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Great Power, Arms, And Alliances

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Great Power, Arms, And Alliances

Abstract
After a low point in the early 2000s, the global arms trade is experiencing a resurgence. Powerful states such as the United States, Russia, France, Germany, and China account for the vast majority of the total exported arms but trading weapons technology seems inherently risky. It increases the proliferation rate of technology and creates vulnerability if a trading partner defects from an alliance. Given the risk, why do great powers trade their weapons? The results show a positive linear relationship between great power competition and the volume of arms trade globally. Positive relationships were also found for alliances, domestic regime similarity between importing and exporting states, and for when the importing state is involved in an active conflict. This dissertation looks at the international arms trade using a mixed methodological approach. Quantitatively, a time series multivariate regression model using country year dyads between the major exporting states and all of the other states in the international system is developed to look at how great power competition, alliances, political regimes, and conflict affect the arms trade. The quantitative analysis is supported with two qualitative case studies that employ process tracing to provide more detail about how the international arms trade is related to great power competition, alliance formation, domestic political regime similarity, and conflict. In the first case study, the end of the Cold War is used to show how the decline of the Soviet Union created new arms trade and alliance opportunities for NATO. The second case study looks at the iterative Arab-Israeli War to see how domestic political regimes and conflict affect the arms trade when two great powers compete via proxy in a regional conflict. The levels of great power competition are currently increasing as China continues to mature into a dominant regional power and Russia pursues a grand strategy of agitating against western institutions. Based on the conclusions of this study, this suggests that the level of arms traded in the international system will continue to increase as great powers seek to add to and solidify their alliance spheres of influence by increasing access to their arms.

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GREAT POWER, ARMS, AND ALLIANCES

Keith L. Carter

A DISSERTATION

in

Political Science

Presented to the Faculties of the University of Pennsylvania

in

Partial Fulfillment of the Requirements for the

Degree of Doctor of Philosophy

2019

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Dedication

To my wonderful children Kat, Graham, and Boyd, I love you. I am excited to continue watching you develop into thoughtful, funny, and courageous adults. You are champions. Erin without you none of this would have been possible—my love for you grows daily. You are the best wife ever.
GREAT POWER, ARMS, AND ALLIANCES

Keith L. Carter
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After a low point in the early 2000s, the global arms trade is experiencing a resurgence. Powerful states such as the United States, Russia, France, Germany, and China account for the vast majority of the total exported arms but trading weapons technology seems inherently risky. It increases the proliferation rate of technology and creates vulnerability if a trading partner defects from an alliance. Given the risk, why do great powers trade their weapons? The results show a positive linear relationship between great power competition and the volume of arms trade globally. Positive relationships were also found for alliances, domestic regime similarity between importing and exporting states, and for when the importing state is involved in an active conflict. This dissertation looks at the international arms trade using a mixed methodological approach. Quantitatively, a time series multivariate regression model using country year dyads between the major exporting states and all of the other states in the international system is developed to look at how great power competition, alliances, political regimes, and conflict affect the arms trade. The quantitative analysis is supported with two qualitative case studies that employ process tracing to provide more detail about how the international arms trade is related to great power competition, alliance formation, domestic political regime similarity, and conflict. In the first case study, the end of the Cold War is used to show how the decline of the Soviet Union created new arms trade
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CHAPTER 1: INTRODUCTION

Globally, the arms trade is flourishing. Major powers, such as the United States, Russia, France, Germany, and China, together captured 75% of the total arms exported from 2014 to 2018. The U.S. alone accounts for 36% of the total global arms trade, and there has been a steady global increase since the early 2000s.\(^1\) Although the recent increases in the volume of the international arms trade have not yet matched its peak from the 1980s, the 23% rise since the low point in the early 2000s suggests an increased demand for weapons systems. It is remains unclear exactly why the volume of the arms trade varies. Given the size and relative power of the states that are involved, it is clear that the international arms trade is a component of a states’ grand strategy, and confers some benefit to exporters. It is also obvious that states would not want their weapons to proliferate unchecked throughout the international system—potentially falling into competitors’ hands and eroding their advantage. Presumably, there are multiple factors that affect a state’s decision to sell weapons, but what is the relationship between great power competition, alliances, and the arms trade? Why do powerful states sell their weapons?

Since the industrial revolution, weapons have become increasingly specialized. As the rate of technological change increased, militaries sought to maintain their advantage by possessing the most advanced weapons available. Driven by the security

dilemma, states were “compelled to create a permanent armaments industry of vast proportions.”2 In spite of security competition though, states frequently form alliances and trade armaments, and there is a clear relationship between a state’s level of economic and military power and the exportation of arms. Structural arguments suggest that one reason states would trade arms is to balance against other competing states. In this account, the number of great powers in the international system is front and center because of its effects on the types of balancing behavior. States could therefore trade arms to alter existing military balances and to signal alliance commitments. Additionally, because hegemonic states play a role commensurate to their power in stabilizing the international system, arms trades could serve as tool for major powers to extended their power by establishing hierarchical security spheres.3

Powerful states sell their weapons to extend their security spheres of influence. The contest to extend alliance networks varies depending on the level of great power competition occurring between hegemonic rivals. As the level of great power competition increases, the relative stakes of losing position magnify lowering barriers to arms trade, increasing supply, and generating demand. Often these competitions occur in a regional context where multiple great powers are competing for influence and establishing proxy subsidiaries. Other considerations, such as the existence of an alliance, the degree of regime similarity, or the importing states involvement in an active

conflict increase the volume of arms traded. Gaining a deeper understanding of the relationship between great power competition, alliances, and the arms trade has important implications. In terms of scholarship, unpacking the interrelated nature of great power competition, arms, and alliances expands current accounts of state balancing behavior and alliance formation. Additionally, as the international system enters a new period of increased great power competition, there are some important implications for how the sale of arms can be used as a tool of statecraft for extending security spheres and building resilient partnerships.

Theory:

In this dissertation, I will argue that the central variable affecting the volume of arms traded internationally is the amount of great power competition occurring in the state system. Great power competition plays a central role in structural arguments defining alliance formations and balancing behaviors. Because of the anarchic state of the international system and the disparate power relationships between states, competition and the threat of violence necessitates that states must attend to their security through some combination of organizing, equipping, and manning a military. However, states vary in the distribution of resources and industrial capability to produce military equipment. States that adopted the modern system of force employment, an approach to industrialized warfare that emerged out of the trench stalemate of the First World War, gained a decisive advantage militarily over states that have not or could not adopt this
approach to warfare. Because the adoption of the modern system requires the industrial tools of war as a necessary condition, states are pressured to obtain modern armaments. Importantly, the modern system avoids charges of technological determinism by stipulating that while the industrialized tools of war are a necessary condition, they are not sufficient to adopt the modern system. Nevertheless, arms become a critical component of state security considerations.

The industrial revolution generally, and the industrialization of war making materials specifically, had broad implications for the international distribution of power. States that mastered industrialized production were able to mass produce arms, move armies at an unprecedented scale, exploit metallurgical advancements in shipbuilding and gun construction, and eventually take to the skies. One example of the relationship between industrialization and military power is evident in the relative power America gained during the Second World War. In this war, America was able utilize its natural and material resources, convert its existing manufacturing industry, adopt mass production techniques in airplane and ship construction, and as a result, was both militarily and materially central to the allied victory in WWII. As industrialization became crucial to war, states’ relationships with the military-industrial complex changed.

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5 Ibid., 28-51.
The privatization of the armament industry had three important consequences for the development of an international arms trade. First, because privatization increased industrial competition—as firms competed to gain market share—the pace of technological development was accelerated. Second, privatized firms needed to be profitable to maintain themselves organizationally. Profitability can be increased by foreign sales because it expands the market, and by increasing the number of weapons systems sold, the cost per system is reduced through economies of scale. However, foreign sales have the potential to alter the balance of power in a direction unfavorable to a state’s preferences, increasing the probability of protectionist trade policies for war making technology. Third, because rapid technological changes could potentially shift balances of power, and the lack of information regarding an adversary’s capabilities, states had to increase their spending and accelerate their equipment acquisition strategy.

The naval arms race between Britain and Germany prior to the First World War highlights some of the key features of the transformation of states’ relationships with the armament industry. The multipolarity that existed in the international system at the time increased the military interdependence of the great powers in the international system and promoted external balancing. Great power balancing behavior played out interactively with the industrialization of armament manufacture. In Britain, just before the turn of the 19th Century, tension was mounting between state controlled armament firms such as

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Woolwich and private firms such as Armstrong and Vickers. Furthermore, Britain was not alone in the privatization of armament manufacture similar developments were happening in Germany and to a lesser degree in France. In this early period of industrialization, “[n]ational loyalty obstructed profitable dealing with potential enemies.” Nevertheless, some cross-border but intra-industry agreements were maintained between British and German firms even after the outbreak of hostilities in July 1914. During this same period, in part driven by the increased pace of technological advancement, the Royal Navy’s spending increased threefold—easily exceeding the rate of economic growth in Great Britain at the time. Thus, states that privatize their military-industrial complex face a dilemma. One the one hand, privatization is potentially advantageous for state security because it engenders market competition. On the other hand, due to the costs of research, development, and production it is unlikely that defense firms could recoup their investment solely through intra-national sales. Likewise states that were late to industrialize were at an obvious disadvantage and faced a choice between developing their own military-industrial complexes, procuring high end technology from an early adopter, or a blended strategy of doing a bit of both. In part the tension inherent in these problems is resolved when states

10 Ibid., 262-306.
11 Ibid., 292.
12 Ibid.
engage in the exportation and importation of military weapons. Desiring to maintain a robust military-industrial complex, states are likely to export military technology within their security spheres of influence to achieve economies of scale. Similarly, developing states or states with lower military-industrial capacity are likely to want to import weapons to attend to their security needs without having to outlay the capital required to produce arms internally. Given the possible role that foreign weapons sales play in alliance building, alliance maintenance, and as a tool of state balancing behavior, it is possible that the political calculus of arms trading changes based on the distribution of power within the international system.

**Discussion of Hypotheses**

*H1: Great power competition will create increased volume in armament trade across the international system.*

Whether thinking about the role of power in either polar or hierarchical terms, a state’s arms trade decision making is fundamentally affected by the distribution of power across the international system. As the relative positions of states rise and fall, the changes in the distribution of power influences the behavior of the great powers within the system. Extending influence through the exportation of arms is a way that great powers can externally balance against perceived threats. Theoretically, the characterization of whether the international system is as underpinned by a condition of anarchy or hierarchy informs a central difference between arguments highlighting the role of polar powers versus the influence of states *vis-à-vis* one another. Starting from anarchy, polarity arguments highlight interstate competition between polar powers and
generate observable implications for arms trading as balancing. Balancing arguments focus on the number and competition between polar powers existing at a given time within the international system, whereas hierarchical arguments focus on the degree of influence states have as a result of their position relative to other states. In a multipolar system, the external balancing nature of alliances and the profusion of other great powers creates the most security uncertainty because there is both a fear of alliance defection and an environment marked by great power competition.

In a bipolar system security uncertainties are reduced because, though the threat is high, the rival is known. A bipolar system also changes the character of balancing from external (through alliances) to internal.\textsuperscript{14} Alliances are still important, but they are managed differently, and the two competing great powers are better able to advance their interests within their alliance networks because defection no longer has the same implications for the overall international balance of power.\textsuperscript{15} Following the Second World War, the United States and the Soviet Union emerged as the prevailing great powers in a bipolar international system. Both established security spheres and engaged in military-industrial competition. The bipolarity of the international system, and the resulting pattern of alliance formation affected the patterns of trade liberalization. Joanne Gowa developed a model showing that because the risk of alliance withdrawal is lower in a bipolar international system, free trade is more likely to occur and it is specifically more

\textsuperscript{14} Waltz, \textit{Theory of International Politics}, 168.
\textsuperscript{15} Ibid., 169.
likely to occur within the alliance network.\textsuperscript{16} Is it possible that this is also true for arms trades? Two features of bipolar international systems favor arms trade: 1. alliance stability and 2. more predictable great power competition.

Unipolar international systems may go further than bipolarity in reducing the uncertainty of the international security environment because the sole great power enjoys an “unequivocal hierarchy of power.”\textsuperscript{17} In unipolarity there is presumably little concern for alliance withdrawal for the remaining great power, but there is also a relative lack of great power competition. Unipolarity does not however, imply peace. Indeed, as noted by Nuno Monterio, unipolarity “while eliminating great-power competition, makes room for significant conflict.”\textsuperscript{18} During periods of unipolarity, the machinations of minor powers and regional hegemons are less problematic to the reigning great power because as the sole great power alliance opportunities with a competing great power are absent. The role of hegemonic powers in stabilizing the international system helps explain in part why the United States, as the leading hegemonic power, is less able to recoup the peace dividend during periods of low great power rivalry. Indeed, as Caverley and Kapstein highlight, the United States’ has lost global market share in weapons trade since the end of the Cold War because the relatively expensive and sophisticated weapons the U.S. uses to maintain the stability of the system and to project power internationally are at

\begin{footnotesize}
\textsuperscript{17} Robert Gilpin, ”The Theory of Hegemonic War,” \textit{The Journal of Interdisciplinary History} 18, no. 4 (Spring, 1988).
\end{footnotesize}
odds with the types of equipment optimal for the lower-scale conflicts.\textsuperscript{19} It also seems plausible that the stability of a system maintained through the extended security sphere of a dominant hegemonic state incentivizes free-riding. For example, spending within NATO is heavily borne by the United States, with many states failing to meet the modest 2006 NATO guideline of 2\% of GDP. “The combined wealth of the non-US Allies, measured in GDP, exceeds that of the United States. However, non-US Allies together spend less than half of what the United States spends on defence.”\textsuperscript{20} Moreover, the imbalances within NATO are not strictly monetary; much of the military capability of NATO resides in the assets and forces of the United States.

Polarity accounts of the international system, while offering insight into the expected behaviors of the polar powers, do not fully capture the levels of competition between the polar powers at any given time. During the bipolar period of the Cold War, for example, the level of competition changed although the number of polar powers in the system remained the same. Similarly, during the post-Cold War period the level of competition was not fixed. As Russia’s collapse became more widely understood, and as China economically, technologically, and militarily grew the level of competition in the state system changed. Because great power competition is a constant pressure that can change in magnitude whether or not there is a corresponding change in the number of great powers, this variable’s impact on arms trade can be examined. For example, during

\textsuperscript{19} Jonathan D. Caverley and Ethan B. Kapstein, "Disruptive Innovation and the Global Arms Trade," (2015), 31-32. (Unpublished)
\textsuperscript{20} \url{http://www.nato.int/cps/en/natohq/topics_67655.htm?selectedLocale=en} (accessed 7 Dec 2015)
the middle of the Cold War when the levels of competition between the U.S. and the Soviet Union were at their height versus the end of the Cold War when competition was waning.

In summary, great power competition creates demand for military equipment across the international system. The increases to arms trade result from increased great power competition for three reasons. First, because of the effect of great power competition on arms racing there is an increased rate of equipment change, which generates demand for new equipment and creates a surplus of older equipment. Second, in periods of increased competition, great powers will look to both bolster the capabilities of their existing allies, and seek new alliances by providing access to their arms. Finally, in periods of low great power competition there will be increased free-riding, which will reduce the expenditure on arms within the hegemonic state’s security sphere.

H2: Trade will be highest between major powers and mid-range powers.

The number of great powers competing at a given time in the international system plays a central role in structural arguments, however, structural arguments can be problematic when describing relationships between lesser powers and for times when great power competition is reduced. As an alternative, arguments characterizing power relationship oriented around hierarchy maintain the central role of great powers, and account for the behavior of lesser powers. In both accounts, the behavior of great powers is important, but hierarchical arguments offer a better way to account for the behavior of regional and lesser powers. Great powers operate within the system by providing
hegemonic leadership and resources to stabilize the system and preserve the status quo.\textsuperscript{21} Although Kindleberger’s arguments are tailored to economic leadership and stability, they are easily extended to security. Hegemonic powers, through their position within the hierarchy of interstate power, are able to exercise political authority over other states.\textsuperscript{22} Although the authority of a powerful state over a less powerful state is not absolute, this account portends that in return for their stabilizing efforts, hegemonic powers create obligations within their economic and security spheres.\textsuperscript{23} Armament trade is a tool through which states can create obligations. This implies that in general, greater relative power increases arms exportation. While more powerful states are expected to trade more, the power of the importing states is also important. Importing states must have enough capacity to afford and utilize the traded weaponry. Thus, the expected relationship is non-linear. When the difference in power is low, such as between two major powers, the volume of arms trade is expected to be low. Alternatively, when the difference is high, trade would also be low because of the different military requirements between developing developed and developing countries.\textsuperscript{24} Trade is expected to be highest in conditions where there is a discrepancy in power favoring the exporting nation, but when this discrepancy is not too high.

\textsuperscript{22} Lake, "Escape from the State of Nature: Authority and Hierarchy in World Politics," 50.
\textsuperscript{23} Ibid., 51.
\textsuperscript{24} For now, this discussion is putting aside other reasons why trade may be low between the developed and the developing world, such as human rights issues and regime instability.
H3: Alliances increase weapons trade

The pressures of great power competition are closely related to state behaviors centered on alliance building to balance power into security spheres of interest. But, while great power competition exerts pressure across the international system to seek alliances, and as theorized above to increase the exportation of arms, the two behaviors need to be disaggregated. Great powers trade arms to both existing allies and non-allies indicating they there is a more nuanced relationship between great power competition, arms, and allies. There are a variety of causal pathways that explain the hypothesized relationship between alliances and arms trading.

First, trading within an alliance makes practical sense to increase the likelihood of campaign success within an alliance from an interoperability stand point. Having common equipment across an alliance is an effective way to reduce the friction of multinational campaigning because it simplifies the supply chain for replacement parts, fuel, and ammunition while assisting commanders in understanding the capabilities of allied forces. Following a similar logic, arms trade between allies is a way for great powers to increase the military capacity of its allies—making them capable of responding to security situations without necessarily involving them. Second, arms trade can serve as a way of signaling commitment. Arms trades of major weapons systems link countries’ military-industrial complexes together in ways that make alliance defection difficult. Thus, great powers may use arms trade as a way of signaling their commitment to their existing or potential allies. For example, in the context of great power competition, the negotiation of a trade deal between a great power to a beleaguered ally
or a potential ally would be an especially strong signal of support. Arms trade can also serve as a signal of commitment in situations between competing great powers. For example, during alliance formation arms trades could precede an alliance to serve as a strong demonstration to form an alliance. Pre-alliance trade along these lines could serve as a signal to other great powers of great power intentions to expand its security sphere of influence, and it also could function as a signal of the subordinate power within alliance about their preferred alliance partnerships.

In addition to structural arguments concerning the relationship between power, competition, and balancing there are a variety of economic reasons for states to trade weapons within alliances. For one, modern weapons research and development is costly and it requires an increasingly specialized industrial capacity. States seeking to gain or maintain a technologically sophisticated military face a choice between either developing their own armament-specific industrial capacity, or seeking to procure weapons from a state that already has an established armament industry, or a combination of the two. Given the economic and security dominance of major powers and their fully established military-industrial complexes, they are desirable trading partners. Moreover, great powers are incentivized to seek arms trade agreements because the costs of research, development, and production can be potentially defrayed by achieving economies of scale through foreign sales.

Seeking to buy weapons from a great power, however, can be problematic for less powerful states. The types of weapons great powers pursue are useful for the types of conflict they anticipate participating in—namely large-scale operations and engagements
in near-peer or peer-to-peer combat. The types of weapons smaller states need may be qualitatively different because their ultimate use in security operations such as securing borders or quelling internal unrest is different. This creates a supply and demand mismatch whereby great powers are supplying high-end weapons in a market that desires less sophisticated arms. To counter this loss in market share, great powers can globalize their weapons production to provided domestic economic benefits to their partners, or establish minimum spending goals for alliance members, such as in NATO.

Additionally, by disaggregating and selling individual components of a sophisticated system great powers can potentially recoup some of their expenditure. Stephen Brooks argues that part of the enduring peace following the Second World War can be explained as a function of the globalization of Multi-National Corporations, which has spread the production of major weapons systems across many countries. Brooks contends that one of the drivers of globalized inter-alliance weapons production is the narrowing of the distinction between military and civilian technology. Certainly it is true that dual-use technology has contributed to the trend of multi-national weapons production through the interconnected network of MNCs, but does this explanation fully explain state behavior?

In the starkest terms, Brooks is contending that states have essentially been forced into multi-national production as a result of global market forces. But clearly there are also choices being made concerning who is allowed to purchase and or manufacture high-

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27 Ibid., 84-85.
end military technology. One instance of this is observed in Lockheed Martin’s F-35 Joint Strike Fighter program. The F-35 is a fifth-generation multi-role fighter aircraft that employs advanced computer aided targeting and navigation with stealth technology—it is touted to be widely superior to any existing fighter aircraft. If the claims of its superiority are founded, then the F35 represents a technology that could favorably tilt the outcomes of military engagements towards states that have fielded the F-35. In spite of the potential erosion of the security assurances that come from being the sole user, the U.S. has engendered the diffusion of the F-35 by design. In this case, Australia, Canada, Denmark, Italy, the Netherlands, Norway, Turkey, the United Kingdom and the United States are all simultaneously involved in producing and fielding this aircraft while Israel, Japan, and the Republic of Korea are purchasing it through the Foreign Military Sales (FMS) program.\(^2\) The pattern of trade and production in the case of the F-35 is unsurprisingly distributed within the United States’ long-standing allies. In other words, given the potential of the F-35 to shift the balance of air power, the distribution of trade is narrowly confined to the staunchest of allies. So, it seems that while Brooks is right to point toward a larger pattern of globalization generally to explain the role of MNCs in the production of weapons, it is also possible that globalized production offers a strategy to the hegemonic power to offset the tendency toward free-riding. Specifically, by distributing the production of weapons systems within an alliance network, a hegemonic power can create domestic economic benefits to an alliance nation for its continued military spending. Indeed, to gain the strategic benefit of influence in its allies’ military

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endeavors, the United States is even willing to subsidize foreign sales. Additionally, the initial sale, while valuable, potentially only represents a small fraction of the total value of the trade. The average life span of a military end-item such as a tank, airplane, or ship is measured in decades. And, during the life span there will be a steady demand for parts, services, and upgrades. Choosing to enter into a trading agreement represents a long-term financial and military commitment for both the importing and exporting country thus hedging against tendencies towards free-riding in a relatively secure international environment.

\textit{H4: Arms trade from major powers to subordinate powers will increase when the subordinate power is involved in a conflict}

Arms trade can also serve as a demonstration of resolve. In this scenario, as local threats emerge against allied partners major powers can reassure lesser powers of their commitment by selling, lending, or giving them arms. Of course, practical reasons for inter-alliance trade must also inform a state’s acquisition strategy. Within alliances there is an obvious tangible benefit to having common equipment in that it ensures interoperability when working together as a coalition. Similarly, by distributing common equipment across an alliance, the U.S. may be able create incentives for coalition partnership in military actions. Under this logic, the costs of participation are lowered for alliance countries when the U.S. subsidizes their involvement by providing maintenance and operating costs the supply of parts, fuel, and weapons to a common set of equipment.

\textsuperscript{29} Jonathan D. Caverley and Ethan B. Kapstein, "Power or Profit? The United States and the International Arms Trade," 26.
By using arms trade subsidization, the United States can lower its domestic political
barriers for military action by expanding alliance participation thus lowering its own
forces involvement. To gain political authority within their security spheres major
powers are likely to increase their exports to subordinate members experiencing conflicts
or participating as an alliance member in a security conflict of the major power.

_H5: Nuclear powers will have higher volume of weapons trade._

Nuclear weapons can dramatically alter balances of power and yield a
disproportionate increase in the amount of power they confer.\(^{30}\) It is therefore unlikely
that they would be traded. However, while it may be the case that states will not directly
trade nuclear weapons it remains to be determined whether there is a difference in the
patterns of arms trade to nuclear powers. Solidifying alliances—through increased arms
trade—with other nuclear powers should be a primary concern since the defection of a
nuclear ally has the largest implications for the balance of power. Alternatively, states
that have developed the technological sophistication necessary to produce nuclear
weapons may already have the internal capability to provision their own arms.
Problematically though, the specialized capability required to produce nuclear weapons
does not necessarily imply a robust military-industrial complex. Furthermore, while the
deterrent capacity of nuclear weapons in undeniable, the normative injunctions against
their use makes them unsuited to project conventional military power in the majority of
conflicts states find themselves involved in. Thus, India, which has possessed nuclear

weapons since the 1970s, is simultaneously both a nuclear power and the leading armament importer from 2011-2015. Given the degree that nuclear weapons polarize alliances it is likely that trade to nuclear countries will be more confined within security spheres of influence. Thus, it is reasonable that developing nuclear weapons will simultaneously increase the volume of armament trade, and reduce the number of trading partners.

**H6: Regime congruity will increase arms trade.**

Regime congruity and democratization follow a similar theoretical logic, thus they are discussed together below.

**H7: Democratization precedes arms trade from democratic regimes.**

As discussed above, major powers potentially use weapons trading as a way to increase their authority and create obligations throughout their security spheres of influence. This does not imply that major powers will trade to everyone. On the contrary, since there is competition between powers for a share of the arms market—and for the influence it provides—it is likely that major powers will trade with regimes that they are sympathetic to. Additionally, access to weapons from democratic states will follow democratization. Establishing democratic institutions, market-based economies, and increased concern for human rights will increase access to weapons from democratic major powers. For example in the U.S., as Blanton demonstrates, the level of

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consideration for human rights is important in the United States’ decision to initiate weapons trade with another country—though after the initial decision is made human rights do not impact the quantity or the quality of the weapons traded.\textsuperscript{32} Major powers that are not fully included in the democratic sphere, such as Russia and China, will fill the gap by providing weapons for autocratic regimes. Thus we would expect, that in general, weapons trade would be increased between states with similar regime types.

**Summary of Hypotheses**

\textit{H1:} Great power competition will create increased volume in armament trade across the international system.

\textit{H2:} Trade will be highest between major powers and mid-range powers.

\textit{H3:} Alliances will increase arms trade.

\textit{H4:} Arms trade from major powers to subordinate powers will increase when the subordinate power is involved in a conflict.

\textit{H5:} Nuclear powers will have higher volume of weapons trade.

\textit{H6:} Regime congruity will increase arms trade.

\textit{H7:} Democratization precedes arms trade from democratic regimes.

Outline of Dissertation

The remainder of this dissertation employs a mixed methods approach to investigate the above hypotheses. Methodologically, Chapter 2 uses the volume of arms trade across the international system as the dependent variable in a time series multivariate regression using country year dyads between major powers as exporters with all the other states in the system as importers. Models are estimated to look at the data using different combinations of independent variables, different combinations of exporting states, and for regional effects. Informed with the results from the quantitative analysis, Chapter 3 looks qualitatively at the end of the Cold War to further explore the relationship between great power, arms, and alliances. This time period was selected because it captures a period where the relative power of the United States vis-à-vis the Soviet Union was rapidly changing. Looking at the processes through which the United States was able to use its position as the dominant power to expand its security sphere of influence into Eastern Europe through alliances and arms trade offers a unique historical perspective into the relationship between these variables. To further understand the relationship, Chapter 4 focuses in on the United States and the Soviet Union’s regional competition in the iterative wars between Israel and its Arab neighbors during the height of the Cold War. Focusing in on this historic period offers a chance to explore great power behavior during a time of increased global competition and also illuminates the domestic political calculations of the importing state as they seek to garner weapons contracts to facilitate their local security affairs. Finally, the concluding chapter will focus on identifying the major findings of the study and contextualize their import for the
political science literature, assess the current arms trade situation in light of these findings and offer some policy recommendations, and indicated future areas of study in this research agenda.
CHAPTER 2: QUANTITATIVE ANALYSIS

Introduction:

In this chapter, three empirical models are presented to test select theoretical hypotheses from the previous chapter. The first model looks at data in the aggregate to determine how factors such as great power competition, domestic political regimes, regime similarity, alliances, war, and nuclear capability affect the volume of arms trade. A second series of models is presented to further refine the results of the first. In the second series, the sample is split by exporting states to determine what differences exist between the great powers in their arms trading behavior, and whether there are differences in the arms trading behavior of great powers, major powers, and mid-range or developing powers. A final series of models is estimated by splitting the sample regionally.

