

Transferring Trouble?

System Leadership, Superpower, and the Effects of Arms Transfers on Interstate Conflict

Spencer L Willardson

1/14/2013

I presented a version of this paper at the Annual Meeting of the International Studies Association in San Diego, California in April 2012. I thank Sara Mitchell, Randall Newnham, and Ryan Grauer for comments on earlier drafts of this paper. Any mistakes are my own.

How does the transfer of arms from a major power affect the propensity of the recipient state to initiate or become the target of interstate conflict? Previous research has shown that arms transfers have little independent effect on the conflict propensity of recipient states (Krause 2004). Those studies suffered from a lack of more data from the post-Cold War time period. Borrowing a concept of security hierarchy from Lake (2009) I examine the propensity of recipients of US and Soviet/Russian arms to engage in conflict. I find that the end of the Cold War had a large effect on the patterns of Russian arms transfers. I find also weak support for the idea that states that receive arms transfers from Russia are more prone to conflict behavior than are recipients of U.S. arms. This is consistent with the framework set out by both Krause (2004) and Lake (2009).

During the early 1990s Vietnam engaged in a fairly large-scale conflict with its neighboring state, and long-time antagonist, Cambodia. One of the most dramatic incidents within this conflict was the invasion of the Duong sub-district of Cambodia by Vietnamese troops, who forced the evacuation of at least six villages and essentially moved the border of the states five Kilometers in the process. The reasons for the antagonism are manifold and complicated (Morris 1999), but one dynamic that was clear in the conflict was the support that Vietnam received from Russia into the 1990s. This support came in the form of weapons transfers, the largest of which was the delivery of 16 Russian Styx anti-ship missiles for which the Vietnamese government paid \$164 million (1992 constant dollars) (SIPRI 2011). These missiles were ordered in 1994 and delivered in early 1996. The Styx anti-ship missile is used in ship-to ship warfare¹. This delivery had the potential to change the military balance between Vietnam and its neighbors by giving the Vietnamese more offensive capability to destroy other states' ships. Did the provision of weapons to Vietnam fuel its conflict behavior with Cambodia in the ensuing years? Is the case of the Russian supplied missiles and armed conflict between Vietnam and Cambodia unique?

How does the transfer of arms from a major power affect the propensity of the recipient state to initiate or become the target of interstate conflict? Previous research has found that the rivalry between the United States and the Soviet Union during the Cold war was reflected in the way that they supplied arms to client states (Kinsella 1994). The majority of countries in the world are not capable of producing sophisticated military machinery and weaponry on their own. Instead they rely on the sale of these weapons or the licensing of technology in order to develop their arsenals (Brauer 2003; K. Krause 1992; Smith and Udis 2003).

In this study I use a variety of empirical methods, including multivariate logistic regression to investigate whether the effects of arms transfers from the United States differ from the effects of

¹ The Styx has been deployed in at least two interstate conflicts – the Six Day War and in the 1971 India Pakistan War. In both cases the missile has successfully sunk enemy ships.

transfers from the Soviet Union (and later Russia). Recent Scholarship has found that arms transfers from a major power do not restrain conflict behavior in the recipient states (V. Krause 2004). Krause examined all states that are classified as major powers, while the analysis presented here examines only the US and Soviet Union/Russia. I examine this question with an eye toward the theory that the United States is engaged in a security hierarchy (Lake 2009) and that its influence, especially in the post-Cold War world should have a pacifying effect on states under its security wing. While the patterns of arms exports have changed dramatically for the Russian state, there are mixed results as to the effect of arms transfers by Russia and the United States on the conflict behavior of recipient states in the post-Cold War environment.

Patterns of Arms Transfers

Krause (1992, 5–7) characterized three broad trends in arms transfer literature up to 1992. The first period was the interwar period which was characterized as “...polemical, partisan, and prescriptive analyses of the evils of arms merchants.” A second wave of arms transfer research emerged in the mid 1960’s and lasted for about a decade. This period was characterized by the first systematic and rigorous analyses of arms transfers. The third period began roughly in the mid 1970’s and was characterized by an explosion of the arms trade. These studies were largely based on case studies and made little effort to “...situate arms transfers in the broader fabric of relations between states.”

Political scientists have incorporated the study of arms into studies of interstate relations and conflict. Studies on arms transfers can be classified into three primary areas: the effect of arms transfers on recipient state behavior, the effect of arms transfers on intrastate conflict, and the effect of arms transfers on interstate conflict.

Recent studies have sought to find a link between arms transfers and recipient (clientele) behavior. Blanton (1999) examined different factors that affect a country’s human rights

behavior, and posited that arms transfers provided the means for regimes to brutally repress political rivals. She found that there was a statistically significant relationship between arms imports and a country's poor human rights record. Blanton (2000) examined U.S. foreign policy goals and the patterns of U.S. arms sales abroad and found that the U.S. followed a policy of abstaining from arms transfers to states with poor human rights records.

Meernik et al. (1998) conduct a similar test of U.S. foreign aid². They explicitly test for systemic-level variables and use data that extends through the end of the Cold War. One hypothesis tested is whether or not security concerns were still top priority in the way that aid is distributed by the United States. Security concerns were measured through data on alliances, US troop presence, and borders with U.S. ideological opponents. They found that foreign aid distribution is highly correlated with security concerns.

These tests of arms aid indicate that arms are used as political rewards in much the same way as other types of aid. Lai (2003) examines similar data. He uses more refined economic indicators that can account for the large disparity in aid amounts across countries and tests for bureaucratic inertia in the gatekeeping stage of the model. More importantly he updates the security goals of the U.S. as the world shifts from the bipolar Cold War to a more unipolar world inhabited by states that are friendly to U.S. interests and "rogue states." He finds that contrary to the conclusions of other authors, security is still a driving factor in the allocation of aid by the United States. If arms aid (including arms transfers at discount prices) is substitutable for other types of aid, and aid is predicated on security concerns, then it follows that patterns of arms transfers by states should change as the security concerns of the state change.

