Supplementary Materials

To Compete or Strategically Retreat? The Global Diffusion of Reconnaissance Strike

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Supply-Side Arguments and Evidence

Hypotheses

Many scholars and policymakers assume that desirable military technologies naturally proliferate at a rapid clip. However, these predictions can underestimate the supply-side constraints associated with acquiring certain military technologies. Even if a state wants a military platform, whether they actually obtain it also depends on if they have the capability to build or buy the technology. Prior literature shows that a state's capacity affects its ability to acquire weapons platforms (e.g., Horowitz 2010; Fuhrmann and Horowitz 2017; Mehta and Whitlark 2021).

Supply-side factors are likely to be particularly salient for reconnaissance strike technology, as acquisition requires the development and integration of many different systems. As a result, states that lack sufficient technological capability may not have the capacity to build (or integrate) reconnaissance strike capabilities:

> H_2: **States with greater technological capacity should be more likely to acquire advanced reconnaissance strike capabilities.**

If states have the capacity to *operate* reconnaissance strike platforms—but not *build* them domestically—then acquisition is still possible through the international arms market. All states do not have an equal opportunity to purchase reconnaissance strike technology since markets for technologies with military relevance are politicized. The United States' decision in 2019 to impose sanctions on Turkey—a NATO ally—for purchasing a Russian missile defense system illustrates this phenomenon. Though there are many factors that affect arms sales, prior research shows that formal defense agreements are particularly salient (e.g., Kinne 2020). Since there are clear strategic consequences associated with reconnaissance strike, countries should be more inclined to share the technology with defense partners and allies. This logic leads to a second supply-side hypothesis:

> H_3: **States that have defense relationships with major reconnaissance strike suppliers should be more likely to acquire advanced reconnaissance strike capabilities.**

Operationalizing Technological Capacity

To proxy a state's technological capability, we use the log of its gross domestic product (GDP) per capita (World Bank 2019), which is commonly used in the proliferation literature (Fuhrmann and Horowitz 2017). For robustness, we also employ several alternative variables. Our main alternative is a measure of the percentage of post-high school education (i.e., tertiary education) attained in the population (Barro and Lee 2013).[1] Given the strong relationship between education and output/technological advancement (Barro and Lee 2013), average national education level is a good proxy for technological capacity. The other variables we employ for robustness are the logged amount of high-technology exports, the logged number of scientific and technical journal articles, and the logged number of researchers per million (World Bank 2019).

Operationalizing Defense Relationships

The most prominent way to measure military relationships involves capturing formal defense pacts between countries. Nevertheless, this practice has some limitations. First, since new formal alliances are rare, the global alliance structure has remained relatively static for the last few decades (Kinne 2018). This means there is not much variation to exploit when examining more recent time periods. Second, since World War II, the compliance rate associated with alliance commitments has significantly declined, suggesting formal alliances are not as strong a predictor of behavior as they were in the past (Berkemeier and Fuhrmann 2018). Finally, defense alliances do not capture many critical military relationships, like between the US and Israel and the US and Saudi Arabia. Though non-aggression agreements provide a broader measure of military relationships than mutual defense pacts, they are often too broad a measure. For example, the Alliance Treaty Obligations and Provisions (ATOP) dataset codes the United States and Russia as having a non-aggression pact from 1975 to the current day due to the Helsinki Accords (Leeds et al. 2002).

[1] This data was collected in 5-year increments until 2010. We forward and backward-filled this variable based on the closest year for which data is available.

To get a more fine-grained look at likely access to weapons technology, we use Defense Cooperation Agreements (DCAs) between states as our main measure of defense relationships (Kinne 2020). DCAs are "formal bilateral agreements that establish institutional frameworks for routine defense cooperation" (Kinne 2018, 803). Unlike defense alliances, DCAs have been proliferating rapidly since the end of the Cold War (Kinne 2018, 801). Another advantage of DCAs is that they are principally about cooperation between states, while alliances concentrate on planning for potential conflict scenarios (Kinne 2020, 735). The former concept is more closely related to the supply-side logic we outline in H_3.

Drawing on Kinne's (2020) dataset, we measure whether a state has a DCA with the United States or Russia, key reconnaissance strike exporters.[2] Some DCAs are explicitly about weapons procurement, which is problematic in that it may be too closely related to the dependent variable of interest. To avoid this issue, our measure only includes DCAs about training/officer exchanges, research, and/or consultation. Because the DCA dataset only covers 1980-2010, we forward-fill missing values. We also show the results are robust to cutting the analysis off in 2011. Unlike defense pacts, our DCA variable captures the relationship between the United States and Israel/Saudi Arabia.[3] And contrary to non-aggression agreements, our variable does not indicate a defense relationship between the US and Russia.

Results

In accordance with H_2, we find strong evidence that states with higher levels of technological capacity are more likely to acquire advanced reconnaissance strike capabilities. In all seven models in Table 2 in the main text using one of our reconnaissance

[2]We opt for this measure rather than a network measure like degree centrality because we expect that it is defense connections to the major exporters—the US and Russia—that drives proliferation rather than being part of a larger network and having defense connections with relatively small and less politically important states. Future work should assess whether more complicated spatial dynamics exist. For example, after a first-stage spread from the US and Russia to other countries, is there a second-stage spread out from those other countries?

[3]It also captures other significant relationships, like between the United States and Australia, France, South Korea, and the United Kingdom.

strike variables as the outcome measure, our variable proxying technological capacity is positive and statistically significant ($p < 0.01$). GDP PER CAPITA is also substantively significant. In Model 1, a one standard deviation increase in GDP PER CAPITA is associated with an almost four-tenths of a standard deviation increase in reconnaissance strike capabilities.

This result also holds for a series of robustness checks, including using measures of high-tech exports, scientific and technical journal articles, and researchers per million people. Supply-side factors are indeed important drivers—and, in some cases, impediments—of proliferation.

Lastly, we find support for H_3, the argument that defense relationships with major suppliers is associated with greater reconnaissance strike capabilities. Our variable measuring whether a state has a DCA with the US or Russia is positive and statistically significant in all seven models in Table 2 using one of our reconnaissance strike variables as the outcome measure. Substantively, using estimates from Model 1, having a DCA with the United States or Russia is associated with an almost *50% increase* in a state's reconnaissance strike index score. This finding is also robust to not forward-filling the DCA variable and so cutting off the analysis in 2011, as we well as including a measure of whether a state has a defense pact with the US or Russia in addition to the DCA variable.

One limitation of our supply-side findings is that we cannot differentiate between reconnaissance strike capabilities that are self-built versus those that are bought. Since our argument about technological sophistication is more closely related to self-built technologies, and our argument about defense relationships is more closely related to technologies that are purchased, it would be helpful if we could model each separately. Nevertheless, our findings still provide evidence that greater technological sophistication and defense relationships with key suppliers increases the chances of acquiring reconnaissance strike capabilities through some pathway.

Interestingly, whether a country has a *defense pact* with the United States or Russia (or even any kind of alliance coded in ATOP) is not statistically associated with reconnaissance strike capabilities. This suggests that DCAs have advantages realative to traditional defense pacts in helping understand how political relationships influence the proliferation of reconnaissance strike capabilities.

An example of this dynamic is Bahrain. The Kingdom of Bahrain has a population of just over 1.5 million and is about a quarter the size of Rhode Island, the smallest American state. Its total GDP is just $35 billion, and its economy is dominated by oil production, which accounts for about 85% of government revenues. Given these factors, Bahrain faces significant supply-side barriers to domestically producing advanced reconnaissance strike systems. However, in accordance with H_3, Bahrain's defense relationship with the US has enabled it to overcome domestic supply-side barriers and acquire advanced reconnaissance strike technology through the international arms market. Although the US and Bahrain have not signed a formal defense pact, they do have a DCA. Bahrain has also been designated a major non-NATO ally and the kingdom hosts thousands of American troops, including the powerful Fifth Fleet. As a result, they are permitted to purchase US weapons, which they would not be able to produce indigenously. For example, the Bahraini air force's inventory of fighters consists entirely of highly capable fourth generation F-16 and third generation F-5 aircraft imported from the US (Military Balance 2020, 343). In fact, almost all of Bahrain's reconnaissance strike technology coded in our dataset is imported from the US, and, overall, *85% of Bahrain's military equipment* was purchased from the US (Katzman 2020, 20). Consequently, Bahrain demonstrates that defense relationships with key reconnaissance strike exporters is an important determinant of weapons proliferation, even if those relationships do not rise to the level of formal defense agreements.

Robustness Tests

Accounting for Skew in the Dependent Variable

The dependent variable (in both EW and ICW forms) is right-skewed with most values clustered at the low end of the index. Therefore, in Table S.1 we examine whether our results remain robust when we take the log or the cubed root of our equally-weighted (EW) or inverse covariance weighted (ICW) dependent variable.[4] All of the results remain robust to this change.

