

## Appendix

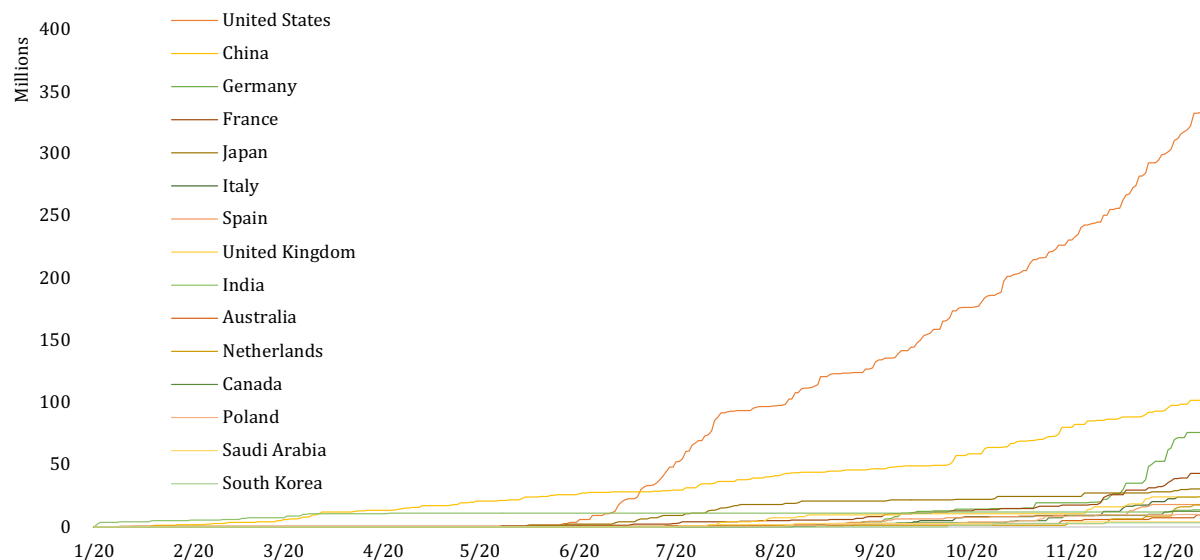


Figure A1: Timing of vaccine donation

Table A1: Determinants of bilateral and COVAX specified donation using death for disease burden

	Pooled		Donation channels		Donor types		
	(1) Pooled donation	(2) Bilateral donation	(3) COVAX specified	(4) COVAX specified vs. Bilateral	(5) DAC	(6) Non-DAC	(7) Non-DAC vs. DAC
Part 1 Gatekeeping (logit)							
COVAX specified (vs. bilateral)	1.049*** (0.333)			1.121 (1.898)	1.357*** (0.306)	0.251 (0.365)	1.100*** (0.317)
Non-DAC vs. DAC	2.432*** (0.432)	2.483*** (0.396)	2.152*** (0.322)	2.343*** (0.274)			5.672** (2.298)
Log(Cases+1)	0.005 (0.026)	0.087 (0.061)	-0.042 (0.032)	0.086 (0.060)	0.024 (0.036)	-0.013 (0.020)	0.024 (0.035)
Log(GDP per capita)	-0.230*** (0.043)	-0.462*** (0.113)	-0.020 (0.045)	-0.460*** (0.111)	-0.184*** (0.056)	-0.390*** (0.117)	-0.180*** (0.053)
Log(Trade)	-0.334*** (0.050)	-0.127 (0.082)	-0.492*** (0.121)	-0.130 (0.081)	-0.298*** (0.071)	-0.388*** (0.053)	-0.294*** (0.068)
Voting distance	0.330*** (0.029)	0.427*** (0.069)	0.229*** (0.057)	0.427*** (0.068)	0.287*** (0.028)	0.424*** (0.105)	0.282*** (0.026)
Log(Population)	0.753*** (0.115)	0.458*** (0.173)	1.019*** (0.188)	0.411*** (0.157)	0.859*** (0.099)	-0.343 (0.251)	0.846*** (0.094)
$\Delta$ *Log(Cases+1)				-0.128** (0.058)			-0.038 (0.038)
$\Delta$ *Log(GDP per capita)				-0.363** (0.163)			-0.115 (0.075)
$\Delta$ *Log(Trade)				-0.201* (0.107)			0.185*** (0.068)
$\Delta$ *Voting distance				0.654***			-1.252***

