Preserve, Pressure, Protect, and Peel:

The US-China Rivalry and the Politics of Vaccine Provision

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Abstract

Lead states compete for influence and followers, and the COVID-19 pandemic served an important reminder that the provision of health aid like vaccines, is a foreign policy tool. How and to which countries do providing states distribute aid amidst global a crises and great power rivalry? The foreign aid literature emphasizes instrumental provision with respect to donor-recipient relations, but tends to leave aside how provider rivalry may shape the politics of provision. Hegemonic order theorists are attuned to the symbolic and social nature of such vaccine provision, but are susceptible to undervaluing the possibility of providing in accordance with recipient need. This article integrates these literatures and presents a novel typology of strategies: preserving existing partnerships, pressuring opponents, protecting recipients based on need, and peeling off countries from geopolitical rivals. It then analyzes how the US and Chinese distributed life-saving COVID-19 vaccines through 2021-2022. Regression results and Bayesian reasoning of original elite interviews suggest the US approach is characterized by protecting and peeling, while patterns of Chinese distribution suggest a combination of pressuring, preserving, and protecting. Case studies of Paraguay and Nicaragua – historic allies of Taiwan - further support these conclusions. This raises important questions regarding the circumstances under which aid provision is instrumental and how hegemonic rivals compete during global crises.

Keywords: COVID-19, foreign aid, vaccines, provision, United States, hegemonic competition, peeling

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1 Introduction

At the World Health Assembly in May 2020, President Xi announced China's vaccines would be an affordable, accessible global public good (Tan and Regalado 2020). In June, President Biden claimed the US would donate doses free and clear to countries most in need (White House 2021b). Both suggested an apolitical, public-health approach. Yet global shortages coupled with spiking COVID deaths meant that such vaccines were potential sources of leverage. As countries like China and Russia began providing doses to other countries, many raised concerns that vaccines would be used for political gain (O'Rourke and McInnis 2020; O'Reilly 2021; Banco 2021) or reputation improvement (Urdinez 2023). This raises an important set of questions: how do lead states provide such critical aid amidst pressing public health and geopolitical concerns, and why might they pursue differing strategies?

The consensus in the foreign aid literature is that provision is a tool for promoting the provider's national interest, or a means of addressing the recipient's humanitarian needs (Alesina and Dollar 2000; Kuziemko and Werker 2006; Dreher et al. 2018; Bermeo 2011). Both bi and multilateral assistance often serve major power interests (Kersting and Kilby 2016; Dreher, Sturm, and Vreeland 2015; Dreher and Sturm 2012; Lim and Vreeland 2013; R. Clark and Dolan 2021). Yet this does not adequately account for the distinct logics providers might pursue, nor the ways in which provision is dynamic and affected by the actions of other providers. Hegemonic order theorists are attuned to the symbolic and social nature of such vaccine provision, but are susceptible to undervaluing the possibility of providing in accordance with recipient need.

This article integrates these literatures and presents a novel typology of strategies: *preserving* existing partnerships, *pressuring* other states for political gain, *protecting* health, and *peeling* less aligned countries from geopolitical rivals. To assess which combination of strategies

appears at play, I analyze US and Chinese dose distributions during 2021 and 2022. To probe further, I draw on interviews with 26 officials, officers, and advisors, as well as cases of US vaccine donation in Paraguay and Nicaragua. These two countries - historic allies of Taiwan - differ in political openness and relations with the US and China, providing an opportunity to further adjudicate hypotheses. I find China primarily exported vaccines bilaterally, *preserving* partners such as Belt and Road members and arms importers, *pressuring* Taiwan's allies, and *protecting* public health. By contrast, the US largely donated vaccines through the COVAX mechanism, the vaccine arm of the WHO's Access to COVID-19 Tools (ACT) Accelerator. Its patterns suggest a *peeling* and *protecting* approach, with little evidence of favoring friends or punishing other countries.

The piece makes three major contributions. It presents a generalizable set of approaches for goods provision amidst geopolitical rivalries, building on yet adjudicating between the expectations of foreign aid, hegemonic, and global health literatures. Country provision of aid is rarely an either-or proposition of political considerations and recipient needs; these approaches allow for a more precise examination of provision patterns.

Empirically, it provides insight into the black box of US decision-making, situating global public health and vaccine assistance as a central matter of great power politics. Vaccines are non-fungible and more 'one-off' compared to other forms of aid but still retain tremendous strategic value through considerations of timing, conditionality, withholding, and recipient prioritization. These aspects are under-discussed in the foreign aid literature and by process tracing the decision-making for the US, this piece can shed light on the extent to which such considerations shaped the provision of crucial lifesaving aid.

Finally, this piece shows how hegemonic contestation between great powers can have potential positive externalities through a competition of provision. In their struggle for followers, prestige, and legitimacy, such states may incidentally provide more goods in the international system than would have been the case without such competition (Howard and Dayal 2018; Clunan 2014; Ikenberry and Nexon 2019; Barder 2015). The piece is organized as follows. First, it discuses the politics of foreign aid, noting aspects of vaccine provision that are unique. It then synthesizes multiple literatures into four strategies of provision and present descriptive quantitative findings. This is supported by original interview evidence and case studies of Nicaragua and Paraguay, analyzed with Bayesian heuristic reasoning. The final section concludes and discusses the potential for positive externalities when hegemons compete in goods provision.

2 COVID and the Politics of Foreign Aid

Health aid is often seen as a source of leverage (Drezner 2020; Johnson 2020; Kenwick and Simmons 2020) but in some ways vaccines are particular. They are more one-off form of assistance. Once a population is inoculated, the potential for an extreme dependence on that product is reduced. Moreover, vaccines are disease-specific;[2] importing one does not necessarily undercut domestic manufacturers' current research. Partnerships between international manufacturers and local producers can also foster pharmaceutical research and collaboration (Yeremia and Raditio 2021).

Nevertheless, vaccines could be withheld or provided conditionally. Particularly during periods of acute demand or short supply, a providing state has leverage. Vaccine diplomacy then,

[2] In the case of COVID-19, the regular development of new variants has meant that COVID-19 vaccines are less one-off than other vaccines might be, and there is a greater longer-term demand for additional doses and boosters than might have initially been expected.

is the deployment of ostensibly health-focused programming for non-health foreign policy goals (Fazal 2020), and represents the most recent manifestation of potential tensions between recipient need and donor interest.[3] A state's patterns of distribution present an opportunity to examine its priorities and interests, and I now discuss four strategies and their observable implications that speak to both.

2.1 Preserve

As McKinlay and Little (1977, 63) stated, "the restricted allocation of aid reinforces the idea that the donor attaches some special significance or commitment to the recipient", and states often favor their friends like allies and countries which vote similarly in the UN (Alesina and Dollar 2000) This trend has appeared consistent (Cheng and Minhas 2021; Bermeo 2008; Stallings 2016) and also applies to the realm of developmental aid through multilateral lending institutions (Kilby 2009; Kersting and Kilby 2016; Dreher, Sturm, and Vreeland 2015; Dreher and Sturm 2012; Lim and Vreeland 2013).