Table S.1: Logging and Taking the Cubed Root of the Dependent Variable

	(1) Logged	(2) Cub Root	(3) Logged	(4) Cub Root
RIVALS AVG INDEX	0.5008***	0.7859***	0.5929***	1.1167***
	(0.0987)	(0.1189)	(0.1025)	(0.1588)
RIVALS AVG INDEX^2	-0.4950***	-0.7879***	-0.5606***	-1.1042***
	(0.1154)	(0.1515)	(0.1255)	(0.2061)
LOG GDP PER CAPITA	0.0229***	0.0401***	0.0352***	0.0748***
	(0.0044)	(0.0062)	(0.0052)	(0.0094)
DCA WITH US/RUSSIA	0.0404***	0.0772***	0.0700***	0.1218***
	(0.0148)	(0.0188)	(0.0189)	(0.0286)
POLITY	-0.0006	-0.0022**	-0.0000	-0.0029*
	(0.0007)	(0.0011)	(0.0009)	(0.0018)
STATUS-SEEKING	0.0417**	0.0730***	0.0412	0.1072***
	(0.0197)	(0.0259)	(0.0257)	(0.0396)
CONSTANT	-0.1265***	0.0381	-0.2219***	-0.3133***
	(0.0354)	(0.0498)	(0.0398)	(0.0764)
Observations	5323	5323	5323	5323
Dependent Variable	ICW	ICW	EW	EW

Notes: *p<0.10; **p< 0.05; ***p<0.01.
Standard errors clustered by country in parentheses.
ICW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

[4] Since the log of 0 is undefined, we add 1 to the dependent variable before taking the log. We also take the cubed root of our dependent variable because this is defined for 0 and so does not require adding an arbitrary constant. It is also a stronger transformation than taking the log. We do not transform our count dependent variable because it is not nearly as skewed.

Fractional Probit and Tobit Specification

Because our dependent variable is bounded between 0 and 1, in models 1 and 2 in Table S.2 we show our results are robust to the use of a fractional probit model, which is designed to handle continuous variables bounded between 0 and 1 (Papke and Wooldridge 1996). In models 3 and 4, we demonstrate that our findings also hold when we employ a Tobit model with a lower limit of 0 and an upper limit of 1.

Table S.2: Fractional Probit and Tobit Models

	(1) Frac Probit	(2) Frac Probit	(3) Tobit	(4) Tobit
RIVALS AVG INDEX	2.9973***	3.3192***	0.6129***	0.9000***
	(0.5452)	(0.5181)	(0.1381)	(0.1676)
RIVALS AVG INDEX^2	-3.0540***	-3.1882***	-0.6089***	-0.8752***
	(0.6964)	(0.6520)	(0.1598)	(0.2038)
LOG GDP PER CAPITA	0.1518***	0.2161***	0.0271***	0.0533***
	(0.0291)	(0.0322)	(0.0060)	(0.0088)
DCA WITH US/RUSSIA	0.1938**	0.3043***	0.0423**	0.0903***
	(0.0822)	(0.0882)	(0.0201)	(0.0271)
POLITY	-0.0032	0.0009	-0.0004	-0.0002
	(0.0046)	(0.0055)	(0.0009)	(0.0014)
STATUS-SEEKING	0.2604***	0.2709**	0.0496*	0.0672*
	(0.0946)	(0.1188)	(0.0256)	(0.0371)
CONSTANT	-2.7745***	-3.2900***	-0.1589***	-0.4044***
	(0.2462)	(0.2763)	(0.0486)	(0.0747)
Observations	5323	5323	5323	5323
Dependent Variable	ICW	EW	ICW	EW

Notes: *p<0.10; **p< 0.05; ***p<0.01.
Standard errors clustered by country in parentheses.
ICW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

Is the Inverted-U Relationship Just Driven by the US and Russia?

One possibility is that because the US is so capable, the inverted-U result is just driven by states avoiding symmetric balancing against the US. In fact, much of the prior political science literature we draw on to develop our inverted-U theory is focused on unipolar politics (Wohlforth 1999; Gowa and Ramsey 2017) and the US in particular (Coe 2018). Similarly, Russia may also have an outsized effect on the results. We assess this possibility in Table S.3. Model 1 excludes the US from the rival capability measure, meaning the US' reconnaissance strike score is not included in the calculation of this variable for states that are rivals with the US. Model 2 excludes both the US and Russia from the rival capability measure. Model 3 takes a different approach by simply dropping all countries that are rivals with the US, and Model 4 drops countries that are rivals with the US or Russia. All the results are robust to these tests, suggesting the inverted-U finding is not driven exclusively by the US and Russia.

Table S.3: Is the Inverted-U Relationship Just Driven by the US and Russia?

	(1)	(2)	(3)	(4)
RIVALS AVG INDEX	0.7629***	0.8531***	0.5804***	0.4199***
	(0.1996)	(0.2527)	(0.1827)	(0.0867)
RIVALS AVG INDEX^2	-1.0606***	-1.4355**	-0.7087**	-0.5198***
	(0.3887)	(0.6479)	(0.3035)	(0.1957)
LOG GDP PER CAPITA	0.0276***	0.0281***	0.0265***	0.0210***
	(0.0060)	(0.0061)	(0.0062)	(0.0036)
DCA WITH US/RUSSIA	0.0417**	0.0418**	0.0453**	0.0593***
	(0.0205)	(0.0210)	(0.0199)	(0.0125)
POLITY	-0.0005	-0.0004	0.0001	-0.0005
	(0.0009)	(0.0010)	(0.0008)	(0.0006)
STATUS-SEEKING	0.0605**	0.0638**	0.0210	0.0261
	(0.0269)	(0.0264)	(0.0170)	(0.0176)
CONSTANT	-0.1635***	-0.1674***	-0.1531***	-0.1061***
	(0.0494)	(0.0507)	(0.0505)	(0.0272)
Observations	5323	5323	5042	4864
Countries Excluded from Rival Index	US	US & Russia	None	None
Countries Dropped if Rivals With	None	None	US	US or Russia

Notes: Standard errors clustered by country in parentheses. *p<0.10; **p< 0.05; ***p<0.01.

Extending or Shortening the Time Period Under Analysis

In Table S.4, we demonstrate that our results remain robust to extending or shortening the time period under analysis from 1980-2017 to 1960-2017 or shortening the analysis to 1988-2017. Note that Kinne's (2020) Defense Cooperation Agreement (DCA) Dataset only goes back to 1980. Consequently, in the models extending back to 1960 we replace that variable with a measure of whether countries have a defense pact with the US or Russia according to the Alliance Treaty Obligations and Provisions (ATOP) Dataset (Leeds et al. 2002). Per our theoretical expectations in the main text, the ATOP alliance variable has no statistically significant relationship with a state's reconnaissance strike capabilities, likely because traditional defense pacts do not include many important defense relationships. By contrast, our main measure of defense relationships—DCAs—does significantly affect a state's reconnaissance strike capabilities in models from 1988-2017.

Table S.4: Extending or Shortening the Time Period Under Analysis

	(1)	(2)	(3)	(4)	(5)	(6)
	1960-2017	1988-2017	1960-2017	1988-2017	1960-2017	1988-2017
RIVALS AVG INDEX	0.6097***	0.6410***	0.7561***	0.7650***	6.5715***	6.1653***
	(0.1252)	(0.1461)	(0.1349)	(0.1487)	(0.8669)	(0.8712)
RIVALS AVG INDEX^2	-0.6301***	-0.6348***	-0.7327***	-0.7194***	-6.4816***	-5.7307***
	(0.1536)	(0.1645)	(0.1685)	(0.1756)	(1.1913)	(1.0988)
LOG GDP PER CAPITA	0.0281***	0.0293***	0.0428***	0.0448***	0.3568***	0.3749***
	(0.0059)	(0.0063)	(0.0068)	(0.0072)	(0.0552)	(0.0559)
DCA WITH US/RUSSIA		0.0368*		0.0762***		0.5529***
		(0.0218)		(0.0274)		(0.1702)
ALLIANCE WITH US/RUSSIA	-0.0265		-0.0225		0.0861	
	(0.0194)		(0.0219)		(0.1563)	
POLITY	0.0004	-0.0010	0.0012	-0.0004	0.0014	-0.0110
	(0.0010)	(0.0010)	(0.0012)	(0.0012)	(0.0101)	(0.0108)
STATUS-SEEKING	0.0603***	0.0513*	0.0623**	0.0472	0.6226***	0.5558**
	(0.0201)	(0.0274)	(0.0275)	(0.0380)	(0.1822)	(0.2481)
CONSTANT	-0.1583***	-0.1721***	-0.2718***	-0.2909***		
	(0.0430)	(0.0511)	(0.0494)	(0.0561)		
Observations	7110	4494	7110	4494	7110	4494
Dependent Variable	ICW	ICW	EW	EW	Count	Count

Notes: *p<0.10; **p< 0.05; ***p<0.01.
Standard errors clustered by country in parentheses.
ICW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

Fixed & Random Effects

In Table S.5, we show that our results remain robust to the use of year fixed effects to control for secular time trends, as well as country fixed or random effects to control for factors that vary between countries.[5] Interestingly, in all of these models *POLITY* is negative and significant, indicating that more democratic countries are less likely to acquire advanced reconnaissance strike capabilities compared to less democratic countries. However, this result does not hold in models that fully exploit between-country variation. By contrast, *STATUS-SEEKING* is only significant in one of the four models, and the sign is in the opposite direction of theoretical expectations.

