Arms and Electoral Influence: Arms Deals with Autocracies and U.S. Presidential Elections

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Abstract

As presidential elections approach, U.S. leaders make additional arms deals with autocracies. U.S. leaders make these deals to bolster their electoral prospects by claiming credit for providing jobs and increasing defense contracting in swing states. Autocratic arms recipients have greater political flexibility to order arms near presidential elections and increase their security by taking arms. 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 unpack the process by showing how deal timing shifts when regimes change within countries, 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 detail the electoral motivations and value of U.S. security cooperation with autocrats.

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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 junta 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 arms deals with autocracies and U.S. presidential elections is not a coincidence. 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 critical 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. Autocrats then use arms to fortify their regime against external and internal threats. This matters because autocracies are less likely to gain security

[1] Obama first announced the deal in 2010. This paper analyzes confirmed orders, not announcements.
[2] All deal information from (SIPRI, 2021).

via formal alliances with the United States (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 three ways. The first mechanism check addresses autocratic constraint by comparing deals before and after democratization in Greece and Portugal. After that, I document the importance of autocratic security motivations by showing that autocratic allies drive most of the association between autocracies and electoral cycles. Last, I examine which weapons systems move in deals and increase swing state contracts, and find that aircraft, electronics, ships and vehicles all contribute to deals and contracts.

The argument and findings address three salient issues in international relations. First, this paper details 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.

Electoral considerations are also a new explanation of when, why and to whom the United States sells arms. Existing work on arms transfers considers diverse explanations for why states make arms transfers (Willardson and Johnson, 2022), including foreign policy interests (Thrall, Cohen and Dorminey, 2020), economic considerations (Bitzinger, 1994) networks (Thurner et al., 2019), and leverage (Spindel, 2023). Using arms sales for electoral advantage adds to these findings, and matters because the United States is the leading exporter of arms.

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 further motivation. Au-

tocracies have sufficient political flexibility to make arms deals near elections and reap security benefits when they do.

Last, my results mirror prior findings that antagonistic foreign states can use economic policies to impact electoral competition. For instance, China used tariffs to reduce Republican vote share in the 2018 midterm elections by targeting industries in competitive districts, and soy tariffs to hurt Republican congressional candidates in soy-producing areas Chyzh and Urbatsch (2021); Kim and Margalit (2021). My argument considers how security partnerships can help leaders manipulate economic conditions to their advantage.

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 examine the theoretical process in three steps. First, I test 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 unpack the process by analyzing arms deals before and after democratization within two states, the role of autocratic allies and which weapons move both deal cycles and 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 change policies 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, however, 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 spending discretion.

Given constraints on aggregate economic instruments, recent political cycles scholarship emphasizes targeted policies. Focused manipulations maximize electoral impact by tailoring shifts to target key constituencies (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 improves economic conditions. Whitten and Williams (2011) note that defense spending often serves social welfare goals and Becker (2021) finds that unemployment encourages NATO members to shift spending from equipment to personnel.

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). Targeted spending generally increases support for incumbents (Kriner and Reeves, 2012), and defense contracts can be a targeted instrument.

In the United States, a leader seeking to maximize the electoral impact of new contracts

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

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

will focus awards on swing states. Because they are competitive, swing states hold the balance of the Electoral College (Kriner and Reeves, 2015). Many swing 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 sets contracting levels. Also, if leaders want to award more contracts and expand, the U.S. military may lack absorption capacity to incorporate outputs or not need older systems. Political increases in the supply of defense contracting may not respond to military needs. This makes finding other buyers necessary.

Foreign markets provide additional demand for defense goods. Foreign countries can buy new production or keep production lines for older equipment going. U.S. leaders can also 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. Indeed, credit claiming is essential to budget cycles (Bueno, 2021). Leaders will claim credit for jobs, and as confirmed orders stimulate contract awards, improvements in economic conditions substantiate these claims.

When they claim credit for generating employment, leaders can argue that arms sales create and preserve jobs. Job preservation may be more important than job creation. Arms sales add relatively few jobs, but selling older equipment keeps established production lines running

[5]This is analogous to 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.

(Caverley, 2018).

U.S. regularly leaders claim that arms deals support the defense industrial jobs. The Obama administration justified the $60 billion sale to Saudi Arabia in those terms. Boeing and U.S. officials highlighted 77,000 jobs tied to Saudi aircraft purchases.[7] Donald Trump then attempted to claim credit for jobs tied to existing Saudi deals or letters of intent. In 2020, a Department of Defense press release claimed that among U.S. workers, "up to 1 million ... depend on U.S. defense exports for their job security."[8] The Clinton administration also engaged in more arms sales than observers anticipated, because as one defense industry executive argued that "Clinton realizes these exports create jobs."

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 when possible (Thrall, Cohen and Dorminey, 2020).[9]

Congressional approval is necessary for a foreign customer to place orders. 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 near elections.

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 Congressional approval, so orders will allow leaders to provide material benefits in key electoral areas.

