Online Resource 1: Supplementary Appendix to: Who Represents the Recipient? UNGA Delegation Size, Political Composition, and Foreign Aid

The Review of International Organizations

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1 Data Construction and Estimation Support

1.1 Reproducible construction pipeline

The analysis data are constructed from archived upstream files rather than from manually edited regression inputs. The project pipeline preserves the official UNGA delegation documents, OECD aid tables, bilateral trade data, UNGA ideal points, World Development Indicators, and EM-DAT archive used in the paper. The master construction scripts standardize country identifiers, assign delegation rosters to the year in which each session began, classify roster titles, construct the donor–recipient risk set, and merge exact calendar-year lags. The alignment measures use final-passage ideal points indexed by calendar year rather than UNGA session number.

The analysis file is `bilateral_oda_preferred.RData`. It is generated by `historical_1960/scripts/build_preferred_analysis_data.R` from the assembled donor–recipient panel. The analysis notebook records file hashes, package versions, source-reporting flags, and the audit that reconciles the active-donor-by-eligible-recipient risk set with OECD membership and eligibility records.[1] The figure and summary-statistic inputs in the main paper can be regenerated by running `draft/build_manuscript_exhibits.R`.

1.2 Risk-set construction and attrition

The 1994–2017 risk set contains every donor in the fixed provider list with a reported commitment cell in that year, paired with every ODA-eligible recipient in each outcome year from 1994 through 2017. An absent total-commitment cell is assigned an analytical zero only inside this risk set. It is not described as an OECD-reported zero.

[1] The validation uses OECD historical DAC Lists of Aid Recipients. The annual recipient universe is taken from DAC3A records and checked against these lists.

Reported component cells, unreported component cells, and analytical zeros retain separate flags throughout the pipeline.

Table A1 traces the observations retained at each construction and estimation stage. Exact one-year lags and complete main predictors account for the first reduction. Bilateral trade sums available import and export directions; one observed direction can therefore supply a nonmissing total. The source-definition sensitivity requires both directions to be observed. The restriction changes both sample coverage and the trade-data requirement.

The 54 negative commitments are source-reported reversals or corrections. They remain in the source data but cannot enter PPML, whose dependent variable must be nonnegative. The last reduction occurs because fixed-effect groups without usable outcome variation do not contribute to the PPML estimates.

Table A1: Sample construction and estimation attrition, 1994–2017

Stage	Observations	Reported	Analytical zeros	Donors	Recipients	Years
Eligible donor–recipient risk set	92,524	57,568	34,956	33	179	24
Complete exact-lag predictors	72,896	50,349	22,547	33	155	24
Nonnegative commitments	72,842	50,295	22,547	33	155	24
PPML estimation support	66,323	50,263	16,060	32	155	24

Notes: "Reported" denotes a donor–recipient–year total commitment cell contained in the OECD source. "Analytical zero" denotes an absent total-commitment cell inside the constructed active-donor-by- eligible-recipient risk set. The nonnegative stage excludes 54 reported negative commitments. PPML support excludes fixed-effect groups that do not contribute to estimation.

1.3 Delegation coding

The roster measures are constructed from official names, titles, and section headings. National-leader representation is coded from the listed title and requires the head of state or head of government. Other executives include cabinet ministers, deputy ministers, and comparable senior executive officials. Permanent-mission personnel are

identified from explicit mission or permanent-representation affiliations. Substantive advisers include advisers and experts but exclude titles explicitly identifying private, protocol, security, administrative, or clerical staff.

Total headcount excludes explicitly identified civil-society participants and observers. Press accounts of presidential entourages may include people outside the official delegation roster. The national-leader indicator follows listed offices, including monarchs and governors-general as well as presidents and prime ministers; it does not distinguish executive from ceremonial authority. Other-executive presence equals one when the other-executive count is positive. Donor mission personnel are classified from the donor's roster using the same affiliation rule as recipient mission personnel.

Roles overlap by design. For example, a delegate may be both an adviser and a permanent-mission official. A national leader is also part of the delegation headcount. Role counts are therefore not summed as mutually exclusive groups. The baseline composition models add one role at a time while controlling for total headcount; supplementary models examine joint representation measures.

1.4 Trends in recipient representation

Figure A1 describes how recipient representation changes over the roster period. The median delegation grows from 14 members in 1993 to more than 20 near the end of the sample. National-leader representation varies more sharply across sessions, rising in the 2000 and 2005 summit years and exceeding one-half of observed recipients in several later sessions. Delegation size thus shows a broad upward trend, while leader representation combines longer-run change with pronounced differences across sessions.

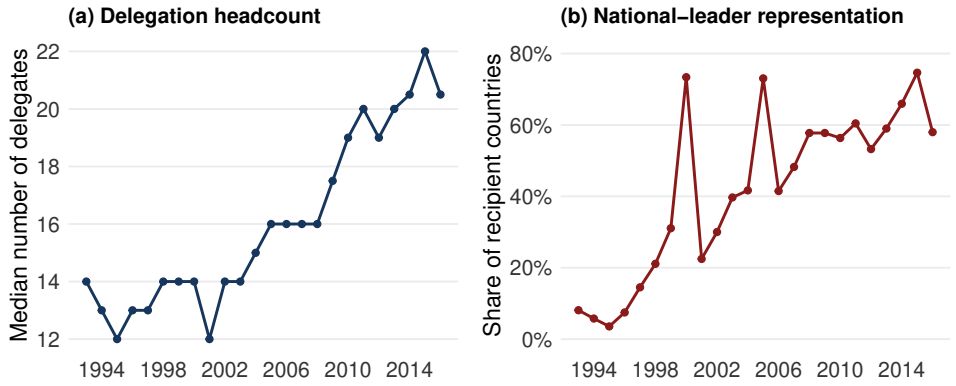


Fig. A1 Recipient representation at the UNGA, 1993–2016

Notes: Panel (a) reports the median delegation headcount among recipients outside the fixed provider list with an observed official roster. The headcount excludes explicitly identified civil-society participants and observers. Panel (b) reports the share of those recipients whose head of state or head of government appears in the roster. Years refer to the year in which the UNGA session began.