Table S.5: Fixed & Random Effects

	(1) OLS	(2) OLS	(3) OLS	(4) OLS
RIVALS AVG INDEX	0.0479*	0.0747**	0.0540**	0.0809***
	(0.0245)	(0.0292)	(0.0248)	(0.0292)
RIVALS AVG INDEX^2	-0.0495*	-0.0685*	-0.0551*	-0.0740**
	(0.0293)	(0.0364)	(0.0290)	(0.0359)
LOG GDP PER CAPITA	0.0103**	0.0149	0.0123***	0.0178**
	(0.0051)	(0.0095)	(0.0048)	(0.0090)
DCA WITH US/RUSSIA	0.0091	0.0273***	0.0095*	0.0278***
	(0.0056)	(0.0075)	(0.0056)	(0.0075)
POLITY	-0.0017***	-0.0018***	-0.0017***	-0.0017***
	(0.0004)	(0.0005)	(0.0004)	(0.0005)
STATUS-SEEKING	-0.0051	-0.0122*	-0.0044	-0.0115
	(0.0044)	(0.0073)	(0.0044)	(0.0074)
CONSTANT	-0.0049	-0.0334	-0.0249	-0.0633
	(0.0408)	(0.0761)	(0.0373)	(0.0705)
Observations	5323	5323	5323	5323
Dependent Variable	ICW	EW	ICW	EW
Country Fixed Effects	✓	✓	×	×
Country Random Effects	×	×	✓	✓
Year Fixed Effects	✓	✓	✓	✓

Notes: *p<0.10; **p< 0.05; ***p<0.01. Stnd. errors clustered by country in parentheses. ICW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

[5] The coefficient on our DCA variable in model 1 and on our GDP variable in model 2 is just under conventional levels of statistical significance ($p < 0.11$ for DCAs and $p < 0.13$ for GDP). Note also that yearly within-country GDP shifts are generally relatively modest, reducing the expected explanatory power of this variable for these particular models.

5-Year and 10-Year Lags

Due to the relatively long procurement times for some elements of the reconnaissance strike complex, we show in Table S.6 that our results hold when we lag independent variables 5 or 10 years. Since our measure of DCAs only extends back to 1980, in the models with 10-year lags we are only able to analyze the 1990-2017 time period.

Table S.6: 5-Year and 10-Year Lags

	(1) 5-Year Lags	(2) 5-Year Lags	(3) 10-Year Lags	(4) 10-Year Lags
RIVALS AVG INDEX	0.6446***	0.7915***	0.6727***	0.8318***
	(0.1393)	(0.1434)	(0.1423)	(0.1475)
RIVALS AVG INDEX^2	-0.6585***	-0.7755***	-0.7188***	-0.8444***
	(0.1612)	(0.1720)	(0.1694)	(0.1778)
LOG GDP PER CAPITA	0.0278***	0.0429***	0.0283***	0.0440***
	(0.0061)	(0.0070)	(0.0060)	(0.0071)
DCA WITH US/RUSSIA	0.0450**	0.0854***	0.0463**	0.0872***
	(0.0204)	(0.0260)	(0.0213)	(0.0273)
POLITY	-0.0003	0.0004	-0.0004	0.0004
	(0.0009)	(0.0012)	(0.0010)	(0.0012)
STATUS-SEEKING	0.0554**	0.0605*	0.0615***	0.0696**
	(0.0252)	(0.0338)	(0.0227)	(0.0306)
CONSTANT	-0.1627***	-0.2782***	-0.1691***	-0.2884***
	(0.0488)	(0.0546)	(0.0486)	(0.0560)
Observations	4686	4686	4039	4039
Dependent Variable	ICW	EW	ICW	EW

Notes: *p<0.10; **p< 0.05; ***p<0.01.
Standard errors clustered by country in parentheses.
ICW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

Additional Control Variables

In Table S.7, we show that the results hold when we include additional control variables, like a country's composite index of national capabilities (CINC) score from the Correlates of War dataset (Singer, Bremer, and Stuckey 1972), as well as their total military spending or military spending as a percentage of GDP from the Stockholm International Peace Research Institute (2019).[6] The findings also hold when controlling for whether a country possesses nuclear weapons.[7] Unsurprisingly, higher values of these variables are also associated with greater reconnaissance strike capabilities.

Table S.7: Additional Control Variables

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS
RIVALS AVG INDEX	0.3496***	0.5300***	0.4046***	0.6397***	0.5584***	0.7917***	0.3823***	0.5522***
	(0.0746)	(0.1006)	(0.0850)	(0.1213)	(0.1500)	(0.1685)	(0.0663)	(0.0938)
RIVALS AVG INDEX^2	-0.3245***	-0.4843***	-0.3833***	-0.6004***	-0.5423***	-0.7584***	-0.3870***	-0.5441***
	(0.0847)	(0.1170)	(0.0979)	(0.1425)	(0.1785)	(0.2040)	(0.0837)	(0.1149)
LOG GDP PER CAPITA	0.0232***	0.0372***	0.0193***	0.0353***	0.0262***	0.0421***	0.0255***	0.0400***
	(0.0033)	(0.0042)	(0.0036)	(0.0055)	(0.0060)	(0.0071)	(0.0041)	(0.0046)
DCA WITH US/RUSSIA	0.0260*	0.0625***	0.0461***	0.0852***	0.0421**	0.0814***	0.0198	0.0530***
	(0.0136)	(0.0172)	(0.0129)	(0.0206)	(0.0212)	(0.0264)	(0.0177)	(0.0186)
POLITY	-0.0009	-0.0000	-0.0010	-0.0002	0.0001	0.0009	-0.0014**	-0.0007
	(0.0007)	(0.0009)	(0.0007)	(0.0010)	(0.0010)	(0.0014)	(0.0005)	(0.0008)
STATUS-SEEKING	0.0456**	0.0419	0.0553**	0.0514	0.0485*	0.0446	0.0455***	0.0415*
	(0.0201)	(0.0274)	(0.0276)	(0.0374)	(0.0291)	(0.0390)	(0.0163)	(0.0223)
CINC	3.3181***	4.1097***						
	(1.0151)	(0.8472)						
MIL SPENDING			1.7e-12***	1.7e-12***				
			1.4e-13	1.4e-13				
MIL SPENDING PERC GDP					0.0035*	0.0035		
					(0.0021)	(0.0029)		
NUCLEAR WEAPONS							0.2559***	0.3374***
							(0.0660)	(0.0539)
CONSTANT	-0.1269***	-0.2376***	-0.0928***	-0.2172***	-0.1575***	-0.2817***	-0.1370***	-0.2483***
	(0.0253)	(0.0320)	(0.0281)	(0.0415)	(0.0503)	(0.0565)	(0.0311)	(0.0337)
Observations	5323	5323	4919	4919	4918	4918	5323	5323
Dependent Variable	ICW	EW	ICW	EW	ICW	EW	ICW	EW

Notes: Standard errors clustered by country in parentheses. *p<0.10; **p< 0.05; ***p<0.01.
ICW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

[6] Note that the results also remain robust when the ordinal dependent variable is utilized. There is some missing data for the military expenditure variables, which is why some observation drop.

[7] Our DCA variable becomes statistically insignificant in model 7, though it remains statistically significant in model 8 when utilizing our primary measure of reconnaissance strike capabilities——our equally-weighted measure.

Alternative Measures of Interstate Threats

In the main text, we found evidence for our inverted-U hypothesis with respect to security threats using a measure of the average reconnaissance strike index score of a country's rivals or neighbors. In Table S.8, we also show that our results hold when using a measure of the *median* index score of a country's rivals or neighbors.[8] Alternatively, if we use the *world* average reconnaissance strike score as an independent variable rather than the average of a state's *rivals*, then our inverted-U result becomes statistically insignificant. Per our argument in the main text, this null result makes sense because although a relatively high world average may indicate some level of theoretical threat to State A since any country can, in principle, cause State A harm, the capabilities of a country's rivals are likely much more germane to a country's decision-making since rivals represent more of an actual threat.

Table S.8: Alternative Measures of Interstate Threats

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) Ord Probit	(6) Ord Probit
RIVALS MED INDEX	0.6150***		0.7509***		7.1236***	
	(0.1402)		(0.1440)		(0.9723)	
RIVALS MED INDEX^2	-0.6480***		-0.7446***		-7.2804***	
	(0.1711)		(0.1787)		(1.3328)	
NEIGHBORS MED INDEX		0.2648**		0.3241**		3.4950**
		(0.1207)		(0.1293)		(1.5104)
NEIGHBORS MED INDEX^2		-0.3041**		-0.3359*		-3.9693**
		(0.1509)		(0.1818)		(1.7690)
LOG GDP PER CAPITA	0.0276***	0.0249***	0.0421***	0.0369***	0.3597***	0.2855***
	(0.0061)	(0.0067)	(0.0070)	(0.0081)	(0.0553)	(0.0591)
DCA WITH US/RUSSIA	0.0419**	0.0546**	0.0813***	0.1005***	0.5553***	0.6127***
	(0.0207)	(0.0222)	(0.0261)	(0.0295)	(0.1580)	(0.1717)
POLITY	-0.0006	-0.0017*	0.0003	-0.0014	-0.0033	-0.0149
	(0.0009)	(0.0010)	(0.0012)	(0.0013)	(0.0101)	(0.0104)
STATUS-SEEKING	0.0546**	0.0537*	0.0519	0.0556	0.5916**	0.5262**
	(0.0274)	(0.0313)	(0.0352)	(0.0416)	(0.2302)	(0.2240)
CONSTANT	-0.1600***	-0.1263**	-0.2718***	-0.2143***		
	(0.0493)	(0.0504)	(0.0549)	(0.0599)		
Observations	5323	5323	5323	5323	5323	5323
Dependent Variable	ICW	ICW	EW	EW	Count	Count

Notes: *p<0.10; **p< 0.05; ***p<0.01.
Standard errors clustered by country in parentheses.
ICW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

[8] Models 3 and 4 substitute the EW index for the ICW index and also use the former to measure the median index score of rivals/neighbors.