The second area in which arms transfers have been studied by political scientists is on the effect that arms transfers have on intrastate war. Jackson (2010) examines the role of legal arms in civil conflict. He concludes that the vast majority of weapons used by rebel groups in intrastate

² They include arms aid in their measure of foreign aid with the argument that the two types of aid are substitutable.

conflict are obtained from the stockpiles of the state – and not from a global black market in arms trade. Other work by Kalyvas and Balcells (2010) focuses on the interaction of the international system and internal wars with a focus on the “technology” of wars. They find that civil war outcomes are more likely to hold when both sides in the conflict use more sophisticated weapons such as mortars and artillery. These types of items are more difficult to obtain illicitly, which indicates a link to state to state arms transfers as the mechanism for groups obtaining these weapons. In the case of internal conflict, the technology of war is provided by outside states prior to or concurrently with conflict, thus making arms transfers an important factor in intrastate war. Maniruzzaman (1992) found that arms transfers to states tended to reinforce the legitimacy of military rule and led to military coups in recipient states.

Craft and Smaldone (2002) systematically examine the determinants of conflicts in sub-Saharan Africa. They specifically examined arms transfers both with and without military spending (as a control) in order to determine the importance of arms imports on the presence of conflict. They found a strong relationship between arms transfers and conflict within states even when overall military spending was accounted for. Their methodology does not allow us to make causal claims about arms transfers and conflict onset, but it does strengthen the empirical link between those concepts. Their findings also illustrate the need to determine whether or not arms transfers are exogenous to the overall security environment in which a state exists.

A subset of this literature on arms transfers’ effect on intrastate war deals primarily with the illicit arms sales. Strazzari and Tholens (2010) borrow theories about weapons availability and the dynamics of insurgency. They apply this dynamic to the Palestinian conflict without citing the sources of weapons available to Palestinian fighters. Goose and Smyth (1994) condemn the availability of small arms in conflict zones, especially Rwanda and Bosnia and the role that Russia played in selling small arms to groups involved in those conflicts. Lumpe (2000)

³provides an anecdotal overview of the supply side of the illicit small-arms market. These studies suffer from a paucity of systematic data for analyzing a large number of cases over time. This makes it difficult to make generalizations (King, Keohane, and Verba 1994) about the effects of arms transfers on interstate relations.

The third area in which arms transfers have been explored by scholars is that of the effect of arms transfers on international conflict⁴. Initial studies examined arms transfers as a link between superpowers and their security protégés. Huth and Russett (1984, 515–6) found that arms transfers were a factor in successful deterrence in defender protégé situations. They examined cases of successful and failed deterrence in and found that arms transfers from the defending state to the protégé resulted in deterrence. The higher the percentage of arms supplied by the defender to the protégé, the greater the probability of successful deterrence resulted.

Huth (1988, 436-7) found that arms transfers had no effect on successful deterrence in cases of extended immediate deterrence. This finding was consistent with the effect of alliance ties on extended immediate deterrence. Huth's findings support a model in which the immediate actions and balance of power are the primary determinants in successful deterrence when a crisis between a protégé and another state are brewing. This finding is not necessarily contradictory to the Huth and Russett finding that arms are important in general extended deterrence. It does indicate that the effect of arms transfers may be conditional on a crisis event timeframe.

³ Nearly all studies of illicit arms activity point to the Former Soviet Union as a major supply point for illicit weapons, especially small arms. This activity is not easily measured and will not be tested in this paper.

⁴ It is possible that literature on arms races could be included in this category. However, arms races can be separate from arms transfers. I focus in this study on supplier's decisions to supply arms, which is likely affected by the recipient's demand for weapons. In that sense arms races may be subordinate to arms transfers except in the rare cases that both states involved in an arms buildup are capable of supplying all of their own weapons.

Kinsella and Tillema (1995) examined arms transfers by the U.S. and Soviet Union to Middle Eastern allies from 1948 to 1991. They found that U.S. arms transfers to Israel had a restraining effect on its conflict behavior with rival Arab states. Transfers from the Soviet Union to client states had the opposite effect and tended to precipitate conflict. This result fits with Krause's (1991) theoretical framework for superpower bargaining using arms transfers to protégé/client states.

The most explicit research on the effect of arms transfers on interstate conflict is that of Krause (2004). Krause examines conflict using a bargaining framework and posits that arms transfers can have an independent or interactive effect on conflict when used as a tool by major powers. Arms transfers by themselves lead to more conflict, but when they are part of a defense pact and the arms are supplied by the major power in the pact, this will have a pacifying effect. To test his hypotheses he examined conflicts from 1950 to 1995 at the state-year level and examined states as either dispute initiators or dispute targets. His independent variables were arms transfers from major powers, defense pacts with major powers, and the proportion of arms transfers from major power defense pact allies. He uses a probit model as well as a Two-Stage Conditional Maximum Likelihood Model (2SCML) with a number of interactions. Krause (2004, 367) finds that arms transfers can be "...compared and combined with other alliances when predicting armed conflict."

Krause hypothesizes that arms transfers have the effect of strengthening or substituting for armed defense pacts, and that arms will have a similar effect on state conflict behavior. This is conditioned on what state transfers the weapons. Krause posits that transfers from a major power to a subordinate state will make that recipient state less likely to initiate interstate conflict. He finds that arms transfers from major powers do not in themselves restrain states from engaging in conflict initiation or from being targeted for conflict.

