Arms and Electoral Influence: Arms Deals with Autocracies and Presidential Elections

Joshua Alley
Assistant Professor
University College Dublin*
joshua.alley@ucd.ie

October 27, 2023

Abstract

As elections approach, U.S. leaders make additional arms deals with autocracies. U.S. leaders make these deals to bolster their election prospects by claiming credit for providing jobs and increasing defense contracting in swing states. Autocratic arms recipients have greater political flexibility to strike arms deals near presidential elections and can increase their security. I provide three pieces of evidence for this argument. First, I detail electoral cycles in arms deals between the United States and autocracies. I then link arms deals to defense contract awards in swing states. Finally, I provide additional evidence for the process by showing that U.S. allies drive most of the autocratic arms deals cycle and that the same platforms that move in arms deals increase swing state contracts. The argument and results help explain why U.S. security cooperation with autocracies endures despite normative and practical concerns.

*Thanks to Brian Blankenship, Rosella Capella, Jonathan Caverley, Jonathan Chu, Ben Fordham, Erik Lin-Greenberg, Zachary Markovitch, Leah Matchett, Andy Philips and Phil Potter, as well as participants in the Boston University Political Economy of Security Online Workshop Series and 2022 Meeting of the International Studies Association for helpful comments.

1 Introduction

In 1972, the Nixon administration struck ten 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 arms deliveries continued after his 1974 resignation.

Something similar happened during the 2012 presidential election, when Saudi Arabia ordered arms from the Obama administration.[1] Twelve deals included 400 Harpoon anti-ship missiles, 12 Apache attack helicopters, and 63 K-6 120mm mortars, along with F-15 jet parts, guided bombs, and other helicopters. Subsequent weapons deliveries spanned the next eight years, including the 2015 Saudi intervention in Yemen's civil war.[2]

The confluence of large arms deals with autocracies and presidential elections is not coincidental. Domestic political competition in the United States encourages arms deals with autocracies. As elections approach, U.S. leaders make more arms deals with autocracies in order to claim credit for the jobs associated with sales and increase defense contracting to in fact improve economic conditions. New defense contract awards then flow to swing states, improving economic conditions in key electoral regions. Arms deals with autocracies thus bolster leaders' efforts to retain power by facilitating political budget cycles (Tufte, 1978; Mintz, 1988; Mayer, 1995; DeRouen Jr and Heo, 2000; Becker, 2021).

Autocracies make arms deals near U.S. elections because arms transfers increase their security and autocrats have additional political flexibility. Unlike democratic leaders, who face their own budget process and potential opposition criticism, autocrats have fewer constraints on accommodating electoral cycles. Autocracies can then use arms to fortify their regime against external and internal threats. This matters because autocracies are less likely to gain se-

[1] Obama first announced the deal in 2010.
[2] All deal information from (SIPRI, 2021).

curity via formal alliances with the United States, so they rely on alternative forms of security cooperation (McManus and Yarhi-Milo, 2017).

I provide three pieces of evidence to support this argument. First, I find that U.S. arms deals with autocracies increase as presidential elections approach, while arms deals with democracies are unchanged. Second, I show 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 examining the process in two ways. First, allied states drive most of the association between autocracies and electoral cycles, which shows the importance of autocratic security motivations. Furthermore, the same weapons systems that cycle in arms deals are also most correlated with additional swing state contracts.

The argument and findings address three salient issues in international relations. First, this paper unpacks the electoral causes and consequences of security cooperation. Just as domestic political business cycles in large countries reshape economic conditions (Kayser, 2006), electoral competition alters U.S. security cooperation. That security cooperation then feeds back into U.S. politics.

Second, my argument and findings help explain why the United States often sells arms to autocracies despite normative and geopolitical concerns. While strategic interests and other common determinants of arms exports create a baseline flow of arms between the United States and some autocracies, electoral competition in the United States adds an additional motivation. Autocracies have sufficient political flexibility to make arms deals near elections and reap security benefits when they do.

Last, I build on 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, while Chyzh and Urbatsch (2021) claim that Chinese soy tariffs hurt Republican congressional candidates in soy-producing areas. My argument inverts these findings by considering how security partners

can help leaders manipulate economic conditions.

This paper begins by outlining 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 with autocracies. I then test the theoretical process in three steps. First, I examine how partner regimes and presidential election timing shape U.S. arms deals from 1950 to 2014. I then show that arms deals are correlated with increased defense contract awards to swing states. Finally, I examine the mechanisms by analyzing arms deals with autocratic allies, as well as which weapons drive deals cycles and increased swing state contracts. The last section discusses the results and concludes.

2 Argument

My argument claims that electoral competition encourages U.S. leaders to make additional arms deals with autocracies. To begin, I detail constraints on aggregate budget cycle tools and discuss why presidential control makes defense contracting an attractive way to manipulate economic conditions. I then describe how arms deals can accelerate defense contracting awards. Finally, I explain how low political constraints and security benefits make autocracies able and willing to make arms deals around U.S. elections.

Electoral considerations impact policy (Nordhaus, 1975).[3] When leaders want to win office, they can use policy tools to improve economic conditions and win votes. 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).

In the United States, leaders cannot easily manipulate macroeconomic policy to improve their electoral prospects. Federal Reserve independence limits political influence on monetary policy (Clark and Hallerberg, 2000). In fiscal policy, aggregate budgets often constrain

[3]See Dubois (2016) for a review of the vast political budget cycle literature.

spending discretion.

Given constraints on aggregate economic instruments, recent political cycles scholarship emphasizes targeted policies. Focused manipulations maximize electoral impact, and spending shifts can be narrowly tailored (Dubois, 2016, pg. 248). For example, U.S. leaders often initiate trade disputes for industries in swing states as elections approach (Conconi et al., 2017).[4]

Scholars have long speculated that defense spending is a useful instrument for budget cycles (e.g. Tufte (1978); Mintz (1988)). Leaders often retain discretion in defense resource allocation and defense spending impacts economic conditions. Whitten and Williams (2011) note that defense spending can serve social welfare goals and Becker (2021) finds that unemployment encourages NATO members to shift spending from equipment to personnel, for instance.

U.S. defense budgets are poor cyclical tools, however, as Congress makes allocations two years ahead. Defense contracting has more flexibility, as presidents 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 contract awards (DeRouen Jr and Heo, 2000). Such targeted spending increases support for incumbents (Kriner and Reeves, 2012).

In the United States, a leader seeking to maximize the electoral impact of new contracts will focus awards on swing states. Because they are competitive, swing states hold the balance of the Electoral College (Kriner and Reeves, 2015). Because swing status changes slowly, these states also have established defense industrial firms that can benefit from contracts.

Leaders cannot award contracts to swing states without important constraints, however. The defense budget shapes contracting levels. Also, if leaders want to award more contracts, the U.S. military may lack absorption capacity to incorporate outputs. Political increases in the supply of defense contracting may not respond to military needs. This makes finding other

[4]Elsewhere, leaders also use labor agreements (Ahlquist, 2010) and land reform (Philips, 2020) to win support in key constituencies.

buyers necessary.

Foreign markets provide additional demand for defense goods. Either foreign countries can buy new production, or U.S. leaders can sell or transfer old equipment to make room in U.S. stocks. When U.S. leaders turn to foreign buyers of defense goods, using defense contracting for political gains has international spillovers.[5]

Leaders only need arms deals and confirmed orders to benefit electorally.[6] When they announce a deal, leaders can claim credit for creating or protecting defense industrial jobs. As confirmed orders stimulate contract awards, improvements in economic conditions substantiate these claims. Leaders can credibly claim credit because deals are correlated with increased contract awards in swing states.