1.5 Source provenance and validation coverage

The 1993–1998 source sets include provisional delegation lists; later documents were published at different stages of the UNGA session. The 1993–2016 series uses one main document per year and does not systematically incorporate addenda. Publication timing and document format can therefore affect which officials are listed. Historical entity codes retain their original territorial definitions: YUG and SCG are not automatically mapped to SRB, leaving some Serbia-labelled aid observations without matched rosters. Exact lags are constructed on the available donor–recipient panel, so first reporting or eligibility years can be excluded even when a predictor exists in an external source.

The recipient-year panel prepared for replication contains 3,306 records for 156 recipients: 954 from the 1993–1999 extraction and 2,352 from the 2000–2016 extraction. It is drawn from the merged analysis file and differs from both the full UN delegation universe and the final regression sample. Records identify the source document, PDF

filename, country-block page range, and extraction-audit path. Six measures, including leader listing and headcount, agree with archived extractions. Both extraction series are machine parsed; agreement with archived outputs verifies reproducibility rather than record-level accuracy.

Historical documents use embedded text where usable and optical character recognition (OCR) otherwise. Source coverage is measured as recovered country blocks divided by UN year-end membership; this statistic does not measure completeness within delegations. Of 3,709 same-year aid-eligible recipient-years in 1993–2016, 3,306 have matched rosters and 403 do not. Unmatched cases include territories and country codes without a corresponding UN member roster, as well as gaps caused by source coverage and country-code continuity. Missing rosters are not assigned zero headcounts or leader indicators.

The coding convention includes entries in the delegation body and excludes numbered footnotes. Honduras's 1994 president appears only in a conditional footnote and is excluded; Tanzania's 1999 president appears in a conditional body entry and is included. Colombia's 1994 president is likewise excluded because the name appears only in a numbered footnote. Repeated printed names need not represent distinct people. These conventions make document format relevant to measurement.

Targeted source checks cover both headcounts and role classification. A 14-record historical count audit agrees with the corrected data, including 12 delegates and four advisers for El Salvador in 1995. A separate six-record role audit agrees on headcount, leader, permanent-mission, and adviser fields after correction and documented re-adjudication. In the Bahamas 1993 case, applying the protocol-staff exclusion gives three substantive advisers rather than four. The archive retains the initial audits and the corrections.

A further 20 source checks covered 15 historical recipient-year records flagged for parser review, three deterministically selected leader-negative records from 2000–2016, and two records affected by a parser repair, including one donor. Corrections to damaged text, person boundaries, military honorifics and a presidential title changed 13 recipient-year records and one donor-year record, including three missed leader listings. Rebuilt headcounts and leader indicators agree with all 20 source checks.

Additional title-parsing repairs address gendered Spanish and French titles, credential prefixes, council-of-ministers titles, royal titles, role headings, and person boundaries. In the 2000–2016 series, these repairs changed 57 country-year leader indicators from zero to one, including donor records. Source checks also confirmed six additional body-listed leaders in the historical series. Source-page traces and correction ledgers document the changes. Because the checks target selected records, they do not estimate a population error rate or validate every role field. The compact replication package begins with assembled data and estimation code; raw-source acquisition and OCR files remain in the project archive.

Table A2 examines sensitivity to the earlier roster series. Restricting the sample to the 2000–2016 roster series gives a leader estimate of 21.1 percent, compared with 18.2 percent in the full sample. The restriction changes the period and source composition together, so it does not isolate measurement error.

Table A2: Sensitivity to historical roster measurement

Sample	Observations	Difference (%)	95% interval
Corrected full sample	66,323	18.2	[6.0, 31.8]
Rosters from 2000 onward	50,273	21.1	[8.0, 35.9]
Exclude 15 flagged rosters	66,048	18.6	[6.1, 32.6]

Notes: National-leader coefficient transformed as $100[\exp(\widehat{\beta}) - 1]$. PPML with delegation headcount, lagged alignment and trade, donor–recipient and donor–year fixed effects; standard errors clustered by donor and recipient. Intervals use a normal reference distribution. The last row excludes the 15 historical recipient-year records flagged for parser review before correction. The modern-only sample changes the period as well as source quality.

Additional source checks confirm inclusion of Tuvalu's governor-general, listed as head of state in 2002, and Tonga's king and prime minister in 2014. Angola's listed vice-president in 2014 does not trigger the indicator. The rule measures national office, not executive power; it excludes heads of nonnational bodies, vice-presidents, and deputy prime ministers. Source references are retained in the measurement audit.

2 Measurement and Identification Diagnostics

2.1 Roster inclusion and General Debate speakers

The national-leader indicator measures whether the head of state or government appears in the official delegation roster. It does not verify physical attendance, the dates on which the leader was in New York, or a bilateral meeting. Table A3 compares roster inclusion with the official General Debate speaker file across matched countries, including donors and other nonrecipients (United Nations Dag Hammarskjöld Library 2026).[2] A match corroborates participation by a listed leader. A mismatch does not establish absence: separate summit meetings can bring a leader to the UN while another official delivers the country's General Debate statement.