The International Context

Arms sales do not take place in a vacuum. Whether an arms race or arms buildup by a country is motivated by either hostility or fear is unimportant. A few countries dominate the manufacture and sale of weapons (SIPRI 2011). The structure of the international arms sales market makes it likely that the overall structure of the system and the system leaders will play a role in the opportunity (Most and Starr 1989) for states to arm themselves with the type of weapons necessary to engage in interstate warfare. Most states cannot arm themselves without help from the international system leaders. This opportunity framework was hinted at by Diehl and Creszenzi (1998, 116) in that states are threatened by arms (capability) and not defense budgets. Whether a state produces its own weapons, or imports them from another country is less important than the fact that the possession of weapons provide the opportunity for coercive bargaining (Fearon 1995) by the states that possess them.

During the Cold War superpower rivalry both the United States and the Soviet Union spent a great deal of treasure on providing security to ideological partners. One way to think about the relations of the U.S. and Soviet Union during the Cold War is with a framework of extended deterrence. In general deterrence is the ability of one state to prevent another state from attacking it (Huth and Russett 1984, 501). Deterrence helps account for both the intentions and capabilities of adversaries and potential adversaries. Extended deterrence is the extension of protection to a protégé from another state. Huth (1988) examined the effect of extended deterrence on the outbreak of war. He found that it was in cases of high levels of political, military, and economic ties between the defender and the protégé that had an effect on preventing the outbreak of conflict (Huth 1988, 436).

A system leader effect is found in Kinsella's (Kinsella and Tillema 1995; 1994) research into the context of conflict during the Cold War. He found that in the case of the Middle East, the provision of arms by one superpower, Russia, had different effects than arms transfers from the other superpower, the United States. Diehl and Goertz (2001, 32) classify Kinsella's work as

part of a rivalry framework in which the United States competed with the Soviet Union for influence in the Third World. The U.S. Soviet Rivalry was also characterized by high levels of spending on the military, including weapons systems, by each superpower. According to Lake (2001, 102–3) U.S. spending peaked at 5.9 of GDP percent during the Reagan arms buildup while the Soviets spent an average of 14.1 percent of GDP over the course of the Cold War.

Huth, Bennett, and Gelpi (1992) examine the interaction of states within the international system and how those interactions can lead to conflict. Their definition of the world system is that of a “...self-contained set of interacting and interdependent units. The structure of the system is determined both by the ordering of units according to power resources and by the density and arrangement of linkages among those units” (Huth, Bennett, and Gelpi 1992, 480). In order to understand the initiation of conflict, Huth Bennett and Gelpi (1992) investigate the effect that uncertainty in the system has on decision-makers’ choices to enter into conflict. System uncertainty is defined by the authors to mean the “explicit confidence interval that decision makers place around their estimates of the expected outcome of initiating an international conflict” (Huth, Bennett, and Gelpi 1992, 481).

One problem with measuring the effects of extended deterrence by great powers to their protégé states is knowing which relations matter in a deterrence situation. The balance of military forces has been found to be an important factor in conflict initiation (cf. Rousseau et al 1996). The balance of military forces can be difficult to measure since this measure must also take into account possible military support from other countries as well as indigenous capability for arms production. This difficulty has been acknowledged by scholars of deterrence as they have grappled with issues of credibility (Huth, Bennett, and Gelpi 1992, 612–13). How credible is a threat based on potential arms resupply versus weapons on hand?

Lake (2009, 68–71) creates a measurement of security hierarchy of states dependence on the U.S. for security and economics. The security measure is based on the number of U.S. troops

stationed on a state's territory and the number of security alliances undertaken independent of the U.S. by the state. Lake (2009, 141–50) finds that states that are security subordinate to the United States spend less on their own defense. The state that is providing the security for its subordinates logically has an incentive to keep its part of the world peaceful. This incentive will lead to closer scrutiny of potential arms recipients (Blanton 2005).

The United States is not dependent on arms exports to support its domestic arms industry in the way that most other states are. The United States spends a great deal on weapons and can support its domestic arms production much more than states under its protection that may rely on exports to keep their defense industries solvent (Hartley and Martin 2003).

The U.S. is the only superpower remaining, and it has continued to maintain its security hierarchy even after the end of the Cold War. Its decisions on arms transfers should be guided less by ideological differences with the Soviet Union/Russia and more by ensuring its continued security dominance. Russia, on the other hand, is freed from the demands of Soviet revolutionary ideology, but not from the legacy of a hyperactive defense complex. Russia will not be able to afford selectiveness in its provision of arms to states and will be motivated by economic concerns⁵ to provide arms where the U.S. chooses not to.

The end of the Cold War saw an end to much of Russia's dealings with the third world, an area over which it had engaged in superpower rivalry (Porter 1984). Many of the arms provided to the third world by Russia were in the form of aid or at steeply discounted prices. Even with the bureaucratic inertia (Allison 1969) of long-standing arms supply relationships, the end of the Cold War should see a realignment of Russia's arms transfer patterns.

⁵ It is also possible that they will be motivated by revisionist concerns. This is the theoretical foundation for Ambrosio's (2009) authoritarian backlash hypothesis. This does not change the direction of my argument, but does perhaps add an additional [constructivist] dimension to the economic hypothesis. See also Clunan (2009) for a constructivist explanation for Russia's expansive foreign policy.

H1a: Russian post-Cold War arms transfers will be less wide-ranging than Soviet transfers.

H1b: U.S. post-Cold War patterns will not differ significantly from its Cold War patterns.

Further Questions

Two major problems exist in the present literature on arms transfers and international conflict. It is a problem of an international arms transfer political economy. Much of the work on arms transfers has been by economists. However, the work of political scientists rarely takes this literature into account when using arms as a variable in their research. One argument that is prevalent among economists working on arms transfers is that the removal of the ideological barriers of the Cold War has had the effect of pressuring domestic arms production firms to seek foreign buyers in order to remain solvent (See for example Anthony 1998; Brauer 2003; del Carmen Garcia-Alonso and Hartley 2003; Dunne et al. 2002; Hartley and Martin 2003; Levine, Mouzakis, and Smith 2003; Pierre 1997). By focusing solely on the effects of arms transfers we may be missing important structural causes for why countries are willing to provide arms to conflictual nations.