Research Design:

This chapter will present analysis derived from a base dataset of armament trade in a times-series format. The baseline unit of analysis will be country year dyads between major powers as exporters with all the other states in the system as importers. Determining which states constitute major powers was accomplished by using the Composite Index of National Capabilities (CINC) dataset v4.0. Using this data,

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observations prior to 1950 were dropped to more accurately capture the political and structural conditions of the post war international order. Additionally, the data for Unified Germany and the Federal Republic of Germany were combined to more accurately capture the political continuity of the pre and post-Cold War time period—data for the German Democratic Republic was retained as separate entity from 1950-1990. Next, an average CINC score was generated by country over the time period from 1950-2007.

As an alternative approach, the Major Power list was cross checked against averaged CINC scores against GPD as reported by the World Bank. Both measures, shown in Table 1 below, produced the same list of the ten most powerful states—although the ordering was different between measures. Finally, to assess the activity level of these states in the international arms trade they were further cross-referenced against the Stockholm International Peace Research Institute’s (SIPRI) lists of the top importing and exporting nations from 2011-2015. Between these countries the full possible range of major power participation in the international arms trade is represented. Five of the ten major powers are in the top ten for exportation, one (India) is the only major power in the top ten for importation, the U.S.A. and China are in the top ten for both categories, while Brazil and Japan are on neither top ten list. The importing states includes the ten

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34 Fleurant et al., "Sipri Fact Sheet".
exporting states listed above and all the other states in the international system for the years that they existed over the duration of the analysis.\textsuperscript{35}

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
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<td>1</td>
<td>USA: 0.1766</td>
<td>USA: $17,419,000</td>
<td>USA: %33</td>
<td>IND: %14</td>
</tr>
<tr>
<td>2</td>
<td>RUS: 0.13548</td>
<td>CHN: $10,354,832</td>
<td>RUS: %25</td>
<td>SAU: %7.0</td>
</tr>
<tr>
<td>3</td>
<td>CHN: 0.12227</td>
<td>JPN: $4,601,461</td>
<td>CHN: %5.9</td>
<td>CHN: %4.7</td>
</tr>
<tr>
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<td>GER: $3,868,291</td>
<td>FRN: %5.6</td>
<td>UAE: %4.6</td>
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<td>UK: $2,988,893</td>
<td>GER: %4.7</td>
<td>AUL: %3.6</td>
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<tr>
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<tr>
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<td>PAK: %3.3</td>
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<td>DRV: %2.9</td>
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<td>RUS: $1,860,598</td>
<td>NTH: %2.0</td>
<td>ROK: %2.6</td>
</tr>
</tbody>
</table>

Table 1: Showing both Major Powers as derived from averaged CINC scores from 1950-2007 and by GDP in 2014, and the top 10 countries involved in exporting and importing armaments from 2011-2015\textsuperscript{36}

Measuring Arm Trade:

Information on the dependent variable was obtained using the Stockholm International Peace Research Institute’s (SIPRI) database on international arms

\textsuperscript{35} A complete list of importing states can be found in Appendix B.

transfers.\textsuperscript{37} This dataset captures information on international arms trade and is collected by SIPRI from a variety of source records that includes open source reporting, industry reports, and governmental / United Nations publications.\textsuperscript{38} SIPRI’s arms transfer database is ideal for quantitatively studying the international arms trade for a variety of reasons. First, it is an established dataset that is updated annually by a professional research team. Second, it is publicly available, which enhances research replicability. And finally, their use of multiple primary sources increases the reliability of the data. However, there may be some reason for concern, because some SIPRI data relies on open source reporting, that the information on the arms trades for democratic regimes will be both more complete and more accurate. This is attenuated to some degree because of the variety of sources SIPRI uses, and given the large sample size is likely to only marginally affect the results.

SIPRI reports a variety of information for each trade including information about the type of equipment being traded, and whether the equipment is new or used. Since this study is primarily concerned with understanding interstate arms trading behavior, information regarding the quantity and the value of the arms traded is the dependent variable. SIPRI’s Trade Indicator Value (TIV) provides such a measure. TIVs

standardize the values of like items of equipment making cross-country comparisons of military resource import and export possible. Importantly, TIVs represent the transfer of military resources rather than the financial value of the transfer. Weapons for which a production cost is not known are compared with core weapons based on: size and performance characteristics (weight, speed, range and payload); type of electronics, loading or unloading arrangements, engine, tracks or wheels, armament and materials; and the year in which the weapon was produced.\textsuperscript{39}

Thus, the TIV is not a measure of the financial value of the transfer and cannot be used in comparisons to other monetary measures such as GDP and military expenditure.\textsuperscript{40} Using U.S. weapons to look at the range of values shows that a single anti-tank missile, the BGM-71 TOW, is valued at a TIV of 0.1 while a frigate is valued at a TIV of 300. SIPRI further parses TIVs to account for the trade of used equipment and for equipment that is used but overhauled prior to trade at 0.40 and 0.66 of the original TIV respectively.\textsuperscript{41}

The SIPRI data also includes both an order date for the year the deal for the trade was reached, and a delivery year to represent when the equipment was delivered. Because production times can be significant for major military end items such as aircraft and ships, this can result in situations where an order is placed in one year and received in different years. For example, in 1964 the United Kingdom ordered 52 F-4 Phantoms from the United States. Of these 52, 28 F-4 Phantoms were delivered in 1967, 20 in 1968, and four in 1969. In the models that follow, the year variable reflects the order

\textsuperscript{39} Ibid. (Accessed Oct 5, 2016)  
\textsuperscript{40} Ibid. (Accessed Oct 5, 2016)  
\textsuperscript{41} Ibid. (Accessed Oct 5, 2016)
date because it presumably offers a greater indication of the demand for military equipment.

In the original SIPRI data, each armament trade between the exporting country and the importing country is treated as an independent observation. Thus, in the original SIPRI data, there can be multiple observations between exporting country A and importing country B in year X. Since the unit of observation in this study is the total volume of armament trade between country A and B in a given year X, the original data was collapsed to sum both the Trade Indicator Values (TIV) and the total number of equipment pieces traded from country A to country B in year X. For example, the original data reports four trades from the United States to Portugal in 1952. These trades consisted of 15 T-33A training aircraft with a TIV of 37.5, three used S-55 helicopters with a TIV of 1.44 (had the S-55s been new instead of used the TIV for this deal would have been 3.6), one R-33 reconnaissance aircraft with a TIV of 1.95, and 85 M-47 tanks with a TIV of 89.25. After collapsing the data to one entry for arms trade between the United States and Portugal in 1952, the values reported now reflect the sums for both TIV and the number of equipment—in this example, 130.14 and 104 respectively. For the purposes of understanding the effects of competition, regime, alliance patterns, and war on the international arms trade, aggregating the data allows the observation of the macro factors in play. While collapsing the data to one observation per country dyad year is necessary to analyze the data using time series cross-sectional regression, it is accompanied by a corresponding loss of information regarding the type of equipment being traded. Thus, there is a tradeoff between observing the macro determinants of the
arms trade and information about the types of equipment traded. This chapter deals with the former, while subsequent chapters will recover some of the latter.

Both the TIV and the total raw numbers of equipment being traded are suitable as measures of the volume of the international arms trade, however TIVs provide a slightly more complete measure. While the total numbers of the pieces of equipment delivered accounts for the volume of trade, TIV also takes into account information about the volume of trade, the condition of the equipment being traded, and the value of the equipment as compared to similar items based on known production costs for weapons of that category. Thus, for the quantitative analysis that follows, the primary dependent is TIVs. Figure 1 shows a simple graph showing the total volume of the international arms trade in TIV per year from 1950-2007.
Independent Variables

The central question in this study is: how does the distribution of state power affects arms trade behavior? Accordingly, the first set of independent variables measure the distribution of power between great powers, and the distribution of relative power within an export-import dyad. Hypothesis 1 predicts that the total volume of arms trade will be higher in periods of increased great power competition. Testing this hypothesis

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42 This graph also indicates that there is an obvious outlier in 1978 where the total TIV was ≈ 65,000, which is approximately 20,000 more than the next highest year (1980). This outlier resulted from a heightening of Cold War competition in both the Middle East and Asia. In 1978 Japan’s TIV was ≈ 15,000 (imported from the U.S. and comprised largely of the then recently developed F-15C Eagle fighter aircraft and the P3-C Orion anti-submarine surveillance aircraft. And, in the Middle East Russia’s arms exports to Syria, Libya, and Iraq totaled ≈ 12,000 TIV in 1978.
requires a measure of great power competition. The Correlates of War (COW) project provides a useful starting point to measure of state power based on material capabilities in the National Material Capabilities (v4.0) (NMC) data set. Using Composite Index of National Capability (CINC) scores, which include measures of military spending and personnel strength, energy use, iron and steel manufacture, and both urban and total population, as a measure of material power is an established indicator of state capacity.

Creating a directed balance of power variable between the United States and its great power competitor (either Russia or China) is possible by creating a directed dyad where the numerator is the value of the United States’ CINC score and the denominator is the sum of the CINC scores of the United States and either Russia or China depending on the year of the analysis. The resulting variable, (labeled U.S. Power in the following statistical analysis), is a measure of the proportion of power the United States had within the dyad in a given year. Using CINC data from NMC (v4.0) this creates a variable that ranges from 0.417 to 0.649 with a mean of 0.510. In the years where the value exceeds 0.5 the United States held more material power than its great power competitor. While this measure is inherently an incomplete account of competition, it does capture both the positionality and magnitude of great power material power differences.

As shown in Figure 2 below the United States emerged from the Second World War with a significant material power advantage. Over the course of the Cold War, the

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Soviet Union rose and surpassed the United States, but was ultimately unable to sustain its position. In this analysis, based on the collapse of the Soviet Union at the conclusion of the Cold War, China’s CINC score replaces Russia’s starting in 1992. This variable offers a way to test what the effects are of great power material disparity (a feature of great power competition) on the overall volume of the international arms trade.

Figure 2: Showing the Proportion of Material Power the United States Held Within the Great Power Dyad.

A related, but different way to look at competition through the distribution of power within the international system is to look at the effects of polarity. A dummy variable, “unipolarity” is included and is coded 1 starting in 1991. This variable is in some sense a cruder measure of the distribution of power between great power actors, but it offers a way to look at how the international arms trade was affected by the United States’ positionality after the Cold War ended. Another strength of including this
variable is that it allows limited inferences about the role of U.S. power that are not solely based on material measures.

In addition to analyzing the effect of great power material capability disparity, it is also necessary to look at the power of both the exporters and importers. Analyzing the relationship between exporter and importer power is useful for looking at how material balances affect the volume of arms trade. Hypothesis 2 predicts a non-linear relationship between importing countries material capacity and the volume of arms trade. Mid-sized countries (as measured by material power) presumably import more weapons than either small countries who on average need less weapons or large countries who have a more robust internal military-industrial capacity. Importing states’ CINC scores and their square provide a measure to test this hypothesis. These variables are labeled Importer CINC and Importer CINC$^2$ in the following model.\footnote{Since the exporting states in this model were selected based partly on their CINC scores, a complementary variable of exporting state CINC is included as a control variable, but must be interpreted within the limitations of the exporting states selected for inclusion.}

While using material capabilities as a measure of power competition has the advantages of being well established and measurable, there are some reasons to be cautious going forward. First, using a material measure is inherently reductionist. It necessarily ignores the ways that power is used in interstate competition and alternative conceptions of power such as agenda setting and soft power.\footnote{Peter Bachrach and Morton Baratz, "The Two Faces of Power," \textit{American Political Science Review} 56, no. 4 (1962). Joseph S. Nye, \textit{Bound to Lead: The Changing Nature of American Power} (New York: Basic Books, 1990).} Second, material
capability and the ability to mobilize materials for production or war are related but different. Materially rich countries that cannot convert their resources effectively are not necessarily competitively advantaged. Third, the inclusion of total population may be skewing this measure especially after 1992 when it reflects the material differences between the United States and China. These caveats must be considered when interpreting results.

In addition to competition between great powers and the material position of trading partners, other factors that presumably influence international arms trade are included in the main effects model. To test the effects of alliances (Hypothesis 3), an alliance dummy variable is included that is coded 1 if the exporting state and importing state were in any of the alliance types as specified in the Correlates of War Alliance Data Set (v4.1) (mutual defense, neutrality pacts, non-aggression pacts, and entente) during the observation year. To test domestic political regime effects, variables are also included for both the exporting state and importing states (Exporter Regime and Importer Regime) using Polity2 scores from the Polity IV Project. Hypothesis 6 contends that trade will be increased when both members of the dyad have similar domestic regimes. The variable Similar Regimes is a dummy variable measuring export and import state regime congruity. This variable is coded 1 if the exporting and importing states are either both

democracies or both autocracies. This coding decision purposely excludes instances of regime similarity where both the exporting state and the importing state are anocracies because anocratic preferences are difficult to determine and less consistent than democracies and autocracies. Information about the nature of exporting and importing state alliances and domestic political regimes are useful for understanding what types of interstate relations between members of a trade dyad predict a greater volume of trade. Other variables about the types of conditions that might affect the demand and supply of weapons are needed to consider alternative reasons for arms trading behavior.

The most obvious event that increases the demand for weapons is the outbreak of war. Hypothesis 4 predicts that war increases the demand for new and replacement weapons. To further parse the effects of war on the demand for weapons, a series of variables about whether the importing and exporting states were involved in interstate or intrastate wars were merged into the weapons trading data from the Correlates of War (COW v4.0) datasets. A total of four dummy variables were created from the COW data and are coded 1 if either the importing or exporting state is involved in an interstate or intrastate war in the year of the observation. Finally, to test hypothesis 5—whether nuclear powers trade more arms—a nuclear dummy variable was included for both

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48 The cutoff scores for autocratic (less than or equal to -6) and democratic (greater than or equal to 6) regimes were based on recommendations found on the Polity Projects Website at: http://www.systemicpeace.org/polityproject.html
exporting and importing states, and a second dummy variable was created if both states in the dyad have nuclear weapons.

**Missing Data**

Using data from multiple existing datasets is useful because they are familiar in the field and to some degree, through their widespread use, vetted for accuracy. A downside to this approach is that data missing from each of the originating datasets is retained in the final merged data. Data on the dependent variable was available through SIPRI through 2015; therefore, much of the missing data results from the observation in the original datasets ending prior to 2015. Specifically, the end dates for the data used in the construction of the database in this study are: NMC (v4.0) data ends in 2007,\(^\text{50}\) Alliance (v4.1) in 2012, COW Inter-state War (v4.0) in 2003, COW Intra-state War (v4.1) in 2007, and Polity IV in 2015. The truncation of the CINC from NMC data in 2007 is especially problematic because CINC values are used to create a set of variables, such as the U.S. proportion of power vs. great power rivals, Exporter CINC, Importer CINC, and Importer CINC\(^2\). While the data from Polity IV extends the entire duration of the study, it is missing observations for some of the importing countries.\(^\text{51}\) Furthermore, \(^\text{50}\) For exporting states CINC information for Japan starts in 1952, in Germany in 1955, and for all other in 1950 \(^\text{51}\) The following countries are absent from POLITY IV: Andorra, Antigua and Barbuda, Bahamas Barbados, Belize, Brunei, Dominica, Federated States of Micronesia, Grenada, Iceland, Kiribati, Liechtenstein, Maldives, Malta, Marshall Islands, Montenegro, Monaco, Nauru, Palau, Samoa, San Marino, Sao Tome and Principe, Seychelles, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Tuvalu, Zanzibar
the states that are missing from Polity IV are generally smaller states that do not import weapons, which introduces bias in the resulting statistically analysis. Table 2 shows how many observations are missing for each of the variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Missing</th>
<th>Complete</th>
<th>Unique Values</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
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<td>83,203</td>
<td>58</td>
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<tr>
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<td>0</td>
<td>.3194995</td>
</tr>
<tr>
<td>Importer CINC²</td>
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<td>83,212</td>
<td>&gt;500</td>
<td>0</td>
<td>.1020799</td>
</tr>
<tr>
<td>Importer Regime</td>
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<td>88,060</td>
<td>21</td>
<td>-10</td>
<td>10</td>
</tr>
<tr>
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<td>81,371</td>
<td>2</td>
<td>0</td>
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</tbody>
</table>

Table 2: Showing Missing Data by Variable

In spite of missing values within the observations, 68% of the data is complete. Using listwise deletion, and thus artificially restricting the data, could potentially introduce selection bias.\(^{52}\) Alternatively, using an ad hoc strategy to fill in the missing values, such as holding them at their last known value, may underestimate the standard errors in the model.\(^{53}\) Imputation allows the information that is available to inform the statistical analysis while preventing ad hoc biases from entering in the model. The data in this study was imputed using multivariate normal (MVN) regression through an iterative Markov Chain Monte Carlo (MCMC) algorithm.\(^{54}\) One of the strengths of this

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\(^{53}\) Ibid.

method is that it works with arbitrary patterns of missing data. Although some of the missing data in this dataset is categorical, the returned variables from MVN are continuous. Counterintuitively, these values—some of which fall outside of the range of what is observed in the non-imputed data—are better left as is. Paul Alison goes as far as to say that “[l]inear imputation with rounding should never be used. It’s usually inferior and never superior to linear imputation without rounding.”

Similarly, transformed variables that result from the algebraic manipulation of other variables in the data set were transformed prior to imputation. This implies that the missing values of the transformed variables are subsequently imputed. Although this produces values for these transformed variables that are inconsistent within the imputed data, the transform-then-impute strategy generates more accurate regression estimates than the alternative strategy of imputing then transforming.

In this data, because the preponderance of the missingness results from the originating datasets stopping before 2015, the pattern of the missing values generally increases toward the end of the time period under analysis—especially after 2007. As the pattern of missingness increases toward the end of the data there is a corresponding decrease in the ability of accurate imputation. To counter this, and to generate more precision in the subsequent regression models, the missing data was imputed 100 times. Furthermore, the main models presented in this chapter will

encompass the years where the bulk of the data is complete (1950-2007), though fully imputed models (1950-2015) and models estimated by case wise deletion are presented in Appendix C for comparison.

Results

The results were estimated using ordinarily least squares (OLS) regression with fixed effects for panel data. In the first specification, the independent variables pertaining to the power of the importing and exporting state, the power dynamics between great powers, and the relative power differences between exporting and importing states were included. The second set of models incorporates additional variables pertaining to the domestic political regimes of the exporting and importing states, whether they are politically similar in terms of their regimes, and whether they are both strong democracies. A final model expands the control variables to include war effects and nuclear capability. All models use fixed effects and Huber-White robust standard errors.58

58 The determination to use fixed effect was derived based on the results of comparing the fixed effects models with random effects models using a Hausman Test.
The series of variables pertaining to the relationship between material power and armament trade tell an interesting story. Looking at power differentials directionally,
where the United States’ proportion of material power is measured vis-à-vis its great power competitor, shows that as the United States’ share of the power rises, there is a substantial (-39.76 in Model 3B) and marginally statistically significant decrease in arms sales across the international system. This result holds under all four of the models shown in Table 3. Some examples of the types of military resources that a Trade Indicator Value (TIV) of 40 represents are 40 U.S. RGM-84 Harpoon anti-ship missiles, 10 U.S. M-1A1 Abrams Tanks, or 3 U.S. AH-64D Apache Attack Helicopters. Furthermore, the similarly signed—though less substantial—coefficient on the variable unipolarity provides corroborating evidence that when one great power (in this case the United States) outstripped its great power rivals, arms trade throughout the international system was suppressed.

There is some subtle difference between what these two variables are measuring. First, unipolarity is a dummy variable that is coded 1 starting in 1991; thus, this variable ultimately demarcates the post-Cold War period. There are obviously a lot of other things going on in the post-Cold War time frame other than a U.S. preponderance of power and international influence that possibly affected the international arms trade. Increasing globalization and economic interdependence, NATO expansion into the former Soviet sphere, the rise of and increased Western efforts against non-state terrorist actors are some examples. Second, the unipolar period as defined in this dataset does not necessarily correlate to a U.S. preponderance of material power. This is good for analytical purposes because it implies that the collinearity between these two variables is low, and it is good for theoretical purposes because it expands the ways power is
accounted for in the model. During the period from 1991 to 2007, the U.S. was only materially superior (using the metrics that inform CINC scores and recorded in the NMC v(4.0) dataset to its great power competitor (China) from 1992-1995. Undoubtedly part of what is driving China’s position is the inclusion of total population and urban population in CINC score generation. China’s rapid economic growth and urbanization certainly increased its material position at the end of the Cold War, but to what degree did this enable China to advance its position in the international community. This highlights one of the weaknesses of using material power, as measured in CINC as a measure of competition. Namely, it is a narrow measure. Other measures of power that affect competition, such as agenda setting and soft power, are completely absent—though probably informed by—strictly materialist accounts of power.\textsuperscript{59} The United States was uniquely positioned at the end of the Cold War to take advantage of its agenda-setting powers in the institutions it had created following the Second World War. Interpreting both U.S. Power and unipolarity together, as imperfect but different ways to measure the role that U.S. power plays on the international arms trade, supports a conclusion that increased U.S. power suppresses arms trade. Increases in Exporter CINC are correlated with a large and positive impact on arms trade, but fails to achieve accepted level of statistical certainty.

Model 1 directly looks for a non-linear relationship between Importer CINC and arms trade. The coefficients on Importer CINC and Importer CINC$^2$ are signed

appropriately for a non-linear effect, but conclusions about this relationship are not justifiable given the magnitude of the standard errors. The lack of statistical significance on both the coefficient of Importer CINC and Importer CINC² suggest that this hypothesized relationship is not present. In the subsequent models, where the squared term is eliminated suggest that there is a positive linear relationship between Importer CINC and arms trade.

Model 2 Incorporates information about domestic political regimes and suggests that while the domestic political regime of the importing state matters, the regime of the exporting state does not. Specifically, a one-unit increase in the political regime is associated with a -0.47 decrease in TIV. Since the variable Importer Regime ranges from -10 (strongly autocratic) to 10 (strongly democratic), moving from the autocratic end of the range to the democratic end of the range would be equivalent to a -9.4 decrease in TIV. More importantly this suggest that ceteris paribus democracies are less likely to import weapons than autocracies. As expected, there is a positive effect on armament trade between exporting and importing states that are governed by similar domestic regimes.

Adding the set of variables concerning alliances and war into the model shows that while alliances strongly predict increases in arms trade, the effects of war are more mixed. Alliances have a large substantive effect on the volume of arms trade between an exporting and importing state. Holding other things equal, an alliance increases the TIV of armament trade by 65.88. TIVs in this range are equivalent to 150 Russian T-54 Tanks, 110 U.S. AIM-120C Advanced Medium Range Air-to-Air Missiles, or 6 French
Mirage-3E Fighter Aircraft. The effects of interstate war are dependent on whether the state is exporting or importing weapons. For exporting states there is a small negative and not a statistical finding that the effects of being involved in an interstate war decrease weapons trade. This makes intuitive sense considering that involvement in a war would likely increase domestic demand and therefore limit export availability. For importing states, there is evidence that being involved in an interstate war increases the TIV by 20.41 (in Model 3)—involvement in war would intuitively seems likely to increase demand for weapons import. Neither the exporting or importing state show an effect on trade based on their involvement in an intra-state war. Possession of nuclear weapons in Model 4 proves to be insignificant in all specifications—providing firm footing to reject the hypothesis that nuclear powers will have a higher volume of arms trade. Modeling select variables with different combinations of exporting states, shown in Table 4 below, provides more information about great power arms trade behavior.

In this model different combinations of exporters are considered to further determine what difference there are in great power arms trading behavior. The coefficients in this model must be interpreted cautiously as they are derived using different sample sizes, which directly impacts statistical power. Rather than focusing on the exact numbers and statistical significance in each variable, this model is better interpreted as showing differences between different combinations of exporting powers. The role U.S. power preponderancy plays in suppressing arms trade is consistently negative across all specifications. The magnitude of the effect, however, varies dramatically between Western powers and Russia and China. Increases in U.S. power
massively suppressed their competing great powers’ weapons exportation. The rest of
the major powers, (France, Germany, U.K., and Italy), also indicate a negative
relationship between U.S. Power and weapons exportation. Thus, rather quixotically,
U.S. power suppresses exportation from both allies and competitors.

<table>
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<tr>
<th>Exporter Effects With Imputation 1950-2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td>U.S. Power</td>
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<tr>
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<tr>
<td>Unipolarity</td>
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<tr>
<td>(1.921)</td>
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<td>Exporter CINC</td>
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<tr>
<td>(87.19)</td>
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<td>Importer CINC</td>
</tr>
<tr>
<td>(218.4)</td>
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<tr>
<td>Exporter Regime</td>
</tr>
<tr>
<td>(0.405)</td>
</tr>
<tr>
<td>Importer Regime</td>
</tr>
<tr>
<td>(0.206)</td>
</tr>
<tr>
<td>Similar Regimes</td>
</tr>
<tr>
<td>(3.529)</td>
</tr>
<tr>
<td>Alliance</td>
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<td>(22.33)</td>
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<tr>
<td>Ex. Intrastate War</td>
</tr>
<tr>
<td>(2.238)</td>
</tr>
<tr>
<td>Im. Intrastate War</td>
</tr>
<tr>
<td>(3.279)</td>
</tr>
<tr>
<td>Constant</td>
</tr>
<tr>
<td>(12.49)</td>
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<tr>
<td>Observations</td>
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<tr>
<td>Number of panel</td>
</tr>
</tbody>
</table>

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 4: Regression Model Showing Exporter Effects with Imputation 1950-2007

In the case of Russia, the end of the Cold War and the resulting expansion of U.S.
weapons exportation into the former Soviet security sphere likely plays a role in
explaining the magnitude of this finding. On the allied side, the role of U.S. security
assurances likely suppressed defense sectors among its allies. The developing or mid-
range powers in the model, (Japan, India, and Brazil), are signed similarly, but at miniscule levels.

Looking at exporter effects further refines how the effects of unipolarity in the main model should be interpreted. The large negative coefficient of unipolarity in the U.S. only model and in the France, Germany, U.K., and Italy model is likely driving the finding of unipolarity in the main effects model. Interestingly though, Russia appears to have increased its weapons trade in the unipolar era. The differences in behavior between these states may reflect their post-Cold War positionality. Arms trade, through its potential to alter security capabilities, has the potential to upset status quo arrangements. The U.S., its allies, and Russia are likely at cross-purposes in regards to the status quo. Russia’s increased arms trade behavior as a result of unipolarity may reflect balancing through a broad engagement in arms trade to increases its alliance reassurances. The positive and substantial effect of alliances across model specifications is supportive an account of arms trade as balancing.\(^6\) Furthermore, the outsized effect, shown in the Russia only model, of alliances is potentially indicative of increased external balancing in response to relative losses \textit{vis-à-vis} the United States. Regime similarity also shows varying effects across different specifications of exporting states. Both the U.S. only and the Russia only model have much larger coefficients than any of the other combinations. This finding is mutually reinforcing with the finding on

\(^6\) The one specification where the effect of alliance is negative is in the China only model.
alliances, but more narrowly highlights a potential role of the arms trade in building security coalitions between competing great powers.

