

# Arms and Electoral Influence: How Arms Deals with Autocratic Allies Shape Defense Contracting in the United States

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## Abstract

Arms deals with U.S. allies, especially autocratic allies, facilitate high and stable defense contracting in swing states. U.S. leaders make arms deals to award more defense contracts in periods of low demand. Autocratic alliance protégés have more need and political flexibility to strike arms deals near elections. I examine these claims by analyzing the electoral determinants of defense contracting and arms export deals by the United States. First, I detail electoral cycles in arms deals between the United States and its allies. I then link defense contract awards and arms deals. Finally, I examine which weapons systems drive deals and contracting to show that the same systems appear in arms deals cycles and as correlates of swing state contracts. The results show how electoral competition reshapes international security cooperation.

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# 1 Introduction

In 1972, the Nixon administration struck ten different deals to transfer or sell arms to Brazil. Over the next four years, Brazil's military dictatorship received 500 M-113 armoured personnel carriers, five destroyers, seven submarines, and eight S-2E Tracker anti-submarine warfare aircraft. These deals came while Nixon sought reelection and subsequent deliveries continued after his 1974 resignation.

Something similar happened in 2012, when Saudi Arabia ordered a large arms package from the Obama administration.<sup>1</sup> Twelve deals included 400 Harpoon anti-ship missiles, 12 Apache attack helicopters for the Saudi National Guard, and 63 K-6 120mm mortars, along with parts for F-15 aircraft, guided bombs, and other helicopters. Deliveries of these systems and other weapons spanned the next eight years, including the 2015 Saudi intervention in the Yemeni civil war.<sup>2</sup>

These examples reflect a more general pattern, where electoral competition in the United States encourages arms deals with allies, particularly autocracies. Arms deals help leaders use defense contracting to improve economic conditions (Tufte, 1978; Mintz, 1988; Mayer, 1995; DeRouen Jr and Heo, 2000; Becker, 2021). Specifically, arms deals increase defense contract awards in swing states. Electoral cycles in arms deals thus shape economic conditions and electoral competition.

Alliance protégés provide a key market for arms sales because leaders can justify transfers. Allies are also willing to make arms deals because they control import decisions and receive security benefits. Autocratic allies are especially important because they receive more arms than other partners (McManus and Yarhi-Milo, 2017) and autocrats have few constraints on accommodating electoral cycles.

I scrutinize my argument connecting defense contracting, autocratic allies and arms export

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<sup>1</sup>Obama first announced the deal in 2010.

<sup>2</sup>All deal information from (Sto, 2022).

cycles in three steps. First, I analyze U.S. arms deals from 1950 to 2020, and show that arms deals with autocratic allies increase as presidential elections approach, while arms deals with democratic allies remain consistent. Second, I estimate the correlation between arms deals and contract awards to swing states, and find that arms deals have little association with contracts outside of swing states, but increase contract awards in swing states. Finally, I corroborate these correlations by analyzing which weapons systems are present in deals cycles and correlated with swing state contract awards. The last analysis suggests that aircraft are the most important weapons platform in these cycles.

The argument and analysis focus on the United States because it is a leading arms exporter, maintains expansive alliance ties, and there is prior evidence that leaders use defense contracting for electoral advantage. While other countries with smaller economies and defense industries might behave in similar ways, deals and contracting cycles will be weaker or absent. Regardless the pivotal economic and security roles of the United States make understanding the economic and security consequences of U.S. political budget cycles worthwhile. Furthermore, other states might leverage security cooperation to facilitate different policy cycles.

The argument and findings address three salient issues in international relations theory and practice. First, they reveal that efforts to manipulate domestic economic conditions with defense contracting have international security consequences. Just as domestic political business cycles in large countries reshape economic conditions (Kayser, 2006, 2009), electoral competition alters security cooperation.

Second, this paper provides new insight into alliance bargaining and statecraft. Often, work on these issues examines coercion and divergent preferences (Oatley, 2015; Wolford and Kim, 2017; Blankenship, 2020; Becker et al., 2023). But as Baldwin (2020) notes, statecraft also includes positive inducements. This paper highlights positive statecraft by alliance protégés, who use arms deals to cooperate with their patron. 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). In this instance, patron leader and protégé incentives align.

Finally, my results complement prior findings that foreign states' economic policies impact 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 these findings by considering how security cooperation opens up new tools for manipulating economic conditions. This is another way that smaller partners influence alliance patrons (Keohane, 1971).

The paper proceeds as follows. To start, I outline an argument detailing the international consequences of political business cycles in the United States, the role of defense contracting in those cycles, and the consequences for arms deals. I then test the process in three steps. First, I model the mean and variance of contract awards as a function of electoral competition to show that swing states have larger and more stable defense contracting flows. I then demonstrate that arms exports from the United States to allies increase more as presidential elections approach. Third, I estimate a joint Bayesian model of the process and link contracts with deals for specific weapons. The last section discusses the results and offers concluding thoughts.

## 2 Argument

This argument explains how international arms deals facilitate domestic political budget cycles. First, I detail constraints on aggregate budget cycle tools. I then discuss how presidential control and Congressional influence makes defense contracting an attractive way to manipulate economic conditions. Arms deals with allies can accelerate defense contracting awards. Among U.S. allies, autocracies with few constraints on their leaders and strong security motivations to curry favor by accepting arms are especially likely to make arms deals around elections.

Electoral considerations impact policy (Nordhaus, 1975).<sup>3</sup> When leaders want to win office, they can use policy tools to bolster economic growth and win over voters. Leaders create 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).