Vaccines help protect lives, insulate the economy from pandemic disruption, and help ensure political stability through a demonstrated capacity to protect the citizenry. Thus, provision to allies is rational; states have an interest in proving their reliability to partners and allies (Miller 2011) and aid can signal such commitment. Promises to provide vaccines "ties the hands" of the provider as are reputational costs if it fails to deliver (Fearon 1997).[4] Pursuing a strategy of

[3] See Alesina and Dollar (2000); Cheng and Minhas (2021); de Mesquita and Smith (2007); Steele(2017) as well as Dreher et al. (2013; 2020); Hoeffler and Outram (2011); Kuziemko and Werker (2006); Bermejo, (2011); Berthélemy, (2006); Stone, 2006).

[4] Xiaofeng Liang, former head of China's Center for Disease Control and Prevention, stated countries in China's Belt and Road Initiative (BRI) should be prioritized for Chinese vaccines (Yanzhong Huang 2021). Subsequent visits by China's Foreign Minister Wang to the Philippines and Myanmar suggested vaccine provision may have facilitated new infrastructure projects or commitments.

preserving would predict those with closer relations would be likely to receive more doses, or doses at an earlier point in time. In other words:

$H_{preserve}$: Countries with better prior relations or which are more aligned with the provider should receive more doses of vaccines.

2.2 Pressure

Many have argued aid is simply an instrument of political power (Liska 1960), helping to secure foreign policy concessions (de Mesquita and Smith 2007; 2016; Kuziemko and Werker 2006; Berthélemy 2006). A state could condition vaccines to *pressure* other states to change policies or make policy concessions. For the PRC this could mean pressuring allies of Taiwan to strip recognition from the island,[5] pressuring countries to drop support from investigations into Uyghur mistreatment (Solonya and Standish 2021), or punishing countries that have hosted the Dalai Lama (Fuchs and Klann 2010). For the US, this could mean pressuring countries like Brazil, South Korea, and Germany to ban the use of Huawei technology (Cha 2020), or punishing democratic backsliding (e.g. Nicaragua) or illiberal regimes (e.g. North Korea, Myanmar).

This resonates with the work showing how aid and lending can be exchanged for vote-buying in the UN (Dreher and Sturm 2012; Dreher, Sturm, and Vreeland 2015; Dreher et al. 2013; Lim and Vreeland 2013; Kersting and Kilby 2016; R. Clark and Dolan 2021). Beyond making assistance conditional, a more coercive version of this is *withholding* of aid. [6] During COVID-19, rising cases and deaths ratches up pressure on governments. A provider's decision to *not* sell or donate doses in such circumstances indirectly harms that other state during a global pandemic,

[5] This could work both ways; China could pressure those who recognize Taiwan and the US could punish those who removed such recognition (116th United States Congress 2020).
[6] For more on diplomacy, see (Schelling 1957; 1966). For a discussion of coercive diplomacy, see also Downes (2018; George and Simons (1994); George (1992); Levy (2008).

$H_{pressure}$: Countries that pursue policy that is counter to the provider's interest receive fewer doses of vaccines.

2.3 Protect

Despite the above findings in foreign aid, recipient need still matters in aid provision (Cingranelli 1993; Lumsdaine 1993). Norms of appropriateness regarding what states ought to do should incentivize providers to focus on recipient needs (Neumayer 2003; Schraeder, Hook, and Taylor 1998; Keck and Sikkink 1998; Wendt 1995). Within the context of the COVID pandemic, providers may consider two norms of public health; one is to be responsive to the needs of particular countries based on the severity of COVID-19. Another would be providing assistance in an equitable fashion, working to ensure all countries have some access to vaccines regardless of political, economic, or strategic considerations (August et al. 2022; De Maio 2014). The WHO aimed for both, aiming for countries to obtain at least a 20% vaccination rate as soon as vaccines were available globally but also working to be responsive to countries with more severe COVID-19 crises. Thus, a protection strategy's observable implications would be that countries with more severe COVID burdens as well as lower-income countries should receive more vaccine doses.

$H_{protect}$: Countries with a more severe COVID-19 burden should receive more doses of vaccines.

H3b) Lower-income countries should receive more doses of vaccines.

2.4 Peel

The final strategy focuses not on rewarding existing friends, but on appealing to new ones. Providing countries could try to use vaccines to peel countries away from rivals. Lead states provide goods to other states in exchange for support or complicity in their preeminence (I. Clark

2011; Ikenberry 2001; Ikenberry and Nexon 2019; Lake 2014). This reciprocity helps underwrite the lead state's legitimacy, prestige, and reputation (Gilpin 1983; Khong 2019) while also preempting the need to constantly coerce other states into submission. It also helps build a camp of supporters vis-à-vis the rival (Doshi 2021).[7]

The US-China rivalry involves not only economic and security competition, but models of governance and international leadership (Johnston 2019). Yet, which states might be more likely to experience this courting? While almost every country experiences some degree of this rivalry, those with newer ties to one side, shallower institutionalization of relations, less intertwined security situations, and divergence in regime type, political openness, or diplomatic relations could be opportune targets. Finally, a country's domestic politics and the efforts of its leaders to leverage international rivalries for their country's gain, also shape which countries may be both targeted and affected by peeling.

H_{peel} : Countries more aligned with one's rival should receive more vaccine doses.

These four strategies could be pursued in isolation, but with sufficient logistical capacity and vaccine supply, a basket of strategies could be pursued and dynamically influence the approach of others. Due to space constraints, this piece does not theorize or adjudicate which factors, be they domestic, international, or temporal predict which strategies a providing country employs.[8] Instead it assesses, based on the available evidence, which strategies the US and China appeared to use.

[7] For more on how this speaks to the study of international hierarchy, see (Ikenberry and Nexon 2019; Mattern and Zarakol 2016; Mcconaughey, Musgrave, and Nexon 2018; Musgrave and Nexon 2018)

[8] Some promising work regarding strategy selection cites domestic capacities of providers (Suzuki and Yang 2022). Additionally, regime type could shape the timing and selection of strategies - electoral constraints of democratic governments may push such governments to prioritize domestic inoculation relative to autocratic regimes.

3 Research Design and Methods

I turn now to US and Chinese patterns of vaccine deliveries. First, I regress US and Chinese vaccine deliveries at the country-month level on a host of covariates that link to the four strategies. Then, I process trace US donation decision-making drawing on 26 senior and working-level interviews of those working on, or advising US vaccine distribution. Variation in vertical and horizontal positionality gave insights into cross-team deliberations, actor responsibilities, and evidence corroboration (Collier 2011; Davies 2001; Tansey 2007). Finally, I examine the cases of US donations to Paraguay and Nicaragua.