When U.S. leaders attempt to use arms deals to stimulate defense contracting, not every

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

[8] https://www.defense.gov/News/News-Stories/Article/Article/2435951/officials-describe-how-arms-sales-benefit-the-us-partners/

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

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, because autocratic leaders have fewer budget and policy constraints. Autocrats also increase their security by making arms deals, and are especially inclined to seek arms 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 excessive alignment with the United States. Democracies are also more likely to engage in joint production of weapons 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 within existing security institutions, 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 U.S. arms. Peacetime military cooperation between democracies via institutions like the EU and NATO also promotes joint production of arms (Klare, 1983; Bitzinger, 1994), which adds consistency to arms transfers.

Potential opposition criticism, budget constraints, and alternative security arrangements, mean that buying U.S. arms near presidential elections is unlikely to help democratic leaders.

Democratic leaders run political risk for minimal security gain if they engage in cyclical or opportunistic arms purchasing. As a result, democracies will spend resources elsewhere.

Autocrats are less constrained and have different security needs.[10] 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 use 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 limited prospects of formal alliances with the United States.

Arms transfers are therefore 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). 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). This makes arms deals an indispensable way for autocrats to curry favor with U.S. leaders.

Arms transfers are a pivotal offstage signal and can substitute 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).[11]

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

[10] The exact constraints vary by regime.

[11] Arms transfers may not provide much leverage, however (Spindel, 2023).

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 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.

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 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.

Second, I argue that U.S. leaders strike arms deals because deals increase defense contracts in swing states. 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 test these hypotheses and detail the 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 unpack the mechanisms in two ways. The first mechanism check shows that democratization in two NATO members changed arms deal timing, which suggests that political constraints are an important consideration. A second mechanism analysis documents the importance of autocratic allies in driving arms sale cycles, which illustrates the importance of autocrats who rely on the U.S. for security. The third check examines which types of arms change hands and drive contracts, establishing that the defense industrial sectors with arms deal cycles also have the strongest association between deals and contracts.

3 Presidential Elections and Arms Deals

The arms deals hypothesis predicts that the U.S. makes more arms deals with autocracies near presidential elections. To test this prediction, I model U.S. arms deals with all other coun-

tries in the world from 1951 to 2014 using deals data from the SIPRI Arms Transfer Database (SIPRI, 2021).[12]

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 register marks only deals with an confirmed order or deliveries having begun. Announcements without orders do not count, so all deals have 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. Actual transfers can take years after an order is placed, even for deliveries of existing equipment. As a result, transfers are less electorally salient.

The timespan of deliveries makes more common arms transfer measures such as trend indicator value less helpful. SIPRI's trend indicator value methodology tracks actual deliveries, not orders. This difference is especially important for deals with many weapons or larger platforms such as aircraft with a substantial lag between orders and deliveries.

While trend indicator value captures platform value, most deal summaries in the SIPRI register do not provide a monetary value, so could 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, autocratic deals might be less valuable. As I demonstrate below, this is not the case. High-value platforms like aircraft, ships and vehicles are central to arms deals with autocracies 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,

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

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.[13] For ease of estimation and substantive effect calculation, I use Bayesian estimation with the brms package for R (Bürkner, 2017).[14] I show in the appendix that Poisson and zero-inflated Poisson models give similar inferences. Results are also robust to fitting a Poisson model without any hurdle component or controls.

In the hurdle equation of the model, I use four predictors to capture whether a country makes any arms deals with the United States. Perhaps the most important hurdle predictor 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 count these states as allies because all three countries have implicit security guarantees that are similar to U.S. treaties.

Along with alliances, I add the polyarchy measure in the hurdle equation, because autocracies are less likely to make arms deals, all else equal. I also include a dummy indicator of engagement in an active militarized dispute to capture conflict involvement. Finally, I use the log of GDP to predict zero deals, 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.

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

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

Along with the interaction of election proximity and partner regime, I adjust for other correlates of arms deals and partner democracy in the count equation of the hurdle model. These 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. I leave the alliance dummy alone in the hurdle equation to facilitate model identification.

3.1 Results

I summarize the interaction of partner democracy and presidential election proximity in Figure 1.[15] This figure plots predicted arms deals based on proximity to a presidential election and partner democracy.[16] Each facet fixes recipient democracy at the minimum, first quartile, median, third quartile and maximum, and holds all other factors constant.

Figure 4 indicates that autocracies who clear the hurdle of receiving any U.S. arms make more arms deals with the United States as elections approach. At minimum polyarchy, predicted arms deals rise from 1.5 to 2 throughout the presidential election cycle. Hypothesis tests suggest that for a maximally autocratic state, the increase of .18 deals in each year of the

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

[16]I use 90% intervals because simulation variance in Bayesian estimation can lead to unstable inferences with 95% intervals (McElreath, 2016), so 90% is a helpful default (Goodrich et al., 2023).