Many U.S. leaders claim that arms deals will generate employment and support the defense industry. The Obama administration justified the $60 billion sale to Saudi Arabia, that was first announced in 2010 before orders began in 2012. For instance, Boeing and U.S. officials highlighted 77,000 jobs tied to the Saudi aircraft purchases during debates over approval.[7] Donald Trump then attempted to claim credit for jobs tied to existing Saudi deals or letters of intent.

Leaders may also claim credit for the economic benefits of an arms deal to ensure Congressional approval. While the executive branch negotiates arms deals, Congress can veto deals by passing a joint resolution. For Congressmen and Senators who may themselves face reelection, opposing perceived employment in the defense industry is risky. Congress has never successfully blocked an arms deals, and is more likely to attach conditions and monitoring

[5]Related scholarship examines the international economic consequences of budget cycles. Economic interdependence leads to correlated economic growth across countries (Kayser, 2006) and increases the global economic influence of large economies. Ito (1991) finds that U.S. elections increase economic growth in Japan, while Foerster and Schmitz (1997) argue that U.S. electoral cycles impact international stock returns.

[6]Final transfers can and often do come years later. Only 23% of deals result in deliveries in the same year, and the median lag between deal and the first deliveries is one year. As a result, arms deals are more likely to follow electoral cycles than transfers of finished defense goods, as production times vary widely. Ships, tanks and planes can take years to assemble. Munitions and smaller platforms take less time.

[7]urlhttps://www.reuters.com/article/idINIndia-51467020100914.

when possible (Thrall, Cohen and Dorminey, 2020).[8]

Congressional approval is necessary for a foreign customer to place orders, however. As a result, there may be a gap between deal announcements and actual orders that can stimulate contracts. Leaders may therefore negotiate deals earlier in their term so that orders arrive as elections approach.

Even with delays from deal approval, arms sales are still a useful vehicle for increasing defense contracting. Executive leaders and Congressmen can claim credit for jobs when they first announce a deal. Moreover, leaders can expect that a deal will be approved, so orders will increase defense contracting, allowing leaders to provide material benefits in key electoral areas.

When U.S. leaders attempt to use arms deals to stimulate defense contracting, not every country is a useful partner. While all states could make deals, democracies face budget and political constraints and have alternative sources of security. In contrast, autocracies have the flexibility and security motivations to make arms deals around elections.

2.1 Arms Deals with Autocracies

While many states could benefit from U.S. arms, autocracies are more likely to make arms deals near elections. Unlike democracies, autocracies have means to make arms deals around elections. Autocratic leaders have fewer budget and policy constraints. Autocrats also increase their security by making arms deals, and are especially inclined to do so because arms transfers are central to U.S. security cooperation with autocracies.

Autocracies have greater political flexibility to make arms deals around elections than democracies. Democratic leaders might face criticism of deals for U.S. arms. Other elites could object to spending on arms, competition for domestic arms manufacturers, or further alignment with the United States. Democracies are also more likely to engage in joint production of weapons

[8] Congress blocked a 2019 arms sale to Saudi Arabia, but Trump overrode the joint resolution with a veto.

systems, due to domestic political benefits and closer ties with the United States.

Democratic leaders also face routine budget processes, which increase constraint. Asking for additional appropriations to purchase arms is politically risky. As a result, democracies may make consistent arms deals, but will not follow U.S. elections.

In addition to political constraints, democracies have less security motivation to make arms deals. Joint democracy promotes formal alliances, which gives democracies additional security without purchasing arms. Peacetime military cooperation between democracies via institutions like the EU And NATO also promotes joint production of arms (Klare, 1983; Bitzinger, 1994), adds consistency to arms transfers.

Due to potential criticism, budget constraints, and alternative security arrangements, buying U.S. arms near presidential elections is unlikely to help democratic leaders retain office. Democratic leaders run political risk for minimal security gain if they engage in cyclical or opportunistic arms purchasing. As a result, democracies will spend finite resources elsewhere.

Autocrats are less constrained.[9] Even if other autocratic elites oppose additional outlays on U.S. arms, they have fewer ways to constrain the leader. Media scrutiny of deals is also less likely to occur or challenge an autocrats' power base. Finally, autocracies need not respect a codified budget process, so they have more financial flexibility.

Autocracies also strike deals to bolster their security. In general, states can build weapons at home, buy arms from abroad, or employ alliances to bolster their military capability. Autocratic security partners of the United States often rely on purchasing arms, because they have limited domestic defense industries and few prospects of formal alliances with the United States.

Arms transfers are pivotal to U.S. cooperation with 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 can substitute

[9]The exact constraints vary by regime.

entirely for formal security guarantees (Yarhi-Milo, Lanoszka and Cooper, 2016). When arms are essential to U.S. security commitments, autocrats will make deals that increase their military capabilities and signal continued alignment. This mirrors how democracies can use aid to get foreign policy concessions from autocracies, but not democracies (De Mesquita and Smith, 2009).[10]

Arms deals are an indispensable way for autocrats to curry favor with U.S. leaders because formal alliances are unlikely. Formalizing an informal alliance might promote democratization (Gibler and Wolford, 2006). The U.S. public prefers security cooperation with democracies (Alley, 2023).

Internal security concerns further motivate autocratic deal-making. Maintaining a robust coercive apparatus is essential to autocratic leaders' survival in office (Boix, 2008). U.S. arms can provide coercive capacity or allow leaders to invest in repressive capabilities by substituting for other defense goods. Given these security motivations and political flexibility, autocrats are more likely to make arms deals near elections.

This argument is agnostic about whether autocrats consciously help U.S. leaders award defense contracts to swing states by making arms deals. Autocracies may take advantage of an opportunity to purchase more weapons and not deliberately accommodate electoral cycles. Autocrats could make purchases or take transfers of surplus materiel as a deliberate favor to U.S. leaders who support their foreign policy interests, however. Alternatively, U.S. leaders might offer more favorable terms in order to secure orders in advance of an election.

One potential objection to this argument is that striking arms deals with autocrats near elections is risky for U.S. leaders. Even if political opponents criticize deals, however, U.S. leaders may still benefit, as arms deals provide concentrated benefits and diffuse critics have less electoral heft. Especially when contracts from deals flow to electorally salient areas, leaders will expect that deal benefits outweigh costs.

[10] Arms transfer may not provide much leverage, however (Spindel, 2023).

The focus on the United States is an important scope condition of this argument. Arms deal cycles and defense contracting in swing states are the result of a large defense industry and the Electoral College. Fixed election scheduling somewhat reduces endogeneity between policy decisions and election timing. Whether other leaders may behave in similar ways is an open question.

2.2 Implications

The argument generates at least two testable implications about arms deals and defense contracting in the United States. The first hypothesis predicts electoral cycles in arms deals with autocracies. Democracies also buy U.S. arms, but they will not buy more as elections approach. As a result, as time to a presidential election decreases, the United States will make more arms deals with autocracies.

> Arms Deals Hypothesis: As time to a presidential election decreases, U.S. arms deals with autocracies will increase, relative to previous arms deals with autocracies.