Across matched country-years in 1994–2016, excluding the 2000 and 2005 summit years, a listed national leader delivered the country's General Debate statement in 1,248 of 1,572 leader-listed cases, or 79.4 percent.

[2] The comparison uses version 3 of the speaker dataset, released in January 2026; the archived file is dated January 29, 2026.

Table A3: Roster-listed national leaders and General Debate speakers

Period	Leader listed	Listed leader spoke	Match rate
1994–2016, excluding 2000 and 2005	1,572	1,248	79.4%
2000	137	4	2.9%
2005	139	36	25.9%
2015	146	105	71.9%

Notes: The indicator records whether the head of state or government appears in the official delegation roster. The comparison covers matched country rosters, including donors and other nonrecipients. A speaker match means that the same listed leader delivered the country's General Debate statement. A speech is not a complete measure of physical presence. The 2000 and 2005 Millennium and World summits, and the 2015 development summit, allowed a leader to participate in a separate high-level meeting while another official spoke in the General Debate.

2.2 Special summit years

The largest common movements in national-leader representation occur in 2000 and 2005, the years of the Millennium and World summits. The 2015 development summit creates a related concern. Table A4 re-estimates the baseline after dropping the corresponding delegation years. The estimate is nearly unchanged without 2000 and 2005 and remains positive without all three summit years.

Table A4: Sensitivity to special UN summit delegation years

Delegation years included	Estimate	Std. error	Percent difference	p-value	Observations
All delegation years	0.167	(0.056)	18.2	0.003	66,323
Exclude 2000 and 2005	0.166	(0.058)	18.0	0.004	60,404
Exclude 2000, 2005, and 2015	0.147	(0.063)	15.8	0.020	56,643

Notes: National-leader PPML coefficients use log one plus headcount, lagged alignment and trade, donor–recipient fixed effects, donor–year fixed effects, and two-way clustering by donor and recipient. The excluded delegation years map to outcome years one year later. Reported p-values are unadjusted and use a normal reference. Percent differences equal $100[\exp(\widehat{\beta}) - 1]$.

2.3 Variation and observed selection

The baseline retains 66,323 dyad-years, corresponding to 3,198 distinct recipient delegation-years from 155 recipients. Leader listing occurs in 1,369 of these recipient-years; 141 recipients have both leader and nonleader years. Among 2,972

consecutive-year pairs with both years represented in the baseline support, 489 move from no leader to leader and 437 move in the reverse direction. The full observed roster panel instead contains 3,306 recipient-years and 947 switches. Gaps in either support are not counted as consecutive changes.

Table A5 examines observed aid history on recipient roster-years that enter the baseline in the following outcome year. Complete selection predictors leave 2,981 observations from 149 recipients. The prior-aid coefficient is positive but imprecise ($p = 0.299$); prior leader listing is persistent. The result does not establish that leader representation is independent of anticipated aid. The lagged-outcome coefficient is descriptive and may be affected by dynamic fixed-effect bias. Aid aggregates sum available nonnegative donor commitments, so these tests also inherit the aid risk set's reporting and eligibility boundaries.

Table A5: Observed selection into national-leader representation

Predictor	Estimate	Std. error	p-value
Log prior aid	0.021	0.020	0.299
Change in log prior aid	-0.004	0.016	0.796
Log prior donor count	0.086	0.076	0.258
Log prior delegation size	-0.012	0.027	0.661
Prior leader listing	0.112	0.026	< 0.001

Notes: The dependent variable is leader listing in delegation year s. The sample contains 2,981 recipient-years from 149 recipients whose year-s roster enters the retained baseline for commitments in $s + 1$, restricted to complete selection predictors. Aid level and donor count refer to $s - 1$; the aid change compares $s - 1$ and $s - 2$. Recipient and year fixed effects are included. Standard errors are clustered by recipient, with a t reference using the recipient count minus one. These are descriptive linear probability models, including a lagged outcome; no causal interpretation or dynamic-panel bias correction is claimed.

2.4 Sample, trends, inference, and timing

Table A6 collects the remaining diagnostics. The baseline estimate is nearly unchanged on OECD-reported commitment cells and remains positive with recipient trends and recipient-only clustering. The joint timing model retains 53,767 dyad-years from 29

donors and 147 recipients in 1995–2015, a subset of the baseline support. On this same sample, the lag-one coefficient is 0.171 when included alone and 0.155 in the joint model. This separates the sample change from the addition of other dates.

The current and future terms have a joint Wald chi-square p-value of 0.558; a cluster-based $F(2, 28)$ reference gives 0.565. The future coefficient is 0.016 with a normal-reference interval of $[-0.113, 0.144]$, compatible with commitment differences of roughly -11 to 16 percent. The $t-2$ and $t-1$ coefficients are positive, and their joint zero restriction has $p = 0.008$ under the chi-square reference ($p = 0.015$ under $F(2, 28)$). The positive earlier coefficients indicate persistence, while the future interval remains compatible with meaningful associations in either direction. Representation in t can overlap the commitment year, whereas representation in $t+1$ follows it. The tests assess temporal association rather than out-of-sample prediction or causal ordering.