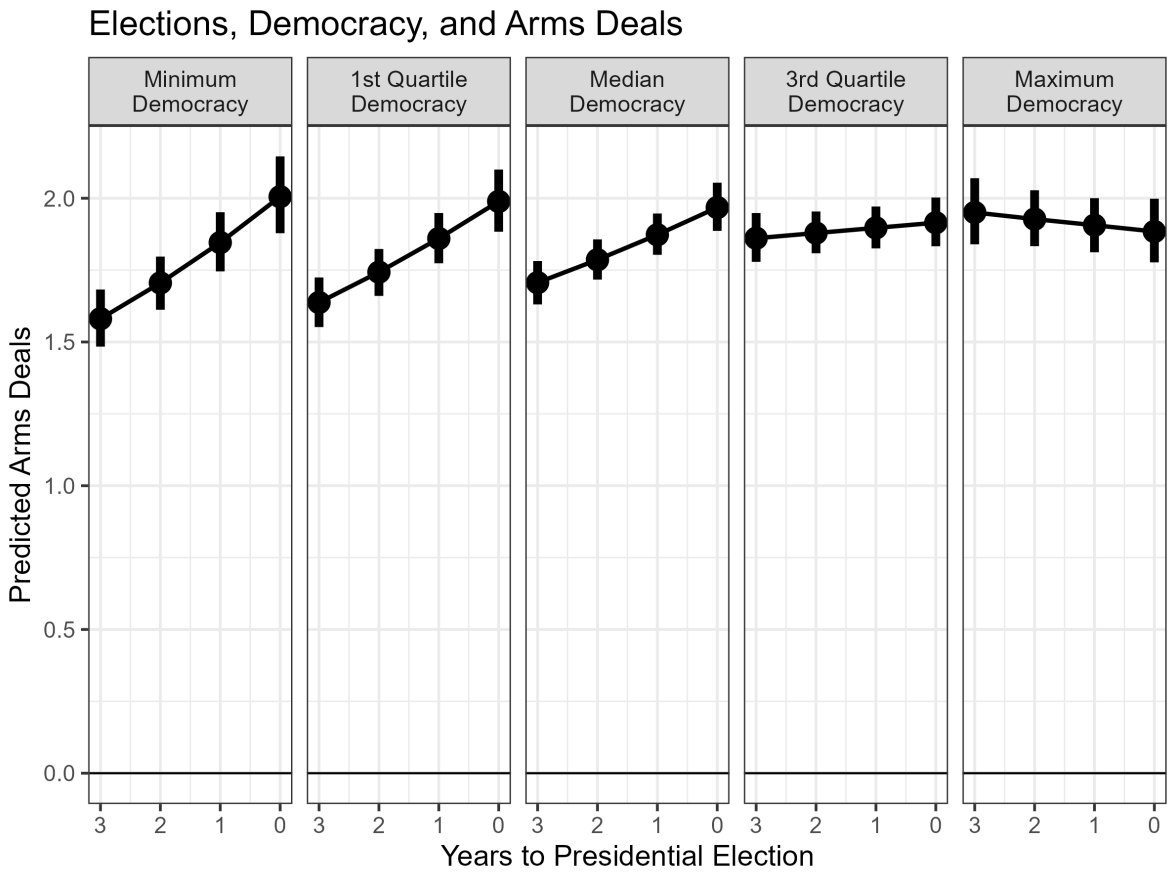

Figure 1. *Predicted arms deals between the United States and five hypothetical states 1950 to 2014 based on presidential election proximity and partner democracy. Estimates derived from a hurdle Poisson model. Points mark the estimates and error bars summarize the 90% credible interval.*

electoral cycle is is clearly positive.[17] 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.[18]

Whether autocracies make more of less arms deals than democracies depends on the presidential election cycle. Early in presidential terms, democracies make more arms deals. Those deals remain roughly constant as elections approach because democracies employ joint production and offsets, and integrated force planning. But in election years, autocracies buy marginally more U.S. arms. Thus, the political composition of U.S. arms deals depends on the presidential election cycle.

As presidential elections approach, arms deals with autocracies rise. My argument claims that U.S. leaders make these deals so they can award additional defense contracts to swing states. If this is true, greater arms deals should 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

[17] The entire posterior mass of the difference between three and zero years to an election is positive, with a 90% credible interval from .33 to .53.

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

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

I draw the outcome measure from Department of Defense prime contract award data in the USAspending.gov database.[19] 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 cover. 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 what constant a researcher adds (Chen and Roth, 2022; Mullahy and Norton, 2022).

[19] 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).[20] Ordered beta regression is fits bounded data better than other models with more restrictive distributional assumptions by using ordered cut points for boundary and continuous observations. This approach allows me to use a flexible outcome distribution and account for zeros. It also avoids scale-effects from log-transformations and measuring contracts 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 leveraging the flexibility and interpretability of 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 alternatives 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.[21]

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

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

[21] I provide a list of swing states in the appendix.

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 extrapolates far beyond any observed data, and is therefore not directly informative. 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 add a state-specific lagged dependent variable, which allows temporal dependence in contracting to vary by state.[22]

4.1 Results

To examine the arms deals and defense contracts hypothesis, I examinine the positive posterior mass of the interaction between arms deals and swing states, because the hypothesis expects a positive association.[23] I then corroborate these estimates with marginal effects and predicted outcomes.

Figure 2 presents the interaction coefficient for deals and swing status, the marginal impact of swing state competition as arms deals vary, and predicted defense contracts for hypothetical

[22]See the appendix for state parameter estimates.

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

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 states in years with low 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 uncertain 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.