How leaders bolster economic growth vary with national political institutions. Federal Reserve independence limits political influence on monetary policy in the United States, for instance.<sup>4</sup> Recent scholarship emphasizes specific policy cycles because leaders struggle to manipulate aggregate economic instruments where they have more direct influence. In fiscal policy, aggregate budgets often give leaders limited spending discretion.

Limited flexibility with aggregate instruments encourages democratic leaders to use targeted policies. Targeting maximizes the electoral impact of finite resources. Many spending shifts can be narrowly tailored (Dubois, 2016, pg. 248). Leaders also employ 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.

Scholars have long speculated that defense spending is a useful instrument for budget cycles (e.g. 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.

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<sup>3</sup>See Dubois (2016) for a review of the vast political budget cycle literature.

<sup>4</sup>Both Lyndon Johnson and Donald Trump had limited ability to browbeat Federal Reserve Chairs into changing monetary. Johnson sought looser monetary policy before the 1968 presidential election, but Fed Chair William McChesney Martin continued to tighten policy. Trump's tweeted demands for looser monetary policy to increase growth before the 2020 election similarly had little impact on Jerome Powell.

Recent studies in the United States argue that defense budgets are poor political tools, however, as Congress makes allocations two years ahead. This shifted attention towards defense contracting, as leaders control contract timing and disbursement (Mayer, 1995; DeRouen Jr and Heo, 2000). Giving contracts also allows leaders to focus on key constituencies and claim credit for awards (DeRouen Jr and Heo, 2000). Leaders generally target spending changes near elections to electorally important areas like swing states (Kriner and Reeves, 2015), and spending increases support for incumbents (Kriner and Reeves, 2012).

The Congressional budget process sometimes hinders political contracting stability. Leaders can allocate contracts within the budget, but finding additional funds is harder. Most defense programs operate on annual budget allocations. Congress rarely authorizes multi-year procurement (CITE CRS HERE). As a result, program disbursements can vary from year to year, especially for smaller outputs like munitions and missiles.

Moreover, when leaders want to award more contracts, the U.S. military may lack absorption capacity to incorporate outputs. Increased supply for defense contracting does not respond to military demand. This makes finding other buyers who are less constrained by the U.S. budget process a critical task.

Foreign markets are an alternative source of demand for defense goods. Either foreign countries can take new production, or U.S. leaders can sell or transfer old equipment to partners to make room in U.S. stocks. Using defense contracting for political gains thus has international spillovers.<sup>5</sup>

Crucially, leaders only need deals and confirmed orders to start up defense contracting. Final transfers can come years later, and do in many cases. Arms export deals are more likely

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<sup>5</sup>Other work examines the international economic consequences of budget cycles. Fiscal and monetary policy shifts impact currency prices and economic growth, which then alters trade and financial ties. 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.

to follow electoral cycles than transfers of finished products, as production times for defense goods vary widely. Large platforms like ships, tanks and warplanes can take years to assemble, while munitions and smaller platforms take less time.

When U.S. leaders attempt to use arms deals for defense contracting, not all countries are useful partners. U.S. allies are more likely to take arms exports than other states. Security partners are a pivotal outlet because alliances facilitate security, economic and political cooperation. The United States often transfers or sells arms to alliance protégés, and some allies have means and motivation to strike arms deals at helpful points in the electoral cycle.

## *2.1 Alliances and U.S. Arms Deals*

Asymmetric alliances between large and small states, like those between the United States and its allies, are grand bargains. In general larger patrons protect smaller protégés in exchange for foreign policy concessions (Morrow, 1991). While patrons increase their foreign policy influence, junior alliance members garner protection from external threats and sacrifice some foreign policy autonomy.

U.S. allies are an obvious market for deals to feed defense contracting, in part because established channels reduce start-up costs and facilitate cumulative deals.<sup>6</sup> Thurner et al. (2019) find that while the relative importance of security and economic factors fluctuates, alliances consistently increase arms transfers. Common security interests 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 (Brooks, 2005). U.S. allies use weapons, systems and doctrines that facilitate deals for additional arms.

Allies are more likely than other states to make arms deals, and autocratic allies are especially likely to make arms deals near elections. The security externalities of arms transfers constrain

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<sup>6</sup>I focus here on formal and informal allies, because formal treaties like NATO are not the only U.S. security commitments. Taiwan, Israel and Saudi Arabia have informal security guarantees and often receive U.S. arms. (Yarhi-Milo, Lanoszka and Cooper, 2016)

electoral cycles in arms exports to non-allies. U.S. elites will be less willing to increase the capability of states with fewer common interests, even if it facilitates contracting cycles.

Competing elites are also more likely to object to arms deals outside alliances. Leaders could face electoral costs if other elites publicly criticize a deal (Saunders, 2022). Arms transfers to non-allies could face greater opposition scrutiny near elections, leading presidents to forestall criticism by forgoing contentious transfers. Limited defense industry cooperation further constrains exports outside alliances, while allies with defense industrial ties can receive intermediate goods as well.

Allied leaders also benefit from arms deals around elections, because deals curry favor with an alliance patron, bolster military capabilities and deepen perceived commitment. Helping patron leaders with arms deals will dispose them more favorably towards an ally. Allies increase their military capabilities with new arms as well, which can make their fighting forces more effective. Finally, allies gain confidence in their patron's commitment when deals become deliveries because arms exports are a costly signal (McManus and Yarhi-Milo, 2017).

Arms deals are therefore positive statecraft by allies. States often use purchases and transfers to increase their political influence (Baldwin, 2020, pg. 42–3). Ikenberry and Grieco (2003, pg. 184–5) note that states often use direct transfers to attract and sustain security commitments.

Moreover, protégés do not always pay for U.S. arms. 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. Alliances make such subsidized transfers easier to justify to other elites, as they promote common security interests.

