Online Appendix for Support from Above: International Organizations, Summits, and Leader Survival

This appendix provides additional information to supplement the analysis in the main text. Table A1 is the list of 165 countries included in the analysis. Table A2 is the descriptive statistics for all the variables. Table A3 shows the between and within variations for the leader failure variable, the IO membership variable, and the IO summit variable. Table A4 provides two additional analyses using alternative measures for the explanatory variable. Table A5 presents the results of the two-stage instrumental variable analysis. The details can be seen below.

Table A1: List of Countries Included in the Empirical Analysis

Afghanistan	Albania	Algeria	Angola
Argentina	Armenia	Australia	Austria
Azerbaijan	Bahrain	Bangladesh	Belarus
Belgium	Benin	Bhutan	Bolivia
Bosnia	Botswana	Brazil	Bulgaria
Burkina Faso	Burundi	Cambodia	Cameroon
Canada	Cape Verde	Central African Republic	Chad
Chile	China	Colombia	Comoros
Congo Brazzaville	Congo Kinshasa	Costa Rica	Croatia
Cuba	Cyprus	Czech Republic	Denmark
Djibouti	Dominican Republic	East Germany	East Timor
Ecuador	Egypt	El Salvador	Equatorial Guinea
Eritrea	Estonia	Ethiopia	Fiji
Finland	France	Gabon	Gambia
Georgia	Ghana	Greece	Guatemala
Guinea	Guinea-Bissau	Guyana	Haiti
Honduras	Hungary	India	Indonesia
Iran	Iraq	Ireland	Israel
Italy	Ivory Coast	Jamaica	Japan
Jordan	Kazakhstan	Kenya	Korea North
Korea South	Kuwait	Kyrgyzstan	Laos
Latvia	Lebanon	Lesotho	Liberia
Libya	Lithuania	Luxembourg	Macedonia
Madagascar	Malawi	Malaysia	Mali
Mauritania	Mauritius	Mexico	Moldova
Mongolia	Morocco	Mozambique	Myanmar
Namibia	Nepal	Netherlands	New Zealand
Nicaragua	Niger	Nigeria	Norway
Oman	Pakistan	Panama	Papua New Guinea
Paraguay	Peru	Philippines	Poland
Portugal	Qatar	Romania	Russia
Rwanda	Saudi Arabia	Senegal	Sierra Leone
Singapore	Slovak Republic	Slovenia	Solomon Islands
Somalia	South Africa	Spain	Sri Lanka
Sudan	Suriname	Swaziland	Sweden
Switzerland	Syria	Taiwan	Tajikistan
Tanzania	Thailand	Togo	Trinidad and Tobago
Tunisia	Turkey	Turkmenistan	UAE
Uganda	Ukraine	United Kingdom	United States
Uruguay	Uzbekistan	Venezuela	Vietnam
Yemen North	Yemen South	Yugoslavia	Zambia
Zimbabwe			

Table A2: Descriptive Statistics

	Mean	**Median**	**Std. Dev.**	**Minimum**	**Maximum**
Leader failures	0.02	0	0.15	0	1
Membership in IOs	60.20	59	19.53	4	125
Memberships in IOs with summits	5.63	6	1.88	1	10
Membership in economic IOs	27.70	27	9.45	3	58
Membership in political IOs	7.12	7	2.52	0	15
Membership in other IOs	21.56	21	7.28	0	47
GDP per capita (logged)	8.18	8.05	1.51	5.10	11.66
Economic growth	3.77	3.93	6.45	−64.05	149.97
Foreign aid (logged)	9.69	12.14	5.60	−13.71	16.29
Polity score	1.94	5	7.24	−10	10
Election year	0.25	0	0.43	0	1
Internal threat	3.10	0	3.54	0	11.36
Oil production (logged)	5.53	0	8.75	0	22.17
Leader's age	58.21	58	11.00	19	93
Post-Cold War	0.65	1	0.48	0	1
Time in office	7.56	5	7.96	0	49

Variable	Dim	Mean	SD	Min	Max	Observations
failure	overall	0.025	0.155	0	1	N = 5173
	between		0.035	0	0.15	n = 153
	within		0.151	-0.125	1	T = 33.81
IOs	overall	60.202	19.527	4	125	N = 5173
	between		16.505	21.833	112.35	n = 153
	within		10.425	22.052	88.052	T = 33.81
IOsummit	overall	5.631	1.882	1	10	N = 5173
	between		1.396	2.222	9	n = 153
	within		1.301	1.196	9.781	T = 33.81

Table A3: Between and Within Variations for the Outcome and Explanatory Variables

Additional analyses

I conduct two additional analyses to test the robustness of the results. First, I use two other measures for our key explanatory variable—a binary indicator for country-years with IO memberships above the mean and log(IO memberships+1). Second, I disaggregate IOs by their functions and classify IOs into political ones, economic ones, and others (including technical and other IOs). The results are presented in Table A4.