Table A6: Identification and inference diagnostics for national-leader representation

Diagnostic	Estimate	Std. error	p-value	Observations
Baseline: donor and recipient clustering	0.167	(0.056)	0.003	66,323
Baseline: recipient clustering only	0.167	(0.070)	0.017	66,323
Reported ODA cells	0.167	(0.056)	0.003	49,991
Recipient-specific trends	0.181	(0.048)	< 0.001	66,323
Joint timing: Representation in $t-2$	0.163	(0.054)	0.002	53,767
Joint timing: Representation in $t-1$	0.155	(0.053)	0.003	53,767
Joint timing: Representation in t	0.036	(0.042)	0.393	53,767
Joint timing: Representation in $t+1$	0.016	(0.066)	0.810	53,767

Notes: The first four rows estimate the baseline $t-1$ national-leader coefficient under the stated sample or inference change. The final four rows come from one joint timing model containing the $t-2$, $t-1$, t, and $t+1$ representation indicators. All models include delegation scale, lagged ideal-point similarity, lagged trade, donor–recipient fixed effects, and donor–year fixed effects. Standard errors are clustered by donor and recipient unless the row states recipient clustering only. PPML coefficient tests use a normal reference; the recipient-only sensitivity uses a t reference with 154 degrees of freedom.

Table A7 compares complete delegation specifications at one- and two-year commitment horizons. With s denoting roster year, representation, alignment and trade remain dated s in both columns; the joint model's prior aid and economic controls

remain dated $s-1$. Only the annual outcome changes from $s+1$ to $s+2$. This differs from the preceding diagnostic, which changes the leader indicator's date while leaving headcount and controls at their existing dates. Neither specification estimates cumulative commitments or isolates a delayed causal effect.

The comparison starts with each model's retained baseline sample and requires valid outcomes at both horizons. With outcomes ending in 2017, matched rosters end in 2015. The size-only and size-plus-leader models have 62,135 candidate observations; intersecting the observations retained by PPML at both horizons leaves 61,280 from 31 donors and 149 recipients. The joint model has 59,416 candidates and retains 58,532 from 29 donors and 147 recipients. The original one-year estimates are also shown to distinguish support changes from horizon changes.

Table A7: One- and two-year commitment horizons

Model and contrast	Original one-year	Matched one-year	Matched two-year
Size-only: headcount	6.4	6.6	7.2
	[-3.0, 16.8]	[-2.8, 16.8]	[-2.8, 18.3]
Size + leader: headcount	2.8	2.2	3.6
	[-7.8, 14.5]	[-8.1, 13.7]	[-7.6, 16.3]
Size + leader: leader	18.2	20.2	16.2
	[3.0, 35.6]	[4.0, 39.1]	[1.2, 33.4]
Joint: headcount	2.9	2.6	3.7
	[-10.3, 18.1]	[-10.7, 17.9]	[-9.7, 19.1]
Joint: leader	14.9	15.9	13.4
	[3.3, 27.8]	[3.4, 29.8]	[-2.7, 32.2]
Joint: combined personnel	-4.9	-5.5	-4.7
	[-21.6, 15.2]	[-22.3, 15.0]	[-20.1, 13.7]

Notes: Percentage differences in expected annual commitments; brackets report individual, unadjusted 95 percent recipient-clustered t intervals. Headcount and combined-personnel contrasts double one plus the count; leader changes from zero to one. All models include donor–recipient and donor–outcome-year fixed effects. The matched columns use identical donor–recipient–roster-year observations within each model: 61,280 for size-only and size + leader (original 66,323), and 58,532 for joint composition (original 63,253). Matched rosters cover 1993–2015. All regressors retain their dates relative to the roster. The joint model adds combined personnel, prior aid and economic controls. Two-year outcomes are annual commitments in $s+2$, not the sum over two years. Other representation measures are held fixed in each joint contrast.

On matched support, the two-year leader contrast in the size-plus-leader model is 16.2 percent, with a recipient-clustered 95 percent interval of 1.2 to 33.4 percent

($p = 0.034$). The joint-model contrast is 13.4 percent, with an interval of -2.7 to 32.2 percent ($p = 0.106$). Two-way clustered normal-reference p-values are 0.016 and 0.079, respectively; the joint two-year covariance matrix requires positive-semidefinite repair. These are individual tests without multiple-testing adjustment. All size and combined-personnel intervals include zero. The point estimates are compatible with an association extending beyond the following year; their precision does not establish that the association differs between horizons.

2.5 Interpreting PPML coefficients

The following contrasts hold the other model variables and fixed effects constant. For the national-leader indicator, the percentage difference in expected commitments is

$$100 \left[\exp\left(\widehat{\beta}\right) - 1 \right]. \tag{1}$$

Delegation counts enter as $\log(1+D)$ so that observations with a count of zero remain in the sample. For a change from D_0 to D_1, the percentage difference in expected commitments is

$$100 \left[\exp\left\{ \widehat{\beta} \log\left(\frac{1+D_1}{1+D_0} \right) \right\} - 1 \right]. \tag{2}$$

The size-only coefficient reported in the main composition table is 0.090. It multiplies $\log(1+D)$, so interpreting a change in headcount first requires calculating the change in this logged variable. The 10-to-21 comparison is an illustration of doubling $1+D$, not a doubling of the number of delegates. Starting from 10 officials gives $1+D_0 = 11$; doubling 11 gives 22, which corresponds to an ending headcount of $D_1 = 22-1 = 21$. Ten is an illustrative starting value, not a threshold implied by the model. Any pair satisfying $1+D_1 = 2(1+D_0)$ yields the same estimated percentage contrast.