The second problem is part of the first. The change from a bi-polar world to a unipolar one may have left a “security vacuum” in areas that were previously patronized by one of the superpowers. This may lead to more conflict occurring not just because arms are being supplied, but because other guarantees of security are not.

There is a certain degree of path dependence in weapons systems. Once a system is chosen it requires a large degree of training and maintenance to keep the weapons functional (Brauer 2003). This is why arms contracts are so lasting - the purchase of the actual weapons system is only the beginning of the relationship between the client and the producer. The Soviet Union tended to arm revisionist states, but Russia doesn't have the same ideological or economic hold

as did its predecessor. Inertia should lead Russia to inherit more conflict prone customers for its defense products than the United States.

Economic considerations will factor into the selection of arms trade partners. This can mean that economics trumps peace. The pattern found during the Cold War by Kinsella and Tillema (1995) was that the Soviet state armed revisionist states – this was due in some degree to its ideological revolutionary foundation. While Russia has not inherited these ideological commitments, it has inherited an arms distribution network. The following hypothesis is based on the assumption that revisionist states are more likely to be involved in conflict.

Arming revisionist states is not the same as promoting conflict. A simple measure of rates will only pick up conflict and not initiator. States armed by the U.S. may be involved in a similar rate of conflict as are those armed by Russia. States receiving weapons from the U.S., however, are more likely to be involved in the U.S. security hierarchy (Lake 2009) but will be conscientious of U.S. expectations. This may condition states that receive arms from the U.S. to act more circumspectly. States supplied by Russia will, for the most part, be supplied for economic reasons, and will feel no such obligation to honor Russia's security wishes.

H2a: Recipients of Russian arms will be more likely to be conflict initiators than states being supplied by the United States.

H2b: This difference will be more pronounced in the post-Cold War era (after 1991).

Empirical Testing

Each of the sets of hypotheses above requires a slightly different approach to examine empirically. In the first case, the dependent variable is the pattern of arms sales to states before and after the end of the Cold War. In the second case the dependent variable is a measure of conflict in states that are recipients of arms from either (or in some cases both) Russia or the U.S. In both cases, however, the primary data used are the same.

The arms transfer data come from the Stockholm International Peace Research Institute (SIPRI). SIPRI has data on arms transfers from 1950 through 2010. These data are available as downloadable Trend Indicator Value (TIV) sheets. These data were collected and reconfigured as state-year imports and exports (totals) for each country in the international system in that year. Additionally, this analysis is restricted to arms imports from the U.S. or Russia, so each state got its own “import” variable for each state-year entry in the data set. States that did not import arms have a value of 0 while states that did import weapons in a given year have those total values in millions of constant (1992) U.S. dollars. The values are also dichotomized as an indicator value of whether or not a state received weapons.

The other data were generated using EuGENE (Bennett and Stam 2000) and datasets supplied by other authors, including the Polity IV data (Marshall and Jaggers 2002), the Correlates of War (COW) MID data as well as capabilities data (Small and Singer 1969) and the Gleditsch and Ward economic data (2002).

The first set of hypotheses was tested directly. The independent variable is the rate of arms transfers by the U.S. (and Russia) during the Cold War to each individual state in the system. These rates were constructed using a count variable of the number of years in which the United States provided a state with weapons. For example, if the U.S. sent arms to France in 1950, 1970, 1980, and 1989 the count variable is 4. This count was then divided by the total number of Cold War years in the sample (1950-1991 or 52 years) to create a standardized rate for each country.

The same process was applied to create the dependent variable, except the rate was calculated for the years 1992 to 2001. The rate from the Cold War period was regressed on the post-Cold War rate to determine how well previous sales predicted present sales. Table 1 shows the results for this test for the U.S. and Russian cases.

-Table 1 Here

This table shows a strong confirmation of the first set of hypotheses. It does appear that the U.S. arms transfer policy remained remarkably consistent in the 10 years after the end of the Cold War. This is the benefit of “winning the Cold war.”

U.S. arms transfers post-Cold War can be explained nearly perfectly (89 percent) by its Cold War behavior. Russia’s results also conform to the predicted pattern. Russia’s post-Cold War activity is markedly different than its Cold War behavior. Only 22 percent of the arms transfers can be explained. This is surely due to the collapse of the Eastern European COMECON / Warsaw Pact market as well as the abandonment of ideological commitments that provided subsidized and free arms to numerous countries. It is also an indication that the number of countries to which Russia was providing weapons to shrink considerably. This is consistent with the economic model which would predict that Russia would drop dead weight ideological customers in favor of paying customers. Figure 1 shows the same information as Table 1 in graphical form.

-Figure 1 about here

This initial confirmation of the hypothesis that the international context matters to how leading states supply weapons leads to the next analysis – the effect of arms transfers on conflict initiation and targeting. This analysis consists of two parts. The first is a bivariate analysis of conflict initiation and targeting and a state’s status as a weapons recipient. The first piece of the analysis is a test to determine whether or not a state received arms from the U.S. or from Russia. This presented a problem because arms sales (as illustrated in the Vietnam vignette at the beginning of this paper) are often long processes. In addition to long delivery times, acquisition of arms tends to be cyclical, with states upgrading their arsenals every few years rather than buying new equipment on a continuous basis. The overall dataset that was used to construct the

dispute variables was the Correlates of War (COW) Directed Dyad dataset (Jones, Bremer, and Singer 1996).