In addition to alliance and regime similarity effects, Russia and China appear to be playing a primary role behind the finding in the main model, that arms trade increases as a result of the importing state being involved in an interstate war. In contrast, the U.S. shows a negative relationship between arms trade and importing state involvement in interstate warfare. This divergence is possibly indicative of status quo reinforcing or status quo impugning grand strategy.
A third series of models, shown below in Table 5, looks at the regional variation in arms trade. One of the most interesting findings in this model is that, unlike all of the

<table>
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<th>Regional Effects Model with Imputation 1950-2007.</th>
<th>All</th>
<th>Africa</th>
<th>Asia</th>
<th>Europe</th>
<th>Middle East</th>
<th>N/S America</th>
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<td>62.33**</td>
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<td>(25.67)</td>
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<td>-12.64***</td>
<td>-10.32</td>
<td>-4.029*</td>
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<td>(5.353)</td>
<td>(7.169)</td>
<td>(2.375)</td>
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<td>Exporter CINC</td>
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<td>65.17**</td>
<td>-301.0</td>
<td>614.9***</td>
<td>-221.8</td>
<td>74.81</td>
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<td>(87.19)</td>
<td>(28.47)</td>
<td>(193.3)</td>
<td>(221.0)</td>
<td>(356.9)</td>
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<td>(1.293)</td>
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<td>-0.0646*</td>
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<td>(25.60)</td>
<td>(11.32)</td>
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<td>(6.043)</td>
<td>(15.47)</td>
<td>(7.888)</td>
<td></td>
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<tr>
<td>Constant</td>
<td>20.64*</td>
<td>8.909***</td>
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<td>136.1***</td>
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<td>480</td>
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<td>485</td>
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</tbody>
</table>

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p=0.1

Table 5: Regression Model Showing Regional Effects with Imputation 1950-2007

previous specification, the coefficient on U.S. Power is positive in the European region.

This indicates that, unlike the rest of the world where increases to U.S. Power has suppressed the arms trade, in Europe there was an opposite effect. Given the central role the European region played during the great power competition that defined the Cold War, this finding is strongly supportive of an account that increased great power
competition increases the volume of arms trade. The negative coefficient on Unipolarity in the European region model further suggests that as competition decreased in the post-Cold War era, there was a corresponding decrease in the volume of arms trade. The findings for Alliances and Regime similarity also appear to be robust to regional variation, though there are differences in the magnitude of the effect. Regional effects are most pronounced in the Middle East where the effects of U.S. Power, Similar Regimes, and Alliances are markedly higher than the other regions.

In summary, the findings from these three series of models allows for the rejection of some of the initial hypotheses while providing clarity on others. Among the rejected hypotheses, the main effects model shows that the nonlinear relationship between importing state power and arms trade postulated in hypothesis 2 is unlikely. In the first model, neither the coefficient on Importer CINC or Importer CINC\(^2\) was significant; furthermore, dropping the squared term raised the level of significance on Importer CINC to statistically accepted level in subsequent models. This suggests that there is a measurable positive relationship between importing states material power and the volume of weapons traded. Nuclear power, tested in model 4, also failed to exert a measurable effect on arms trade in all specifications allowing a rejection of the hypothesis that nuclear powers will have a higher volume of arms trade. The findings on the effects of war are mixed.

The main effects model in the third specification tested four conditions that looked at whether the state was an importer or exporter, and whether the type of war was an interstate or intrastate war. Of the four conditions, the only specification that seemed
to exert a measurable effect was when looking at importers involved in interstate wars. This finding, however, was further clarified when looking at sub-samples of the exporting states in the second series of models. Russia and China appear to be primarily responsible for this finding—with Russia doing the bulk of the work. The U.S. only specification, in contrast to Russia and China, shows a negative effect on arms trade when the importer is in an interstate war. The findings imply that there is support for hypothesis 4, which stipulates an increase in arms trade when a subordinate member of a great power’s security sphere of influence is involved in a conflict with the caveat that the conflict is an interstate war, and that the exporting state be either Russia or China.

Exporter domestic political regimes do not seem to matter much, though there is a slight effect for importer regime. More importantly though, regime similarity exerts a positive, statistically noticeable, and substantive effect in the main effects model—supporting the hypothesis that regime congruity will increase arms trade. This finding, however, is further clarified in the exporter effects models. Both Russia and the U.S. only specifications show a markedly higher value on the coefficient for regime similarity than any of the other exporting state specifications. This may indirectly indicate that regime similarity is more important to great powers than to other exporters.

**Discussion**

The main findings from the results section are broadly consistent with various theories in the international relations literature. Throughout the Cold War the U.S. and the Soviet Union competed against one another for a larger share of international hegemony. Kindleberger noted in his analysis of the depression, that the world economy
requires the stabilizing effort of an international hegemon.\textsuperscript{61} The U.S. used its dominant material and strategic position following the Second World War to establish international institutions to secure its vision of a liberal international world order in both economic and security endeavors. Since the proliferation of weapons has the potential to shift the status quo by redistributing military capacity, it is possible, and consistent with the empirical evidence, that the U.S. was able to use its military-industrial position to suppress the arms trade. The overall reduction in arms trade as U.S. power increased could be the result of internally balancing military capacity under bipolarity.\textsuperscript{62} In the regional models, the positive relationship between increased U.S. power and arms trade in Europe is consistent with centrality of that region during the Cold War, and supports accounts of arms trading as a tool of competition. There is also evidence that, as expected based on the decreased uncertainty of bipolarity, there are stark differences in the arms trade behavior between great powers and the remainder of the countries in the sample. Specifically, for the U.S. and Russia the effect of being in an alliance or having a similar domestic political regime significantly increases the number of weapons traded. Given the different behavior of the U.S. and Russia, it seems theoretically plausible that arms trade can serve as a tool in the establishment and maintenance of security hierarchies. Given the differences in great power arms trade behavior, this finding also potentially expands Lake’s indicators of security hierarchy beyond the extraterritorial deployment of military forces and


\textsuperscript{62} Waltz, \textit{Theory of International Politics}, 168.
independent alliances.\textsuperscript{63} Arms access may potentially allow great powers to reap some of the hierarchical benefits without the political risk for the subordinate state of basing foreign troops. In other words, arms may serve as a foot in the door tactic for security hierarchy expansion.

The differences in behavior under unipolarity are also consistent with U.S. preferences to preserve the status quo order and for rival powers to challenge it.\textsuperscript{64} Trade behavior overall is decreased in the unipolar period but that finding reflects the weight of U.S. in the model. Both Russia and China have increased trade under unipolarity.\textsuperscript{65} Arms trade may serve as a concrete tactic for near peer competitors desiring to change the international system and further operationalizes Gilpin’s account offering an observable behavior of rising power’s expansion.\textsuperscript{66}

**Conclusion**

This chapter has presented a series of three empirical models showing how common variables in international relations affect the pattern of conventional weapons trade. Of the various findings, three stand out. First, increases to U.S. power vis-à-vis its peer and near peer competitors suppresses arms trade. Second, there is variation between the preferences of the U.S. and its near peer-competitors as evidenced by the difference

\textsuperscript{63} Lake, "Escape from the State of Nature: Authority and Hierarchy in World Politics," 62-63.
\textsuperscript{65} The effect in the China only specification is small and not statistically significant, however, because of the data limitations this model likely underestimates China.
\textsuperscript{66} Gilpin, *War and Change in World Politics*, 10.
between the U.S. and Russia / China under unipolarity and through arms support to importer states involved in an interstate war. Third, alliances and similar domestic regimes appears to influence great power states more than major powers or developing powers in influencing the volume of arms traded.

The empirical results also allow a rejection of three of the initial hypotheses. First, there is no evidence of a non-linear relationship in support of the hypothesis that trade will be higher to mid-range powers. Rather there is strong findings of a positive linear relationship between material power as represented by CINC and arms trading volume, but mid-range powers do not outstrip major powers in their importation. Second, nuclear capability does not have a noticeable effect on the volume of arms traded. Third there is no effect on trade for when the exporting state is involved in a war. Although there was a significant effect for regime similarity the hypothesis regarding whether democratization precedes arms trades is not fully tested. The significance of regime similarity is a necessary condition toward determining whether this hypothesis will ultimately hold but is insufficient to determine the process.
CHAPTER 3: The End of the Cold War, Arms Trade, and Alliance Reorientation in Eastern Europe

Introduction

The end of the Cold War changed the power dynamics of the international system. Competition between peers was replaced by a hegemonic United States. This change in the structure of the international system from bipolarity to unipolarity had significant implications for arms trading behavior. Though the power imbalance started prior to the symbolic fall of the Berlin Wall in 1989, the rather sudden collapse of the Soviet Union was nevertheless surprising. Over the course of ten years, from 1989 to 1999, many states in the former Soviet sphere of influence realigned with the West and were incorporated into NATO. Given the role that competition, alliances, and regime similarity play in the arms trade behavior of great powers, an in-depth look at the effects on arms trade as a result of this reorientation of the international system is warranted. Through alliances, great powers can balance against each other to prevent any one state’s pursuit of power.67 Problematically for scholars studying the role of alliances empirically, there is relatively little variation in alliance formations or shifts after the Second World War. Compounding this problem is the relatively few instances of great power shifts in the historic record. Indeed, during the time period from 1945-1989, there is only one shift in the structure of the international system from bipolarity to unipolarity at the end of the Cold War. Evaluating claims regarding the effect of great power competition, alliances,

67 Waltz, Theory of International Politics.
and regime similarity on arms trade behavior with a strictly quantitative approach does not yield enough data to draw strong conclusions.

The opportunity for shifts in great power alliance networks are necessarily tied to the rise and fall of great powers; therefore, the number of great powers in the system at any given time defines and constrains alliance opportunities.\textsuperscript{68} Shifts in the composition of great powers in the international system and thus shifts in the underlying alliance networks they engender are relatively rare because great powers, through their prominent role in maintaining the status quo in the existing international order, are fairly resilient. Nevertheless, power does wax and wane. New powers emerge and challenge the existing order, and older powers seek to preserve their position. The results of the quantitative analysis showed that alliances were the strongest predictor of arms trade in both the U.S. only and Russia only models in the previous chapter. The end of the Cold War provides a specific case for a more in-depth look at the role alliances play and for some of the other hypotheses supported in the previous quantitative work. In this chapter, I will look at how the great power reorientation of the U.S. and Russia in Eastern Europe at the end of the Cold War changed the patterns of arms trade by opening new alliance opportunities, and increasing political and economic regime congruity. Specifically, in this case three of the initial hypotheses will be evaluated. First, this case offers a more nuanced evaluation of the role of great power competition on the arms trade. Second, the effects of security alliances and economic partnership can be disaggregated allowing a different look at the effects of regime similarity. Third, as it pertains to the U.S. and the

\textsuperscript{68} Ibid.
other western allies this chapter provides information about the role democratization plays in setting the conditions for new arms trade partnerships.

In this qualitative chapter, two of the main hypotheses in this study that found support in the earlier quantitative chapter can be compared to determine their casual effect on the arms trade. Specifically, this chapter expands upon the earlier work by directly investigating the difference in arms trade as a function of great power competition and the effects of alliance. Since there is some endogeneity between great power competition and alliance formations looking, at an in-depth analysis of when these variables exert their effect will further support the hypotheses in this study. The primary hypothesis in this study is that increasing great power competition increases the overall level of the arms trade in the international system. This hypothesis is expected to exert its effect because it is theorized that great powers will be more likely to trade weapons when competition between them is heightened so that they can extend their security spheres of influence vis-à-vis their great power rival. In this chapter, which looks at Eastern Europe at the end of the Cold War, there is a reduction of great power competition as Russia’s power noticeably waned. Consequently, at the conclusion of the Cold War, it is expected that the overall arms trade will decline. Here the decline in the arms trade is postulated to occur most visibly across the states that comprised the Soviet Union’s former security sphere in Eastern Europe. In addition to the decline of great power competition that occurred at the conclusion of the Cold War, there was a steady erosion of the former Soviet security sphere as the states that comprised it were assimilated into NATO. Broadly, there were three waves of NATO expansion following
the Cold War. Alliances were hypothesized to have a large a positive effect of the volume of arms traded; this was substantiated in the previous quantitative analysis. This chapter allows a closer look at how joining an alliance exerts its effect in the overall process of expanding the arms trade.

In the following section, the nature of the arms trade in Eastern Europe at the end of the Cold War will be examined. One state, Poland, will be looked at in depth to investigate how the effects of great power and alliances impacted the volume of arms they imported and whom they imported them from. After the general contours of the operational effects of great power competition and alliances are derived from an in depth look at Poland, the study will be expanded to look at the aggregate effect in Eastern Europe, and further expanded to look at the effects across the three waves of NATO expansion. This chapter will show that of the two main variables identified in the quantitative analysis, great power competition exerts a more pronounced effect in this subset than alliance membership.

**Case Selection**

The abrupt end of the Cold War in 1989 shifted the distribution of international power decisively toward the United States. For states previously allied with the U.S.S.R., this made decisions about whom to trade arms with possible and created new alliance opportunities. Though the end of the Cold War represents only one case of how the decline of a great power affects arms trading behavior, within the case variation can be generated by disaggregating the unit of analysis to the state level. Through
disaggregation, and even in spite of restricting the analysis to Europe, this generates separate examples of alliance shifts, alliance formations, or lack of alliance for the states that came into existence following the Soviet collapse such as Albania, Belarus, Bosnia Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Latvia, Lithuania, Macedonia, Moldova, Montenegro, Poland, Romania, Slovakia, Slovenia, and the Ukraine. These states make excellent data points for developing a linkage between the role of great power competition, alliances, democratization, and regime similarity in the ensuing pattern and volume of arms trade. Many of these states were formerly members of the Warsaw Pact and subsequently became members of NATO. Additionally, some of these states also shifted their primary economic partnerships from the Council for Mutual Economic Assistance (COMECON) to the European Union.

One limitation to this case is that it exclusively focuses on the changes to the pattern of arms trade to Eastern Europe as a result of the expansion of the U.S. Thus, care must be taken when expanding the conclusions of this case study beyond the U.S. to great powers generally. It is possible and even probable, that other great powers would have separate and distinguishable grand strategies, and would therefore use arms trade to achieve different aims. Nevertheless, the concentration of power necessary to be a great power and the structural conditions of the international system should engender behavioral trends that, while differing in the details, presumably share certain features.

Given that the end of the Cold War was not precipitated through outright conflict but was rather the result of a limited opening of economic markets under Soviet reforms, Eastern Europe’s desire to realign with the West may primarily be a function of its’
desire to have greater access to the western model of economic success. Because the
scope of the Soviet decline was unknown at the time, accession to the NATO alliance
would also serve as a hedge against the possibility of a re-emergence of coercive Russian
power. For the U.S. however, adding additional alliance commitments for the collective
defense of Eastern European countries entailed accepting significant uncertainty.
Although increasing the number of members in NATO could serve as a useful hedge
against a resurgence of Russian power, it was also true that expanding the alliance
increased the risk of being pulled into a conflict if Russia decided to reassert itself. In the
following section, Poland’s arms trade behavior will be process traced by examining the
effects of great power competition and alliance realignment through examination of the
available archival documentation to infer why the steps occurred in the order they did.
Subsequently, using the information provided by the examination of Poland, arms trade
behavior to other European nations will be considered based on either their respective
date of NATO accession or lack of NATO accession.

Poland was selected from the set of states mentioned above because it represents
the most likely case of a state looking to realign its security sphere following the
conclusion of the Cold War for three reasons. First, its geographic position on the
boarder of Germany made it especially valuable to the West. Through an alliance with
Poland, the geographic space between the majority of NATO and Russia was increased.
Adding Poland to NATO would help the alliance solve its perennial geostrategic problem
of conventional force imbalances against Russia in the east. Specifically, in the event of
a Russian attack, adding Poland and thereby increasing the distance between the core of
Europe and Russia would allow NATO to trade space for time while the U.S mobilized and deployed the bulk of its forces across the Atlantic. 69 The value of Poland’s strategic geographic position partly explains why major powers would want to add Poland as an ally.

Second, Poland provides the depth of data needed for drawing inferences about the central features of the arms trade under study in this dissertation. As shown below in Table 6, Poland has had the highest levels of weapons trade in Eastern Europe since the conclusion of the Second World War. Certainly, Poland’s high levels of trade are reflective of its role, via its geographic position, as a buffer between Russia and Western Europe, but they are also indicative of an existing level of military capacity. In Poland the question was not whether to constitute a military and equip it with technologically sophisticated weapons, but rather how to best alter the existing military apparatus and subsequently procure the requisite equipment.

69 The reconciliation between East Germany and West Germany played a similar geographic role, but is significantly different in character. In Germany the alliance shift can be explained as East German integration into the existing alliance structure of West Germany rather than of choosing to seek new alliances with former adversaries.
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Table 6: Showing the Total Number of Trades Between the Major Powers and Eastern European Countries from 1947-2015

Third, as shown in Table 7 below, Poland is the wealthiest of the states under consideration. And, as shown in Table 8, in recent years Poland has habitually allocated a higher percentage of its resources on defense expenditures then other Eastern European countries. Both Poland’s financial health and its willingness to allocate its financial resources to security make it a likely importing state.

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70 The abbreviations in the top row are for Albania, Bulgaria, Croatia, Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia. Japan, India, and Brazil are omitted as exporters because they have no trades to any of these countries during this time period.
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Table 7: Showing GDP Billion U.S. Dollars

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Table 8: Showing Defense Expenditure for NATO members as a Percentage of GDP

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72 Poland allocates just less of its GDP, on average, than Estonia. Both Estonia and Poland are higher than the European average of 1.52 over the same time period, and none of the countries in NATO except the U.S., the U.K., and Greece routinely meet the 2% GDP expenditure on defense the alliance agreed to in 2006. NATO, "Defence Expenditures of NATO Countries (2008-2015)," news release, 28 Jan, 2016.
Geographic position, a preexisting and relatively modern military (though initially Soviet in organizational structure and equipment), and financial resources explain why Poland is the most likely case at the end of the Cold War of a state looking to reorient their security position through alliances and arms trade. Strategic geographic position explains Poland’s value as an ally and explains why the U.S. and NATO would extend collective security to them. Poland’s established military institutions increase the likelihood of arms trade and its relatively high defense expenditure provides the means to purchase weapons. All of these factors contribute toward making Poland a likely case of a state that will seek to extend its security commitments by seeking arms from a major power. While using one specific country affords greater attention to detail, there is a trade off in the degree of generalization afforded by the case. To offset this the other Eastern European countries will be discussed based on the year they entered the NATO alliance. This will broadly create four cohorts: The first cohort consists of the states that were admitted to NATO in 1999 and includes Poland, the Czech Republic, and Hungary. The general contours and bureaucratic process developed during these early post-Cold War accessions shaped the future of alliance’s expansion by generating detailed membership requirements. The second major cohort, in 2004, was the largest and included Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia, and Slovenia. The third cohort accessed in 2009 and included Albania, and Croatia. Finally, a fourth cohort of similar Eastern European nations that have not joined NATO will be looked at to see

what the patterns of great power trade look like in the absence of joining a formal alliance. This final cohort includes Belarus, Bosnia-Herzegovina, Georgia, Macedonia, Moldova, Montenegro, and Ukraine.73 Looking across these cohorts will allow a determination about whether the general features present in Poland are broadly extendable, or whether they differ in ways that provide evidence against the findings.

**Poland**

Following WWII, the world existed in an international system defined by the bipolar great powers competition between the U.S. and the U.S.S.R. Balancing was a direct implication of the United States’ articulated policy—often expressed as containment—starting in 1950 by the Truman administration in NSC 68. The NATO alliance played a crucial role in formalizing the collective defense alliance commitments between member countries. At Yalta in February 1945, the post war strategy was decided among the allies. Poland, and Eastern Europe generally, was positioned in the Soviet’s sphere of influence.74 At the Potsdam conference in July and August of the same year, further work was done defining post war Europe—although in an environment marked by increasing tension between the Soviet Union and the rest of the allies. Specifically, the borders of Poland were redefined to make up for territory ceded in the east by adding territory in the west. Both of these realignments essentially shifted the

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73 Montenegro assessed to NATO in June 2017, but the data used in this study ends in 2015 so for the purposes of this analysis Montenegro is grouped with other Eastern European non-NATO countries.
Polish state west, causing large-scale population realignments, as Germans were actively deported out of the new Polish territory.\textsuperscript{75} More importantly, as the Cold War progressed and the post-war alliances became more pronounced, this border shift increased Poland’s dependence on the U.S.S.R. as a bulwark against irredentist German claims. In spite of this reliance however, by the early 1980s there were indications that there were politically viable factions within Poland that were interested in moving out of Russia’s sphere of influence. Poland’s Solidarity movement (a non-communist labor union) was rapidly expanding its membership and gaining political influence. The Solidarity movement’s successful strike, which precipitated its existence, posed a direct threat to Moscow’s political control and serves as an early indicator of the unrest growing within the Soviet sphere of influence in the 1980s.\textsuperscript{76} Although the Solidarity movement was repressed by the imposition of martial law by the pro-soviet Polish military commander, General Jaruzelski, its leaders would eventually reemerge at the end to the Cold War and assume leadership of the country. By the early 1980s there were already clear signs that there were a substantial number of Poles amenable to western political ideals.

As the Cold War reached its culmination in the late 1980s, another indication of the waning influence of the Soviet Union was immediately apparent in Poland’s election of a non-communist government in 1989.\textsuperscript{77} In December of the same year, shortly

\textsuperscript{75} Andrew A. Michta, \textit{America's New Allies: Poland, Hungary, and the Czech Republic in NATO} (Seattle ; London: University of Washington Press, 1999), 42. \texttt{https://history.state.gov/milestones/1937-1945/potsdam-conf}


following the fall of the Berlin Wall, President George H.W. Bush met with Chairman Mikhail Gorbachev to discuss the end of the Cold War at Malta. In President Bush’s briefing book (a collection of short summary positions and talking points) on U.S. policy toward Eastern Europe, there is encouragement for the continuation of Soviet policies of perestroika and glasnost, a commitment to a reunified Germany, and an acknowledgement of support for Poland and Hungary’s “difficult structural economic reforms and support [for] their transition to democracy.”\textsuperscript{78} However, much of the briefing points indicate an overarching concern with altering the security calculus of the region. The U.S. wanted “[t]o redress the conventional force imbalance, to enhance stability and create a more secure military situation.”\textsuperscript{79} And more explicitly, “[t]o reduce Soviet forces stationed in Eastern Europe and thereby encourage more democratic, liberal Eastern European regimes.”\textsuperscript{80}

The Soviet transcripts of the same meeting between Bush and Gorbachev provide a more in-depth look at how Bush translated his briefing points into actual actions, and again show the interplay between economic inducements and security concessions. Specifically, Bush informed Gorbachev that he intended to support the suspension of the Jackson-Vanik amendment and repealing the Stevenson and Baird amendments which

\textsuperscript{79} Ibid. \url{http://nsarchive.gwu.edu/NSAEBB/NSAEBB298/Document%209.pdf} (accessed 18 April 2016)
\textsuperscript{80} Ibid. \url{http://nsarchive.gwu.edu/NSAEBB/NSAEBB298/Document%209.pdf} (accessed 18 April 2016)
were preventing the Soviet Union from obtaining Most Favored Nation (MFN) status and obtaining credit respectively.\textsuperscript{81} Additionally, Bush informed Gorbachev that he would support granting the Soviet Union observer status in the General Agreement on Tariffs and Trade (GATT).\textsuperscript{82} This economic discussion took place early on the 2\textsuperscript{nd} of December before attention was turned to the changing security relationships in Eastern Europe. On the second day of the conference, Gorbachev talks specifically about the changing security dynamics of Europe. Starting with an assurance that “the Soviet Union will not under any circumstances initiate a war,” Gorbachev details the scope of the Soviet’s adoption of a defensive doctrinal concept of operations and discusses the numerous military reductions in Eastern Europe while questioning why similar doctrinal and force posture changes have not been forthcoming from NATO.\textsuperscript{83}

Bush avoids a direct discussion, indicates that he has directed the military to initiate an analysis of military expenditure, and turns the conversation to a discussion of the reunification of Germany and U.S. involvement in Poland. Both leaders address the needs for arms control in chemical weapons, strategic weapons, and the balance of conventional forces. Care is clearly taken by both leaders to address the changing dynamics of Europe with an eye toward the domestic ramifications of the decisions they


\textsuperscript{82} Ibid. \url{http://nsarchive.gwu.edu/NSAEBB/NSAEBB298/Document%2010.pdf} (accessed 16 April 16)

\textsuperscript{83} Ibid
were making.\textsuperscript{84} Although the Soviet transcript, which was released in 1993, may have been edited to put Gorbachev and the Soviet Union in the best possible light, a National Security Council (NSC) memo from the 5\textsuperscript{th} of December clearly captures President Bush’s level of commitment to the Malta agenda and verifies the general veracity of the Soviet account.

In this memorandum, the NSC is informed of President Bush’s commitment to extend Most Favored Nation (MFN) status to the Soviet Union by 1990, support observer status in the GATT, and extend support for Soviet economic initiatives.\textsuperscript{85} After the preliminary comments about Soviet economic inclusion, the NSC memo outlines an aggressive arms control agenda accelerating the Strategic Arms Reduction Treaty (START), chemical munitions reduction, and the balance of Conventional Forces in Europe.\textsuperscript{86} The overall import of the discussions reflects the concern each leader felt to correctly navigate the reorientation of power in Europe. At this moment in history the extent of Soviet decline was unclear in the West, thus these initial negotiations proceeded carefully with close attention paid by both sides to the prestige and domestic political concerns of the other. The global pattern of arms trade and the regionally specific information about trading behavior during great power realignments is a critical step toward understanding the relationship between arms and allies.

\textsuperscript{86} Ibid.
At Malta the U.S. had incomplete information about the scope and rapidity of the Soviet economic decline, and was prudently cautious in pushing an agenda for the westernization of former Soviet client states in Eastern Europe. These initial diplomatic steps indicate a complex interaction between economic inducements and security reforms. Based on the evidence from these initial discussions, the U.S. had an advantageous position relative to the Soviet Union economically. Accordingly, the U.S. was able to use economic incentives to garner security concessions. In this case, the waning of Soviet power in Eastern Europe created opportunities for former Soviet allies to pursue new alliances. Prior to any extension of alliances within the former Soviet sphere, however, the U.S. needed more information about the relative standing of their former adversary. Information about Russian power vis-à-vis the United States would naturally increase over time—making alliance overtures and weapons trade to Poland and the rest of Eastern Europe possible by the mid 1990s. Poland’s arms trade (shown in Table 9 below) between the unification of Germany in 1990 and the formal study on NATO enlargement in 1995 was minimal. The majority of the trade consisted of 300 Italian diesel engines. The other trades were relatively innocuous light aircraft and combat helicopters and a few ostensibly combat oriented aircraft from Germany. Given the makes and model of the German trades it is likely that they were a divestiture of East Germany’s Soviet era military equipment.
<table>
<thead>
<tr>
<th>Year</th>
<th>Exporter</th>
<th>Designation</th>
<th>Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>Russia</td>
<td>Mi-14PL</td>
<td>ASW Helicopter</td>
<td>1</td>
</tr>
<tr>
<td>1991</td>
<td>Germany</td>
<td>MiG-23M</td>
<td>Fighter Aircraft</td>
<td>2</td>
</tr>
<tr>
<td>1991</td>
<td>Germany</td>
<td>Su-22</td>
<td>FGA Aircraft</td>
<td>2</td>
</tr>
<tr>
<td>1991</td>
<td>United States</td>
<td>Bell-206/OH-58</td>
<td>Light Helicopter</td>
<td>2</td>
</tr>
<tr>
<td>1992</td>
<td>Russia</td>
<td>M28B Bryza-1R</td>
<td>MP Aircraft</td>
<td>10</td>
</tr>
<tr>
<td>1993</td>
<td>Russia</td>
<td>An-28TD Bryza-1TD</td>
<td>Light Aircraft</td>
<td>4</td>
</tr>
<tr>
<td>1994</td>
<td>United States</td>
<td>PA-34 Seneca</td>
<td>Light Aircraft</td>
<td>2</td>
</tr>
<tr>
<td>1995</td>
<td>Germany</td>
<td>Mi-24D/Mi-25</td>
<td>Combat Helicopter</td>
<td>18</td>
</tr>
<tr>
<td>1995</td>
<td>Italy</td>
<td>Cursor</td>
<td>Diesel Engine</td>
<td>300</td>
</tr>
</tbody>
</table>

Table 9: Showing Poland’s Arms Trade Between the Reunification of Germany and the NATO study on Enlargement.