I analyze evidence within a Bayesian heuristic framework (Bennett and Checkel 2015; Bennett, Charman, and Fairfield 2021; Fairfield and Charman 2017; 2022). This involves "mentally inhabiting" the world of each hypothesis to assess the likelihood of outcomes and evidence relative to what that specific hypothesis predicts relative to others (Hunter 1984). We gain confidence in the hypothesis wherein that evidence is more expected (Fairfield and Charman 2022, 16). What matters is not whether evidence is *consistent* with a particular hypothesis, but rather if it is *more likely* to be observed in a world of that hypothesis compared to alternative worlds of the rival explanations. Evidence that could occur under more than one of the hypotheses can still increase confidence in one of the hypotheses over rivals if it is *less expected* under the rivals.

Bayesian analysis requires mutually exclusive hypotheses, and while the strategies are not mutually exclusive, the hypotheses of which combination a state uses, are. For both the US and

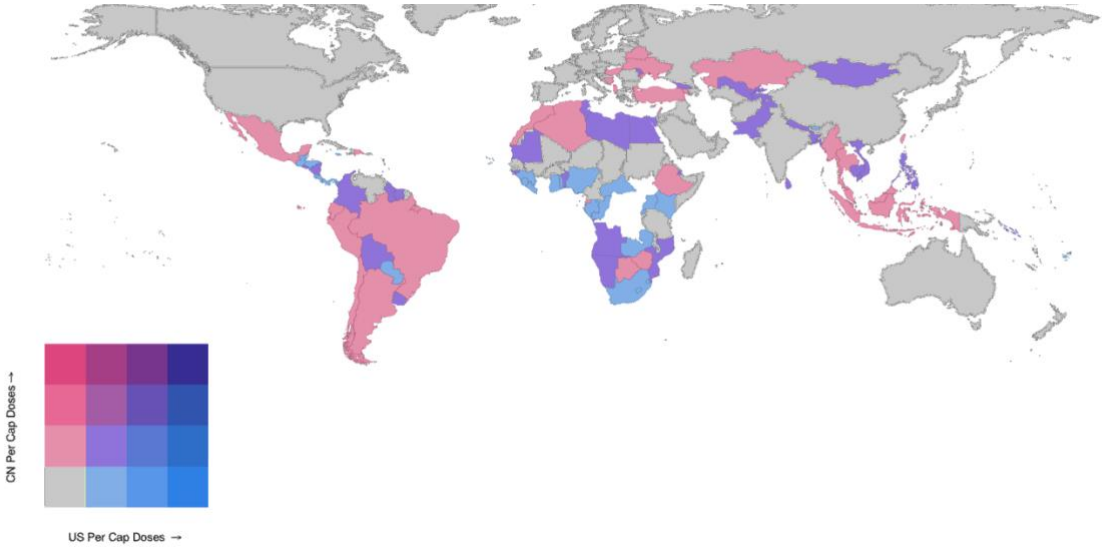
China, I use the foreign aid literature's findings of instrumental provision[9] to hypothesize the US and China will primarily *preserve* friends and *pressure rivals (preserve-pressure).* An alternative hypothesis is they primarily prioritize *protecting* public health and then consider *peeling* other countries *(protect-peel).* They could eschew the latter and focus entirely on a public health *protecting* strategy.[10] Following both the mixed findings of donor interest and recipient need, I use indifference priors for these hypotheses, though for Nicaragua and Paraguay, I apply case-specific priors (Fairfield and Charman 2022, 99, fn. 39).

4 The Empirical Record Donations

As of the spring of 2023, China has delivered 1.64 billion doses with roughly 82% of doses as exports (Bridge Consulting 2022). The US has delivered over 684.2 million doses of vaccine and pledged another 415.8 million doses for a total of 1.1 billion doses (Kaiser Family Foundation 2022). Essentially all US doses have been donated, mostly in a multilateral fashion through the COVID-19 Vaccines Global Access or COVAX mechanism. Early US doses were donated bilaterally.[11] Figure 1 shows the geographic distribution of both vaccine deliveries per capita in the world.

[9] See Hoeffler and Outram (2011). Similarly, Dreher et al. (2013) find temporary UNSC causes increased aid provision, confirming Kuziemko and Werker (2006). Findings also apply to China (Dreher and Fuchs 2015; Harchaoui, Maseland, and Watkinson 2021; Liu and Tang 2018; Regilme and Hodzi 2021).
[10] For a full discussion of the full range and discussion of alternative explanations, see the appendix.
[11] This is discussed as a piece of evidence in the Appendix.

Figure 1 US and Chinese Dose Distribution



US data from the Kaiser Family Foundation,
Chinese data from Beijing Bridge Consulting

To assess distribution systematically, I employ a linear model regressing confirmed delivered doses starting from January 2021 through December 2022.[12] This is a descriptive, rather than causal model, illustrating where doses went a period of acute demand. The unit of analysis is country-month and the dependent variables are Chinese or US doses delivered to a particular country in a given month.

I use the following specifications.

$$log(Doses) = C + \beta_1 Strategic\ Factors_i + \beta_2 Public\ Health\ Factors_i + \beta_3 Controls + \varepsilon_i$$

[12] This excludes doses provided for phase III testing. These confirmed delivered doses from the Kaiser Family Foundation (US doses) and Beijing Bridge Consulting Company (Chinese doses).

To expand on β_1, I add covariates between recipients and the US and China relevant to the *preserving* and *pressuring* strategies. The first is ideological similarity, proxied with average pre-pandemic dyadic UN vote ideal point distance between recipients and the US and China (Bailey, Strezhnev, and Voeten 2017).[13] Distinct from ideological similarity is strategic closeness, measured with binary alliance status with the US Ally (Leeds et al. 2002) as well logged arms exports to recipient countries.[14] Aid and trade also proxy for geopolitical interest (Kilby 2006), so I include logged measures of both, averaged from 2017-2019 and drawn from the OECD and AidData (Dreher et al. 2020). Since like-mindedness could also be a function of regime type, I political openness with V-Dem scores (Coppedge et al. 2021).[15]

To examine peeling strategies relevant to the US and China, I construct a 0-4 index for membership in Chinese-led organizations: AIIB, Shanghai Cooperative Organization (SCO), the Belt and Road Initiative (BRI), and the Regional Comprehensive Economic Partnership (RCEP). I also consider the logged total BRI investments per capita between 2013 and 2020 (Chen 2022)[16] In robustness checks, I also include a Recognize Taiwan in 2020 binary since Taiwan's allies are in the middle of the US-China rivalry (Portada, Lem, and Paudel 2020). Finally, for the US, which started providing vaccines after China, I also include Total Chinese doses (log) from the Beijing Bridge Consulting tracker.

[13] Because this is a unidimensional scale, I follow the recommendation of Bailey et al. (2017) and only include one ideal point distance in a particular model.
[14] This comes from the Stockholm Institute for Peace Research Arms Transfers Database.
[15] Other checks available on request include use of Freedom House Political Rights and Civil Liberties scores in the case of US donations (Cruz, Keefer, and Scartascini 2021). There were no associations with civil liberties, though greater political rights were negatively associated with US bilateral donations and positively associated with US COVAX and overall donations.
[16] In other tests available on request, I also construct and test this measured through attendance at the BRI forums (Broz, Zhang, and Wang 2020).