				(0.204)			(0.235)
$\Delta$ *Log(Population)				0.443***			-0.250***
				(0.108)			(0.093)
Observations	3,265	1,968	1,297	3,265	2,738	527	3,265
Log pseudolikelihood	-1167.080	-510.994	-573.809	-1085.227	-502.247	-276.712	-1145.667
Pseudo R <sup>2</sup>	0.205	0.309	0.178	0.261	0.592	0.191	0.219
Part 2 Level-setting (OLS, log)							
COVAX specified (vs. bilateral)	0.211*			-2.818*	0.327**	0.019	0.223*
	(0.124)			(1.496)	(0.149)	(0.348)	(0.133)
Non-DAC vs. DAC	0.132	0.108	-0.058	0.025			-0.630
	(0.332)	(0.308)	(0.314)	(0.277)			(1.824)
Ln(Cases+1)	-0.007	0.012	-0.008	0.011	0.007	-0.011	0.003
	(0.021)	(0.026)	(0.034)	(0.027)	(0.035)	(0.025)	(0.034)
Ln(GDP per capita)	0.287***	0.209***	0.338***	0.208***	0.295***	0.199***	0.302***
	(0.032)	(0.059)	(0.057)	(0.058)	(0.039)	(0.038)	(0.037)
Ln(Trade)	-0.051	-0.125**	-0.018	-0.128**	-0.082	-0.046	-0.087*
	(0.061)	(0.063)	(0.049)	(0.065)	(0.052)	(0.146)	(0.051)
Voting distance	0.148***	0.179***	0.127***	0.181***	0.131***	0.228***	0.128***
	(0.029)	(0.035)	(0.021)	(0.036)	(0.019)	(0.030)	(0.020)
Ln(Population)	0.368***	0.241**	0.417***	0.210*	0.397***	0.110	0.406***
	(0.124)	(0.118)	(0.150)	(0.119)	(0.138)	(0.108)	(0.138)
$\Delta$ *Ln(Cases+1)				-0.018			-0.012
				(0.042)			(0.041)
$\Delta$ *Ln(GDP per capita)				0.114			0.051
				(0.078)			(0.131)
$\Delta$ *Ln(Trade)				-0.058			0.112***
				(0.040)			(0.041)
$\Delta$ *Voting distance				0.227**			-0.302*
				(0.101)			(0.168)
$\Delta$ *Ln(Population)				0.132			-0.118**
				(0.104)			(0.059)
Observations	542	245	297	542	356	186	542
Log likelihood	-786.655	-360.036	-418.861	-779.495	-502.247	-275.886	-779.638
Adjusted R <sup>2</sup>	0.586	0.576	0.579	0.593	0.592	0.539	0.593

Notes: (1) Values indicate coefficient (standard errors clustered at the level of donor countries).

(2) \*, \*\*, and \*\*\* indicated  $p < 0.10$ ,  $p < 0.05$ , and  $p < 0.01$ .  $\Delta$  indicates either COVAX channel (in column 4) or non-DAC status (in column 7)