By 1995 NATO was officially considering NATO enlargement, and had prepared a formal study. This study makes it clear that while “Russia has raised concerns with respect to the enlargement process of the Alliance,” NATO considered expansion a key step toward “enhancing security and stability for all.”\(^{87}\) Russia features prominently in the analysis, but in spite of the concerns, it is clear that the enlargement would go forward. Additionally, the study highlights the interconnectedness of the NATO alliance and membership in the European Union. While allowing that membership in NATO and the EU were independent of each other, it also makes it clear that “the Alliance views its own enlargement and that of the EU as mutually supportive and parallel processes which together will make a significant contribution to strengthening Europe's security structure.”\(^{88}\) Interestingly, though the NATO study goes in depth about the autonomy of the NATO and EU accession process, it also notes that EU “members are committed to a


\(^{88}\) Ibid.
Common Foreign and Security Policy." However, in the majority of cases accession to NATO preceded joining the EU. While this sequence is suggestive of a primacy for security concerns over increasing economic interdependence, it is limited evidence. It is, however, clear that NATO was actively seeking to lower the institutional barriers to entry. In 1994 the NATO member nations created the Partnership for Peace (PfP) program.

Activities on offer under the PfP programme touch on virtually every field of NATO activity, including defence-related work, defence reform, defence policy and planning, civil-military relations, education and training, military-to-military cooperation and exercises, civil emergency planning and disaster response, and cooperation on science and environmental issues.90

A Study on NATO Enlargement followed the creation of the PfP initiative by a year and the language of the study implies that the PfP was intended to play a major role in assisting aspirant member in making the military reforms necessary for NATO membership. Through the PfP, Poland enacted many military reforms in preparation for NATO accession. These reforms broadly included achieving normative goals commonly associated with liberal democracies such as increased civilian control of the military, professionalization of the Non-Commissioned Officer Corps, and a reduction in the end strength of the officer corps (in Poland’s case this was generally accomplished by retiring Soviet-era officers).91 Separate pragmatic reforms aimed at ensuring interoperability

89 Ibid.
91 Michta, America's New Allies: Poland, Hungary, and the Czech Republic in Nato, 50-55.
within NATO such as, establishing modern air traffic control procedures, and specifying equipment modernization standards.\textsuperscript{92}

Through the specification of modernization standards, NATO was exercising some degree of influence over demand in aspiring member states for new weapons. This indicates a potential causal pathway for the linkage demonstrated in the quantitative analysis between alliance and trade arm trade. In this case, potential alliance members facing modernization and interoperability specifications were faced with a choice to develop their own internal capacity to produce weapons in-line with NATO specifications, or to purchase weapons from states that already possessed the capacity. Partially generating demand by specifying interoperability or modernization requirements suggest a limited economic underpinning for alliance expansion. There were critics at the time that questioned the role the U.S. arms industry was playing—through their lobbying activity—in NATO’s expansion agenda.\textsuperscript{93} Undeniably the arms industry stood to profit. Poland, for example, was projected to need between 100 and 150 fighter planes to replace its aging Soviet era air force at an estimated cost of 20 to 60 million apiece (depending on the specific variant selected).\textsuperscript{94} However, against the alternative explanation that the military modernization program was actually intended to bring potential NATO members to martial parity, this account of military-industrial machination falls flat. Clearly the

\textsuperscript{92} Ibid.
\textsuperscript{94} Ibid.
weapons industry stood to profit, but that does not constitute compelling evidence against an alternative account of the military necessity for inter-alliance interoperability. The gravity of NATO’s Article 5—collective defense—obligates members of the alliance to consider an attack against one an attack against all. By definition adding alliance members necessarily increases the probability of an invocation of Article 5 because it increases the number of states in the alliance that could invoke collective defense. For NATO states considering whether to admit new alliance partners, the long-term commitments and implications of collective defense surely outweighed the gains in defense sector profitability.

Furthermore, the pattern of U.S. trade to Poland cuts against accounts that posit profit as the primary motivator. Equipment modernization occurred in Poland after their accession to the alliance. Empirically, the U.S. started trading weapons with Poland in 1991 with two OH-58 helicopters, and in 1994 for two PA-34s—a light transport aircraft. These two relatively insignificant trades, which were worth roughly $15 million in 2003 dollars, do not constitute a serious attempt at modernization. Starting in 1999—the year Poland joins NATO—the volume and type of trade changes. In 1999, Poland purchased 100 Surface-to-Air Missiles (SAMS), and two Frigates, and, by 2003, Poland was purchasing 48 F-16s worth 3.5 billion to replace its aging fleet of MIGs.

The role great power competition plays in arms trade behavior is apparent in Poland in two ways. First, there is notably no trade from the U.S. to Poland prior to 1991, which suggests that a loss of Russian standing was a necessary condition for the U.S. to begin arms trade with Poland. Hypothesis 1 predicts that higher levels of great
power competition will increase the demand for weapons. The U.S. expansion of its arms trade into Poland, however, seems at odd with this prediction. Globally during the early 1990s there was a decrease in the level of great power competition between the U.S. and Russia, which had defined regional tension since the conclusion of the Second World War. Hypothesis 1 predicts that the volume of arms traded is a function of the level of great power competition in the international system, and, at the end of the Cold War, there is a noticeable decrease in the overall volume of the arms trade. As shown in Table 10 below, for Poland this general decrease accompanies a switch to NATO allies as a primary trading partner.

<table>
<thead>
<tr>
<th>Exporter</th>
<th>Cold War Ended</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Poland in NATO</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Russia</td>
<td>37203</td>
<td>.</td>
<td>91</td>
</tr>
<tr>
<td>NATO Allies</td>
<td>129</td>
<td>.</td>
<td>101</td>
</tr>
</tbody>
</table>

Table 10: Showing the Change in Trade Volume (TIV) as a result of the End of the Cold War and as a Function of Alliance Shift.95

Thus, for Poland, as great power competition decreased at the end of the Cold War, there was both a significant reduction in the total volume of arms traded, and a shift in the alignment of great power security spheres.

The post-Cold War arms trade to Poland captures the difference in the total arms trade volume predicted as the international system shifted from the strict competition

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95 An equality test of the mean TIVs before and after the end of the Cold War and as a function of joining NATO generates a T-Score of 5.53 and 4.43 respectively indicating that both variables have a are statistically distinguishable effect on the arms trade.
predicted under bipolarity to the less intense competition of unipolarity. Specifically, Russia—although at a reduced volume—continued to trade military equipment with Poland as shown in Figure 3 below.

Second, while entering into the NATO alliance was not a prerequisite for the U.S. to begin arms trade with Poland, alliance membership does seem to be related to the type of weapons a great power (in this case the U.S.) is willing to trade. The iterative process between NATO accession requirements, Polish military reforms, and arms trade offers more information about the effects of democratization and alliance membership. Hypothesis 7 predicts that democratization will precede arms trade, while hypothesis 6 predicts that regime congruity will increase the volume of arms trade. In broad-brush
strokes, the process of adopting democratic reform in Poland began in the 1980s with protests and strikes organized by the Solidarity labor movement founded in 1980.96

In June of 1989, following reforms decided in the Round Table Talks, Poland held a partially free election where the political arm of the Solidarity movement won 99 of 100 seats in the newly re-established Senate.97 Finally, in the December 1990 general election, former Solidarity activist Lech Walesa was elected president, paving the way for a series of political and economic reforms.98 Unlike the active suppression in the early 1980s, by 1990 Russia was no longer exerting its power in Poland against these reforms. In Poland, following Russia’s decline, there are some clear initial steps towards democratization prior to the first Western trades in 1991—providing support for hypothesis 7.

Russia’s decline presumably created room both for the U.S. to begin trading weapons with Poland and for Poland to begin making internal domestic democratic reforms. More information about the relative impact of democratization is available as the example is extended temporally through the military and market reforms enacted by Poland to join NATO in 1999 and the EU in 2004. The reforms necessary to meet admission requirements in these institutions further consolidated Poland’s democracy, increased the levels of regime similarity between Poland and the west, and decreased

97 Ibid.
98 Ibid., 8.
regime similarity between Poland and Russia. Looking at the pattern of arms trade to Poland using NATO accession as a benchmark of regime similarity supports the prediction in hypothesis 6 that regime congruity will increase arms trade. Specifically, trade from Russia declines and trade from NATO affiliated western countries increases as shown in Table 11.

<table>
<thead>
<tr>
<th>NATO Membership</th>
<th>Exporting Country</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>France</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>Yes</td>
<td>2</td>
</tr>
</tbody>
</table>

Table 11: Showing Arms Trade Patterns to Poland before and after their NATO accession.

Of the total 228 trade deals to Poland from major power states between 1949-2010, 176 were between Russia and Poland prior to their accession to NATO. Through these trades, which often included the cutting-edge variants of MiG aircraft and T-series tanks—Russia essentially built and maintained Poland’s military throughout the Cold War. After Poland’s accession to NATO, trade from Russia drops to three relatively insignificant trade deals between 1999 and 2010 consisting of 12 transport helicopters and 12 light transport aircraft. Among NATO allies, a similar pattern emerges. Prior to 1999 there are only seven trades (described earlier) from a NATO power to Poland.

The arms trade pattern in Table 11 above shows how increasing regime congruity with the West through the democratization steps required for NATO accession affected where Poland’s weapons were imported from. Understanding arms trade behavior is not solely

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99 Over the years, (across many makes and models), these trades amounted to: 702 Air defense systems, 3,728 aircraft, 9,843 armored vehicles, 1,356 artillery pieces, 57,086 missiles, 164 sensors, and 73 ships.
about how many weapons are traded by which countries, but also about what type of arms a country is willing to trade under different conditions. In addition to changes in how much and from whom, there were significant changes to the types of equipment traded—noticeably contingent on Poland’s alliance membership. Table 12 looks at the differences in the categories of weapons traded between Poland and other members of the NATO alliance or Russia to better highlight the changing nature of arms trade behavior contingent on Poland’s NATO membership.

<table>
<thead>
<tr>
<th>Trade From</th>
<th>Poland NATO Member</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>NATO Allies</td>
<td>Russia</td>
<td>NATO Allies</td>
<td>Russia</td>
</tr>
<tr>
<td>Air Defense System</td>
<td>0</td>
<td>702</td>
<td>0</td>
<td>0</td>
<td>702</td>
</tr>
<tr>
<td>Aircraft</td>
<td>26</td>
<td>3704</td>
<td>87</td>
<td>24</td>
<td>3841</td>
</tr>
<tr>
<td>Armored Vehicle</td>
<td>0</td>
<td>9843</td>
<td>461</td>
<td>0</td>
<td>10304</td>
</tr>
<tr>
<td>Artillery</td>
<td>0</td>
<td>1356</td>
<td>8</td>
<td>0</td>
<td>1364</td>
</tr>
<tr>
<td>Engines</td>
<td>300</td>
<td>359</td>
<td>10</td>
<td>0</td>
<td>669</td>
</tr>
<tr>
<td>Missiles</td>
<td>0</td>
<td>57086</td>
<td>1880</td>
<td>0</td>
<td>58966</td>
</tr>
<tr>
<td>Naval Weapons</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>313</td>
<td>0</td>
<td>313</td>
</tr>
<tr>
<td>Sensors</td>
<td>0</td>
<td>164</td>
<td>66</td>
<td>0</td>
<td>230</td>
</tr>
<tr>
<td>Ships</td>
<td>3</td>
<td>73</td>
<td>2</td>
<td>0</td>
<td>78</td>
</tr>
<tr>
<td>Total</td>
<td>329</td>
<td>73293</td>
<td>2827</td>
<td>24</td>
<td>76473</td>
</tr>
</tbody>
</table>

Table 12: Showing Change in Trade as a Result of Alliance Membership.

The numbers in Table 12 represent the total number of equipment pieces traded by armament category. Furthermore, these armament categories are fairly broad, for example the 24 aircraft traded from Russia to Poland after Poland joins NATO are all relatively innocuous light transport airplanes and helicopters versus the 87 aircraft from

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100 Although they remained closely politically affiliated with the West and continued to militarily support NATO operations, France is excluded in the analysis as a NATO ally over the time period between 1966 and 2009 when they technically withdrew from the formal alliance.
NATO allies, which included some cargo aircraft but also fighter jets, anti-submarine helicopters, and UAVs. Table 12 highlights in more detail the general effect of alliance membership. The relatively few cross-alliance trades are mostly non-combat specific while the intra-alliance trades generally entail more combat-oriented equipment.

Of all the deals to Poland following the end of the Cold War, the 2003 trade of 48 F-16s best captures the political calculus inherent in arms trades. Through participation in the PfP, Poland had undertaken numerous civil-military and military reforms in preparation for accession to NATO. Further, NATO specific reforms were undertaken following the official invitation to join the alliance in 1997. Equipment modernization and interoperability requirements became more salient as the bulk of the domestic political and military personnel reforms were accomplished. Following Poland’s accession in 1999, and especially apparent during the initial stages of Operation Enduring Freedom (OEF), their ability to fully participate in alliance operations was lessened by their lack of modern equipment. Although equipment deficiencies were present in all areas, the Polish Air Force was especially inadequately equipped to meet the air power heavy demands of NATO operations. Poland’s combat aircraft, which in 2001 consisted

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101 Poland’s post-NATO aircraft purchases are as follows: In 2001 Russia traded 12 An-28TD Bryza-1TDs (a light cargo plane that can be used for close in patrolling and reconnaissance). In two separate deals in 2006 and 2010 Russia traded a total of 12 Mi-17s (a utility helicopter that can be used for personnel and equipment transport, medical evacuation, and, with extensive modification, as a gunship platform). The 8 U.S. trades were comprised of 7 C-130s (a medium duty cargo airplane) over two deals in 2004 and 2009, 48 F-16s (a fourth generation fighter aircraft) in 2003, 4 SH-2Gs (an anti-submarine and anti-surface warfare helicopter) in 2001, and two separate deals in 2010 amounting to 12 Scan Eagles (a small UAV).

of 98 Su-22s, 70 MiG-21s, and 22 MiG-29s, was predominately a Soviet era legacy force—only the MiG-29s were remotely modern—and all were in need of expensive modernization upgrades.  Domestic aeronautical production—a casualty of the Soviet breakup—had recently failed to deliver a modernized Iryda in 1999 and was incapable of manufacturing a fourth generation aircraft that would meet NATO interoperability requirements. Against competing bids, Poland eventually decided on the U.S. Lockheed Martin F-16, but there were competing bids from France (Dassault Mirage 200-5 Mk II) and Sweden (JAS-39 Gripen). While the F-16 received the highest rating overall in the Polish test, both the Mirage and the Gripen outperformed it in some categories. In short, the differences between these three aircraft are marginal. While capability played a role in the final decision, the performance similarities between the aircraft were enough that economic and political considerations were able to exert considerable influence on the final selection. Given the importance to understanding how great power alliances shape arms trade formation, an in-depth examination at the political and procedural process Poland used to select F-16s from among the alternative options is warranted.

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105 Seguin, "Why Did Poland Choose the F-16?," 5.
106 Ibid., 13.
107 Ibid., 30.
Economically, the three airframes were comparatively priced; the totals in each of the contracts were within $500 million of each other.\textsuperscript{108} Airframe price point parity meant that other types of economic inducements—financing and offset agreements—would play a greater role in Poland’s purchase decision. All three countries offered financing. The French and Swedish both offered government-backed low-interest loans.\textsuperscript{109} In contrast, the U.S. offer required the Bush administration to work around legislation that prevented the Export—Import Board from financing military sales to developing countries.\textsuperscript{110} The Defense Security Cooperation Agency (DSCA), who oversees the Foreign Military Sales (FMS) program, was able to borrow the money from the U.S. Treasury through Section 23 of the Arms Export Control Act.\textsuperscript{111} Ultimately, this enabled the U.S. to make a competitive proposal that offered a fixed rate 13 year loan, an estimated 5\% interest rate, deferral of payments for eight years, a reduction of exposure fees, and the ability to pay down the loan early.\textsuperscript{112} These economic sweeteners made the financing offered for all three airframes comparable; thus, competition turned to economic offsets. All three companies offered various offset agreements, which are common in international defense deals; however, in 1999 Poland was unique in that their

\textsuperscript{108} Ibid., 16.
\textsuperscript{110} Ibid., 549.
\textsuperscript{111} Ibid., 541.
\textsuperscript{112} Seguin, "Why Did Poland Choose the F-16?," 16; Evans, "Appendix 13e. The Financing Factor in Arms Sales: The Role of Official Export Credits and Guarantees," 541-42.
law required offsets to amount to a minimum of 100% of the value of the purchase.\textsuperscript{113} The offsets offered by both Dassault and Saab/BAE seemingly met this requirement, but because the Polish government independently assesses offset offers using a non-transparent system of multipliers their offers were assessed as being less valuable than Lockheed’s.\textsuperscript{114} Eventually the economic offsets offered by Lockheed totaled $6.3 billion dollars, included a variety of other U.S. industries, and prompted the U.S. ambassador to proclaim that, for Poland, it was “the deal of the century.”\textsuperscript{115} The use of multipliers makes strict economic analysis of the role offsets played in Poland’s decision making complicated—a point tacitly acknowledged at the time by Saab/BAE.\textsuperscript{116} All three firms had their estimated offset packages devalued, but it is unclear exactly what metrics Poland used to calculate the devaluation. It is easy to speculate that Poland’s political motivation to ally itself with the U.S. played an outsized role in the final choice.

Another indication that Poland was courting the U.S. as a strategic ally at the expense of some of its closer European neighbors occurred nearly contemporaneously with the signing of this deal when Poland sided with the U.S. in the Iraq war. This was a bold move considering that Poland needed to retain some European political capital as it continued to negotiate its entry into the EU. France and Germany, the dominate European power players, clearly opposed the war as evident by the colorful statement by French President Chirac’s that “[t]hese countries have been not very well behaved and

\textsuperscript{113} Michta, "Modernizing the Polish Military."
\textsuperscript{114} Seguin, "Why Did Poland Choose the F-16?,” 21-22.
\textsuperscript{116} Seguin, "Why Did Poland Choose the F-16?,” 22, 25.
rather reckless of the danger of aligning themselves too rapidly with the American
position," and that "[t]hey missed a great opportunity to shut up." The selection of the
F-16 against European competitors and near simultaneous support for the Iraq war firmly
aligned Poland with the U.S. for the foreseeable future. To be clear, there is no publicly
available evidence that supports a tacit or explicit quid pro quo arrangement between the
U.S. and Poland that the planes were contingent on support for the war in Iraq. Rather
both events serve as separate evidence that Poland was trying to put itself in the United
States security sphere over a more European-centric one. Although it was unclear at the
time that the war in Iraq would continue for the next decade, it was exceedingly clear that
the decision to procure the F-16 (and the investment in Polish industry that accompanied
it) would link the two countries for decades. For the Poles, choosing to align with the
U.S. over their more immediate neighbors through long-term arms procurement may
have partially reflected their historical experience of relying on European powers (France
and Britain) for their security in the 1930s.

Poland’s decision to more visibly link their security to the U.S. through the F-16
purchase and the inter-industry trade and investment that accompanied it, highlights a
way that alliance membership can differ from arms trade in defining security spheres of
influence. Specifically, arms trading (especially the large-scale sale of modern major
weapons systems) more tightly binds countries to the security sphere of the major power

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117 CNN, "Chirac Lashes out at 'New Europe',"
118 Michael Moran, "Terms of Estrangement: For Poles, the Choice Was Easy,"
they purchase from. In this case, joining the NATO alliance occurred prior to the F-16 trade, which suggests that qualitative difference exists between the types of weapons sold within an alliance and outside an alliance. However, while alliance membership may be a necessary condition to be eligible for major weapon systems trade, it does not account for either demand or selection. Demand in Poland was driven by the interoperability requirements to participate as a member nation in joint NATO operations. This requirement exacerbated the enduring maintenance and performance issues of Poland’s existing Soviet era Air Force, and given their lack of an internal aerospace industry, made their decision to procure a fourth-generation fighter aircraft through trade more likely. Selecting a suitable airframe among competitors proved a buyer’s market. Any of the three airframes would have met the requirements for interoperability, all were competitively priced, each included a comparable financing package, and all met the specification of Polish law that offsets total 100% of the purchase price. The near parity of offers accentuated Poland’s ability to shape the decision by weighting the desired performance characteristics and proposed offset packages. Both areas allowed political calculus to influence the procurement decision, but choosing the U.S. plane would “bring an economic and technological stimulus for Poland and strengthen our links with the United States.”

When considering the long-term security implications of the contract, Poland’s decision reflected, in part, signaling their preference of security sphere alignment.

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119 Polish Defense Minister Jerzy Szmajdzinski as quoted in Tagliabue, "Lockheed Wins Huge Sale to Poland with Complex Deal."
Thus, in Poland and for the greater area of Eastern Europe the decline of great power competition that followed Russia’s decline at the conclusion of the Cold War created room for new alliance possibilities between Russia’s former security sphere of influence and the West. Democratization and arms trade followed, but democratization preceded arms trade from democratic regimes—supporting hypothesis 7. Poland’s desire to participate in the NATO alliance provided further impetus for a series of civil-military and interoperability reforms that further increased the levels of regime similarity between Poland and the west while decreasing the level of regime similarity between Poland and Russia. As Poland consolidated its democracy and accordingly, joined NATO and the EU, the pattern of weapons trade shifts demonstrably in both who its’ trading partners are and what type of equipment is being traded. In Poland, which for the geographic reasons mentioned above is a most likely case, there is strong support for an account of arms trade as determined by great power competition and primarily conducted by states with similarly aligned domestic regimes and joint alliance memberships.

**NATO Expansion and Arms Trade in the Rest of Eastern Europe**

Looking in depth at the effects of waning great power competition and alliance reorientation in Poland demonstrated that decreasing great power competition increased the probability of new trade patterns across formerly aligned security spheres prior to a formal alliance shift. Furthermore, the opening of trade preceded an alliance shift, but

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120 Russia was ostensibly democratizing during the 1990s, but those gains were short lived.
the types of equipment traded were qualitatively different contingent on entering into a formal alliance. This suggests that great power competition exerts more of an effect on defining trade relationships than alliance membership, but that alliance membership plays an important role in defining what is available for trading. In order to gain more information about the changes in trade behavior following the end of the Cold War, and to see if the information gained from looking in depth at Poland is broadly generalizable, the remainder of Eastern Europe provides a set of cases. While the end of the Cold War was a single event, the alliance realignment of NATO’s post-Cold War expansion occurred in four waves. Finally, there remains a set of states (Belarus, Bosnia-Herzegovina, Georgia, Moldova, and Ukraine) that are regionally proximate members of the former Soviet security sphere who have not accessed to NATO. By looking at the trade behavior across these waves and comparing it to the information gained by looking closely at Poland, and also contrasting it against the trade behavior in the states that have not joined the NATO alliance, stronger determinations about the relative role of great power competition and alliances on the arms trade will be possible.

The first wave of NATO expansion added the Czech Republic, Hungary, and Poland in 1999. The second, in 2004, was considerably larger and added Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovenia, and Slovakia. The third wave in 2009 added Albania and Croatia. Finally, Montenegro was admitted in 2017. There are also five countries that are not in NATO though as of late 2018 Bosnia-Herzegovina, Georgia, the former Yugoslav Republic of Macedonia, and Ukraine are in open negotiations with the alliance for membership. The table below compares the change in arms trade
behavior to Eastern European states as a result of the end of the Cold War and as a function of accession to NATO. By looking at the mean volume of trade represented in TIV and comparing it across both conditions a relative determination about the role of great power competition and alliances on the arms trade is possible.

<table>
<thead>
<tr>
<th>Exporter</th>
<th>Cold War Ended</th>
<th>Importer in NATO</th>
<th>Importer in NATO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Russia</td>
<td>44870</td>
<td>.</td>
<td>2923</td>
</tr>
<tr>
<td>NATO Allies</td>
<td>903</td>
<td>.</td>
<td>1640</td>
</tr>
</tbody>
</table>

Table 13: Showing the Change in Trade Volume (TIV) as a result of the End of the Cold War and as a Function of Alliance Shift.

From the data in the table above a couple of conclusions are possible. While the end of the Cold War was a necessary condition for Eastern European states to shift alliances, neither the decline of bipolar great power competition at the end of the Cold War nor an alliance shift was a necessary condition for arms trades. In spite of heightened great power competition during periods when the Cold War was active, NATO allies traded into Eastern European States despite their position within the Russian sphere, and, moreover, Russia continued to trade with its former allies after they joined NATO. The table shows that, similarly with the quantitative results presented in the earlier chapter, that there was an overall reduction in the volume of the arms trade following the decline of the competition of the Cold War. In Eastern Europe, in line with what was shown by

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121 Poland is excluded from these totals to allow the comparison and prevent Poland from affecting the analysis. An equality test of the mean TIVs between the U.S. and Russian exports to Eastern Europe as a result of the end of the Cold War and as a function of joining NATO generates T-Scores of 9.47 and 8.98 indicating that both variables have statistically distinguishable effects.
the in-depth analysis of Poland, there is a significant change in the volume of arms traded. For example, Russia’s trade during the Cold War totaled 44,870 TIV whereas their post-Cold War trade amounted to 3,280 TIV—the majority of which (2,923) was traded prior to an alliance shift by the importing state. Looking at the trade from the pre-existing major power NATO members as exporters, there is an increase in total arms trade contingent on the end of the Cold War but, unlike in Poland, where there was a significant increase in the volume of trade following Poland’s accession to NATO, in the aggregate there is a slight decrease in the amount of total trade following NATO accession.\textsuperscript{122}

Moving away from the aggregate data to take a closer look at the effect of joining NATO is useful to determine if, as seen in Poland, there is a qualitative difference in the type of weapons traded between allies. The series of tables below shows how the nature of trade changed over the waves of NATO expansion. In the first wave there is a pronounced effect on trade behavior as a result of joining NATO. Specifically, Russia’s trade declines dramatically and trade from the NATO allied major powers increases.