## ***2.2 Arms Deals with Autocratic Allies***

While all allies could benefit from U.S. arms, autocratic allied leaders are more likely to make arms deals near elections. Autocracies both the means and motivation to make arms deals. These leaders have fewer domestic political constraints, which increases their budget and



policy flexibility. They also have stronger security motivations to use arms deals to improve relations with the United States, because arms transfers are central to U.S. security guarantees to autocracies.

Allied leaders must have the political freedom to make arms deals. Governments are the customer for most arms sales or transfers, so they generally have some latitude to take arms.<sup>7</sup> At the same time, not every regime is equally free to make arms deals.

Autocratic allies of the United States have greater political flexibility to make arms deals around elections than democracies. Democratic leaders who might face media or elite scrutiny of deals for U.S. arms. Media or elites might object to spending on arms, competition for domestic arms manufacturers, or excessive alignment with the United States.

Autocrats are less constrained. Even if other domestic actors in an autocracy are opposed to additional outlays on U.S. arms, they have few ways to constrain the leader.<sup>8</sup> Media scrutiny of deals is also less likely to occur or challenge an autocrats power base.

Autocrats also strike deals to bolster their security. Arms transfers are more central to credible U.S. commitments to autocracies. The United States prefers “offstage” signals of support for autocrats, rather than public demonstrations of commitment (McManus and Yarhi-Milo, 2017). Arms transfers are a pivotal offstage signal and sometimes substitute entirely for formal security guarantees (Yarhi-Milo, Lanoszka and Cooper, 2016). When arms are the core of how the U.S. provides security, autocrats will be more willing to make arms deals that increase military capabilities and signal continued alignment with the United States.

Autocrats also have fewer other tools to curry favor with U.S. leaders. Formal alliances might promote democratization (Gibler and Wolford, 2006; Warren, 2016). The U.S. public dislikes alliances with autocracies (Alley, 2022), so autocrats have less capacity to pursue deeper ties in other areas. The net result is that arms deals are central to U.S. ties with autocratic

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<sup>7</sup>This mirrors how political control of firms increases trade policy flexibility (Davis, Fuchs and Johnson, 2019).

<sup>8</sup>This changes when opponents of U.S. arms deals are part of the autocrats power base.

security partners, so autocrats are more likely to make arms deals near elections.

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

A potential objection to this argument is that striking arms deals with autocrats might be more costly near elections for U.S. leaders, because political opponents could criticize them for it. In this telling, opposition elites can make arms deals a more “front stage” signal than U.S. leaders would like. Even if this applies, U.S. leaders may still benefit, as arms deals provide concentrated benefits, while alliance critics are more diffuse.<sup>9</sup> Opponents thus face collective action problems that beneficiaries of deals and corresponding contracts do not. When contracts focus on electorally salient areas, leaders can expect that the benefits outweigh any costs.

## ***2.3 Implications***

The argument generates two testable implications about U.S. alliances, arms deals and defense contracting. Again, this argument applies best and perhaps exclusively to the United States. Arms deal cycles and defense contracting in swing states are the result of a large defense industry, many security commitments and the peculiarities of the electoral college. Fixed election scheduling further reduces endogeneity between policy decisions and election timing. Other leaders may behave in similar ways within their specific electoral institutions, however.

The first hypothesis predicts electoral cycles in arms deals, especially to autocratic allies. Democratic allies will be less likely to make cyclical arms deals. As a result, greater proximity to presidential elections will increase arms deals with autocratic allied states.

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<sup>9</sup>Another reason this may not work is that deal announcements sometimes precede final orders by years.

ARMS DEALS HYPOTHESIS: AS TIME TO A PRESIDENTIAL ELECTION DECREASES, U.S.  
ARMS DEALS WITH AUTOCRATIC ALLIES WILL INCREASE.

Second, I expect that arms deals increase contract awards. Striking deals allows leaders to award contracts to areas that might otherwise lose out in the regular budget process. These contracts will concentrate in swing states.

DEALS AND CONTRACTS HYPOTHESIS: AS ARMS DEALS INCREASE, SWING STATE CON-  
TRACT AWARDS WILL INCREASE.

In the following, I examine both hypotheses. In the first analysis, I use a series of descriptive data and single-outcome statistical models to illustrate each step in the process. This starts with descriptive data on defense contracting from 2000 to 2020, then shows how arms exports to allies track U.S. electoral cycles, and ends with a model of electoral cycles in U.S. trade. After that, I test the deals and contracts hypothesis with an analysis of the correlations between arms deals and defense contracting.

### **3 Arms Transfers and Presidential Elections**

The arms deals hypothesis predicts electoral cycles in U.S. arms deals with autocratic allies. To test this hypothesis, I model U.S. arms deals from 1951 to 2014 using deals data from the SIPRI Arms Transfer Database (SIPRI, 2021). The outcome in this panel dataset of all states outside the United States is the annual count of deals, based on SIPRI's trade register. This section presents count data regression estimates of annual arms deals.

I analyze arms deals rather than observed arms transfers for three reasons. First, elites can announce arms deals and related contracts immediately. Secondly, deliveries can take years after a deal is announced, even for second-hand or aid transfers of existing equipment. Finally,

deliveries often space out the total value of a shipment over several years, especially for deals with many weapons or larger platforms.

