Alliances, Arms Exports and Electoral Trade Cycles

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Abstract

Political budget cycles in the United States increase international trade, especially arms exports to allies. Security cooperation thus shapes the ramifications of political business cycles, as arms transfers to allies contribute to electoral trade cycles. When U.S. allies purchase weapons and accept arms transfers, they provide an outlet for outputs from efforts to use defense contracting to stimulate economic growth in key electoral areas. Alliance proteges thus use positive economic and security statecraft to help patron state leaders manipulate the economy during leadership competitions. I examine these claims with three analyses of trade, arms transfers and defense contracting in the United States. First, I show that U.S. trade cycles with elections, with substantial increases overall trade and exports to allies near elections. I then detail how arms transfers from the United States to allies mirror electoral export cycles. Finally, I provide initial evidence of increased defense contract awards around elections. The results suggest that leaders of alliance patron states can employ security and economic ties with proteges for electoral gain.

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1 Introduction

U.S. trade with Denmark and Sweden spiked in 1996, as Bill Clinton ran for re-election. Exports to and imports from both Nordic countries rose, but Denmark received more U.S. exports. While these countries occupied similar regions, and shared similar trade relations with the United States, Denmark received more exports because U.S. arms exports to this NATO member also rose.

Two Middle Eastern states experienced similar trade changes in 1984 when Ronald Reagan stood for a second term. U.S. trade with Turkey and Egypt grew, but exports to Turkey increased more than exports to Egypt. As in the Denmark and Sweden case, Turkey had a formal U.S. security guarantee and Egypt did not, so Turkey received greater U.S. arms transfers and higher total exports.

These cases reflect a more general pattern, where presidential elections in the United States expand international trade, especially arms exports to allies. This paper unpacks the role of alliances and arms transfers in electoral trade cycles between the United States and other countries. I argue that along with a general increase in trade near presidential elections, U.S. allies receive more exports through arms transfers.

Political business cycles produce electoral trade cycles. Elected leaders often use fiscal and monetary policy (Nordhaus, 1975; Tufte, 1978; Rogoff, 1987; Clark and Hallerberg, 2000) to generate economic growth around elections. Monetary and fiscal policy cycles within large states increase trade, as economic expansion pulls in more imports and increases production for export markets and making exports more competitive through currency devaluation.

Along with a general increase in trade, security cooperation facilitates electoral cycles in arms exports. Alliance proteges provide a key market for exports from political business cycles in their patron, as they receive more arms purchases and transfers than other states. Allies take more arms from their patrons near elections because they control import decisions and

U.S. leaders produce additional arms by using defense contracting to create domestic political business cycles (Tufte, 1978; Mintz, 1988; Mayer, 1995; DeRouen Jr and Heo, 2000; Becker, 2021).[1] These arms export cycles reinforce cooperative relationships between U.S. leaders and alliance proteges.

I examine how U.S. allies facilitate electoral export cycles in three ways. First, I show that in addition to general electoral trade cycles, allies receive more U.S. exports as presidential elections approach. I then demonstrate corresponding cycles in arms transfers, where arms exports to allies rise as elections approach. Finally, I provide descriptive evidence of underlying defense contracting cycles.

The argument and analysis focus on the United States because it has the largest economy, substantial alliance ties, and prior evidence of defense contracting cycles. Electoral trade and arms transfer cycles will likely be weaker in other countries with smaller economies and defense industries. Still, the pivotal economic and security roles of the United States make understanding the economic and security consequences of U.S. political budget cycles worthwhile.

The argument and findings address three salient issues in international relations theory and practice. First, they detail the international consequences of political business cycles. Domestic political business cycles in large countries like the United States reshape international economic ties, with knock-on effects in other countries. International economic expansions and related domestic growth make early elections in parliamentary democracies more likely (Kayser, 2006) and increase vote shares for parties supporting higher taxes and spending (Kayser, 2009), to give two examples.

Second, I speak to debates about how economic and security ties interact (Mastanduno, 2009; Poast, 2019). Scholars dispute whether economic linkages drive security ties (Biglaiser and DeRouen, 2007; Fordham, 2010; Kimball, 2010), security concerns encourage economic

[1] There is also evidence that leaders use non-budget instruments like social policy (Philips, 2020), labor agreements (Ahlquist, 2010) and trade disputes (Conconi et al., 2017) to win elections.

linkages (Gowa, 1995; Li, 2003; Long and Leeds, 2006; Gowa and Mansfield, 2004), or both (Biglaiser and DeRouen, 2009; Kinne and Bunte, 2018). My findings suggest that this relationship varies with electoral cycles and sectors.

These claims complement prior findings that foreign states use economic policies to manipulate electoral competition. Kim and Margalit (2021) find that Chinese tariffs reduced Republican vote share in the 2018 midterm elections by targeting industries in competitive districts. In the same way, Chyzh and Urbatsch (2021) find that Chinese soy tariffs hurt Republican congressional candidates in soy-producing areas. My argument inverts this logic by examining how security allies accommodate electoral budget cycles and thereby help incumbents win office.

In asymmetric alliances like those between the United States and its partners, research on economic bargaining often focuses on patron states' economic leverage, and falls into two camps. One argues that alliance patrons have limited economic leverage because they prioritize geopolitical aims (Drezner, 2013; Wolford and Kim, 2017). Another perspective claims that alliance leaders have substantial economic influence (Norrlof, 2010; Brooks, Ikenberry and Wohlforth, 2013) and threats to reduce security commitment encourage economic concessions (Oatley, 2015, pg. 122). Rather than analyze coercive economic demands, my argument covers how positive economic statecraft by allies helps U.S. leaders advance their electoral interests.

Finally, this paper provides new insight into economic statecraft. Most economic statecraft scholarship studies economic sanctions (e.g. Marinov (2005); Allen (2008); Escribà-Folch and Wright (2010)). But as Baldwin (2020) notes, economic statecraft includes positive inducements and negative sanctions. This paper examines positive economic statecraft— how alliance proteges use political economy decisions to indirectly encourage patron leaders' political budget cycles. As a result, it connects with prior work on issue linkage in alliance management, including studies of alliance formation (Poast, 2012) and credibility (Davis, 2008; Poast, 2013).

My finding that allies facilitate political budget cycles through arms exports has important

implications for alliance durability. Leaders who anticipate benefiting from allied trade cycles will be more likely to demonstrate and uphold alliance commitment. Electoral trade cycles are therefore a potential component of grand bargains between alliance patrons and their proteges.

The paper proceeds as follows. To start, I outline an argument detailing the international economic consequences of political business cycles in the United States, the role of defense contracting in those cycles, and the consequences for international trade as well as exports to allies. I then test the process in three steps. First, I show that U.S. exports to allies increase more as elections approach, relative to states without a defense pact. I then demonstrate that arms exports from the United States to allies mirror the electoral export cycle. Third, I establish the political business cycle roots of arms exports with evidence of defense contracting cycles. The last section discusses the results and offers concluding thoughts.

2 Argument

This argument explains how alliances reshape the international economic consequences of domestic political business cycles. First, I detail how political budget cycles expand overall trade. I then discuss how direct leader control makes defense contracting an attractive policy tool for manipulating economic conditions around elections. After that I claim that allies provide an market for outputs from electoral cycles in defense contracting. Finally, I detail the overall result; general electoral trade cycles with greater exports to allies through arms transfers.

Electoral considerations impact economic policy (Nordhaus, 1975).[2] Leaders undertake political budget cycles by using fiscal and monetary policy to increase economic growth near elections and retain power for themselves or their party (Tufte, 1978; Rogoff, 1987). The composition and magnitude of these cycles varies. For example, strong central bank interdependence and fixed exchange rates make fiscal cycles more likely (Clark and Hallerberg, 2000).

[2]See Dubois (2016) for a review of this extensive literature.

Even some independent central banks exhibit cyclical behavior, however (Dubois, 2016, pg. 247)

By creating domestic business cycles, political budget cycles have international economic consequences. Fiscal and monetary policy shifts impact currency prices and economic activity, which then alters trade and financial ties. The larger the cycling economy, the greater the international economic consequences of political business cycles. Economic interdependence leads to correlated economic growth across countries (Artis and Zhang, 1999; Kayser, 2006) and increases the global economic influence of large economies. Ito (1991) finds that U.S. elections increase economic growth in Japan, while Thompson and Zuk (1983) uncover some evidence of similar cycles in advanced industrial economies. Foerster and Schmitz (1997) argue that U.S. electoral cycles impact international stock returns.