Each state in the dyad was coded as being a dispute initiator in time t or the target of a dispute. The second step was to determine which states received arms from either the United States or from Russia. In order to account for the cyclical arms acquisition process I created a variable that accounted for arms transfers in years t and $t-1$. I first summed the arms amounts and then dichotomized this 2-year lag variable. I also created lagged weapons recipient variables for three year and five year periods.

For the initial bivariate analysis the conflict variable was created using a logical operation. All initiator and target states were coded as having been supplied by either U.S. or Soviet/Russian arms within the past 2, 3, or 5 years. In addition to the count of country_target_time cases, a count of all target and all initiator states in the data set (1950 to 2001) was performed. Table 2 shows the results of this analysis.

-Table 2 about here

At first glance it appears that hypothesis 2a cannot be confirmed. Table 2 shows that states that receive U.S. arms are much more likely to be involved as both initiator and target in all interstate disputes from 1950 to 2001. In addition, it is clear that most interstate disputes do not occur without weapons being supplied by either the U.S. or the Soviet Union. This is perhaps not too surprising when one considers that they are the number 1 and number 2 throughout the period studied.

In order to test hypothesis 2b I split the sample and examined only the post-Cold War cases. Those cases that fell between 1992 and 2001. Table 3 shows some support for the hypothesis that purchasers of Russian arms have been more likely to initiate conflict in the post-Cold War era. The result for the five year arms recipient lag show that a remarkable 90 percent of all

MIDs initiated after 1991 were initiated by states that had received arms from either the U.S. or Russia in the past 5 years. This finding is less pronounced in the 3 and 2 year lags. This may be due to some conflation with the bloody break up of Soviet and Eastern Bloc countries that had been supplied by the Soviet Union.

The percentage of states involved as initiators and targets of MIDs is still quite different in the post-Cold War sample, which makes rejecting the null hypothesis that the change in the overall international system had no effect on arms transfers and conflict difficult to accept.

-Table 3 about here

In order to further test hypotheses 2a and 2b I used a logistic regression model. The unit of analysis in the model is the directed dyad year. I dropped all cases of dyads in which no conflict occurred in any year in the 62 years covered by the data. Even though the test that I am conducting is monadic in nature, the directed dyad year model is still appropriate for testing the hypothesis as the monadic information is contained in the directed dyad setup (Bennett and Stam 2003, 46–9).

The dependent variable is a dichotomous measure of whether or not a state was involved in any sort of Militarized Interstate Dispute (MID) in that year. The effects of “dangerous dyads” (Bremer 1992) are captured because the MID will show up in each of the countries engaged in conflict.

This measure is used in order to capture, most simply methodologically and conceptually the idea of a cause/effect type of relationship between arms transfers and the behavior of individual states. It is the most direct way to measure any linkage between the two concepts. The primary independent variable is the receipt of arms from either the United States or Russia. I test this variable (the creation of which is explained above) with 2, 3, and 5 year lags. The statistical results are similar across all of the models, so I confine the results in this paper to the 2 year

lagged relationship. Theoretically the idea that more proximate actions are most relevant to present behavior makes using this variable more appealing as well.

This variable is tested both as a dichotomous variable and as a continuous variable (amount of arms imported in \$millions 1990 over the course of years t and $t-1$) to determine whether the magnitude of arms sales has a differential effect on the conflictual behavior of the recipient state.

A number of variables are added to the analysis in order to control for some other explanations of conflict. Military expenditures in the arms recipient country are used to determine whether arms imports have an additional effect. I control for regime type and democracy using the polity IV measure of polity2 (Marshall and Jaggers 2002). I use the polity rescaled as a 0-20 scale rather than -10 to 10 (Rousseau et al. 1996, 519) to make the results more interpretable.

The distance from each of the two countries (Russia and the U.S.) are also included in order to rule out geographic influences on arms transfer decisions and conflict – i.e. the idea that arming distant conflicts is okay, but not the ones close to home. The final control variable is a dichotomous measure of the Cold War. This variable is meant to control for the temporal effects that were found in the first regression analysis and the bivariate tests shown in tables 2 and 3.

I chose a logistic regression model because it is an appropriate model for dichotomous dependent variables. It is also widely used and its results are relatively straightforward to interpret. The final consideration in this set up is that in a binomial cross-sectional time series model temporal dependence needs to be accounted for. I do this using the method suggested by Carter and Signorino (2010). I include a time, time-squared, and time-cubed variable to account for possible temporal dependencies in the data.

I use the same dependent variable (a dichotomous measure of whether state2 participated in a MID in year t) in each of the four models shown in Table 2. The first two models show the

results for the Russian and U.S. dichotomous measure individually. When both independent variables are included (Model 3) there are no major changes to the interpretation of the coefficients. Model 4 includes the continuous variable of arms import amounts from both the U.S. and Russia. Again, the results are substantially the same.

-Table 4 about here

Model 5 tests whether or not a recipient state is more likely to be the initiator of a MID. The model is the fully specified model with amount of arms as the primary independent variable and only the dependent variable changes from model 4.

Results and Discussion

The results of the analyses shown in Table 4 indicate that arms transfers are indeed related to the conflict behavior of states. The optimistic point of view that the U.S. security hierarchy would result in less interstate conflict by its arms patrons is not born out in the empirical results. Arms transfers from the United States and Russia both seem to be related to conflict in the international realm.

This analysis has shown that Russia, and to a much lesser degree the US, did change their patterns of arms provision in the aftermath of the Cold War. What is less clear is that these changes had any pacifying effect on the international system. A next step in this analysis is to look more closely at the types of disputes that arms transfers from the U.S. and Russia engender.

