ECONOMIC IMPLICATIONS OF POSTWAR STRATEGIC PARTNERSHIP BETWEEN THE UNITED STATES AND ITS FORMER ADVERSARIES

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ABSTRACT

CHRISTIAN WATT: Economic Implications of Postwar Strategic Partnership between the United States and Its Former Adversaries
(Under the direction of Mark Crescenzi)

I model strategic partnership's influence on economic interaction as a firm-level signaling game. The model suggests that the US strategic partnership signal can encourage economic interaction between the United States and its former adversaries that would otherwise have been forfeit to US rivals, thereby increasing broader US economic influence. The signal matters more in situations where firms are pessimistic about the favorability of a former adversary's economic state and the economic state is actually favorable. The signal also matters more in situations where expected firm profitability is low relative to the cost of entry—as expected profit (reward) decreases and cost of entry (risk) increases. In these situations, the strategic partnership signal can encourage market entry and, in turn, preserve gains that would otherwise be conceded to rivals. I then test several of the model's inferences with national-level, multiple interrupted time-series analysis and find preliminary support. Further research is warranted.

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Introduction

The term "strategic partnership," which emerged in political circles during the Clinton administration, has received much press of late. For instance, President Obama very recently[1] addressed the nation on live television from Bagram Airbase, Afghanistan to announce his signing of the US-Afghan Strategic Partnership Agreement—something important enough for the US President to fly to a combat zone and personally sign. Very little, however, is understood about the nature of these partnerships. In fact, I would call the subject a "black hole" in the academy.

Interestingly, strategic partnership *with former war adversaries*[2] has reemerged as a postwar US policy objective, reminiscent of US efforts to woo Germany and Japan after World War II. Why? What are the consequences of strategic partnership under these conditions? In answering this, we might learn more about the incentives for this policy choice. I hypothesize that, for one, there are economic consequences (and, thus, economic incentives) for strategic partnership with former adversaries.

After a brief literature review, I present my general theory of strategic partnership's effect on economic interaction. Next, conceptualizing strategic partnership as a signal between the US government and its subnational firms, I utilize firm-level, game-theoretic modeling to derive testable hypotheses for the effect of strategic partnership on economic interaction. The model suggests that the strategic partnership signal solves uncertainty

[1] May 1, 2012.

[2] The United States has many strategic partnerships (e.g., with India, Turkey, Australia), not just those born out of war.

problems for firms and encourages increased economic interaction—that the US strategic partnership signal can encourage economic interaction between the US and its former adversary that would otherwise have been forfeit to US rivals. In this way, US strategic partnership with former adversaries increases broader US economic influence. The signal matters more in situations where firms are pessimistic about the favorability of a former adversary's economic state and the economic state is actually favorable. The signal also matters more in situations where expected firm profitability is low relative to the cost of entry—as expected profit (reward) decreases and cost of entry (risk) increases. In these situations, the strategic partnership signal can encourage market entry and, in turn, preserve gains that would otherwise be conceded to rivals. I then test several of the model's inferences with national-level, multiple interrupted time-series analysis of bilateral trade flows and find preliminary support. I conclude with recommendations for further research and an assessment of the policy implications of this new research program.

The Literature: Postwar Institutional Arrangements and Trade

Strategic partnership, particularly strategic partnership between the United States and its former adversaries, has received scant (if any) academic attention, which is unfortunate considering its potential cost in terms of lives, dollars, and national attention. As such, I will, in this section, create a definition of strategic partnership and ground my study to the closest relevant literature.

To begin, I define strategic partnership as *a mutually respectful, enduring relationship between nation states that is established to achieve mutual interests.*[3] It is a

[3] While economic-oriented definitions of strategic partnership exist, an official US Government definition does not. President Obama's Executive Order on May 10, 2010, established the Iraq Strategic Partnership Office

multilateral agreement that cannot be unilaterally imposed from one state onto another (that would be something other than "partnership"). This partnership could include security, economic, diplomatic and/or several other domains of cooperation, but does not require inclusion of any specific domain. For instance, NAFTA might be considered a purely economic strategic partnership. In this study, I am specifically interested in addressing strategic partnership between the United States and its former adversaries immediately after war. In the context of this study, then, strategic partnership between former war adversaries represents a particularly cooperative postwar conflict resolution outcome—an outcome that could have ranged anywhere from continued bitter rivalry (e.g., North Korea and South Korea) to strong alliance (e.g., the United States and Japan). The post-WWII partnerships and alliances that followed the Marshall Plan would fit my intended meaning of strategic partnership for this study; so would the 2008 Strategic Framework Agreement between Iraq and the United States as well as the 2012 Strategic Partnership Agreement between Afghanistan and the United States.

Turning to the literature, one might reasonably question why belligerents would consider an enduring strategic partnership with a former war adversary who they previously hated or feared enough to kill. In *After Victory*, John Ikenberry develops a theory for the interests of and the dynamics between the victor and the vanquished after war. After a war concludes, the winning state has three choices: use its power to dominate the weaker state; abandon the weaker state and return home; or use its power to create a mutually acceptable

(ISPO) to facilitate a strategic partnership with the Republic of Iraq. Clearly, strategic partnership is an extant concept, used routinely in political vernacular, and needs to be defined for those purposes. My definition, therefore, is founded on official US government communication from senior officials. The phrase "long-term" is almost always associated with strategic partnership (Kahl 2010; Odierno 2010; Panetta 2011), which is often also linked to mutual interests and mutual respect (Kahl 2010; Panetta 2011). The Strategic Framework Agreement (SFA) between Iraq and the US, designed to build the foundation for a strategic partnership, describes a "long term relationship of friendship and cooperation" (SFA 2008). These concepts form the core of my definition.

postwar order with the weaker state. Success of the latter, more cooperative choice is contingent upon an institutional arrangement that provides the defeated state assurances that the victor will abide by its commitments (Ikenberry 2001, 4, 50).

There are several reasons for the victor to prefer a cooperative postwar arrangement to the extent of being willing to exercise "strategic restraint" and thereby restrict itself with an institutional agreement. Such an arrangement might reduce the need for instruments of coercion, for example military force, and thus lower the costs to maintain order. Further, such an arrangement might also preserve for a longer time some of the victor's current gains, assuming that the victor realizes it will not have an indefinite power advantage (Ikenberry 2001, 18, 53-56).

If the victors are willing to exercise strategic restraint, there are also several reasons for the vanquished to prefer a cooperative postwar arrangement. Such an arrangement may improve the loser's bargaining position, which would otherwise be based simply on power differentials that are currently in favor of the victor. The incentives of such bargains, financial or otherwise, may include temporal advantages that are critical for the vanquished—immediate gains in the midst of devastation may have higher appeal than future freedom of action. Finally, such an agreement may assuage fears that the victor will abandon the vanquished to wallow in chaos and despair of postwar catastrophe, or fears that the vanquished will be dominated by the victor or by another rival should the victor carry through with abandonment (Ikenberry 2001, 51-57).

Thus, there are several incentives for both the victor and the vanquished to establish an institutional arrangement after war, although clearly not all do. The United States, however, would seem to support Ikenberry's model, often attempting an ambitious and

highly cooperative form of institutional arrangement with its former adversaries after war—strategic partnership. What are the economic implications of this policy choice? Are there economic incentives associated with this hyper-cooperative postwar conflict resolution outcome that go beyond the considerations that Ikenberry discusses?

The literature on how war affects trade helps illuminate the challenge in answering these questions and will be important in my forthcoming statistical study. The sides of the debate on how war affects trade fall into two camps. The first camp argues that war has no effect on trade (e.g., Barbieri & Levy 1999). The second camp argues that war, transnational or civil, has a strong negative impact on trade (e.g., Anderton & Carter 2001; Bayer & Rupert 2004). Some find evidence, perhaps counter intuitively, that "trade often increases in the postwar period" (Barbieri & Levy 1999, 463). The studies on general political conflict (embargoes, blockades, rhetoric) are equally divided, with some arguing that there is a "strong and robust negative association between conflict and trade" (Polachek 1999, 25) while others find that "commerce can also flourish even in the presence of very hostile relations" (Kastner 2007, 664). Michael Ward and Peter Hoff perhaps summarize the aggregate findings most wisely: "under some circumstances, the impact of conflict on trade is indeterminate or highly conditional" (2007, 172). This begs the question, under which conditions does war increase trade instead of disrupt or insignificantly impact trade? I hypothesize that the presence of US strategic partnership establishment is such a condition for the United States and its former adversary.

Strategic Partnership's Influence on Economic Interaction as a Signaling Game

In this section I present my firm-level theory for strategic partnership's influence on economic interaction and use game-theoretic analysis to derive testable hypotheses for a future research program. After explaining my methodological choices, I present my theory and its associated model, in which I conceptualize strategic partnership as a signal between the US Government and firms. I then provide both formal and informal analyses of my model and its key takaways.

Why do I choose a firm-level approach?

Quite simply, firms are key players in this scenario. One might prefer a state-level study, but this would sideline the important role of firms in open economies. While one could argue that states control international investment decisions in a command economy where the state owns key enterprises—a scenario in which a state-centered approach might be justifiable and have the advantages of being more parsimonious and tractable—firms in modern open economies have greater autonomy in international investment decisions. The United States Government, for instance, might be able to influence a firm's international investment behavior through incentives and restrictions, but it cannot force a private firm to invest resources in a US strategic partner. A firm-level approach would best highlight the nuances of this scenario.[4] One might also consider a sector-level analysis for a study of this type. Sector-level analysis may bring to light important nuances—certain sectors or types of firms may be more or less prone to invest in these scenarios and that is worth knowing. But sectors do not make strategic investment choices, firms (through their corporate governance

[4] For more on the merits of a firm-centered approach, see Peter Hall and David Soskice, 2001.

processes) do. Therefore, to understand which sectors or types of firms may be most important in the puzzles of my scenarios, it is useful to first understand basic firm behavior.

Overall, bypassing firms and jumping straight to aggregated state- or sector-level study might miss important nuances of the puzzle. While these alternative approaches might more parsimoniously support "what" happens in these scenarios, they might also miss key details of "how" and "why" important relationships occur. I argue that both firms and states are key strategic players in the scenarios of this study and that understanding the microfoundations of their behavior in these unique environments is important to solving this study's puzzles.

Why do I choose a game-theoretic approach?