Natural logarithms convert this ratio into a difference:

$$\Delta \log(1 + D) = \log(22) - \log(11) = \log(22/11) = \log(2) \simeq 0.693.$$

Holding the other regressors and fixed effects constant, their contributions cancel when the two expected commitment amounts are divided. The resulting ratio is

$$\frac{\widehat{\mu}(D_1)}{\widehat{\mu}(D_0)} = \exp\Big\{\widehat{\beta}\,[\log(1 + D_1) - \log(1 + D_0)]\Big\},$$

where $\widehat{\mu}(D)$ denotes expected commitments at headcount D. The coefficient must therefore be multiplied by the change in the explanatory variable before exponentiation. Using the rounded coefficient gives

$$100[\exp\{0.090 \times 0.693\} - 1] \simeq 6.4\%.$$

The familiar expression $100[\exp(\widehat{\beta}) - 1]$ applies when the explanatory variable changes by one unit, as with a binary indicator changing from zero to one. The logged headcount variable changes by approximately 0.693 units in this example. Reported estimates use the unrounded coefficient; applying the same transformation to the coefficient confidence limits yields the reported interval of -3.6 to 17.6 percent. The interval includes zero, so the illustration does not establish a positive size association.

2.6 Inference conventions

Individual PPML coefficient intervals and tests use the normal reference implemented by fixest 0.14.2 with its default clustered covariance corrections.[3] The recipient-controls figure in the main manuscript uses the same reference. Linear probability

[3] Implementation details are described in the fixest documentation, On standard errors.

models use a t reference with the relevant cluster count minus one. Explicit linear contrasts use the minimum donor or recipient cluster count minus one for two-way clustering; single-dimension clustering sensitivities use that dimension's count minus one. The stacked financial-component coefficient tests also use a cluster-count-based t reference, as stated in their table notes. The relationship dollar intervals use the separately documented bootstrap. These are asymptotic or cluster-count approximations.

For the baseline PPML coefficient, retaining the same two-way covariance and using $t(31)$ changes the p-value from 0.003 to 0.005 and the coefficient interval from $[0.058, 0.276]$ to $[0.054, 0.280]$. Recipient-only clustering, with a $t(154)$ reference, gives $p = 0.017$. The baseline and timing clustered covariance matrices are positive definite without repair. The relationship model uses fixest's positive-semidefinite repair; its interaction standard error changes from 0.306323 to 0.306333. The dollar bootstrap does not use that covariance matrix. Covariance diagnostics also identify repairs in some needs, relationship, and financial-component specifications; these are recorded separately from convergence. All models covered by these covariance checks converge.

Table A8: Role tests under recipient clustering

Role	Std. error	Raw p	Holm p
National leader	0.070	0.017	0.069
Other executives	0.129	0.227	0.681
Permanent mission	0.108	0.579	1.000
Substantive advisers	0.038	0.525	1.000

Notes: Coefficients and samples are unchanged from the four composition models. This sensitivity clusters by recipient and uses a t reference with the recipient count minus one degrees of freedom. Holm adjustment is across the four role coefficients. The primary tables use donor-and-recipient clustering and a normal reference.

3 Recipient Needs, Shocks, and Prior Aid

The recipient-condition models distinguish changes in sample coverage from changes associated with additional controls.[4] The first column reports the full-sample baseline; the second restricts it to observations with complete control data. Column 3 adds conditions measured in $t-2$: log GDP per capita, log population, GDP growth, log under-five mortality, log refugees by origin, natural-disaster incidence, affected-population intensity, and log battle deaths. Columns 4 and 5 separately add commitment-year disaster and conflict measures or aggregate aid received in $t-2$.

Table A9: Robustness to observable recipient needs, shocks, and prior aid

	Current sample	Matched sample	Pre-determined needs/shocks	Plus outcome-year shocks	Plus prior aggregate aid
Log delegation scale, t-1	0.039	0.043	0.010	0.009	−0.011
	(0.083)	(0.081)	(0.072)	(0.071)	(0.071)
National leader present, t-1	0.167***	0.152***	0.152***	0.156***	0.158***
	(0.056)	(0.057)	(0.045)	(0.045)	(0.048)
Ideal-point similarity (-distance), t-1	0.194*	0.194**	0.180**	0.193**	0.072
	(0.101)	(0.098)	(0.088)	(0.089)	(0.056)
Log bilateral trade, t-1	0.065	0.018	0.066	0.064	0.005
	(0.083)	(0.082)	(0.052)	(0.052)	(0.033)
Observations	66 323	61 790	61 790	61 790	61 609

* p <0.1, ** p <0.05, *** p <0.01
PPML coefficients for bilateral ODA commitments; parentheses report standard errors clustered by donor and recipient. All columns include leader listing, log one plus headcount, lagged alignment and trade, and donor-recipient and donor-year fixed effects. Column 2 restricts the baseline to the control-complete sample. Column 3 adds recipient conditions at $t-2$; columns 4 and 5 separately add commitment-year shocks and aggregate aid at $t-2$. Stars use unadjusted p-values.

[4] Recipient indicators are obtained from World Bank (2026). The archived API extract was last updated July 13, 2026. Indicator codes are NY.GDP.PCAP.KD (GDP per capita, constant 2015 US dollars), SP.POP.TOTL (population), NY.GDP.MKTP.KD.ZG (growth), SH.DYN.MORT (under-five mortality), SM.POP.RHCR.EO (refugees by origin), VC.BTL.DETH (battle deaths), and DT.TDS.DECT.GN.ZS (debt service). Refugee statistics originate with UNHCR and battle deaths with UCDP at Uppsala University; both are obtained through WDI.

The leader estimate declines from 18.2 to 16.4 percent when the sample is restricted and remains at 16.4 percent after the predetermined controls are added. The two extensions yield estimates of 16.8–17.1 percent. The initial change therefore reflects sample composition. A separate debt-service check in the analysis notebook also loses observations because of reporting coverage; its matched-sample comparison attributes the attenuation to the sample restriction rather than to adding debt service.