Second, leaders strike arms deals because deals increase defense contracts in swing states. Whether this actually occurs is testable proposition, however. Therefore, the second hypothesis predicts that arms deals increase contract awards in swing states. Outside of swing states, arms deals are less likely to increase contract awards.

> Arms Deals and Contracts Hypothesis: As arms deals increase, swing state contract awards will increase and non-swing state contracts will be unchanged.

Next, I examine the hypotheses and argument process. In the first analysis, I test the arms deals hypothesis with data on U.S. arms deals from 1951 to 2014. The second analysis tests

the deals and contracts hypothesis with state-level defense contracting data from 2000 to 2020. Finally, I check the mechanisms in two ways. The first mechanism check shows that deals increase swing state contracts only in the years before and year of a presidential election. The second check establishes that the defense industrial sectors with arms deal cycles also have the strongest association between deals and contracts.

3 Arms Deals and Presidential Elections

The arms deals hypothesis predicts increasing U.S. arms deals with autocracies as presidential elections draw closer. To test this prediction, I model U.S. arms deals with all other countries in the world from 1951 to 2014 using deals data from the SIPRI Arms Transfer Database (SIPRI, 2021).[11]

The outcome in this panel dataset is the annual count of deals. I constructed this measure using SIPRI's trade register, which captures deals for specific platforms, and marks deal start, years of delivery, and deal completion. The trade register marks only deals with an confirmed order or deliveries having begun. Announcements without orders do not count. In the United States, this means that a deal has Congressional approval.

I analyze arms deals rather than arms transfers because deals are more connected to electoral considerations. Elites can award contracts quickly once an order is in place. They can also take credit for a deal. Deliveries can take years after an order is placed, even for transfers of existing equipment. As a result, these are less electorally salient. Delivering arms to security partners is a necessary component of this cycle, but it is not electorally salient.

The timespan of deliveries makes more common arms transfer measures less helpful. SIPRI's trend indicator value methodology tracks actual deliveries, so it captures transfers over the course of a deal, not when leaders might take credit for an order and award contracts. These

[11] Control variable coverage, especially for conflict indicators, constrains the sample.

dynamics are especially important for deals with many weapons or larger platforms such as aircraft.

Most deal summaries in the SIPRI register do not have a monetary value, so might relying on deals overstate the importance of autocratic arms cooperation? If democracies make fewer deals but purchase more valuable arms and autocracies buy many cheap platforms, deals might mislead. As I demonstrate below, this is not the case. High-value platforms like aircraft are central to arms deals with autocracies and democracies, and are also the key platform in autocratic orders around elections.

The argument claims that election timing and partner regime interact to shape U.S. arms deals. I measure election timing and competition with an indicator of the number of years to a presidential election. As years to an election decrease, electoral competition increases.

Next, I measure recipient democracy using the VDem project's polyarchy measure (Coppedge, Alvarez and Maldonado, 2008). Polyarchy provides a fine-grained summary of democratic institutions and contestation. It also suggests that Saudi Arabia, Iran, and Latin American juntas are among the most autocratic recipients of U.S. arms, so it has some face validity.

Because many country-year observations have no arms deals, I use a hurdle Poisson model to estimate how the interaction of democracy and election timing shape arms deals. The hurdle component captures that some countries are unlikely to make any arms deals, and works like standard hurdle regression estimators that political science scholars often use. Adding the hurdle with a Poisson outcome optimizes model fit.[12] For ease of estimation and substantive effect calculation, I use Bayesian estimation with the brms package for R (Bürkner, 2017).[13] I show in the appendix that Poisson and zero-inflated Poisson models give similar inferences. Results are also robust to using a Poisson model without any hurdle component or controls.

In addition to the interaction of election proximity and partner regime, I adjust for other

[12]Standard Poisson models under-predict zeros, while negative binomial models predict over-predict large values. See the appendix for details.

[13]The regression coefficients use a normal prior distribution with a mean of zero and standard deviation of .5.

correlates of arms deals and partner democracy. One 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). I also include three states with inconsistent formal treaty commitments that are U.S. allies; Israel, Taiwan and Saudi Arabia. I include informal allies because arms sometimes substitute for a formal alliance, but the United States has given some widely understood security guarantees (Yarhi-Milo, Lanoszka and Cooper, 2016).

Other controls capture other factors that shape either the security motivation to seek U.S. arms or the means of doing so, and therefore may be correlated with autocracy and arms deals. Two key security control variables are binary indicators of Cold War years and peak years in the Global War on Terror, as the United States worked with autocracies during these periods. I also adjust for oil and gas revenues (Ross and Mahdavi, 2015), as petrostates tend to be autocratic and have additional economic means to purchase U.S. arms.

Further country-year controls include logged GDP and population to capture financial means as well as militarized dispute involvement to measure immediate threats. I also account for distance from the United States and common language, as these factors facilitate trade generally. Finally, I adjust for presidential partisanship with a dummy indicator of Republican administrations.

In the hurdle equation of the model, I use four predictors to capture whether a country makes any arms deals with the United States. First, I include the binary indicator of alliance status and the polyarchy democracy measure, because autocracies and non-allied states are less likely to make arms deals. I also include the indicator of engagement in an active militarized dispute. Finally, I include the log of GDP, because wealthier countries have greater means to buy arms. As I show in the appendix, alliances and greater wealth reduce the likelihood of zero deals, while greater democracy and ongoing conflict increase it.

3.1 Results

I summarize the interaction of partner democracy and presidential election proximity in Figure 1.[14] This figure plots predicted arms deals based on proximity to a presidential election and partner democracy.[15] Each facet fixes recipient democracy at the minimum, first quartile, median, third quartile and maximum.