The firm-level approach I that describe above illuminates a strategic economic interaction between states and firms that is keenly suited for the game-theoretic approach. The scenarios of this study are, in certain respects, a bargain between states and firms over economic interaction between the United States and its former adversaries, and bargaining literature provides a strong foundation for a game-theoretic approach in these scenarios. The game-theoretic approach is particularly useful to help understand key nuances of the microfoundations of these scenarios and can help inform future studies. For instance, a transition from state-level study to firm-level study expands the potential pool of subjects and can greatly complicate data accumulation and analysis. A game-theoretic model can help simplify the interaction and provide focus for future research—which types of firms to examine and what variables to focus on. For such reasons, I view the game-theoretic approach as a better starting point than other options for this study. In this sense, the purpose

of the game-theoretic approach of this study is to uncover dynamics, generate hypotheses, and provide focus for future econometric and case-study analyses that will test the rigor of my game-theoretic findings.

The Theory

I turn now to my firm-level theory. The backbone of my theory follows thusly. First, the US Government wants to increase economic influence and, in turn, national power. This provides incentive for the US Government to encourage US firm investment in the former adversary—to gain continued influence over that former adversary. Second, US firms want to reap available profits, but face postwar uncertainty problems that can inhibit investment in the former adversary state. Last, strategic partnership between the United States and its former adversary serves as a credible signal to resolve uncertainty problems for firms and, thereby, its presence or absence influences economic interaction.

The US Government wants to increase economic influence, an in turn, national power

As Ikenberry shows, there are several reasons for victors and vanquished to prefer an institutional arrangement after war. However, strategic partnership is a particularly ambitious and costly institutional arrangement. Why might the United States so often seem to pursue this ambitious arrangement of an enduring strategic partnership? I argue that an important and perhaps overlooked reason is to increase US national power in the form of economic influence. US policymakers often think of national power, whether soft (non-coercive) or hard (coercive), in terms of "DIME"—that is, diplomatic, informational,

military, and *economic power*.[5] Economic interaction makes one relevant (economically, at least) to an economic partner and this can translate into economic influence, whether bilaterally, regionally, or internationally. Thus, if strategic partnership with former adversaries increases the likelihood of economic interaction with the former adversary and, in turn, increases US national power, then there are important additional economic incentives and consequences of strategic partnership between the United States and its former adversaries that warrant consideration.

US firms want to reap profits, but face postwar uncertainty problems

Firms play a very important role in establishing and maintaining the actual economic interactions between nation states. In my cases of interest, the US Government needs firms to enter former adversary markets if it is to achieve the gains in economic influence and national power that it desires. Likewise, I would expect that firms with profit to gain in former adversary markets would strive to enter those markets—the realities of capitalism and a competitive global economy make it an economic imperative to reap any economic gains that are available. Thus, at the conclusion of a war, both the US Government and firms have incentive to establish economic interaction in former adversary markets. However, firms face significant challenges from *uncertainty* over the state of the former adversary market.

While the economic state of a former adversary may have been known prior to a war, there is a strong possibility that uncertainty over that economic state is a critical concern to firms who are contemplating whether to enter that former adversary market. Is the former adversary state favorable or unfavorable for successful investment? What is the postwar

[5] See, for instance, http://www.jfsc.ndu.edu/library/publications/bibliography/Elements_of_National_Power.pdf.

status and trajectory of the former adversary's financial and legal institutions that would protect the firm's assets? What is the former adversary's orientation towards the United States and is that orientation durable? Is there a risk of future military conflict between the United States and that former adversary? What about the potential of severe economic shock to the firm through future sanctions, embargos, blockades, or nationalization of the firm's assets? What is the likelihood for state collapse of the former adversary? The list goes on. If a firm misjudges the state, it can suffer severe, perhaps even existential, consequences. As such, certain firms need a credible signal that mitigates these and other concerns and helps them resolve some of these uncertainty issues.[6] I argue that strategic partnership between the United States and a former adversary serves as such a signal.

Strategic partnership serves as a credible signal to resolve uncertainty problems and, thereby, influences economic interaction

Government actions and announcements serve both a direct policy role and an indirect strategic communications role. For example, the US-Japan agreement on US basing on Okinawa both directly establishes policy for troop levels and indirectly signals the level of US commitment to its allies in the Pacific theater. This signal matters to many strategic actors, including potential aggressors as well as regional allies who are still wary of a resurgence of Japanese power in the aftermath of World War II. A government's announcement of a formal alliance (e.g., NATO) can both initiate establishment of a combined planning staff (e.g., NATO Headquarters in Brussels, Belgium) and also credibly signal resolve to both an ally (e.g., Germany) and a potential aggressor (e.g., the Former Soviet Union) that a supporter (e.g., the United States) will intervene in the event of

[6] Another way to think if this is that firms, in effect, need a credible commitment that assures more reasonable protection of their assets. See Fearon 1995 for an explanation of credible commitment theory.

aggression against the ally. US Federal Reserve announcements, aside from establishing US economic policy, can send signals on short- and long-term economic outlooks that have immediate and profound global economic consequences. Likewise, it is useful to conceptualize the strategic partnership announcement of this study as one of many signals a government can send to those who might find that signal important (e.g., firms).

There are many reasons to believe that the US Government announcement of strategic partnership with former adversaries is a credible signal that would alleviate many uncertainty concerns for certain firms. First, there is strong reason to believe that the US Government (which is staking its reputation to the partnership) has full knowledge of the probability of a favorable investment environment—that is, whether the firm would experience typical market forces or, rather, atypically hostile market forces such as the enduring collapse of the former adversary's financial and legal systems, a high likelihood of future US sanctions, blockades, embargoes, or military intervention (which the US Government controls), former adversary nationalization of firm assets (for which the US Government would have to choose whether or not to intervene), and so forth. As Fearon and others[7] demonstrate, war helps solve uncertainty problems for belligerents who, prior to war, had incomplete information about their adversary's true capabilities. In the cases of my study, the US Government has, through the course of preparing for and conducting war, greatly reduced uncertainty through intelligence efforts and mortal tests of adversary capabilities. Further, information acquired during war is more important than information available prior to the war (Slantchev, 2004). Thus, by announcing strategic partnership and very publicly tying US reputation to its success (as seen by President Obama's live address from Afghanistan after the signing of the US-Afghan Strategic Partnership), there is an implied level of protection to the firm,

[7] See also Filson and Werner, 2002; Slantchev, 2004.

provided by a fully-knowledgeable US Government, from many of the hostile market forces of the unfavorable environment.

Second, the strategic partnership signal signifies, in important ways, that the former adversary has been or will be reoriented (or more oriented) towards the West. This may even include adoption of western forms of government and economic policies (i.e., towards democratization and a free market economy[8] as seen in the WWII cases of strategic partnership and to some extent in Iraq and Afghanistan). For some adversaries, this may be quite a reversal from previous orientation and, thereby, open up several previously closed markets. As a byproduct of this reorientation, for instance, I would expect the strategic partnership announcement to indicate increased mutual governmental efforts towards bilateral trade. I would expect the US Government, in the spirit of the strategic partnership it has likely initiated, to eliminate the specific wartime prohibitions and move toward more trade openness with the former adversary. Further, I would expect the US Government to incentivize firms to engage in economic interaction with the former adversary. Else, US competitors might reap the benefits from economic interaction with the former US adversary and the economic influence the US Government seeks would be forfeit. Likewise, I would expect the former adversary government to incentivize its firms to participate in economic interaction with US firms.

Lastly, by the formal and enduring nature of strategic partnerships, firms have additional assurances of long-term US Government involvement and protection in economic affairs. In these important ways, then, the strategic partnership announcement serves as a credible signal to firms that it is safer to invest and would, in turn, encourage greater

[8] Feaver 2012, for instance, describes the mutually-reinforcing benefits of democracy and market capitalism, seen as "the most stable system."

investment. Without this signal, firms face greater uncertainty and would have less incentive for investment.

The Model

I now turn to my firm-level model. I have argued that the strategic partnership announcement has economic consequences—that it serves as a signal that resolves uncertainty problems for certain firms and, thereby, encourages investment. Modeling this relationship as a strategic interaction between the US Government and firms helps illuminate the dynamics of the signaling mechanism and generates hypotheses for a new research program. First, I briefly restate portions of my theory in appropriate terms for rational choice modeling[9] to derive preliminary hypotheses specific to the signaling nature of strategic partnership—how does this signal work and what can we learn from it? I then present my model, analysis, and results.

The Problem, Restated

In the discourse of international trade, firms must decide whether or not to invest their valuable resources in a given country. Firms suffer consequences when those investments fail. The decision process is challenging in a stable geopolitical environment and can be even more challenging in a postwar environment in which the economic system of a US adversary has likely suffered tremendous shock. This creates new uncertainty challenges for firms who must reassess risk and reward profiles.

In the postwar environment, I define two broad economic states—favorable and unfavorable. By favorable (State A), I mean that there is a higher chance that the firm's

[9] I assume that governments and firms are rational economic actors.

investment will be protected and that profit will be a function of more routine market forces. In a favorable state, there is lower probability that the former adversary will suffer state collapse. There is a lower probability of economic turmoil from US embargos, sanctions, and blockades (which the US Government, presumably, would have substantial control over). There is a lower probability that a former adversary would nationalize a firm's assets (while the former adversary has, perhaps, de jure control over this, in a favorable state the US Government would, presumably, intervene if necessary). These factors combine to lower the risk to a firm's investment and this lower risk also translates into more favorable commercial insurance rates, investor attitudes, and so forth. Altogether, this increases the likelihood of a successful investment.

By unfavorable (State B), I mean that there is a higher risk that a firm will lose its investment. In an unfavorable state, there is a higher probability that the former adversary will suffer state collapse. There is a higher probability of economic turmoil from US embargos, sanctions, and blockades (which, again, the US Government would have substantial control over). There is a higher probability that a former adversary would nationalize a firm's assets (again, this is a former adversary controlled action, and in an unfavorable state it is less likely that the US Government would intervene). These factors combine to raise the risk to a firm's investment and this higher risk translates into less favorable commercial insurance rates, investor attitudes, and so forth. Altogether, this decreases the likelihood of a successful investment.

The Solution, Restated

Because of this amplified postwar uncertainty over which of the two economic states applies to the former adversary, firms have a particularly strong need for a *credible signal that it is safe to invest*. I argue that the strategic partnership announcement, as made, for instance, by President Obama personally from Afghanistan after the signing of the US-Afghan Strategic Partnership Agreement, serves as a signal from the US Government to US firms that the US Government assesses the economic state as favorable. Further, the strategic partnership announcement has deeper implications in that it, in some ways, stakes US Government reputation to the success of the partnership (and, more importantly for this study, future economic ventures). It also provides an implied level of US Government protection against economic turmoil caused by state failure, sanctions, embargos, blockades, and nationalization. Firms should perceive this strategic partnership announcement, then, as a signal that the probability of a successful investment is higher—that it is safer to invest.