For the strategy of protecting public health, β_2 I draw on metrics identified in interviews - new cases and deaths in recipient countries, lagged by one month and aggregated to the country-month level (WHO Health Emergency Dashboard 2022).

Controls such as country population and GDP per capita are also included, though in this case, the interpretation of the latter may have implications for *protecting* and *preserving* hypotheses. Wealthier countries might be able to pay for vaccines suggesting a potential strategic implication if there is a positive association.[17]

This analysis is not meant to imply Chinese and US doses or their allocation mechanisms are identical. Vaccine efficacy certainly varies, as does whether the countries distributed doses bilaterally or multilaterally. While there was some US input which will be discussed below, the dose distribution process for China and the US was not directly equivalent. Thus, the quantitative findings should be interpreted as patterns of the specific provider, given its particular distribution approach and degree of control.

4.1 Quantitative Findings

The dependent variables, logged doses provided, differ by provider so I report results for China and the US separately. Table 1 **Chinese Delivered Doses by Mechanism**presents results for Chinese distribution, controlling for Chinese trade and recipient population. It shows strong and consistent associations with a strategy of *protecting* public health and *preserving* existing friends. The *pressuring* opponents comes from additional consideration of countries that recognize Taiwan.

[17] This strategic calculus for prioritizing wealthier countries was directly articulated in the Trump plan for international vaccine donation, discussed below.

Models 1 and 2 analyze all Chinese vaccine deliveries, while 3-4, and 5-6 analyze donations and exports respectively. First, there is a strong association between reported COVID-19 deaths and Chinese vaccines. The interpretation for Model 2 would be that a 50% increase in lagged COVID deaths is correlated with a 30.1% increase in actual Chinese doses delivered. Other associations suggest political and strategic relations matter: a 50% increase in logged arms exports from China is associated with a 21.2% increase in Chinese doses and there are similar correlations between dyadic UN voting similarity and more embeddedness in Chinese-led organizations.[18]

Recipient relations with the US also matter for Chinese doses; countries with more *different* voting records from the US received *more* Chinese doses. Similarly, countries that import more arms from the US received fewer donations from China. Strikingly countries that recognize Taiwan, as well as those which hosted the Dalai Lama since 2017 did not receive *any* doses from China.[19]

These correlations are to be expected if China pursued a combined *pressure-preserve-protect* strategy. The prioritization of arms partners, like-minded states, members of Chinese-led organizations, and BRI partners is entirely expected if taking this approach, but would be very surprising under a pure *protecting* strategy. Similarly, the lack of doses to Taiwan's allies and reporting that the PRC withheld doses to Ukraine until it withdrew support from UN motion regarding the mistreatment of Uyghurs are both unsurprising under a *pressure-preserve-protect*

[18] The exception here is UNIDP with China, which is negative and illustrates the same point. A smaller a dyadic UNIDP, the closer the countries are in their votes, so countries that vote more similarly with China (smaller UNIDP) are associated with more Chinese doses.

[19] For the former as a tabular result, see Appendix 2.2. Discussion of the Dalai Lama is in Appendix 2.3

Table 1 Chinese Delivered Doses by Mechanism

	Dependent variable (Log):					
	All doses		**Donated** doses		**Exported** doses	
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged COVID cases	-0.098**	-0.116**	-0.005	-0.017	-0.098**	-0.108***
	(0.049)	(0.049)	(0.036)	(0.036)	(0.041)	(0.041)
Lagged COVID deaths	0.630***	0.650***	0.191***	0.211***	0.544***	0.552***
	(0.051)	(0.051)	(0.037)	(0.037)	(0.043)	(0.043)
Ideal point distance from China	-0.668***		0.041		-0.703***	
	(0.149)		(0.108)		(0.124)	
Arms Exports from China (Log)	0.486***	0.475***	0.232***	0.204***	0.362***	0.370***
	(0.055)	(0.055)	(0.040)	(0.040)	(0.046)	(0.046)
BRI investment per capita (Log)	0.087***	0.092***	0.088***	0.089***	0.018	0.023
	(0.034)	(0.034)	(0.024)	(0.024)	(0.028)	(0.028)
CN-led org membership	0.298***	0.301***	0.252***	0.281***	0.202***	0.182***
	(0.081)	(0.083)	(0.059)	(0.060)	(0.068)	(0.069)
Ideal point distance from US		0.914***		0.462***		0.613***
		(0.132)		(0.096)		(0.111)
Arms Exports from US (Log)	-0.040	-0.047	-0.067**	-0.070**	-0.025	-0.033
	(0.042)	(0.043)	(0.031)	(0.032)	(0.035)	(0.036)
US ally	-0.100	-0.024	-0.019	0.044	-0.175	-0.144
	(0.147)	(0.148)	(0.107)	(0.108)	(0.122)	(0.124)
V-Dem Score	-0.122	0.915**	-0.622**	0.082	0.339	0.907***
	(0.365)	(0.410)	(0.265)	(0.298)	(0.304)	(0.342)
Chinese Aid (Log)	0.045***	0.039***	0.0003	-0.011	0.045***	0.046***
	(0.012)	(0.011)	(0.008)	(0.008)	(0.010)	(0.010)
GDP per capita (Log)	-0.504***	-0.469***	-0.513***	-0.436***	-0.147	-0.162*
	(0.111)	(0.109)	(0.080)	(0.080)	(0.092)	(0.092)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,745	3,722	3,745	3,722	3,745	3,722
R^2	0.155	0.162	0.073	0.078	0.146	0.147
Adjusted R^2	0.152	0.159	0.070	0.075	0.143	0.144
Residual Std. Error	3.991 (df = 3731)	3.987 (df = 3708)	2.902 (df = 3731)	2.902 (df = 3708)	3.324 (df = 3731)	3.332 (df = 3708)

F Statistic	52.783*** (df = 13; 3731)	54.945*** (df = 13; 3708)	22.629*** (df = 13; 3731)	24.280*** (df = 13; 3708)	49.180*** (df = 13; 3731)	49.096*** (df = 13; 3708)

Note: *p**p***p<0.01

strategy. If Chinese distribution strategy omitted any protecting public health component, the correlations with new COVID-19 deaths would also be extremely relative to a strategy that included public health considerations.

Moving to the analysis of US vaccine donations, **Error! Reference source not found.**presents US donations patterns controlling for US trade, recipient population, and the amount of Chinese doses received. It shows correlations expected under a *protect-peel* strategy, but quite surprising if it followed a *preserve-pressure* based one. In the latter case, one would expect allies, allies of Taiwan, democracies, and strategic partners that buy US arms to be rewarded with more doses. Similarly, one would expect those closer to China and autocratic states, to receive fewer doses. However, this is not what is observed.[20]

Instead, all US donations are predicted by lagged and logged COVID deaths. Using Model 3, a 50% increase in lagged COVID deaths is correlated with a 4.13% increase in US bilateral donations delivered. There is no evidence that ally status, regime type, or UN voting alignment – with either the US or China – played much of a role. US arms importers also received fewer doses. Model 1 suggests a 50% increase in US arms exports would be correlated with a 4.7% *decrease* in US overall doses donated, but a similar increase in Chinese arms exports would predict a 17.5% *increase* in US donations. Rather than being punished for voting more similarly to China in the UN, such countries received more donated US doses.