The argument suggests that three variables driving U.S. arms deals. The first is electoral competition, which I measure with an indicator of the number of years to a presidential election. The second key factor is whether a country is a U.S. ally. I measure alliance status with a binary indicator of whether a country is a formal U.S. treaty ally using data from the ATOP project (Leeds et al., 2002), as well as one of three states that have not always had a formal treaty commitment but are widely seen as U.S. allies with implicit security guarantees; Israel, Taiwan and Saudi Arabia. I include informal allies because in some of these cases arms substitute for a formal alliance, but the United States is still attempting to ensure partner security (Yarhi-Milo, Lanoszka and Cooper, 2016). Finally, I measure country democracy using the VDem project's polyarchy measure (Coppedge, Alvarez and Maldonado, 2008). I interact all three of these variables to predict arms deals.

To estimate how alliances, democracy and election timing shape arms deals, I use a Poisson model.<sup>10</sup> This fits the annual count of arms deals well. For ease of estimation and calculation, I use Bayesian estimation with the *brms* package for R (Bürkner, 2017). I show in the appendix that using a Gaussian outcome gives similar inferences.

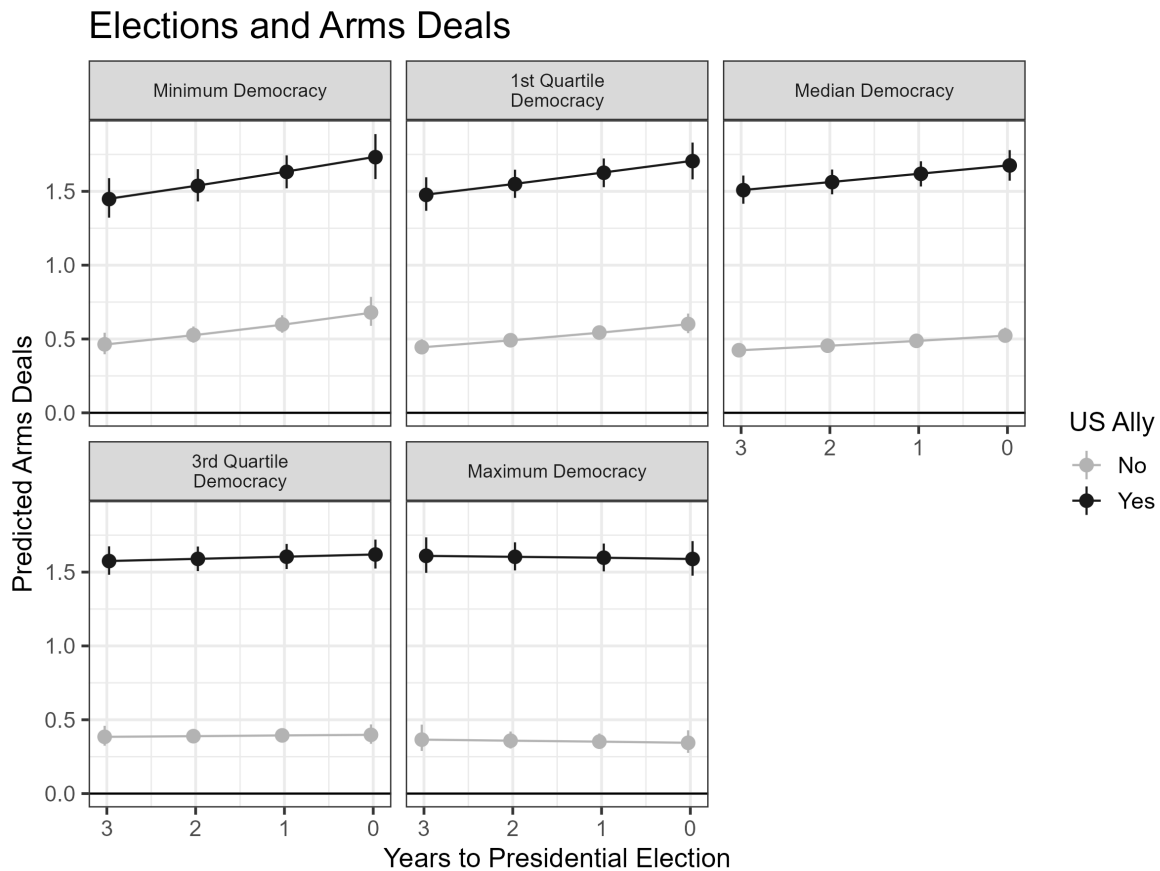
Along with the three key independent variables, I adjust for other factors that are correlated with arms deals, alliances, and democracy. The first control variable is a binary indicator of Cold War years, as more U.S. allies were autocratic during this period. I also adjust for EU membership as a potential constraint on some states. Further country-level controls include, whether a country is involved in a militarized dispute, logged GDP, population, and distance from United States, as well as a binary indicator of common language. Finally, I adjust for presidential partisanship with a dummy indicator of years with a Republican president.

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<sup>10</sup>This is the best-fitting model for the deals data. Simple Poisson models under-predict zeros, while negative binomial models predict far too many large values. See the appendix for details, including inferences from linear regression and regular Poisson models that are similar to those reported here.

### 3.1 Results

Because interpreting coefficients in triple interactions is challenging, I summarize the interaction of alliances, democracy and presidential election proximity in Figure 1.<sup>11</sup> This figure plots predicted arms deals based on proximity to an election and whether a state is a U.S. ally or not. Each facet sets recipient democracy at the minimum, first quartile, median, third quartile and maximum.



**Figure 1.** Predicted arms deals between the United States and other states 1950 to 2014 based on presidential election proximity, democracy, and security alliances. Points mark the estimates and error bars summarize the 90% credible interval.

There are two key inferences in Figure 1. First, the United States makes more arms deals with allied states than non-allied states, regardless of regime type. Predicted deals with non-

<sup>11</sup>See the appendix for coefficient estimates.

allied states are low and basically constant across the different levels of democracy. The impact of an alliance on arms deals is much greater for democracies than autocracies. U.S. allies with maximal polyarchy scores receive one and a half more arms deal a year than states with similar democracy, all else equal. Minimally democratic U.S. allies receive .5 deals more in expectation.