There is an important assumption in the model I am about to present—that the US Government has full knowledge about the probability of success. That is, in terms of the game, that the US Government knows whether the state is favorable or unfavorable. I previously argued that this assumption is reasonable because war helps solve uncertainty problems for belligerents who, prior to war, had incomplete information about the adversary's true capabilities. Further, the US Government controls salient actions such as whether it will impose sanctions or intervene in event of nationalization of a firm's assets. Finally, the US Government has substantial influence over the former adversary's likelihood of state collapse.

Another important consideration is that the US Government may decline to pursue a strategic partnership with a former adversary even when it assesses the economic state as favorable. This could be a result of benign conditions (an amicable lack of interest for a formal agreement between the two former belligerents) or something more malign that signals lingering hostility or economic danger. Consequently, when firms do not receive a strategic partnership signal from the US Government, they are not sure whether this is because the United States assesses the economic state as unfavorable or whether the economic state is favorable but other factors preclude a strategic partnership.[10]

To recap, the strategic partnership announcement implies a higher level of economic protection. In effect, it serves as a signal from the US Government to firms that it is safe to invest in the former adversary. Without that signal, firms are unclear of the economic state—they do not know if the US Government was unable to establish postwar strategic partnership due to benign reasons that would not undermine investment safety or, rather, if the US Government chose to avoid strategic partnership due to more malign reasons that might threaten investment safety. Further, without the strategic partnership signal, firms lose an indicator that the US Government will underwrite a portion of the investment risk (e.g., ensure that trade laws are enforced and that assets are not nationalized).

This strategic interaction between the US Government and US firms can be modeled as a signaling game as depicted in Figure 1, below.[11] While this game is a simple abstraction, and as such, a substantial simplification of real-world dynamics, its utility is

[10] There is also the case where the United States cannot announce a strategic partnership because the former adversary, for whatever reason, declines. This permutation is not specifically modeled, but would also result in an ambiguous signal (pooling scenario as will be explained shortly) in which case the signal (lack of strategic partnership) would not reveal information about the economic state.

[11] See Osborne, 2004, Chapter 10, for further explanation of signaling games.

nonetheless to help us understand the strategic partnership signal and derive new hypotheses for testing. The game has the following characteristics:

Players

There are two players—the US Government (USG) and a US firm (Firm).

States

There are two postwar economic states of a former US adversary, favorable and unfavorable (State A and State B as previously described). Nature determines whether a former US adversary is in a favorable economic state with probability (p) or whether it is in an unfavorable economic state with probability ($1-p$).[12]

Beliefs

Firms believe that the economic state of a former adversary is favorable with a probability of (α) and believe that the economic state of a former adversary is unfavorable with a probability of ($1-\alpha$).

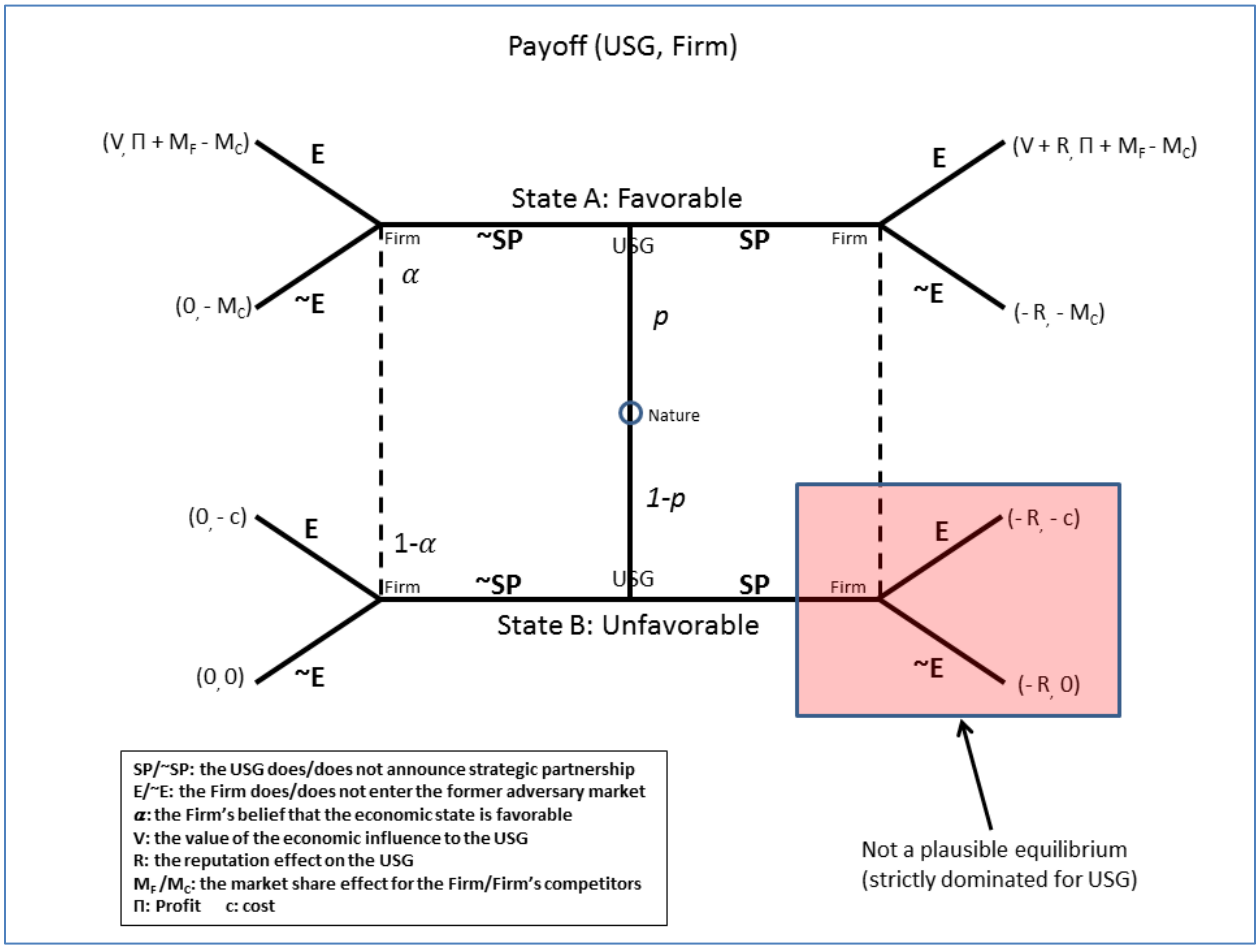
Player Actions

The USG (sender) action is to "announce" a strategic partnership (SP) or "not announce" a strategic partnership (~SP).

The Firm (receiver) must choose to "enter" (E) or "not enter" (~E) the former adversary market based on USG action.

[12] While my model assumes that nature determines whether an economic state is favorable, there is a possibility that strategic partnership itself may also influence the favorability of a state—that the determinants of economic favorability are not completely exogenous to the model. For instance, while nature may initially determine that an economic state is favorable, a lack of strategic partnership (and, therefore, a lack of strategic partnership's potential reinforcement of economic favorability) could lead to an eventual erosion of economic favorability. Conversely, while nature may initially determine that a state is economically unfavorable, the presence of strategic partnership could lead to an eventual improvement of the economic state. This potential feedback effect of the strategic partnership signal is not modeled, but is considered in my analysis.

Figure 1: Strategic Partnership as a Signaling Game.



Player preferences and payoff functions[13]

The USG is motivated by two primary factors—relative power (in relation to rivals) and reputation.

The USG wants to maximize its economic power in relation to US rivals. When US firms establish economic links with a former adversary, they help the USG establish economic influence over that former adversary at the expense of US rivals.

[13] Here I employ Occam's razor to articulate the most relevant economic factors, acknowledging that not all considerations (e.g., levels of economic interdependence or industrialization) can be modeled without obscuring the main lessons of the game.

Let the value of this favorable payoff for the USG = V > 0, where V increases as the utility of the economic influence increases (e.g., a robust trade relationship with Germany after WWII at the expense of then-peer-rival Russia) and decreases towards zero as the utility of the economic influence decreases (e.g., a minor trade relationship with Grenada at the expense of rival Cuba). If US firms do not establish economic links with the former adversary (either by not entering the former adversary market or by entering and losing their investment in an unfavorable market), the USG loses the opportunity for increased economic influence over that former adversary to the benefit of US rivals. Let this unfavorable payoff for the USG = 0.

The USG wants to protect its reputation. If the USG announces a strategic partnership (SP) in a favorable state and firms enter former adversary markets, this has a positive effect on USG reputation (this implies potency, relevance, and reliability of the USG and the strategic partnership agreement). Let this positive payoff to USG reputation = +R. If the USG announces SP in an unfavorable state, this has a negative effect on USG reputation (the USG is seen as unreliable and the USG could incur further costs of intervention on behalf of firms to protect its reputation). Let this negative payoff to USG reputation = -R. If the USG announces SP and firms who are expected to enter the market actually refuse to enter the former adversary market, this also has a negative effect on USG reputation (this implies impotence and irrelevance of the USG and/or the strategic partnership agreement). Let this negative effect to USG reputation = -R. Finally, if the USG does not announce SP, there is no reputation effect—the United States has not tied its

reputation to the success of the strategic partnership and postwar strategic partnerships between former adversaries are understandably rare.

Firms are motivated by two broad economic considerations—immediate and future profitability. Immediate profitability is a function of the standard Profit (Π) = Revenue (r) – Cost (c) function. Firms want to maximize Π. This results in the following payoffs:

- If a Firm does not enter, $\Pi = 0$.
- If a Firm enters in a favorable state,[14] $\Pi = \Pi$.
- If a Firm enters in an unfavorable state, it loses its investment[15] and $\Pi = -c$.

Future profitability is a function of market share effect of a Firm (M_F) as compared to the market share effect of its competitors (M_C). US firms want to maximize $M_F - M_C$. This results in the following payoffs:

- If the Firm does not enter, $M_F = 0$ (it earns no market share).
- If the Firm enters in a favorable state, $M_F = M_F$ and $M_C = M_C$.
- If the Firm enters in an unfavorable state, investment is lost and $M_F = M_C = 0$.
- The total market effect for the Firm = $M_F - M_C$.

The combined immediate and future profitability function is therefore $\Pi + M_F - M_C$.

A full explanation of the resultant terminal histories (as seen in Figure 1) is located in Appendix A.

[14] Assumption: $\Pi > 0$ in a favorable state (there is at least some profit under favorable conditions or firms would not participate in this game).

[15] Assumption: $c > 0$ (there is at least some cost to enter a market).