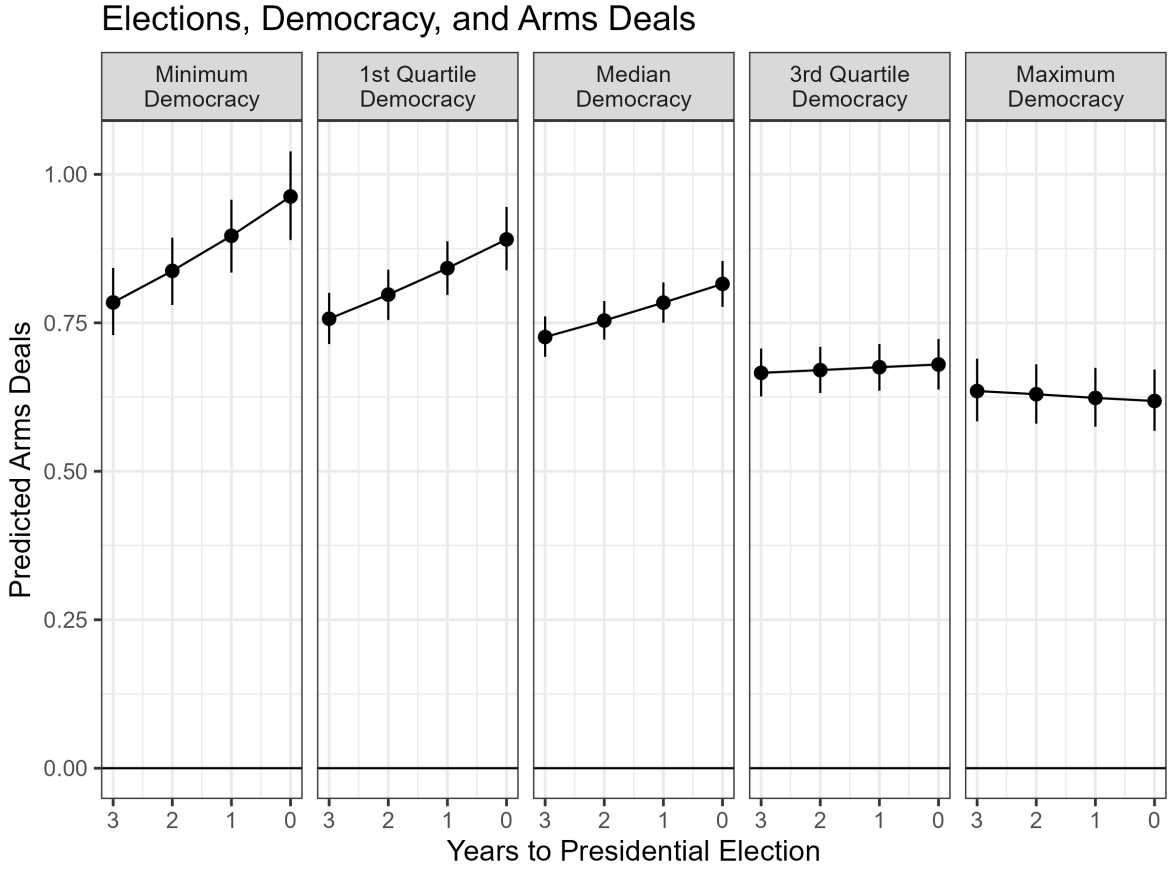

Figure 1. *Predicted arms deals between the United States and other states 1950 to 2014 based on presidential election proximity and partner democracy. Estimates derived from a hurdle Poisson model. Points mark the estimates and error bars summarize the 90% credible interval.*

Figure 3 indicates that autocracies make more arms deals with the United States as elections approach. At minimum polyarchy, predicted arms deals rise from .77 to .97 throughout the

[14]See the appendix for coefficient estimates from all models and summaries of key variables.

[15]I use 90% intervals because simulation variance in Bayesian estimation can lead to unstable inferences with 95% intervals (CITE THIS).

presidential election cycle. Hypothesis tests suggest that for a maximally autocratic state, the increase of .06 deals in each year of the electoral cycle is is clearly positive.[16] Electoral cycles when democracy is at the 1st quartile or median are smaller but clearly positive. The arms deal cycle diminishes as democracy increases, so states with a polyarchy score from the third quartile on see no change in arms deals as elections approach.[17]

Furthermore, predicted arms deal levels increase as polyarchy decreases. This further supports expectations that autocracies who make arms deals with the United States place greater emphasis on arms as a source of security. They are also less likely to employ joint production and offsets. Greater democracy thus reduces any electoral cycle in arms deals with the United States and the level of arms deals.

As presidential elections approach, arms deals with autocracies rise. The argument claims that leaders make more deals so they can award additional defense contracts to swing states. The resulting deals and contracts hypothesis predicts that greater arms deals increase defense contracting in swing states. The next analysis examines this connection.

4 Arms Deals and Defense Contracting

Linking arms deals and defense contracting is challenging. Deals occur between countries, while defense contracting for electoral advantage takes place within U.S. states. While jointly modeling deals with countries and contracts is theoretically possible, summing country-year deal estimates into an annual measure of total deals for the state-level analysis creates an aggregation problem. To maintain simplicity, this analysis uses observed annual deals, electoral competition and state-level factors to predict defense contract awards from 2001 to 2020. While connecting individual contracts and foreign military sales is challenging, the narrow focus on

[16] The entire posterior mass of the difference between three and zero years to an election is positive, with a 95% credible interval that ranges from .1 to .22.

[17] I show in the appendix that the main interaction estimates are robust to using binning estimators.

arms production and subsequent analysis matching deals cycles and contracts across defense industrial sectors mean that this approach still provides a useful test.

I draw the outcome measure from Department of Defense prime contract award data in the USAspending.gov database.[18] This archive contains individual contracts from 2000 to 2020. I analyze defense contracting in these years because archive starts in the 2000 fiscal year, detailed coverage begins in 2001 and some state-level controls have limited coverage after 2020.

Drawing on this contracting data trades temporal coverage for detailed information. Although other contracting datasets have longer temporal coverage, they contain less information about state awards and what contracts are for. By using this data, I can examine the role of electoral geography, ensure that I am only capturing contracts for arms production and eventually link arms deals and contracts in defense industry sectors.

The key outcome is total defense contracts for arms production awarded to each state every year, measured in millions of U.S. dollars. This measure does not include sub-contracts, so it may not fully capture the flow of funds. 55% of contracts require a subcontracting plan, so subcontracting is common but not ubiquitous. While subcontracting is important, I focus on prime awards because these are more visible to leaders. I focus on contracts for arms production, because arms deals should have little impact on contracts for other goods like construction equipment or food. To do this, I filter the contracts using Department of Defense program description codes.

Total defense contracts are challenging to model, because some states have no weapons contract awards in a given year, and other states receive billions of contracting dollars. A zero-valued and right-skewed outcome results. Transformations of such data can make substantive effect calculations challenging and potentially biased. Traditional approaches such as logging the outcome after adding one are sensitive to the outcome scale and the constant added (Chen and Roth, 2022; Mullahy and Norton, 2022).

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

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).[19] Ordered beta regression is fits bounded data better than other models with more restrictive distributional assumptions. This approach allows me to use a flexible outcome distribution and account for zeros. It also avoids scale-effects from log-transformations and deciding to work with outcomes in millions of dollars. Converting the coefficients and marginal effects back to the outcome scale after estimation is straightforward, as I multiply the model estimates by the rescaling constant.

Because ordered beta regression requires rescaling defense contracts, I present two additional checks in the appendix. First, I also fit a a hurdle lognormal model of contracts without any transformation. Second, I model annual contract changes with a robust regression. Both approaches give similar inferences.

The first independent variable is total annual arms deals. I measure arms deals by summing U.S. arms deals with all countries in every year. Annual deals range from 75 to 160.

The other key independent variable is a dummy indicator of swing state status based on 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. These states are thus more competitive than others in the core Democratic or Republican coalitions, and could determine the outcome of an election. I provide a list of swing states and years in the appendix.

I then interact the swing state dummy with total U.S. arms deals. My argument expects that the constituent term of arms deals, which expresses the association between deals and contracts outside of swing states, should be negligible or negative. If leaders use arms deals for electoral advantage, then they will not be as correlated with contracts outside of key electoral areas. Because there are no years with zero U.S. arms deals, the swing state constituent term

[19] https://www.robertkubinec.com/post/logs/

extrapolates far beyond any observed data, and is therefore hard to interpret directly. The interaction term for swing states and annual deals should be positive.

In addition to the electoral competition and deals variables, I include several controls. First, I adjust for population and GDP, because 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 dummy coding Republican presidencies.