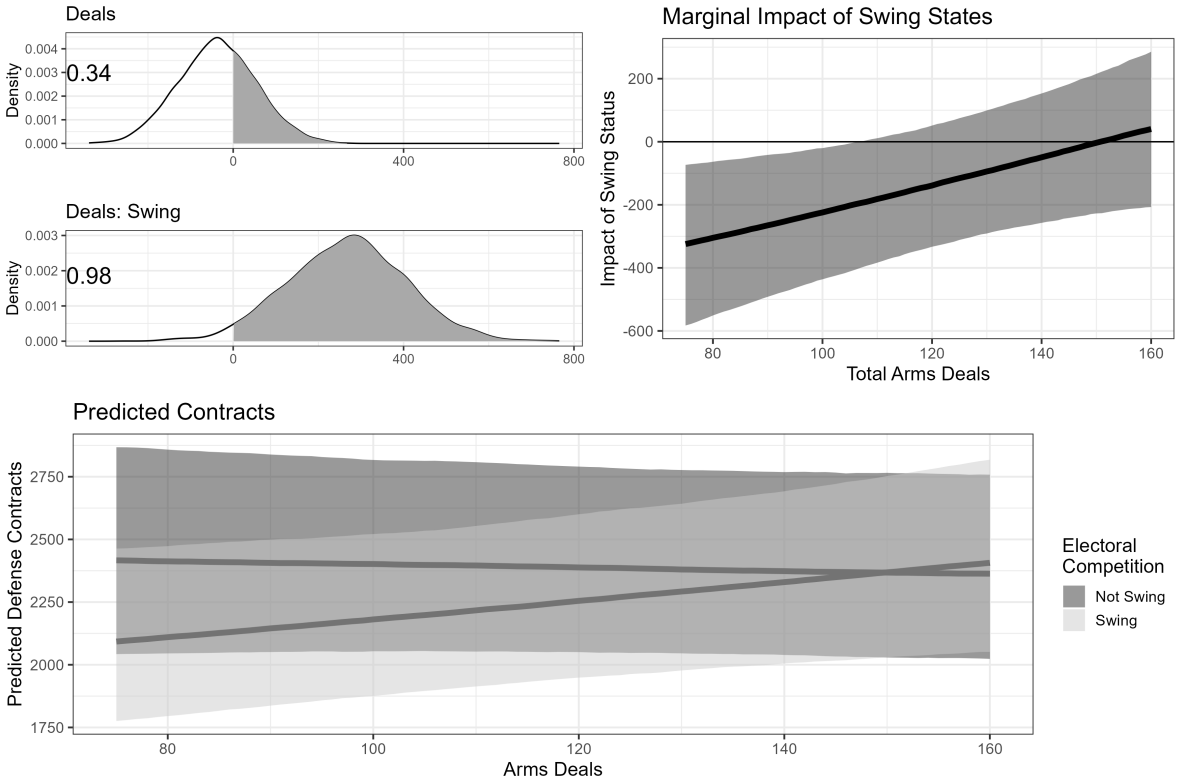

Figure 2. *Interaction coefficients, marginal effects and predicted outcomes from an interaction of swing state status and U.S. arms deals. The outcome is annual defense contracts in the 50 U.S. states from 2001 to 2020, measured in millions of dollars. Lines give the expected value, while the error 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 correlation 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

In this section, I unpack the process behind the aggregate correlations above. To begin, I check the argument that low constraint and additional security motivations drive autocracies to make arms deals. After examining autocracies' rationale for making arms deals, 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.

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. This implies that leaders are more likely to channel contracts from arms deals to swing states as elections approach.

5.1 Why do Autocracies Make Arms Deals?

The argument claims that autocracies make arms deals with the United States near elections because their leaders have fewer constraints and reap security benefits. Here, I show that within U.S. partners, changes in political regime lead to changes in arms deal timing, which suggests that constraints matter. I then show that autocratic allies, who are especially dependent on the United States for security, are especially likely to make arms deals as elections approach.

5.1.1 Low Constraint: Regime Changes

To show how constraint changes deal timing, I compare arms deals in two U.S. allies under different political regimes. Greece and Portugal both underwent substantial changes in political regime, unlike other U.S. security partners that are consolidated democracies or autocracies. I

selected these two states because the total variation in their polyarchy score is two times greater than average, they made arms deals with the United States across all regime types, they both democratized in the middle of the Cold War, and are early members of NATO. Joint defense planning in NATO makes these cases a hard test for the political constraint mechanism.