Formal Analysis

As the game depicts, when the USG assesses that the state is unfavorable, it will not announce SP (the lower right quadrant of Figure 1). This is because that quadrant is strictly dominated—in an unfavorable state, the payoffs to the USG for ~SP are always greater than the payoffs for SP ($0 > -R$). This is very important to the signaling nature of the game, because it creates a "separating signal" for the Firm when the USG announces SP. That is, when the USG announces SP, the Firm knows that the USG assesses the former adversary's economic state as favorable. However, as the game shows, when the USG does not announce SP (~SP), the Firm does not have a separating signal but rather a "pooling signal," and this results in greater uncertainty for the Firm as to whether the state is favorable or unfavorable. Consequently, the game has the following pure weak sequential equilibria:[16]

A separating weak sequential equilibrium where: the USG announces SP in a favorable state (SP/F) and does not announce SP in an unfavorable state (~SP/U); and the Firm enters with a SP signal (E/SP) and does not enter without a SP signal (~E/~SP).

Analysis: in equilibrium, if the USG strategy is separating (SP/F, ~SP/U), then if the USG signal is SP, the Firm must believe by consistency that $p = 1$; that is, that the situation is as represented in the upper right hand quadrant of Figure 1. In this case, the Firm enters (E) because $(\Pi + M_F - M_C) > (- M_C)$. Conversely, if the USG signal is ~SP, then the Firm must believe by consistency that $p = 0$; that is, that the situation is as represented in the lower left hand quadrant of Figure 1. In this case, the Firm does

[16] I do not explore mixed strategy equilibria in this paper—pure strategy equilibria are sufficient to demonstrate the dynamics of the signaling interaction.

not enter (~E) because (0) > (- c). This results in an associated Firm strategy of (E/SP, ~E/~SP). Given this Firm strategy, would the USG want to defect and select (~SP/F) as a strategy? No, because the USG payoff for (SP/F, E/SP) is (V+R) and is greater than the payoff for (~SP/F, ~E/~SP) which is (0). Thus, there is a weak sequential equilibrium where the USG strategy is (SP/F, ~SP/U) and the Firm strategy is (E/SP, ~E/~SP).

A pooling weak sequential equilibrium where: the probability (p) of being in a favorable state is higher [$p \geq c/(\Pi + M_F + c)$] and the USG does not announce SP in a favorable or unfavorable state (~SP/F, ~SP/U); and the Firm enters without a SP signal (E/~SP) and does not enter with a SP signal (~E/SP).[17]

An additional pooling weak sequential equilibrium where: the probability (p) of being in a favorable state is lower [$p \leq c/(\Pi + M_F + c)$] and the USG does not announce SP in a favorable or unfavorable state (~SP/F, ~SP/U); and the Firm does not enter with or without a SP signal (~E/SP, ~E/~SP).

Analysis: if the USG strategy is pooling (~SP/F, ~SP/U), then no information is revealed by the ~SP announcement. In equilibrium, the Firm then, by consistency, believes that the state is favorable with a probability $\alpha = p$ and believes the state is unfavorable with a probability $(1 - \alpha) = (1 - p)$.

[17] I do not find this equilibrium as particularly plausible in the real world. It would be present when the SP announcement discourages rather than encourages investment. This equilibrium could be eliminated with certain refinements to my model.

In this case, the expected payoff to the Firm for entering (E/~SP) is:

p(payoff in a favorable state) + (1-*p*)(payoff in an unfavorable state)

Or, $p(\Pi + M_F - M_C) + (1-p)(-c)$

Likewise, the expected payoff to the Firm of not entering (~E/~SP) in this case is:

p(payoff in a favorable state) + (1-*p*)(payoff in an unfavorable state)

Or, $p(- M_C) + (1-p)(0) = p(- M_C)$

In equilibrium, the Firm will enter the former adversary market (E/~SP) when its expected utility of entering the market exceeds its expected utility of not entering the market.

Or when, $p(\Pi + M_F - M_C) + (1-p)(-c) \geq p(- M_C)$

Or when, $p(\Pi + M_F) - (1-p)(c) \geq 0$

Or when, $p(\Pi + M_F) \geq (1-p)(c)$

Or when, $(\Pi + M_F)/c \geq (1-p)/p$

Or when, $(\Pi + M_F)/c \geq 1/p - 1$

Or when, $(\Pi + M_F)/c + c/c \geq 1/p$

Or when, $(\Pi + M_F + c)/c \geq 1/p$

Or when, $p \geq c/(\Pi + M_F + c)$[18]

[18] Since Π and M_F are always greater than or equal to zero and c is always greater than zero, the numerator (c) is always less than or equal to the denominator ($\Pi + M_F + c$). Thus, a probability always exists and is between zero and 1.

Conversely, in equilibrium, the Firm will not enter the former adversary market (~E/~SP) when its expected utility of not entering the market exceeds its expected utility of entering the market.

Or when, $p \leq c/(\Pi + M_F + c)$

Suppose $p \geq c/(\Pi + M_F + c)$ and the Firm strategy is to enter as described above (E/~SP). Given this Firm strategy, would the USG want to defect and select (SP/F) as a strategy? It depends on the Firm's strategy in response to the SP signal. The USG payoff for (~SP/F) is V. However, if the USG defects and changes its strategy to (SP/F), its payoff is higher (V+R) if the Firm enters (E/SP) and lower (-R) if the Firm does not enter (~E/SP). Accordingly, for this to be a weak sequential equilibrium, the USG strategy of (~SP/F, ~SP/U) must be accompanied by a Firm strategy of (E/~SP, ~E/SP).

Now, suppose $p \leq c/(\Pi + M_F + c)$ and the Firm strategy is to not enter as described above (~E/~SP). Given this Firm strategy, would the USG want to defect and select (SP/F) as a strategy? It depends on the Firm's strategy in response to the SP signal. The USG payoff for (~SP/F) is 0. However, if the USG defects and changes its strategy to (SP/F), its payoff is higher (V+R) if the Firm enters (E/SP) and lower (-R) if the Firm does not enter (~E/SP). Accordingly, for this to be a weak sequential equilibrium, the USG strategy of (~SP/F, ~SP/U) must be accompanied by a Firm strategy of (~E/~SP, ~E/SP).

Informal Analysis

In light of just these equilibria, we garner several takeaways for future testing. I begin with USG (sender) strategies and considerations. For unfavorable states, the preferred USG strategy is easy to decipher—the ~SP choice dominates the SP choice as previously described.

Key takeaway: the USG does not want to announce SP in an unfavorable state.

However, the strategy choice is more nuanced in the favorable state. In the favorable state, the payoff to the USG is highest when it announces SP and the Firm enters the former adversary market (SP, E), next highest when the USG does not announce SP but the Firm still enters the former adversary market (~SP, E), next highest when the USG does not announce SP and the Firm does not enter the former adversary market (~SP, ~E), and worst when the USG announces SP but the Firm does not enter the former adversary market (SP, ~E) . In formal terms, the hierarchy of payoffs is: $(V+R) > V > 0 > -R$.

However, because firms know that a SP signal from the USG indicates the state is favorable (thanks to the separating nature of this portion of the game), the USG expects the Firm to enter the former adversary market when it announces SP (coincidentally, where the USG payoff is highest) because the payoff to the Firm for entering the market in a favorable state exceeds the payoff to the Firm for not entering the market. In short, the USG maximizes its expected utility when it announces SP in a favorable state.

The game, thus, illuminates several key considerations for the USG. First, the payoff is always higher for the USG when firms enter the market in a favorable state, regardless of

the SP announcement. Second, the payoff in a favorable state is maximized when USG announces SP (i.e., when the USG utilizes the separating strategy). Third, if the USG is unable to announce SP in a favorable state for whatever reason (i.e., resorts to a pooling strategy), it risks firms not entering and may forfeit any payoff.

> *Key takeaway: in a favorable state, the USG wants to announce SP if at all possible to maximize payoff and avoid the risk of firms not entering due to the ambiguous ~SP signal. If the USG cannot announce SP, it needs another mechanism to encourage firms to enter the former adversary market and achieve its desired economic influence.*

I now consider Firm (receiver) strategies and considerations. The Firm's strategy depends on whether it receives a SP or ~SP signal from the USG. If a SP signal is received (i.e., the USG utilizes a separating strategy), the Firm believes the economic state is favorable and maximizes its payoff by entering the former adversary market as previously illustrated.[19]

> *Key takeaway: the Firm wants to enter the market when it receives a SP signal.*

If the Firm receives a ~SP signal, it has greater uncertainty whether the former adversary market is favorable or unfavorable (i.e., it is not immediately clear whether the USG is utilizing a separating or pooling strategy; further, when the USG uses a pooling strategy, the signal is ambiguous outright). In a pooling scenario, the Firm's response, then,

[19] And under the previous assumptions that profit and market share effect for that particular Firm are > 0.

depends on its beliefs over which state is present and the relationships between several variables. The pooling equilibria in the formal analysis showed that the Firm's decision to enter would depend on whether *p* was greater than (in which case it would enter) or less than (in which case it would not enter) $c/(\Pi + M_F + c)$. Importantly, when the state is actually favorable (irrespective of a Firm's beliefs), there are gains to be made from Firm entry for both the USG and the Firm (whose entry payoff of $\Pi + M_F - M_C$ exceeds its non-entry payoff of $-M_C$ in a favorable state). Thus, the strategic partnership signal (i.e., USG utilization of a separating strategy) can serve a critical purpose to encourage investment in those favorable economic situations where a Firm's pessimism of the state relative to its cost of entry and profit potential causes it to decline entry.

> *<u>Key takeaway</u>: in a favorable state, the SP signal matters more and can save gains that would otherwise be conceded to US rivals when a Firm's pessimism about the favorability of a state increases.*[20] *As a Firm's optimism about the favorability of a state increases,*[21] *the likelihood that a Firm will enter increases in the pooling scenarios (which could, actually, be <u>bad</u> for the Firm's bottom line in the cases where the actual state is unfavorable).*

Second, in the pooling scenario, the Firm's entry or non-entry decision also depends on a relationship between the Firm's expected profit (Π), market share effect (M_F), and cost of entry (c). As seen in the equation $c/(\Pi + M_F + c)$, as expected profit and market share rise,

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[20] Relative to its cost of entry and profit potential relationship $c/(\Pi + MF + c)$.

[21] Relative to its cost of entry and profit potential relationship $c/(\Pi + MF + c)$.

the denominator increases causing $c/(\Pi + M_F + c)$ to decrease. Thus, the Firm's belief that the state is favorable ($\alpha = p$) can be smaller and still result in Firm entry, even when the state is actually unfavorable. Also, as a Firm's cost of entry increases relative to the other variables, the equation $c/(\Pi + M_F + c)$ approaches $c/c = 1$. That is, the belief that the state is favorable ($\alpha = p$) must be increasingly larger to result in Firm entry as the cost of entry increases relative to expected profit and market share effects, even when the state is actually favorable.