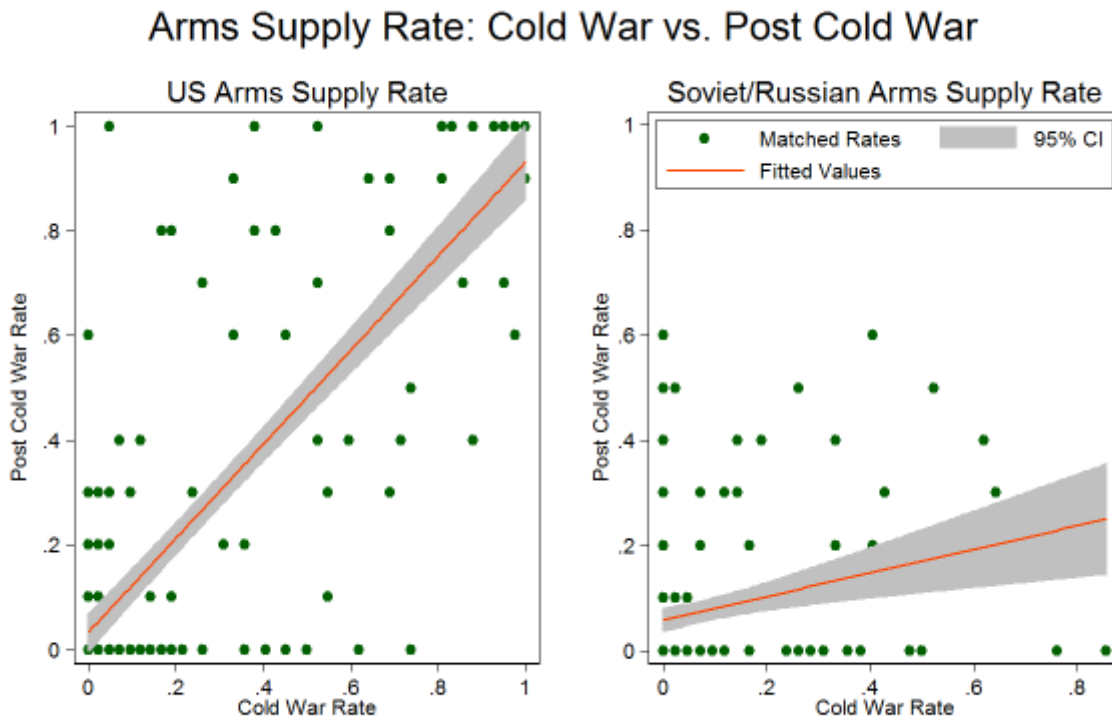
The foreign policy implications are still tentative for this analysis. Blanton (2000, 2005) found that the U.S. selection of states to provide arms to does weed out certain human rights violators. It does not appear as if that process is weeding out conflict prone states.

The results of these analyses do seem to show that where a state gets its arms does not immunize the state from conflict. The case of Vietnam and Cambodia that began this paper seems a proper way to end it. Vietnam and Cambodia have been embroiled in a conflictual relationship for more than 40 years, with intermittent bouts of conflict. While the Soviets and later Russians supplied the state with more potent weapons with which to undertake its actions against its neighbors, those weapons did not seem to cause the state to behave in any certain way.

Table 1 – Post Cold War Arms Transfer Rates Predicted by Cold War Rate

	<i>US</i>		<i>USSR/Russia</i>	
	<i>b</i> (SE)	P> z	<i>b</i> (SE)	P> z
Post-Cold War Rate	0.898 (.043)	0.001	0.224 (.066)	0.001
Constant	0.034 (.018)	0.064	0.058 (.011)	0.001
R-Squared	0.69		0.06	
N	197		197	

Figure 1 – Post Cold War Arms Transfer Rates Predicted by Cold War Rate



Data come from SIPRI arms transfer database.

Table 2 – Predicting MID Initiation by Weapons Transfers from US or Russia

		Recipient States As Initiators				Recipient States As Targets			
		U.S.	Russia	Total	All MIDs	U.S.	Russia	Total	All MIDs
2 Year	Number	571	185	756	1430	693	214	907	1703
Lag	Percent Total	75.5%	24.5%	100.0%	52.9%	76.4%	23.6%	100.0%	53.3%
3 Year	Number	668	252	920	1430	812	295	1107	1703
Lag	Percent Total	72.6%	27.4%	100.0%	64.3%	73.4%	26.6%	100.0%	65.0%
5 Year	Number	755	364	1119	1430	907	429	1336	1703
Lag	Percent Total	67.5%	32.5%	100.0%	78.3%	67.9%	32.1%	100.0%	78.4%

Table 3 – US and Russian Conflict Behavior 1992-2001

		Recipient States As Initiators				Recipient States As Targets			
		U.S.	Russia	Total	All MIDs	U.S.	Russia	Total	All MIDs
2 Year	Number	102	55	157	386	152	66	218	473
Lag	Percent Total	65.0%	35.0%	100.0%	40.7%	69.7%	30.3%	100.0%	46.1%
3 Year	Number	123	72	195	386	178	88	266	473
Lag	Percent Total	63.1%	36.9%	100.0%	50.5%	66.9%	33.1%	100.0%	56.2%
5 Year	Number	201	147	348	386	201	147	348	473
Lag	Percent Total	57.8%	42.2%	100.0%	90.2%	57.8%	42.2%	100.0%	73.6%

Table 4 – Logistic Regression Model: Effect of Arms Transfers on Conflict Behavior