\textsuperscript{122} For Poland the post-Cold War trade from NATO members amounted to 101 TIV. Following Poland’s NATO membership, there was a significant increase to 3,157 TIV.
First Wave post-Cold War NATO Member expansion 1999 (Poland, Hungary, and Czech Republic)

<table>
<thead>
<tr>
<th>Trade From</th>
<th>Before NATO</th>
<th>After NATO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Russia</td>
<td>NATO Allies</td>
</tr>
<tr>
<td>Air Defense System</td>
<td>5413</td>
<td>0</td>
</tr>
<tr>
<td>Aircraft</td>
<td>25799</td>
<td>159</td>
</tr>
<tr>
<td>Armored Vehicle</td>
<td>10646</td>
<td>0</td>
</tr>
<tr>
<td>Artillery</td>
<td>1357</td>
<td>0</td>
</tr>
<tr>
<td>Engines</td>
<td>70</td>
<td>105</td>
</tr>
<tr>
<td>Missiles</td>
<td>3900</td>
<td>18</td>
</tr>
<tr>
<td>Naval Weapons</td>
<td>17</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sensors</td>
<td>510</td>
<td>110</td>
</tr>
<tr>
<td>Ships</td>
<td>2285</td>
<td>129</td>
</tr>
<tr>
<td>Total</td>
<td>49997</td>
<td>521</td>
</tr>
</tbody>
</table>

Table 14: Showing Trade Patterns by Armament Category in the First Wave of NATO Expansion.

In the second and third waves (shown in Tables 15 and 16 below), NATO had learned from the process of admitting the first wave of countries, and formalized procedures. In 1999, shortly after admitting Poland, Hungary, and the Czech Republic, NATO created the Membership Action Plan (MAP) to institutionalize the lessons it had learned. All subsequent states participated in the MAP.

Countries participating in the MAP submit individual annual national programmes on their preparations for possible future membership. These cover political, economic, defence, resource, security and legal aspects. The MAP process provides a focused and candid feedback mechanism on aspirant countries’ progress on their programmes. This includes both political and technical advice, as well as annual meetings between all NATO members and individual aspirants at the level of the North Atlantic Council to assess progress, on the basis of an annual progress report.  

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Each of the areas mentioned (political, economic, defense, resource, security, and legal issues) has specific sub-points that serve to broadly further liberal democratic principles. The goals for aspiring members are followed by implementation guidance. The defense goals include consideration for “[t]he ability of aspiring countries to contribute militarily to collective defence and to the Alliance's new missions and their willingness to commit to gradual improvements in their military capabilities”, and “to pursue standardization and/or interoperability.” Accordingly, in the second wave, the pattern of trade shows the same decline from Russia following NATO accession, but for trade with allied nations, the increase occurred prior to joining NATO, presumably in preparation to meeting the interoperability requirements. Likewise, in the third wave, trade from Russia ceases contingent on accession to NATO, and there is a decrease in allied trading. Furthermore, a third (21.64 TIV) of the allied trading is in the form of the U.S. exporting 212 various armored vehicle variants to Croatia—presumably for their use in support of Croatia’s ongoing support to the NATO effort in Afghanistan.

Second Wave post-Cold War NATO Member expansion 2004 (Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia, and Slovenia)

<table>
<thead>
<tr>
<th>Trade From</th>
<th>Before NATO</th>
<th>After NATO</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>NATO Allies</td>
<td>Russia</td>
<td>NATO Allies</td>
</tr>
<tr>
<td>Air Defense System</td>
<td>2883</td>
<td>237</td>
<td>0</td>
</tr>
<tr>
<td>Aircraft</td>
<td>15863</td>
<td>865</td>
<td>0</td>
</tr>
<tr>
<td>Armored Vehicle</td>
<td>7337</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Artillery</td>
<td>1016</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>Engines</td>
<td>40</td>
<td>184</td>
<td>0</td>
</tr>
<tr>
<td>Missiles</td>
<td>2808</td>
<td>39</td>
<td>22</td>
</tr>
<tr>
<td>Naval Weapons</td>
<td>87</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sensors</td>
<td>620</td>
<td>157</td>
<td>0</td>
</tr>
<tr>
<td>Ships</td>
<td>3008</td>
<td>499</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>33662</td>
<td>2018</td>
<td>47</td>
</tr>
</tbody>
</table>

Table 15: Showing Trade Patterns by Armament Category in the Second Wave of NATO Expansion.

Third Wave post-Cold War NATO Member expansion 2009 (Albania and Croatia)

<table>
<thead>
<tr>
<th>Trade From</th>
<th>Before NATO</th>
<th>After NATO</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia</td>
<td>NATO Allies</td>
<td>Russia</td>
<td>NATO Allies</td>
</tr>
<tr>
<td>Air Defense System</td>
<td>14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Aircraft</td>
<td>340</td>
<td>21</td>
<td>0</td>
</tr>
<tr>
<td>Armored Vehicle</td>
<td>51</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Artillery</td>
<td>105</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Engines</td>
<td>0</td>
<td>0.25</td>
<td>0</td>
</tr>
<tr>
<td>Missiles</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Naval Weapons</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sensors</td>
<td>6</td>
<td>59</td>
<td>0</td>
</tr>
<tr>
<td>Ships</td>
<td>230</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>81.25</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 16: Showing Trade Patterns by Armament Category in the Third Wave of NATO Expansion.

In the Eastern European states that have not joined NATO, Russia’s volume of trade exceeds the NATO allies. Looking at a finer level of detail shows that Russia’s trade has been almost exclusively focused on building Belarus’s air defense network. Of the eleven trades, valued at 638.16 TIV, from Russia to this subset of Eastern European
states, eight are to Belarus. Together they consist of 500 assorted Surface to Air Missiles (SAM) and 16 SAM systems such as the S-300 and the SA-15.\textsuperscript{125} Russia’s other three trades to this block of states were all in the 1990s and consisted of one Mi-34 (a light helicopter) to Bosnia, five T-72 Tanks to Georgia, and four Mi-17 transport helicopters to Macedonia. Among the NATO allied nations, 60% of the trade volume occurred between the United States and Bosnia in the two years following the end of the Bosnian conflict in 1995. The remainder was spread in small trades across Macedonia, Georgia, and Ukraine—there were no trades by either Russia or a NATO ally to either Moldova or Montenegro.

<table>
<thead>
<tr>
<th>Trade From</th>
<th>Non-NATO East European States (Belarus, Bosnia-Herzegovina, Georgia, Moldova, Montenegro\textsuperscript{126} and Ukraine)</th>
<th>NATO Allies</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Defense System</td>
<td>Russia</td>
<td>342</td>
<td>342</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>342</td>
<td>342</td>
</tr>
<tr>
<td>Aircraft</td>
<td>Russia</td>
<td>140</td>
<td>167</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>27</td>
<td>167</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>167</td>
<td>167</td>
</tr>
<tr>
<td>Armored Vehicle</td>
<td>Russia</td>
<td>4</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>74</td>
<td>78</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>78</td>
<td>78</td>
</tr>
<tr>
<td>Artillery</td>
<td>Russia</td>
<td>0</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>Engines</td>
<td>Russia</td>
<td>0</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Missiles</td>
<td>Russia</td>
<td>183</td>
<td>183.25</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>0.25</td>
<td>183.25</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>183.25</td>
<td>183.25</td>
</tr>
<tr>
<td>Naval Weapons</td>
<td>Russia</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
<td>Russia</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sensors</td>
<td>Russia</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Ships</td>
<td>Russia</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Total</td>
<td>Russia</td>
<td>669</td>
<td>813.25</td>
</tr>
<tr>
<td></td>
<td>NATO Allies</td>
<td>144.25</td>
<td>813.25</td>
</tr>
</tbody>
</table>

Table 17: Showing Trade Patterns by Armament Category for Eastern European States not in NATO.

\textsuperscript{125} The S-300 is a relatively large air defense system designed for long range interdiction of enemy aircraft and cruise missiles to defend fixed site facilities, while the SA-15 is a shorter range system designed to protect against a wider array of tactical and operational air threats such as helicopters, unmanned aerial vehicles, and short range ballistic missile threats.

\textsuperscript{126} Montenegro joined NATO in June of 2017, but, given the scope of the data present in this study and the recency of its accession, it is being considered with the other Non-NATO Eastern European countries.
Looking at the data across the waves of NATO membership makes it clear that joining NATO is neither necessary nor sufficient to trade arms. However, the actions taken by potential members to gain membership indicates both a willingness to enact domestic policies in concord with liberal democratic norms, and to modernize (westernize) the states military—including pursuing interoperability requirements. In the case of Eastern Europe, the effect of joining the NATO alliance does not manifest itself as an increase in the volume of trade a new NATO member receives, but rather, in the loss of Russia as a arms trading partner. The patterns of trade do not seem to be as rigidly tied to alliance membership as they are contingent on the reorientation of great power competition that occurred as a result of Russia’s decline. Unlike Poland where there were relatively few trades across security spheres, the tables above show that in the aggregate cross alliance trade occurred frequently though Russia’s trade declined precipitously as alliances shifted. The difference in trade patterns as a result of the wane of Russian power at the conclusion of the Cold War is more reminiscent of the pattern observed in Poland where there are relatively few trades from the NATO allies into Russia’s security sphere prior to 1991.

Contrasting the effects on trade patterns between alliance membership and great power indicates that the potential effect of great power competition is greater. During the Cold War, under bipolarity, arms trade patterns in Eastern Europe were solidly defined by great power alignment. Trade between the NATO allies into Eastern Europe prior to the end to the Cold War was restricted to a handful of trades consisting of light or transport helicopters and engines. As the competition of the Cold War ended, trade
between NATO allies into the former Soviet security sphere increased. Russia did not cease to be a trading partner after the Cold War but their role as the primary provider of combat equipment diminished. Furthermore, as the former members of its security sphere joined NATO Russia’s trade to them further declined. Among NATO members, there is an increase in trade behavior following the reduction of the competition of the Cold War. And in contrast to Poland, there is a slight reduction of trade behavior following NATO accession. This features prominently in the data for states in the second and third waves of NATO accession outlined above due to interoperability requirements specified as a condition in the Membership Action Plan.

**Conclusion**

In this chapter, I used the end of the Cold War to look directly at how arms trading behavior change when there is a decline in great power competition. A great powers’ decline creates new possibilities for trade and also creates new alliance opportunities—both of which have hypothesized impacts on the volume of arms traded. Opportunities for alliance reorientation are relatively rare because of the stability of great powers in the international system. The expansion of the West’s security sphere into former Soviet client states provided a case to look at the effects on arms trade from a great powers’ decline and test whether the effect was based more on the impact of lessening competition or through alliance expansion. In both Poland and the rest of Eastern Europe, there was a noticeable decrease in the volume of trade following the decline of competition between the U.S and the Soviet Union that characterized the Cold
War. As time passed, information about the magnitude of the Russian decline increased, creating an opportunity for the U.S. and NATO to begin pursuing alliance expansion. By creating the PfP (and later developing the MAP), NATO clearly signaled its intention to expand the alliance into Russia’s former security sphere, as well as, communicating the scope of the reforms necessary to potential new members. Enacting the reforms specified by NATO demonstrated commitment to western norms of civil-military relations; it also created demand for interoperable weapons and equipment. Although new markets were created under the requirements from modernization, gaining access to these markets can be eliminated as the primary motivation for alliance reorientation because of the gravity of collective defense. The change in great power competition precipitated both expansions of arms markets into Eastern Europe and new alliance memberships. The evidence supports the hypothesis that the level of great power competition is more impactful to the arms trade across the international system than alliances. In this case, the decrease of great power competition decreased the volume of the arms trade overall. Alliance reorientation (also made possible through great power realignment) provided NATO the opportunity to specify and elicit the adoption of Western norms in the former Soviet security sphere. This increased the levels of regime contiguity and democratization. As predicted, regime contiguity and democratization affected the patterns of trade. In Poland, the types of weapons systems traded to allies were qualitatively different. Poland, whose geographic position made it especially attractive for alliance inclusion, was an exceptionally valuable new ally, which may explain why this difference is present. For the majority of Eastern Europe however, the allies traded a
higher volume of arms to perspective NATO members before they were formally in the alliance. In part, this can be attributed to the institutionalization of new member accession that occurred in the second and third wave of post-Cold War NATO expansion. After admitting Poland, Hungary, and the Czech Republic NATO formalized the democratic, military, and societal reforms required to join the alliance. Participating in the Membership Action Plan directed interoperability requirements, which presumably led to the increase in the volume of trade observed in the data to aspiring members. Also, driving the overall reduction in the volume of the arms trade was the very noticeable decrease in Russia’s exporting behavior to newly admitted NATO members.
CHAPTER 4: Arab Israeli Conflict

Introduction

On the 6th of October 1973, the observance of Yom Kippur was broken across Israel by the sounds of U.S. built McDonnell Douglas F-4 Phantoms streaking overhead. The planes would staunch the attack by Soviet T-62s and T-54s of the Syrian and Egyptian armies in the Golan Heights and Sinai Peninsula. Between the 6th and 24th of October, the weapons technology from the U.S. and the U.S.S.R. would clash repeatedly, causing both superpowers to deepen their commitment to their proxies while avoiding direct confrontation with each other.

In the time period between 1945 and the 1973 Yom Kippur War, the Middle East moved from being a relatively minor front in the old colonial great game to a front in the Cold War competition between the U.S. and the Soviet Union. Tracing the development of the great power alignments in the region presents a story about how arms trade relationships arise, and why great powers choose to trade their arms. The emergent great power alignments and the ensuing arms trade relationships in the Middle East during the Cold War present a compelling account of the relationship between great power competition, alliance formations, and arms trade behavior. Upon the creation of Israel in 1948, it was not clear that their eventual great power benefactor would be the U.S. At the start of the time period under consideration, Israel had little to offer, and received

minimal military equipment consisting of mostly small arms and WWII surplus.\textsuperscript{128} Israel, under constant threat in invasion, had to find ways to make itself valuable as an ally to engender their access to the weapons they needed for national defense. Former regional powers such as France and England were reticent to inflame tensions in the region that could potentially threaten some of their former colonial holdings by flooding Israel with arms.

Unlike Israel, which had little to offer, the geostrategic nature of the Suez Canal enhanced the value of an alliance with Egypt for the Soviet Union, whose naval strategy eschewed aircraft carriers in favor of terrestrial basing. Egypt’s geographic position between the Mediterranean Sea and the Red Sea decidedly amplified its value to the Soviet Union thereby increasing the likelihood of an arms trading relationship. Unsurprisingly, a tacit \textit{quid-pro-quo} relationship between arms and access developed. In 1955, a significant arms deal was struck between Czechoslovakia and Egypt; this was followed by Egypt’s nationalization of the Suez Canal in 1956. Both events had strategic significance in the region. The former increased the pressure on Israel to find a source of weapons, and the latter increased the stakes for Western aligned powers.

While the last chapter evaluated the effects of great power competition on arms trade when one of the great powers is in decline, this chapter expands the scope of the analysis by looking at the arms trade under a period of relative great power parity. In this chapter, the enduring conflict in the Middle East between Israel and its Arab neighbors

\textsuperscript{128} Notably from Czechoslovakia in 1948
will be considered to investigate how major powers exert influence within their security spheres through arms trade and military assistance during periods of relative great power parity. Although the historical roots of this conflict extend far into the past, the emergence of the U.S. and the Soviet Union as great powers following the Second World War created new alliance opportunities in the Middle East and the ensuing competition between them is a backdrop for studying the relationship between alliances, great power competition, and the arms trade.

While one of the central features of the arms trade is that it predominately occurs within existing alliance relationships, it is also a function of the level of great power competition occurring within the international system. Looking at the Middle East after the Second World War offers an excellent case to examine the interplay of many of the relationships at work in this study. The central argument operating in this chapter is that arms trade with great powers follows from deliberate efforts by subordinate states to model regime similarity to either engender an alliance formation or to strengthen an existing alliance. Additionally, that the threshold for great powers to trade their weapons with a subordinate or proxy power is raised or lowered by their perceived stakes in the great power competition taking place because of the perceived strategic advantage to be gained from their alliances. This case is useful theoretically because it showcases arms trading behavior in a strategically important region during a time period of heightened great power competition where the long-standing colonial alliance structures were failing and new alliances were possible.
Case Selection

Looking at the arms trade in the Middle East is useful as a case for three reasons. First, on the supply side both the United States and the U.S.S.R. had geostrategic interests in the region due to the abundance of oil reserves and the sea lines of communication afforded by the Suez Canal. Additionally, at least early on, both great powers had a vast surplus of weapons from the Second World War. Furthermore, the Middle East, unlike the contestations occurring in Europe and Latin America, was not geographically proximate to either power, making the dispute less existential for the superpowers.

Second, many of the states within the region generally had both high revenue from oil sales and a high demand for military equipment. Lacking wealth and resources prior to the relatively late discovery of oil, the region was late to industrialize. New wealth and little organic industry combined with decolonization and a persistent conflict with Israel created a steady demand for imported arms. Third, there is substantial variation in domestic political regimes in the region. Accordingly, this variation allows a close examination of the effects of regime similarity on arms trade relationships.

The primary hypothesis of this study is that the volume of the international arms trade will increase as a function of the competition between great powers. Over the Cold War, both the U.S. and the U.S.S.R. supported actors in the Middle East with arms, and, in the Soviet instance, military advisors. To assist with isolating the effects of great power competition, this case is restricted along the following lines. First, this case is

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129 Some of the variation in regime occurred as a result of clandestine involvement from the U.S.
temporally restricted from 1955 through 1978. The selection of dates is always
debatable. Starting in 1955 is warranted because: it eliminates any immediate effect of
the expiration of the British mandate in Palestine; starts after the recognition of the state
of Israel and the first iteration of the Arab-Israeli conflict; and follows the initial regime
changes in Syria, Egypt, and Iran. Ending the case with the Camp David Accords in
1978 captures much of the competition between the U.S. and the U.S.S.R., includes the
Yom Kippur war, and provides a convenient historic stopping point. Ending with the
Camp David Accords is prudent because the patterns of great power alignment were
fairly fixed by this stage of the Cold War. Furthermore, stopping the analysis in 1978
eliminates the possible effects of the Soviet Union’s invasion of Afghanistan, and early
attempts at reforming the Communist party. Second, to mitigate the effect of formal
alliances, Turkey, a NATO member since 1952, is omitted from the case. Finally,
although Iran received the highest volume of trade within the region from the U.S. (the
CIA’s machinations from the coup d’état in 1953 through the Shah’s ouster in the 1979
Iranian Revolution explains the majority of this trade), it is omitted from this case study.
This deliberately focuses this case on the effects of great power competition on the arms
trade through the lens of the Arab Israeli conflict rather than providing a regional case.

**Background**

During the First World War, Britain and France made plans for the post-war
partition of the Ottoman Empire through the Sykes-Picot Agreement (May 1916).
Though the boundaries were not as set at the time as they are today, this agreement
generally established British Mandates in Palestine, Iraq, and Jordan, and a French
Mandate in Syria and Lebanon—Egypt, Kuwait, and Qatar were British Protectorates. Simultaneously to the reigning European great powers’ decisions regarding how to split former Ottoman holdings, the First World War was also providing the impetus and opportunity for a resurgence of Arab Nationalism.\(^{130}\) British policy at different times encouraged both Jewish and Arab factions to vie for a nation state. For example, British army officer Sir Henry McMahon assured Hussein bin Ali of Arab independence as an implicit *quid-pro-quo* following the First World War in exchange for Arab support against the Turks.\(^{131}\) Ultimately Sykes-Picot agreement and the Balfour Declaration (Nov 1917) provided official recognition and encouragement from Britain for Jewish settlement in Palestine. The British reversal on Arab independence and their support for Zionism in Palestine created grievances that were exacerbated during the reordering of international power in the wake of the Second World War.

Following the Second World War, the Middle East was disrupted through decolonization and an influx of Jewish migration. Guilt among the Western powers over the persecution of Jews during the Second World War provided a unique political opportunity for the creation of a Jewish home state, which occurred simultaneously with the expiration of the British mandate in Palestine on 14 May 1948. Following the creation of the Jewish state of Israel, the Middle East erupted into nearly a continual state of conflict between Israel and an Arab bloc predominately comprised of Egypt, Syria,

\(^{130}\) David Fromkin, *A Peace to End All Peace: The Fall of the Ottoman Empire and the Creation of the Modern Middle East*, 1st Owl Books ed. (New York: H. Holt, 2001), 176-79.

\(^{131}\) Ibid., 173-87.
Iraq, Jordan, and Libya. The latter were unified by a wave of Arab nationalism following decolonization, and were aligned within the Soviet sphere of influence. This alignment provided them access to Soviet weapons technologies at reduced rates and especially in Egypt, a robust advisory network of Soviet military personnel to assist in their defense. Furthermore, the Soviet Union advocated on their behalf through international institutions such as the United Nations, buffering them to some degree from the international action by Western powers.

Colonial British and French interests, which had been prevalent in the region for decades but were on the decline, were at times at odds with the developing approaches to the region by the United States and the Soviet Union. The former British Mandates in Palestine and Transjordan became the battleground for a Jewish homeland. This placed British commitments to allies in the region such as King Abdullah directly at odds with their stated support of a Jewish homeland in the Balfour Declaration. Transjordan’s Arab Legion for example was commanded by British officers and paid for with British Pounds.\textsuperscript{132} As Transjordan gained its independence in 1946 and began to assert territorial rights to parts of Palestine (another British Mandate), there were obvious conflicts of interest for Britain as the day-to-day fighting between Jews and Arabs increased. Between 1946, when Transjordan gained its independence, and 1948 when the Mandate in Palestine expired, British field forces found themselves on both sides of the nascent

conflict that would erupt into the First Arab-Israeli War upon Israel’s declaration of 

independence in 1948.

The First and Second World Wars had left the region with an admixture of 

weaponry and, given many of the Arab armies long standing colonial relationships, most 

of these weapons were in Arab hands. Estimates put the combined arms of Egypt, Iraq, 

Syria, Jordan, and Lebanon at around 128 artillery pieces, 140 armored cars, 15 tanks, 

and 37 aircraft.\textsuperscript{133} Israel, on the other hand, initially struggled to acquire arms. The 

United States, flexing its post-war muscle, enacted and enforced an arms embargo on the 

region that prevented many Western nations from exporting weapons in support of either 

side of the conflict. Thus, the emerging Israeli army was initially equipped with a variety 

of homemade armored cars, light mortars, and smuggled or stolen equipment. In May of 

1948, Czechoslovakia, recently coming under Soviet rule and not under the sway of the 

U.S. embargo exported, a variety of small arms including 5,200 machine guns of various 

caliber, 24,500 rifles, and 52,540,000 rounds of ammunition and 25 Messerschmitt 109 

aircraft to Israel.\textsuperscript{134} Although Israel never gained parity, this infusion of weapons, 

combined with captured equipment and numerous small-scale acquisitions, was enough 

to close the gap.

At the local level, the enduring conflict between the Arab coalition and Israel 

defined the region. During the time period under consideration, there are numerous 

historical moments such as the First Arab-Israeli War in 1948, the Six Day War in 1967,

\textsuperscript{133} Ibid., 78.
\textsuperscript{134} Ibid.
and the Yom Kippur War in 1973 where the level of hostility rose to a level of an outright war. While these engagements are more widely known, the entire time frame was fraught with cross border raids, territorial dispute, irredentist opposition, and military activity.

Israel’s success in the First Arab-Israeli War in 1948 secured the territorial gains granted under the U.N. General Assembly Resolution 181 and also much of surrounding area that had been initially set-aside for Palestinian Arabs. In the immediate time period following the 1948 war, the region underwent a massive demographic transition as Palestinians left or were displaced and Jewish settlers immigrated from around the region to Israel.

Further, more contentious territorial acquisitions followed the 1967 Six Day War. In this conflict, Israel gained territory from Egypt (the Gaza Strip and the Sinai Peninsula), Jordan (the West Bank), and Syria (the Golan Heights).

Israel’s decisive victory in 1967 destroyed much of the conventional combat capabilities of the Arab coalition—particularly Egypt—forcing them to employ new strategies. Furthermore, Israel’s capture of the entirety of the Sinai Peninsula was humiliating for Egypt. Almost immediately, Egypt began a employing an attrition strategy against Israeli forces who had dug into defensive positions (the Bar Lev Line) along the Eastern coast of the Suez Canal. The War of Attrition mostly consisted of a combination of artillery and mortar attacks, small arms exchanges, commando raids, and limited aerial engagements that allowed Egypt to put steady pressure on the Israeli Defense Force (IDF). As Egypt regained martial capacity, through a steady infusion of Soviet weapons and advisors, their audacity increased. In a particularly active period
during the spring of 1969, Egypt launched 475 attacks in April and another 231 in May resulting in 43 killed and 103 wounded.\textsuperscript{135}

The cross-border back-and-forth between Egypt and Israel continued until the Yom Kippur War in October of 1973. In this iteration of the Arab-Israeli conflict, Egypt, catching Israel by surprise on the most holy day of the Jewish year, was able to make some early territorial gains crossing the Suez and penetrating the Bar Lev line. Nearly simultaneously, Syria attacked near simultaneously in the Golan Heights placing Israel in a double envelopment. Israel, however, was able to rapidly mobilize their reserves and successfully counterattacked. By the end of October, the Israeli army had pushed the Syrians out of the Golan Heights and was actively shelling Damascus; and, on the Egyptian front, the IDF had encircled the 3\textsuperscript{rd} Egyptian Army.\textsuperscript{136} Following a trend that started when Sadat ended the Soviet advisory effort in 1972, the Yom Kippur War punctuated a general decline of Soviet influence in the region. Additionally, as the 1970s progressed, there were increased indications that Israel had developed nuclear capability, which also changed regional dynamics. By the Camp David Accords in 1978, Egypt was willing to negotiate directly with Israel. Israel in turn, ceded the Sinai Peninsula back to Egypt reestablishing their pre-1967 borders and paving the way for The Egypt–Israel Peace Treaty in 1979.

The shifting nature of great power politics following the Second World War was evident in the Suez crisis in 1956, which brought together an alliance of former regional

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\item[\textsuperscript{135}] Ibid., 212.
\item[\textsuperscript{136}] Ibid., 236.
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powers France and Britain with Israel. These former colonial powers however, were past their prime. Israel wanted a great power backer to compete against an Arab faction backed by the Soviet Union. Given the Soviet backing of the Arab states and the absence of another superpower capable of countering the U.S.S.R., and, given the Soviet backing of the Arab states, Israel was predisposed toward pursuing a relationship with the U.S. by the nature of the bipolar international system. Although the U.S. was preoccupied with other global commitments—notably the Vietnam War—the 1967 Arab-Israeli War forged an enduring relationship between the U.S. and Israel.\textsuperscript{137} Israel had sought to increase its importation of U.S. arms during the 1960s and the U.S. had traded a limited amount of arms with Israel prior to 1967; the 1967 war shifted Israel’s primary source of weapons from France to the United States.\textsuperscript{138}

Following the 1967 war, during the War of Attrition (1969-1970), both the Arab coalition and Israel deepened their dependence on their great power benefactor for weapons, and, particularly in the Arab case, for direct military assistance. The enduring low-grade conflict on the Sinai Peninsula and Suez Canal created a steady demand for weapons. Also, in the Egyptian case, their massive equipment losses in the 1967 conflict necessitated rearmament. Weapons alone were not enough. In response to Israel’s nearly unopposed air superiority, Egypt’s security relationship with the Soviet Union went beyond weapons. Sophisticated Soviet air defense technology, in some cases manned by


\textsuperscript{138} Ibid., 188-90.
an active Soviet advisory effort, appeared in the Suez Canal region by 1970.\textsuperscript{139} In all, the Soviet Union would deploy 32,000 soldiers to help their beleaguered Egyptian ally during the period between the Six Day War and the end of their advisory efforts in 1972.\textsuperscript{140} Furthermore, the Egyptian experience fighting the Israeli Air Force during the War of Attrition would enable their initial tactical success in the Yom Kippur War (1973).