Alternative Measures of Technological Capacity

In the main text, we showed that our results for technological capacity remained robust when using a measure of education from Barro and Lee (2013). In Table S.9, we also show that our results remain robust when we employ three other variables from the World Bank (2019): the logged amount of high-technology exports, the logged number of scientific and technical journal articles, and the logged number of researchers per million people.[9] For all models the coefficient on our technological capacity proxy is positive and statistically significant, as expected. Note, however, that these variables contain a significant amount of missing data, which explains why some of our other results are not robust to the use of these alternative variables.

Table S.9: Alternative Measures of Technological Capacity

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS	(9) Ord Probit	(10) Ord Probit	(11) Ord Probit	(12) Ord Probit
RIVALS AVG INDEX	0.5090***	0.5492***	0.4405***	0.8594**	0.6196***	0.6794***	0.4993***	0.8988***	5.8594***	6.1271***	5.6227***	7.3240***
	(0.1009)	(0.1559)	(0.1220)	(0.3452)	(0.1177)	(0.1485)	(0.1167)	(0.2710)	(0.9596)	(1.0861)	(1.1410)	(1.6256)
RIVALS AVG INDEX^2	-0.4797***	-0.5914***	-0.4281***	-0.9639*	-0.5641***	-0.7243***	-0.4704***	-0.8306**	-5.3912***	-6.7438***	-5.1577***	-8.1474**
	(0.1146)	(0.1905)	(0.1348)	(0.5791)	(0.1413)	(0.1903)	(0.1360)	(0.3872)	(1.2129)	(1.4744)	(1.3055)	(3.4249)
NATIONAL EDUCATION LEVEL	0.0055***				0.0072***				0.0373***			
	(0.0018)				(0.0018)				(0.0093)			
LOG HIGH-TECH EXPORTS		0.0145***				0.0229***				0.2188***		
		(0.0027)				(0.0029)				(0.0245)		
LOG JOURNAL ARTICLES			0.0294***				0.0444***				0.4785***	
			(0.0046)				(0.0042)				(0.0405)	
LOG RESEARCHERS PER MILLION				0.0272***				0.0418***				0.2287***
				(0.0078)				(0.0088)				(0.0586)
DCA WITH US/RUSSIA	0.0398*	0.0175	-0.0118	0.0246	0.0844***	0.0444*	0.0084	0.0643*	0.6006***	0.2914*	0.0287	0.6212***
	(0.0222)	(0.0234)	(0.0248)	(0.0325)	(0.0266)	(0.0257)	(0.0245)	(0.0376)	(0.1559)	(0.1605)	(0.1752)	(0.2144)
POLITY	-0.0016*	-0.0022**	-0.0034***	-0.0008	-0.0005	-0.0026**	-0.0041***	-0.0011	0.0051	-0.0380***	-0.0609***	-0.0101
	(0.0009)	(0.0010)	(0.0008)	(0.0021)	(0.0013)	(0.0013)	(0.0010)	(0.0024)	(0.0105)	(0.0119)	(0.0121)	(0.0173)
STATUS-SEEKING	0.0222	0.0381	0.0131	0.0399	0.0140	0.0272	-0.0128	0.0121	0.3797	0.3717	-0.0233	0.2130
	(0.0244)	(0.0267)	(0.0243)	(0.0365)	(0.0307)	(0.0365)	(0.0317)	(0.0524)	(0.2410)	(0.2294)	(0.2307)	(0.3037)
CONSTANT	0.0204	-0.1678***	-0.0660***	-0.0719	0.0119	-0.2972***	-0.1270***	-0.1298***				
	(0.0146)	(0.0468)	(0.0233)	(0.0489)	(0.0149)	(0.0486)	(0.0220)	(0.0495)				
Observations	4792	3791	2704	1848	4792	3791	2704	1848	4792	3791	2704	1848
Dependent Variable	ICW	ICW	ICW	ICW	EW	EW	EW	EW	Count	Count	Count	Count

Notes: *p<0.10; **p< 0.05; ***p<0.01. Standard errors clustered by country in parentheses. CW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

[9] Due to a significant amount of missing data, these variables were forward and backward-filled up to three years based on the closest available value.

Alternative Measures of Defense Relationships

Because the DCA Dataset (Kinne 2020) only goes up until 2010, we forward-filled missing values in the main text through 2017. In model 1 in Table S.10, we show that our results are also robust to cutting off the analysis in 2011.[10]

Since some DCAs are explicitly about weapons procurement, which is problematic in that it may be too closely related to the dependent variable of interest, our measure of defense relationships in the main text only includes DCAs about training/officer exchanges, research, and/or consultation. In model 2 below, we show that our results are also robust to a measure that includes all DCAs with the US or Russia. In model 3, we also show our results are robust to a measure that only includes DCAs related to procurement.

In model 4, we demonstrate that our DCA variable remains statistically significant in the expected direction when we also control for whether a country has a defense pact with the US or Russia (Leeds et al. 2002).[11] By contrast, *DEFENSE PACT WITH US/RUSSIA* has no statistically significant effect on a state's reconnaissance strike capabilities. This demonstrates that DCAs have an effect independent of and greater than defense pacts. It also suggests, as discussed in the main text, that defense alliances are not always the best measure of defense cooperation. In model 5, we show that the same dynamic holds when we control for whether a country has any type of alliance with the US or Russia coded in the ATOP Dataset, not just defense pacts (Leeds et al. 2002).

Finally, in models 6 and 7 we examine the impact of having a defense pact or any type of alliance with the US or Russia on a state's reconnaissance strike capabilities, without controlling for DCAs. As expected, neither variable has a statistically significant effect.

[10] Since all independent variables are lagged 1 year to reduce concerns about endogeneity, DCA data for 2011 is not missing.

[11] The correlation between these two variables is 0.13.

Table S.10: Alternative Measures of Defense Relationships

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OLS	OLS	OLS	OLS	OLS	OLS	OLS
	1980-2011	1980-2011	1980-2017	1980-2017	1980-2017	1980-2017	1980-2017
RIVALS AVG INDEX	0.7339***	0.7710***	0.7882***	0.7440***	0.7289***	0.7948***	0.7788***
	(0.1400)	(0.1386)	(0.1318)	(0.1443)	(0.1429)	(0.1387)	(0.1364)
RIVALS AVG INDEX^2	-0.7135***	-0.7684***	-0.7945***	-0.7045***	-0.6904***	-0.7694***	-0.7543***
	(0.1702)	(0.1651)	(0.1595)	(0.1723)	(0.1733)	(0.1656)	(0.1654)
DCA WITH US/RUSSIA (Non-Procurement)	0.0817***			0.0827***	0.0823***		
	(0.0253)			(0.0254)	(0.0253)		
DCA WITH US/RUSSIA (Any)		0.0549***					
		(0.0176)					
DCA WITH US/RUSSIA (Procurement)			0.0699***				
			(0.0199)				
DEFENSE PACT WITH US/RUSSIA				-0.0148		-0.0141	
				(0.0246)		(0.0251)	
ALLIANCE PACT WITH US/RUSSIA					0.0179		0.0187
					(0.0150)		(0.0164)
LOG GDP PER CAPITA	0.0386***	0.0396***	0.0444***	0.0431***	0.0404***	0.0480***	0.0453***
	(0.0068)	(0.0068)	(0.0061)	(0.0079)	(0.0071)	(0.0072)	(0.0066)
POLITY	0.0007	0.0005	0.0009	0.0006	-0.0002	0.0009	0.0001
	(0.0011)	(0.0012)	(0.0011)	(0.0014)	(0.0011)	(0.0014)	(0.0012)
STATUS-SEEKING	0.0659*	0.0678**	0.0630**	0.0501	0.0445	0.0660**	0.0602*
	(0.0335)	(0.0324)	(0.0283)	(0.0348)	(0.0348)	(0.0318)	(0.0319)
CONSTANT	-0.2493***	-0.2647***	-0.2957***	-0.2780***	-0.2685***	-0.3091***	-0.2993***
	(0.0526)	(0.0512)	(0.0478)	(0.0581)	(0.0542)	(0.0534)	(0.0502)
Observations	4369	4369	4369	5323	5323	5428	5428

Notes: *p<0.10; **p< 0.05; ***p<0.01.
Standard errors clustered by country in parentheses.
EW = Equally-Weighted Index.

Alternative Measures of Regime Type

As in the main text, in Table S.11 we show that regime type has no statistically significant effect on a state's reconnaissance strike capabilities when we use alternative measures of regime type. In models 1, 5, and 9 we use a binary variable for democracy from Polity instead of the full 21-point measure (Marshall, Gurr, and Jaggers 2014).[12] In models 2, 6, and 10 we utilize a binary measure of autocracy from Polity.[13] In models 3, 7, and 11 we include binary measures of both democracy and autocracy in order to analyze whether there are differences relative to mixed regimes, which previous literature on proliferation has found (Fuhrmann and Horowitz 2017). Finally, in models 4, 8, and 12 we utilize the V-Dem electoral democracy index, where higher values indicate that a country is more democratic (Coppedge et al. 2019). Consistent with the results from the main text, we find no statistically significant relationship between regime type and a state's reconnaissance strike capabilities.