Disaster totals sum the recorded impacts of natural events in the archived EM-DAT extract (Delforge et al. 2024). Missing affected or death counts contribute zero to these recorded totals; they are not evidence of zero true impact. The construction retains indicators for any and all affected counts being unreported within an event-positive country-year. Country-years with no recorded natural event have zero event counts. Missing WDI battle-death cells are treated as no recorded deaths, with a separate missingness indicator; missing economic and refugee values remain missing. The sensitivity table reports event-count-only, missingness-indicator, and observed-conflict-sample estimates. The last of these changes country-year support substantially.

4 Allocation Margins

4.1 Donor breadth

The first specification below is a recipient-year count model with the log number of donors at risk as an offset. The second applies PPML to a dyadic positive-commitment indicator. The national-leader coefficient is close to zero in both cases.

Table A10: Source-definition and missingness sensitivities

Specification	Observations	Difference (%)	95% interval
Primary	66,323	18.2	[6.0, 31.8]
Exclude EST LTU ROU	65,749	18.2	[6.0, 31.8]
DAC accession-year restriction	62,794	18.4	[6.2, 32.0]
Both trade directions observed	61,954	17.9	[6.0, 31.1]
Predetermined recipient controls	61,790	16.4	[6.6, 27.3]
Disaster event count only	61,790	16.3	[6.4, 27.2]
Disaster and conflict missingness flags	61,790	16.2	[6.7, 26.7]
Conflict observed only	13,551	24.3	[8.6, 42.2]
Predetermined controls + current shocks + prior aid	61,609	17.3	[7.0, 28.6]

Notes: Leader-listing percentage differences from PPML with donor–recipient and donor–year fixed effects, delegation headcount, alignment and trade. The predetermined-controls row corresponds to column 3 of the recipient-needs table. The last row adds outcome-year shocks and prior aid together; columns 4 and 5 of that table add them separately. Intervals use donor-and-recipient clustered standard errors and a normal reference. EST, LTU and ROU denote Estonia, Lithuania and Romania. DAC denotes the OECD Development Assistance Committee; its membership restriction includes the accession calendar year. Intervals are unadjusted for multiple testing. Observed-conflict support changes the sample substantially and is not a preferred replacement for the event-series convention.

Table A11: Donor breadth and the extensive margin

	Number of committing donors	Any dyadic commitment
Log delegation scale, t-1	0.002	0.001
	(0.008)	(0.007)
National leader present, t-1	0.009*	0.005
	(0.005)	(0.004)
Ideal-point similarity (-distance), t-1		0.023
		(0.018)
Log bilateral trade, t-1		0.003
		(0.006)
Observations	2890	61 790

* p <0.1, ** p <0.05, *** p <0.01
PPML coefficients. Column 1 counts committing donors per recipient-year, uses log donors at risk as an offset, and includes recipient and year fixed effects. Column 2 uses a donor-recipient-year indicator equal to one for a positive commitment and zero otherwise, with donor-recipient and donor-year fixed effects. Both columns include leader listing, log one plus headcount and predetermined recipient controls; column 2 also includes lagged alignment and trade. Parentheses report standard errors clustered by recipient in column 1 and by donor and recipient in column 2. Stars use unadjusted p-values; the two leader tests form one Holm family.

4.2 Relationship history

An established relationship has a positive commitment in at least one year from $t-4$ through $t-2$. The analysis retains 2000–2017 as a common outcome period for this definition and the longer $t-2$ through $t-6$ sensitivity. The longer window then begins no earlier than 1994, when the reconstructed modern donor–recipient sample starts. The primary three-year history window alone would permit an earlier start. The amount model, positive-commitment model, and positive-outcome-only model use the same basic interaction but answer different questions. The large proportional coefficient among dyads without recent commitments should be read alongside the model-implied dollar differences reported in Figure A2. The between-group amount contrast has a Holm-adjusted p-value of 0.061 with the $t(31)$ reference used for explicit contrasts. Using a normal reference instead gives 0.043; the 5 percent threshold conclusion therefore depends on the reference distribution.

Table A12: Relationship history and national-leader representation, 2000–2017

	Commitment amount	Any positive commitment	Positive amounts only
National leader: no recent commitment	0.917***	0.069*	0.707***
	(0.310)	(0.039)	(0.264)
Established relationship	1.045***	0.236***	0.637***
	(0.250)	(0.056)	(0.242)
National leader x established	−0.750**	−0.067*	−0.540**
	(0.306)	(0.039)	(0.254)
Log delegation scale, t-1	−0.026	0.001	−0.025
	(0.084)	(0.006)	(0.084)
Ideal-point similarity (-distance), t-1	0.098	0.027	0.100
	(0.109)	(0.017)	(0.106)
Log bilateral trade, t-1	0.023	−0.002	0.025
	(0.071)	(0.006)	(0.075)
Observations	50 313	50 313	39 556

* p <0.1, ** p <0.05, *** p <0.01
PPML coefficients for the stated outcomes in 2000–2017. Established means a recorded positive commitment in at least one year from $t-4$ through $t-2$; missing history cells count as no recorded positive commitment. All columns include leader listing interacted with established status, log one plus headcount, lagged alignment and trade, predetermined recipient controls, and donor-recipient and donor-year fixed effects. Parentheses report standard errors clustered by donor and recipient. Stars use unadjusted p-values. The three leader-by-established interactions form one Holm family. Their adjusted tests treat each interaction as a between-group contrast and use a $t(31)$ reference; stars use the individual-coefficient normal reference.