Models A1-2 in Table A4 include a binary variable for IO memberships, which is 1 when the number of IO memberships or that for IOs with summits is above the mean value and 0 otherwise. As can be seen, the coefficients for both variables are negative and statistically significant, and the effect is stronger for IOs with summits. Models A3-4 use a log-transformation of IO memberships. In Model A3, the coefficient for logged IO memberships is negative but statistically insignificant. This suggests that

a linear specification is probably more appropriate.[1] In Model A4, the coefficient for IOs with summits is negative and statistically significant at the 95% level. Although the results are not entirely robust to alternative coding schemes for IO memberships, overall they show that our main finding that IOs (particularly those with leader summits) help leaders holds.

In Models A5-A8, IOs are disaggregated into economic ones, political ones, and others. Model A5 includes the number of economic IOs to which a country is a member as the explanatory variable. As can be seen, the coefficient for economic IOs is negative and achieves statistical significance at the 95% level. Models A6 and A7 include the number of political IOs and other IOs as the respective explanatory variable as the respective explanatory variable, and both coefficients are also negative and barely achieve statistical significance at the 90% level. In Model A8, we include all three types of IOs, and the results also show that none of them has a statistically significant effect.[2] These findings suggest that the helpful effect of IOs on political leaders does not come from a specific type of IOs and that IOs help leaders *collectively*. This also echoes our arguments that IO membership leads to longer leader survival through a number of diverse mechanisms, and therefore the more IOs a country participates in, the more likely that some of these mechanisms work to help leaders.

[1] When the data are log-transformed, we assume that an increase in larger numbers (say from 110 to 120) has a much smaller effect than an equal increase in smaller numbers (say from 40 to 50), which is probably not an appropriate assumption for countries that already participate in many IOs. Logging (and scaling down) the data may underestimate the effect of an additional IO for these countries.

[2] This is probably because these three variables are highly collinear with one another. The correlation coefficient between economic IOs and political IOs is 0.71, between economic IOs and other IOs is 0.86, and between political IOs and other IOs is 0.64.

Table A4: IO Membership and Leader Failures: Robustness and Additional Analysis

Explanatory variable	**Model A1** binary IO membership	**Model A2**	**Model A3** log(IO memberships+1)	**Model A4**	**Model A5**	**Model A6**	**Model A7**	**Model A8**
IO membership	−0.592		−0.711					
	(0.315)∗		(0.639)					
IOs with summits		−1.025		−1.677				
		(0.369)∗∗∗		(0.625)∗∗				
Economic IOs					−0.068			−0.045
					(0.032)∗∗			(0.043)
Political IOs						−0.247		−0.136
						(0.134)∗		(0.153)
Other IOs							−0.074	−0.017
							(0.043)∗	(0.057)
GDP per capita	−0.209	−0.010	−0.098	−0.120	−0.009	−0.097	−0.073	0.008
	(0.475)	(0.479)	(0.483)	(0.475)	(0.048)	(0.480)	(0.479)	(0.482)
Growth	−0.024	−0.022	−0.021	−0.024	−0.022	−0.022	−0.022	−0.021
	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)	(0.015)
Foreign aid	−0.063	−0.061	−0.057	−0.062	−0.055	−0.061	−0.062	−0.058
	(0.046)	(0.047)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)	(0.046)
Polity	−0.005	−0.008	−0.012	−0.011	−0.006	−0.014	−0.011	−0.007
	(0.025)	(0.024)	(0.025)	(0.024)	(0.025)	(0.024)	(0.025)	(0.024)
Election	0.125	0.129	0.137	0.127	0.148	0.120	0.142	0.141
	(0.228)	(0.228)	(0.228)	(0.227)	(0.228)	(0.227)	(0.228)	(0.228)
Internal threat	0.072	0.070	0.078	0.070	0.077	0.076	0.078	0.078
	(0.032)∗∗	(0.032)∗∗	(0.032)∗∗	(0.032)∗∗	(0.032)∗∗	(0.032)∗∗	(0.032)∗∗	(0.032)∗∗
Oil production	−0.079	−0.092	−0.090	−0.093	−0.083	−0.097	−0.087	−0.089
	(0.016)	(0.059)	(0.061)	(0.060)	(0.060)	(0.061)	(0.061)	(0.061)
Leader's age	0.008	0.006	0.008	0.009	0.010	0.007	0.009	0.009
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Post Cold war	−0.474	−0.398	−0.470	−0.247	−0.206	−0.393	−0.356	−0.134
	(0.278)∗	(0.273)	(0.314)	(0.302)	(0.338)	(0.296)	(0.315)	(0.348)
# of observations	5,173	5,173	5,173	5,173	5,173	5,173	5,173	5,173
# of countries	153	153	153	153	153	153	153	153
Log likelihood	−438.6685	−436.5035	-439.8642	-436.951	−438.1781	−438.7828	−438.9666	−437.6775
AIC	1209.337	1205.007	1211.728	1205.902	1208.356	1209.566	1209.933	1211.355
BIC	2296.837	2292.508	2299.229	2293.402	2295.857	2297.066	2297.434	2311.958

