tratop_e/region_e/summary_e.xls`

[8] USAID Economic Analysis and Data Services (2012): US Overseas Loans and Grants, Obligations and Loan Authorizations Greenbook, available at `http://gbk.eads.usaidallnet.gov/`

[9] The traditional gravity model drew on an analogy with Newton's Law of Gravitation. A mass of goods or labor or other factors of production supplied at origin i, A_i, is attracted to a mass of demand for goods or labor at destination j, B_j, but the potential flow is reduced by the distance between them, d_{ij}. Strictly applying the analogy, $T_{ij} = A_i B_j / d_{ij}^2$ gives the predicted trade flow between i and j, T_{ij} . Tinbergen (1963) is the first application of the gravity model to trade flows.

model for this kind of exercise, and the specification can be derived formally from a general equilibrium model of production, consumption, and trade, as in Anderson & Van Wincoop (2003). However, instead of using the bilateral level of trade between U.S. and the rest of the world, our dependent variable is the log of country i's import from (exports to) the US as a share of total country i's import (export). The shares are used to capture changes in the relative trade flows between the U.S. and the host country.

The baseline model is specified as follows:

$$\log z_{it} = \mu_i + \mu_t + \lambda \log security_{it} + \beta X_{it} + \epsilon_{it} \tag{12}$$

where i denotes the host/recipient country (i.e. hosting troops and/or aid), t denotes time. $\log security_{it}$ (i.e. security provision) is the log of troops deployed by the US in country i at time t or the log of military aid provided by the U.S. to help country i, including weapons depending on the estimation. The matrix X_{it} includes the standard determinants of trade as used in the gravity equation literature, following Glick & Taylor (2010), but is not meant to be exhaustive. We include time-invariant dyadic variables such as geographic proximity (log distance, contiguity) and historical linkages (common language, ex-colony). We also control for several characteristics of the host/recipient country (real GDP, per capita real GDP, population) and a time-varying measure of relative distance (*Remoteness*), calculated as the (log of) GDP-weighted average distance to all other countries (Wei, 1996). Finally, following Tomz *et al.* (2007), we include the participation in Free Trade Agreements because they are viewed as creating opportunities for trade. The gravity equation also includes a full set of time dummies, μ_t, that control for unobservable year effects that are common across the states. β and λ are coefficients and ϵ_{it} represents the other influences on bilateral trade, assumed to be well behaved.

Most studies use pooled, rather than panel estimators that may not adequately control for omitted country - or pair-specific - attributes or distinguish between the effects of military assistance on trade across country pairs and the effects over time. Another shortcoming that makes the gravity wrongly specified is the lack of multilateral resistance terms, or the importance of relative trade costs in determining trade flows (Anderson & Van Wincoop, 2003). Without their inclusion, the error terms are correlated with bilateral trade barriers. We tackle this problem with country-pair fixed effects, μ_i.[10] Hence, our

[10] As Baier & Bergstrand (2007) show, fixed-effects models on panel data including bilateral (country-pair) fixed-effects and

identification of security transfer's impact depends on the within-pair variation in trade and security provision.

4.2.1 Baseline results

Table 1 reports the estimated coefficients of the gravity model when the U.S. troop deployment is our proxy for the the level of security transfers. We differentiate between (shares) of exports and imports. Throughout the paper we use Huber-White standard errors to address the potential problem of heteroskedasticity in the error terms. The traditional gravity equation is shown in columns (i) and (v). The models also control for macro area and year effects (not reported). The added control variables are economically and statistically significant with "standard" interpretations. For instance, the U.S. trades more with economically larger countries. A common language, i.e. English, encourages trade, as does a common ongoing Free Trade Agreement. FTAs can be interpreted as a way to reinforce bilateral economic relations. Canada and Mexico, that share territorial boundaries with the U.S., engage in higher levels of trade with the U.S. because transportation costs are lower than with non-neighbors. Our main coefficient of interest is the λ estimate of the effect of U.S. troop deployment on the shares of exports and imports. By looking at columns (i) and (v), a 10% increase in the size of troops deployed increases the share of exports and imports by 1-1.1 percentage points and this effect is statistically significant at the 1% level. This is a quite large effect, as it amounts to almost one-third (one-fifth) of the effect caused by a similar increase in GDP on US exports (imports).