4.3 Dollar contrasts and their uncertainty

The amount model retains 50,313 donor–recipient–year observations from 2000–2017: 7,842 without a recorded positive commitment in the history window and 42,471 in established relationships. The former group can include newly eligible dyads; it does not mean that a donor has never committed aid to the recipient. Missing or ineligible history cells contribute no recorded positive commitment to the classification. A complete-history sensitivity below requires available risk-set outcome cells, including analytical zeros in all three history years.

Let S_g contain the retained observations in history group g, and let $\widehat{\mu}_k(l)$ be the fitted conditional mean after setting the leader indicator to l, retaining all other regressors and fitted fixed effects. The reported dollar contrast is

$$\widehat{\Delta}_g = \frac{1}{|S_g|} \sum_{k \in S_g} \left[\widehat{\mu}_k(1) - \widehat{\mu}_k(0)\right].$$

Every retained dyad-year receives equal weight within its group. Recipients, donors, and years therefore contribute according to their number of retained observations. The comparison averages over each group's own covariates and fixed effects; it is neither an aggregate share nor a causal gain. The fitted mean under leader listing set to zero is \$0.23 million among dyads without recent commitments and \$27.66 million in established relationships. The larger proportional association in the former group can therefore coexist with a smaller dollar contrast.

Uncertainty is assessed using 999 crossed donor-and-recipient bootstrap draws. Each draw independently samples 32 donor labels and 142 recipient labels with replacement, preserves their dyadic histories, and weights each observation by the product of its donor and recipient multiplicities. This uses the pigeonhole resampling scheme of Owen (2007). The PPML slopes and both sets of fixed effects are re-estimated, and group averages use the resampled observation weights. Cells with all-zero fixed effects have zero limiting predictions under either leader value and remain in the averaging denominator; positive singleton cells are retained. The intervals are the 2.5th and 97.5th percentiles of the bootstrap contrasts. The two group contrasts and their paired difference use the same draws. The resulting intervals describe uncertainty in the fitted contrasts on the retained sample and are unadjusted for multiple testing.

Table A13: Average model-implied dollar contrasts by relationship history

Contrast	Estimate	95% bootstrap interval
No recent commitment	0.35	[-0.05, 0.96]
Established relationship	5.03	[0.84, 11.08]
Established minus no-recent	4.68	[0.53, 10.64]

Notes: Millions of constant 2024 US dollars. Each group averages the predicted difference from changing the leader indicator from zero to one over its retained donor–recipient–year observations, holding other regressors and fitted fixed effects at their observed values. Intervals use 999 independent donor-and-recipient resamples (32 donors, 142 recipients); the PPML slopes and fixed effects are re-estimated in each draw. The third row is the paired difference of group averages. Percentile intervals are approximate and are not multiplicity adjusted.

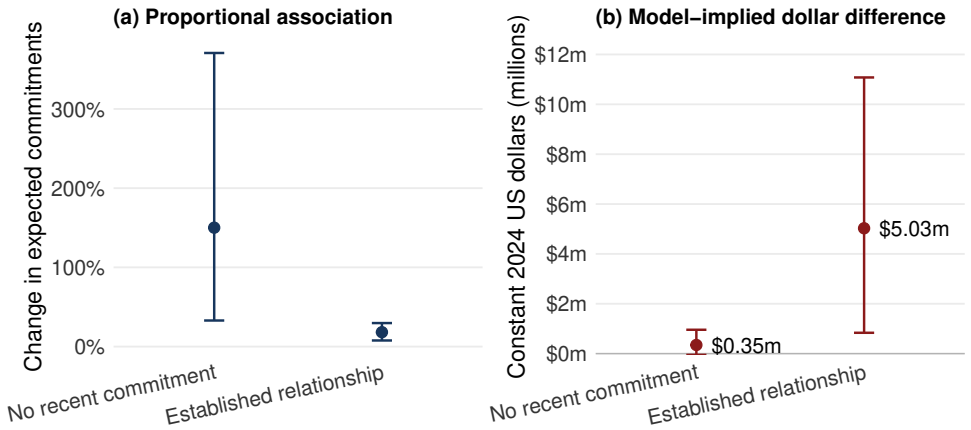


Fig. A2 National-leader representation and relationship history

Notes: Panel (a) transforms the group-specific PPML coefficients into percentage differences, with 95 percent intervals using donor and recipient clustering. Panel (b) reports average model-implied dollar differences from the same amount model, in millions of constant 2024 US dollars, with 95 percent percentile intervals from 999 crossed donor-and-recipient bootstrap draws that refit the model and fixed effects. Each retained dyad-year receives equal weight within its group. An established relationship has a positive commitment in at least one year from $t-4$ through $t-2$. The sample covers 2000–2017, a common outcome period for the primary history definition and the longer $t-2$ through $t-6$ sensitivity. In 2000, the longer window begins in 1994, the start of the reconstructed modern donor–recipient sample.

4.4 Relationship-history sensitivities

Table A14 distinguishes stability of the ordering from stability of the magnitudes. Capping commitments at the 99.5th percentile reduces the established-group dollar contrast from $5.03 million to $2.09 million. The larger dollar contrast in that group persists across the reported-cell and alternative-history specifications, but each comparison uses its own retained observations and, when changed, its own history definition. The longer history window yields a raw p-value of 0.077 for the proportional coefficient difference. The ordering of the dollar point estimates is more stable than their magnitude or the precision of the proportional comparison.