**Table A2: Determinants of bilateral and earmarked COVAX using effective doses**

	Pooled		Donation channels		Donor types		
	(1) Pooled donation	(2) Bilateral donation	(3) COVAX specified	(4) COVAX specified vs. Bilateral	(5) DAC	(6) Non-DAC	(7) Non-DAC vs. DAC
<b>Part 1 Gatekeeping (logit)</b>							
COVAX specified (vs. bilateral)	1.049*** (0.335)			1.218 (2.284)	1.357*** (0.307)	0.246 (0.369)	1.101*** (0.318)
Non-DAC vs. DAC	2.431*** (0.433)	2.474*** (0.397)	2.158*** (0.321)	2.339*** (0.272)			7.893*** (2.044)
Log(Cases+1)	0.050** (0.024)	0.133*** (0.043)	-0.001 (0.030)	0.132*** (0.043)	0.042 (0.035)	0.080*** (0.012)	0.042 (0.034)
Log(GDP per capita)	-0.277*** (0.054)	-0.522*** (0.097)	-0.055 (0.053)	-0.520*** (0.095)	-0.204*** (0.065)	-0.488*** (0.094)	-0.200*** (0.061)
Log(Trade)	-0.393*** (0.059)	-0.212** (0.101)	-0.534*** (0.138)	-0.216** (0.101)	-0.326*** (0.082)	-0.509*** (0.025)	-0.322*** (0.078)
Voting distance	0.331*** (0.029)	0.437*** (0.072)	0.224*** (0.056)	0.438*** (0.070)	0.290*** (0.028)	0.420*** (0.104)	0.285*** (0.025)
Log(Population)	0.751*** (0.115)	0.449*** (0.171)	1.020*** (0.189)	0.404*** (0.154)	0.856*** (0.101)	-0.336 (0.247)	0.842*** (0.095)
$\Delta^*$ Log(Cases+1)				-0.133*** (0.040)			0.038 (0.035)
$\Delta^*$ Log(GDP per capita)				-0.319* (0.187)			-0.213*** (0.079)
$\Delta^*$ Log(Trade)				-0.216** (0.109)			0.178*** (0.068)
$\Delta^*$ Voting distance				0.660*** (0.204)			-1.243*** (0.233)
$\Delta^*$ Log(Population)				0.467*** (0.088)			-0.330*** (0.080)
Observations	3,265	1,968	1,297	3,265	2,738	527	3,265
Log pseudolikelihood	-1164.146	-505.891	-574.642	-1080.918	-859.357	-274.817	-1142.648
Pseudo R <sup>2</sup>	0.207	0.316	0.177	0.264	0.188	0.197	0.221
<b>Part 2 Level-setting (OLS, log)</b>							
COVAX specified (vs. bilateral)	0.278** (0.136)			-1.806 (2.019)	0.417** (0.171)	0.022 (0.355)	0.283* (0.148)
Non-DAC vs. DAC	0.150 (0.357)	0.095 (0.303)	-0.096 (0.348)	-0.000 (0.288)			-1.257 (1.902)
Ln(Cases+1)	0.015 (0.022)	0.028 (0.019)	0.021 (0.045)	0.027 (0.019)	0.026 (0.039)	0.003 (0.021)	0.022 (0.038)
Ln(GDP per capita)	0.267*** (0.039)	0.194*** (0.067)	0.314*** (0.061)	0.192*** (0.066)	0.274*** (0.048)	0.186*** (0.042)	0.283*** (0.046)
Ln(Trade)	-0.104 (0.069)	-0.141** (0.066)	-0.108 (0.076)	-0.145** (0.068)	-0.164** (0.069)	-0.060 (0.152)	-0.170** (0.068)
Voting distance	0.148*** (0.031)	0.184*** (0.034)	0.126*** (0.026)	0.186*** (0.035)	0.141*** (0.022)	0.227*** (0.030)	0.136*** (0.023)
Ln(Population)	0.432*** (0.140)	0.244** (0.115)	0.507*** (0.174)	0.208* (0.123)	0.460*** (0.151)	0.100 (0.094)	0.471*** (0.150)
$\Delta^*$ Ln(Cases+1)				-0.007 (0.049)			-0.018 (0.042)
$\Delta^*$ Ln(GDP per capita)				0.044 (0.108)			0.124 (0.147)
$\Delta^*$ Ln(Trade)				-0.064			0.107**

				(0.040)			(0.044)
$\Delta^*$ Voting distance				0.323***			-0.377**
				(0.116)			(0.172)
$\Delta^*$ Ln(Population)				0.126			-0.114*
				(0.113)			(0.066)
Observations	542	245	297	542	356	186	542
Log likelihood	-809.035	-360.920	-438.266	-1080.918	-522.335	-275.918	-799.597
Adjusted R <sup>2</sup>	0.583	0.580	0.566	0.264	0.584	0.539	0.594

Notes: (1) Values indicate coefficient (standard errors clustered at the level of donor countries).