Columns (ii)-(iv) and (vi)-(viii) provide several robustness checks. First, to address the likely omission of country-specific characteristics and/or the importance of relative trade costs in explaining the existence and the extent of the bilateral trade, we estimate models with country fixed effects. In so doing, however, the time-invariant covariates drop out (i.e. distance, contiguity, common language), because they are perfectly collinear with the country fixed effects. In columns (ii) and (iii), the estimated coefficients of the log of troop deployment are equal to 0.11-0.12, slightly larger than in the model which does not control for country fixed effects, and still statistically significant at 1% level. The introduction of the fixed effects lowers the significance of some explanatory variables, which is to be expected for the variables with small within-country variation.

country-and-time dummies are superior to other estimation methodologies such as pooled OLS, or random-effects models.

Secondly, we estimate the same fixed effects model but exclude countries at war with the US (e.g. Vietnam, Iraq) and the member states of the Warsaw Pact. The intuition behind the exclusion of the second group is straightforward: the U.S. was mostly unable to provide military assistance to countries belonging to the Soviet bloc, and at the same time did not engage in significant trade with them. The results are reported in columns (iii) and (vii) of Table 1. The size and the statistical significance troop deployment remain unchanged, suggesting that our results are robust and are not driven by the inclusion of these countries.

Third, the models of columns (vi) and (viii) allow for a more complex structure of the pairs fixed effects by adding 162 pair-specific time trends to the baseline specification. The coefficient of 0.07 and 0.05 show that after removing time-varying pair and common year effects an increase of 10% in the number of troops is associated with a 0.7 and 0.5 growth in the relative size of exports and imports with the United States.

Similar models where the military assistance is measured by the U.S. disbursement of military aid in the form of money and weapons are found in Table 2. Results are organized as in Table 1, i.e. columns (i) and (v) show the estimates of the traditional gravity equation, columns (ii) and (vi) control for country fixed effects, columns (iii) and (vii) exclude countries at war and the members of the Warsaw Pact, and columns (iv) and (viii) include country-specific linear trends. U.S. military aid positively contributes to the shares of exports and imports to/from the U.S.. A 10% increase in the amount of military aid transferred to country i is directly linked to an increase of the relative trade flow between 0.6 and 1.1 percentage points.

Even though the results provide empirical support to our security-induced trade theory, the estimates of our main coefficients of interest, λ, in equation 12, are most certainly contaminated by two sources of endogeneity, i.e. omitted variables bias and reverse causality, which will be duly addressed in the following two sections.

4.3 Correcting for omitted variables bias

In equation 12, the coefficients of security could be affected by omitted co-determinants of economic gains, i.e. trade. Indeed, several determinants of bilateral trade (or conversely trade barriers) might also affect the bilateral political affinity and consequently the political costs of troop deployment or military aid. An

upward bias of the coefficient λ in the customary gravity equation may come for instance from the fact that some countries (because of cultural, historical, or other reasons that we cannot fully control for) have good bilateral relations with the U.S. while also having large trade flows. We control for such country pair fixed effects by exploiting the panel dimension of our data set, but this may not suffice.

Therefore, we address the potential endogeneity of the coefficient λ by using a more general model where the effect of the U.S. security strategy varies across quartiles. In so doing, we exploit the shifts in the US security strategy over more than 50 years to identify its effect on trade.[11] Take military aid for example. The top recipients of military aid in 1970 were Viet Nam, South Korea, Taiwan, Lao, Thailand, Greece and Spain while in 2010 the focus shifted completely to other countries, including Israel, Egypt, Iraq, Pakistan, Jordan and Somalia which became some of the top recipients. This holds for example for the U.S. presence in Europe during the Cold War, and the massive presence in the Middle East more recently. This "shifting focus" is also verifiable at the regional level: troops and weapons were sent to those regions most in need of U.S. assistance, according to shifting U.S. priorities over time (see Figure 1 and 2). The importance of Latin America and the efforts invested in counter-narcotics policies in the last decade is also evident, with Bolivia, Peru, and more recently, Colombia, among the top U.S. aid recipients.[12] The impact of the terrorist attacks on September 11, 2001, and the subsequent use of foreign aid to support the war on terrorism is clearly seen in the country-aid allocations to the Middle East and South Asia, in particular Afghanistan, Pakistan, Jordan and Indonesia.