There is less empirical evidence of electoral trade cycles, but the theory is straightforward. For example, monetary expansion has price and income effects— price effects make exports more competitive, while increased incomes stimulate import consumption (Sumner, 2021). Economic growth from political budget cycles also increases domestic consumption and demand for imported goods. Electoral cycles in imports follow, as consumption follows economic expansions and contractions from political budget cycles. While all economies should pull in additional trade through economic expansion near elections, these effects will be most pronounced in large economies.

Raw trade data shows clear electoral cycles in U.S. exports, imports and total trade from 1951 to 2019. Figure 1 presents the distribution of changes in logged exports, imports and overall trade in years with differing proximity to presidential elections. Box plots summarize the distribution of U.S. trade with all states in those years. The dark line in each box plot marks the median value.

While there is ample variation in export changes across, the median export change is highest in the year before or year of a presidential election. Import changes also rise, though they

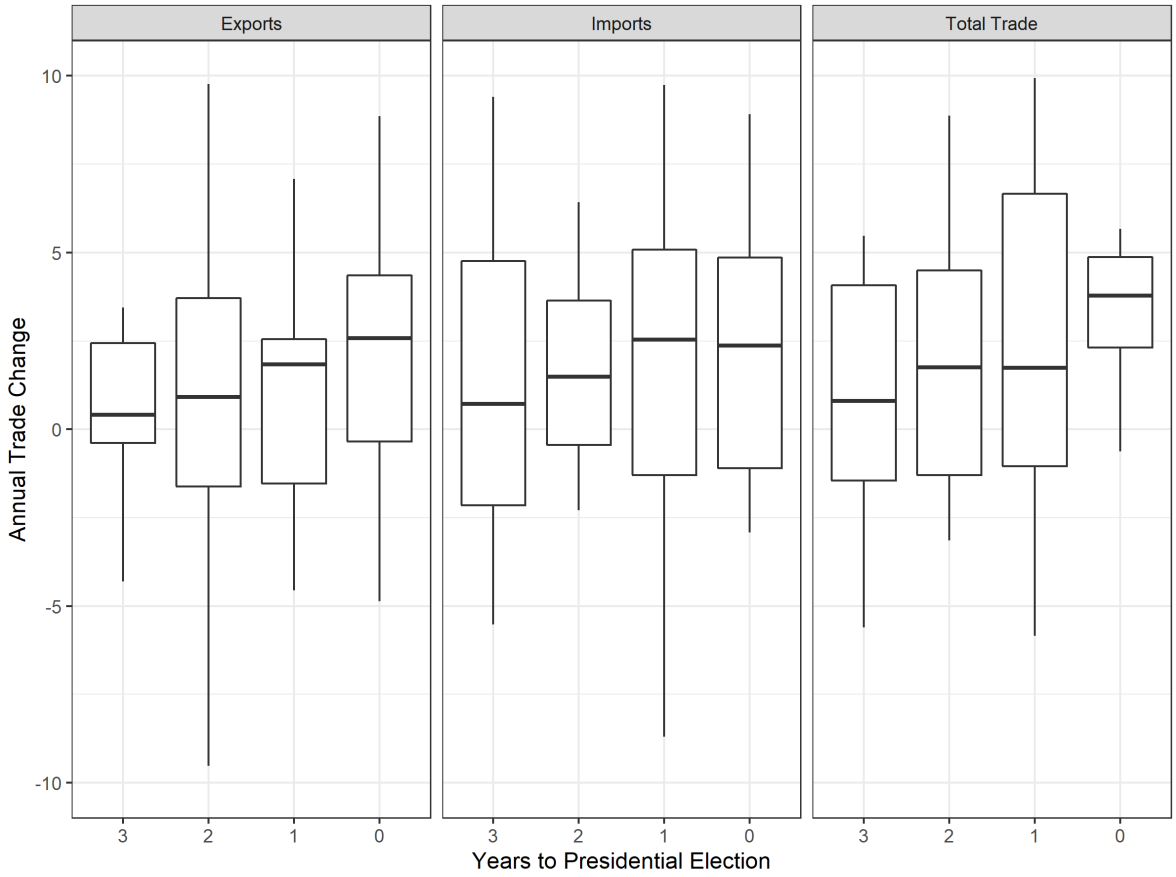

Figure 1. *Electoral cycles in U.S. trade between 1951 and 2019. Each box plot summarizes the distribution of changes in logged exports, imports, and overall trade as a presidential election approaches. The thick black line in each plot marks the median value.*

vary more before an election. As a result of increasing exports and imports, total trade changes also increase, especially in presidential election years.

The economic roots of these electoral trade cycles are straightforward, but the composition of electoral trade cycles requires further scrutiny because recent scholarship highlights specific policy cycles. On the fiscal policy side, aggregate budgets often give leaders limited spending discretion, which leads to targeted spending shifts (Dubois, 2016, pg. 248).[3] Leaders also manipulate other policies such as trade disputes (Conconi et al., 2017), labor agreements (Ahlquist, 2010) and land reform Philips (2020) to win support in key constituencies.

Many observers claim that defense spending is an especially flexible instrument for budget cycles (Tufte, 1978; Mintz, 1988). Executive leaders often have more discretion in defense resource allocation, and defense spending has economic ramifications. Whitten and Williams (2011) note that defense spending can serve social welfare goals and Becker (2021) finds that unemployment in NATO members encourages leaders to shift spending from equipment to personnel.

Recent studies in the United States argue that defense budgets, which are set two years in advance, are hard to use for political cycles. As a result, attention shifted towards defense contracting, as leaders control contract timing and disbursement (Mayer, 1995; DeRouen Jr and Heo, 2000). Disbursing contracts also allows leaders to target key constituencies in response to unemployment and approval.

Electoral cycles in defense contracting have economic and security consequences. Defense contracting increases arms production by employing firms to produce defense goods. While these goods can equip the U.S. military, electoral cycles and defense planning may diverge. Even the U.S. military may lack absorptive capacity to incorporate defense contracting outputs. Put differently, increased supply from electoral cycles in defense contracting does not respond to increased military demand, requiring other buyers. Foreign markets provide alternative

[3]This does not rule out fiscal cycles, however, and certainly does not rule of out monetary cycles.

outlets for excess arms production from defense contracting cycles.

Production times for defense goods vary widely. Large platforms like ships, tanks and airplanes can take years to assemble. Still, if foreign states place orders for these platforms near elections, contracts can go out immediately. Other goods such as small arms, ammunition and missiles, may be produced and exported more quickly. Intermediate goods, such as F-35 components, can also be exported as needed.

When defense production and planning diverge, foreign markets provide alternative takers for excess arms production from defense contracting cycles. Security partners are a pivotal outlet because alliances facilitate security, economic and political cooperation. The United States often transfers or sells arms to alliance proteges, and proteges have means and motivation to accommodate electoral cycles.

2.1 Alliances and Arms Exports

In asymmetric alliances between large and small states, the large state protects its smaller partner in exchange for foreign policy concessions (Morrow, 1991). A credible promise of military support increases the large state's foreign policy influence. Small alliance members garner protection from external threats and sacrifice some foreign policy autonomy. Although many asymmetric alliance formalize hierarchical relationships, security and economic hierarchy are distinct (Lake, 2009).

Many alliances also include explicit or implicit promises of economic cooperation (Gowa and Mansfield, 2004; Long and Leeds, 2006; Davis, 2008; Poast, 2012).[4] Prior research indicates that alliances promote trade (Gowa, 1995; Gowa and Mansfield, 2004; Haim, 2016) or protect existing trade ties (Fordham, 2010). Alliances also encourage foreign direct investment (Li and Vashchilko, 2010) and monetary cooperation (Li, 2003). A cooperative bargain of security and

[4]Conflict and economic integration are linked in general (see for example, (Gartzke and Li, 2003; Chen, 2021)).

economic cooperation results.

Bundled security and economic cooperation makes U.S. allies an obvious market for outputs from political cycles in defense contracting. Close security cooperation and economic integration of defense industries create economic and security ties that encourage arms trade (Bitzinger, 1994). Defense industry integration generates trade in intermediate defense goods. When contracting cycles produce new goods, U.S. leaders can also sell or transfer old equipment to partners to make room for new arms. Thurner et al. (2019) find that while the relative importance of security and economic factors fluctuates, alliances consistently increase arms transfers.