The second inference is that electoral cycles in arms deals are present for autocratic allies and absent for democratic allies. When allied polyarchy is at the minimum value, predicted arms deals rise from 1.4 to 1.7 throughout the presidential election cycle. Hypothesis tests of equality between allied arms deals at minimum democracy at each level suggest that the increase of .1 deals in each year of the electoral cycle is clearly positive. The electoral cycles when democracy is at the 1st quartile or median are also clearly positive, but are much less substantively important. This cycle diminishes as allied democracy increases, so allies with a polyarchy score at the third quartile or higher see no change in arms deals as elections approach.

Electoral cycles are strongest for autocratic allies. States that are not US allies do not change arms deals throughout the electoral cycle. Alliances increase the level of arms deals, and regime type impacts responsiveness to presidential elections.

These estimates support arms deals hypothesis. As presidential elections approach, arms deals rise, but only with autocratic allies. Arms deals with democratic allies are unchanged by electoral competition.

These arms deals with autocratic allies near elections are connected to electoral cycles in defense contracting. If there are no cycles in defense contract awards, then arms deals have less tangible consequences. The next analysis checks for electoral cycles in defense contracting awards.

## 4 Arms Deals and Defense Contracting

Connecting arms deals and defense contracting is challenging. Deals occur between countries, while defense contracting for electoral purposes takes place within US states. While jointly modeling deals and contracts is theoretically possible, summing country-year deal estimates into an annual measure of total deals creates an aggregation problem.

This analysis uses observed annual deals, electoral competition and state-level factors to predict defense contract awards from 2001 to 2020. I draw the outcome measure from Department of Defense prime contract award data in the USAspending.gov database.<sup>12</sup> This archive contains data on individual contract awards starting in the 2000 fiscal year, so the defense contracting analysis runs from 2000 to 2020.<sup>13</sup> The key outcome is total defense contracts associated with arms production awarded to each state every year, measured in millions of US dollars.<sup>14</sup>

Total defense contracts are challenging to model, because some states have no observed contract awards in a given year, and other states receive billions of dollars in contracts. This creates a zero-valued and right-skewed outcome. Traditional approaches, such as logging the outcome after adding one, are sensitive to the scale of the outcome and the constant added (Chen and Roth, 2022; Mullahy and Norton, 2022). Transformations with such data make calculating accurate marginal effects challenging and potentially biased.

To overcome these issues, I fit two types of models. First, I rescale the defense contracts measure to fall between zero and one by expressing each state's contracts as a share of total defense contracting in that year. I then use ordered beta regression to predict the rescaled outcome (Kubinec, 2022). This allows me to use a flexible outcome distribution, account for zeros and avoid scale-effects from log-transformations and working with outcomes in millions

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<sup>12</sup>Link here: [https://www.usaspending.gov/download\\_center/custom\\_award\\_data](https://www.usaspending.gov/download_center/custom_award_data).

<sup>13</sup>Some state-level controls have limited coverage after 2020.

<sup>14</sup>This measure excludes other contracts besides weapons production because arms deals should have little impact on contracts for things like construction equipment or food.

of dollars. Changing the coefficients and marginal effects to the scale of contracts after this is straightforward. I also fit a hurdle lognormal model that models the probability a state receives no contracts, as well as the roughly normally distributed log of non-zero contracts. Both approaches give similar inferences.<sup>15</sup>

The key independent variable is total annual arms deals. To measure arms deals, I sum US arms deals with all countries in every year. Total deals range from 75 to 160.

Because the argument expects that deals drive contracts in areas with high electoral competition, I include a dummy indicator of swing state status from (Kriner and Reeves, 2015). Swing states are states where the losing party won at least 45% of the two-party vote in three straight elections. I then interact this dummy with total US arms deals. In that interaction, constituent term of arms deals, which expresses the association between deals and contracts outside of swing states, should be close to zero. Because there are no years with zero US arms deals, the swing state constituent term is not directly meaningful. The interaction term itself should be positive, according to the deals and contracts hypothesis. This parameter captures the impact of deals on swing state contracts.

In addition to the electoral competition and deals variables, I include several controls. First, I adjust for population and GDP, in case larger and more prosperous states receive more contracts. Other electoral competition indicators include the time to a presidential election and whether a state is a core member of the president's coalition (Kriner and Reeves, 2015). I also control for increased defense contracting demand during peak years in the global war on terror with a dummy variable that is equal to one from 2001 to 2011. The final control adjusts for presidential partisanship by coding years with a Republican President with one.

Additional adjustments in the model account for the data structure. First, I include state varying intercepts because observations cluster within states. Current contracting also depends

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<sup>15</sup>The hurdle-lognormal results are in the appendix, along with estimates from OLS on untransformed contracts. All estimation uses brms for R (Bürkner, 2017).



on past contracting, as the defense industrial base concentrates in particular states. I therefore include a state-specific lagged dependent variable, which allows temporal dependence in contracting to vary by state.<sup>16</sup>

This model is a useful test of the second hypothesis, as it assesses the impact of arms deals on swing states while adjusting for clustering, temporal variation and other predictors. The next section summarizes the estimates from this model.

## 4.1 *Results*

Because one of the interaction coefficients has no substantive meaning, I focus on marginal effects and predicted outcomes here, leaving coefficient estimates for the appendix. In Figure 2, I present the impact of deals, swing state competition, and predictions from interaction. All these estimates suggest that deals increase defense contracting awards to swing states. For all these estimates, I again use 90% credible intervals, because these are less sensitive to simulation variance in Bayesian analysis.