> <u>Key takeaway</u>*: in a favorable state, the SP signal matters more and can save gains that would otherwise be conceded to rivals as a firm's profit potential decreases or as a firm's cost of entry increases (i.e., a decrease in profit to cost ratio). Similarly, utilization of a separating strategy can spare firms from economic loss from pooling strategies where high profit and market share potentials (i.e., an increase in profit to cost ratio) encourage entry when the state is actually unfavorable.*

To recap the game-theoretic findings, the model suggests that the strategic partnership signal is important to both the US Government and firms and that it can encourage investment that would otherwise be forfeit to US rivals. In this way, strategic partnership with former adversaries increases US economic influence.

In a favorable state, the US Government wants to announce strategic partnership if at all possible to maximize payoffs and avoid the risk of firms not entering due to the greater uncertainty generated in the absence of the strategic partnership signal. Additionally, the US Government does not want to announce strategic partnership in an unfavorable state or it will

suffer reputation costs. To maximize their payoff, firms (that expect to profit, of course) want to enter the market when they receive a strategic partnership signal. However, the game suggests that the strategic partnership signal matters more to some firms than others. Clearly, strategic partnership matters more to the US Government as the value of the economic influence increases for the US Government (e.g., Japan verses Grenada). However, the signal also matters more in situations where firms are pessimistic about the favorability of a former adversary's economic state and the economic state is actually favorable. Additionally, the signal matters more in situations where the expected profitability is low relative to the cost of entry—as expected profit (reward) decreases and cost of entry (risk) increases. In these cases, the strategic partnership signal can encourage market entry and, in turn, preserve gains that would otherwise be conceded to rivals. These findings provide a foundation to generate new hypotheses for empirical testing based on the specifics of who cares more or less about the strategic partnership signal.

Competing Theories and a New Research Program

Here I briefly examine several competing theories regarding the economic implications of strategic partnership between the United States and its former war adversaries and propose a new research program. The first competing theory I consider that the US strategic partnership announcement does not necessarily signal that the former adversary environment (state) is favorable. The second is that there may be other mechanisms associated with strategic partnership that are driving changes in economic interaction (e.g., US Government material incentives for US firms to enter former adversary markets). The third centers on situations in which the US Government might have incentive to announce a

strategic partnership in an unfavorable state, precisely contradictory to the separating nature of my model.

In response to the contention that the strategic partnership signal is not necessarily favorable for firms, for instance that it instead signals a lingering security problem that requires continued US involvement, I would reflect back to my meaning of "favorable state." In it, I am not arguing that high profit returns are guaranteed for all firms. I am also not arguing that entering a former adversary market such as Afghanistan is more favorable than entering an allied market such as Canada. Rather, I am arguing that the former adversary postwar environment, whatever it may be, is more favorable for US firms when there is US strategic partnership than when there is not. This is due to the resultant lower probability of sanctions, nationalization of assets, state collapse, and so forth. A situation like the one in Afghanistan "is what it is." Would one argue that a US firm feels that the investment outlook in such a situation improves or worsens after the announcement of US strategic partnership, considering the association of such partnerships with enduring US Governmental commitment and support? My academic bet is that, for many firms, the outlook improves with the strategic partnership announcement and that this increases economic interaction.

In response to the contention that there may be other mechanisms associated with strategic partnership that are driving the changes in economic interaction rather than strategic partnership's signal, I fully acknowledge the possibility. One challenge is that this creates a problem of collinearity—the inability to separate out the signal's effect from the effect of other mechanisms that are also always present as a byproduct of strategic partnership. Some of these other mechanisms, I believe, are subsumed in my treatment of the subject. For instance, if US Government material incentives (i.e., private payments to firms to enter

markets) are always associated with strategic partnership (and I am not suggesting that they are), we could think of this as part of the "favorable" state I describe—firms might then anticipate such incentives when they receive the strategic partnership signal and this would, aggregately, encourage investment and increase economic interaction.

One must also consider the possibility that the United States Government might have incentive to announce a strategic partnership in an unfavorable state, precisely contradictory to the separating nature of my model. For example, there may be situations where short term gains for the US Government from such an announcement (e.g., domestic electoral gains) might outweigh long-term reputational effects (i.e.., states may not fail and/or firms may not lose their investments until the next administration's watch). However, aside from a being highly conspiratorial contention (e.g., it would require a US Administration to announce a strategic partnership with a former adversary that it would allow to collapse or nationalize firm assets), there are relatively few cases from which to observe such a trend, knowing, for instance, that the US partnerships with Germany and Japan did not align with this contention.

It should be clear that we need a much better understanding of strategic partnership's influence in general. These competing theories and others might be best addressed through field research and case study of specific firms and US Government agencies. In this way, we may best understand which (if any) firm policymakers actually pay attention to the strategic partnership signal, if that signal is always viewed as favorable relative to not having the signal (and for which types of firms this varies[22]), or if there are other mechanisms associated with strategic partnership (that are not captured by the signal) that encourage firm investment. We might also gain better insight into government incentives for announcing

[22] For instance, mercenary-type firms may see US Government involvement as "market competitive" or constraining.

strategic partnership with its former adversaries. Firm-level econometric study may also improve our understanding of those key takeaways from my game analysis, for instance which types of firms and sectors are most influenced by the strategic partnership signal and how profit and cost dynamics specifically influence entry decisions. My hope is that this research project will create a starting point for such discovery.

Such firm-level qualitative and quantitative research may prove quite challenging. It may be difficult (and time consuming) to find sufficient firms that would be willing to share their sensitive strategic decision-making processes and proprietary information for publication. Firm-level econometric study could be data-intensive and ambitious. While the findings of my model offer some confidence for future study, it would be prudent to examine more readily available and tractable data before proceeding with such ambitious research. This is the focus of my next section, in which I test portions of my firm-level theoretical findings at the national level—what I term a "national-level sanity check" of my theory.

Statistical Evidence at the National Level of Strategic Partnership's Influence on Economic Interaction

The key takeaways of my theoretical model suggest that the US Government prefers to announce strategic partnership in a favorable state to maximize its payoff and avoid the risk of firms not entering due to the ambiguous lack of strategic partnership signal. Additionally, the US Government does not want to announce strategic partnership in an unfavorable state. Firms (who stand to profit, of course) want to enter the former adversary market when they receive a strategic partnership signal. Further, the strategic partnership signal can save gains that would otherwise be conceded to rivals in a favorable state as a firm's profit potential decreases or as a firm's cost of entry increases. All of these takeaways

support the contention that the US Government's strategic partnership signal has economic consequences—specifically, that it encourages firm entry into former adversary markets and, thereby, promotes economic interaction between the United States and its former adversary.

Therefore, if my theoretical model has real-world merit, the effects of the strategic partnership signal should aggregate at a national level such that economic interaction between the United States and its former adversary is higher in the cases where strategic partnership follows war termination as compared to other cases. Further, as deduced from my general theory, I view economic interaction (in part) as a distribution contest of sorts between the United States and its rivals for relative economic power. Thus, in those strategic partnership cases with increased economic interaction between the United States and its former adversaries, the United States should have a comparative advantage and, in turn, the former adversary should have less capacity for economic interaction with US rivals.

Hypotheses

To test the relationships of economic interaction that are described above, one could examine bilateral trade, foreign direct investment, or perhaps even portfolio investment. One of the most prevalent methods for operationalization in the literature is to examine trade data. Because of its advantages in precedence and availability of data, I choose the same.

In light of the academic debate over war's effect on trade, I expect my econometric analysis to reflect that war disrupts bilateral trade in the short term. However, at the conclusion of the war I expect a rebound effect to near prewar levels. Thus, in the context of this study, I expect trade to decline leading up to war as risk of economic loss, nationalization of assets, embargos, sanctions, blockades, and so forth increases. During the war, I expect to

see much lower levels of bilateral trade as explicit trade becomes prohibited and illicit trade, in more contemporary settings, becomes easier to observe and deter. At the conclusion of the war I expect economic interests to outweigh previous wartime concerns and bilateral trade to rebound towards prewar levels as prewar business relationships reform. These trends are reflected in Anderton & Carter's trade-flow charts for war's effect on trade (2001, 452-453). However, as I have argued, instead of seeing a return to near prewar levels of trade, I expect the cases that involve US-former adversary strategic partnership to exhibit an increase in trade relative to prewar levels while US rivals experience a decrease in trade with former US adversaries. While US rivals might experience an increase in overall trade value as a former US adversary's economy grows, I expect that the relative market share and growth rates over time will favor the United States over its rivals. In short, the former adversary will trend towards a higher percentage of business with the United States, leading to comparative increase in US growth rate and market share and a comparative decrease in US rival growth rate and market share in former adversary markets—a relative power shift in favor of the United States.

Accordingly, with US-former adversary strategic partnership establishment, the United States and the former US adversary should experience *increased* bilateral trade while the former US adversary and US rivals experience *decreased* bilateral trade. Conversely, in the absence of US-former adversary strategic partnership establishment, the United States and the former US adversary should experience *decreased* bilateral trade while the former US adversary and US rivals experience *increased* bilateral trade. From this, I generate five falsifiable hypotheses:

H1: Under the treatment of strategic partnership, overall trade between the United States and former US adversaries will exceed the overall US norm for postwar periods

H2: Under the treatment of US strategic partnership, postwar trade between the United States and its former adversary increases relative to prewar periods

H3: Under the treatment of US strategic partnership, postwar trade between the former US adversary and US rivals decreases relative to prewar periods

H4: In the absence of strategic partnership, postwar trade between the United States and its former adversary decreases relative to prewar periods

H5: In the absence of strategic partnership, postwar trade between the former US adversary and US rivals increases relative to prewar periods

Statistical Analysis and Results

I adopt the multiple interrupted time-series method of Lewis-Beck and Alford (1980) as employed by Anderton & Carter (2001). This method of analysis has the advantage of segregating out pre-, during-, and post-war bilateral trade trends as well as the typically strong "bumps" in trade during war onset and termination. Further, it has been utilized in both economic and political science literature (in which, conveniently, it has been used to analyze several of the cases of interest in this study) and is replicable, allowing for greater confidence in statistical results. A critique of this method is that it is sensitive to sample size—that its shorter time periods of study can result in greater instability in its statistical estimators (see Barbieri and Levy 2001). However, others argue, and I agree, that these timeframes are sufficient to observe war's effect on trade and I argue that they are sufficient to observe the effects of postwar strategic partnership for this study as well.[23] Economic data

[23] See Anderton and Carter, 2001. Also, as will be discussed, the timeframe of analysis will be ± ten years of a war. The further we extend beyond this timeframe, the more removed we get from the effects of the war and postwar strategic partnership dynamics and may increasingly introduce other mechanisms that would influence trade relationships.

for bilateral trade and consumer price index (CPI) is taken from the US Census Bureau,[24] Bureau of Labor Statistics (2012), Correlates of War Bilateral Trade (v3.0), and Mitchell[25] 1998 a, b, and c data sets.