Differences between bilateral and COVAX patterns are also more likely if the US followed a *protect* and *peel* strategy relative to a *pressure* and *preserve* one. Under the latter, as the US

[20] For Taiwan allyship and US donations, see Table A2 in the Appendix.

switched from bilateral to multilateral, one would expect the US to launder its donations through COVAX, ultimately *preserving* friends or *pressuring* rivals the way it might with bilateral donations. However, a *protect-peel* strategy wherein the US delegates decision-making to COVAX and decreases its own ability to specifically target or reward certain countries would make for divergent patterns between bilateral and multilateral distributions. This is what is observed, and is again, far more likely under a *protect* and *peel* approach, relative to a *pressure* and *preserve* one.

Overall, the quantitative evidence suggests that the Chinese vaccine allocation followed a *preserving, pressure,* and *protect* strategy while the United States donations followed a *peel* and *protect* strategy. Findings are robust to various checks found in the appendix, including robust regressions, two months lags, month-fixed effects, the use of excess mortality instead of reported deaths, and a cross-sectional analysis that focuses on the time-invariant correlations of vaccine distribution.

Table 2 US Donations and Reported Deaths

	Dependent variable (Log):					
	All doses		**Bilateral** doses		**COVAX** doses	
	(1)	(2)	(3)	(4)	(5)	(6)
Lagged COVID cases	0.014	0.012	-0.038**	-0.037**	0.060	0.058
	(0.051)	(0.051)	(0.017)	(0.016)	(0.046)	(0.046)
Lagged COVID deaths	0.021	0.028	0.100***	0.099***	-0.104**	-0.097**
	(0.053)	(0.053)	(0.017)	(0.017)	(0.047)	(0.047)
Ideal point distance from US	-0.032		0.094**		-0.043	
	(0.140)		(0.045)		(0.125)	
Arms Exports from US	-0.107**	-0.097**	-0.007	-0.005	-0.102**	-0.094**
	(0.045)	(0.046)	(0.015)	(0.015)	(0.041)	(0.041)
US ally	-0.235	-0.208	-0.014	-0.017	-0.202	-0.178
	(0.154)	(0.153)	(0.050)	(0.049)	(0.137)	(0.137)
US Aid	0.207***	0.199***	0.027	0.024	0.179***	0.172***
	(0.055)	(0.056)	(0.018)	(0.018)	(0.050)	(0.050)
Ideal point distance from China		-0.318*		-0.132**		-0.256*
		(0.165)		(0.053)		(0.147)
Arms Exports from China	0.397***	0.377***	0.002	-0.001	0.361***	0.344***
	(0.057)	(0.058)	(0.018)	(0.019)	(0.051)	(0.052)
BRI investment per capita (Log)	0.034	0.031	-0.010	-0.012	0.005	0.003
	(0.034)	(0.034)	(0.011)	(0.011)	(0.030)	(0.030)
CN-led Org Membership	-0.130	-0.129	-0.055**	-0.057**	0.008	0.009
	(0.083)	(0.083)	(0.027)	(0.027)	(0.074)	(0.074)
V-Dem Score	0.801*	0.987***	0.208	0.133	0.825**	1.000***
	(0.424)	(0.381)	(0.137)	(0.123)	(0.379)	(0.341)
GDP per capita (Log)	-0.680***	-0.583***	-0.099**	-0.086*	-0.310**	-0.227*
	(0.147)	(0.150)	(0.047)	(0.048)	(0.131)	(0.134)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3,722	3,722	3,722	3,722	3,722	3,722
R^2	0.100	0.101	0.040	0.041	0.086	0.087
Adjusted R^2	0.097	0.098	0.037	0.037	0.082	0.083
Residual Std. Error (df = 3707)	4.119	4.117	1.331	1.330	3.686	3.684
F Statistic (df = 14; 3707)	29.445***	29.736***	11.087***	11.221***	24.866***	25.092***

Note: *p**p***p<0.01

4.2 Tracing US Decision-Making

The empirical record suggests differing baskets of strategies between China and the US. Yet to gain insight into the considerations and calculations of the US approach, one cannot rely on observed outcomes. Thus, I process trace US vaccine decision-making in two time periods: the Trump administration and the Biden administration using original interviews. Interviewees ranged in perspective from senior advisors to desk-level officers, as well as a range of departments from State and Defense to Health and Human Services (HHS), USAID, and the Executive.[21] These provided breadth, depth, and the chance to triangulate across sources and departments. For both the Trump and Biden administrations, it appears the White House and National Security Council (NSC) were at the heart of determining US donation policy and implementation (USAID 2021; White House 2021a; 2021c). [22] The findings diverge between administrations with evidence from the Trump administration weighing in favor of a *preserve-pressure* approach. Evidence from the Biden administration, which actually distributed these donations, weighs heavily in favor of a *protect-peel* strategy.

4.2.1 The Trump Administration

During the Trump administration, little attention went to international distribution. One former Trump official described the emerging strategy as "pretty weak in terms of the global view"(Respondent 14 2022). Still, in December of 2020, President Trump signed Executive Order 13962 mandating the government create a plan for global distribution in 30 days (Trump 2020, 139). The subsequent plan was unambiguous that friendly countries would be the priority.

[21] A full discussion of the sample, sampling strategy, and interview conduct is found in section 3.2 of the Appendix.
[22] Congress appeared to be involved only in a funding approval capacity (Respondent 15 2022, 15).

According to then Deputy Chief of Staff for Health and Human Services Paul Mango, the plan – never publicly released, had the following prioritization:

1) Strategic allies such as Israel, Canada, Taiwan, South Korea, and some European nations.
2) Countries that had helped develop the vaccine.
3) Countries with relationships to the Global Vaccine Alliance (Gavi),
4) Any other countries that were not included in the above groups.[23]

Mango stated there was "not really" any ethical concern about putting strategically important and wealthy countries at the top of the list. When asked directly about whether there would be consideration for COVID-19 case numbers or spikes, Mr. Mango stated, "I sat in on a lot of those meetings, and there was no consideration of that at all" (Mango 2022).

Under an instrumental approach of *pressuring* and *preserving* through distribution, the Trump plan is entirely expected. The prioritization of strategic allies like Israel, Taiwan, and South Korea, all in geopolitical hotspots, is quite likely relative to a world wherein the US follows a *protecting* public health strategy.[24] Under a *protecting* strategy, it would be very unlikely relative to the instrumental strategy; these countries have strong healthcare systems and had at that point, contained the virus fairly well. Consequently, the COVID-19 burden was low such that this prioritization would be unexpected from a public health standpoint. This evidence weighs in favor of the Trump administration pursuing a *preserve-pressure* strategy compared to a *protecting* public health.