Further adjustments in the model account for the data structure. First, I include state varying intercepts because observations cluster within states. Current contracting also depends on past contracting, but this varies across divergent state defense industries. I therefore include a state-specific lagged dependent variable, which allows temporal dependence in contracting to vary by state.[20]

4.1 Results

To examine the arms deals and defense contracts hypothesis, I focus on marginal effects and predicted outcomes. I test the deals and contracts hypothesis by examining the positive posterior mass of the interaction between arms deals and swing states, because the hypothesis expects a positive association.[21]

Figure 2 presents coefficient for the interaction of deals with swing status, the marginal impact of swing state competition as arms deals vary, and predicted defense contracts for hypothetical swing and non-swing states. All these estimates suggest that deals increase defense contracting awards to swing states. In fact, swing states receive fewer contracts than other

[20] See the appendix for state parameter estimates.

[21] For the marginal effect of swing status and outcome predictions, I again use 90% credible intervals, because they are less sensitive to simulation variance.

states in years with lower arms deals.

As the top left panel of Figure 2 shows, the impact of increasing arms deals on defense contracting is clearly positive in swing states and unclear elsewhere. 98% of the posterior mass of the deals and swing state interaction is positive, so the preponderance of evidence supports the deals and contracts hypothesis. Only 34% of the posterior mass in the deals constituent term is positive, however, so there is little evidence that deals increase contract awards outside of swing states.

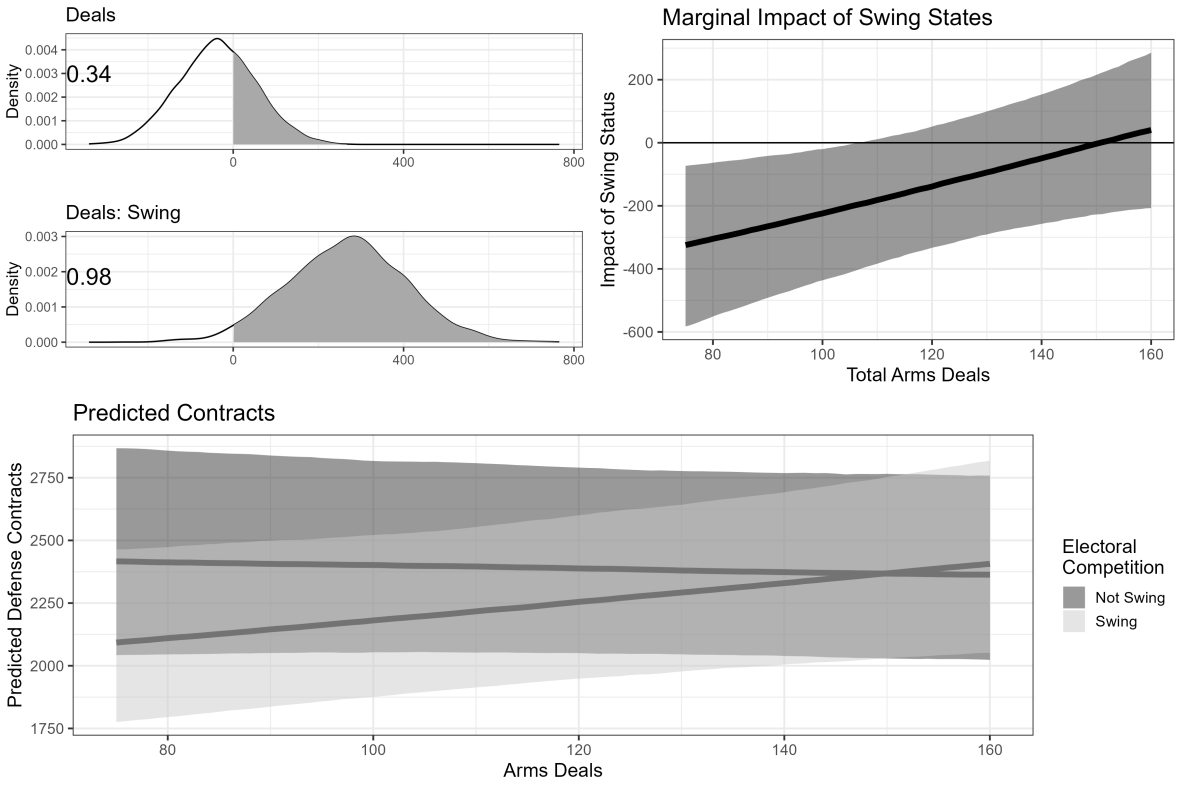

Figure 2. *Interaction coefficients, marginal effects and predicted outcomes from an interaction of swing state status and U.S. arms deals. The outcome is annual defense contracts in the 50 U.S. states from 2001 to 2020, measured in millions of dollars. Lines give the expected value, while the error bars summarize 90% credible intervals. All other variables fixed at the mode or median. Estimates derived from an ordered beta regression with rescaled defense contracts, with estimates transformed back onto the outcome scale.*

In addition to the direction of the relationship between deals and swing state contracts matching the argument, the relationship is substantively meaningful. Holding all else equal,

moving from the first to the third quartile of deals increases defense contracting by $202 million in a hypothetical swing state. This is a meaningful shift in defense contracting, given the potential spillovers. Greater deals are less connected to contract awards outside swing states because the share of contracts that go to swing states rises in election years.

The top right panel of Figure 2 shows that the marginal impact of swing state status on defense contracts rises as arms deals increase. In fact, deals offset what is otherwise a swing state disadvantage in defense contracts. At the observed minimum of arms deals, a typical swing state receives $2.5 billion less in contracts. The swing state disadvantage at low levels of arms deals occurs because non-swing states like California and Texas have substantial defense industries. When arms deals approach 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, as I show in the bottom panel of Figure 2. Holding all else equal, increasing arms deals leads to greater contracts in swing states. Defense contracts in non-swing states do not respond to increasing arms deals. As a result, the gap in defense contracting between swing and other states disappears in years with high arms deals.

All three of the quantities in Figure 2 are consistent with one another and with the argument. Increasing arms deals are correlated with greater defense contracts in swing states. As a result, swing states receive similar contracts to other states with larger economies and less electoral competition, who otherwise receive more contracts.

5 Examining the Theoretical Process

The results so far corroborate two predictions of the argument, but require additional validation. In the following, I check the low constraint and high security motivation mechanisms by showing that allies drive most of the electoral cycle in U.S. arms deals with autocracies.

Given a strong security motivation to make arms deals, autocratic allies have the necessary mix of means and motivation to make arms deals.

After examining the role of alliances in arms deals cycles, I establish that the same platforms in arms deals between the United States and autocratic allies are also strongly correlated with swing state contracts. If the platforms that moved in deals cycles were uncorrelated with swing state contracts, that would suggest any connection between deal cycles and swing state contracts is coincidental. The sectoral consistency I find instead suggests that arms deals do translate into swing state contracts.[22]

5.1 Autocratic Allies

The argument claims that autocracies make arms deals with the United States near elections because their leaders have fewer constraints and reap security benefits. The confluence of security need and freedom to make deals is necessary for cycles. Autocratic allies of the United States have equal political flexibility and greater security motivation than other autocrats. As a result, allied states should drive most of the electoral cycle in autocratic arms deals.

Alliances increase arms transfers in general. Thurner et al. (2019) find that while the importance of security and economic factors fluctuates, alliances consistently increase arms transfers. Ikenberry and Grieco (2003, pg. 184–5) note that states often use direct transfers to attract and sustain security commitments. U.S. allies that rely on American weapons, systems and doctrines can also integrate purchases more easily and build on past orders.