Variations in the *global* U.S. security strategy over time are unlikely to be correlated with other observed and unobserved region's attributes affecting bilateral trade flows. Since we do not observe the U.S. foreign policy aims, we attempts to proxy this unobserved characteristic by using troop (military aid) quartile dummies. So we rewrite the model in equation 12 as follows:

$$\log z_{crqt} = \mu_r + \mu_q + \mu_t + \lambda_q \log security_{crgt} + \beta_q X_{crqt} + \varepsilon_{crqt} \tag{13}$$

where c denotes country, r represents region, q stands for quartile and t denotes time. After aggregating

[11] A similar strategy has been successfully implemented in Acemoglu & Pischke (2001) to assess the effect of family income on the siblings' educational enrollments.

[12] *Plan Colombia*, for example, which includes U.S. military/counter-narcotics aid, was conceived between 1998 and 1999 by the administration of Pastrana to end the Colombian armed conflict and create an anti-cocaine strategy.

equation (13) across countries, we obtain the following specification:

$$\log \overline{z}_{rqt} = \mu_r + \mu_q + \mu_t + \lambda_q \log \overline{security}_{rgt} + \beta_q \overline{X}_{rqt} + \varepsilon_{rqt} \tag{14}$$

where $\log \overline{z}_{rqt}$ is the log average bilateral trade in region r, quartile q and time t, and $\log \overline{security}_{rgt}$ is the log average security measure in region r, quartile q and time t.

Equation 14 controls for time, region and quartile fixed effects. The time captures the effects of aggregate conditions like changes in U.S. presidency while the quartile fixed effects purge the correlation between security and the errors due to unobserved foreign policies, so that λ_q is correctly identified.

Note that the estimation of Equation 13 can be thought of as an instrumental variables' (IV) estimation of the original equation using the full set of quartile-region-time interactions as the instruments for the security provision. This IV interpretation makes our empirical strategy appealing. Troop deployment or military aid are likely to vary with political or other unobservable affinities between the U.S. and the host/recipient country i. As explained, these factors may be correlated with the attitude of trading with i, so that security is correlated with the error term in Equation 12. Our strategy avoids this important source of bias, because we are controlling for i's rank in the regional troop/aid distribution, which is close to a sufficient statistic for its unobservable characteristics. We identify λ_q from the variations in the "level of security" conditional on this rank. In addition, our estimation strategy also exploits the fact that security differentials have changed in different ways when we look at diverse regions (see Fig. 1-2). By relying completely on within region variations we can control for the interactions of time and security groups (e.g. quartile dummies) at the aggregate level in the trade equation. This allows us to also estimate a model that controls for other (unobservable) factors which might have affected host/recipient countries differently, like heterogeneous levels of instability in the region of interest.

4.3.1 Results

In line with our discussion above, Tables 3 and 4 control for troop/aid quartile fixed effects, using troop deployment and military aid respectively. Data are cell level means for 6 world macro regions, 56 years and 4 quartiles. However, the actual number of observations in Tables 3 and 4 are lower than 1344 ($= 6 * 56 * 4$) because the sample has some missing data. We add the *Remoteness* variable - calculated as

the (log of) GDP-weighted average distance to all other countries - to have a time-invariant measure of distance. We estimate several specifications whose main differences lie in the number of fixed effects and their interactions. Both ways to proxy the security imply a positive and highly significant impact on trade levels across all models. In the Appendix, Tables A.1 and A.2 also report the regressions which do not control for quartile effects. This is equivalent to estimating security on trade without controlling for the possibility of unobservable factors affecting both trade and foreign policy goals. By lurking behind Table 3 and 4 it seems that our strategy detects and adjusts for an upward bias in the estimates of the U.S. troop deployment and military aid. There is a general slight decrease in the size of the coefficients of interest, but there are no consequences on their statistical significance. Moreover, their sheer size still demonstrates important effects of the U.S. security strategy on the relative levels of bilateral trade. Political factors along with economic conditions are most critical for understanding what encourages countries to trade with the U.S.. From a political standpoint, our results strongly suggest that an increase in the number of U.S. troops in a country, or similarly an increment in the amount of military financing, provides a signal of positive relations and military assistance that promote increased trade dependence.