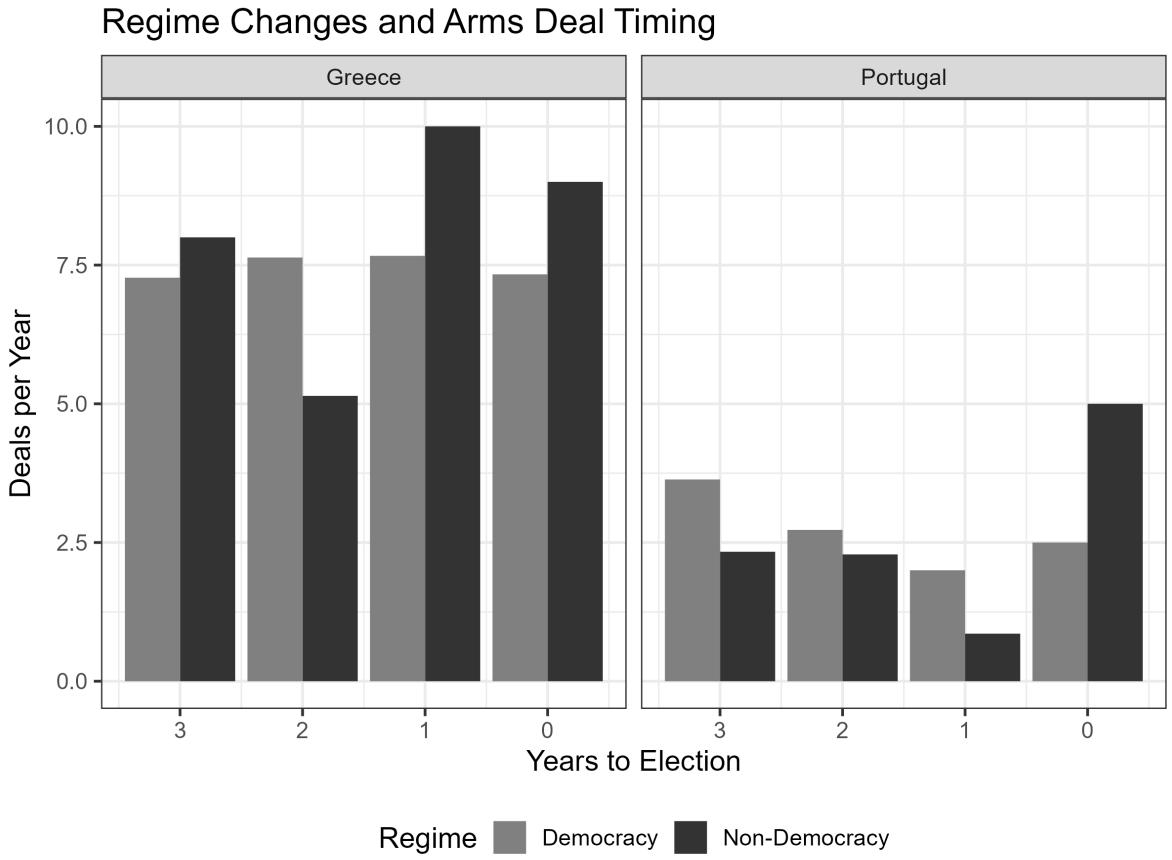

Figure 3. *Average U.S. arms deals with Greece and Portugal in every year of the presidential election cycle, divided by regime type. Democracy years have mean or greater polyarchy.*

Figure 3 shows that for Greece and Portugal, autocratic periods are associated with more arms deals near elections. Conversely, arms deals are more stable over time in periods of democracy. When these states had a greater than average polyarchy score, average arms deals were lower during U.S. election years.

Both Greece and Portugal made more arms deals with the United States in election years

when they were autocracies than when they were democracies. On average, the Salazar regime in Portugal made 2.5 more arms deals in presidential election years than democratic leaders of Portugal. After transitioning to democracy, Greece made consistent arms deals with the United States across the electoral cycle. During military rule, Greece made more arms deals in the year before and year of presidential elections.

Even within the institutional constraints of NATO, autocratic leaders have more flexibility to make arms deals near presidential elections. Transitions to democracy attenuate this tendency, which suggests that democratic leaders face different constraints and incentives in when they acquire U.S. arms. Autocratic allies like the Salazar regime and Greek junta also have additional security motivation to make arms deals, which I detail below.

5.1.2 Security Motivation: Autocratic Allies

I test the security motivation by examining autocratic allies. Because U.S. allies rely on the United States for security more than other autocracies, and and U.S. leaders rely on arms to support autocratic partners (Yarhi-Milo, Lanoszka and Cooper, 2016), autocratic allies have additional motivation to purchase U.S. arms. U.S. leaders can also more easily justify selling arms to perceived allies. As a result, allies should drive most of the increase in arms deals with autocracies near presidential elections due to their greater security needs.

Alliances increase arms transfers in general. While the importance of security and economic factors fluctuates, alliances consistently increase arms transfers (Thurner et al., 2019). Ikenberry and Grieco (2003, pg. 184-5) note that states often use direct transfers to attract and sustain security commitments.

Arms sales increase autocratic allies' security. First, 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 Yarhi-Milo, 2017).

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 with dictators is still challenging, but it is more straightforward for allies. U.S. allies that rely on American weapons, systems and doctrines can also integrate purchases more easily and build on past orders.

Among autocracies, U.S. allies have stronger security motivations because they depend on U.S. support and arms for security. 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.

I tweak the hurdle Poisson model of autocracies and arms deals to examine the role of alliances. To do this, I add the dummy indicator of whether a state is a U.S. ally to the interaction of partner regime and presidential election proximity.[24] This creates a triple interaction of alliance, regime type, and election timing.

Interpreting coefficients in triple interactions is challenging, so I summarize the interaction of alliances, democracy and presidential election proximity in Figure 4. 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 4 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.

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

[24]This includes formal and informal allies.