In contrast to the decisive Israeli victory of the Six Day War, the outcome of Yom Kippur War (6-25 October, 1973) was more ambiguous. The initial phases of the war largely caught the Israelis by surprise. The Egyptians were able to successfully cross the Suez Canal, overrun Israeli defensive positions, and impose massive equipment losses.\textsuperscript{141} Furthermore, unlike the previous iterations of the conflict, the Israeli Air Force (IAF) faced formidable air defense batteries that employed a combination of Soviet SAM-2, SAM-3, and SAM-6 systems.\textsuperscript{142} In addition to the modern equipment, these batteries were manned by Soviet trained crews and had the benefit of their recent operational experience against the IAF during the War of Attrition. Israel’s initial efforts to counterattack with an armored force were thwarted by dismounted infantry employing shoulder fired anti-tank missiles.\textsuperscript{143} Similarly on the Golan front against the Syrians, the Israelis, facing a combination of helicopter mobile commando raids, armored forces

\textsuperscript{140} Ibid., 211.
\textsuperscript{142} Ibid.
\textsuperscript{143} Ibid., 227.
employing the venerable Soviet T-62 tank, and dismounted infantry employing tank-killing shoulder fired munitions, initially lost ground and suffered heavy losses before successfully mounting a counterattack. Nevertheless, by the cease fire at the end of October, Israel had recaptured the ground lost in the Golan Heights, had staunched the penetration across the Suez in the Sinai, and was threatening destruction of the Egyptian 3rd Army.

During the Yom Kippur War, great power commitment to their proxies’ security was evident. Massive early equipment losses on both sides prompted resupply efforts. Both great powers resupplied their respective proxy sending a clear political signal regarding their resolve to their allies as the United Nations sought to impose a cease-fire. The outcome of the Yom Kippur War in retrospect foreshadowed changes to the great power relationships across the region that in some ways had already begun. Prior to the war in 1972, Soviet reluctance to furnish Egypt with offensive weapons had prompted Egyptian president Anwar el-Sadat to ask the Soviet Union to withdraw its extensive advisory effort. Following the death of Gamal Abdel Nasser in 1970, Sadat had also indicated a willingness to work more closely with the United States towards a peaceful

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144 Ibid., 229-33.
145 Ibid., 234-37.
resolution with Israel. Unfortunately, these negotiations were unable to prevent the outbreak of the 1973 hostilities. The high wartime losses, combined with the deterioration of Egypt-Soviet relations, did create increased diplomatic space for a more active U.S. involvement in the peace process. In the aftermath of the Yom Kippur War, Secretary of State Henry Kissinger actively sought to facilitate negotiations between the combatants. This would lead to a series of peace negotiations between Israel and Egypt that eventually returned the Sinai to Egypt, split Egypt from the Arab coalition, and garnered the first recognition of the state of Israel from an Arab state. Against the background of détente between the Soviet Union and the United States, and with the lessening American commitment to the Vietnam War, the reduction of hostilities following the Yom Kippur War can be seen as part of a larger global waning of Cold War great power competition.

**Discussion**

Of the hypotheses under consideration in this case, some stand out more than others. Specifically, this study’s primary hypothesis, that great power competition will increase the volume of arms sales is further expanded through the historical details provided in this case. In the quantitative analysis, it was found that when the U.S. held a higher proportion of material power vis-à-vis their great power competitor, there was an

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148 Ibid., 260-61.
overall decrease on the volume of arms trade across the international system.\textsuperscript{149} In this case the enduring local conflict in the Middle Eastern region is squarely juxtaposed against the larger backdrop of the superpower competition of the Cold War. In the Middle East during this period of increased great power competition, and with a persistent ongoing regional conflict, high levels of arms trade are expected. Also, this case offers a closer look at how regime similarity, democratization, and alliances affect the volume of arms traded. Earlier statistical analysis showed that both regime similarity (hypothesis 6), active conflict (hypothesis 4), and formal alliances (hypothesis 3) had positive and statistically significant effects on the volume of arms traded. Clearly, these variables have a high degree of endogeneity—making conclusions about their exact effects on the basis of quantitative analysis alone difficult. In this case however, it is possible to disaggregate some of the effects from these variables on the ensuing changes to the volume of arms traded. This case will look extensively at the intertwined process of regime congruity and alliances on the volume of arms traded to clarify the effects found in the earlier analysis.

Second, on the surface, the prediction that arms trade will be highest between major powers and mid-range powers (hypothesis 2), appears to be operating in this case. Given the lack of strong support for this hypothesis in the quantitative analysis however, this support must be discounted. The specific narrowing of the time period and countries

\textsuperscript{149} State power was taken using date from the Correlates of War National Material Capabilities (v4.0) data set and used the Composite Index of National Capability (CINC) scores for as its measure.
under study within this case requires us to consider the support for hypothesis 2 as merely anecdotal. Accordingly, hypothesis 2 is not considered in depth.

Table 18 below shows that trade across the region was extensive over the time period from 1955-1978. As expected by the history outlined above, U.S.S.R. and the United States are the predominant exporters and their primary recipients are their respective regional proxies. Between 1955 and 1978, Israel accounted for approximately 6% of the total TIV of U.S. arms export which was 25% of the total U.S. arms trade within the Middle Eastern region.\textsuperscript{150} During the same time period, 8% of the total TIV of the Soviet Union’s arms exports went to Egypt, 9% to Syria, and 6% to Iraq, and, between the three, accounted for 34% of the total value of Russia’s arms exports globally.\textsuperscript{151}

\textsuperscript{150} U.S. exports to Israel from 1955 to 1978 amount to 17,617 TIV out of a total of 284,108 TIV globally. Total U.S. exports to the Middle East during this time frame equaled 68,170 TIV.

\textsuperscript{151} The Soviet Union exported 93,998 TIV to the Middle East from 1955 to 1978 out of their global arms trade of 278,221. Egypt imported 22,934 TIV, Syria 24,085 TIV, and Iraq 16,031 TIV.
Table 18: Showing the trade across the Middle East Region from 1955 to 1978.

As predicted by hypothesis 6, regime congruity strongly predicts trade relationships. In many of the Arab states during the time period under consideration, regime similarity is particularly heightened by their relatively recent overthrow of colonial rule. The Soviet Union offered a source of arms that was free from colonial baggage; and furthermore, Arab socialism shared an ideological core with Soviet communism.\textsuperscript{152} Support to Israel is more difficult to pin down. Israel’s democratic Knesset is ostensibly aligned with western democratic norms, but at least in the early years, the United States favored diplomatic resolutions over arming the Jewish state.\textsuperscript{153}


By the Yom Kippur war, Prime Minister Meir clearly understood that trade with
the U.S. was partly a function of adhering to democratic norms as evidenced by her
election not to launch a preemptive strike in spite of increasing evidence of another round
of Arab hostilities. While regime congruity explains some of the patterns on arms
trade in the region, the prevailing explanation for the volume is the level of great power
competition. Hypothesis 1 predicts that great power competition will create increased
volume in armament trade. The U.S. and the U.S.S.R. were in an intense global
competition during the time under consideration (1955-1978). While Europe figured
more prominently in this competition, the Middle East played an important role for a
variety of reasons.

Geographically the region occupied a strategically important position on the
southern flank of the U.S.S.R., and could affect access to the Suez Canal. Second, the
abundant oil reserves increased the importance of the region as a strategic ally. The first
reason was of greater concern to the Soviets then to the U.S; they were more affected by
the geostrategic considerations. The region is closer to them in terms of proximity. Also,
the Soviet navy’s failure to adopt aircraft carriers compelled them to seek land bases that
could counter the U.S. Sixth Fleet in the Mediterranean Sea and Indian Ocean. For the
Soviets, countering U.S. influence in the region generated a requirement for basing, and

Force*, 224.
155 Michael Horowitz, *The Diffusion of Military Power: Causes and Consequences for
Adamsky, "The "Seventh Day" of the Six Day War: The Soviet Intervention in the
the requirement for basing in turn created a Soviet dependency in the region for terrestrial access, which ultimately led them to exchange armament and general military support.

Understanding the role of great power competition in the United States’ relationship with Israel is less straightforward. Unlike other states in the region, Israel lacked abundant oil reserves. The United States’ supported the plan outlined in U.N. Resolution 181 for the partition of the former British mandate in Palestine into separate Arab and Jewish entities—with an internationally controlled Jerusalem. However, recognition of the state of Israel was a decision fraught with great power political implications. In a memorandum urging an early recognition from President Truman of the Jewish State dated May 9th, 1948, “take[ing] this action before the Russians” is directly mentioned in order to avoid the “diplomatic defeat” of the Russians going first. Although recognition of Israel in advance of the expiration of the British mandate in Palestine would not be forthcoming, President Truman wasted no time following its cessation. On the same day the mandate concluded (May 14th, 1948), the United States recognized the provisional state of Israel. On the 15th of May, the Arab states of

Lebanon, Syria, Transjordan, Iraq, and Egypt declared war on Israel. In an effort to promote peace, the United States enacted an arms embargo on the region. Israel needed weapons, and Czechoslovakia—a recent Soviet satellite state—filled the void with a large quantity of WWII surplus weapons. This early trade highlights that the eventual alignment between Israel and the West was not a forgone conclusion at the outset. Furthermore, the use of Czechoslovakia as proxy for the Soviet Unions’ machinations in the region would be repeated in a massive arms deal to Egypt in 1955. The changing nature of great power alignments make this case all the more useful for drawing conclusions about the role of regime similarity, alliances, and great power completion on arms trade behaviors.

Israel survived the initial attack on its sovereignty, and for a time was able to cautiously court both the U.S. and the U.S.S.R. as great power benefactors. Surrounded on all sides by hostile neighbors, Israel’s immediate focus was local, and maintaining relations with both powers was a foreign policy that maximized possible sources and options for both military and domestic support. Ultimately the structural features of bipolarity sharpened the competition between great powers during the Cold War and made this position untenable in the long run. Both Israel and its Arab neighbors looked to great powers in their attempts to rearm following the open hostilities of the 1948 Arab-Israeli War. As noted by Secretary of State Dean Acheson in a letter to

Accessed March 13th, 2017


Representative Jacob K. Javits, when the Security Council lifted the arms embargo in August 1949, Britain resumed fulfilling its preexisting treaty obligations to supply weapons for security requirements to many of its former (Arab) colonial holdings alarming Israel.\textsuperscript{161} However, Acheson also noted that “[a]t the time the Security Council arms embargo was lifted, the United States and Great Britain stated that they did not wish to see an arms race develop in the Middle East.”\textsuperscript{162} Shortly after this letter was penned, in a joint effort between the old and upcoming bastions of western power, the United States, France, and Britain issued the Tripartite Declaration on the 25\textsuperscript{th} of May 1950 to limit the burgeoning arms race and recognize borders in the region.\textsuperscript{163}

For the outside powers, the overarching purpose of the declaration was to try and frame their arms sales into the region as in support of the status quo, and accordingly, in a manner such that neither the Arab nor the Israeli side would be alienated and further ingratiate itself within the Soviet sphere.\textsuperscript{164} For Israel the status quo was untenable. The Israelis needed an advantage in technologically sophisticated weapons to offset their numerical weakness—their days of pragmatically occupying the middle ground between the Soviet and U.S. sphere of influence had come to an end.

\textsuperscript{162} Ibid.
\textsuperscript{164} Shlaim, "Israel between East and West. 1948-56," 660.
The Korean War heightened the growing competition of the Cold War and provided a pretense for Israel to signal its preference for western alignment, and, on July 4th, 1950, the Knesset voted for a resolution condemning North Korea. This represented a decisive step away from the pragmatic policy of working with both superpowers. On July 31st, Prime Minister Ben-Gurion, in an impromptu meeting with the U.S. Ambassador James McDonald and relayed to Dean Acheson by Telegram, explicitly discussed his desire to build an Israeli army armed with U.S. weapons that would be willing to aid the U.S. and its western allies in opposing Russian bellicosity. Israel’s pro-western overtures did not immediately yield the results they hoped for—namely access to U.S. offensive armaments. Part of the problem lay in Israel’s informal policy of reprisals. The U.S. was on the verge of initiating an arms deal with Israel in December 1955 when the Israelis launched a reprisal raid into Syria killing 50. In a cable to the Secretary of State John Foster Dulles, James Moose Jr. the U.S. Ambassador to Syria recommended a “(1) public statement in Washington condemning Israeli aggression, (2) full US support for unequivocal Security Council resolution condemning Israeli attack, (3) disapproval of sale of US arms to Israel and (4) effective reduction US bilateral aid to Israel.” Furthermore, Moose cautioned that the sale of arms to Israel would cause resentment “so profound that for all practical purposes Syria can thereafter

165 Ibid.
166 State, "Foreign Relations of the United States, 1950. The near East, South Asia, and Africa " 960-61.
be considered and unfriendly country, whether the Communist take over or not.” As a consequence, the deal was canceled and the U.S. continued a cautious policy of arms trade into the region, and especially to Israel to prevent pushing the Arab states into Soviet hands.

The Israelis had decided to cast their lot with the West but by the early 1950s, had not been able to establish the trade relationships they wanted with the U.S. for weapons. Meanwhile, the overall competition of the Cold War was increasing, and the U.S., Britain, and France were battling Russia for influence among the Arab countries. Pro-Western overtures to assure regional interests, such as Plan Alpha and the Baghdad Pact, were constructed to court Arab regimes, leaving Israel uncertain of its security. Further, part of the problem Israel had in arranging access to weapons was self-inflicted. Israel’s strategy of retaliatory raids was contested domestically, condemned internationally in the United Nations, and limited the willingness of Western powers to engage in arms trade. Additionally, these raids also effectively pushed Egypt to seek further armaments.

The Suez crisis in 1956 foreshadowed the trajectory of regional alignments. As predicted by hypothesis 6, regime congruity increases the likelihood of arms trade. In this case, following a series of particularly devastating retaliatory raids along the Gaza Strip in 1954-1955, Nasser formalized Egypt’s relations with the U.S.S.R. and signed an arms trade deal with Czechoslovakia (a Soviet proxy) for an unprecedented volume of armaments. Given that both great powers were working with Egypt and supplying

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169 Ibid., 868.
them with weapons up until this point, this decision represented a deliberate choice by Nasser to ally with the Soviet Union—a choice made easier by the alignment of political regimes. Nasser’s nationalization of the Suez Canal Company, though legal, was financially a move against longstanding investments by the West—specifically Britain and France.\textsuperscript{171} Furthermore, Egypt’s receipt of $250 millions worth of arms from the Soviet Union via Czechoslovakia in 1955 was another indicator of emerging alliance patterns.\textsuperscript{172} Because of the dichotomous features of alliance alignment patterns under bipolarity, Egypt’s political actions during the Suez crisis alienating the West and aligning with the U.S.S.R., and their hostile relationship with Israel, Israel’s western orientation was ensured.

Israel wanted a great power alliance that would in part assure its security through the provision of weapons; the U.S. was reluctant, so Israel started to look elsewhere. France’s growing Algeria problem provided a pretext for Israeli overtures, but Nasser’s federalization of the Suez Company in 1956 provided Israel an international crisis to leverage as a signal of their Western alignment in pursuit of their grand strategy of obtaining a great power arms trading partner. Against the competition of the Cold War, the Suez Crisis further polarized the emergent relationships in the region between a Western supported Israel and a Soviet sponsored Arab alliance (comprised predominantly

\textsuperscript{171} Ibid., 38.

\textsuperscript{172} Various sources generally agree that this deal comprised $250 Million: 100-150 MiG 15s; 50 Ilushin Il-28 (bombers); 70 Ilyushin Il-14 military transport planes; 230 T-34 main battle tanks; 200 BTR-152 armored personnel carriers; 440-600 artillery pieces, various types; 34 antiaircraft guns; 2 destroyers; 4 minesweepers, 12 torpedo boats; and, 6 submarines.
of Egypt, Syria, and Iraq). The regional competition between these factions was an outlet for the larger pattern of great power competition, and resulted in a nearly constant state of warfare. In a series of vignettes presented below, specific features of the arms trade will be explored in depth to highlight the interaction between the Cold War competition of the superpowers and the regional tension between Israel and its Arab neighbors.

**Israel-France and the Suez Crisis**

By the middle of the 1950s, cross border skirmishing was common between Egyptian and Israeli forces stationed on the Gaza Strip, military operations were escalating in their audacity, and there were competing factions within the Israeli government regarding the strategy Israel needed to ensure its security.¹⁷³ The election of Prime Minister Ben-Gurion in 1955 was a referendum in support of a more militarized strategy.¹⁷⁴ Nearly simultaneously to the election and following the withdrawal of British forces from the Canal Zone, pressure was increasing on Israel to find a Great Power alliance that would bolster its security. Egypt, facing similar pressure, secured the tacit backing of Russia when Czechoslovakia infused its military with a massive supply of armaments. More important than the material gains though, was that this trade firmly entrenched Egypt in the Soviet security sphere, and from the standpoint of great power competition, established a Soviet foothold into the Middle East. Israel found itself in a political space where lacking the security assurances of a great power benefactor, its survival as an independent state was continuously threatened. Israel’s immediate strategy

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¹⁷⁴ Ibid., 2.
(security through tit-for-tat small-scale offensive raids and border security) required weapons, and its grand strategy (solidifying their existence as a Jewish state in the region) required a great power benefactor.

Prime Minister Ben-Gurion made procuring arms a centerpiece of his administration. Balance of power politics would predict that, given the Soviet alliance with Egypt and the emerging bipolarity of the international environment, Israel’s alliance possibilities would be oriented to the West. The history, in this case, vindicates the prediction. By the mid-1950s, Israel was rapidly trying to right the imbalance of power caused by the Soviet arms deal to Egypt by courting western powers—namely Britain, France, and the United States. Ironically, Israel’s arms in their war for independence had been acquired primarily through Czechoslovakia with the same tacit support of the U.S.S.R. that Egypt was now experiencing. Israel also had a robust population of eastern European Jews with ties to their former homeland. In other words, Israel’s alliance with the West was not a forgone conclusion; nevertheless, in spite of these features, once Egypt became the benefactor of Soviet arms, the parliament in Israel eschewed Russia as a source for further armaments.

Britain, as a vestige of its former colonial standing in the region, had broad interests in both Egypt (through its investments in the Suez Canal), in the territory it formerly administered (Palestine now Israel), and in Jordan. Ernest Bevin, who served as Britain’s Foreign Secretary from 1945-1951, pursued a non-interventionist strategy in the
Middle East, to preserve what was left of the British Empire.\textsuperscript{175} In practice this meant retaining a financial and managerial stake in Middle Eastern oil fields and refineries, and preserving to the greatest extent possible, the network of military bases in the region.\textsuperscript{176} British bases (Suez in particular) stretched throughout the region controlling the Mediterranean and offering strategic airfields and land bases in Egypt, Palestine, Iraq, and Transjordan.\textsuperscript{177} The British the grand strategy was to retain access by retaining Arab support; accordingly, they were reluctant to enter into arms trades with Israel. The U.S., at this early stage in the Cold War, was more occupied on the emerging balance of nuclear power, and was still reeling from its recent foray into regional conflicts on the Korean peninsula.

France, embroiled in a colonial conflict in Algeria, was suspicious of Nasser’s involvement there. At the Bandung Conference in 1955, Nasser, who at this time was seen as a leading figure within the Arab world, had overtly supported the independence of Algeria.\textsuperscript{178} Moreover, Ahmed Ben-Bella, an Algerian rebel leader, was being provided quarter in Cairo, and the French government suspected that this relatively benign support was being complemented by more direct support in the form of the provisioning of arms.\textsuperscript{179} France’s growing quagmire in Algeria and their growing suspicion of Nasser increased their willingness to negotiate arms trade with Israel. Maintaining control of

\textsuperscript{176} Ibid., 4.
\textsuperscript{177} Ibid., 4-13.
\textsuperscript{179} Ibid., 41.
French Algeria constituted France’s main interest in the region at this point. Unlike Britain, whose population in the Middle East was mostly comprised of soldiers and bureaucrats, France had a significant population of French citizens living in Algeria, and Algeria was considered a part of France. The Algerian War (1954-1962) was thus the focal point of France’s Middle Eastern policy, and Israeli leaders knew that in the minds of the French, there was a direct link between Nasser and the Algerian rebels. Shimon Peres, the Director-General of the Israeli Ministry of Defense, put a fine point on the issue to Ben-Gurion, which was latter recorded in his diary, that for the French “failure in the Suez is tantamount to failure in Algeria.”180

In the spring of 1956, Israel and France had entered into an agreement that would deliver new Mystère jets and AMX-13 tanks in return for intelligence sharing and possible participation in military action in support of French efforts in Algeria.181 France’s decision to initiate arms sales to Israel is this case provides support to hypotheses 4. Hypothesis 4 stipulates that arms trade from major powers to subordinate powers will increase during periods of conflict when the subordinate power is involved as an ally in that conflict. In this case, decision to was to start trading arms as an implicit quid pro quo for support in the major powers regional campaign. The Algerian crisis created a common enemy for France and Israel. Egypt was overtly aggressive towards Israel, and France saw Nasser as providing direct support to the Algerian rebels. Israel’s

180 As quoted in ibid., 39.
181 Ibid., 27-28.
leaders saw the benefit of a common enemy and deliberately framed their involvement in French operations as a way to gain increased access to French armaments.

This vignette highlights an especially important feature of arms trade behavior because except for the degree of involvement in a regional conflict, France mirrored Britain. Both were major powers with comparable military-industrial complexes, both were former powers in the region that had seen a loss of their influence in the region following the Second World War, and both were similar in their domestic political regimes. Britain’s dual strategy of trying to maintain its financial and military interest in the region by transitioning from colonial power to Arab partner limited their ability to side with Israel, and their relationship with the U.S. (the U.S. had withdrawn its funding from the Aswan dam prompting Nasser to nationalize the Suez Canal in the first place), prevented them from fully supporting the Arabs. For France, the Algerian crisis served to lower barriers against trading with Israel because the immediate need for alliance reassurances exceeded the potential consequences of exacerbating Arab Israeli tensions. Additionally, this vignette occurs early in the historical period under study—at a point when the great power competition between the U.S. and the U.S.S.R. was increasing. Accordingly, in support of hypothesis 1, as the level of great power competition increased, arms trade behavior increased. Russia, whose interests in the region were driven by their need for basing, moved to supply Egypt (among others) with a variety of weapons technology. This influx of weapons created an existential crisis for Israel who looked abroad for a trading partner. Israel’s possible trading partners were constrained to some degree by the emerging bipolarity on the Cold War, which provides additional
clarity into the process behind hypothesis 6. This hypothesis stipulates a positive relationship between regime congruity and the volume of arms trade. In this vignette, there is evidence of a clear interaction between the structure of the international system—and the balancing behavior it predicts—and the relationship between regime congruity and arms trade relationships.

Specifically, regime congruity is neither a necessary nor a sufficient condition to trade arms, but is often correlated with arms trade relationships because of the competitive implications of balancing behavior. As competition increases, the impetus for balancing through the proliferation of arm increases but is to some degree constrained to similar minded political regimes. The level of competition between the U.S. and the U.S.S.R. had not yet risen to a level where the U.S. or Britain was willing to signal its alliance preference for Israel through arms trade. In this vignette, France was trying to maintain control of Algeria, and assumed that Nasser was working in support of Algerian rebels.\(^{182}\) To further its intelligence collection and operational reach, France sought to further its alliances in the region by supplying arms to Israel. Active involvement in the Algerian conflict lowered barriers to arms trade for France, whose direct interest in the region made them more politically salient then either Britain or the United States. As competition increased over the Cold War, the U.S. and Russia arms trade within their respective security spheres increased.

\(^{182}\) Ibid., 39-45.
The June 1967 Six Day War

In contrast to the situation during the Suez crisis, by the outset of the Six Day War in 1967, the alignment between the superpowers and the participants in the Arab-Israeli conflict was clearly defined. The Soviet Union had established alliances among many of the Arab nations within the Middle East—and notably with Israel’s most pressing threats, Egypt and Syria. Furthermore, Russia was also consolidating its regional influence by favoring the creation of subordinate alliances such as the Egypt-Syria Defense Agreement in 1966. In other words, the Soviet strategy of establishing a security sphere in the Middle East through arms sales remained the status quo. Israel however was faced with a mounting problem. Since their partnership in the Suez crisis, France had become Israel’s leading source of high-end military armaments, including 72 Mirage IIICs. The loss of Algeria in 1962 changed France’s foreign policy aims in the region. De Gaulle’s France resumed its diplomatic relations with the larger Arab Middle East while continuing delivery (including a clutch shipment of repair parts on June 7th) of already purchased military goods. With Algeria gone, France’s stakes in the region were lessened, and rather than siding with Israel at the risk alienating the Arabs, France began perusing a broader, ostensibly more neutral strategy in the Middle East. Although France’s arms trade relationship with Israel did not end in 1962, their unwillingness to

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185 Ibid., 256.
take Israel’s side in a crisis was clear—France would advocate neutrality during the Six Day War. Critically, this policy left Israel uncertain of future weapons trades, and also, without a great power alliance to stanch the Soviets regional hegemonic ambitions.

Access to arms was always a pressing issue to Israel for two interrelated reasons. First, Israel is undermanned in comparison to their Arab rivals. To mitigate this at the national level, Israel mandated military service, effectively employed a tiered reserve system that made full use of the population, and maximized the advantages of interior lines to distribute personnel and resources in a mutually supportive defensive scheme. However, given the continual influx of Soviet equipment into their Arab neighbors, Israel, without a continued source of advanced artillery, airplanes, and mechanization would increasingly become disadvantaged in their ability to employ large-scale offensive maneuver warfare. Israel’s position in the Middle East—surrounded on all sides by hostile countries—implied continual beleaguerment and the balance of forces favored the Arab coalition. At the outbreak of the Six Day War in 1967 for example, Israel could muster between 250,000 and 275,000 soldiers (180,000 to 200,000 of which were reservist).186 But the differences in manpower were not staggering, Arab forces, in comparison, numbered 22,000 Iraqis, 56,000 Jordanians, 65,000 Syrians, and between 100,000-130,000 Egyptians.187 In terms of equipment however, the Arabs had an

advantage. Israel fielded 1,100 tanks, 756 artillery systems, and 250 planes as opposed to
the Arab coalitions’ 1,400 tanks, 1,350 artillery systems, and over 400 airplanes.\textsuperscript{188}

At this point in the Cold War, Israel’s choices for a great power alliance and a
source of weapons that could counter the Soviet technology flowing into their
adversaries’ hands were constrained to one. In the spring of 1967, as Nasser’s
machinations pointed toward war, the Israeli government sought assurances from the U.S.
The Johnson administration’s position was vague. Both President Johnson and Secretary
of State Dean Rusk made it clear in May that Israel should not take preemptive action
against Egypt, and should give diplomacy some time to resolve the mounting crisis.
Furthermore, the Western powers were actively working to find a diplomatic or limited
use of force action to reopen the Straits of Tiran. In the Israeli General Staff however, a
Schlieffen plan type of logic was at work. Egypt was rapidly moving war material and
forces into the Sinai—every day that passed in negotiations strengthened Egypt’s
position. In their second entreaty to the U.S. in June, Israel sent the director of Mossad
Meir Amit to confer with Secretary of Defense Robert McNamara instead of sending a
diplomat to the State Department.\textsuperscript{189} Critically, Israel wanted assurances that America
would provide diplomatic support in the United Nations, that the U.S. would back Israel
in the event the Soviets intervened on behalf of the Arabs, and that the U.S. would


increase its weapons trade to replenish Israel’s arsenal. Amit was not seeking and did not receive a direct assurance, but based on his recollection of the conversation, and verified subsequently in a telephone conversation between Prime Minister Eshkol and President Johnson, it was clear that the U.S., at least tacitly, supported military action by Israel.