Independent Variables	<i>Model 1</i>		<i>Model 2</i>		<i>Model 3</i>		<i>Model 4</i>		<i>Model 5 -Initiator</i>	
	<i>b</i> (SE)	P> z	<i>b</i> (SE)	P> z	<i>b</i> (SE)	P> z	<i>b</i> (SE)	P> z	<i>b</i> (SE)	P> z
Russian Arms (0/1)	0.3147 (.0001)	0.0000			0.3543 (.0667)	0.0000				
US Arms (0/1)			0.2809 (.051)	0.0000	0.3070 (.05171)	0.0000				
Russian Arms (Amount)							0.0004 (.00037)	0.0000	0.0003 (.00008)	0.0000
US Arms (Amount)							0.0004 (.00005)	0.0000	0.0004 (.00007)	0.0000
Military Expenditures	0.0000 (.00001)	0.0000	0.0000 (.0001)	0.0000	0.0000 (.00001)	0.0000	0.0000 (.00001)	0.0000	0.0000 (.00001)	0.0000
GDP per Capita	0.0000 (.00004)	0.3580	-0.0001 (.00001)	0.0060	-0.0001 (.00001)	0.0090	-0.0001 (.00004)	0.0640	0.0000 (.00001)	0.0000
Polity2 Score (0-20)	0.0037 (.0034)	0.2780	-0.00156 (.0034)	0.6530	0.0007 (.04513)	0.5210	0.0168 (.00344)	0.6250	0.0192 (.00427)	0.0000
Distance from US	0.0006 (.00001)	0.0000	0.0003 (.00003)	0.0000	0.0003 (.00003)	0.0000	0.0001 (.00001)	0.0000	0.0001 (.00002)	0.0000
Distance from Russia	-0.0002 (.00001)	0.0000	-.0016 (.0001)	0.0000	-0.0005 (.00003)	0.0000	-0.0001 (.00001)	0.0000	-0.0001 (.00001)	0.0000
Cold War (1950-1991) (0/1)	0.7887 (.13078)	0.0000	0.7626 (.1305)	0.0000	0.7626 (.1305)	0.0000	0.7815 (.13114)	0.0000	0.4069 (.15585)	0.0090
t	-0.0800 (.03196)	0.0000	0.0578 (.03196)	0.0710	-.0944 (.01769)	0.0000	-0.0803 (.0174)	0.0000	-0.0362 (.02274)	0.1110
t2	-0.0024 (.00136)	0.0810	-0.0027 (.00136)	0.0480	-0.0024 (.00137)	0.2610	-0.0025 (.00136)	0.7350	-0.0004 (.00098)	0.6500
t3	0.0000 (.00002)	0.1000	0.0000 (.00002)	0.0670	0.0000 (.00002)	0.1240	0.0000 (.00002)	0.0000	0.0000 (.00001)	0.1200

Constant	-5.5040	0.0000	-5.4220	0.0000	-5.4646	0.0010	-5.4765	0.0000	-6.0140	0.0000
	(.1931)		(.1934)		(.19425)		(.19353)		(.24263)	
Log Likelihood	-13488		-13818		-13818		-13487		-9597	
Pseudo R-Squared	0.02		0.02		0.02		0.02		0.02	
N	891623		891623		891623		891623		891623	

References

- Allison, Graham T. 1969. "Conceptual Models and the Cuban Missile Crisis." *The American Political Science Review* 63(3): 689–718.
- Ambrosio, Thomas. 2009. *Authoritarian Backlash: Russian Resistance to Democratization in the Former Soviet Union*. Farnham, England: Ashgate Pub. Company.
- Anthony, Ian. 1998. *Russia and the Arms Trade*. New York: SIPRI.
- Bennett, D. Scott, and Allan C. Stam. 2000. "Eugene: A conceptual manual." *International Interactions* 26(2): 179–204.
- . 2003. *The Behavioral Origins of War*. University of Michigan Press.
- Blanton, Shannon Lindsey. 2005. "Foreign Policy in Transition? Human Rights, Democracy, and U.S. Arms Exports." *International Studies Quarterly* 49(4): 647–668.
- . 1999. "Instruments of Security or Tools of Repression? Arms Imports and Human Rights Conditions in Developing Countries." *Journal of Peace Research* 36(2): 233–244.
- . 2000. "Promoting Human Rights and Democracy in the Developing World: U.S. Rhetoric versus U.S. Arms Exports." *American Journal of Political Science* 44(1): 123–131.
- Brauer, Jurgen. 2003. "Potential and Actual Arms Production." In *The Arms Trade, Security and Conflict*, eds. Paul Levine and Ron Smith. Routledge, p. 21–36.
- Bremer, Stuart A. 1992. "Dangerous Dyads: Conditions Affecting the Likelihood of Interstate War, 1816-1965." *The Journal of Conflict Resolution* 36(2): 309–341.
- del Carmen Garcia-Alonso, Maria, and Keith Hartley. 2003. "Export Controls, Market Structure and International Coordination." In *The Arms Trade, Security and Conflict*, eds. Paul Levine and Ron Smith. Routledge, p. 37–54.
- Carter, David B., and Curtis S. Signorino. 2010. "Back to the Future: Modeling Time Dependence in Binary Data." *Political Analysis* 18(3): 271–292.
- Clunan, Anne L. 2009. *The Social Construction of Russia's Resurgence: Aspirations, Identity, and Security Interests*. Baltimore: Johns Hopkins University Press.
- Craft, Cassady, and Joseph P. Smaldone. 2002. "The Arms Trade and the Incidence of Political Violence in Sub-Saharan Africa, 1967-97." *Journal of Peace Research* 39(6): 693–710.
- Diehl, Paul F., and Mark J. C. Crescenzi. 1998. "Reconfiguring the Arms Race-War Debate." *Journal of Peace Research* 35(1): 111–118.
- Diehl, Paul F., and Gary Goertz. 2001. *War and Peace in International Rivalry*. University of Michigan Press.
- Dunne, J. P et al. 2002. "Concentration in the International Arms Industry." <http://ideas.repec.org/p/uwe/wpaper/0301.html> (Accessed September 17, 2010).