4.4 Dealing with reverse causality

A positive correlation between bilateral trade openness and the probability of hosting U.S. troops or being the recipient of military aid can also arise from causality running both ways. Military aid or troops may be driven by the economic interdependence between countries. We implement an instrumental variable procedure by using an instrument correlated with the endogenous explanatory variables, i.e. U.S. security provision, conditional on the other covariates, but uncorrelated with the error term in the explanatory equation. An ideal candidate is the host country military spending per soldier. The rationale is the following: the "security umbrella" that the U.S. provides through its troop deployment or the annual military aid package should be negatively related to the level of domestic funding per soldier. The higher the level of military effectiveness of a recipient country, the lower the level of security provided by the U.S. in terms of weapons and troops. In fact, according to the U.S. Greenbook, one of the explicit aims of military assistance (which can be as high as the annual installments of $1.3 billion to Egypt) is to make the recipients' armies a more capable, professional force. The same logic can be applied to the strategic

deployment of troops, in the light of direct threats to the host country (and the security of the region). This mechanism is also coherent with our theoretical model, where U.S. military assistance and the host country investment in security are strategic substitutes. The literature on the effect of total military expenditure on economic growth is very sensitive to the correct specifications and quite inconclusive (see e.g. Dunne & Smith), but there are no reasons to believe that military expenditures *per soldier* should be correlated with the *shares* of bilateral trade between the U.S. and the recipient country.

4.5 IV Results

In Tables 5 and 6 we report the instrumental variable estimates when troop deployment and military aid are instrumented with the host country per capita military spending. At the bottom of Tables 5 and 6 we also show the first-stage estimated coefficients of the instrument along with the customary F-test to verify the reliability of the chosen instrument. As one would expect the log of per capita military expenditures are strongly and inversely correlated with the log troop (log aid) at a 1% level of statistical significance. In accordance with our prior, an increase in military expenditure per soldier reduces the U.S. military presence and the amount of U.S. aid. Furthermore, the F-statistics are always greater than the threshold value of 10. Taken together, these checks suggest the relevance of the host country military effectiveness at explaining the variance of the endogenous variable. The key variables of interest are the estimates of troop and aid. The size of the coefficient and the level of significance of the troop deployment provides encouraging empirical support to our theory. As before, the exclusion of countries belonging to the Warsaw Pact and at war with U.S. does not affect our results. All the coefficients take on typical values that are consistent with the large empirical gravity literature. The only exception is the sign of FTAs when security is represented by military aid. When we instrument the security provision, the size of the coefficients of troop and aid are larger than the previous estimates in Tables 1 and 2, thus suggesting a downward bias in the non-instrumented regressions.

5 Conclusions

The relationship between international politics and trade has sparked a long-lasting debate about whether trade produces conflict, or whether conflict reduces trade. Common to both research strands is the use

of the militarized interstate disputes (MIDs) to capture conflict-related dynamics. While MIDs provide a rough proxy for security concerns, national security interests are not restricted to war periods and therefore may not involve military disputes. Our paper aims to map possible connections between the security strategy of a country and its commercial ties, in times of peace and war. We use nuanced measures of foreign policy, U.S. troop deployments and foreign military financing. In fact, the U.S. has deployed more forces abroad and in more countries than any other military in the world history; it is also the largest contributor of military aid to foreign countries in the world. Both instruments of foreign policy have the same stated goal, contributing to regional and global stability and containing transnational threats and better reflect national security goals than strictly conflict-based MIDs. Most of the troops are harbored by allies. Similarly, the vast majority of unclassified military aid and assistance goes to friends.

Our results suggest that we are right to advance the relevance of political motivations behind bilateral trade; foreign policy goals affect trade flows between countries. Most of the previous studies recognized the endogeneity of foreign policy but did little to take into account the omitted variable bias that might arise as a result of the exclusion of unobservable factors explaining both trade flows and security concerns. Moreover, establishing a close relationship between American security concerns and bilateral trade leaves also open the question of whether troops/military aid cause trade or vice versa. We deal with both issues, the simultaneous determination of trade and security and the possibility of reverse causality, and demonstrate, by using an array of novel estimations of the gravity model, that our results are both theoretically and methodologically robust.

We show a clear pattern: security concerns affect the shares of bilateral trade flows between the U.S. and the rest of the world. Both imports and exports are equally affected. We put forward some theoretical explanations that account for the strong patterns elicited in the regression analysis, in particular a mechanism that explains relative bilateral trade as a consequence of increasing dependence on the U.S. security umbrella. Our corrected model specification, and the strong link forged between the theory and the empirical strategy, lead to a stronger relationship between trade and security than in traditional models. Scholars can and should endeavor to open the "black box" of foreign goals and look at domestic and governmental characteristics as well as the international environmental factors that influence trade flows as a starting point to predict future trends.