Electoral cycles in arms exports benefit U.S. leaders. Presidents gain additional flexibility to manipulate economic conditions with defense contracting and signal support for U.S. alliance proteges by sending arms. Defense contracting cycles increase prosperity in key electoral areas, which increases a leader's odds of winning office for themselves or their party. As for signaling support, McManus and Yarhi-Milo (2017) argue that arms transfers are a costly but less visible signal of patron support.[5]

Allied leaders also benefit from arms exports around elections. U.S. allies curry favor with their patron, bolster their military capabilities and deepen perceived commitment. Taking arms exports is positive economic statecraft. Purchases and transfers are a common way that states bolster their political influence (Baldwin, 2020, pg. 42-3). In alliance politics, Ikenberry and Grieco (2003, pg. 184-5) note that states often use direct transfers to attract and sustain security commitments.

Arms transfers fall under direct leader control, which gives allies flexibility to respond to U.S. defense contracting cycles. Arms imports are more flexible than tariffs or other trade policies that leaders could manipulate to boost trade with the United States. Governments are

[5]Yarhi-Milo, Lanoszka and Cooper (2016) argue that arms transfers sometimes substitute for alliances so patrons can provide security with less entrapment risk.

the customer for most arms sales or transfers, so just as political control of firms increases trade policy flexibility (Davis, Fuchs and Johnson, 2019), they have more latitude to take arms with less political blowback.

Moreover, proteges do not always pay for U.S. arms transfers. The United States often subsidizes or gifts arms transfers through foreign military sales programs. While these still count as arms exports, they impose few immediate costs on recipients. Pure transfers to allies are easier for presidents to justify than transfers to other states. Allies are more likely to receive pure transfers or subsidies than other states.

Allies are more likely than other states to receive arms transfers around elections. The security externalities of arms transfers will reduce electoral cycles in arms exports to non-allies. U.S. leaders will be less willing to increase the capability of potential opponents, even if it facilitates electoral cycles. Furthermore, arms transfers outside of alliances may face greater opposition scrutiny near elections, leading presidents to forestall criticism by forgoing contentious transfers. Limited defense industry cooperation also constrains exports outside alliances to finished goods, while allies with defense industrial ties can receive intermediate goods.

This argument is agnostic about whether allies make a conscious decision to help political budget cycles by taking arms exports. U.S. allies need not make deliberate choices to accommodate electoral cycles in defense contracting, they may receive better terms and more financial support to take additional goods. Allies could also take transfers or surplus materiel as a deliberate favor to leaders who have supported their foreign policy interests, however.

The overall argument proceeds as follows. First, budget cycles increase defense contracting awards and overall trade. Greater defense contracting increases arms production, which then augments arms exports to allies. Figure 2 summarizes this sequence.

Given general budget and specific defense contracting cycles, I expect trade increases and greater exports to allies through arms transfers around U.S. elections. Greater imports and exports will increase total trade around elections. The relative impact on trade balances depends

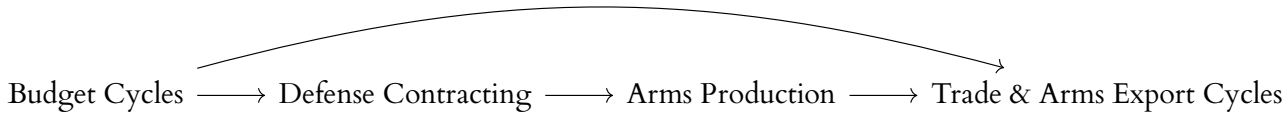

Figure 2. *Summary of the argument process.*

on whether imports or exports increase more. If U.S. proteges take more exports than non-allies, the U.S. trade balance with those states will improve relative to trade balances with non-allies however.

The result of this process is increased trade as elections approach, especially exports from the United States to alliance proteges. Electoral export cycles in alliances reflect trade in arms and intermediate defense goods. Arms exports in turn are rooted in electoral cycles of defense contracting.

2.2 Implications

The argument generates several testable implications, within specific scope conditions. Cycles are most likely in states with a large economy, alliance partners and a robust domestic defense industry. Fixed election scheduling also reduces endogeneity between policy decisions and strategic election timing. Therefore, the argument and analysis focus on the United States, which meets all these conditions. Other states may have weaker cycles, or greater cycles in different goods.

The first hypothesis predicts general electoral cycles in trade, especially exports to allies. As presidential elections approach, I expect greater overall trade and increasing exports from the United States to alliance proteges.

> Trade Cycles Hypothesis: As time to a presidential election decreases, U.S. imports and exports will increase, and exports to allies will increase more than other trade flows.

The second hypothesis predicts corresponding cycles in arms exports. If arms transfers and sales drive export cycles, electoral cycles in arms transfers should match trade cycles. Proximity to presidential elections will increase arms transfers from the United States to allied states.

> Arms Exports Hypothesis: As time to a presidential election decreases, U.S. arms exports to allies will increase.

The third prediction tests the expected relationship between defense contracts and arms exports. I expect electoral cycles in defense contacting, and a positive correlation between these cycles and U.S. arms exports.

> Defense Contracts Hypothesis: As defense contracting increases around elections, U.S. arms exports will increase.

In the following, I describe how I scrutinize each of these hypotheses. In the first analysis, I establish the role of allies in electoral export cycles. The second analysis shows increasing exports to allies track with the U.S. electoral cycles, and are of comparable magnitude to trade cycles. Finally, I offer a preliminary examination of the final link in the argument with descriptive data on defense contracting from 2000 to 2020.

3 Electoral Cycles in U.S. Exports to Allies

To test the first hypothesis, I analyze U.S. trade from 1950 to 2014. This analysis presents electoral trade cycles, then establishes that allied states see electoral export cycles. The key independent variable is an indicator of years until a presidential election year. The years to election variable ranges from zero in election years to three in the year immediately after an election. The second key variable is a dummy indicator of a defensive alliance between the United States and each state, drawn from the ATOP database (Leeds et al., 2002). Finally, I interact the defensive alliance dummy with the years to election variable.

The key outcomes are annual changes in the natural log of exports, changes in log imports, changes in total trade, and trade balance changes. The total trade changes and trade balance changes measures assess the net impact of export and import changes. I use changes because models in levels with a lagged dependent variable suggest non-stationarity in many panels. Lagged trade flows have unit roots or near unit root coefficients, so models in levels risk spurious inferences (Granger and Newbold, 1974). I draw on exports and imports data from the IMF's direction of trade statistics database.

For U.S. exports, my argument makes three predictions about the interaction between alliances and years to election. First a positive constituent term on the defensive alliance variable, which indicates that allies take more exports than non-allies in election years, when time to election is zero. Second, I expect a negative constituent term on years to election as non-allied states respond to political business cycles in other ways. Last, a negative interaction between alliances and time to the election would indicate that exports to allies are more responsive to elections than exports to states without a defensive alliances with the United States.

I expect no interaction between alliances and election proximity for U.S. imports, because imports reflect general economic growth. Foreign firms can respond to increased U.S. demand regardless of alliance cooperation. Allies may export more than other states, but they will not be more responsive to elections than other states.

In addition to the interaction of time to elections and a defensive alliance, I include a series of control variables that may be correlated with alliances and trade. Key trade variables include for changes in the GDP of both states, population-weighted distance, contiguity, common language and former colonial ties (Fouquin and Hugot, 2016). I also adjust for democracy (Marquez, 2016), the presence of a militarized interstate dispute (Gibler, Miller and Little, 2016), and shared IGO membership (Pevehouse et al., 2020).[6]

Some trade flow changes are unusual. This creates heavy-tailed residuals, so I employ a

[6]Some dyadic data from the *peacesciencer* R package (Miller, 2021).

robust regression estimator; M-estimation with Tukey's biweight function (Rainey and Baissa, 2020). Robust regression places less weight on unusual observations, making it more efficient than OLS for this particular outcome.

3.1 Results

Raw trade data shows differences between allies and non-allies for electoral cycles in U.S. exports, imports and total trade. Figure 3 presents the distribution of changes in logged exports, imports and overall trade in years with differing proximity to presidential elections. Box plots summarize the distribution of U.S. trade with all states in those years. The dark line in each box plot marks the median value.