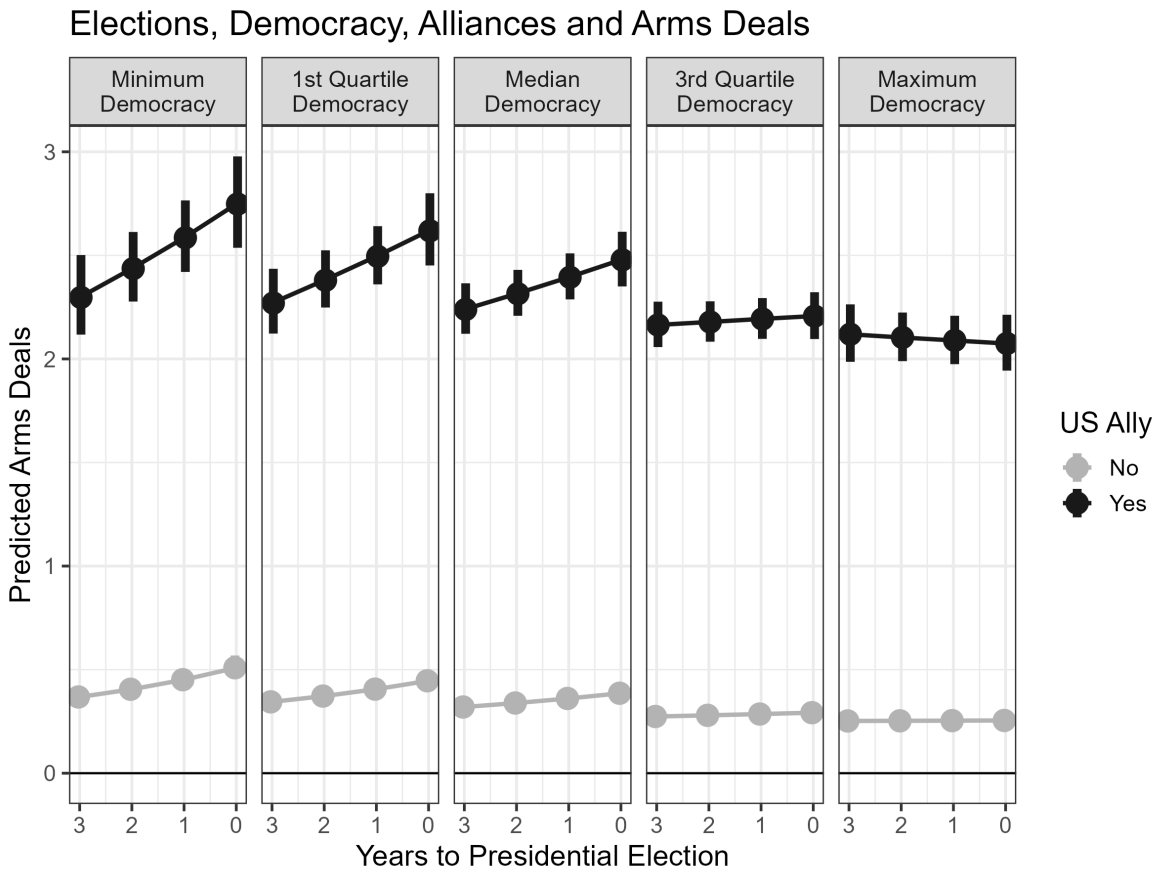

Figure 4. *Predicted arms deals between the United States and other states 1950 to 2014 based on presidential election proximity, democracy, and security alliances. Estimates derived from a hurdle Poisson model. Points mark the estimates and error bars summarize the 90% credible interval. All other variables fixed to their mode or median.*

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.[25] Non-allied states with a minimal polyarchy score see predicted deals increase by roughly .03 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. Joint planning and constraints remove both means and motive for democracies to order more arms around presidential elections.

Electoral cycles in arms deals are strongest for autocratic allies. Alliances increase arms deals generally, 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 process check 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.[26] I find that most of the the electoral rise in U.S. arms deals with autocracies includes deals for aircraft, ships and vehicles, all of which also increase swing state contracts for aircraft production. Aircraft deals are especially likely to increase swing state contracts, given dispersed supply chains and high value. These three systems have

[25] The 90% credible interval ranges from .21 to .49.

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

a widely distributed production base and comprise 69% of all deals.

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

I then fit six hurdle Poisson models of arms deals, one for each type of arms. This outcome is deals in each sector for every country-year observation. These models use the same predictors as the main arms deals model; the interaction of recipient democracy and election timing, along with a hurdle equation and controls. Using the hurdle further improves model fit because 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 5. The estimates suggest that a combination of weapons systems drive electoral cycles in arms deals with autocratic allies. The total increase in predicted arms deals with a fully autocratic state in Figure 1 is .42. Summing the predictions across all six sectors suggests a similar increase in total arms deals across the electoral cycle.

Aircraft deals are the most common overall with 48% of all deals, and autocracies take slightly more aircraft as presidential elections approach. In expectation, aircraft deals with autocrats rise by .1 as presidential elections draw closer.[27] While aircraft deals with democratic allies are also common, they respond half as much to elections, so there is not a clear difference.

Among autocracies, electronics, ship and vehicle deals also increase with electoral proximity. Electronics deals rise by .07, in expectation. Ships deals rise by between 0.01 and 0.05, and vehicle deals by between .02 and .09.[28] Democratic deals for these weapons do not track elections in the same way.

[27] This difference between 3 years to an election and an election year has a 90% credible interval from 0.02 to 0.18 and 94% positive posterior mass.

[28] 90% credible interval estimates based on the difference between an election year and three years to an election. In all three sectors, there is at least 97% positive posterior probability in the difference.