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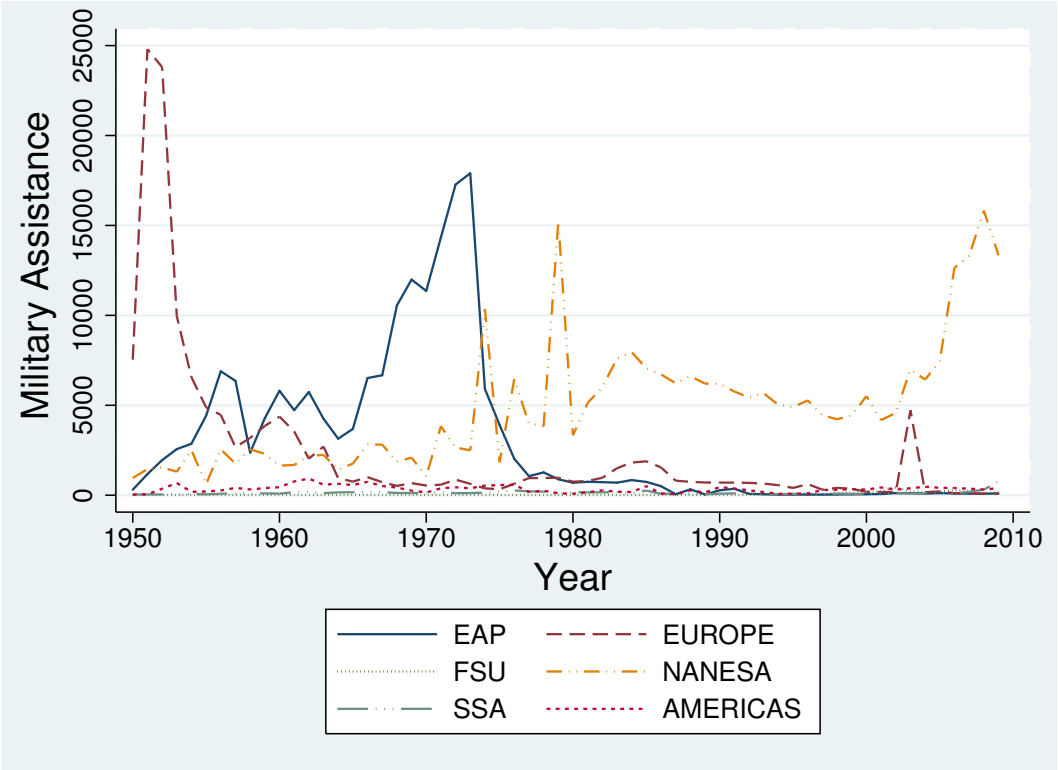

Figure 1: Military assistance. Source: U.S. Agency for International Development. NANESA = North Africa, Near East and South Asia. EAP = East Asia and Pacific. SSA= Sub-Saharan Africa. FSU = Former Soviet Union.