Table S.11: Alternative Measures of Regime Type

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS	(9) Ord Probit	(10) Ord Probit	(11) Ord Probit	(12) Ord Probit
RIVALS AVG INDEX	0.7412***	0.7376***	0.7412***	0.7372***	0.6135***	0.6141***	0.6128***	0.6111***	7.1423***	7.0913***	7.1425***	7.0685***
	(0.1405)	(0.1391)	(0.1405)	(0.1424)	(0.1358)	(0.1335)	(0.1361)	(0.1395)	(0.9209)	(0.9231)	(0.9220)	(0.9110)
RIVALS AVG INDEX^2	-0.7019***	-0.6983***	-0.7021***	-0.6958***	-0.6084***	-0.6115***	-0.6103***	-0.6048***	-6.9906***	-6.9425***	-6.9901***	-6.9386***
	(0.1700)	(0.1681)	(0.1696)	(0.1712)	(0.1586)	(0.1552)	(0.1575)	(0.1600)	(1.2484)	(1.2413)	(1.2460)	(1.2205)
LOG GDP PER CAPITA	0.0415***	0.0425***	0.0415***	0.0402***	0.0270***	0.0265***	0.0268***	0.0265***	0.3439***	0.3550***	0.3439***	0.3462***
	(0.0074)	(0.0072)	(0.0075)	(0.0067)	(0.0062)	(0.0065)	(0.0063)	(0.0054)	(0.0593)	(0.0520)	(0.0602)	(0.0588)
DCA WITH US/RUSSIA	0.0826***	0.0827***	0.0826***	0.0850***	0.0422**	0.0423**	0.0424**	0.0442**	0.5724***	0.5722***	0.5724***	0.6009***
	(0.0253)	(0.0256)	(0.0255)	(0.0254)	(0.0198)	(0.0199)	(0.0199)	(0.0200)	(0.1548)	(0.1562)	(0.1559)	(0.1544)
STATUS-SEEKING	0.0488	0.0489	0.0487	0.0512	0.0497*	0.0493*	0.0494*	0.0508**	0.5518**	0.5552**	0.5519**	0.5628**
	(0.0351)	(0.0351)	(0.0354)	(0.0350)	(0.0256)	(0.0258)	(0.0260)	(0.0256)	(0.2280)	(0.2280)	(0.2286)	(0.2253)
DEMOCRACY (Polity)	0.0061		0.0064		-0.0043		-0.0020		0.0761		0.0756	
	(0.0187)		(0.0203)		(0.0138)		(0.0146)		(0.1619)		(0.1737)	
AUTOCRACY (Polity)		-0.0018	0.0009			0.0071	0.0063			-0.0337	-0.0015	
		(0.0175)	(0.0189)			(0.0129)	(0.0135)			(0.1438)	(0.1526)	
ELECTORAL DEMOCRACY (V-Dem)				0.0110				-0.0092				-0.0694
				(0.0347)				(0.0283)				(0.2829)
CONSTANT	-0.2717***	-0.2762***	-0.2719***	-0.2665***	-0.1569***	-0.1565***	-0.1578***	-0.1519***				
	(0.0567)	(0.0549)	(0.0560)	(0.0537)	(0.0499)	(0.0510)	(0.0493)	(0.0485)				
Observations	5323	5323	5323	5403	5323	5323	5323	5403	5323	5323	5323	5403
Dependent Variable	EW	EW	EW	EW	ICW	ICW	ICW	ICW	Count	Count	Count	Count

Notes: *p<0.10; **p< 0.05; ***p<0.01. Standard errors clustered by country in parentheses. CW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

[12] We define democracies as countries scoring between 7 and 10 on the Polity2 measure of regime type.

[13] We define autocracies as countries scoring between -7 and -10 on the Polity2 measure of regime type.

Alternative Measures of Status-Seeking

In Table S.12, we analyze how our prestige results change when we utilize alternative measures of status-seeking. In models 1, 5, and 9 we employ a measure of status from Renshon (2016) that indicates whether states face a status deficit globally.[14] Specifically, higher values indicate that there is a greater gap between a state's actual power (measured using CINC scores) and its international status (measured using diplomatic exchange data). According to theoretical expectations, we would expect that states facing a greater status deficit would have greater demand for reconnaissance strike technology in order to boost their status. In accordance with this expectation, the coefficient on *GLOBAL STATUS DEFICIT* is positive and statistically significant, providing some additional evidence that status-seeking countries are more likely to acquire advanced reconnaissance strike capabilities.

In models 2, 6, and 10 we use a different measure of status from Renshon (2016) that indicates whether states face a status deficit compared to their relevant status community.[15] While this variable is statistically significant in models 2 and 11 when the EW and count variables are used as the dependent variable, it does not quite reach conventional levels of significance in model 6 when the ICW index is used as the dependent variable.

In models 3-4, 7-8, and 11-12 we use a lower threshold in order to code countries as status-seekers using our Olympic measure of status from Early (2014). Following Early (2014), our primary measure utilized in the main text codes countries as status-seekers if they (a) win at least 5 medals, and (b) their actual number of medals is at least twice as large as their predicted number of medals. Alternatively, in models 3, 6, and 11 we eliminate the 5-medal requirement. In models 4, 8, and 12 we eliminate the twice as large requirement and code states as status-seekers if their actual number of medals is greater than their predicted number of medals. While in the expected direction, these alternative measures of status-seeking are not statistically significant. Perhaps these null results

[14] We extend Renshon's (2016) measure of status through 2005 using updated CINC data and forward-fill the remaining values.

[15] See Renshon (2016) for a discussion of how this is determined.

are due to the fact that the lower threshold for coding status-seeking is inappropriate, capturing countries that are not actually seeking prestige. Nevertheless, these null results illustrate that our status findings are less stable than our results with respect to security threats, technological capacity, and defense relationships.

Table S.12: Alternative Measures of Status-Seeking

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS	(8) OLS	(9) Ord Probit	(10) Ord Probit	(11) Ord Probit	(12) Ord Probit
RIVALS AVG INDEX	0.6741***	0.6918***	0.7297***	0.7333***	0.5664***	0.5817***	0.6073***	0.6112***	6.2305***	6.4434***	6.8978***	6.9511***
	(0.1491)	(0.1461)	(0.1431)	(0.1428)	(0.1423)	(0.1398)	(0.1385)	(0.1382)	(0.9993)	(0.9835)	(0.9263)	(0.9257)
RIVALS AVG INDEX^2	-0.6001***	-0.6192***	-0.6717***	-0.6764***	-0.5189***	-0.5376***	-0.5849***	-0.5891***	-5.5029***	-5.7693***	-6.4974***	-6.5700***
	(0.1765)	(0.1729)	(0.1702)	(0.1695)	(0.1641)	(0.1607)	(0.1595)	(0.1592)	(1.3882)	(1.3640)	(1.2496)	(1.2421)
LOG GDP PER CAPITA	0.0448***	0.0446***	0.0421***	0.0418***	0.0287***	0.0284***	0.0274***	0.0269***	0.3918***	0.3884***	0.3571***	0.3541***
	(0.0073)	(0.0075)	(0.0069)	(0.0069)	(0.0063)	(0.0064)	(0.0060)	(0.0059)	(0.0610)	(0.0619)	(0.0552)	(0.0546)
DCA WITH US/RUSSIA	0.0814***	0.0828***	0.0862***	0.0848***	0.0435**	0.0447**	0.0454**	0.0438**	0.5669***	0.5796***	0.6140***	0.5991***
	(0.0254)	(0.0256)	(0.0252)	(0.0253)	(0.0200)	(0.0203)	(0.0199)	(0.0199)	(0.1557)	(0.1565)	(0.1544)	(0.1563)
POLITY	0.0003	0.0003	0.0003	0.0002	-0.0004	-0.0004	-0.0005	-0.0005	-0.0011	-0.0015	-0.0018	-0.0023
	(0.0012)	(0.0012)	(0.0012)	(0.0011)	(0.0009)	(0.0009)	(0.0009)	(0.0009)	(0.0101)	(0.0100)	(0.0099)	(0.0099)
GLOBAL STATUS DEFICIT (Renshon)	0.0139**				0.0087**				0.1681**			
	(0.0062)				(0.0042)				(0.0672)			
COMMUNITY STATUS DEFICIT (Renshon)		0.0108*				0.0059				0.1307**		
		(0.0065)				(0.0043)				(0.0649)		
STATUS-SEEKING I (Early)			0.0126				0.0209				0.1434	
			(0.0257)				(0.0190)				(0.2046)	
STATUS-SEEKING II (Early)				0.0169				0.0238				0.1877
				(0.0204)				(0.0155)				(0.1667)
CONSTANT	-0.2899***	-0.2895***	-0.2734***	-0.2722***	-0.1669***	-0.1653***	-0.1603***	-0.1579***				
	(0.0563)	(0.0577)	(0.0546)	(0.0540)	(0.0500)	(0.0512)	(0.0487)	(0.0484)				
Observations	5288	5288	5323	5323	5288	5288	5323	5323	5288	5288	5323	5323
Dependent Variable	EW	EW	EW	EW	ICW	ICW	ICW	ICW	Count	Count	Count	Count

Notes: *p<0.10; **p< 0.05; ***p<0.01. Standard errors clustered by country in parentheses. CW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

Analyzing the Impact of Other Variables

Personalist Regimes

Given that previous research shows personalist regimes are more likely to pursue nuclear weapons (Way and Weeks 2014), in Table S.13 we test whether a similar result also holds for the reconnaissance strike complex. In models 1, 4, and 7, we utilize a measure of personalist regimes from the Rulers, Elections, and Irregular Governance (REIGN) Dataset, which has data through 2017 (Bell 2016). The coefficient on *PERSONALIST (REIGN)* is positive in all models, as expected. It is statistically significant in model 1, which uses the ICW index; just under conventional levels of statistical significance in model 4 ($p < 0.13$), which uses the EW index; and not significant in model 7, which utilizes our count dependent variable.