Median export changes are higher for allies than non-allies near presidential elections. Export changes for non-allies still rise, but less than exports to allies. Imports from non-allies and allies are equally responsive to election timing. As a result, total U.S. trade increases regardless of formal security ties.

Figure 1 shows electoral cycles in U.S. trade, but it is possible that other factors confound this relationship. Figure 4 presents coefficient estimates from the robust regression models of the four trade outcomes, along with 95% confidence intervals. These estimates suggest that allies receive substantial U.S. export cycles, but all states respond to elections with increased exports to the United States.

As expected, the interaction between the defensive alliance dummy and years to election is negative in the exports model, which implies that allies receive more U.S. exports as presidential elections approach. Allies receive more U.S. exports in election years, and respond especially strongly to election timing. The smaller constituent term on the election years constituent term in the exports model implies a smaller electoral cycle in exports to non-allies.

The interaction term for imports suggests no clear difference in U.S. imports around elections between allies and non-allied states. Moreover, the time to election constituent term is

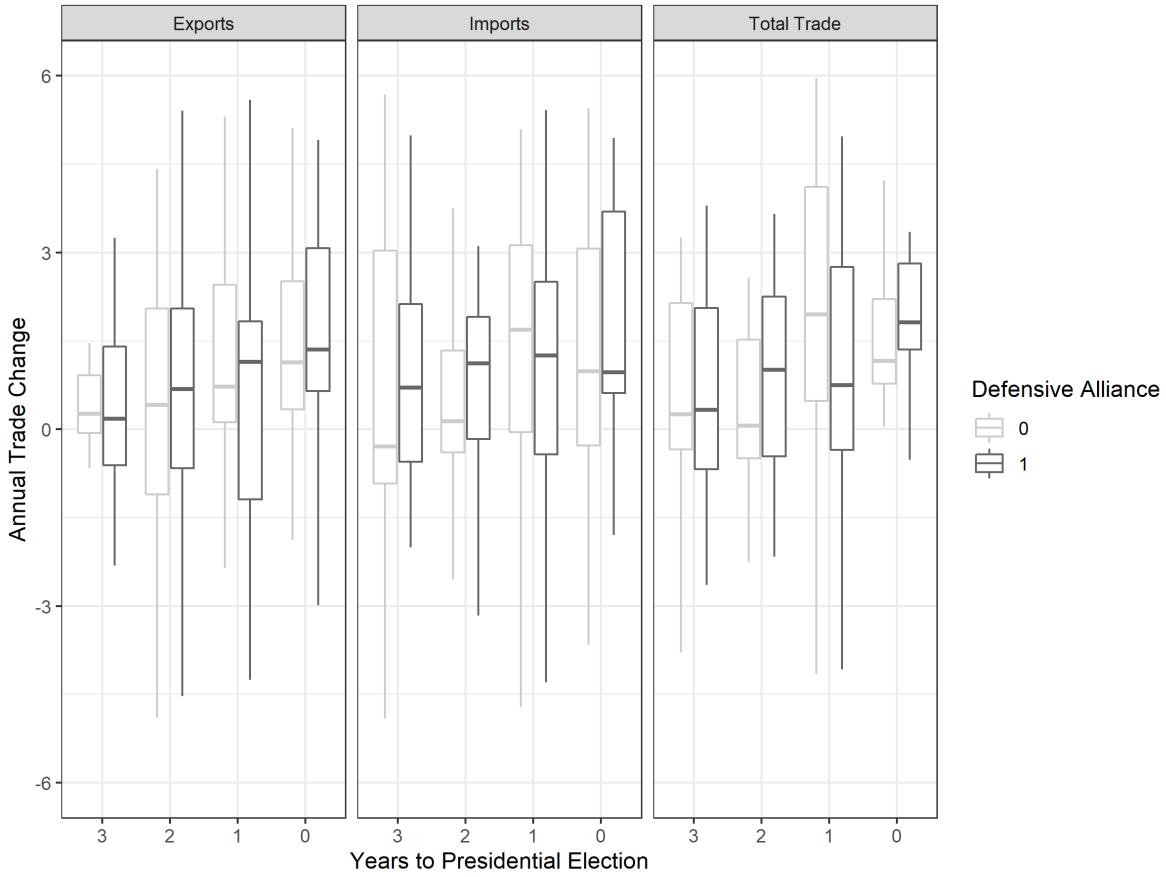

Figure 3. *Electoral cycles in U.S. trade between 1950 and 2014. Each box plot summarizes the distribution of changes in logged exports, imports, and overall trade as a presidential election approaches. Colors mark trade with allies and non-allies. The thick black line in each box plot marks the median value.*

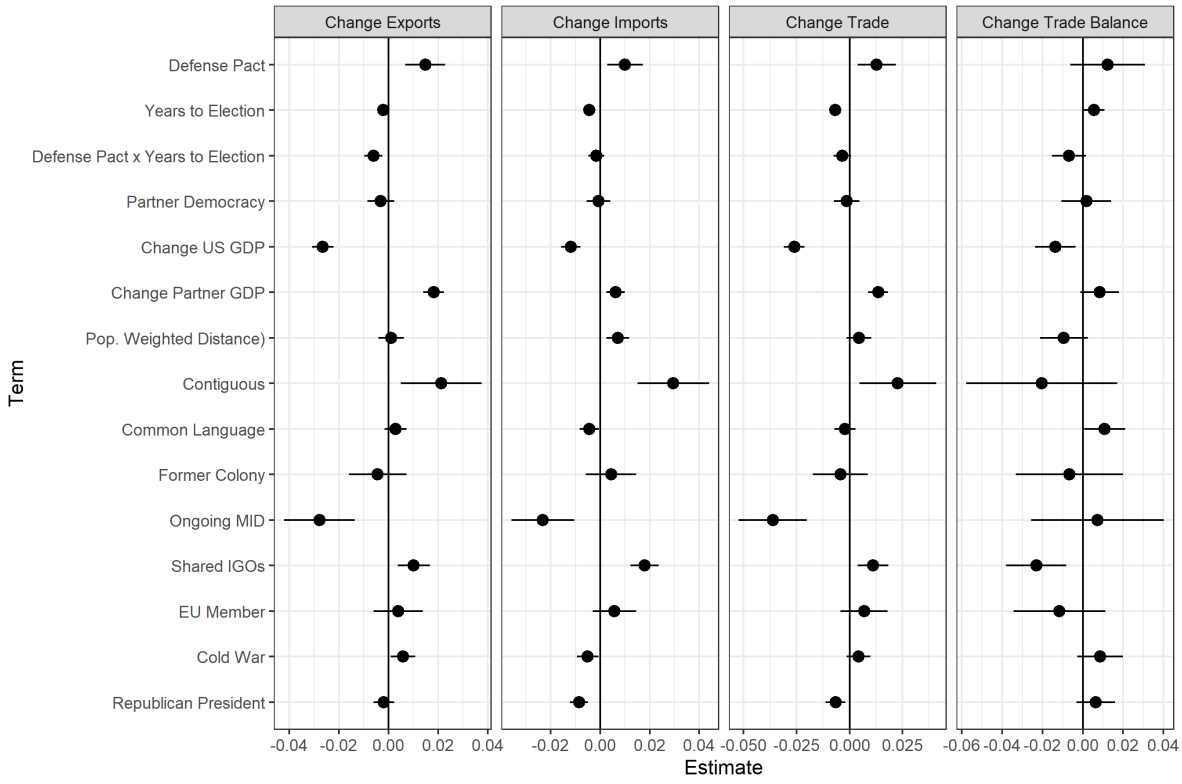

Figure 4. *Robust regression coefficients from models of U.S. trade, 1950 to 2014. Points mark coefficient estimates and error bars encapsulate 95% confidence intervals. All continuous predictors rescaled by two standard deviations.*

negative for all outcomes, except the trade balance. This is indicative of similar electoral cycles between allies and non-allies. Trade changes approximate the track of exports. Simultaneous increases in imports and exports have an unclear impact on trade balances, however.