While the counterfactual is unknowable, it is quite plausible that Israel would not have proceeded in its preemptive air campaign, which utterly destroyed the Egyptian Air Force and is widely credited for winning the war, without the backing of the U.S. In many respects, Egypt had already forced their hand; however, the implicit backing of the U.S. lowered the inherent risk of military action. What is clear, is that the obliteration of the Egyptian Air Force, in spite of their seemingly formidable Soviet supplied air defense capabilities, was the critical element of what became an unequivocal Israeli victory. It is also clear that the 1967 war changed the pattern of arms trade between the U.S. and Israel. As shown in Figure 4 below, prior to the 1967 war, France primarily provided Israel’s armaments. Following the 1967 war, France essentially ceases to supply Israel with weapons, and the U.S. becomes Israel’s primary supplier of arms. Also, evident in Figure 4, is that the overall volume of trade increases dramatically following 1967. Furthermore, as shown in Figure 5 this trend was also occurring within the Soviet’s Arab security sphere. Taken together these graphs provide some evidence of a causal pathway operating behind the predication of hypothesis 1.

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190 Ibid.
191 Ibid., 38-39.
Figure 4: Showing Armament Trade to Israel from the U.S. and France from 1954 to 1976.

Figure 5: Showing Armament Trade to Egypt, Syria, and Iraq from the U.S.S.R. from 1954 to 1976.
The behavior of both the U.S. and the U.S.S.R and their respective security spheres in the Middle East during the period surrounding the 1967 Arab-Israeli War, shows a way that increased great power competition causes an increase in arms trade. When great power competition is high, as predicted under bipolarity, the stakes for the great powers in regional contests are higher because the loss of a regional ally or the loss of a regional war increases the power of the great power rival. Under multipolar conditions, the ebb and flow of power from a regional loss would be more diffuse across the various great power rivalries. Furthermore, the increased great power competition occurring under bipolarity in 1967 created an environment that favored mid-range conflict. Subordinate states under the security hierarchy of a great power benefactor such as Israel or Egypt could increase their levels of hostility vis-à-vis one another without risking complete defeat. Accordingly, great powers are willing to enter into regional conflict through proxies as part of their strategy to strengthen their bloc, and regional powers are able to leverage the rivalry to enhance their security position through arms trades and security assurances.

There is however, a potential cost for great powers involved in regional conflicts. In this case, the 1967 war increased both powers’ arms trade and activity in the region. The Soviets essentially rebuilt the Arab (and in particular the Egyptian) military after the war. As shown in Figure 5 above, Soviet trades to Egypt, Syria, and Iraq in 1967 neared 10,000 TIV, a nearly five-fold increase from their prewar baseline of approximately 2,000. Furthermore, Soviet prestige was on the line—their allies, using their weapons, had been resoundingly defeated. Nasser too found himself with limited options—the
costs of increased Soviet weapons were a reduction in Egypt’s independence from Soviet political involvement. The Soviets, who as a result of their basing strategy were more reliant on their relationships in the region than the United States, found themselves militarily committed in terms of equipment and an advisory effort.

The War of Attrition (1967-1970) and The Yom Kippur War (1973)

In the 1967 Arab-Israeli war, the Arab alliance was soundly defeated. Egypt, in particular, had lost almost the entirety of its Air Forces and had lost both land and prestige. The failure of the war to destroy Israel in a bold decisive campaign in 1967 gave way to a strategy of attrition and ultimately another round of open warfare in the Yom Kippur War. The Egyptians’ objective loss—in what amounted to a rout—was also problematic for the Soviet Union. The Soviets were the primary supplier of weapons to the Arab coalition. Their military investment in the region from 1955-1975 totaled 62,014 TIV, of which nearly a third went to Egypt. In other words, Egypt’s loss was also a black mark for the reputation of Soviet military equipment—and by extension the Soviet Union itself.

The primary hypothesis in this study—that increased great power competition increases the volume of arms sales—can partially be explained by the role of reputation. In this case in particular, the reputational cost for great powers was further magnified in two ways. At the macro level, the conflict occurred during a time of marked great power competition. At the micro level, the conflict directly placed Western and Soviet technology against each other. Since the former makes the latter more likely, it is
presumably safe to infer that in periods of heightened great power competition it is more likely that a great powers’ weapons performance characteristics vis-à-vis its great power competitor will be known across the international audience. Objectively in this case, Egypt’s poor military performance had less to do with the Soviet weapons and more with abroad failure to adequately integrate the Soviet equipment into a coherent set of concepts of operations reinforced through professionalized military training exercises. However, this is perhaps clearer in hindsight than it was at the time.

At the time, what was clear was that Israel, armed with Western planes, had unopposed air superiority over the Egyptians’ Soviet supplied air defenses. Equipment losses during the war were dramatically lopsided. Egypt, in particular was eviscerated; total losses are estimated at $2 billion. Critically this included the utter destruction of Arab air assets. In total, over 450 Arab airplanes had been destroyed to a mere 36 lost by Israel. Again Egypt bore the majority of the cost—in the opening attack alone Egypt lost 286 airplanes. Moreover, hundreds of tanks, artillery pieces, SAMs batteries, and miscellaneous combat vehicles were captured by Israeli forces. As shown in the Figure 6 below, the dramatic loss of military equipment in the 1967 war generated an exponential increase in the volume of arms trade from the Soviets to their Arab allies, whereas the U.S. trade to Israel proceeded at a lower volume in a more linear trajectory.

192 Keith L. Carter, "Techno-Strategic Integration" (Naval Postgraduate School, 2012).
193 Oren, Six Days of War: June 1967 and the Making of the Modern Middle East, 305.
194 Ibid., 306.
195 Ibid., 176.
196 Ibid., 305-06.
The most straightforward explanation for this variance is that the massive equipment losses suffered on the Arab side generated greater demand. The relative value of the trade by category is informative, but additional information about the nature of great power involvement in regional competition is garnered from looking more closely at the specific nature of the trade during this period. The combat losses of the Six Day War, and the almost immediate resumption of low scale hostilities by Egypt (later designated the War of Attrition 1967-1970), created steady demand on both sides for armament. As indicated in Figure 6, Russia started almost immediately rearming Iraq, Syria, and Egypt. Egypt’s massive losses generated an exponential increase in the volume of Soviet military equipment that they imported. The U.S. was slower to respond
to Israel’s rearmament needs, nevertheless a steadily increasing supply of weapons (particularly aircraft) was traded to Israel over this period.

Additionally, the standard operational constructs being employed by Egypt and Israel, which predominately involved artillery strikes and small-scale special operations raids by the Egyptian forces and retaliatory airstrikes by the Israelis, drove their acquisition programs as shown below in Figure 8. In this graph, the relative value of weapons exports measured in TIV is shown by weapon category. Russia’s trade to Egypt (particularly in the Air Defense and Missiles categories) reflects Egypt’s attempt to increase the survivability of their interior from Israel’s aerial penetration. Meanwhile Israel’s continued demand for aircraft reflects their desire to have a deep strike capability vis-à-vis their Arab neighbors.

Figure 8: Showing Arms Trade Indicator Values by Weapons Category between the U.S.S.R. and Egypt and the U.S. and Israel from 1967 to 1974.
Putting aside the relative value of the trade and looking more closely at the numbers of systems delivered by category provides further insight into the concepts of operations being employed during the War of Attrition and sets the stage equipment wise for the Yom Kippur War. As shown below in Table 19, Russia focused on replacing the massive vehicle and aircraft losses of the 1967 War, and, as shown by the numbers of air defense systems and missiles, placed considerable emphasis on increasing Egypt’s survivability against aerial attack. In 1967 alone, Russia made deals to deliver 150 MiG Fighter Aircraft (50 MiG-19s and 100 of the more advanced MiG-21F-13), 140 Su-7B Fighter-bombers, and 1,350 tanks (800 T-54s and 550 T-55s). And, in 1968, Russia laid the foundation to deliver over 10,000 of their newly developed man portable SA-7s anti-aircraft missiles.

<table>
<thead>
<tr>
<th>1967-1974</th>
<th>U.S. to Israel</th>
<th>Russia to Egypt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Defense</td>
<td>150</td>
<td>283</td>
</tr>
<tr>
<td>Aircraft</td>
<td>680</td>
<td>737</td>
</tr>
<tr>
<td>Armored Vehicles</td>
<td>832</td>
<td>3,750</td>
</tr>
<tr>
<td>Artillery</td>
<td>706</td>
<td>171</td>
</tr>
<tr>
<td>Missiles</td>
<td>11,822</td>
<td>15,760</td>
</tr>
<tr>
<td>Ships</td>
<td>3</td>
<td>35</td>
</tr>
</tbody>
</table>

Table 19: Showing the Number of Arms Traded by Weapons Category between the U.S.S.R. and Egypt and the U.S. and Israel from 1967 to 1974.

In the aftermath of the 1967 victory, the U.S arms trade to Israel proceeded in a more gradual linear fashion (as shown previously in Table 19 above), and contained fewer overall trades. In terms of armament category, Israel imported a comparable though slightly lesser number of air defense systems, aircraft, and missiles while importing considerably more artillery pieces, and significantly less armored vehicles. The focus of both coalitions on the acquisition of aircraft and the means to defeat them
was in part due to the outsized role aircraft had played in the decisiveness of the Israeli victory and the desire by both factions to penetrate over the hardened lines at the Suez Canal into the interior of the other country. Israel’s focus on artillery is also directly related to their hardening of the defensive positions around the Suez line, while Egypt’s outsized procurement of armored vehicles reflect their need to replace their damaged and captured vehicles from the recent war.

Israel’s arms trade in 1967 and 1968 is dominated by the acquisition of the artillery they needed to shell Egyptian positions on and beyond the opposing bank of the Suez Canal during the protracted war of attrition that punctuates the time period between the 1967 Arab Israeli conflict and the 1973 Yom Kippur War. Over these two years, Israel procured 340 artillery systems of various calibers from the U.S. The majority (240) of the acquisition were the smaller tactical 105MM and 155MM towed artillery systems useful for supporting infantry maneuver and capable of ranges between 11 to 15KM. The remaining 100 systems were the larger self-propelled 175MM and 203MM systems capable of ranges out to 40KM and usually employed by an operational headquarters for counter battery fire and suppression of enemy air defense systems.

Israel also needed to sustain its advantage in airpower. As the War of Attrition wore on, and Egypt’s relationship with the Soviet Union deepened in to a full-fledged advisory effort, the U.S. steadily supplied Israel with upgraded aviation platforms. Between 1971 and 1973, the United States traded 121 A4-E Skyhawks, 117 A-4M Skyhawk-2s, and 166 F-4E Phantom-2s. These aircraft were fully modernized with
upgrades over their predecessors, played a major role in the upcoming Yom Kippur War, and were only retired from service in 2015.\textsuperscript{197}

The trade interaction occurring during this time period supports three of the hypotheses in this study. First, as expected from the previous historical discussion, regime congruity is strongly predictive of increased arms trade. Specifically, during this period Egypt’s ties with Russia deepened and arms trade increased. The failure of the Arab coalition was acutely felt by Egypt president Nasser, whose loss of face exacerbated inter-Arab rivalries and lessened the degree of pan-Arab nationalism that had maintained coalition bonds.\textsuperscript{198} The loss of support from his close Arab allies prompted Nasser to deepen his ties with the Soviets. Nasser would support the Soviet invasion of Czechoslovakia in 1968, and went to the Soviet Union directly in January 1970 to request additional air defenses to help staunch Israel’s air campaign during the War of Attrition.\textsuperscript{199} Ultimately, the Soviet Union would supply massive amounts of air defense equipment, and would also deploy 32,000 soldiers and airmen to advise and surreptitiously participate as armed combatants against Israeli forces.\textsuperscript{200}

\textsuperscript{197} Yoav Zitun, "Iaf Retires Skyhawk after 48 Years in Service," https://www.ynetnews.com/articles/0,7340,L-4738755,00.html.
A second hypothesis in this study, namely that arms trade from major powers to subordinate powers will increase during times when the subordinate power is involved in a conflict, is also operating in this case. The tit-for-tat nature of the combat between Israel and Egypt following the 1967 war highlights how proxy wars between subordinate states generate increased arms trade from major powers. In this case, Egypt combat losses generated an immediate demand to replace damaged and destroyed equipment and to upgrade their existing equipment to more modern variants. Furthermore, Egypt’s rearmament affected the other side of the equation and generated an increased demand for more and more modern weapons in Israel—setting the conditions for increased arms trade by both great powers to their regional proxies. The demand function is easy to explain in this case based on the protracted consumption of war material expected during an enduring conflict. The supply however is less clear. Assuming the benefits of stability for both parties why did the U.S. and the U.S.S.R. continue to provide weapons to their regional allies?

While regime congruity continues to correlate with arms trade relationships, it is not the main variable at work in explaining the increased trade that occurred between Egypt and Israel following the 1967 war. The major hypothesis under investigation in this study provides some insight into this question. Increased great power competition is expected to increase the total volume of arms sales across the international system. The demands of great power competition increase the necessity to create security spheres, and to challenge their rivals for influence in various regions. In this case, the great power competition between the U.S. and the U.S.S.R. was reaching its zenith in a Cold War
between these two states. At the level of grand strategy, the Soviets were still reeling from their strategic loss to achieve parity with the U.S. in terms of forward staging nuclear forces in Cuba.\textsuperscript{201} Although it seemed that initially the U.S. nuclear strategy of massive retaliation had advantages over the Soviets in the areas of submarine-launched nuclear missiles, forward positioned medium range missiles, and strategic bombing capability.\textsuperscript{202} It was becoming clear as the Cold War progressed, that there were problems with the logic of massive retaliation and the U.S. was adopting a more involved strategy in the third world. At the time however, from the Russian perspective, the U.S. Sixth Fleets’ operations in the Mediterranean posed a direct threat that had to be countered by increased alliances and forward basing in the Middle East and primarily in Egypt. The usefulness of Egypt to the Soviets in terms of the larger strategic competition explains Russia’s willingness to expand their trade in support of Egypt’s local conflict, thus solidifying their alliance and securing Soviet access to the region to counter the U.S. Indeed, it is difficult to imagine Russia’s increased and enduring level of support to the region and specifically Egypt in the absence of their great power competition against the United States.

**Conclusion**

Just months prior to the outbreak of the Yom Kippur War, Israeli celebrated its Independence Day in with a parade. On display was their American military acquisitions

\textsuperscript{201} Ibid., 220.
\textsuperscript{202} Ibid.
consisting of F-4A Phantoms, mechanized artillery, troop carriers, and tanks.\textsuperscript{203} Meanwhile the Arab coalition was preparing to make good on the late Nasser’s promise concerning the captured territories in the Sinai and the Golan Heights “which was taken by force will be returned by force.”\textsuperscript{204} In the immediate period before the outbreak of the war, Israel’s intelligence apparatus noticed both the increased shipments of Soviet arms and the Egyptian preparations along the Suez line.\textsuperscript{205} Credible reporting concerning Egypt and Syria’s intention to start a major offensive were directly relayed to Prime Minister Golda Meir and the members of her cabinet on the 4\textsuperscript{th} of October. Although Meir mobilized the entirety of the IDF reserves, she also concluded that a preemptive airstrike was not in Israel’s best strategic interest. Given the decisive role that the preemptive airstrike played in the 1967 war, this decision is an informative reflection of the role Israel’s reliance on the continual supply of U.S. arms played in shaping their behavior as a subordinate state in the U.S. security sphere.

This chapter compliments and expands some of the key findings about the role of great power competition, regime similarity, alliances, and conflict in arms trade behavior demonstrated in the earlier chapters. Specifically, this chapter directly explores the relationship between great power competition and the arms trade. The case presented above was deliberately narrowed to look specifically at arms trade behavior during a period of heightened great power competition in a region where there was a long-

\textsuperscript{204} Oren, \textit{Six Days of War: June 1967 and the Making of the Modern Middle East}, 319.
standing iterative conflict. During the period presented in this case, both the United States and the Soviet Union were seeking to expand their influence regionally in the Middle East as one part of their broader global competition. The winnowing of great power alliance possibilities predicated under a bipolar international system narrowed the options for the states in the region.

The stakes of increased great power competition served to, in effect, lower the barriers of the U.S. and the Soviet Union for access to their armaments. This was clearer for the Soviet Union whose requirement for land bases in the Middle East made it especially likely to maintain its arms trade commitments in spite of subordinate state misbehavior. For importing states, Israel, Egypt, Syria and others, directly made political decisions that took into account their reliance on either the U.S. or the Soviet Union for arms in such a way that signaled their regime similarity and alliance commitments. In effect, access to arms, as presented in this case served as a tool for great powers to exercise their influence via proxies in a contested region during a period of larger global competition. And, for importing states the access to arms presented an opportunity for them to pursue their interest in the region within the limits and constraints of their respective great powers policy agenda and norms.

This chapter compliments the earlier quantitative work by operationalizing the process at work for the variables under study, and expanding the analysis to periods of heightened great power competition. Previous qualitative work looked at arms trade behavior at the conclusion of the Cold War when the United States enjoyed a period of unprecedented international hegemony. This chapter provides additional clues about
arms trade behavior during a period of great power parity. Going forward it is important to consider and make some predictions about the expected global impacts to arms trade behavior as China emerges as a peer global power, and Russia continues its revanchist resurgence.
CHAPTER 5: Conclusion

Introduction

Throughout the previous chapters the relationship between power, arms, and alliances was explored using a mixed methods approach that looked holistically at arms trade in the aggregate through a multivariate regression, and then used a case study approach to look historically at arms trade behavior during periods of great power fluctuation. In this chapter, the major findings of this study will be restated and evaluated against the original hypotheses, current arms trade behavior will be surveyed against the findings in this study, the contribution of this research will be evaluated, implications for policy explored, and future research areas identified.

Summary of Findings

The central question in this project concerns the relationship between great power competition and arms trade behavior. To look at this relationship a series of hypotheses were developed, and given the examination of these hypotheses in the previous chapters, some intermediate conclusions were made about their effects. In this section, the evidence collected from the quantitative section and from each of the cases will be evaluated as a whole against the initial hypotheses to see what conclusions can be drawn.

H1: Great power competition will create increased volume in armament trade across the international system.

Hypothesis 1 predicted that great power competition would increase the volume of the arms trade. Support for this hypothesis was found in the quantitative analysis and
further exemplified in the qualitative case studies. For the majority of the time period analyzed, the U.S. and the U.S.S.R. were the two great power competitors in the international system. However, at various points throughout the bipolar Cold War the intensity of the competition differed. The quantitative results showed that when the U.S. held the preponderance of the power, or alternatively, when the U.S. faced less competition from a rival great power, there was a reduction in the overall volume of arms traded across the international system.

Historically, the U.S. held a dominant position *vis-à-vis* its great power rival during the Cold War at two points: at the beginning, because the U.S. industrial base and infrastructure were spared from the destruction of the Second World War and, at the end, following the collapse of the Soviet economy throughout the late 1980s and early 1990s. The variation in the amount of great power competition generated two historical case studies. The first, looked at U.S. and Soviet arms trading behavior at the end of the Cold War when the level of great power competition was decreasing. This case study showed the interplay between decreasing great power competition, arms trade, and alliance shifts. In keeping with the prediction that there is a linear relationship between the level of great power competition and the volume of arms sales and despite the United States’ steadily expanding arms trade into the former Soviet security sphere, the total volume of arms trade was reduced. In other words, the increase in U.S. arms sales did not match the decrease in Soviet arms sales because the demand for weapons across the region was altered by the decreasing amount of great power competition.
The second case study looked at the Arab-Israeli wars (which spanned the height of the Cold war) iteratively when the level of great power competition was high. In this case study, the steady demand for weapons between competing regional actors to achieve their political objectives interacted with the great power competition between the U.S. and the Soviet Union. This case showed one way that the level of great power competition causes the observed relationship to the arms trade. Namely, when great power competition is high there is an increased likelihood of proxy wars, which stimulate the demand for arms. The long duration of the regional proxy war stimulated an arms race between Israel and the Arab coalition. The employment of weapons can increase the stakes of the competition for great powers by generating reputational risk for the performance of their weapons systems. The Soviet Union doubled down in Egypt following their loss in the 1967 Arab-Israeli war, in part because their technology had been beaten so resolutely.

\textit{H2: Trade will be highest between major powers and mid-range powers.}

In contrast to the original hypothetical relationship, which postulated that trade patterns would non-linear—with mid-range powers importing more than major powers—the quantitative analysis showed fairly strong evidence of a linear relationship between the level of the importing states material power and the volume of arms trade. Indeed, of all the measures, importing state material power, as captured by CINC scores, had the highest impact on the volume of weapons traded.

\textit{H3: Alliances will increase arms trade.}
There is strong evidence of a positive relationship between alliances and arms trade volume. Alliances were shown to have the second largest impact on the volume of arms traded following the importing states’ CINC score. Further analysis in subsequent models comparing behavior between major powers, showed a dramatic difference in the effects of alliances on the arms trade behaviors of the U.S. and Russia. When analyzed independently, an alliance with the U.S. was shown to have a positive and fairly large effect on arms trade, but the results did not reach the same levels of statistical significance as the main effects models where all major powers were considered together. In the Russia only specification the results of an alliance were slightly greater than three times the size of the U.S.-only model and were highly statistically significant. The difference in the level of statistical confidence between these two results suggest that there was more variance in the underlying U.S. behavior. In other words, having an alliance with the U.S. was not as strong a predictor as having an alliance with Russia on increases to arms trade.

Subsequent qualitative work expanded the account of relationship between alliances and the arms trade. The first case looked at the end of the Cold War when the great power shifts in the international system created new alliance opportunities. This case looked directly at the formation of alliances and the initiation of arms trade to further explain the quantitative relationship identified earlier. Here alliances, while predictive of arms trade, were shown not to be necessary nor sufficient for the initiation of arms trade. Furthermore, the impact of great power competition proved to be a greater factor in explaining the arms trading behavior than alliance formation, primarily because
much of the arms trades from the west occurred after the Soviet collapse but prior to NATO accession.

During the second case study, when great power competition was at its height, the U.S. and the Soviet Union competed against each other through proxies in the Middle East. While both great powers traded arms to the region, their behaviors were different. The U.S. approached its arms trade relationship with Israel cautiously; preferring to stay out of the conflict, the U.S. was reluctant to provide arms to Israel. U.S. arms sales were also implicitly conditioned on how they were used in a way that Soviet sales to Egypt were not. Thus, the Knesset actively considered maintaining their access to U.S. weapons when they choose not to launch a preemptive attack on Egypt in 1973—despite having credible intelligence that Egypt was preparing an offensive campaign.

Despite Israel’s determination to engender and maintain access to U.S. arms, the volume of arms traded to Israel by the U.S. never approached the level the Soviet Union was delivering to its Arab neighbors. Trade within alliance security spheres, in this case, interacted with the strategic needs of the competing great powers. Simply put, Russia’s stakes in the region were higher because of their grand strategic requirements for land basing to counter U.S. sea power in the Mediterranean and Red Seas. For Russia, the regional stakes were higher than they were for the United States. The importance of the ally network for Russia increased their willingness to provide arms and other direct military support to the Arab coalition despite their losses and international condemnation.
**H4:** Arms trade from major powers to subordinate powers will increase during when the subordinate power is involved in a conflict

The results demonstrated a positive relationship between the volume of arms trade and the importing state’s involvement in an interstate conflict. Conflict inevitably creates a demand for weapons, and one of the ways great powers compete is through proxy wars. The type of conflict was disaggregated in the quantitative analysis to gain additional information whether there were different arms trading behaviors for interstate versus intrastate conflicts. Presumably great powers are more interested in competing with each other through their alliances in interstate conflict than supporting one faction or the other in an intrastate conflict. As predicted, trade volumes are higher when the importing state is involved in an interstate conflict, but not meaningfully higher when the importing state is involved in an intrastate conflict. The Arab-Israeli case study also shed light on the mechanisms of great power arms trading behavior in support of their proxies during an interstate war. Egypt’s massive equipment losses in the 1967 war prompted Russia to export vast amounts of weaponry. Russia also increased its mil-to-mil advisory effort, and their clandestine participation in the conflict. In this case, the head-to-head clash of Soviet and U.S. technology increased the reputational costs for the great powers because the failure of their proxy was also indicative of a failure of their equipment. The Soviet Union in particular doubled down in their transfer of anti-aircraft artillery and the associated sensor array to detect incoming aircraft to Egypt following the 1967 war to shore up their reputation.

**H5:** Nuclear powers will have higher volume of weapons trade.
This hypothesis was not supported.

\textit{H6: Regime congruity will increase arms trade.}

Based on the evidence, there is more trade between states having similar regimes. This result provides a more nuanced finding about the roles of similar regimes and alliances, which are both theoretically designed to answer the question about which states great powers trade their weapons to. The result for regime similarity is smaller than it is for alliances. Understanding that both regime similarity and alliances positively affect the volume of weapons traded provides a greater range for talking about arms trade behaviors. When possible, states prefer to trade within their alliances. Short of a formal alliance, states having a similar regime type receive a greater volume of arms.

\textit{H7: Democratization precedes arms trade from democratic regimes.}

Regime similarity is not fixed in time. In both of the case studies, states engaged in behavior that increased their level of democratization. The deliberate steps noted in the overview of NATO’s Membership Action Plan in the earlier analysis of the realignment of Eastern Europe were clearly oriented towards democratizing former Soviet States. To some degree NATO institutionalized democratization as a requirement for joining the alliance, and through that same process, the arms trade to prospective members generally increased supporting Hypothesis 7. However, it would be too bold to say that democratization is necessary for arms trade. It is clear from the evidence that as states take steps to change their political landscape, they receive more arms. Though it was not specifically investigated in this project, a logical area for future research would
be to look at the behavior of states moving toward increased autocracy and see if there is a similar relationship to arms trade among autocratic security spheres of influence.

Taken together the findings above answer the question: Why do great powers trade arms in the following ways? Great powers trade weapons to increase their security assurances. When competition between great powers is high, the arms trade increases because great powers in essence lower their threshold about who they are willing to trade with.

**Contribution to the Discipline**

The work in this dissertation broadly contributes to the field of international relations in the following ways. First, it expands the understanding of the politics behind arms trade decision making. The main finding—that a great powers’ willingness to trade its weapons is in part contingent on the level of great power competition they are experiencing in the international system—is useful for explaining some of the variation in arms trade behavior. The level of competition affects great power arms trading behavior by changing the decision-making framework. When the threat of peer or near peer competitor presents itself, the other great powers seek to solidify or expand their security spheres of influence to compete against the perceived rival lowering barriers to arms trading. For example, there has been a steady increase in arms trade volume around the globe since a low point in the early 2000s, which in line with the findings in this project, is being driven by the rising level of great power competition between the U.S. and China, and the U.S. and Russia.
Since the rise of Vladimir Putin in the early 2000s, Russia has increasingly inserted itself as a player in the great power game. The Russo-Georgian War in 2008, the annexation of the Crimean Peninsula in 2014, Russia’s involvement in the Syrian Civil War, and their active manipulation of the 2016 U.S. presidential election, among other things, are consistent with Russia’s strategic objectives. Whether Russia really has the economic capacity to operate as a great power or if they are more of a spoiler is debatable, but their actions toward their strategic objectives of regaining a buffer zone in Eastern Europe, undermining the NATO alliance, and generally impugning the western world order without question will engender a competitive response. Elements of this resuming competition are already present in the U.S. and Russia’s recent arms trade activity. Russia’s involvement in the Syrian conflict has increased their arms exportation to the region by 19% from 2014-2018 over the 2009-2013 timeframe with Egypt and Iraq both increasing their importation of Russian weapons.206

Similarly, North Africa, China, Russia, and the U.S. are positioning themselves for access to the Mediterranean Sea through their arms sales. Russia, is using arms sales to Algeria to ensure its access to the Mediterranean Sea in support of their strategic objective of destabilizing Europe. The U.S., seeking to counter Russia, is actively competing by arming Morocco. China, France, and Germany are also selling arms in what has become a very important region geostrategically due to the seaports of debarkation for migration into Europe, and control of the sea lines of communications through the Mediterranean. The recent competition in this region between major powers

has led to a 20% increase in the volume of arms trade to North Africa over the 2009-2013 levels; North Africa accounts for 75% of all arms traded to Africa.\textsuperscript{207}

While the competition with Russia has increased in recent years and has generated a competitive response from the U.S. and its Western allies—including increases to the volume and expansion in the distribution of arms—Russia’s limited economic potential will constrain their great power ambition. China, on the other hand, has risen both economically and militarily and is start to exhibit some signs that it is pursuing a long-term strategy of regional hegemony and global competition. China’s expansion of their island defense chain in the South China Sea, their economic expansion and exploitation in Africa (through a combination of infrastructure development and natural resource extraction), their belt and road initiative, and their continued economic influence have increased the salience of a U.S.-China competition over the last decade.