Autocratic allies also have additional security motivation to facilitate electoral arms deal cycles. Deals that win favor with U.S. leaders increase the odds of U.S. support for a partner's foreign policy goals and political survival. In addition to the capability boost of new arms, allies gain confidence in U.S. commitment because arms exports are a costly signal (McManus and

[22] A third process check in the appendix shows that the marginal impact of arms deals on swing state contracts is positive in the year before and year of a presidential election and is closer to zero otherwise.

Yarhi-Milo, 2017), and U.S. leaders rely on arms to support autocratic partners (Yarhi-Milo, Lanoszka and Cooper, 2016).

Furthermore, the security externalities of arms transfers reduce electoral cycles in arms exports to non-allies. U.S. leaders will be less willing to increase the capability of states with fewer common interests, even if it facilitates contracting cycles. Justifying deals is still challenging, but it is more straightforward for autocratic allies.

Among autocracies, U.S. allies mix stronger security motivations with the same low constraints. Autocratic allies thus have the necessary means and motivation to buy arms near elections. Alliances also make it easier for U.S. leaders to justify deals. As a result, most of the electoral cycle in arms deals with autocracies should occur with allied states.

5.1.1 Results

I tweak the hurdle Poisson model of autocracies and electoral arms deals to examine the role of alliances. To do this, I add a dummy indicator of whether a state is a U.S. ally to the interaction of partner regime and presidential election proximity.[23] This creates a triple interaction of alliance, regime type, and election timing.

Because interpreting coefficients in triple interactions is challenging, I summarize the interaction of alliances, democracy and presidential election proximity in Figure 3. This figure plots predicted arms deals based on proximity to a presidential election, democracy and alliance status. Each facet divides estimates based on democracy, while colors distinguish between allied and non-allied states.

The estimates in Figure 3 suggest that allies are responsible for most of the electoral cycle in U.S. arms deals with autocracies. The United States makes more arms deals with allied states than non-allied states, regardless of partner regime. Predicted deals with non-allied states are lower regardless of democracy.

[23] This includes formal and informal allies.

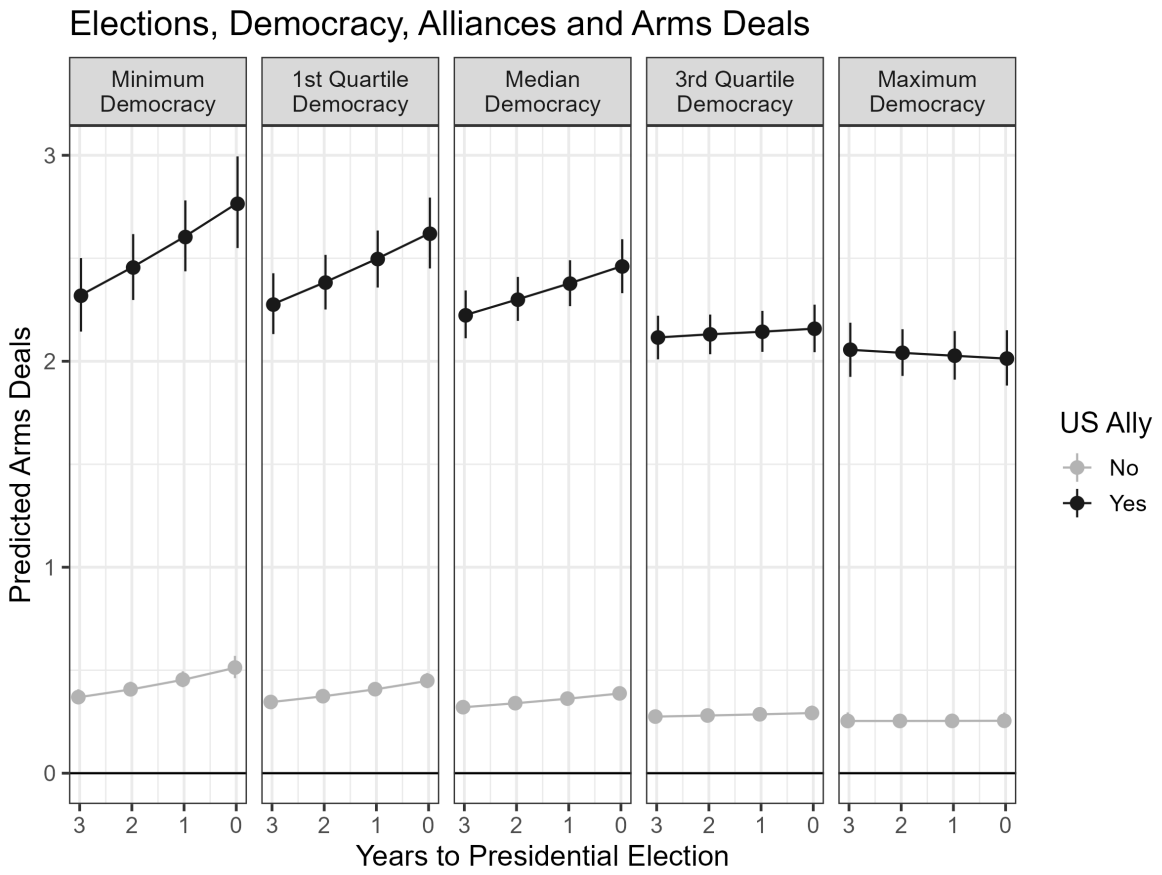

Figure 3. *Predicted arms deals between the United States and other states 1950 to 2014 based on presidential election proximity, democracy, and security alliances. Estimates derived from a hurdle Poisson model. Points mark the estimates and error bars summarize the 90% credible interval. All other variables fixed to their mode or median.*

There are cycles in arms deals for autocracies with and without a U.S. alliance, but the cycles are much larger for allied states. When allied polyarchy is at the minimum, predicted arms deals rise from 2.3 to 2.7 throughout the presidential election cycle. Hypothesis tests of equality between allied arms deals at minimum democracy indicate a clear increase of .13 deals in each year of the electoral cycle.[24] Non-allied states with a minimal polyarchy score see predicted deals increase by roughly .05 a year.

Unlike autocratic allies, democratic allies receive consistent arms deals. Defense industrial integration may explain some of the democratic stability (Brooks, 2005), but another plausible explanation is that democratic leaders face more constraints on making deals around presidential elections. The constraint argument is also plausible because democracies make fewer arms deals overall.

Electoral cycles in arms deals are strongest for autocratic allies. Alliances increase the level of arms deals, and autocracies respond more to presidential elections. This suggests that autocracies with both political flexibility and security motivation make arms deals that ultimately feed swing state contracts. In the next section, I use specific defense industrial sectors to check that connection between deals and contracts.

5.2 Which Weapons Drive Deals and Contracts?

The final analysis examines whether the weapons systems that change hands in U.S. arms deals with autocratic allies and are correlated with swing-state contract awards. Showing that the United States makes more deals for specific weapons as elections approach, and that deals for those weapons correlate with defense contract awards in swing states increases confidence in the theoretical process.[25] I find that aircraft are the most common subject of arms deals with autocrats near elections, and aircraft deals also increase swing state contracts for aircraft

[24] The 95% credible interval ranges from .05 to .21.

[25] These correlations do not link specific deals and contracts, however.

production.

To analyze deals by sector, I divided arms deals and defense contracts into six sectors. The sectors include aircraft, arms and munitions, military electronics, missiles and space technology, ships, and vehicles. Each of these sectors has a distinct production geography and arms deal distribution.