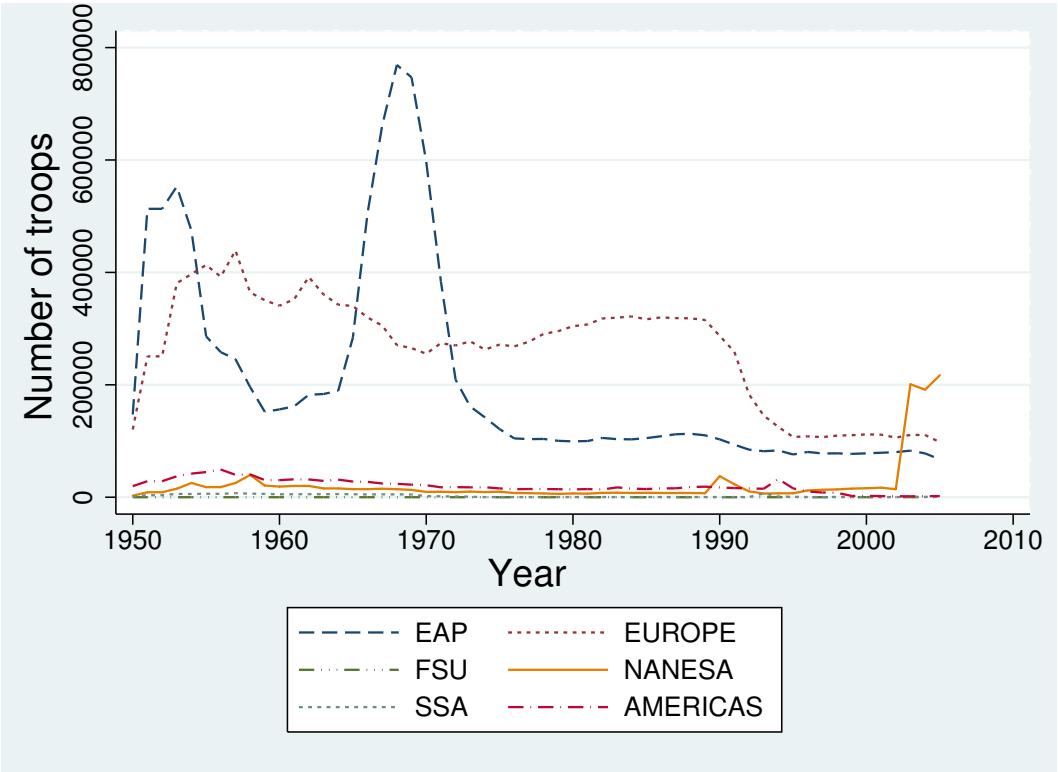

Figure 2: US Troops Overseas by Region. Source: The Heritage Foundation, 2006. NANESA = North Africa, Near East and South Asia. EAP = East Asia and Pacific. SSA= Sub-Saharan Africa. FSU = Former Soviet Union.

Table 1: Benchmark estimates of US exports and imports. Security is Troop Deployment.

	US Exports				**US Imports**			
	i	ii	iii	iv	v	vi	vii	viii
log Troop	0.10***	0.11***	0.11***	0.07***	0.11***	0.12***	0.11**	0.05**
	(0.01)	(0.03)	(0.04)	(0.02)	(0.01)	(0.04)	(0.05)	(0.02)
log GDP	0.28***	-0.35	-0.29	-0.18	0.57***	0.03	0.10	0.42
	(0.11)	(0.32)	(0.34)	(0.17)	(0.15)	(0.43)	(0.45)	(0.41)
log pcGDP	-0.11	0.82**	0.80**	0.31	-0.56***	0.49	0.53	0.07
	(0.11)	(0.34)	(0.35)	(0.22)	(0.16)	(0.44)	(0.46)	(0.38)
log Population	-0.26**	0.21	0.20	1.00*	-0.52***	-0.05	0.03	-0.21
	(0.11)	(0.32)	(0.33)	(0.59)	(0.16)	(0.42)	(0.43)	(0.84)
F.t.a.	0.34***	0.10	0.06	-0.00	0.73***	0.38	0.36	0.47
	(0.05)	(0.13)	(0.13)	(0.12)	(0.11)	(0.25)	(0.25)	(0.52)
log Distance	0.01				0.21***			
	(0.06)				(0.08)			
Contiguity	0.32***				0.49***			
	(0.11)				(0.13)			
Common language	0.24***				0.40***			
	(0.02)				(0.04)			
Former colony	0.71***				0.66***			
	(0.07)				(0.08)			
Macroarea FE	yes	no	no	no	yes	no	no	no
Country FE	no	yes	yes	yes	no	yes	yes	yes
Time FE	yes	yes	yes	yes	yes	yes	yes	yes
Country-specific l.trend	no	no	no	yes	no	no	no	yes
War	yes	yes	no	yes	yes	yes	no	yes
Warsaw Pact	yes	yes	no	yes	yes	yes	no	yes
N	6402	6402	6095	6402	6380	6380	6073	6380

Huber-White SEs in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 2: Benchmark estimates of US exports and imports. Security is Military Aid.