[23] Dep. Chief of Staff HHS Paul Mango confirmed that his department along with others listed in the order had thirty days to create the plan for vaccinating other countries and that the finalized plan would prioritize "strategic partners"(Author interview with Paul Mango 2/24/2022).
[24] A more expansive Bayesian weighting of this evidence is in the Appendix. See Appendix 3.41.

4.2.2 Transition to the Biden Team

If the Trump administration had stayed in office, the US practice of distribution may well have followed such a plan. Yet, the Biden administration ultimately oversaw US global distribution and this transition itself was less-than-amicable. Mr. Mango described it as 'rocky' and blamed the incoming administration for 'not showing up'.[25] A Biden officer in USAID noted they were not aware of a plan inherited from the previous administration (Respondent 15 2022). Strikingly, Col. Matt Clark who served as program manager for the Trump administrations Operation Warp Speed's vaccine team and then as President Biden's Senior Policy Advisor and Director of International COVID Response Operations stated:

> There was nothing at all that was handed off that I'm aware of. That doesn't mean it didn't exist but there wasn't any published strategy really until this [Biden] administration prepared to publish strategy. (M. G. Clark 2022)

Thus, it appears the Biden administration did not appear to receive or act on a Trump plan. It stated it "does not use the previous administration's policy or the cited list to make vaccine-sharing decisions" (Banco 2022) Instead it devoted substantial time and resources to developing its own 'core principles' and global plan that reportedly only focused on getting doses into arms (Respondent 18 2022).[26] Publicly, the administration stated US doses would have no strings attached (Blinken 2022) nor be used "to secure favors from other countries" (White House 2021a; 2021b; 2021c).[27]

What is the inferential weight of this evidence – do such public statements increase confidence that Biden's administration was *protecting* rather than *preserving* and *pressuring?*

[25] Mr. Mango claimed the Biden team "never showed up" in-person to meetings despite the accommodations of the Trump team (Mango 2022).
[26] See Appendix 2.3.2 for additional testimonial and Bayesian analysis.
[27] This point was echoed in nearly every interview with those who directly worked on vaccine distribution across levels of seniority. A full discussion of these testimonials can be found in the Appendix.

Under a *protection* strategy, the US is likely to make such statements, but such statements are about as likely under an instrumental strategy. Even in the combined *preserve* and *protect* approach, the administration would make similar statements, so we do not necessarily gain confidence that the Biden administration focused on *protecting* public health, relative to an instrumental approach. However, the need to develop 'core principles' – a process described as long and time-consuming, does provide some inferential weight (Respondent 18 2022). It would be rather surprising to encounter this evidence if the Biden team simply implemented the *preserving* and *pressuring* outlined under Trump, relative to a strategy that is focused more on *protecting* public health. This is far more expected under the latter approach, relative to the former, so this increases confidence that the Biden team not only took a different approach from Trump's, but that such an approach prioritized *protecting* public health.

4.2.3 Donations: Deciding and Delegating

Recommendations to the NSC for where to donate were based on cases per capita, cases per 100,000, and death rates, with priority appearing to shift between hotspots rather than staying on particular regions or countries (Former US State Department Officer 2021).[28] In describing this, one State officer said "People wanted to make sure that countries were getting it that needed it the most. I just want to commend the people who were staying impartial. There was nothing I saw that would have concerned me as a private citizen (Former US State Department Officer 2021; 2022, 1). However, early US donations were bilateral[29] and some individuals did admit, with some hesitancy, that the US was tracking where China sent its doses. Despite this, an individual in a different department, stated, "there doesn't seem to be any sense of …like dark murky waters of

[28] Longer Bayesian discussion in Appendix 2.3.2..

[29] [29] I treat the shift and the timing of the shift from bilateral to COVAX donations as its own evidence in Appendix 2.3.3. It weighs in favor of *protect-peel* relative to *preserve-pressure.*

you know who gets what exactly. it's pretty upfront and pretty transparent in that regard" (Respondent 16 2022).

Those in the Department of Defense (DoD), tasked with implementing policy (M. G. Clark 2022; Former Department of Defense Officer 2022a; 2022b), offered a different perspective. Interviewees admitted there *were* conversations entailing the use of strategic, political, or other as one respondent put it, 'national interest' considerations for determining destinations. One officer participating in weekly meetings with the NSC noted how a representative from the Stability and Humanitarian Assistance group inquired about geopolitical and strategic considerations for recipients. They were then told those were not and would not be considered. A senior-level advisor from the Department of Defense even separately noted their surprise at the *lack* of such strategic considerations:

> Full disclosure, I came here fully expecting and fully kind of hoping that we would be thinking about national interests… you know, 'Hey let's help first' but secondarily support it…And then I when I got here, I was told nothing can suggest that this is vaccine diplomacy. Because it's not. It needs to be around why you were over there, and now you're here, which is delivering vaccines, where they can get used and not sit around. (Respondent 14 2022)

Consider not whether evidence is consistent with a *protect-peel* hypothesis or a *preserve-pressure* hypothesis, but rather whether such evidence is more expected in one over the other. The testimonials of those in the State department are expected under both hypotheses; one would expect under the former officials would report a focus on getting doses to where they are needed. One would also expect such individuals to report no 'murky waters' or 'grand conspiracy' because that would be the truth. Yet this is also what one would expect under a *preserve-pressure* hypothesis because the political sensitivity of such calculations would make such admissions

extremely unlikely. Thus, this evidence alone does not provide weigh heavily in favor of either hypothesis.

However, the testimonies from the Department of Defense are a different matter. It is unlikely a Defense officer would hear of people inquiring about the possibility of adding strategic and political considerations if these were in fact, already considered. Similarly, senior testimony regarding the surprising lack of 'national interest' considerations is extremely surprising if the US was already *pressuring* or *preserving* some states. Yet this is expected under a *protect-peel* approach. Moreover, those interviewed spoke not only to their direct experience but also what was observed in larger, regular meetings with the NSC. With insights spanning multiple agencies and levels of seniority, it is implausible these individuals were unaware of secret political calculations. To the contrary, they were aware of such conversations and heard such considerations expressly rejected.