The sign and confidence intervals of the interaction terms are inadequate evidence of a conditional relationship (Brambor, Clark and Golder, 2006), so I plot predicted changes in trade flows in Figure 5. This figure presents predicted changes in trade across time to election for states with and without a U.S. defense pact. Given non-linear relationships from logged trade flows and a robust estimator, these predictions are more straightforward to interpret than marginal effects.[7]

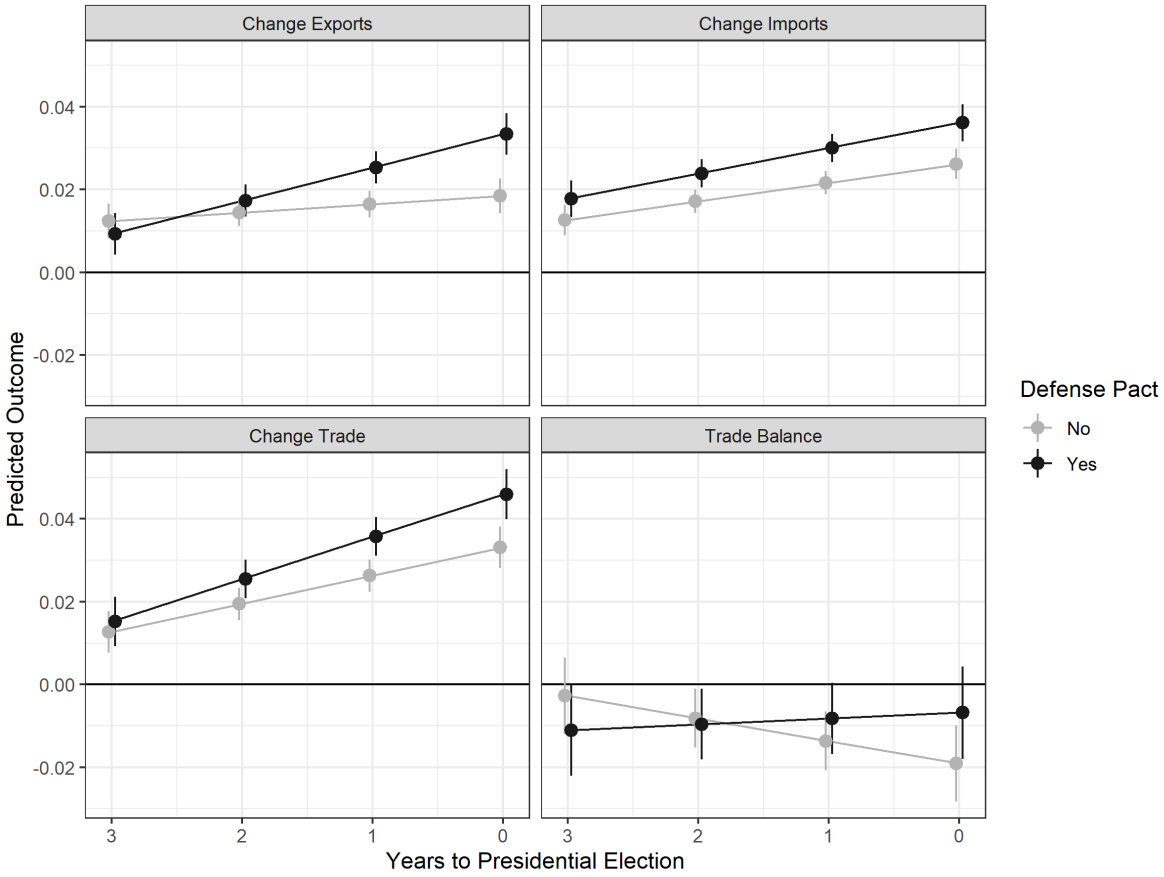

Figure 5. *Predicted changes in trade between the the United States and other states. Points mark the predictions and error bars summarize the 95% confidence interval.*

[7]I present marginal effects in the appendix.

Predicted changes in exports, imports, total trade and the trade balance are consistent with inferences from the coefficient estimates. While U.S. exports to non-allies rise somewhat with election proximity, exports to allied states increase more. Allied and non-allied export changes are comparable until the year before and year of U.S. presidential elections, and after that, exports to U.S. allies increase by far more.

U.S. imports increase as presidential elections approach, and there is little difference in the trend between allies and other states. This is the result of political budget cycles boosting domestic consumption, which do not target specific goods. Imports from allies are consistently greater than imports from non-allies, however, which is consistent with prior work on alliances and trade promotion (Gowa and Mansfield, 2004).

Differences in exports produce distinct electoral trade cycles between states with a U.S. defense treaty and those without. Non-allies increase imports and exports in similar ways as elections approach. As a result, their total trade changes increase with election proximity, but less so than allies. Allied trade with the United States rises more than trade with other states in presidential election years.

Trade balances, a key concern for some policymakers, show less evidence of electoral cycles. U.S. trade deficits with allies narrow somewhat around elections, but expand with non-allies, as imports rise more than exports. Uncertainty estimates makes distinguishing predictions between and within the two groups difficult.

These results are consistent with the export cycles hypothesis. Exports to allies increase more near elections than exports to non-allies. In the next section, I show that these differences in arms transfers to allies track export cycles.

4 Arms Transfers and Presidential Elections

I model U.S. arms transfers from 1951 to 2014 using data from the SIPRI Arms Transfer Database (SIPRI, 2021). The outcome in this analysis is annual logged arms transfers, based on SIPRI's trend indicator value methodology for major conventional weapons. I model arms transfer levels because these shifts are less autocorrelated than overall exports. I cannot use the same estimation strategy, however, because 60% of the observations have zero observed arms transfers. Such zero-inflation makes standard regression techniques inefficient. To overcome this issue, I use a two-stage model to approximate a hurdle into non-zero arms transfers.

In the first stage, I model a binary indicator of non-zero arms transfers with a logistic regression. The logistic regression predicts U.S. arms transfer presence with the defensive alliance dummy, dummy indicators of the Cold War, EU membership and Republican presidencies, recipient democracy, shared IGO membership and MID participation. I also include indicators of U.S. and recipient GDP, population-weighted distance, along with binary measures of common language, contiguity and colonial history. Finally, I account for duration dependence with cubic time polynomials (Carter and Signorino, 2010).

The second stage model is a linear regression of all non-zero arms transfers. This model of observed arms transfers adjusts for the predicted probability of non-zero arms transfers and a lagged arms transfer indicator to the predictors from the model of changes in exports. As in the trade models, I interact defense pacts and time to election to capture differences in electoral cycles between U.S. allies and non-allies. Other controls match the exports model, encapsulating economic, cultural, and distance in ties between the United States and other states. As a result, the overall approach approximates a hurdle from zero to positive arms transfers in modeling U.S. arms transfers.

4.1 Results

These results proceed in two parts. First, I present the coefficient estimates from the logistic regression of arms transfer presence and regression of arms transfers on election proximity and alliances in Figure 1. I then summarize the interaction of alliances and presidential election proximity in Figure 6.

At the arms transfer hurdle stage, defense pacts increase the likelihood of any arms transfer, as does contiguity, shared IGO membership, and former colonial ties. Increasing partner GDP increases the likelihood of arms transfers. More distant states are also more likely to receive arms transfers, as the United States sells many arms outside the Western Hemisphere. After accounting for alliances, increasing democracy and U.S. GDP make arms transfers less likely, as did the Cold War. The negative Cold War coefficient reflects dispersion in U.S. arms transfers across more states after the USSR collapsed.

In the regression of arms transfer levels, states with a U.S. defense pact receive more arms in presidential election years. As with overall exports, the difference between allies and non-allies increases as time to an election decreases. The key difference with the overall exports finding is that arms transfers to non-allies fall as presidential elections approach. This suggests that increasing exports from the United States to non-allies around elections concentrate in other goods.