Commensurate with their economic growth, the Chinese military-industrial complex has grown in size and capability. As expected, based on the effects of increasing great power competition, Chinese weapons exports have grown nearly 200% since 2000.\textsuperscript{208} The majority (70%) of China’s weapons trade occurs regionally within Asia, but they are facing limited export markets because as predicted, based on alliance and regime effects, India, Australia, South Korea and Vietnam do not import Chinese

\textsuperscript{207} Ibid., 8.
\textsuperscript{208} Ibid., 5.
China’s extension of their security sphere of influence in Asia has increased pressure within the U.S. for a competitive response.

Under the Obama administration, the U.S. deliberately pursued a strategy oriented on engagement in the Pacific. Australia, whose longstanding alliance and high degree of regime similarity with the U.S. make it the most likely trading partner, is unsurprisingly the primary importer of U.S. armaments in the region. Indeed from 2014-2018, 60% of Australia’s total imported arms originate in the U.S., which accounts for 7.7% of the total U.S. arms exports—making Australia the second largest importer of U.S. arms behind Saudi Arabia. Other major importers in the region include South Korea, Japan, and Taiwan.

The types of equipment the U.S. is exporting to the region is also of interest from a great power competition perspective. There is a growing realization among U.S. strategists that recent Chinese acquisitions of anti-access and area-denial (A2/AD) technology and the development of a comprehensive strategy for its employment, will threaten the United States’ ability to project power in the region. Accordingly, the U.S. began transferring the types of weapons it would need to fight its way into a Pacific theater of operations to its regional allies. In 2018, Japan moved to acquire 105 F35s—a fifth-generation stealth multirole aircraft designed to defeat air-to-ground defensive

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209 Ibid.
210 Ibid., 2-3, 6.
Further sales to counter A2/AD systems include ship and land-based AEGIS combat systems to Japan, as well as Patriot air-to-ground missile defense systems to South Korea and Taiwan.\textsuperscript{213}

Despite the rhetoric about rebalancing to the Pacific to counter China, and taking into account the U.S. trading activity listed above, Asia has not overtaken the Middle East as the primary destination of U.S. arms exports. Foreign military sales to the Middle East increased 134\% since the 2009-2013 data, and accounts for 52\% of total U.S. arms exports; Saudi Arabia alone comprises 22\% of the total U.S. arms trade.\textsuperscript{214} Demand within the Middle Eastern region is clearly being driven by the ongoing conflicts in Syria and Yemen, as well as the perennial conflict between Israel and Hezbollah. Many of the United States’ western allies have also increased their trade into the Middle East. Great power involvement in the region and in those conflicts further explains the trend.

Second, these findings contribute and extend some of the existing literature in international relations. Understanding the way that power competition affects the arms trading behavior of major powers gives Waltz’s insight about internal and external balancing more depth. Waltz is primarily focused on how the structure of the international system affects stability; great power behavior varies under different arrangements of great powers. Bipolar systems are presumed to be more competitive because the powers are so clearly defined that the stakes approach a zero-sum logic.\textsuperscript{215} In

\textsuperscript{212} Wezeman et al., "Trends in International Arms Transfers, 2018". 3.
\textsuperscript{213} Ibid., 4.
\textsuperscript{214} Ibid., 3.
\textsuperscript{215} Waltz, Theory of International Politics, 171.
a multipolar arrangement, there is a diffusion of responsibility because the interests and the stakes of the competition for the various great powers are less clear.\textsuperscript{216} In terms of alliances however, the dynamics of competition are reversed. In a bipolar system, the competition for alliances is less important because the smaller states that comprise the remainder of the international system are not powerful enough to change the balance of power by shifting their alliances.\textsuperscript{217} In a multipolar system, the management of alliances is paramount because defections can upend the existing balance; the formation and maintenance of alliances will be more contested.\textsuperscript{218} However, Waltz’s account of the relationship between the number of great powers in the international system and the value of alliances is focused on the alliances between great powers.

Multipolar systems, unlike bipolar systems, make it possible for blocks of great powers to ally with each other against other great powers, dramatically affecting power concentrations. Moving past structural arguments to one that looks at competition may be more helpful to explain great power behavior. Great powers are in competition to extend their global reach and influence. More powers in the system is presumed to increase the competition, because buyers will have more options, which will compel great powers to lower their barriers for sales. Increased competition makes attracting and maintaining alliances a primary concern. One method is through the creation of alliances. Given the relationship between arms sales and alliances, it seems likely that arms sales serve more as a tool to maintain alliances than to attract new alliance

\textsuperscript{216} Ibid.
\textsuperscript{217} Ibid., 169.
\textsuperscript{218} Ibid., 165-68.
When great powers transfer their military equipment, they are making their alliance network resilient to defection because over the life span of the equipment, the requirements for upgrades, repair parts, and maintenance will tie the two countries together.

These findings roughly compliment and extend Stephen Walt’s early work on alliance formation. Specifically, Walt’s finding that foreign aid does little to create alliances is similar to the conclusions found in the relationship between arms trade and alliances found here.219 There are a couple of ways that the findings about the relationship between the arms trade and alliances examined here need to contextualized. First, unlike Walt, in this study arms sales are disaggregated from the general category of foreign aid and considered independently, which makes the information drawn from their analysis more specific to arms. Walt’s primary independent variable that predicts the creation of an alliance is the balance of threat, which expands the logic of balance of power by stipulating that states balance against states perceived to be the biggest threat, and there is not necessarily a relationship between presenting the biggest threat and being the most powerful.220

In this study, great power competition is the primary variable investigated to look at the resulting changes to the volume of arms traded. Arms trades can and often do occur between states that are not allies, but when states are allied there is an increase in

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220 Ibid., 263.
the volume of arms traded. Because Walt’s analysis and this one specifies different dependent variables, there are some differences in the interpretation of the results even though both studies are talking about competition, alliances, regime similarity, and arms trade (foreign aid). The effect of increased great power competition is felt within the governments of the great powers and serves to change the political calculus of the transfers of arms. This finding is analogous to Walt’s in that as the level of threat rises the importance of ideological similarity lowers for alliance building. Unlike balance of threat, the level of great power competition is somewhat agnostic about how it is perceived outside of the great powers themselves. Arms trade can be undertaken absent an alliance (or a desire for an alliance) by a great power seeking to complicate, disrupt, or foil a competing great power’s agenda. Russia’s deal in 2019 to sell Turkey S-400 anti-aircraft missiles is a potential example of this. The decision to trade weapons and the decision to form alliances are different though they can overlap under certain conditions.

Second, in Walt’s original analysis, which occurred prior to the end of the Cold War, there was a shortage of available data on the arms sales of many of the regimes in the former Soviet security sphere. As the data from the Cold War has improved, and by looking closely at the post-Cold War patterns of alliance formation and arms trading patterns, the conclusions here are more robust. Walt’s finding that the provision of foreign aid, which is identified as a type of balancing behavior, is only marginally impactful for alliance formation can be updated to take into account the data from Eastern

\[221\] Ibid.
Europe following the Cold War.\textsuperscript{222} Already in Walt’s account there is some internal tension in his case analysis on the Middle East regarding the behavior of Israel who “the United States has been able to extract significant concessions from.”\textsuperscript{223} As NATO expanded following the conclusion of the Cold War, the NATO alliance was able to purposely influence the domestic political and economic development of perspective member states through the specification of the Partnership for Peace and the Membership Action Plan. In spite of the relative decline of the Russian threat, the majority of Eastern Europe sought an alliance with NATO. Rearmament through the provision of western and predominately U.S., arms was a paramount feature of that realignment.

Understanding how the level of great power competition affects state decisions to import and export weapons helps explains Caverley and Kapstein’s finding that show a declining market share for the U.S.\textsuperscript{224} As the U.S. continued to develop and produce weapons for the use of the United States’ military, states that did not feel a sense of responsibility for policing the global commons required different armaments than the types of high-end expensive weapons that the U.S. produced.\textsuperscript{225} Operationally, this describes much of the arms market dynamic as the threat of the Soviet Union waned. During that time, NATO expanded into Eastern Europe as described in Chapter 3. Simultaneously, many NATO members recouped a peace dividend in high-tech armament procurement while simultaneously supporting military operations that required

\begin{footnotesize}
\textsuperscript{222} Ibid., 268-69.
\textsuperscript{223} Ibid., 268.
\textsuperscript{224} Caverley and Kapstein, "Disruptive Innovation and the Global Arms Trade," 2.
\textsuperscript{225} Ibid.
\end{footnotesize}
less sophisticated operations in Afghanistan. As this study has shown, when great power competition is lower the volume of arms traded is reduced because states are more likely to trade within their alliances or to other states with similar regimes because the demands to maintain a security sphere oriented against a peer threat is reduced. Conversely, as the level of great power competition increases and the need to orient an alliance network towards a high-end threat becomes manifest, the volume of trade will rise.

**Policy Implications**

United States’ policy makers are becoming increasingly oriented on the potential for a new era of great power competition. Although this is a global competition, there are some regions that are more contested than others. Specifically, the Pacific, the Middle East, Africa, and Europe. The 2017 National Security Strategy (NSS) clearly asserts a doctrine of “principled realism” and mentions China and Russia multiple times by name as competing against American power.\(^{226}\) Given this conceptualization of the international environment by the United States, it is likely that the recent trends observed above will continue. There is already some tension about the potential role that the arms trade plays at work in U.S. foreign policy. One the one hand, the growing level of great power competition should serve to lower barriers and facilitate a higher degree of trade. On the other hand, there is concern about the types of regimes the U.S. is trading to. Clearly, U.S. politicians should be concerned about funneling weapons into regimes that

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could potentially use them towards nefarious ends, but there should also be concern over
great power balances in contested regions.

This tension is currently operating most clearly in the Middle East in Saudi Arabia
and Turkey. The U.S. debate over arms sales to Saudi Arabia has revolved around
normative arguments to cease arms sales to induce behavioral changes. The Trump
administration and other governments have faced pressure to alter their arms trade
agreements with Saudi Arabia following the death of Jamal Khashoggi, and to staunch
Saudi Arabia’s use of these weapons in their campaign against Yemen.\textsuperscript{227} While some
Saudi Arabia’s lesser trading partners such as Denmark and Finland ceased their trade,
Germany is the only major power of Saudi Arabia’s four leading exporters to do so.\textsuperscript{228}
The other three major exporters to Saudi Arabia—the U.S., the U.K., and France have not
suspended their arms sales in spite of political pressure.\textsuperscript{229}

In the current state of the international system where there is increasing
competition between the U.S. and China, and the U.S. and Russia, the role of normative
arguments (at least in this limited anecdote) appear not to outweigh the fear of losing
ground in great power competition. While the continued sale of Arms to Saudi Arabia is

\textsuperscript{227} There is some evidence in the historic record, that behavioral changes can be
coerced to maintain favorable access to arms, for example, the change in Israel’s
strategy of aerial preemption which was used effectively in the 1967 war before
they were a major recipient of U.S. arms vice the 1973 Yom Kippur War when Israel
refrained from preemptively striking Egypt specifically to maintain their access to
U.S. weapons.
\textsuperscript{228} Angela Dewan, "These Are the Countries Still Selling Arms to Saudi Arabia," CNN,
\textsuperscript{229} Ibid.
being debated, and there are factions of the legislative branch that oppose continued sales, the Trump administration in particular has been overtly opposed to ceasing U.S. sales to Saudi Arabia. The Trump administration cites Saudi Arabia’s role keeping Iran in check through a proxy war in Yemen, their continued support of the fight against Radical Islamic Terrorism, the revenue gained by U.S. corporations through arms sales, and the concern that if the U.S. ceased its arms sales, its great power competitors would rapidly fill the void. Given the specific concern about Russia and China benefiting from the U.S. cancelling its contracts with Saudi Arabia, it seems clear that the Trump administration views the U.S. arms trade as a frontier of great power competition. Other members of the U.S. government do not necessarily share the executive branch’s view. Highlighting the role of two-level games in arms trade policy, the current polarized state of U.S. politics makes it hard to disentangle the elements of foreign policy being pursued in support of a U.S. grand strategy from the domestic political benefits each party is getting from opposing the other.

In terms of the variables examined in this dissertation it is likely that the U.S. arms trade to Saudi Arabia will continue in the long run. Specifically, Saudi Arabia has a modern military and a strong economy, they are involved in a regional war, and they have a long-standing relationship with the U.S. In addition to its significant oil reserves, Saudi Arabia commands a geostrategic position in the Persian Gulf and serves as a

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regional balancer to Iran. Moreover the U.S. is currently concerned about a growing level of great power competition, much of which is taking place in the Middle East where the U.S. has relatively few allies. While the regime similarity between the U.S. and Saudi Arabia is low, the levels of the predictive variables mentioned above suggests that the arms trade relationship between the U.S. and Saudi Arabia will continue—though there may be a short-term decline as the U.S. seeks to compel behavioral changes within the Saudi regime.

From a policy perspective though the U.S. should be cautious about how much force it tries to exert against the Saudis through a series of blocked or contingent arms sales. If the U.S. overplays its hand, then it is likely that Russia would insert itself as a supplier of arms—expanding their presence in the Middle East. With Russia already complicating U.S. ground actions in Syria, consolidating their position along the sea lines of communication through the Mediterranean in North Africa, and seeking to extend their relationship with Turkey, the great power stakes are increasing in the region at a time when U.S. Iranian relations are at a low point. Iran remains the primary threat in the region for the U.S., and countering them will require a cohesive alliance network that includes Saudi Arabia. Given these considerations, the better course for U.S. policy with Saudi Arabia is to continue to fulfill outstanding contacts and work to improve regime behavior through diplomatic channels.

The United States relationship with Turkey has also experienced some turbulence over arms sales as a result of a 2019 Russian arms deal for S-400 missile-defense systems. This is a highly unusual move of a long-term NATO ally seeking advanced
military technology outside of the NATO framework. Turkey’s willingness to accept an arms trade deal from Russia is clearly a response to the declining relationship between them, the U.S., and the West generally. Turkey’s grievances are over the conduct of the war in Syria, the perceived involvement of the United States in the 2016 coup attempt, and the criticism of the increasing autocracy of the Turkish government. Already the U.S. has cut off the delivery of the fifth generation F-35 Joint Strike Fighters pending Turkey’s withdrawal from the Russian deal.\textsuperscript{231} Additionally, Turkish pilots and aviation maintenance personnel currently training on the airframe in the United States have been removed from training but allowed to remain in the U.S. while the dispute is resolved.\textsuperscript{232} Ostensibly the central concern for the U.S. is that Turkey’s use of the Russian S-400s while being used in conjunction with “friendly force” F-35s would capture information about the stealth capabilities and radar signature of the F-35s that Russia would gain access to and proliferate.\textsuperscript{233} Ultimately if Turkey chooses Russia there could be ramifications for Turkey’s continued participation in the NATO alliance, which plays directly into Russia’s hand of fracturing the Western liberal order. The U.S. has already

offered to sell Patriot Missile Systems—a comparable and NATO interoperable system—to Turkey. The brinksmanship between the U.S. and Turkey, is fundamentally a question of arms and alliances. Turkey is far from an ideal ally, however, the potential damage to the reputation and solidarity of NATO if they leave the alliance to align with Russia, would not benefit U.S. interests in the long run and would embolden Russia to further erode the alliance. U.S. policy makers simply cannot accept the possible compromise of the F-35’s technology, and Turkey is seemingly unwilling to renege on the Russian deal. Policy makers would be better served by offering Turkey better ways to enhance their missile defense systems with a subsidized trade of U.S. systems. Failing to entice Turkey through subsidized missile defense sales, the U.S. should suspend the F-35 indefinitely while continuing to sell arms that do not run the risk of compromise while increasing efforts to engage in diplomatic and mil-to-mil cooperation. In the majority of the possible scenarios, Russia is the winner in this exchange—the U.S. needs to relook its arms trade strategy vis-à-vis Russia to prevent further erosion of its alliance networks.

While Russia’s recent revanchist activities in the Middle East warrant a measured response from the U.S., the growing great power competition with China is likely to be more significant. Like other historical great power contests, the emerging contest between the U.S. and China will take place on a global scale and will require a cohesive strategy from across all of the elements of national power to be effective. Already, in the early stages of this contest, two regions have emerged where U.S. and Chinese interest

are in opposition—the Indo-Pacific and Africa. In the Pacific, China seems intent on pursuing a strategy of regional military hegemony.\textsuperscript{235} To date this has mostly taken the form of establishing a perimeter of forward bases throughout the South China Sea. Strategically, this perimeter dominates the sea lines of communication through the region, and creates a depth of terrestrial basing for anti-access / area denial weapon systems for a theater defense of the mainland.\textsuperscript{236} Much of China’s actions in claiming or creating islands along the Nine-Dash line is contested by other countries in the region, but ultimately, they lack the power to contest China in any meaningful way. China has also been increasing its military capacity to project power into Taiwan and to conduct expeditionary campaigning more generally.\textsuperscript{237}

The U.S. has identified three lines of effort in its Indo-Pacific strategy:

Preparedness, Partnership, and promoting a Networked Region.\textsuperscript{238} In part this strategy relies on forward posturing combat-credible forces in conjunction with regional allies and partners to limit competitors from seizing their objectives before the U.S. can mobilize from the continental United States.\textsuperscript{239} The focus on interoperable alliances and “offering financing and sales of cutting-edge U.S. defense equipment to security partners” ensures that the sale of U.S. weapons will be a prevalent feature of this strategy.\textsuperscript{240} Already specified

\textsuperscript{236} Ibid.
\textsuperscript{237} Ibid., 8-9.
\textsuperscript{238} Ibid., 17.
\textsuperscript{239} Ibid., 18.
\textsuperscript{240} Ibid., 21.
are the sale of interoperable missile defense systems to Japan and Australia, which follows the patterns observed in Europe as the NATO alliance expanded where more capable and stable allies received greater access to advanced weapons. From a policy perspective, the sale of weapons and the increased focus on partnerships, is at risk of being hollow without a larger organizing principle.

As China amasses military and economic power in the region and, depending on the degree to which they attempt to coerce their neighbors, it may be time to revisit the idea of a mutual defense treaty similar to the defunct Southeast Asia Collective Defense Treaty (SEATO). Other associations in the region, such as the Association of Southeast Asian Nations (ASEAN) and the Tran-Pacific Partnership (TPP), focus primarily on economic relationships. A collective defense treaty on the other hand, would aim to create an interoperable military alliance. It would be a mistake to blindly apply lessons from the U.S. experience in the Cold War against the Soviet Union to China in the 21st century; nevertheless, the creation of a formalized defense alliance in the Pacific could consolidate the alliances the United States already has in the region. Specifically, the United States could leverage the longstanding relationships it has with many countries in the regions like Australia, New Zealand, Japan, S. Korea, the Philippines, among others, into a cohesive whole oriented on maintaining freedom of navigation throughout the region and addressing regional security concerns. Drawing from NATO, the benefits of a formalized regional alliance versus the collection of separate bilateral and multilateral alliances currently in existence, would be the establishment of guidelines and a pathway to membership (similar to the Membership Action Plan). The U.S. is already promoting
democratization, selling weapons, and engaging in mil-to-mil partnerships; creating a formalized collective regional mutual defense alliance would extend the actions already being undertaken and serve to balance China’s growth in the region.

On a more global scale, China’s Belt and Road Initiative represents a comprehensive strategy of economic and infrastructure investment to advance its position as a global economic superpower in the 21st century. Not all of China’s activities in pursuit of this agenda are being well received, and some of their actions are creating competitive space for the U.S. to provide an alternative partnership. For example, in Africa, China and the U.S. (among others) are competing for market share in a large underdeveloped economic market. While it is a mistake to think of a continent the size of Africa monolithically, the stakes in the region are high. Stated U.S. interests are broadly aimed at improving access to economic markets, increasing the political stability, and countering violent extremist organizations operating in ungoverned or weakly governed spaces. 241 Unlike in the Pacific, where there are a series of long-term stable U.S. allies, policy in Africa is more uncertain and involves greater risk. Policy wise there are few opportunities for increased arms trade and alliance formations. Russia has a dominant position in Algeria, and the U.S. is aligned with Morocco, which represents the only African countries in the top 40 list of arms importing states. 242 That both countries are in North Africa is not surprising given the geostrategic position along the Mediterranean Sea and feeding into the back door of Europe. And in sub-Saharan Africa, China is the

second leading arms exporter behind Russia and ahead of the U.S. The U.S. and China both have military bases in Djibouti whose port is theater strategic logistics asset, and there is rightly concern that if Djibouti defaults on its Chinese owned debt, the port will be “leased” to China similarly to what happened to Sri Lanka in 2017. This pattern would follow what has emerged as the “debt-trap diplomacy” criticism of Chinese heavy investment in relatively risky African Infrastructure projects in support of their theater dominant Belt and Road Initiative. This line of criticism creates some strategic space for the U.S. to compete for soft power influence, which should include continuing and expanding the already existing mil-to-mil relationships, and looking for opportunities to expand its arms trade into the region in support of forging alliances.

**Limitations and Future Research**

There are many limitations to the research presented in this study; there are three that deserve specific discussion. First, there is an outsized representation of the Cold War in the data that generated the quantitative analysis, and the historical cases. At a minimum this implies that the results should be considered cautiously, and at worst, it implies that the results cannot be extended past the historical period that generated them. Inferentially though, focusing more on the logic of competition instead of the structure of the international system makes the results valid under any arrangement of great powers.

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The ways that great power balancing behavior unfolds in bipolar versus multipolar systems may differ but responses to competition are likely similar.

The second major limitation, is that the analysis presented is derived from data that look at the trade in conventional military weapons designed purposely for military use usually by corporations associated with a state’s military-industrial complex. However, there is a growing use of civilian off-the-self technology for military applications; the proliferation of civilian technologies with military application has several implications for this study. First, to the degree that it is possible for states to attend to their security needs through civilian off-the-shelf technology, the role that the transfer of high-end technology plays in solidifying alliances will be reduced. Second, the transfer of weapons is highly controlled while the availability of off-the-shelf technology can generally be assumed to occur in a more or less open market system. This implies that as civilian technology grows in its martial capacity, great powers will lose the ability to capitalize on their control of the arms market to shape their security spheres.

Third, this study did not explore the monetary inducements to the arms trade in depth. While there is an economic component to CINC scores and GDP was considered when looking at which states represented major powers, the economic impacts of foreign sales and the potential political calculus involved in maximizing those effects was considered as secondary to great power competition. Clearly there is a lot of money involved in foreign military sales, and given the powerful domestic effects of economic inducements as well as the considerable lobbying influence of military-industrial
corporations it is likely that economic considerations affect the political decision making for the sale of arms in a way that does not necessarily have to be tied to great power competition.

The limitations mentioned above offer some immediate areas of future research that supports a developing an arms trade research agenda. As identified above, looking more closely at the role of civilian off-the-shelf technology is an important step to identifying whether the abilities of great powers to attract and maintain security spheres of influence through arms access is lessened. Second, the nature of the ensuing U.S. competition with China is also an area that warrants future research. There are many reasons to suspect that the way the competition between the U.S. and China unfolds will be different than the competition with Russia during the Cold War. Extended interoperable alliances may have lost some of their panache given the interconnected nature of the global economy and the reduced ideological underpinning of the current competition. Third, the economic considerations of arms trade decision making need to be considered more thoroughly as an additional hypothesis to great power competition so that their effects can be understood in relation to the other factors affecting arms trade decision making.

Final Remarks

Why do great powers trade their weapons? Taken together, the evidence from this study suggests that powerful states attempt to leverage access to their armaments to engender and maintain their security sphere of influence. As the level of great power
competition in the international system increases, great powers are more willing to extend arms trade access to states that are not allies, weak allies, or further away from them in political regime type. Importing states of sufficient power, seek to align themselves through arms trades with great powers to enhance their regional security position and signal their commitments. Because of the long-life spans, maintenance requirements, and life-cycle upgrades to major military end items, great powers are able to exert limited control over their subordinate arms trading partners who do not want to limit their access to arms.
### APPENDIX A: CODE BOOK

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APPENDIX B: LIST OF IMPORTING STATES

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Belarus, Belgium, Belize, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana,
Brazil, Brunei, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Canada, Cape
Verde, Central African Republic, Chad, Chile, China, Colombia, Comoros, Congo, Costa
Rica, Croatia, Cuba, Cyprus, Czech Republic, Czechoslovakia, Democratic Republic of
the Congo, Denmark, Djibouti, Dominica, Dominican Republic, East Timor, Ecuador,
Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Federated States of
Micronesia, Fiji, Finland, France, Gabon, Gambia, Georgia, German Democratic
Republic, Germany, Ghana, Greece, Grenada, Guatemala, Guinea, Guinea-Bissau,
Guyana, Haiti, Honduras, Hungary, Iceland, India, Indonesia, Iran, Iraq, Ireland, Israel,
Italy, Ivory Coast, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kiribati, Kosovo, Kuwait,
Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Libya, Liechtenstein, Lithuania,
Luxembourg, Macedonia, Madagascar, Malawi, Malaysia, Maldives, Mali, Malta,
Marshall Islands, Mauritania, Mauritius, Mexico, Moldova, Monaco, Mongolia,
Montenegro, Morocco, Mozambique, Myanmar, Namibia, Nauru, Nepal, Netherlands,
New Zealand, Nicaragua, Niger, Nigeria, North Korea, Norway, Oman, Pakistan, Palau,
Panama, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Portugal, Qatar,
Republic of Vietnam, Romania, Russia, Rwanda, Samoa, San Marino, Sao Tome and
Principe, Saudi Arabia, Senegal, Seychelles, Sierra Leone, Singapore, Slovakia, Slovenia,
Solomon Islands, Somalia, South Africa, South Korea, South Sudan, Spain, Sri Lanka, St.
Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Sudan, Suriname, Swaziland, Sweden, Switzerland, Syria, Taiwan, Tajikistan, Tanzania, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Tuvalu, Uganda, Ukraine, United Arab Emirates, United Kingdom, United States of America, Uruguay, Uzbekistan, Vanuatu, Venezuela, Vietnam, Yemen, Yugoslavia, Zambia, Zanzibar, and Zimbabwe
### APPENDIX C: ALTERNATIVE REGRESSION MODELS

Main Effects Model with Casewise Deletion.

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Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
Regional Effects Model with Casewise Deletion.

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Observations: 66,897
Number of panel: 1,660

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
## Exporter Effects with Casewise Deletion

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Robust standard errors in parentheses

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### Regional Effect Model with Imputation 1950-2015.

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Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1
BIBLIOGRAPHY


———. "The President's Meetings with Soviet President Gorbachev." edited by Department of State, 1989.


Zitun, Yoav. "Iaf Retires Skyhawk after 48 Years in Service."
https://www.ynetnews.com/articles/0,7340,L-4738755,00.html.