(2) \*, \*\*, and \*\*\* indicated  $p < 0.10$ ,  $p < 0.05$ , and  $p < 0.01$ .  $\Delta$  indicates either COVAX channel (in column 4) or non-DAC status (in column 7)

**Table A3: Subgroup analysis of donation determinants**

	(1)	(2)	(3)
	USA vs. other DAC	China vs. DAC	India vs. DAC
Part 1 Gatekeeping (Logit)			
Specified COVAX (vs. bilateral)	1.377*** (0.318)	1.357*** (0.306)	1.150*** (0.320)
Country	8.238*** (1.314)	7.301*** (1.480)	10.420*** (1.447)
Ln(Cases+1)	0.026 (0.052)	0.061 (0.051)	0.061 (0.050)
Ln(Population)	-0.174** (0.069)	-0.294*** (0.093)	-0.290*** (0.090)
Ln(GDP per capita)	-0.397*** (0.133)	-0.470*** (0.118)	-0.465*** (0.114)
Ln(Trade)	0.380*** (0.065)	0.418*** (0.040)	0.413*** (0.037)
Voting distance	0.755*** (0.172)	0.856*** (0.100)	0.845*** (0.097)
Country *Ln(Cases+1)	0.203*** (0.053)	0.033 (0.051)	0.072 (0.049)
Country *Ln(Population)	-0.365*** (0.081)	0.376*** (0.093)	-0.457*** (0.086)
Country *Ln(GDP per capita)	-0.279** (0.130)	0.222* (0.118)	-0.364*** (0.109)
Country *Ln(Trade)	-0.031 (0.071)	-0.555*** (0.040)	0.122*** (0.044)
Country *Voting distance	-0.409** (0.170)	-0.947*** (0.100)	-1.557*** (0.105)
Observations	2,738	2,873	3,006
Log pseudolikelihood	-849.508	-944.518	-1022.426
Pseudo R <sup>2</sup>	0.197	0.236	0.196
Part 2 Level-setting (OLS, log)			
Specified COVAX (vs. bilateral)	0.299** (0.119)	0.350** (0.157)	0.435*** (0.137)
Country	0.897 (1.169)	1.579 (0.968)	-2.119* (1.084)
Ln(Cases+1)	0.003 (0.042)	0.053 (0.058)	0.057 (0.058)
Ln(Population)	0.496*** (0.072)	0.384*** (0.063)	0.376*** (0.061)
Ln(GDP per capita)	-0.012 (0.083)	-0.168* (0.086)	-0.162* (0.087)
Ln(Trade)	0.111*** (0.033)	0.190*** (0.029)	0.195*** (0.027)
Voting distance	-0.049 (0.150)	0.395*** (0.140)	0.387*** (0.138)
Country *Ln(Cases+1)	0.169*** (0.042)	-0.014 (0.058)	-0.060 (0.057)
Country *Ln(Population)	-0.037 (0.068)	-0.184*** (0.063)	-0.015 (0.057)
Country *Ln(GDP per capita)	-0.159* (0.083)	-0.161* (0.086)	0.322*** (0.092)
Country *Ln(Trade)	-0.030 (0.033)	0.177*** (0.029)	0.015 (0.025)
Country *Voting distance	0.238 (0.146)	-0.249* (0.140)	-0.202 (0.135)
Observations	356	444	451

Log likelihood	-483.282	-623.955	-639.847
Adjusted R <sup>2</sup>	0.627	0.584	0.621

Notes: (1) Values indicate coefficient (standard errors clustered at the level of donor countries). (2) \*, \*\*, and \*\*\* indicated  $p < 0.10$ ,  $p < 0.05$ , and  $p < 0.01$ . (3) Country indicates USA vs. non-DAC (in column 1), China vs. DAC (in column 2) or India vs. DAC (in column 3)