	US Exports				**US Imports**			
	i	ii	iii	iv	v	vi	vii	viii
log Aid	0.11***	0.10***	0.08***	0.06***	0.10***	0.09***	0.07***	0.02
	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)	(0.02)	(0.02)	(0.02)
log GDP	0.41***	-0.08	-0.06	-0.15	0.88***	0.41	0.42	0.38
	(0.11)	(0.33)	(0.34)	(0.16)	(0.15)	(0.46)	(0.47)	(0.36)
log pcGDP	-0.15	0.49	0.50	0.42*	-0.75***	0.09	0.15	0.10
	(0.11)	(0.35)	(0.37)	(0.24)	(0.16)	(0.47)	(0.48)	(0.33)
log Population	-0.36***	-0.17	-0.14	0.98*	-0.83***	-0.49	-0.48	0.23
	(0.11)	(0.32)	(0.33)	(0.51)	(0.16)	(0.43)	(0.44)	(0.81)
F.t.a.	0.21***	0.03	0.04	0.11	0.47***	0.23	0.27	0.30
	(0.05)	(0.10)	(0.10)	(0.10)	(0.08)	(0.23)	(0.23)	(0.30)
log Distance	-0.20***				0.10			
	(0.05)				(0.07)			
Contiguity	0.26***				0.67***			
	(0.09)				(0.11)			
Common language	0.21***				0.26***			
	(0.02)				(0.03)			
Former colony	0.91***				1.04***			
	(0.06)				(0.07)			
Macroarea FE	yes	no	no	no	yes	no	no	no
Country FE	no	yes	yes	yes	no	yes	yes	yes
Time FE	yes	yes	yes	yes	yes	yes	yes	yes
Country-specific l.trend	no	no	no	yes	no	no	no	yes
War	yes	yes	no	yes	yes	yes	no	yes
Warsaw Pact	yes	yes	no	yes	yes	yes	no	yes
N	7228	7228	7011	7228	7206	7206	6989	7206

Huber-White SEs in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: Fixed effects estimates of US exports and imports, controlling for quartile fixed effects. Security is Troop Deployment.

	US Exports			**US Imports**		
	i	ii	iii	iv	v	vi
log Troop	0.090***	0.082***	0.104***	0.109***	0.115***	0.125***
	(0.012)	(0.012)	(0.013)	(0.013)	(0.013)	(0.015)
log GDP	0.051*	0.053*	0.043	0.048	0.035	0.050
	(0.030)	(0.029)	(0.033)	(0.033)	(0.033)	(0.037)
log pcGDP	0.042	0.054*	0.061**	0.004	0.003	-0.037
	(0.028)	(0.028)	(0.030)	(0.031)	(0.031)	(0.034)
log Population	-0.104***	-0.101***	-0.082***	-0.053*	-0.044	-0.058*
	(0.027)	(0.027)	(0.030)	(0.030)	(0.030)	(0.033)
log Remoteness	-0.287***	0.052	-0.020	-0.020	0.085	0.029
	(0.030)	(0.050)	(0.061)	(0.033)	(0.056)	(0.068)
Quartile FE	yes	yes	yes	yes	yes	yes
Region FE	yes	yes	yes	yes	yes	yes
Time FE	no	yes	yes	no	yes	yes
Region FE × Time FE	no	no	yes	no	no	yes
N	1133	1133	1133	1133	1133	1133

Standard errors in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Fixed effects estimates of US exports and imports, controlling for quartile fixed effects. Security is Military Aid.

	US Exports			**US Imports**		
	i	ii	iii	iv	v	vi
log Aid	0.061***	0.066***	0.093***	0.061***	0.060***	0.046**
	(0.013)	(0.014)	(0.016)	(0.015)	(0.016)	(0.019)
log GDP	0.149***	0.163***	0.154***	0.058	0.069*	0.076
	(0.033)	(0.034)	(0.041)	(0.038)	(0.039)	(0.048)
log pcGDP	-0.122***	-0.096**	-0.073*	-0.094**	-0.110**	-0.137***
	(0.038)	(0.039)	(0.043)	(0.044)	(0.046)	(0.051)
log Population	-0.120***	-0.149***	-0.112***	-0.005	-0.014	0.005
	(0.032)	(0.032)	(0.040)	(0.037)	(0.037)	(0.047)
log Remoteness	-0.347***	-0.117*	-0.206***	-0.005	0.011	-0.224**
	(0.033)	(0.060)	(0.075)	(0.037)	(0.069)	(0.088)
Quartile FE	yes	yes	yes	yes	yes	yes
Region FE	yes	yes	yes	yes	yes	yes
Time FE	no	yes	yes	no	yes	yes
Region FE × Time FE	no	no	yes	no	no	yes
N	952	952	952	952	952	952

Standard errors in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: IV estimates of US exports and imports. Security is Troop Deployment.