- Fearon, James D. 1995. "Rationalist Explanations for War." *International Organization* 49(3): 379–414.
- Gleditsch, Nils Petter et al. 2002. "Armed Conflict 1946–2001: A New Dataset." *Journal of Peace Research* 39(5): 615–637.
- Goose, Stephen D., and Frank Smyth. 1994. "Arming Genocide in Rwanda." *Foreign Affairs* 73(5): 86–96.
- Hartley, Keith, and Stephen Martin. 2003. "The Economics of UK Arms Exports." In *The Arms Trade, Security and Conflict*, eds. Paul Levine and Ron Smith. Routledge, p. 5–20.
- Huth, Paul K. 1988. "Extended Deterrence and the Outbreak of War." *The American Political Science Review* 82(2): 423–443.
- Huth, Paul K., D. Scott Bennett, and Christopher Gelpi. 1992. "System Uncertainty, Risk Propensity, and International Conflict among the Great Powers." *The Journal of Conflict Resolution* 36(3): 478–517.
- Huth, Paul K., and Bruce Russett. 1984. "What Makes Deterrence Work? Cases from 1900 to 1980." *World Politics* 36(4): 496–526.
- Jackson, Thomas. 2010. "From Under Their Noses: Rebel Groups' Arms Acquisition and the Importance of Leakages from State Stockpiles." *International Studies Perspectives* 11(2): 131–147.
- Jones, Daniel M., Stuart A. Bremer, and J. David Singer. 1996. "Militarized Interstate Disputes, 1816–1992: Rationale, Coding Rules, and Empirical Patterns." *Conflict Management and Peace Science* 15(2): 163–213.
- Kalyvas, Stathis N., and Laia Balcells. 2010. "International System and Technologies of Rebellion: How the End of the Cold War Shaped Internal Conflict." *American Political Science Review* 104(03): 415–429.
- King, Gary, Robert O Keohane, and Sidney Verba. 1994. *Designing Social Inquiry: Scientific Inference in Qualitative Research*. Princeton, N.J: Princeton University Press.
- Kinsella, David. 1994. "Conflict in Context: Arms Transfers and Third World Rivalries during the Cold War." *American Journal of Political Science* 38(3): 557–581.
- Kinsella, David, and Herbert K. Tillema. 1995. "Arms and Aggression in the Middle East: Overt Military Interventions, 1948–1991." *The Journal of Conflict Resolution* 39(2): 306–329.
- Krause, Keith. 1992. *Arms and the State: Patterns of Military Production and Trade*. Cambridge ;, New York: Cambridge University Press.
- . 1991. "Military Statecraft: Power and Influence in Soviet and American Arms Transfer Relationships." *International Studies Quarterly* 35(3): 313–336.
- Krause, Volker. 2004. "Hazardous Weapons? Effects of Arms Transfers and Defense Pacts on Militarized Disputes, 1950–1995." *International Interactions* 30(4): 349–371.

- Lai, Brian. 2003. "Examining the Goals of US Foreign Assistance in the Post-cold War Period, 1991-96." *Journal of Peace Research* 40(1): 103-128.
- Lake, David A. 2009. *Hierarchy in International Relations*. Cornell University Press.
- Levine, Paul, Fotis Mouzoukis, and Ron Smith. 2003. "Arms Export Controls and Emerging Domestic Producers." In *The Arms Trade, Security and Conflict*, eds. Paul Levine and Ron Smith. Routledge, p. 55-77).
- Lumpe, Lora. 2000. *Running Guns: The Global Black Market in Small Arms*. Zed Books.
- Maniruzzaman, Talukder. 1992. "Arms Transfers, Military Coups, and Military Rule in Developing States." *Journal of Conflict Resolution* 36(4): 733-755.
- Marshall, Monty G., and Keith Jagers. 2002. "Polity IV Project: Political Regime Characteristics and Transitions, 1800-2002."
<http://www.cidcm.umd.edu/inscr/polity/index.htm>.
- Meernik, James, Eric L. Krueger, and Steven C. Poe. 1998. "Testing Models of U.S. Foreign Policy: Foreign Aid during and after the Cold War." *The Journal of Politics* 60(1): 63-85.
- Morris, Stephen J. 1999. *Why Vietnam Invaded Cambodia: Political Culture and the Causes of War*. Stanford University Press.
- Most, Benjamin A., and Harvey Starr. 1989. *Inquiry, Logic, and International Politics*. University of South Carolina Press.
- Pierre, Andrew J. 1997. *Cascade of Arms: Managing Conventional Weapons Proliferation*. Washington, D.C.: Brookings Institution Press ; Cambridge, Mass.
- Porter, Bruce. 1984. *The USSR in Third World Conflicts: Soviet Arms and Diplomacy in Local Wars, 1945-1980*. Cambridge; New York: Cambridge University Press.
- Rousseau, David L. et al. 1996. "Assessing the Dyadic Nature of the Democratic Peace, 1918-88." *The American Political Science Review* 90(3): 512-533.
- SIPRI. 2011. "Stockholm International Peace Research Institute Arms Transfers Database."
<http://www.sipri.org/databases/armstransfers> (Accessed March 22, 2011).
- Small, Melvin, and J. David Singer. 1969. "Formal Alliances, 1816-1965: An Extension of the Basic Data." *Journal of Peace Research* 6(3): 257-282.
- Smith, Ron, and Bernard Udis. 2003. "New Challenges to Arms Export Control: Whither Wassenaar?" In *The Arms Trade, Security and Conflict*, eds. Paul Levine and Ron Smith. Routledge, p. 94-110.
- Strazzari, Francesco, and Simone Tholens. 2010. "Another Nakba: Weapons Availability and the Transformation of the Palestinian National Struggle, 1987-2007." *International Studies Perspectives* 11(2): 112-130.