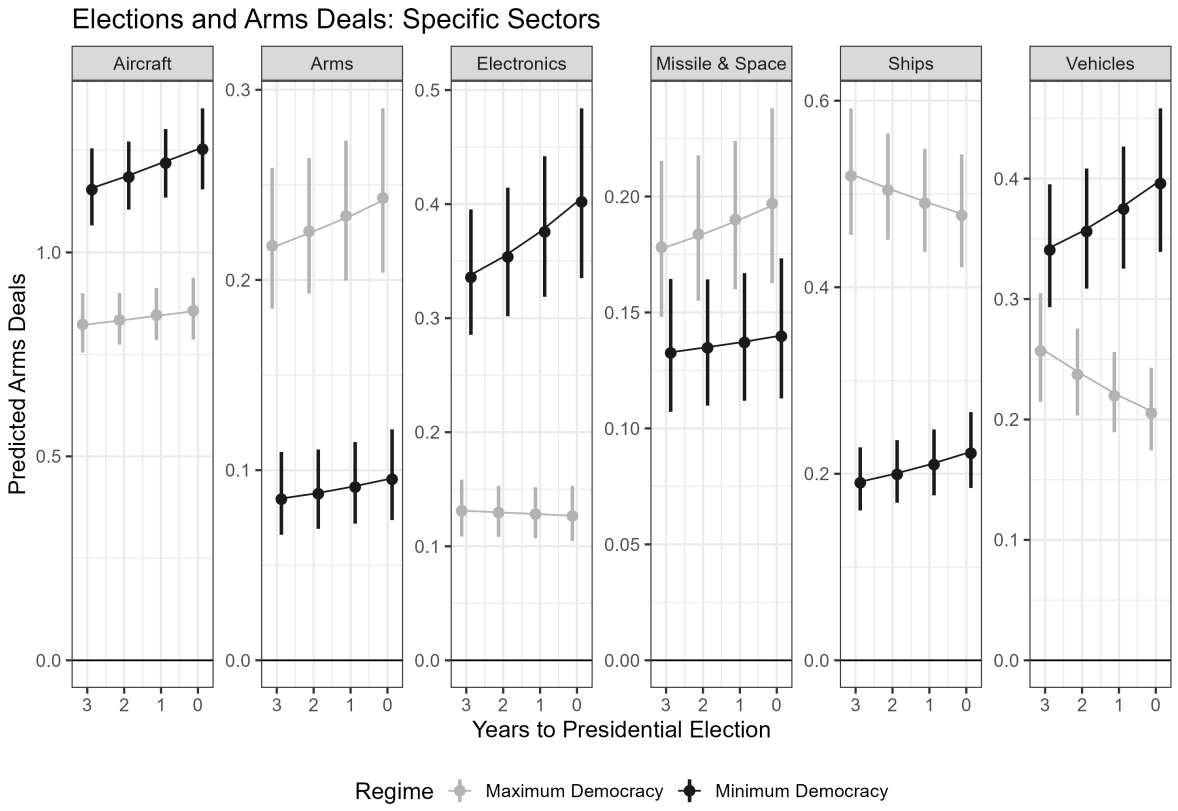

Figure 5. *Predicted arms deals between the United States and other states 1950 to 2020 based on presidential election proximity, democracy, and military alliance. Estimates derived from six sector-specific hurdle Poisson models counting annual deals divided by the type of military good exchanged. Points mark the estimates and error bars summarize the 90% credible interval. All other variables fixed to their mode or median.*

Other weapons show less evidence of autocratic cycles in arms deals. Democratic allies are more likely to make deals for missiles and space systems, and deal timing is similar across regimes. The importance of democracy and alliances for missile technology likely reflects joint production and planning in formal U.S. alliances. Deals for arms and other munitions do not depend on democracy or election timing.

Aircraft, electronics, ships and vehicles all change hands in autocratic deal cycles. These deals are all positively correlated with swing state contracts, though the associations' magnitude varies.

5.2.1 Deals and Defense Contracts by Sector

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 sectors. 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 set of state varying intercepts, state-specific autocorrelation, and other controls.

Figure 6 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 the directional deals and contracts hypothesis.

While deals for arms, vehicles, and missile and space components have largely positive associations with related swing state contracts, aircraft deals have the greatest positive association.