Alliances and elections are not the only meaningful predictors of arms transfers. Arms transfer levels are less sensitive to partner democracy, but increase with allied GDP and decrease with U.S. GDP. Contiguous, more distant and former colonial states also receive more transfers, as do states that share more IGO memberships with the United States. The predicted probability of arms transfer coefficient implies that states that were more likely to receive arms are less likely to see large increases in arms. Large increases in U.S. GDP reduce arms exports changes. The Cold War coefficient is largely negative, perhaps as the scale of arms transfers was more limited in that period. Last, there is some temporal autocorrelation in arms transfers,

	Non-Zero Arms Transfer: Logit	Arms Transfers: OLS
Defense Pact	1.61	0.34
	(1.43, 1.79)	(0.13, 0.56)
Years to Election		0.04
		(-0.02, 0.10)
Defense Pact x Years to Election		-0.08
		(-0.16, -0.01)
Partner Democracy	-0.34	-0.01
	(-0.51, -0.18)	(-0.12, 0.11)
US GDP	-0.50	-0.19
	(-0.76, -0.25)	(-0.37, -0.01)
Partner GDP	0.24	0.09
	(0.06, 0.42)	(0.01, 0.18)
Pop. Weighted Distance)	1.39	0.49
	(1.23, 1.56)	(0.33, 0.65)
Contiguous	1.12	0.59
	(0.53, 1.78)	(0.32, 0.86)
Common Language	-0.04	-0.22
	(-0.17, 0.09)	(-0.31, -0.12)
Former Colony	1.00	0.22
	(0.50, 1.54)	(0.04, 0.40)
Ongoing MID	-0.81	-0.20
	(-1.23, -0.40)	(-0.55, 0.15)
Shared IGOs	2.63	0.54
	(2.40, 2.87)	(0.25, 0.83)
EU Member	-0.20	-0.30
	(-0.52, 0.14)	(-0.48, -0.12)
Cold War	-0.80	-0.18
	(-1.04, -0.56)	(-0.37, 0.02)
Republican President	-0.10	-0.03
	(-0.23, 0.02)	(-0.12, 0.06)
Lag Ln(Arms Transfers)		0.61
		(0.58, 0.63)
Pred. Prob. of Arms Transfer		-0.65
		(-1.21, -0.09)
Num.Obs.	7879	3268

Table 1. *Coefficient estimates from a logistic regression of non-zero U.S. arms transfers and robust regression of changes in arms transfers. All continuous predictors rescaled by two standard deviations. Intercepts included but omitted from the table. The logit model estimates also omit the cubic time polynomials.*

as the lagged dependent variable of .61 shows.

Again, the coefficient estimates in Table 1 are imperfect indicators of how alliances and electoral proximity interact. Figure 6 therefore plots predicted arms transfers and marginal effect of defense pacts. These predicted changes in arms transfers and estimated marginal effect of defensive alliances are consistent with the arms exports hypothesis.

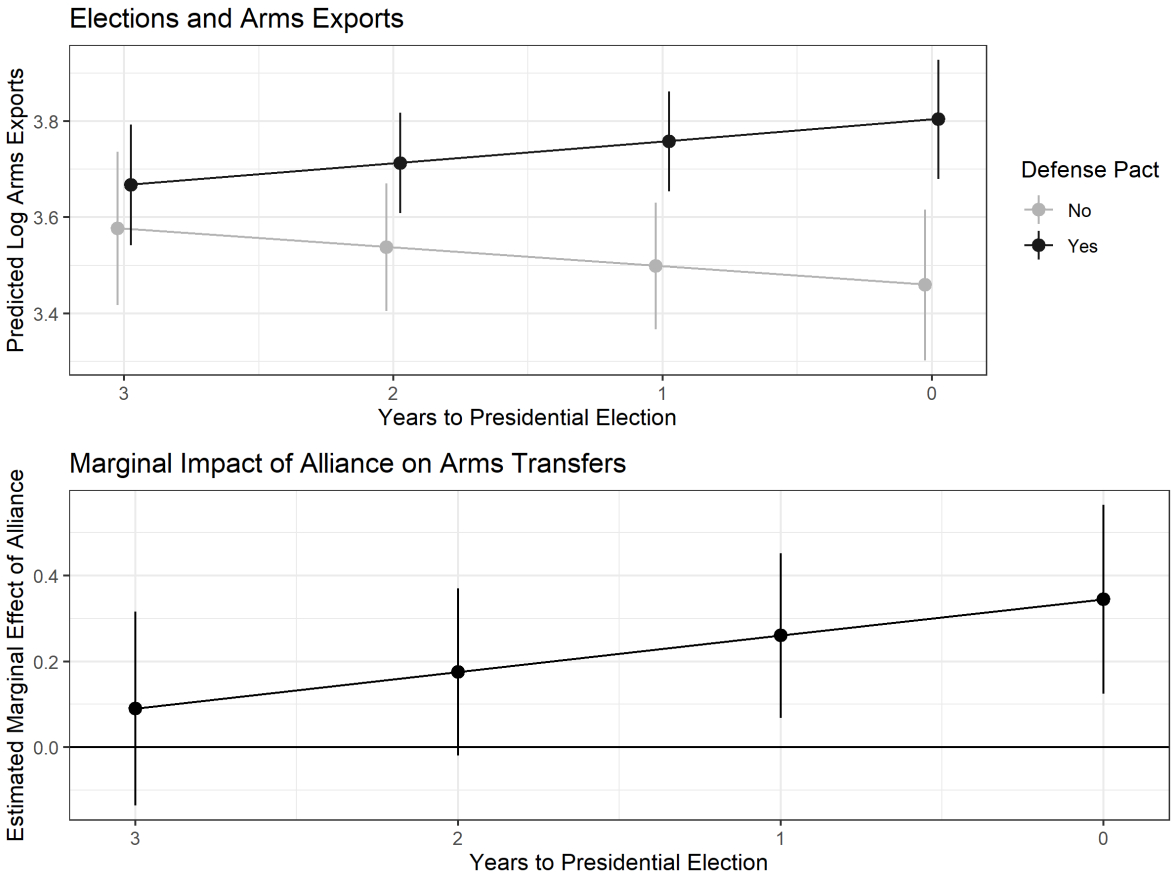

Figure 6. *Predicted outcome and the marginal impact of defensive alliances on changes in the log of arms transfers between the United States and other states 1950 to 2014. Points mark the estimates and error bars summarize the 95% confidence interval.*

First, predicted arms transfers to U.S. allies increase as presidential elections approach. For a U.S. ally, predicted log arms transfers rise by .14 in expectation. This is roughly equal to the marginal effect of an alliance on overall exports reflected in Figure 5. At the same time, arms transfers to non-allies fall as elections approach.

As a result, while arms transfers to allies and non-allies are similar in the year after a presidential election, there is a expected gap of .34 between allies and non-allies in election years. The marginal impact of a defense pact on arms transfers reflects this difference, as it rises near presidential elections. U.S. allies thus receive more arms near presidential elections than other states, as security cooperation and defense industry integration encourage arms exports.

Divergent electoral cycles in arms transfers reflect distinct political relations. Allies have more to gain from accommodating electoral cycles in arms transfers, and can fit additional U.S. arms into military forces that already use U.S. kit. Arms transfers cement cooperative relationships and bolster allied security through additional capability. Leaders may also face more scrutiny over arms transfers outside alliances as elections approach.

Growing arms exports to allies near elections are the result of electoral cycles in defense contracting. The next piece of evidence demonstrates the presence of electoral cycles in defense contracting. Future iterations of the paper will analyze this final stage of the process more fully.

5 Defense Contracting Cycles

To show electoral cycles in defense contracting, I draw on Department of Defense prime contract award data from the USAspending.gov database.[8] This archive contains data on individual contract awards from to 2000 fiscal year on. I collected all Department of Defense contracts from 2000 to 2020.

In addition to aggregating the total federal dollar obligation of all contracts in every year, I differentiate contracts by sector. Along with non-arms contracts for areas such as medicine, construction and services, I measure total contracts for aircraft, ships, vehicles, missiles/space, and weapons/ammunition. While large contracts for components of major combat platforms have greater economic heft, full platforms can take years to deliver. Missiles, weapons and am-

[8] Link here: https://www.usaspending.gov/download_center/custom_award_data.

munition may lead to more immediate exports of defense goods, as their production schedules are more flexible.

If defense contracting drives electoral export cycles, we should observe electoral cycles in defense contracting. Figure 7 shows defense contracting cycles around presidential elections. As presidential elections approach, aggregate defense contract awards increase. There is a notable spike of $25-30 billion in the median of overall defense contracts from two years into a presidential term to one year before an election. Median defense contracting levels rise further in election years.