In models 2, 5, and 8, we use an alternative measure of personalism from Geddes, Wright, and Frantz (2014), which goes through 2011. *PERSONALIST (GWF)* is not statistically significant in either of these three models.[16]

Lastly, in models 3, 6, and 9, we use a measure of personalist regimes from Way and Weeks (2014), which goes through 2007. None of these variables are statistically significant. Overall, then, there is little evidence that personalist regimes are more likely to acquire advanced reconnaissance strike capabilities.

[16] This variable remains null even if you forward-fill through 2017, or extend the analysis back farther in time.

Table S.13: Personalist Regimes

	(1) OLS 1989-2017	(2) OLS 1980-2011	(3) OLS 1980-2007	(4) OLS 1980-2017	(5) OLS 1980-2011	(6) OLS 1980-2007	(7) Ord Probit 1980-2017	(8) Ord Probit 1980-2011	(9) Ord Probit 1980-2007
RIVALS AVG INDEX	0.6201***	0.6120***	0.6613***	0.7301***	0.7454***	0.8019***	6.9930***	7.0420***	7.8758***
	(0.1328)	(0.1293)	(0.1390)	(0.1388)	(0.1374)	(0.1453)	(0.9024)	(0.9518)	(1.0013)
RIVALS AVG INDEX^2	-0.6262***	-0.6432***	-0.7100***	-0.7042***	-0.7544***	-0.8301***	-6.9393***	-7.2219***	-8.5368***
	(0.1572)	(0.1579)	(0.1687)	(0.1681)	(0.1693)	(0.1784)	(1.2176)	(1.3604)	(1.4798)
LOG GDP PER CAPITA	0.0277***	0.0269***	0.0250***	0.0438***	0.0428***	0.0409***	0.3534***	0.3481***	0.3390***
	(0.0070)	(0.0074)	(0.0075)	(0.0079)	(0.0083)	(0.0083)	(0.0579)	(0.0651)	(0.0651)
DCA WITH US/RUSSIA	0.0448**	0.0387**	0.0479**	0.0875***	0.0733***	0.0854***	0.6125***	0.5339***	0.6519***
	(0.0192)	(0.0194)	(0.0201)	(0.0249)	(0.0252)	(0.0258)	(0.1532)	(0.1696)	(0.1769)
PERSONALIST (REIGN)	0.0232*			0.0266			0.1419		
	(0.0126)			(0.0173)			(0.1547)		
PERSONALIST (GWF)		0.0185			0.0124			-0.1016	
		(0.0130)			(0.0162)			(0.1396)	
PERSONALIST (WW)			0.0207			0.0206			0.1409
			(0.0127)			(0.0163)			(0.1605)
STATUS-SEEKING	0.0482*	0.0599**	0.0567**	0.0486	0.0687**	0.0649**	0.5549**	0.7626***	0.7211***
	(0.0246)	(0.0240)	(0.0218)	(0.0339)	(0.0334)	(0.0312)	(0.2290)	(0.2281)	(0.2447)
CONSTANT	-0.1714***	-0.1582***	-0.1483**	-0.2963***	-0.2772***	-0.2700***			
	(0.0568)	(0.0599)	(0.0595)	(0.0640)	(0.0667)	(0.0652)			
Observations	5380	4033	3229	5380	4033	3229	5380	4033	3229
Dependent Variable	ICW	ICW	ICW	EW	EW	EW	Count	Count	Count

Notes: *p<0.10; **p< 0.05; ***p<0.01.

Standard errors clustered by country in parentheses.

ICW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

Military Regimes

Following previous literature (e.g., Sechser and Saunders 2010), we also test whether military regimes are more likely to acquire advanced reconnaissance strike capabilities. After all, military governments are likely to have parochial interests in acquiring this type of military technology. However, as shown in Table S.14, we do not find any statistically significant relationship between military regimes and reconnaissance strike capabilities.[17]

Table S.14: Military Regimes

	(1) OLS 1980-2017	(2) OLS 1980-2011	(3) OLS 1980-2017	(4) OLS 1980-2011	(5) Ord Probit 1980-2017	(6) Ord Probit 1980-2011
RIVALS AVG INDEX	0.6142***	0.6088***	0.7143***	0.7416***	6.8963***	7.1124***
	(0.1351)	(0.1296)	(0.1403)	(0.1377)	(0.9107)	(0.9577)
RIVALS AVG INDEX^2	-0.6054***	-0.6286***	-0.6759***	-0.7454***	-6.7282***	-7.3744***
	(0.1589)	(0.1568)	(0.1687)	(0.1691)	(1.2232)	(1.3627)
LOG GDP PER CAPITA	0.0255***	0.0246***	0.0418***	0.0411***	0.3463***	0.3548***
	(0.0066)	(0.0069)	(0.0073)	(0.0076)	(0.0537)	(0.0609)
DCA WITH US/RUSSIA	0.0440**	0.0377*	0.0871***	0.0726***	0.6171***	0.5327***
	(0.0195)	(0.0196)	(0.0252)	(0.0254)	(0.1516)	(0.1688)
MILITARY (REIGN)	0.0045		0.0197		0.2198	
	(0.0159)		(0.0238)		(0.3120)	
MILITARY (GWF)		-0.0160		-0.0140		-0.1085
		(0.0157)		(0.0198)		(0.3111)
STATUS-SEEKING	0.0510**	0.0613**	0.0530	0.0695**	0.5827**	0.7456***
	(0.0256)	(0.0247)	(0.0352)	(0.0341)	(0.2268)	(0.2284)
CONSTANT	-0.1492***	-0.1342**	-0.2755***	-0.2598***		
	(0.0521)	(0.0541)	(0.0566)	(0.0585)		
Observations	5380	4033	5380	4033	5380	4033
Dependent Variable	ICW	ICW	EW	EW	Count	Count

Notes: *p<0.10; **p< 0.05; ***p<0.01.
Standard errors clustered by country in parentheses.
ICW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

[17] This null result holds when we forward-fill missing values in models 2, 4, and 6 through 2017, or extend the time period under study farther back in time.

Coups

In Table S.15, we test the relationship between coup risk/past coup attempts and a state's reconnaissance strike capabilities. From one perspective, we might expect that leaders who face a high risk of coups would have incentives to engage in "coup-proofing" by denying their militaries advanced reconnaissance strike capabilities that could potentially be used in service of a coup (Talmadge 2015). On the other hand, recent research suggests that leaders may have incentives not to coup-proof when the risk of a coup is high because doing so could anger the military and cause them to attempt a coup (Sudduth 2017). Moreover, ground-based forces like infantry are more often employed in coup attempts than the air, naval, and missile forces included in our dataset, reducing the incentives for coup-proofing in this context (Pilster and Böhmelt 2012, 360).

For information on coups, we use the REIGN Dataset (Bell 2016), which incorporates data from Powell and Thyne (2011), as well as other sources. Model 1 analyzes the impact of coup risk (defined as the predicted probability of a military coup attempt taking place and calculated using machine-learning methods) on a state's reconnaissance strike capabilities. Models 2-4 utilize a binary variable that measures whether a coup attempt occurred in the last 3, 5, or 10 years. Models 5-7 use a variable that measures the total number of coup attempts that occurred in the last 3, 5, or 10 years. In all 7 models, our coup variable has no statistically significant effect on a state's reconnaissance strike capabilities.[18] Perhaps the competing logics of the effect of coups on military capabilities, discussed above, help explain the null results in this case.

[18] This null result also holds when using the EW index as the dependent variable, the count dependent variable, or extending the time period under study farther back in time.