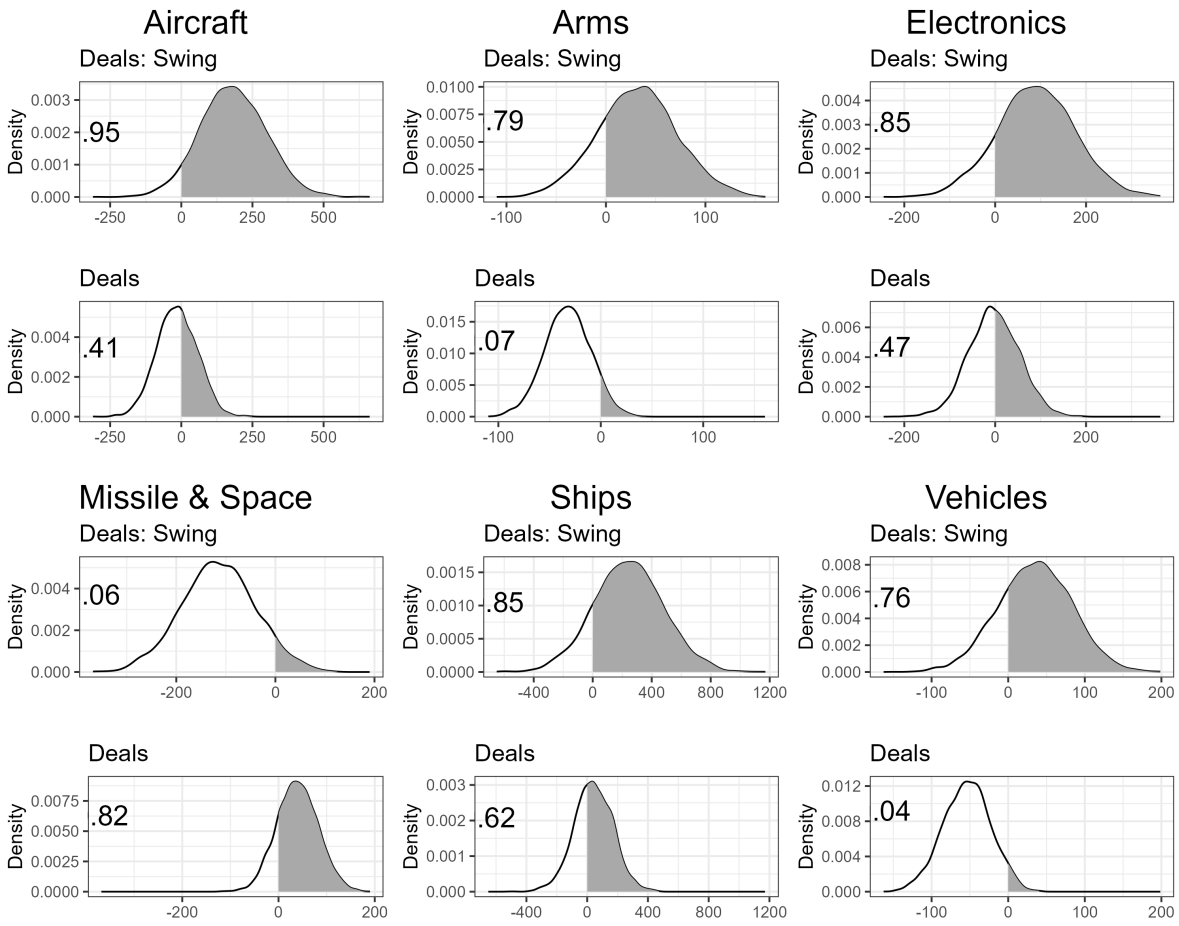

Figure 6. *Associations between different types of arms deals and defense contracts within defense industry sectors. Shaded area and text summarize the positive posterior mass. Estimates in millions of U.S. dollars.*

95% of the posterior mass in the interaction of aircraft deals and swing state status is positive. This reflects a diffuse supply chain for engines, airframes, and other components as well as the value of aircraft.

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

Similarly, much of the vehicles posterior mass is positive in swing states, though the direction of that association is less clear. Most of the association between electronics deals and swing state contracts for military electronics is positive as well. As a result, the main platforms that move in deals near elections also increase swing state contracts.

Only missile and space production, which is geographically concentrated, has greater positive mass on the association between deals and contracts outside of swing states. Perhaps as a result, autocracies do not acquire more missile and space systems near presidential elections. Munitions have a positive association with swing state contracts, but there is little evidence of cyclical deals in this sector.

These results suggest that autocratic deals for aircraft, ships, vehicles and electronics drive increasing swing state contracts. Aircraft and ship deals are particularly lucrative. Overall, these results further detail the connection between arms deals with autocratic allies and swing state contracts.

6 Discussion and Conclusion

Arms deals with autocracies have electoral value for U.S. leaders, as they help increase defense contracting awards in swing states. To improve or maintain economic conditions in

electorally critical areas, leaders strike additional arms deals with autocracies as presidential elections approach. Deals then increase swing state contract awards and allow leaders to claim credit for protecting or adding jobs. Electoral competition thus encourages arms transfers to autocracies like the Shah of Iran, Latin American juntas and Saudi Arabia. For their part, autocracies take arms because they gain security and have greater political flexibility to negotiate deals.

The argument and results bridge two disparate literatures on security cooperation and political budget cycles. Security cooperation with arms sales helps leaders award contracts with less attention to the budget process and force planning of the U.S. military. This is the mirror image of how states manipulate international economic ties to undermine adversarial leaders (Chyzh and Urbatsch, 2021; Kim and Margalit, 2021).

Along with adding an electoral explanation for U.S. arms sales, this paper 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.

There are some limitations to the argument and findings. First, the Electoral College, corresponding strategic behavior in where defense firms locate production and fixed election timing mean that this argument applies exclusively to the United States. Other democracies likely use arms deals to support employment, but the process will differ. Second, the results do not present a unified model of deals and contracts, and do not link specific deals and contracts.

Future research could proceed in several directions. Exploring the role of defense industry integration and intermediate goods in these arms cycles is interesting. Scholars might also examine other ways that leaders leverage security cooperation to try and win elections.

Electoral competition reshapes international security cooperation. Efforts to use defense contracting to improve the economy in swing states encourage U.S. arms deals with autocra-

cies. While these deals may send U.S. arms to risky destinations, electoral considerations take precedence.

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