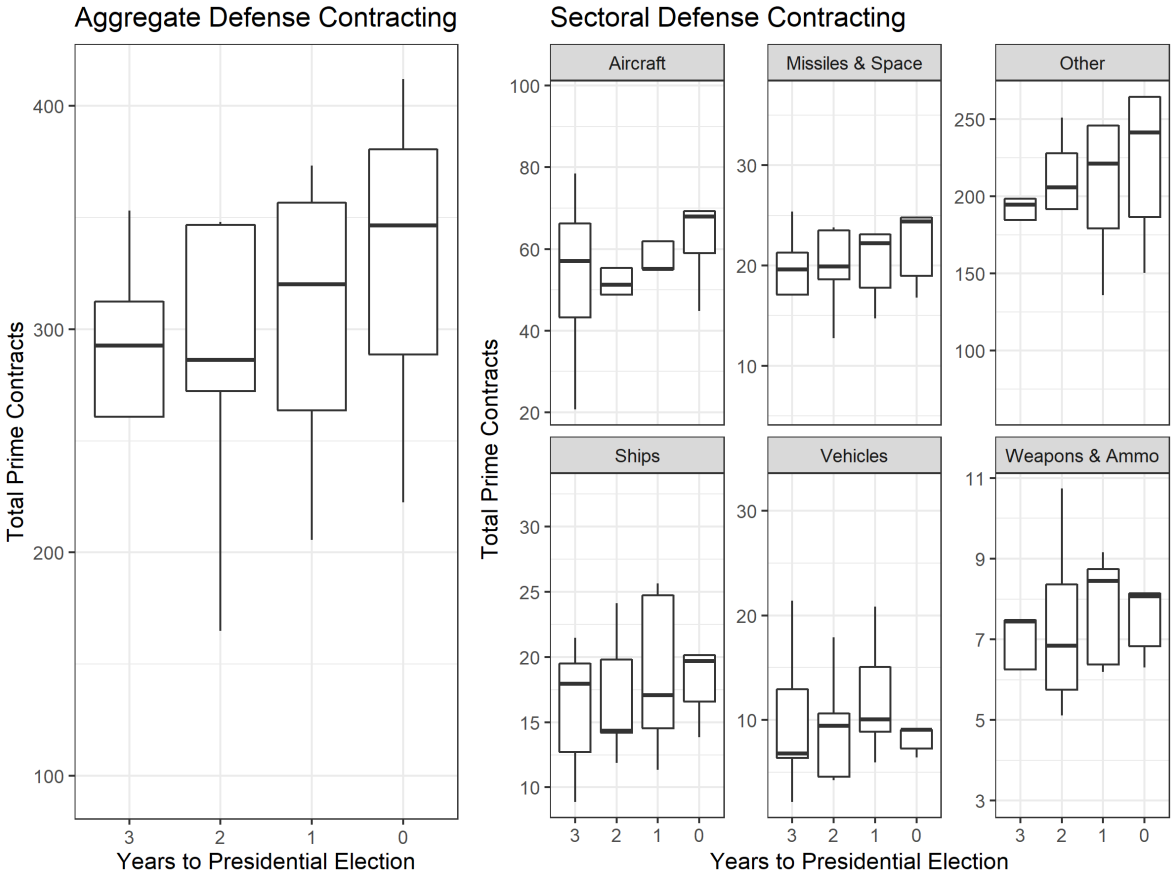

Figure 7. *Distribution of prime defense contract awards by presidential election proximity, 2000-2020. The dark line in the box plot marks the median value of total contract awards in each year.*

Particular sectors drive the aggregate increase in defense contracting. Aircraft contracts

increase dramatically, as do missile and space outlays. Naval contacts and prime awards for weapons and ammunition also increase, but retain a high level in the first year of many administrations, which changes those cycles. Other defense awards also rise, and there is a slight increase in vehicle contracting. Outside of aircraft, most of the specific platform cycles change the median contract outlay by less than $10 billion.

Therefore, there is some evidence that defense contracting cycles follow presidential elections. Along with prior research (DeRouen Jr and Heo, 2000), this suggests that defense contracting is a plausible source of electoral cycles in arms exports from the United States to its allies. Efforts to manipulate economic conditions through defense contracting have international ramifications.

6 Discussion and Conclusion

All three results are consistent with political budget and defense contracting cycles driving expanding international trade and arms exports to U.S. allies. Economic efforts to bolster presidential electoral prospects have international consequences. Additional goods from defense contracting cycles produce arms flows outside the United States. This bolsters cooperative relations between the United States and its allies.

Allied economic and security statecraft thus helps U.S. leaders win elections. While this is not a part of formal alliance bargains, these informal linkages are essential to grand bargains between alliance patrons and proteges. Allies need not undertake these cycles deliberately, but their accepting arms transfers is part of a cooperative bundle of ties regardless.

Allied support for political budget cycles affects democratic alliance credibility and maintenance. A stable alliance bargain can develop if leaders anticipate the electoral benefits of defense contracting cycles and arms exports to allies. When leaders expect that maintaining security commitment will have electoral rewards, they will be more likely to invest in alliances.

These findings also add an international security component to the political budget cycle literature. Alliance partnerships can allow leaders to manipulate economic conditions for electoral gain. By providing an outlet for defense contracting , allies help leaders contract for new goods with less attention to the absorptive capacity and force planning of the U.S. military.

Finally, the argument and findings add to prior findings that states manipulate international economic and security cooperation to bolster or undermine leaders. To give one example, Chyzh and Urbatsch (2021) show that Chinese soy tariffs reduced support for Republicans in the 2018 midterm elections. Allies have both motive and means to use economic and security cooperation to help leaders. Rather than undermine leaders, allied arms import decisions create positive inducements for regular cooperation.

Future research could proceed in several directions. First, cycles in other economic outcomes such as foreign direct investment, are an interesting area for study. Exploring the role of defense industry integration and intermediate goods in these arms cycles is also critical. Whether these results generalize to autocratic alliances or other democratic alliance patrons is another worthwhile inquiry. Security partners of other alliance patrons may take similar actions in different industries, for instance.

In conclusion, political budget cycles reshape international economic and security cooperation. Political budget cycles increase trade and arms transfers to U.S. allies through economic growth and defense contracting. Security cooperation can therefore facilitate electoral benefits for incumbent leaders.

References

Ahlquist, John S. 2010. "Policy by contract: Electoral cycles, parties and social pacts, 1974–2000." *The Journal of Politics* 72(2):572–587.

Allen, Susan Hannah. 2008. "The Domestic Political Costs of Economic Sanctions." *Journal of Conflict Resolution* 52(6):916–944.

Artis, Michael J and Wenda Zhang. 1999. "Further evidence on the international business cycle and the ERM: is there a European business cycle?" *Oxford Economic Papers* 51(1):120–132.

Baldwin, David A. 2020. *Economic Statecraft: New Edition*. Princeton University Press.

Becker, Jordan. 2021. "Rusty guns and buttery soldiers: unemployment and the domestic origins of defense spending." *European Political Science Review* 13(3):307–330.

Biglaiser, Glen and Karl DeRouen. 2007. "Following the Flag: Troop Deployment and U.S. Foreign Direct Investment." *International Studies Quarterly* 51(1):835–854.

Biglaiser, Glen and Karl DeRouen. 2009. "The Interdependence of U.S. Troop Deployments and Trade in the Developing World." *Foreign Policy Analysis* 5(3):247–263.

Bitzinger, Richard A. 1994. "The Globalization of the Arms Industry: The Next Proliferation Challenge." *International Security* 19(2):170–198.

Brambor, Thomas, William Roberts Clark and Matt Golder. 2006. "Understanding interaction models: Improving empirical analyses." *Political Analysis* 14(1):63–82.

Brooks, Stephen G, G John Ikenberry and William C Wohlforth. 2013. "Don't come home, America: the case against retrenchment." *International Security* 37(3):7–51.

Carter, David B and Curtis S Signorino. 2010. "Back to the Future: Modeling Time Dependence in Binary Data." *Political Analysis* 18(3):271–292.

Chen, Frederick R. 2021. "Extended Dependence: Trade, Alliances, and Peace." *The Journal of Politics* 83(11):246–259.

Chyzh, Olga V and Robert Urbatsch. 2021. "Bean Counters: The Effect of Soy Tariffs on Change in Republican Vote Share Between the 2016 and 2018 Elections." *The Journal of Politics* 83(1):415–419.

Clark, William Roberts and Mark Hallerberg. 2000. "Mobile Capital, Domestic Institutions, and Electorally Induced Monetary and Fiscal Policy." *American Political Science Review* 94(2):323–346.

Conconi, Paola, David R DeRemer, Georg Kirchsteiger, Lorenzo Trimarchi and Maurizio Zanardi. 2017. "Suspiciously timed trade disputes." *Journal of International Economics* 105:57–76.

Davis, Christina L. 2008. "Linkage Diplomacy: Economic and Security Bargaining in the Anglo-Japanese Alliance,1902-23." *International Security* 33(3):143–179.