I then fit six hurdle Poisson models, one for each type of arms deals. These models use the same covariates as the preceding arms deals model; a triple interaction of alliance, democracy and election timing, along with a series of controls and a hurdle equation. Using the hurdle again improves model fit, as more country-year observations have zero deals within sectors.

For ease of presentation, I plot predicted arms deals at the minimum and maximum of partner democracy in Figure 4. The estimates suggest that aircraft are the core weapons system in electoral cycles in arms deals with autocratic allies. Military alliances strongly increase the likelihood of arms deals for aircraft and regime type determines how much aircraft deals follow presidential election cycles. Aircraft deals with autocratic allies are the most common deal overall, and these deals rise as presidential elections approach. While aircraft deals with democratic allies are also common, they respond less 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 also move in arms deals that feed defense contracting.

Other weapons show less evidence of cycles in arms deals. Deals for arms and other munitions do not depend on democracy or election timing. Democratic allies are more likely to make deals for military electronics and missile/space systems. The importance of democracy and alliances for these goods likely reflects joint production and planning in formal U.S. alliances.

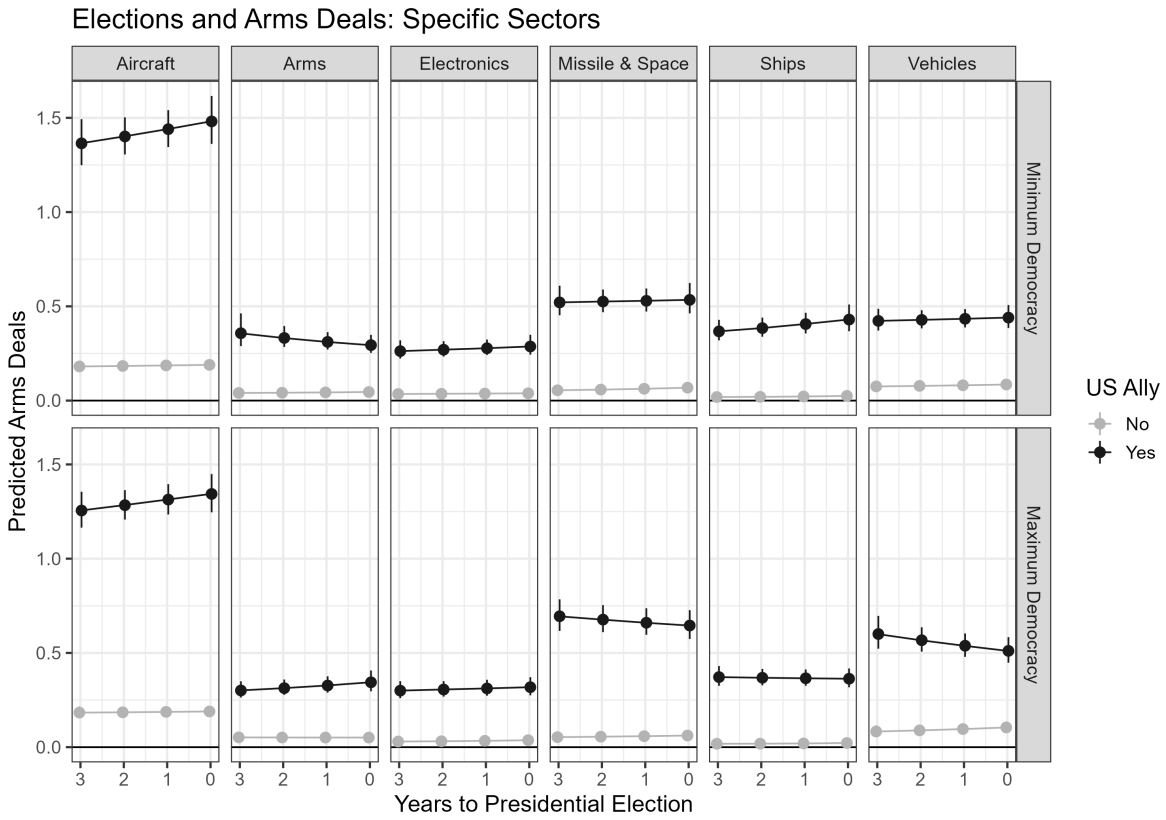

Figure 4. *Predicted arms deals between the United States and other states 1950 to 2020 based on presidential election proximity, democracy, and military alliance. Estimates derived from six sector-specific hurdle Poisson models counting annual deals divided by the type of military good exchanged. Points mark the estimates and error bars summarize the 90% credible interval. All other variables fixed to their mode or median.*

5.2.1 Deals and Defense Contracts by Sector

Next, I fit six models of defense contracts to examine the deals and contracts hypothesis for each sector and check if the sectors with deal cycles have a clear positive association between deals and swing state contracts. This analysis divides total contracts by sector using the product description for each contract. 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 outcomes, using an identical specification to the aggregate defense contracting model. The key independent variables in these models are observed arms deals in each sector, the binary swing state indicator, and their interaction. I also include the same terms to capture state varying intercepts, state-specific autocorrelation, and other controls.

Aircraft deals are strongly correlated with aircraft contracts in swing states. Figure 5 plots the interaction between different deal types and swing state status. These estimates show the deals coefficients from six ordered beta models, transformed back to the outcome scale. Again, I focus on the positive posterior mass, as this gives the evidence consistent with a directional hypothesis.

While deals for most systems like arms, vehicles, and missile and space components have largely positive associations with related swing state contracts, aircraft deals have the greatest positive association. 95% of the posterior mass in the interaction of aircraft deals and swing state status is positive. This probably reflects the diffuse aircraft supply chain, which incorporates engines, airframes, and other essential components.

In addition to aircraft, ships and electronic deals are correlated with greater swing state contracts. Increases in ships deals are associated with $300 million more contracts in a hypothetical swing state. Annual ships deals range from one to 11, so these deals are rare but lucrative. The impact also may not concentrate in shipyards, as most ships deals cover whole platforms, which require components from other regions.