My universe of cases includes all post-1941 US wars for which I could obtain data except for Grenada and Panama, which I exclude due to the nature of those conflicts. Appendix B contains my coding of strategic partnership presence and efficacy. I make an assessment of whether a strategic partnership is effective, ineffective, or mixed to identify any trade correlations with longer-term strategic partnership efficacy as well as correlations with the initial strategic partnership signal. For parsimony here, the US partnerships with Japan, Germany, and Italy are coded as effective. There were no US strategic partnerships with China (after the Korean War), Vietnam, or Serbia, so those are coded as ineffective. The partnerships with Iraq and Afghanistan are coded as "mixed efficacy."

Importantly, data limitations preclude analysis of several cases that would have benefitted this study. US/Vietnam, Iraq/Iran, Afghanistan/Iran, and Serbia/Russia, for example, have too much missing data to conduct assessment. Minimal missing data were imputed (with a value of zero) to allow empirical analysis of two cases, both involving Serbia 1993 & 1994 during the Bosnia conflict. This figure substantively matches trade data for Serbia 1995.

Precisely as attempted by Anderton & Carter (see 2001, 449 for the full description of each variable), I estimate the following equation for each dyad:

$$\text{Ln(Real Trade}_t) = \beta_0 + \beta_1 \text{ Trend}_t + \beta_2 \text{War Level}_t + \beta_3 \text{War Trend}_t + \beta_4 \text{ Peace Level}_t + \beta_5 \text{ Peace Trend}_t + e_t$$

[24] For my extensions to Anderton and Carter's (2001) work, I primarily use COW bilateral trade data. I use US Census data to extend the COW bilateral trade data from 2009 to 2011. The census data tends to report approximately 10% less than the COW data for trade, and appropriate adjustments were made for scale.

[25] The Mitchell data sets are utilized by Anderton & Carter (2001). I used them as well to replicate and verify a sample of Anderton and Carter's results.

Like Anderton & Carter, I also construct real trade flow charts to visualize the impact of war (and strategic partnership) on trade (see Appendix C, which includes charts for former US adversary/US rival trade as well). For the question of whether war disrupts trade, the results are less visually dramatic for the newer US war cases (US/Serbia, US/Afghanistan, US/Iraq), presumably because these wars were extremely brief, masking effects. This brevity of conflict also created a problem with mulitcollinearity (one-year wars did not allow enough variation in the War and Peace Trend variables), forcing me to choose between eliminating War Trend or Peace Trend as a variable. I eliminated War Trend as I am more interested in the post-conflict strategic partnership trend. Further, as do Anderton & Carter, I test for autocorrelation[26] in my extensions. I use GLS (AR1) regression techniques and report rho in those cases where autocorrelation is indicated by the Breusch-Godfrey (BG) test.

All of the charts indicate increases in postwar relative to prewar real trade between the United States and former adversaries with the exception of US/China and US/Serbia (my "ineffective" strategic partnership cases), which supports my hypotheses. Growth rate is hard to assess from the charts. Postwar real trade between former adversaries and US rivals expectedly declines relative to prewar levels between Japan and China, Italy and China, and Italy and Russia. While not represented in charts, Germany's trade with Russia and China is absent from the data from 1939 onward. If we assume (which I believe is reasonable) that these trade figures are near zero, then Germany's graphic representation of real trade with US adversaries would show a strong decline from pre- to postwar trade (much like the US/China chart). Likewise, Japan's trade with Russia has missing data from 1939 to 1951, at which

[26] I test for autocorrelation using the Breusch-Godfrey (BG) test and use a conservative p-value of .1 (rejecting the null-hypothesis that all rho = zero and judging that autocorrelation is present where $p < .1$).

point trade is small and negligible. Thus, if we make similar assumptions that Japan's missing data figures are near zero, Japan's graphic representation of real trade with US adversaries would also show a strong decline from pre- to postwar trade (also similar to the US/China chart).

Conversely, Serbia, Iraq, and Afghanistan show substantial increases in postwar real trade, relative to prewar levels, with US rival China. Admittedly, I would prefer to assess the Serbia/Russia, Iraq/Iran, and Afghanistan/Iran figures, but current data limitations preclude this. If we accept China as a modern day US rival (or at least a competitor), then the Serbia graphic supports my hypotheses and the Iraq and Afghanistan graphics combine to indicate their "mixed effectiveness" status—increased trade with the United States but also with US rivals—no firm loyalties. Interestingly, it seems China profits after the United States goes to war unless China itself goes to war with the United States.

Turning now to the formal analysis of the coefficients, Appendix D contains a merged coefficient matrix of US wars (both US and former adversary results, as well as former adversary and US rival results) that includes original Anderton & Carter (2001) data where applicable. Data limitations prevent the creation of a viable statistical US norm to assess Hypothesis 1. However, it will be shown that five of the seven US cases (all five of which include US strategic partnership effort) demonstrate and increase in postwar trade relative to prewar trade between the United States and its former adversary. The other two cases will be shown to have a near-zero level of postwar trade. Thus, intuitively, these cases support my contention that trade under the treatment of strategic partnership is greater (i.e., increases more often than not) between the United States and its former adversary as compared to the US norm.

Hypothesis 2 suggests that there should be a positive *net growth* between Trend, War Trend, and Peace Trend coefficients where strategic partnership is effective—after war, trade growth between the US and its former adversaries would increase to a sustainable norm. However, analysis is complicated by the Peace Level coefficient. If trade jumps dramatically after war (see US/Italy graphic), the Peace Trend coefficient and net growth may well be negative because bilateral trade cannot be sustained at the Peace Level bump. Therefore, the coefficients must be examined in concert with the real trade charts to fully understand the dynamics. US/Italy's statistically significant Peace Trend is negative, but upon examination of the immediate dramatic increase in trade upon cessation of war (the Peace Level effect), and factoring in the Trend (β_1) and War Trend (β_3) effects, the zero net growth makes sense and the overall increase in trade is consistent with my hypothesis of increased trade between the United States and its former adversary in the presence of effective strategic partnership. Similarly, US/Germany's substantial and statistically significant Peace Level and slightly positive but statistically insignificant Peace Trend support the hypothesis. US/Japan and US/Afghanistan have both statistically significant Peace Trends and Peace Levels, clearly supporting my hypothesis. US/Iraq has a statistically significant negative coefficient that, when combined with the effects of the prewar Trend, results in a positive net growth in addition to the postwar bump in trade. Combined, these five cases support the hypothesis that effective strategic partnership (and mixed-effectiveness strategic partnerships for this hypothesis evaluation[27]) is correlated with increased trade.

Hypothesis 3 suggests that postwar trade between former adversaries and US rivals should decrease in our effective partnership cases (US/Japan, US/Germany, and US/Italy). I

[27] The results are three of three in favor of the hypothesis when not including the mixed effectiveness cases. As it is more restrictive to include those cases, I include the mixed cases in this part of the hypothesis evaluation.

have already explained why I expect this to be true with respect to Japan/Russia, Germany/Russia, and Germany/China. Japan/China, however, is complicated by the fact that Japan occupied China during the war (note the extremely large increase in trade between Japan and China *during* the war). Thus, despite the statistically significant positive coefficient for Peace Trend between Japan and China, when factoring in the substantial ***drop*** in trade upon the cessation of war (Peace Level), and the prewar data, Japan clearly has reduced postwar trade with China, supporting the hypothesis. The data for Italy/Russia and Italy/China is statistically insignificant, but from the charts appears to support the hypothesis. A look at the average annual postwar-to-prewar real trade ratios in Appendix E suggests that the average annual postwar Italy/Russia and Italy/China real trade decreased from 12 to 25% relative to prewar levels. Thus, four, and potentially six of the six WWII rival cases (if we credit Italy/Russia and Italy/China) support Hypothesis 3. Our mixed effectiveness cases (US/Afghanistan and US/Iraq), however, clearly show increased postwar trade between Iraq/China and Afghanistan/China. If we include those cases in this portion of the evaluation, conservatively four of eight total cases and liberally six of eight total cases support Hypothesis 3. The China effect, as a byproduct of China's strong economic performance over the last two decades, may very well skew these results. Unfortunately, trade data for other rivals (e.g., Iran) is not forthcoming.

Hypothesis 4 (absence of effective strategic partnership) suggests that US trade with China and Serbia should show a postwar decline due to the absence of effective strategic partnership. However, US/China surprisingly has a statistically significant, positive Peace Trend, which nets a modest growth after considering the effects of the War Trend and prewar Trend. The US/Serbia Peace Trend results are not statistically significant. Upon examining

the charts, it is clear that these results are skewed by very small (near zero) levels of postwar trade. Further, with only these two cases, I cannot confidently accept or reject this hypothesis, but the results so far are supportive of Hypothesis 4. I would suspect that US trade with Vietnam, should data have been available, would have supported this hypothesis.

Turning last to Hypothesis 5, I would expect an increase in trade between the former US adversary and US rivals in the US/Serbia and US/China cases. While the statistically insignificant coefficients are inconclusive for the Serbia/China case, the expected relationship is readily apparent from the charts. However, in the US/China case, China remained a rival and data limitations prevent evaluation of rival China against other rivals (e.g. Russia) during this timeframe. I consider this case unassessable but intuitively supportive of the hypothesis. Further, if we include US/Iraq and US/Afghanistan (mixed-efficacy cases), the results are also supportive culminating in four of four cases that support Hypothesis 5, although all of these cases factor former adversary trade with China which may systematically influence the results.

To summarize, my hypotheses about trade and strategic partnership are partially supported in my preliminary analysis of the subset of seven US war cases. Data limitations preclude the development of an empirical US benchmark, and thus full assessment of Hypothesis 1, but the overall case results suggest it is viable. Hypothesis 2 is supported in five of five cases—with effective (or mixed) strategic partnership efficacy, postwar trade between the United States and its former adversary increases relative to prewar periods. Substantively, the magnitudes of these postwar increases range from 2- to 5.5-times prewar levels, with outliers at an only 10% increase for US/Japan (but trending up) and a more than

40-times increase for US/Afghanistan.[28] There is only mixed support for Hypothesis 3—trade between former US adversaries and US rivals does not necessarily decrease under the presence of effective strategic partnership. That said, data limitations prevent examination of other key former adversary/US rival trade relationships (Iraq/Iran, for instance) that may have strongly influenced the evaluation of this hypothesis. Hypothesis 4 shows support in the limited cases, but small trade levels skew the results. Hypothesis 5 is supported regardless of whether or not I include the US/Iraq or US/Afghanistan cases—without effective strategic partnership, trade between former US adversaries and US rivals increases. Substantively, the magnitudes of these postwar increases range from 2.4 to 6.3-times prewar levels.