Table S.15: Coups

	(1) OLS	(2) OLS	(3) OLS	(4) OLS	(5) OLS	(6) OLS	(7) OLS
RIVALS AVG INDEX	0.7318***	0.7304***	0.7301***	0.7259***	0.7305***	0.7304***	0.7261***
	(0.1455)	(0.1454)	(0.1456)	(0.1466)	(0.1454)	(0.1456)	(0.1465)
RIVALS AVG INDEX^2	-0.6983***	-0.6950***	-0.6933***	-0.6879***	-0.6952***	-0.6939***	-0.6877***
	(0.1733)	(0.1728)	(0.1725)	(0.1724)	(0.1728)	(0.1725)	(0.1722)
LOG GDP PER CAPITA	0.0412***	0.0421***	0.0421***	0.0423***	0.0420***	0.0417***	0.0414***
	(0.0072)	(0.0070)	(0.0071)	(0.0073)	(0.0070)	(0.0070)	(0.0071)
DCA WITH US/RUSSIA	0.0830***	0.0835***	0.0835***	0.0854***	0.0834***	0.0833***	0.0848***
	(0.0256)	(0.0257)	(0.0258)	(0.0261)	(0.0257)	(0.0258)	(0.0261)
POLITY	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
	(0.0012)	(0.0012)	(0.0012)	(0.0012)	(0.0012)	(0.0012)	(0.0012)
STATUS-SEEKING	0.0487	0.0497	0.0495	0.0478	0.0494	0.0488	0.0462
	(0.0351)	(0.0352)	(0.0353)	(0.0366)	(0.0351)	(0.0352)	(0.0362)
COUP RISK	-0.5687						
	(0.6629)						
COUP ATTEMPT (LAST 3 YEARS)		-0.0002					
		(0.0119)					
COUP ATTEMPT (LAST 5 YEARS)			0.0003				
			(0.0123)				
COUP ATTEMPT (LAST 10 YEARS)				0.0004			
				(0.0131)			
NUMBER OF COUP ATTEMPTS (LAST 3 YEARS)					-0.0045		
					(0.0088)		
NUMBER OF COUP ATTEMPTS (LAST 5 YEARS)						-0.0053	
						(0.0074)	
NUMBER OF COUP ATTEMPTS (LAST 10 YEARS)							-0.0054
							(0.0056)
CONSTANT	-0.2643***	-0.2745***	-0.2744***	-0.2744***	-0.2727***	-0.2703***	-0.2653***
	(0.0579)	(0.0550)	(0.0561)	(0.0591)	(0.0548)	(0.0554)	(0.0570)
Observations	5286	5280	5244	5091	5280	5244	5091

Notes: *p<0.10; **p< 0.05; ***p<0.01.
Standard errors clustered by country in parentheses.
ICW = Inverse Covariance Weighted Index; EW = Equally-Weighted Index.

Explaining Inverse Covariance Weighting

Following Anderson (2008), an ICW index can be calculated in the following way. Here, we quote directly from Schwab et al. (2020, 955-956):

1. Select k indicators relevant for outcome j.

2. Adjust sign: For all k indicators, ensure the positive direction always indicates a "better outcome."

3. Normalize indicators: Demean all k indicators by subtracting the mean of the indicator in the reference group (the full sample is the default reference group). Then, convert them to effect sizes, $\tilde{y}_k$, by dividing each indicator by its reference group standard deviation.

4. Construct weights: Create weights using $\sum^{-1}$, the inverse of the covariance matrix of the normalized indicators. Specifically, set the weight $\tilde{w}_k$ on each indicator equal to the sum of its row entries in $\sum^{-1}$. With this rule, highly correlated indicators are assigned small or offsetting weights, while less correlated outcomes receive larger weights.

5. Construct index: Calculate the weighted average of $\tilde{y}_k$ for observation i.

6. Normalize index: Demean index $\bar{s}_i$ by subtracting the mean of the index in the reference group, and convert it to effect sizes by dividing it by its reference group standard deviation. This normalization results in an index distributed with mean zero and standard deviation one in the reference group.

There are several advantages associated with ICW (Anderson 2008). First, it can handle variables measured on different scales. Second, it increases statistical efficiency by ensuring variables that provide more unique information (i.e., those that are less highly correlated with other variables in the index) are given more weight. Third, relative to a series of individual measures, the single index measure created by ICW can cause the random measurement errors associated with individual variables to cancel each other out.

Fourth, relative to a series of individual measures that require multiple hypothesis tests to be conducted, the single index measure created by ICW reduces the chances of false negatives or positive occurring as a consequence of a large number of statistical tests.

Components of the Reconnaissance Strike Index

As discussed in the main text, we define the reconnaissance strike complex as the integration of surveillance assets, strike platforms, and munitions to strike targets (in any domain of warfare) quickly, from a distance, and with greater precision, with a lower probability of being detected or destroyed first. All eight of the systems we include in our index (e.g., ballistic missiles and submarines) and all of the component variables of those systems we include (e.g., range and speed) are utilized because they fit into this definition. For example, all eight of the systems we measure fall under one of the three categories discussed in our definition: (1) surveillance assets, (2) strike platforms, and (3) munitions. ISR capabilities and satellites are surveillance assets. Bombers, fighters, and submarines are strike platforms. Ballistic missiles and cruises are strike platforms that carry munitions, and PGMs are munitions. Additionally, all of the component variables of those systems we include enable states to better achieve at least of the four functional elements of reconnaissance strike in our definition: (1) to strike targets quickly, (2) to strike targets from a distance, (3) to strike targets with greater precision, and (4) to strike targets without being detected or destroyed first. Even though some older-generation military systems (e.g., second generation aircraft) may have little reconnaissance strike value and do little to increase the general sophistication of a state's military, we include them because they still bring states closer to being able to strike targets quickly, from a distance, and with greater precision, with a lower probability of being detected or destroyed first. In other words, reconnaissance strike sophistication—and, indeed, general military sophistication—is a spectrum, and even out-of-date military technology brings states farther along the spectrum. In what follows, we explain how we operationalized the component variables of our main index and why these variables full under the definition of reconnaissance strike.

Ballistic Missiles

Ballistic missiles have existed for generations. We include multiple elements of ballistic missile characteristics, including range, payload, and fuel type, to capture ballistic missile sophistication. Note that we place ballistic missiles, cruise missiles, and PGMs in separate categories for index construction purposes. We separate them for two reasons. First, missiles are delivery vehicles that can carry different types of warheads. This distinguishes them from platforms (like fighter jets) and munitions (like smart bombs). Second, the literature on reconnaissance strike separates out ballistic missiles and cruise missiles from other guided weapons for historical reasons, because ballistic missiles are not actively guided (though they can contain countermeasures to defeat defenses), and because cruise missiles are generally considered a distinct type of missile system.

Table S.16: Component Variables of the Ballistic Missile Index

Variable	Operationalization	Relevance
Fuel	0 = Liquid-Fueled; 1 = Solid-Fueled	Solid-fueled missiles can be launched much quicker (and more safely) than liquid-fueled missiles.
MIRV (Multiple Independently Targetable Reentry Vehicle)	0 = No; 1 = Yes	MIRV missiles can carry multiple warheads that can each hit different targets, increasing the probability that the target is actually hit and destroyed. Watts (2013) discusses MIRV in the context of recon strike and China's development of a conventionally-armed MIRV missile.
Payload	0 = 500kg or Less; 1 = Greater than 500kg	Missiles with a greater payload can carry more warheads or heavier warheads that are more destructive, increasing the likelihood states are able to destroy targets. The 500kg threshold is used because it is about the median payload of missiles in our dataset, and because it is the threshold utilized by the Missile Technology Control Regime (MTCR) to determine whether missiles are nuclear-capable.
Range	1 = Less than 1000km; 2 = 1000km to Less than 3000km; 3 = 3000km to Less than 5500km; 4 = Greater than 5500km	A greater range makes it easier to hit targets from a safe distance. Too short a range may mean you cannot hit a target at all. The range bins correspond to short, medium, intermediate, and long-range missiles, as defined by the Center for Arms Control and Non-Proliferation (2017).

Bombers

Bombers have been around almost as long as aircraft, since the early 20th century. The index elements below are designed to account for variation over time in the sophistication of bombers. As with the ICW method in general, countries get more credit for capabilities that are relatively more novel compared to the bombers possessed by other countries (or countries that have no bombers at all). Thus, by using ICW to pull out those capabilities that are novel at each point in time, countries get more credit for deploying bombers with stealth capabilities, for example, than for having bombers with jet engines in the 1980s.[19]

[19] There are some countries that do not have bombers with jet engines for certain years in our dataset.

Table S.17: Component Variables of the Bombers Index

Variable	Operationalization	Relevance
Armaments	1 = Unguided Bombs; 2 = Unguided Bombs + Missiles; 3 = Guided Bombs; 4 = Guided Bombs + Missiles	Bombers that can carry guided bombs and/or missiles are much more useful for striking targets precisely than those that cannot. For example, only about 20% of American bombs in World War II fell within 1,000 feet of their targets, let alone actually hitting them (United States Strategic Bombing Survey 1945, 13).
Ceiling	The maximum altitude the bomber can fly in km.	The ability to fly at higher altitudes reduces the chances of being shot down and thus lowers the probability of being detected or destroyed first.
Communications	0 = No Access to Communications Data; 1 = Access to Communications Data	Access to communications data can help identify targets or avoid detection.
Engine	0 = Non Jet Engine; 1 = Jet Engine	Aircraft with jet engines can fly faster and reach their targets more quickly.
Payload	The maximum payload in kg the bomber can carry.	Bombers with a greater payload are more likely to hit and destroy their targets.
Range	The maximum range in km of the bomber.	Bombers with a greater range can reach targets located farther away.
Speed	0 = Subsonic; 1 = Supersonic	Bombers with greater speed capabilities can reach targets faster and are harder to shoot down and intercept.
Stealth	0 = No; 1 = Yes	Bombers with stealth capabilities are less likely to alert enemy forces before the target is hit and are harder to shoot down and intercept.

Cruise Missiles

There are other relevant variables related to cruise missiles' contribution to reconnaissance strike, such as stealth, that, unfortunately, we were not able to include due a lack of accurate, publicly available information.