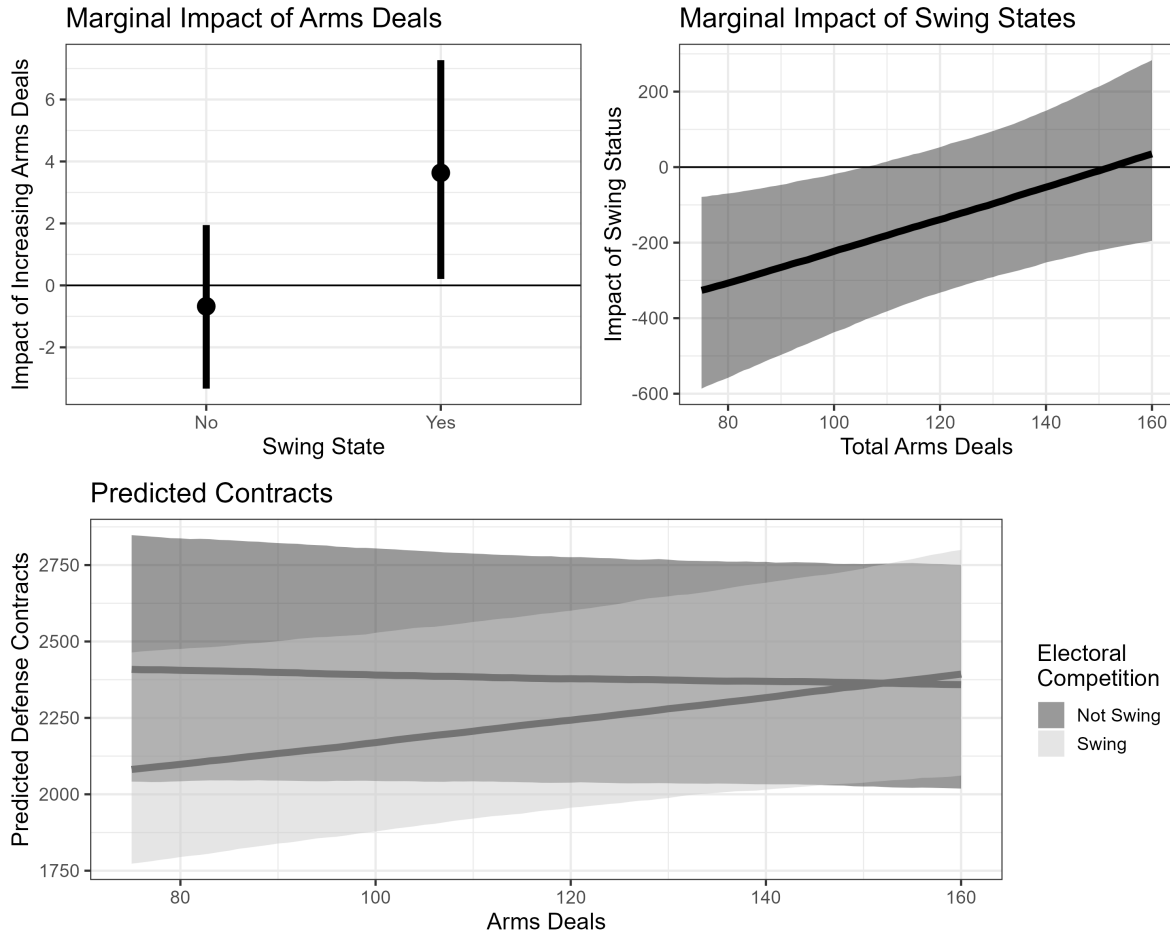
First, the marginal effect of increasing arms deals on defense contracting is unclear outside of swing states, but clearly positive in swing states. In expectation, one additional arms deal increases defense contract awards to swing states by \$4 million. There is substantial uncertainty in this relationship, as the lower bound is \$39 million and the upper bound is \$702 million.

Second, swing states receive more defense contracts increases in years with more arms deals. At the observed minimum of arms deals, swing states receive \$250 billion less in contracts. The swing state disadvantage occurs mostly because larger states like California and Texas have substantial defense industries and are not swing states. When arms deals are near the observed maximum, swing states receive similar contracts to other states.

Finally, predicted defense contracts increase as arms deals increase, but only in swing states,

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<sup>16</sup>See the appendix for descriptive evidence that temporal dependence in contracting varies by state, along with a summary of the state-level autoregressive parameters.



**Figure 2.** *Marginal effects and predicted outcomes from an interaction of swing state status and US arms deals. The outcome is annual defense contracts in the 50 US states from 2001 to 2020, measured in millions of dollars. Lines and points give the expected value, while the error bars summarize 90% credible intervals. All other variables fixed at the mode or median.*

as the bottom panel of Figure 2 shows. Holding all else equal, increasing arms deals lead to greater contracts in swing states. But defense contracts in non-swing states do not respond to increasing arms deals. As a result, other states defense contracting advantage disappears in years with above-average arms deals.

These estimates support the defense contracts hypothesis. Increasing arms deals are correlated with greater defense contracts in swing states. As a result, swing states receive similar contracts to other states with established defense industries, larger economies and less electoral competition.

Given these marginal effects, calculating the partial impact of alliances and allied regimes on deals and ultimately contracts is straightforward. Across the electoral cycle with eight hypothetical countries of varying democracy and alliance status in Figure 1, there is one more arms deal in the election year, compared to the year after an election. The marginal effect of arms deals presented in Figure 2 is \$3.6 million, so the hypothetical cycle at both levels adds several million in defense contracting to one swing state.