Overall, these preliminary national-level statistical results support my theoretical model's firm-level inferences that postwar strategic partnership between the United States and its former adversary has economic consequences in that it encourages trade between the US and its former adversary. There is some national-level statistical evidence that such strategic partnership also influences trade between former US adversaries and US rivals. That is, my theoretical model, at this point, is viable for more ambitious firm-level study.

Conclusion

I have presented a firm-level theoretical model which suggests that the strategic partnership signal is important to both the US Government and firms and that it can encourage investment that would otherwise have been forfeit to US rivals. In this way, strategic partnership with former adversaries increases US economic influence. In a

[28] See Appendix E for a comparative list of prewar to postwar average annual real trade ratios.

favorable state, the US Government wants to announce strategic partnership if at all possible to maximize payoffs and avoid the risk of firms not entering due to the greater uncertainty generated in the absence of the strategic partnership signal. Additionally, the US Government does not want to announce strategic partnership in an unfavorable state or it will suffer reputation costs. To maximize their payoff, firms (that expect to profit, of course) want to enter the market when they receive a strategic partnership signal. However, my model suggests that the strategic partnership signal matters more to some firms than others. Clearly, strategic partnership matters more to the US Government as the value of the economic influence increases for the US Government (e.g., Japan verses Grenada). However, the signal also matters more in situations where firms are pessimistic about the favorability of a former adversary's economic state and the economic state is actually favorable. The signal also matters more in favorable states where the expected profitability is low relative to the cost of entry—as expected profit (reward) decreases and cost of entry (risk) increases. In these cases, the strategic partnership signal can encourage market entry and, in turn, preserve gains that would otherwise be conceded to rivals.

I then tested several of the model's inferences with national-level, multiple interrupted time-series analysis. My preliminary national-level statistical results support my theoretical model's firm-level inferences that postwar strategic partnership between the United States and its former adversary has economic consequences in that it encourages trade between the US and its former adversary. There is some national-level statistical evidence that such strategic partnership also influences trade between former US adversaries and US rivals—that such trade increases when there is no strategic partnership between the United States and its former adversary.

While my statistical testing provides preliminary support for my theoretical model, there is still much to do before I can profess with confidence about the economic effects of strategic partnership between the United States and its former adversaries. In other words, at this point I see smoke, not a fire. In light of my modeling and statistical tests, more ambitious field research and case study of specific firms and US government agencies is warranted. In this way, we may best understand which (if any) firm policymakers actually pay attention to the strategic partnership signal, if that signal is always viewed as favorable relative to not having the signal (and for which types of firms this varies), or if there are other mechanisms associated with strategic partnership (that are not captured by the signaling mechanism) that encourage firm investment. We might also gain better insight into government incentives for announcing strategic partnership with its former adversaries. Firm-level econometric study may also improve our understanding of those key takeaways from my game analysis. For instance, it may improve our understanding of which types of firms and sectors are most influenced by the strategic partnership signal and how profit and cost dynamics specifically influence entry decisions. My hope is that this research project will create a starting point for such discovery.

This line of research has several relevant policy implications. It illuminates incentives for the US Government to pursue strategic partnership with former adversaries (economic influence relative to rivals) in addition to the incentives that Ikenberry proposes. It also illuminates an incentive for certain US firms to pressure the US Government to establish a strategic partnership. With further effort in this new research program, we may earn a better understanding of who wins economically when the United States goes to war and how strategic partnership changes those dynamics.

Appendix A: Full Descriptions of Terminal Histories

The payoff functions result in the following terminal histories as seen in Figure 1:

- If the USG announces SP (SP) in a favorable state and a Firm enters (E)
  - The USG receives both its value of economic influence from the Firm's entry plus the value of the reputation effect because the Firm validates USG reputation. The payoff is therefore (V + R).
  - The Firm receives the value of the economic interaction. The payoff is therefore ($\Pi + M_F - M_C$).

- If the USG announces SP (SP) in a favorable state and a Firm does not enter (~E)
  - The USG receives no value of economic influence and suffers a reputation decrement because the Firm did not enter and validate USG reputation. The payoff is therefore (-R).
  - The Firm earns no revenue and suffers no cost ($\Pi = 0$) and earns no market share ($M_F = 0$) while its competitors increase market share in a favorable environment. The payoff (simplified) is therefore ($- M_C$).

- If the USG does not announce SP (~SP) in a favorable state and a Firm enters (E)
  - The USG receives its value of economic influence from the firm's entry but does not gain the value of a reputation effect because it did not announce SP and tie its reputation to its success. The payoff is therefore (V).
  - The Firm receives the value of the economic interaction because the market is favorable ($\Pi + M_F - M_C$).

- If the USG does not announce SP (~SP) in a favorable state and a Firm does not enter (~E)
  - The USG receives no value of economic influence because the Firm did not enter and there is no reputation effect because the USG did not announce SP and tie its reputation to its success. The payoff is therefore (0).
  - The Firm earns no revenue and suffers no cost ($\Pi = 0$) and earns no market share ($M_F = 0$) while its competitors increase market share in a favorable environment. The payoff (simplified) is therefore ($- M_C$).

- If the USG announces SP (SP) in an unfavorable state and a Firm enters (E)
  - The USG earns no value of economic influence because the Firm's investment fails in an unfavorable environment and the USG suffers a reputation decrement because it provided harmful information to the Firm and loses credibility. The payoff is therefore (-R).
  - The Firm earns no profit or market share because it entered an unfavorable market and lost its investment while its competitors also gain no market share in an unfavorable environment. The payoff (simplified) is therefore (-c).

- If the USG announces SP (SP) in an unfavorable state and firms do not enter (~E)
    - The USG receives no value of economic influence and suffers a reputation decrement because the firm did not enter and validate the USG reputation. The payoff is therefore (-R).
    - The Firm gains and loses nothing because it does not invest and its competitors do not gain market share in an unfavorable environment either. The payoff (simplified) is therefore (0).

- If the USG does not announce SP (~SP) in an unfavorable state and firms enter (E)
    - The USG receives no value of economic influence because the Firm loses its investment and there is no reputation effect because the USG did not announce SP and tie its reputation to its success. The payoff is therefore (0).
    - The Firm earns no profit or market share because it entered an unfavorable market and lost its investment while its competitors also gain no market share in an unfavorable environment. The payoff (simplified) is therefore (-c).

- If the USG does not announce SP (~SP) in an unfavorable state and firms do not enter (~E)
    - The USG receives no value of economic influence because the Firm does not enter and there is no reputation effect because the USG did not announce SP and tie its reputation to its success. The payoff is therefore (0).
    - The Firm gains and loses nothing because it did not invest and its competitors do not gain market share in an unfavorable environment either. The payoff (simplified) is therefore (0).

Appendix B: Coding Strategic Partnership

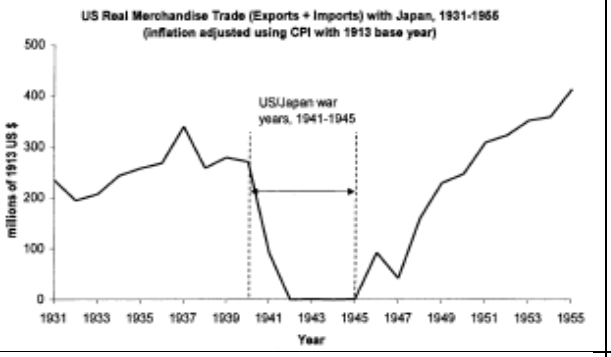
For parsimony in this paper, I make the following assessments of whether US strategic partnership effort was present and effective after war based on previous experience and personal judgment.

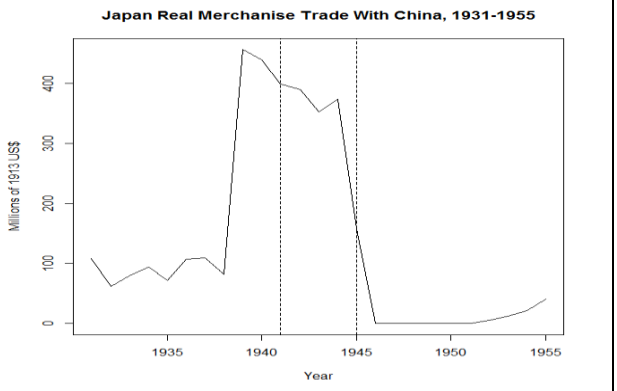
Table 1: Coding of Strategic Partnership

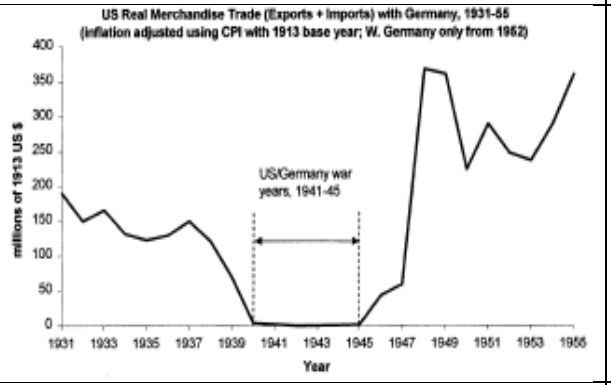
Case	Coding	Justification
US/Germany	Present/Effective	Partnership culminated in NATO alliance—outlasted the Cold War.
US/Japan	Present/Effective	Partnership culminated in NATO alliance—outlasted the Cold War.
US/Italy	Present/Effective	Partnership culminated in NATO alliance—outlasted the Cold War.
US/China (Korean War)	Not Present (Ineffective)	China is also a proxy for North Korea in that conflict as I have NO DATA on North Korean trade.
US/Vietnam	Not Present (Ineffective)	The US declined Vietnamese offers for rapprochement in the mid-1970s. NO DATA.
US/Grenada	Present/Effective	EXCLUDED: Grenada is solidly in the US sphere of influence and likely could not repel a strategic partnership "offer" from the US. The scope of the US/Grenada conflict was relatively small. Thus, this case does not meet my intent of strategic partnership and could skew results (likely in favor of my hypotheses).
US/Panama	Present/Effective	EXCLUDED: Panama is solidly in the US sphere of influence and likely could not repel a strategic partnership "offer" from the US. The scope of the US/Panama conflict was relatively small. Thus, this case does not meet my intent of strategic partnership and could skew results (likely in favor of my hypotheses).
US/Serbia	Not Present (Ineffective)	Milosevic (war criminal) was still in power after the war; Russia was a spoiler and competitor for Serbian allegiance. US did not attempt a strategic partnership.
US/Iraq	Present/Mixed Efficacy	The US/Iraq Strategic Framework Agreement was signed in 2008. However, while certain levels of cooperation still exist (e.g., US sales of F-16s to Iraq are still underway), there are clear indications of problems with the partnership (e.g., Iraqi support to Assad in Syria and complicity in Iranian support of Assad AGAINST the wishes of the US and almost all regional parties).
US/Afghanistan	Present/Mixed Efficacy	The US/Afghan Strategic Partnership Agreement was signed in May of 2012. However, there are clear indications of problems with the partnership (e.g., frequent "green on blue" murders of coalition troops by Afghans and anti-US banter by incumbent leaders).