A final piece of evidence to consider is the fact that many interviewees noted the US was tracking Chinese doses.[30] Suggested reasons varied and included a concern that those vaccinated with less efficacious Chinese doses were still vulnerable. This is far more expected under a *protect-peel* strategy relative to a *preserve-pressure.* Chinese doses could be the result of severe COVID-19 situations or could provide a proxy for which populations have access to some degree of COVID-19 protection. As new variants emerged, this information would also be helpful because it became clear Chinese vaccines were had lower efficacy relative to Moderna and Pfizer, and such data could reveal which populations appeared 'protected' but were actually still susceptible. Thus, one can convincingly reason why under a *protecting* strategy, the US would track Chinese doses. From a *peeling* perspective, such information is also quite expected. Concerns that China was

[30] This is discussed more in the Appendix.

courting countries through vaccines would make this information crucial if the US wanted to match, counter, or even out-donate vaccines. However, this is less expected under a *preserve-pressure.* Preserving friends focuses attention on one's allies, and it is less immediately obvious what information about Chinese distribution patterns does to provide new insight into which countries are politically or strategically important for the US. From a *pressure* perspective, Chinese dose information could be useful insofar as outside access to Chinese vaccines might undercut any US leverage that comes from conditionality or withholding. But on the whole, this small detail is far more expected under a *protect-peel* approach than a *preserve-pressure* one, and thus, like the Defense testimonies, weighs in favor of the former.[31]

4.2.4 COVAX and the Multilateral Distribution of the US

In its collaboration with COVAX, the US had some input in the latter's delegation. As Biden's National Security Advisor Jake Sullivan noted, "Ultimately, the United States *will have* [original emphasis] the authority to say the doses are going here, as opposed to there, but that will be done in very close consultation and partnership with COVAX and *crucially,* according to COVAX's formula…"(J. Sullivan 2021). Yet those inside and outside the Biden administration still observed the US largely delegating decision-making to COVAX. Interviewees noted a feeling of 'outsourcing' by August and September of 2021:

> Respondent: August or September of 2021 was when it really started shifting over to you know just give it all to COVAX and let them decide…We're not doing this for political favors, we're giving it to them so they can distribute as they see fit. (Former US State Department Officer 2022)

Another officer in USAID described tracking recipient demand and vaccination rates to send to COVAX. They stated:

[31] Longer Bayesian discussion in Appendix 2.3.4..

> Vaccine …basically, all the allocation and determinations of where the donations are going to run through COVAX, and that …takes away all of the like weird convoluted dotted lines like flow of vaccines. and puts it all into basically one warehouse. (Respondent 16 2022)

These testimonials weigh in favor of *protect-peel* over *preserve-pressure.* Under the former, moving doses quickly to those in need is paramount, and thus using COVAX's centralized No-Fault Compensation Mechanism (WHO n.d.) is quite expected. This is because COVAX's compensation mechanism precludes the need to create separate indemnity agreements with each recipient. In a *preserve-pressure* world, this is surprising because such individualized negotiations could create leverage opportunities; the increased inefficiency would be a small cost compared to the potential political gain. Giving this up by going to COVAX is thus quite surprising if the US was operating with a *preserve-pressure* approach, so this weighs in relative favor of *protect-peel*.

Overall, while the process tracing from the Trump administration weighs in favor of a *preserve-pressure* hypothesis, the actual practice of US global donations under the Biden administration weighs heavily in favor of a *protect-peel* hypothesis.

4.3 Cases of Vaccine Distribution: Paraguay and Nicaragua

I turn now to specific cases of vaccine donation to observe how public health and geopolitical factors shape decisions in particular cases. Paraguay and Nicaragua are useful cases to compare; both are presidential republican systems in Latin America – a region the US has stated it would prioritize donations (White House 2021a). They share certain similar demographic

characteristics,[32] and important in the context of great power rivalry, both were historic allies of Taiwan.[33]

While these countries have some similarities, there are also important aspects of heterogeneity. Paraguay's GDP of roughly 39 billion USD is over double that of Nicaragua's (14.01), and GDP per capita is substantially higher ($5,400 vs. $2,090). This shows differential abilities to pay for vaccines. Perhaps more importantly, they also differ in their relations to the US and political openness. Paraguay has a Freedom House rating between 64 or 65 between 2017 and 2021 (Freedom House 2021), and public approval of US leadership was roughly 50%.[34] Relations have historically been cooperative (Beittel 2010; Mora and Cooney 2010). Nicaragua presents a different situation. Under President Ortega, Nicaragua has experienced substantial democratic backsliding, jailing opposition candidates, banning NGOs, and cracking down on journalists. Its Freedom House score dropped from 47 to 23 from 2017 to 2021 during which time relations with the US have become increasingly fraught. From this variation, a *preserve-pressure* hypothesis would predict US donations to both countries given their recognition of Taiwan, but that Nicaragua might be sensitive to, or conditional on improved democratic practices. Conversely, *protect-peel* would predict US donations regardless of Taiwan recognition and timing that is proximate to COVID-19 severity.

[32] Paraguay's population is roughly 7.2 million while Nicaragua's is roughly 6.2 million and the country's life expectancy are 74 and 75 respectively. Their median ages are 29 and 27 the two countries had historically similar levels of inequality. Recently however, Paraguay's Gini coefficient has dropped to 43.5 while Nicaragua's remains around 46.2 (World Bank 2022).

[33] At the time the US donated vaccines in October, it still was recognizing Taiwan. On December 9, Nicaragua announced it was severing ties with the island and instead establishing relations with the PRC(Myers 2021). Days after the announcement, the PRC delivered 200,000 vaccines to the country as part of a larger promise to provide 1 million doses to the country(BBC 2021).

[34] Paraguay's public approval of US leadership was 48% with 35% refusing or answering "Don't Know" (Gallup 2015).

4.3.1 Protecting Paraguay

Paraguay received two, million-dose donations from the United States on July 9th and July 27th. This was a few months after allegations China was offering vaccines in exchange for severing ties with Taiwan (Graham-Harrison 2021; Horton and Parks 2021; Reuters 2021). Paraguay's foreign minister Euclides Acevedo stated, "President Xi Jinping has a lot of interest in a tie-up with us" (Parks 2021), challenging the US and Taiwan for "proof of their [US and Taiwanese] love". He followed up asking, "What good is a fraternal embrace that leaves us in a state of respiratory failure?"(Londoño 2021).

The timing of US donations might appear likely under a *preserve-pressure* hypothesis as a response to these Chinese overtures, though Paraguay's Foreign Ministry denied the legitimacy of such PRC overtures (Graham-Harrison 2021). Yet, setting aside that Taiwan ally status was not statistically associated with US vaccine donation,[35] the timing and amount of the second million would either be coincidental or require additional explanation.[36] Unless there was a substantial political or strategic shift in relations that would motivate the rapid second distribution of doses, this second donation appears more coincidental.

By contrast, the timing of US donations is likely from a *protect-peel* hypothesis. Demonstrated ability to receive and distribute doses is critical in vaccinating as many people as possible (PAHO 2021; n.d.; M. G. Clark 2022) and one interviewee who worked on the donations to Paraguay suggested the provision of one million doses on July 9th, and the subsequent million doses donated on July 27th in particular, were made based on an assessment of Paraguay's ability to absorb and distribute doses. Initially, the Paraguayan government was administering about

[35] See Table A.3 in the appendix.
[36] It is worth noting that quantitatively, Taiwan ally status did not demonstrate statistically significant correlations with US vaccine donations across any model. See the Quantitative Appendix Table 3.