Notes. Standard errors are in parentheses. *p< .1; **p< .05; ***p< .01. The cubic polynomials for the number of leaders' previous years in office are also included in all models.

Two-stage instrumental variable analysis

The studies of IOs or international agreements more broadly encounter two interrelated issues: endogeneity and the selection bias. Countries may selectively enter international agreements that do not require dramatic policy changes and that they are more likely to comply with (Downs, Rocke and Barsoom, 1996). As argued previously, leaders may also select IOs that can potentially help their survival. Moreover, it is highly likely that unstable countries do not participate in the global society as actively as other countries. So the findings in Table 2 in the main text could be driven by potential endogeneity—that long-ruling leaders are more likely to engage in international cooperation. To deal with this issue, we use a two-stage instrumental variable approach. While a valid instrument for IO membership is hard to find, we use one that is similarly used by other scholars (e.g., Büthe and Milner, 2008): the average number of IOs to which other countries in the same region are members.[3] Many IOs are formed by countries in the same region, and a country tends to comply with international treaties when other countries in the same region do so (Simmons, 2000). So the average number of IOs to which other countries in the region are members has a diffusion effect on the number of IOs to which a country is a member. Also, there is little reason to expect that IOs that other countries join have a direct effect on the leader survival in a country.

Table A5 presents the results of the two-stage instrumental variable analysis. Model A9 is the first-stage OLS model, in which the outcome variable is the number of IO memberships a country holds. We include the instrumental variable and all the control variables. As shown, the average number of IOs in the region has a positive effect

[3]Büthe and Milner (2008) use the number of PTAs signed by other countries in the same region as an instrument for a country's PTAs, and we similarly apply this approach to create an instrument, which is the total number of IOs to which countries in the same region other than country *i* are members divided by the number of other countries in the same region. Six regions are included: Africa, America, Asia, Europe, the Middle East, and Oceania.

Model A5: IO Membership and Leader Survival: Instrumental Variable Analysis

Outcome variable	**Model A9** (IO membership)	**Model A10** (leader failure)
IO membership		-0.085
		$(0.027)***$
Average IOs in the region	0.722	
	$(0.012)***$	
GDP per capita	5.242	0.448
	$(0.231)***$	(0.521)
Growth	-0.005	-0.021
	(0.010)	(0.015)
Foreign aid	0.031	-0.049
	(0.020)	(0.048)
Polity	0.121	0.010
	$(0.018)***$	(0.026)
Election	0.084	0.166
	(0.139)	(0.229)
Internal threat	-0.023	0.077
	(0.021)	$(0.032)**$
Oil production	-0.230	-0.094
	$(0.044)***$	(0.061)
Leader's age	0.006	0.013
	(0.008)	(0.012)
Post Cold war	5.968	0.697
	$(0.211)***$	(0.509)
t	0.194	0.076
	$(0.046)***$	(0.097)
t^2	-0.065	-0.090
	$(0.031)**$	(0.082)
t^3	0.003	0.031
	(0.005)	$(0.018)*$
Number of observations	5,173	5,173
Number of countries	153	153
Log likelihood		-435.6884
AIC		1203.377
BIC		2290.877
Excluded instrument F-test	3779***	
Adjusted R-squared	0.9539	

Notes. Standard errors are in parentheses. *p< .1; **p< .05; ***p< .01.

on the number of IOs to which a country is a member, and the effect is statistically significant at the 99% level. This suggests that a country is more likely to participate in more IOs when other countries in the same region do so. The *F*-test of the excluded instrumental variable is 3779, which far exceeds the conventional threshold of 10 (Sovey and Green, 2011), indicating a strong instrumental variable.

In Model A10, the fitted values of Model A9 that serve as an instrument for IO membership enter to be the explanatory variable. As the results show, instrumented IO membership has a negative and statistically significant effect on leader failures. This confirms that IO membership has a helpful effect on leaders and suggests that the findings in the main analysis are not simply driven by endogeneity.

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