Appendix C: Trade Flow Charts

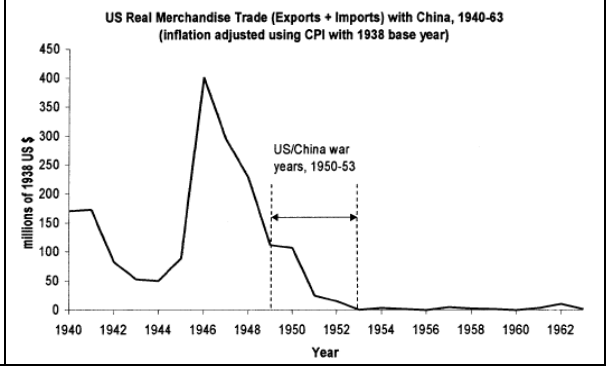
Figure 2: Anderton & Carter (2001) and Original Trade Flow Charts

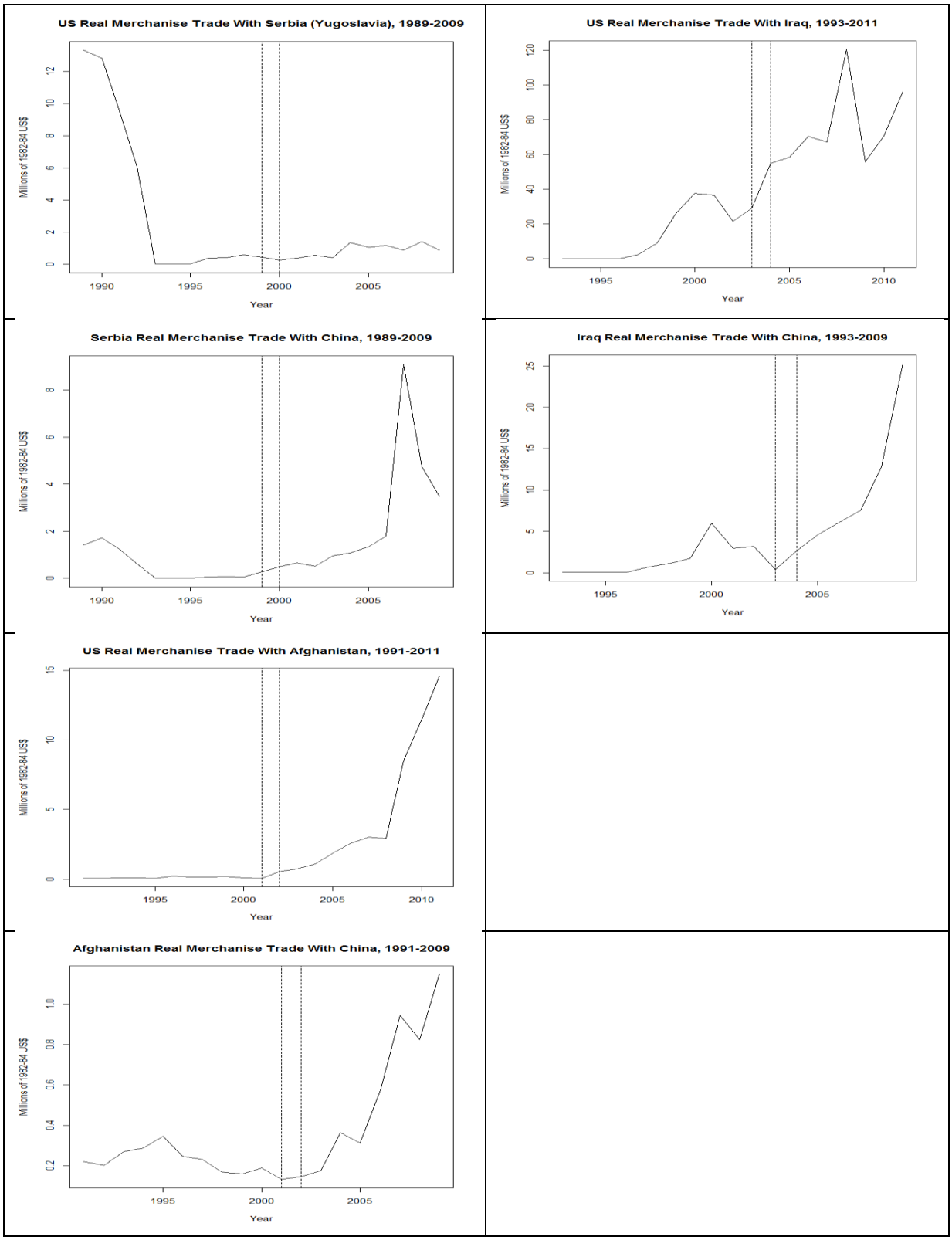






*** Per COW data, Germany's trade with US rivals Russia and China is unknown or absent between 1938 and 1990. I assume it to be negligible (i.e., similar to Japan/China chart above) due to postwar Allied occupation and Cold War realities.





* "Bold" charts transferred from Anderton Carter, 2001.

Appendix D: Merged Coefficient Matrix

Table 2: Merged Coefficient Matrix of Anderton & Carter (2001) and Original Data

Dyads (war years in parentheses)	*Constant (b_0)*	*Trend (b_1)*	*War Level (b_2)*	*War Trend (b_3)*	*Peace Level (b_4)*	*Peace Trend (b_5)*	*Rho*	*R_2*
## Original Anderton Carter data with commensurate rival extension data								
USA/Germany, 1931–55 (1941–45)	5.67* (0.49)	–0.25* (0.09)	–3.71* (1.01)	0.24 (0.28)	4.78* (0.87)	0.17 (0.28)		0.90
USA/Italy, 1931–53 (1941–43)	4.29* (0.16)	0.00 (0.03)	–9.67* (0.56)	2.17* (0.24)	4.22* (0.36)	–2.18* (0.24)	–0.69	0.97
Italy/Russia (US Rival)	4.68* (1.70)	-1.01** (0.30)	-0.50 (2.27)	1.12 (0.79)	0.08 (2.03)	0.75 (0.79)	0.52	0.73
Italy/China (US Rival)	0.25 (1.53)	-0.28 (0.29)	-2.72 (3.13)	0.23 (0.87)	1.42 (2.69)	0.70 (0.87)		0.49
USA/Japan, 1931–55 (1941–45)	5.25* (0.34)	0.08 (0.06)	–3.12* (0.75)	–0.93* (0.20)	5.76* (0.64)	1.04* (0.20)	–0.48	0.91
Japan/China (US Rival)	4.05** (0.89)	0.17 (0.17)	0.78 (1.81)	-0.36 (0.50)	-14.29** (1.56)	1.42* (0.50)		0.91
USA/China, 1940–63 (1950–53)	4.59* (0.59)	0.07 (0.11)	1.40 (1.37)	–1.71* (0.47)	0.25 (1.09)	1.72* (0.47)		0.85
Pure extension data								
USA/Serbia 1989-2009 (1999)	1.34 (2.25)	-0.45 (0.39)	1.26 (2.47)	N/A	0.01 (2.47)	0.68 (0.58)	0.58	0.17
Serbia/China (US Rival)	-1.08 (2.47)	-0.48 (0.43)	3.33 (2.95)	N/A	0.98 (2.95)	0.80 0.65	0.52	0.38
USA/Afghanistan 1991-2011 (2001)	-2.80** (0.20)	0.12** (0.04)	-1.52** (0.41)	N/A	2.14** (0.40)	0.26** (0.05)		0.98
Afghanistan/China (US Rival)	-1.31** (0.13)	-0.04 (0.02)	-0.33 0.26)	N/A	-0.16 (0.28)	0.34** (0.04)		0.91
USA/Iraq 1993-2011 (2003)	-4.65** (1.34)	0.98** (0.23)	-1.26 (1.63)	N/A	0.30 (1.69)	-.95* (0.41)	0.50	0.80
Iraq/China (US Rival)	-4.71** (0.70)	0.76** (0.13)	-3.96* (1.44)	N/A	1.62 (1.63)	-0.34 (0.31)		0.84

The data for wars are provided by Anderton & Carter's table 1 (2001, 454); data for rival portions are constructed through extension.
For Anderton Carter data, "Standard errors are shown in parentheses. An asterisk indicates a two-tailed *p*-value less than 10%. Hypotheses on *b*2, *b*3, and *b*4 are one-sided. Regressions are estimated using Time Series Processor (TSP) Version 4.4. AR1 results are reported if the absolute value of the *t*-statistic on rho exceeds 1.3; otherwise OLS results are reported." (Anderton & Carter, 2001 454)
For extension data, significance codes are * for .1 or better and ** for .01 or better.

Appendix E: Trade Ratios

Table 3: Prewar to Postwar Average Annual Real Trade Ratios

Dyads (war years in parentheses)	*Prewar/Postwar Avg Annual Trade Ratio*
USA/Germany, 1931–55 (1941–45)	2.004935017
USA/Italy, 1931–53 (1941–43)	2.843660018
# Italy/Russia (US Rival)	0.877317806
# Italy/China (US Rival)	0.747652383
USA/Japan, 1931–55 (1941–45)	1.105090159
Japan/China (US Rival)	0.05038615
## USA/China, 1940–63 (1950–53)	0.017793684
## USA/Serbia 1989-2009 (1999)	0.190798838
Serbia/China (US Rival)	4.682838201
USA/Afghanistan 1991-2011 (2001)	40.85670067
Afghanistan/China (US Rival)	2.419555994
USA/Iraq 1993-2011 (2003)	5.534138354
Iraq/China (US Rival)	6.284927817

* This chart represents (average annual postwar trade) divided by (average annual prewar trade).
# These figures are paired with statistically insignificant coefficients.
These figures are skewed by very low trade levels.

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