Davis, Christina L, Andreas Fuchs and Kristina Johnson. 2019. "State Control and the Effects of Foreign Relations on Bilateral Trade." *Journal of Conflict Resolution* 63(2):405–438.

DeRouen Jr, Karl and Uk Heo. 2000. "Defense Contracting and Domestic Politics." *Political Research Quarterly* 53(4):753–769.

Drezner, Daniel W. 2013. "Military Primacy Doesn't Pay (Nearly As Much As You Think)." *International Security* 38(1):52–79.

Dubois, Eric. 2016. "Political business cycles 40 years after Nordhaus." *Public Choice* 166(1):235–259.

Escribà-Folch, Abel and Joseph Wright. 2010. "Dealing with tyranny: International sanctions and the survival of authoritarian rulers." *International Studies Quarterly* 54(2):335–359.

Foerster, Stephen R and John J Schmitz. 1997. "The transmission of US election cycles to international stock returns." *Journal of International Business Studies* 28(1):1–13.

Fordham, Benjamin O. 2010. "Trade and asymmetric alliances." *Journal of Peace Research* 47(6):685–696.

Fouquin, Michel and Jules Hugot. 2016. Two Centuries of Bilateral Trade and Gravity data: 1827-2014. techreport CEPII.

Gartzke, Eric and Quan Li. 2003. "War, Peace and the Invisible Hand: Positive Political Externalities of Economic Globalization." *International Studies Quarterly* 47(1):561–586.

Gibler, Douglas M, Steven V Miller and Erin K Little. 2016. "An Analysis of the Militarized Interstate Dispute (MID) Dataset, 1816–2001." *International Studies Quarterly* 60(4):719–730.

Gowa, Joanne. 1995. *Allies, Adversaries, and International Trade*. Princeton University Press.

Gowa, Joanne and Edward D. Mansfield. 2004. "Alliances, Imperfect Markets, and Major-Power Trade." *International Organization* 58(4):775–805.

Granger, Clive WJ and Paul Newbold. 1974. "Spurious Regressions in Econometrics." *Journal of Econometrics* 2(2):111–120.

Haim, Dotan A. 2016. "Alliance networks and trade: The effect of indirect political alliances on bilateral trade flows." *Journal of Peace Research* 53(3):472–490.

Ikenberry, G. John and Joseph Grieco. 2003. *State Power and World Markets: The International Political Economy*. New York: W. W. Norton.

Ito, Takatoshi. 1991. "International impacts on domestic political economy: a case of Japanese general elections." *Journal of International Money and Finance* 10:S73–S89.

Kayser, Mark Andreas. 2006. "Trade and the Timing of Elections." *British Journal of Political Science* 36(3):437–457.

Kayser, Mark Andreas. 2009. "Partisan Waves: International Business Cycles and Electoral Choice." *American Journal of Political Science* 53(4):950–970.

Kim, Sung Eun and Yotam Margalit. 2021. "Tariffs As Electoral Weapons: The Political Geography of the US–China Trade War." *International Organization* 75(1):1–38.

Kimball, Anessa L. 2010. "Political Survival, Policy Distribution, and Alliance Formation." *Journal of Peace Research* 47(4):407–419.

Kinne, Brandon J and Jonas Bunte. 2018. "Guns or Money? Defense Cooperation and Bilateral Lending as Coevolving Networks." *British Journal of Political Science* 50(3):1067–1088.

Lake, David A. 2009. *Hierarchy in International Relations*. Ithaca: Cornell University Press.

Leeds, Brett, Jeffrey Ritter, Sara Mitchell and Andrew Long. 2002. "Alliance Treaty Obligations and Provisions, 1815-1944." *International Interactions* 28(3):237–260.

Li, Quan. 2003. "The effect of security alliances on exchange-rate regime choices." *International Interactions* 29(2):159–193.

Li, Quan and Tatiana Vashchilko. 2010. "Dyadic military conflict, security alliances, and bilateral FDI flows." *Journal of International Business Studies* 41:765–782.

Long, Andrew G and Brett Ashley Leeds. 2006. "Trading for Security: Military Alliances and Economic Agreements." *Journal of Peace Research* 43(4):433–451.

Marinov, Nikolay. 2005. "Do Economic Sanctions Destabilize Country Leaders?" *American Journal of Political Science* 49(3):564–576.

Marquez, Xavier. 2016. "A Quick Method for Extending the Unified Democracy Scores." Available at SSRN: http://ssrn.com/abstract=2753830.
URL: *http://dx.doi.org/10.2139/ssrn.2753830*

Mastanduno, Michael. 2009. "System maker and privilege taker." *World Politics* 61(01):121–154.

Mayer, Kenneth R. 1995. "Electoral Cycles in Federal Government Prime Contract Awards: State-Level Evidence from the 1988 and 1992 Presidential Elections." *American Journal of Political Science* pp. 162–185.

McManus, Roseanne W and Keren Yarhi-Milo. 2017. "The Logic of "Offstage" Signaling: Domestic Politics, Regime Type, and Major Power-Protégé Relations." *International Organization* 71(4):701–733.

Miller, Steven V. 2021. *peacesciencer: A User's Guide for Quantitative Peace Science in R*.

Mintz, Alex. 1988. "Electoral Cycles and Defense Spending: A Comparison ofIsrael and the United States." *Comparative Political Studies* 21(3):368–381.

Morrow, James D. 1991. "Alliances and Asymmetry: An Alternative to the Capability Aggregation Model of Alliances." *American Journal of Political Science* 35(4):904–933.

Nordhaus, William D. 1975. "The Political Business Cycle." *The Review of Economic Studies* 42(2):169–190.

Norrlof, Carla. 2010. *America's Global Advantage: US Hegemony and International Cooperation*. Cambridge University Press.

Oatley, Thomas. 2015. *A Political Economy of American Hegemony*. New York: Cambridge University Press.

Pevehouse, Jon C.W., Timothy Nordstrom, Roseanne W. McManus and Anne Spencer Jamison. 2020. "Tracking Organizations in the World: The Correlates of War IGO Version 3.0 datasets." *Journal of Peace Research* 57(3):492–503.

Philips, Andrew Q. 2020. "Just in time: Political policy cycles of land reform." *Politics* 40(2):207–226.

Poast, Paul. 2012. "Does Issue Linkage Work? Evidence from European Alliance Negotiations, 1860 to 1945." *International Organization* 66(1):277–310.

Poast, Paul. 2013. "Can Issue Linkage Improve Treaty Credibility? Buffer State Alliances as a "Hard Case"." *Journal of Conflict Resolution* 57(5):739–764.

Poast, Paul. 2019. "Beyond the "Sinew of War": The Political Economy of Security as a Subfield." *Annual Review of Political Science* 22:223–239.

Rainey, Carlisle and Daniel K. Baissa. 2020. "When BLUE Is Not Best: Non-Normal Errors and the Linear Model." *Political Science Research & Methods* 8(1):136–148.

Rogoff, Kenneth S. 1987. "Equilibrium political budget cycles.". NBER Working Paper No. 2428.

SIPRI. 2021. *SIPRI Yearbook 2021: Armaments, Disarmament and International Security*. Oxford: Oxford University Press.

Sumner, Scott. 2021. *The Money Illusion: Market Monetarism, the Great Recession, and the Future of Monetary Policy*. University of Chicago Press.

Thompson, William R and Gary Zuk. 1983. "American Elections and the International Electoral-Economic Cycle: A Test of the Tufte Hypothesis." *American Journal of Political Science* pp. 464–484.

Thurner, Paul W, Christian S Schmid, Skyler J Cranmer and Göran Kauermann. 2019. "Network Interdependencies and the Evolution of the International Arms Trade." *Journal of Conflict Resolution* 63(7):1736–1764.

Tufte, Edward R. 1978. *Political Control of the Economy*. Princeton University Press.

Whitten, Guy D. and Laron K. Williams. 2011. "Buttery Guns and Welfare Hawks: The Politics of Defense Spending in Advanced Industrial Democracies." *American Journal of Political Science* 55(1):117–134.

Wolford, Scott and Moonhawk Kim. 2017. "Alliances and the High Politics of International Trade." *Political Science Research and Methods* 5(4):587–611.

Yarhi-Milo, Keren, Alexander Lanoszka and Zack Cooper. 2016. "To Arm or to Ally? The Patron's Dilemma and the Strategic Logic of Arms Transfers and Alliances." *International Security* 41(2):90–139.