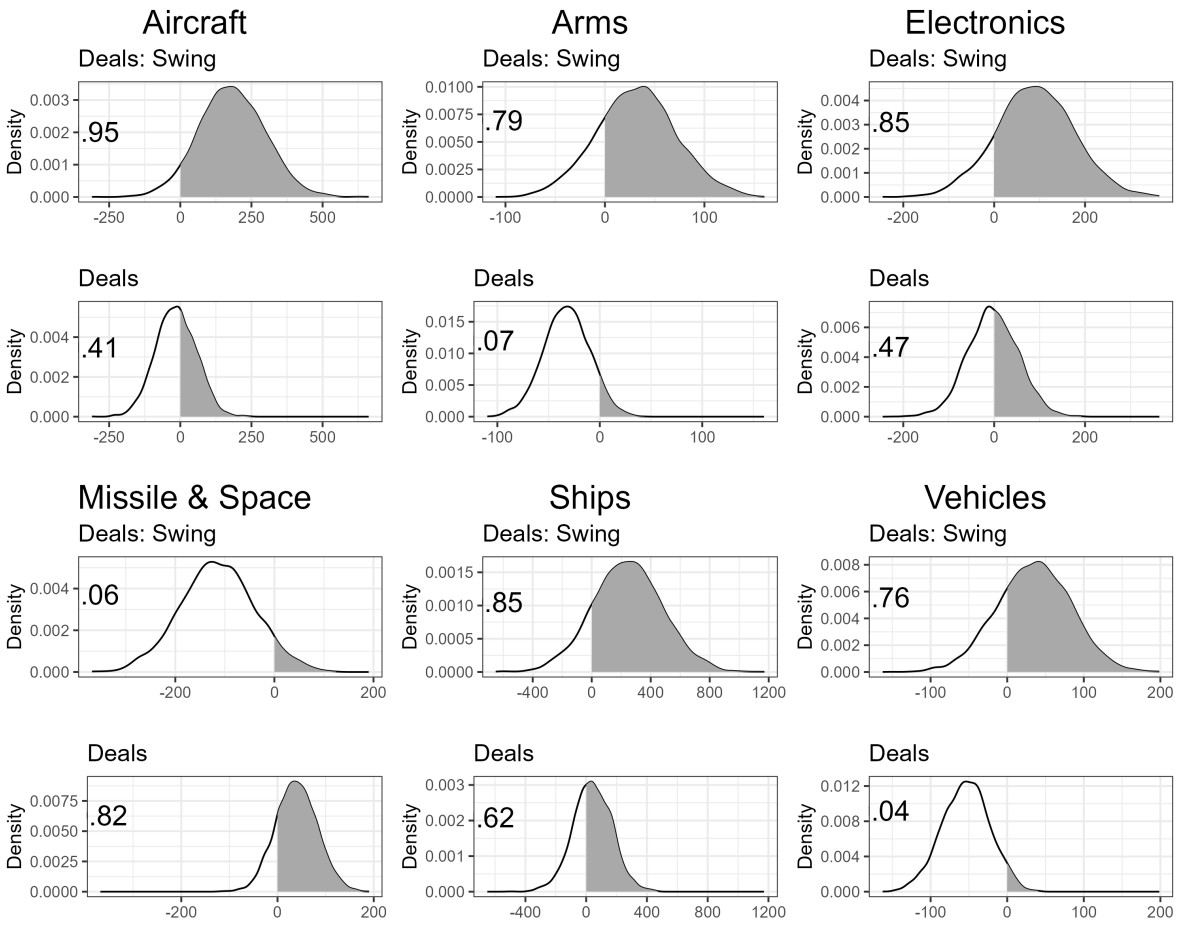

Figure 5. *Associations between different types of arms deals and defense contracts within defense industry sectors. Shaded area and text summarize the positive posterior mass. Estimates in millions of U.S. dollars.*

While electronics arms deals are less cyclical, most of the association between electronics deals and swing state contracts for military electronics is positive as well. Electronics manufacturing does not come from electorally-driven arms deals, but electronics deals also feed swing state contracts. Similarly, much of the vehicles posterior mass is positive in swing states, though the direction of that association is less clear. Only missile and space production, which is geographically concentrated, has greater positive mass on the association between deals and contracts outside of swing states.

These results suggest that aircraft are the main component in arms deal cycles and aircraft deals often increase swing state contracts. Other deals in sectors like arms, electronics and ships may also increase swing state contracts, but these have less cyclical arms deals. Overall, this supports a connection between arms deals with autocratic allies and swing state contracts.

6 Discussion and Conclusion

Arms deals with autocratic allies help U.S. leaders increase defense contracting awards in swing states. Arms deals with autocracies increase as presidential elections approach. Deals then increase swing state contract awards. Much of this cooperation sends arms to autocratic U.S. allies like the Cold War era Brazilian junta and Saudi Arabia.

This note helps explain why U.S. security cooperation with autocracies endures despite normative and practical criticisms. Arms deals increase autocratic allies' security and help U.S. leaders win elections. While not a part of formal treaties, these informal linkages are essential to bargains between the United States and its security protégés. Electoral arms deals sustain regular cooperation across regimes.

In addition to helping explain U.S. security cooperation with autocracies, these findings 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 award contracts with less attention to the budget process and force planning of the U.S. military. The results also complement findings that states manipulate international economic ties to undermine adversarial leaders (Chyzh and Urbatsch, 2021; Kim and Margalit, 2021), by showing how some partners aid cycles via security cooperation.

Future research could proceed in several directions. Exploring the role of defense industry integration and intermediate goods in these arms cycles is potentially interesting. Whether there are similar cycles outside the United States is also a worthy subject of future study. Other alliance patrons may take similar actions in different ways.

Electoral competition reshapes international security cooperation. Efforts to use defense contracting to improve the economy in swing states encourage U.S. security cooperation with autocracies. While these deals may empower states that misuse U.S. arms, electoral considerations take precedence.

References

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

Alley, Joshua. 2023. "Elite Cues and Public Attitudes Towards Military Alliances." *Journal of Conflict Resolution* 67(7–8):1537–1563.

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

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

Boix, Carles. 2008. "Economic Roots of Civil Wars and Revolutions in the Contemporary World." *World Politics* 60(03):390–437.

Brooks, Stephen G. 2005. *Producing Security: Multinational Corporations and the Changing Calculus of Conflict*. Princeton, NJ: Princeton University Press.

Bürkner, Paul-Christian. 2017. "brms: An R package for Bayesian multilevel models using Stan." *Journal of Statistical Software* 80(1):1–28.

Chen, Jiafeng and Jonathan Roth. 2022. "Log-like? Identified ATEs defined with zero-valued outcomes are (arbitrarily) scale-dependent.".

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.

Coppedge, Michael, Angel Alvarez and Claudia Maldonado. 2008. "Two Persistent Dimensions of Democracy: Contestation and Inclusiveness." *The Journal of Politics* 70(3):632–647.

De Mesquita, Bruce Bueno and Alastair Smith. 2009. "A Political Economy of Aid." *International Organization* 63(2):309–340.

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

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

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.

Gibler, Douglas M and Scott Wolford. 2006. "Alliances, Then Democracy: An Examination of the Relationship Between Regime Type and Alliance Formation." *Journal of Conflict Resolution* 50(1):129–153.

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.

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.

Klare, Michael T. 1983. "The Unnoticed Arms Trade: Exports of Conventional Arms-Making Technology." *International Security* 8(2):68–90.

Kriner, Douglas L and Andrew Reeves. 2012. "The Influence of Federal Spending on Presidential Elections." *American Political Science Review* 106(2):348–366.

Kriner, Douglas L and Andrew Reeves. 2015. "Presidential Particularism and Divide-the-Dollar Politics." *American Political Science Review* 109(1):155–171.

Kubinec, Robert. 2022. "Ordered Beta Regression: A Parsimonious, Well-Fitting Model for Continuous Data with Lower and Upper Bounds." *Political Analysis* pp. 1–18.

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

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.

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

Mullahy, John and Edward C Norton. 2022. Why Transform Y? A Critical Assessment of Dependent-Variable Transformations in Regression Models for Skewed and Sometimes-Zero Outcomes. Technical report.

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

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

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

Ross, Michael and Paasha Mahdavi. 2015. "Oil and Gas Data, 1932-2014." Harvard Dataverse.

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

Spindel, Jennifer. 2023. "Arms for influence? The limits of Great Power leverage." *European Journal of International Security* pp. 1–18.

Thrall, A Trevor, Jordan Cohen and Caroline Dorminey. 2020. "Power, profit, or prudence? US arms sales since 9/11." *Strategic Studies Quarterly* 14(2):100–126.

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.

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.