	US Exports		**US Imports**	
	i	ii	iii	iv
log Troop	0.95***	1.15***	0.72***	0.54**
	(0.23)	(0.32)	(0.23)	(0.25)
log GDP	0.46	0.70*	0.63**	0.53*
	(0.30)	(0.38)	(0.29)	(0.30)
log pcGDP	0.04	-0.15	-0.11	0.07
	(0.30)	(0.38)	(0.29)	(0.30)
log Population	-1.35***	-1.83***	-1.24***	-0.87
	(0.48)	(0.68)	(0.47)	(0.54)
F.t.a.	0.66***	0.69***	0.77***	0.61***
	(0.21)	(0.27)	(0.21)	(0.20)
		First stage		
log pcMilex	-0.11***	-0.09***	-0.11***	-0.09***
	(0.03)	(0.03)	(0.026)	(0.03)
F-stat	18.7	12.72	18.54	12.6
Country FE	yes	yes	yes	yes
Time FE	yes	yes	yes	yes
War	yes	no	yes	no
Warsaw Pact	yes	no	yes	no
N	5859	5593	5849	5583

Huber-White SEs in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: IV estimates of US exports and imports. Security is Military Aid.

	US Exports		**US Imports**	
	i	ii	iii	iv
log Aid	0.66***	1.10***	0.59***	0.71**
	(0.14)	(0.34)	(0.16)	(0.30)
log GDP	0.91***	1.65**	1.30***	1.48***
	(0.31)	(0.65)	(0.37)	(0.57)
log pcGDP	-0.31	-1.22*	-0.68**	-0.95
	(0.28)	(0.67)	(0.34)	(0.58)
log Population	-2.33***	-4.56***	-2.58***	-3.23**
	(0.63)	(1.61)	(0.72)	(1.38)
F.t.a.	-0.76***	-1.33**	-0.45*	-0.60
		First stage		
log pcMilex	-0.17***	-0.10***	-0.17***	-0.10***
	(0.03)	(0.03)	(0.03)	(0.03)
F-stat	28.9	11.1	28.9	11.1
Country FE	yes	yes	yes	yes
Time FE	yes	yes	yes	yes
War	yes	no	yes	no
Warsaw Pact	yes	no	yes	no
N	6050	5796	6040	5786

Huber-White SEs in brackets. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

A Appendix

Table A.1: Fixed effects estimates of US exports and imports (non controlling for quartile fixed effects). Security is Troop deployment.

	US Exports			**US Imports**		
	i	ii	iii	iv	v	vi
log Troop	0.103***	0.098***	0.104***	0.078***	0.081***	0.084***
	(0.007)	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)
log GDP	0.023	0.033	0.010	0.011	0.000	0.010
	(0.029)	(0.029)	(0.032)	(0.032)	(0.032)	(0.036)
log pcGDP	0.042	0.058**	0.068**	-0.010	-0.008	-0.046
	(0.029)	(0.028)	(0.030)	(0.031)	(0.031)	(0.034)
log Population	-0.057**	-0.061**	-0.040	-0.049*	-0.043	-0.060*
	(0.027)	(0.026)	(0.029)	(0.030)	(0.029)	(0.033)
log Remoteness	-0.257***	0.114**	0.081	0.005	0.138**	0.091
	(0.031)	(0.049)	(0.059)	(0.033)	(0.055)	(0.066)
Region FE	yes	yes	yes	yes	yes	yes
Time FE	no	yes	yes	no	yes	yes
Region FE × Time FE	no	no	yes	no	no	yes
N	1133	1133	1133	1133	1133	1133

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A.2: Fixed effects estimates of US exports and imports (non controlling for quartile fixed effects). Security is Military Aid.

	US Exports			**US Imports**		
	i	ii	iii	iv	v	vi
log Aid	0.066***	0.069***	0.074***	0.048***	0.048***	0.040***
	(0.007)	(0.007)	(0.008)	(0.008)	(0.008)	(0.009)
log GDP	0.152***	0.165***	0.155***	0.041	0.052	0.059
	(0.032)	(0.033)	(0.040)	(0.037)	(0.038)	(0.048)
log pcGDP	-0.120***	-0.090**	-0.071*	-0.109***	-0.126***	-0.178***
	(0.036)	(0.037)	(0.041)	(0.042)	(0.043)	(0.049)
log Population	-0.120***	-0.148***	-0.118***	-0.002	-0.010	0.001
	(0.031)	(0.032)	(0.040)	(0.036)	(0.037)	(0.047)
log Remoteness	-0.363***	-0.116**	-0.218***	0.003	0.008	-0.207**
	(0.028)	(0.057)	(0.073)	(0.032)	(0.066)	(0.087)
Region FE	yes	yes	yes	yes	yes	yes
Time FE	no	yes	yes	no	yes	yes
Region FE × Time FE	no	no	yes	no	no	yes
N	976	976	976	976	976	976

Standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$