20,000 doses per day, meaning the initial tranche of one million doses from July 9th would last a few months. Yet following the introduction of the "Expanded Program on Immunization", which included a large-scale, car-based mass vaccination campaign , their daily administration of doses rose to 100,000 (Respondent 14 2022; MercoPress 2021). Senior Advisor Clark noted that with this information, the US assured Paraguay' it could quickly provide another million doses – news reportedly met with relief and jubilation (M. G. Clark 2022) Overall then, the evidence is more expected if the US is *protect-peel* world compared to a *preserve-pressure* one, increasing confidence in the former.

4.3.2 No Strings in Nicaragua

The US has provided aid to Nicaragua conditionally (Burke et al. 2005) and has historically cut assistance when the latter experienced democratic backsliding. In 2011, President Ortega side-stepped the Constitution and secured re-election – a moment that Secretary of State Clinton described as "a setback to democracy" (Rogers 2012). In response, the US slashed $3 million in assistance. In 2018, the passed legislation to limit both its own, and multilateral lending assistance to the country.

Recent times have not improved US-Nicaraguan relations as President Ortega continued jailing political opposition and repressing dissent. The US levied additional sanctions on top Nicaraguan officials (Harrison 2022) and pre-emptively declared the November 2021 elections illegitimate (Blinken 2021). Yet, the US promised 1.4 million doses and delivered 305,370 doses of Pfizer on October 29th - a little over a week before the 'illegitimate' November 7th election (AFP 2021). US Ambassador to Nicaragua, Kevin Sullivan stated that election considerations were not a concern:

> Ambassador Sullivan: The White House described the Nicaraguan elections as sort of a 'pantomime'. So that sort of climate is not easy to warm up through vaccine donations.

> Author: …Were there any discussions about how vaccines might interact with the elections given the authoritarian context?
> Ambassador Sullivan: I mean, I think our, our approach on that has been pretty clear and that when it came to vaccine donations and the pandemic in general, our actions would be based on public health considerations and not on other things. (K. Sullivan 2022)[37]

Despite this, on December 10, 2021, Nicaragua officially severed ties with Taiwan and recognized the PRC. Four days after it did so, it received 200,000 donated Sinopharm doses – the first of 1 million donated doses from the PRC (BBC 2021). The US was sharply critical of Nicaragua's action (Myers 2021) but still provided a second donation of roughly 650,000 doses of Pfizer – including pediatric doses in July of 2022 (Confidencial 2022).

Under a *preserve-pressure* strategy, its donation record to Nicaragua extremely is surprising. If the US sought to *pressure* Ortega's regime, it would be unlikely to donate without conditionality on say, the release of political prisoners. It would also be unlikely to donate around the election for fear of allowing Ortega to claim credit, project competence, or provide a timely source of rents to sway voters. Thus, the first round of donations and the timing are extremely surprising or highly coincidental. If it sought to *preserve* Taiwan's allies, it would not donate after Nicaragua flipped recognition away from Taiwan and the second round of donations in July of 2022 is similarly surprising, especially since the US legislation threatening to punish states that abandon Taiwan (116th United States Congress 2020), so one would not expect the US to donate 1.4 million doses after Nicaragua's change in recognition.

By contrast, under a *protect-peel* world, these donations to Nicaragua would be entirely expected; Nicaragua was experiencing both a spike in cases and in deaths around the time of the first donation. New daily cases reached an all-time high of 718 roughly one month before the

[37] A Bayesian discussion for this testimonial is also in Appendix 2.3. The testimonial alone does not weigh in favor of either *protect-peel* or *pressure-preserve.*

October donation with total cases exceeding 16,000 a few weeks later. Given reports from the WHO's COVID-19 study of excess mortality that Nicaragua's actual COVID deaths were up to 55 times higher than reported, the spikes occurring in September and October have the potential to be even more urgent and salient to US decision-makers at the time. The detail of pediatric doses in the second round of donations is also quite expected since vaccination of children older than three had only begun in May 2022 with Sinopharm and the Cuban-made Sobrena-02 vaccines. It is thus expected that not long after pediatric vaccination began, the US would follow through and donate a large number of doses.

In sum, the cases of US donation to Nicaragua and Paraguay further increase confidence that the US pursued a *protecting public health* strategy relative to an instrumental use of vaccines to *pressure* illiberal states or *preserve* friends. The timing and amounts of US doses are far more expected if the health considerations are the primary drivers of US vaccine policy, while they are extremely surprising or coincidental if strategic or political concerns were preeminent.

5 Implications and Conclusion

This article provided a framework of four strategies that are generalizable to other contexts of provision and examined vaccine provision during the COVID-19 pandemic. In analyzing Chinese and US vaccine distribution, it found China and the US employed different baskets of strategies. Both appeared sensitive to recipient need, though China also favored ideological, strategic, and BRI partners, while denying vaccines to Taiwan's allies or Dalai Lama-hosting countries. The US – late to global vaccine provision and accused of "vaccine-hoarding" – did eventually begin donating to countries with more severe COVID burden and to those more aligned with China. Applying Bayesian reasoning to insights from original interviews about US decision-

making, along with case studies of Nicaragua and Paraguay further weigh in favor of a US *protect-peel* strategy relative to alternatives.

This raises several important implications and avenues for future research. First, the degree of donor interest in aid provision varies with respect to provider. There is a need to understand why and under what circumstances foreign aid is political. While China and the US varied in provision patterns, do such differences manifest for authoritarian and democratic regimes more broadly? As the proposed Trump plan for global provision suggested, the US might well have prioritized allies and wealthier countries under a second Trump term, and thus the story is likely more complicated than a simple regime type dichotomy. But future research could examine this empirically over time and across crises.

Second, the differing strategies used by the US and China may point to distinct approaches to hegemonic order contestation and great power rivalry. Many acknowledge the uncertain future of the liberal international order (Ikenberry 2020; Mearsheimer 2018), raising questions about whether and how China may seek to challenge, adjust, or remake the international order (Goh 2019; Johnston 2019). The provision of critical health aid could demonstrate hegemonic leadership, reinforce friendships, and otherwise strengthen relations already being cultivated through efforts like Belt and Road or other Chinese-led organizations. China's mix of strategies appears to resemble a hegemonic strategy of "building" a base of followers (Doshi 2021) Conversely, the US, may focus more on *peeling* countries that are in the middle or have aligned more closely with China. The battleground states and fence-sitters are of great interest to the US and China, and competition over and for this group of states may have positive externalities. Such countries may benefit from this "competition for provision".

The pandemic has been a crisis of unprecedented scale, and it has shed light not only on fundamental health inequities and gaps in the global health infrastructure but also on the differing strategies countries in a position to provide, ultimately pursue. Unfortunately, as the pandemic stretches into its fourth year, there are still billions who have not yet received the vaccine. The concern with new variants and the likelihood of future global health crises suggest the politics of provision are likely to remain important topics of political and policy study for years to come.

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Interview Data is largely confidential and not available. Respondents were assured any transcripts of the interview would not be published. Where possible, I aim to provide context and longer statements to avoid concerns of cherry-picking or misinterpretation.