## **5 Which Weapons Drive Deals and Contracts?**

The final analysis examines which weapons systems change hands in US arms deals with autocratic allies, and checks whether the same systems are correlated with swing-state contract awards. This provides more granular evidence that deals are in fact responsible for increased defense contracting. Showing that the United States makes more deals for specific weapons as elections approach, and that those weapons deals are also correlated with defense contract awards in swing states increases confidence that the models above reflect the theoretical process. I find that aircraft and ships are most common subject of arms deals with autocrats near elections.

To analyze these factors, I fit the same models of arms deals and defense contracts, but

divide deals and contracts into six sectors. Those sectors include aircraft, arms and munitions, military electronics, missiles and space technology, ships and vehicles. I thus fit six poisson models, one each type of arms deals. These models use the same covariates as the aggregate arms deals model; a triple interaction of alliance, democracy and election timing, along with a series of controls.

I also fit six models of defense contracts tied to each sector. As in the analysis of aggregate defense contracting, I rescale the outcome between 0 and 1 using the annual sum of contracts for those defense goods. I then fit ordered beta regression models of the rescaled outcome, using an almost identical specification to the aggregate defense contracting model. The key independent variables in these models are observed arms deals, the binary swing state indicator, and their interaction. I also include terms to capture state varying intercepts, state-specific autocorrelation, and other controls.

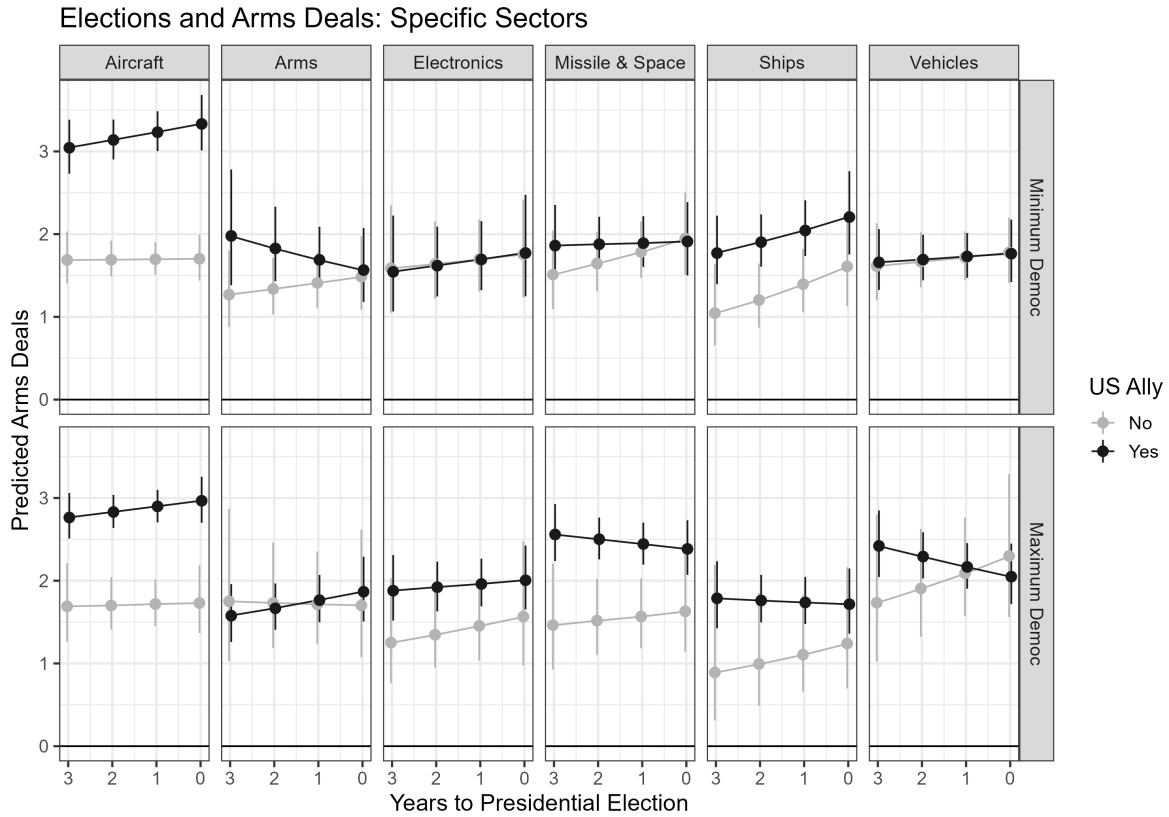
For ease of interpretation, I plot predicted arms deals at the minimum and maximum of partner democracy in Figure 3.<sup>17</sup> The estimates suggest that aircraft drive in electoral cycles in arms deals with autocratic allies. Military alliances strongly increase the likelihood of arms deals for aircraft and allied regime type determines whether deals shift with election proximity. Aircraft deals with autocratic allies are the most common deal in general, and these deals rise as presidential elections approach. While aircraft deals with allies are also common, they are less responsive to election timing.

Among autocracies, alliances increase deals for ships, and ship deals increase with electoral proximity. Allies make more ship deals at all levels of democracy, but only autocratic allies make more deals near elections. Ships could thus contribute to efforts to use arms deals to feed defense contracting.

Other weapons show less evidence of cycles in arms deals. Deals for arms and other munitions do not depend on military alliances, democracy, or election timing. Democratic allies are

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<sup>17</sup>See the appendix for underlying coefficient estimates.



**Figure 3.** Predicted arms deals between the United States and other states 1950 to 2020 based on presidential election proximity, democracy, and military alliance. Estimates derived from six poisson models counting annual deals divided by the type of military good exchanged. Points mark the estimates and error bars summarize the 90% credible interval.