Table S.18: Component Variables of the Cruise Missiles Index

Variable	Operationalization	Relevance
Cruise Speed	0 = Subsonic; 1 = Supersonic	Cruise missiles with greater speed capabilities can reach targets faster and are harder to shoot down.
Initial GOLIS Guidance	1 = Basic Radar; 2 = INS/GPS/GLONASS; 3 = INS/TERCOM; 4 = INS/TERCOM/DSMAC	More advanced guidance technologies increase the chances that the cruise missile hits its intended target.
Range	The average range in km of the cruise missile.	A greater range makes it easier to hit targets from a safe distance. Too short a range may mean you cannot hit a target at all.
Terminal GOLIS Guidance	1 = No Separate GOLIS Terminal Guidance System; 2 = GPS; 3 = DSMAC/TERCOM; 4 = Computer Aided Target Selection	More advanced guidance technologies increase the chances that the cruise missile hits its intended target.
Terminal GOT Guidance	1 = No Separate GOT Terminal Guidance System; 2 = Semi-Active Radar; 3 = Active Radar; 4 = Infrared Radar	More advanced guidance technologies increase the chances that the cruise missile hits its intended target.
Terminal Speed	0 = Subsonic; 1 = Supersonic	Cruise missiles with greater speed capabilities can reach targets faster and are harder to shoot down.

Fighters

We include all fighter aircraft, even those that are primarily geared towards air-to-air combat, because gaining air superiority (which air-to-air fighters, of course help with) better enables countries to "strike targets quickly...with a lower probability of being detected or destroyed first." Thus, all aircraft are useful for achieving a more sophisticated reconnaissance strike capability under our definition of the concept. For example, air-to-air fighters are crucial for providing support to bombers, which are clearly a critical element of the reconnaissance strike complex. Moreover, even if one were to consider land-attack aircraft as more directly connected to the reconnaissance strike complex, most fighters have at least some land attack capabilities.

Table S.19: Component Variables of the Fighter Measure

Variable	**Operationalization**	**Relevance**
Generation	1 = First Generation; 2 = Second Generation; 3 = Third Generation; 4 = Fourth Generation; 5 = Fourth Generation Plus or PlusPlus; 6 = Fifth Generation	Fighter generation categories are the best classification system available to characterize the mix of capabilities that successive groups of fighters possess.

Intelligence, Surveillance, and Reconnaissance

Note that the coding scheme we utilize is closely based off of the one used by the International Institute for Strategic Studies' *Military Balance* publication.

Table S.20: Component Variables of the ISR Measure

Variable	Operationalization	Relevance
Airborne Command Center	Does State X have an airborne command center? 0 = No; 1 = Yes.	An airborne command center facilitates greater coordination among friendly forces to identify targets, facilitate their destruction, and detect as well as avoid potential threats.
Airborne Early Warning	Does State X have fixed- and rotary-wing platforms capable of providing airborne early warning? 0 = No; 1 = Yes.	Early warning is critical for identifying targets and enabling strikes, facilitating coordination between different military assets that can enable targets to be destroyed, and identifying, as well as communicating about, potential threats such that military assets will be less likely to be detected or destroyed.
Communications Intelligence	Can State X gather messages or voice information from interception of foreign communications? 0 = No; 1 = Yes.	Greater intelligence enables states to more effectively locate and track potential targets.
Electronic Intelligence	Can State X gather intelligence by interception of electronic signals not directly used in communication? 0 = No; 1 = Yes.	Greater intelligence enables states to more effectively locate and track potential targets.
Electronic Warfare	Does State X have fixed- and rotary-wing aircraft intended for electronic warfare? 0 = No; 1 = Yes.	The ability to prevent enemies from disrupting your communications enables states to more effectively locate and track potential targets, and the ability to degrade an enemy's communications reduces their ability to effectively respond to your attack.

Table S.20: Component Variables of the ISR Measure, continued

Variable	Operationalization	Relevance
ISR Aircraft	Does State X have fixed- and rotary-wing aircraft intended to provide radar, visible-light, infrared imagery, or a mix? 0 = No; 1 = Yes.	Greater intelligence enables states to more effectively locate and track potential targets.
Reconnaissance	Does State X have equipment designated for reconnaissance? 0 = No; 1 = Yes.	Greater intelligence enables states to more effectively locate and track potential targets.
Signals Intelligence	Can State X gather intelligence by interception of signals, includes communications between people or from electronic signals? 0 = No; 1 = Yes.	Greater intelligence enables states to more effectively locate and track potential targets.

Precision-Guided Munitions

Many states have possessed some types of guided munitions for generations. For example, while air-to-air missiles and air-to-ground missiles have widely proliferated, we focus only on guided versions of those missiles. This means there is indeed variation for these measures. In 2017 about 55% of countries in our sample had air-to-air PGMs and 34% had air-to-ground PGMs. Note also that our ICW method will give less weight to capabilities that have proliferated more widely. We also include many other types of PGMs. We include bomb kits as a separate measurement element because they represent a degree of sophistication given the ability to convert older bombs into guided munitions. Thus, the more different types of PGMs a state has, the higher it will score on the overall index.

Table S.21: Component Variables of the PGM Measure

Variable	Operationalization	Relevance
Air-to-Air	Does State X have a air-to-air pgm capability? 0 = No; 1 = Yes.	Enables states to precisely strike enemy targets in the air from the air.
Air-to-Ground	Does State X have a air-to-ground pgm capability? 0 = No; 1 = Yes. Compared to the "bomb" category these PGMs have more substantial rocket engines.	Enables states to precisely strike enemy targets on the ground from the air.
Bomb	Does State X have a guided bomb capability? 0 = No; 1 = Yes. Compared to the "air-to-fround" category these PGMs have less substantial rocket engines; they primarily are dropped and glide in.	Enables states to precisely strike enemy targets utilizing bombs.
Bomb Kit	Does State X have a bomb kit capability? 0 = No; 1 = Yes.	Can transform standard bombs into precision-guided bombs.
Other PGMs	Does State X have other pgm capabilities? 0 = No; 1 = Yes.	Enables states to precisely strike enemy targets.
Portable Surface-to-Air Missile	Does State X have a portable SAM capability? 0 = No; 1 = Yes.	Enables states to precisely strike enemy targets in the air from the ground.

Satellites

Satellite data comes from Early and Fahrenkopf (2017).[20]

Table S.22: Component Variables of the Satellite Measure

Variable	Operationalization	Relevance
Domestic Satellite	Does State X have a nationally-owned satellite in orbit? 0 = No; 1 = Yes.	The information that satellites provide can enable the use of reconnaissance strike by identifying targets or threats. Private satellite companies can either be taken over by a government during a time of war or may choose to actively cooperate with the government.
Domestic Space-Launch	Does State X have domestic space launch capability? 0 = No; 1 = Yes.	The information that satellites provide can enable the use of reconnaissance strike by identifying targets or threats. Having a domestic launch capability can better enable a government to launch their own satellites during a time of war, whereas if satellites are launched from a foreign facility, then access may be more likely to be restricted.
Military Satellite	Does State X have a nationally-owned military satellite? 0 = No; 1 = Yes.	The information that satellites provide can enable the use of reconnaissance strike by identifying targets or threats.

[20]See their paper for more details about how these variables are coded.

Submarines

Submarines have existed for generations. We include multiple elements of submarine platform capacity to create an overall score for submarines. These elements provide a rounded picture that is superior to any one element. For example, Russian Akula class submarines are faster than US Virginia class submarines, but US Virginia class submarines are more sophisticated. This is revealed by our measurement approach, which includes armaments and propulsion as well as speed. Similarly, modern diesel submarines can be very sophisticated, so even though they may score relatively lower on propulsion, they can score highly on armaments and speed. In other words, diesel submarines can end up outscoring nuclear-powered submarines.

Table S.23: Component Variables of the Submarine Index

Variable	**Operationalization**	**Relevance**
Armaments	1 = Pre-1945 with Only Torpedoes; 2 = Pre-1930 with Torpedoes and Guns; 3 = Pre-1945 with Torpedoes and Guns; 4 = Post-1945 without Missiles; 5 = Torpedoes and Missiles; 5.5 = Torpedoes with Early Precision-Guided Missiles; 6 = Torpedoes with Modern Precision-Guided Missiles	More advanced armaments make it more likely submarines will be able to hit and destroy their targets.
Propulsion	1 = Other; 2 = Diesel; 3 = Fuel Cells; 4 = Nuclear.	Submarines with more advanced propulsion systems can stay submerged for longer and are often quieter, which makes them harder to track.
Speed	The maximum speed of the submarine while submerged in km.	Submarines with greater speed capabilities can reach targets faster.

Narrow and Munitions-Only Index

As discussed in the main text, we create two additional index measures for robustness: (1) a narrower index that uses fewer of the components described above, and (2) a munitions-only index that just includes ballistic missiles, cruise missiles, and PGMs. For the narrower index, we use the following component varriables for each of the eight systems:

- Ballistic Missiles: Fuel; range
- Bombers: Armaments; communications; range; stealth
- Cruise Missiles: All
- Fighters: Generation
- ISR: Airborne early warning; communications intelligence; electronic warfare; ISR aircraft; signals intelligence
- PGMs:All
- Satellites: Military satellites
- Submarines: Armaments

This narrower index excludes variables like payload, which is relevant to a state's ability to successfully hit and destroy targets, but has a more indirect connection to the core elements of reconnaissance strike: intelligence, range, and precision. We also exclude measures of speed from this narrower index because range and precision are more frequently considered core elements of reconnaissance strike than speed. Domestic satellite and space-launch capabilities are excluded from this measure as well since they are less directly related to a state's *military* capability. The munitions-only index uses the same component variables as the narrow index, but only includes ballistic missiles, cruise missiles, and PGMs.

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