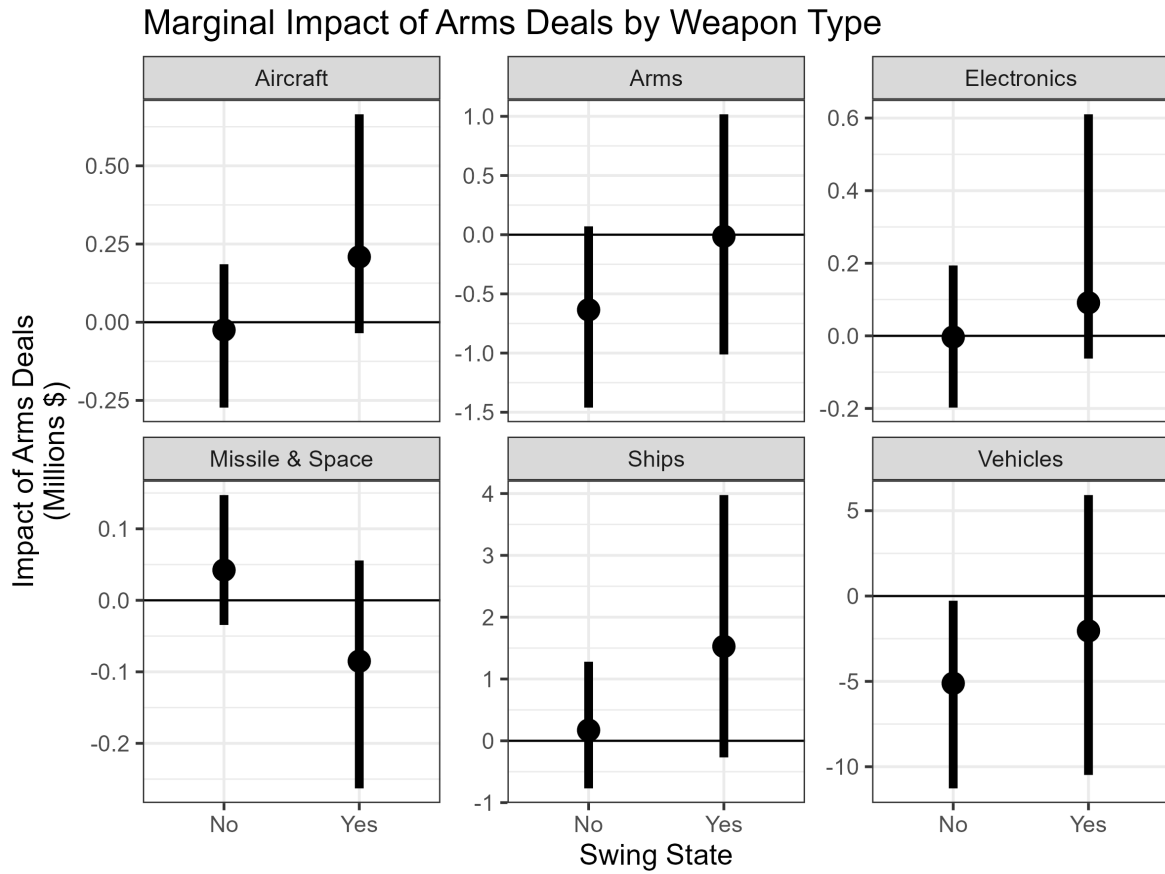
more likely to make deals for military electronics and missile/space systems. The importance of democracy and alliances for these goods likely reflects greater trade in intermediate goods to support joint production, as well as joint operations in NATO and other U.S. alliances. Neither electronics nor missile and space systems see electoral deal cycles. Deals for military vehicles do not track the electoral cycle either. Among autocracies, alliances make no difference for vehicle deals. Allied and non-allied democracies have somewhat divergent deals immediately after elections, but their deal-making for US vehicles converges as presidential elections approach.

Aircraft and ships are therefore the most likely systems involved in cycles of arms deals to feed defense contracting. These are also the most likely deals to increase defense contract awards in swing states, as Figure 4 shows. Figure 4 plots the marginal effect of different deal types on corresponding defense contracts in that sector. I derive these estimates by placing marginal effects from the interaction of deals and swing states in the six ordered beta models back on the outcome scale.

While deals for systems like arms, vehicles, and missile and space components have little association with defense contracts in swing states, aircraft and ships deals have a largely positive association. While both 90% credible intervals overlap zero, most of the posterior mass is positive. While electronics deals are less cyclical, most of the association between electronics deals and swing state contracts for military electronics is positive as well.

One additional ships deal is associated with \$1.5 million more contracts in a hypothetical swing state. Annual ships deals range from one to 11, so these deals are rare but potentially lucrative. The impact also may not concentrate in shipyards, as most ships deals cover whole platforms, which require components from other regions in the defense industrial base.

Aircraft deals are far more common, and thus increase swing state contracts by \$250,000, in expectation. From 2000 to 2020, the United States made at least 27 aircraft deals and a maximum of 89 deals. Some of these covered whole platforms, while others covered specific components or upgrades to existing platforms. The complexity of the aircraft supply chain and



**Figure 4.** *Marginal impact of different types of arms deals on corresponding defense contracts. Estimates mark the estimates and error bars summarize the 90% credible interval.*

variation in deal content makes one new aircraft deal less substantively important. That said, these marginal effects imply that moving from the minimum of deals to the maximum adds \$12 million.

## 6 Discussion and Conclusion

The argument and results suggest that political budget and defense contracting cycles expand international trade, especially 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 protégés. 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 help leaders 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. 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 leaders.

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