Requiring complete primary histories gives 47,354 retained observations and dollar contrasts of $0.39 million and $5.07 million. Omitting donors one at a time gives contrasts for dyads without recent commitments of $0.24–$0.38 million and established-group contrasts of $3.60–$5.30 million. The difference of group averages remains positive in these point estimates; the smallest is $3.35 million when the United States is omitted. The donor exclusions assess the influence of individual donors; their ranges are point-estimate comparisons, not confidence intervals.

Table A14: Relationship-history sensitivity checks

Specification	N	Log contrast	Raw p	Dollars: inactive	Established
Primary	50,313	-0.750	0.020	0.35	5.03
Capped at p99.5	50,313	-0.731	0.022	0.30	2.09
Reported cells	39,581	-0.542	0.041	0.88	5.69
History: t-2	50,313	-0.563	0.033	0.33	5.48
History: t-2 to t-6	50,313	-0.615	0.077	0.28	4.88
Complete primary history	47,354	-1.068	0.008	0.39	5.07

Notes: The log contrast is the established-minus-inactive difference in leader coefficients. Its raw p-value uses donor and recipient clustering with the minimum cluster count minus one degrees of freedom; these sensitivity tests are not multiplicity adjusted. Dollar columns are group-average model-implied differences in millions of constant 2024 US dollars, on each specification's retained sample. Complete history requires observed outcome cells in all three primary history years. Dollar columns are point estimates, not tests of differences across specifications.

5 Aid Modalities

5.1 Leader and adviser estimates

The next two tables report separate PPML models for total ODA, grants, loans, and technical cooperation (OECD 2026). Component outcomes enter only when the component cell is reported or when the reporting rules permit a component analytical zero. The national-leader associations with total ODA and grants remain statistically significant after adjustment across the eight leader and adviser tests. The adviser grant estimate is positive but imprecise. The adviser association with technical cooperation is significant before adjustment, but its Holm-adjusted p-value is 0.239. These modality comparisons describe the composition of commitments.

Table A15: National-leader representation across aid modalities

	Total ODA	Grants	Loans	Technical cooperation
Log delegation scale, t-1	0.039	−0.026	0.278*	0.043
	(0.083)	(0.059)	(0.144)	(0.042)
National leader present, t-1	0.167***	0.208***	0.033	0.062
	(0.055)	(0.060)	(0.034)	(0.044)
Ideal-point similarity (-distance), t-1	0.197*	0.262**	0.006	0.264***
	(0.101)	(0.132)	(0.155)	(0.080)
Log bilateral trade, t-1	0.065	0.020	0.395***	0.130*
	(0.082)	(0.098)	(0.080)	(0.072)
Holm-adjusted p-value (role)	0.018	0.004	0.986	0.753
Observations	65 317	64 936	16 390	49 865

* p <0.1, ** p <0.05, *** p <0.01
PPML coefficients for the commitment modality named in each column. National leader is a roster-listing indicator; total headcount enters as log one plus the count. All columns include lagged alignment and trade and donor-recipient and donor-year fixed effects. All columns start from observations with reported or constructible grant and loan outcomes; the total-ODA column therefore differs from the full baseline. Technical cooperation additionally requires a reported cell or eligible analytical zero. PPML removes outcome-specific all-zero fixed-effect groups. Parentheses report standard errors clustered by donor and recipient. Stars use unadjusted p-values. The four leader and four adviser modality coefficients form one eight-test Holm family.

Table A16: Substantive advisers across aid modalities

	Total ODA	Grants	Loans	Technical cooperation
Log delegation scale, t-1	0.049	−0.039	0.309	−0.011
	(0.108)	(0.074)	(0.215)	(0.044)
Log substantive advisers, t-1	0.025	0.048	−0.016	0.043**
	(0.034)	(0.034)	(0.068)	(0.021)
Ideal-point similarity (-distance), t-1	0.209**	0.273**	0.013	0.262***
	(0.101)	(0.132)	(0.155)	(0.083)
Log bilateral trade, t-1	0.060	0.015	0.393***	0.128*
	(0.082)	(0.097)	(0.081)	(0.072)
Holm-adjusted p-value (role)	0.986	0.753	0.986	0.239
Observations	65 317	64 936	16 390	49 865

* p <0.1, ** p <0.05, *** p <0.01
PPML coefficients for the commitment modality named in each column. Adviser staffing and total headcount enter as log one plus the count. All columns include lagged alignment and trade and donor-recipient and donor-year fixed effects. All columns start from observations with reported or constructible grant and loan outcomes; the total-ODA column therefore differs from the full baseline. Technical cooperation additionally requires a reported cell or eligible analytical zero. PPML removes outcome-specific all-zero fixed-effect groups. Parentheses report standard errors clustered by donor and recipient. Stars use unadjusted p-values. The four leader and four adviser modality coefficients form one eight-test Holm family.

5.2 Direct financial-modality tests

The direct tests below put the grant and loan equations on common support and separately examine the extensive margin and grant share. The comparisons distinguish differences in amount coefficients from differences in participation and the grant share. The grant-minus-loan extensive-margin difference is 1.00 percentage point (raw $p = 0.027$, three-test Holm-adjusted $p = 0.053$); the grant-share estimate is imprecise.

Table A17: Secondary financial-modality comparisons for national-leader representation

Contrast	Estimate	Std. error	Raw p	Holm p	N
A. Commitment amounts: common sample					
Grants	0.219	0.074	= 0.008		16,154
Loans	0.034	0.047	= 0.476		16,154
Grant minus loan	0.185	0.070	= 0.016	0.048	16,154
B. Commitment amounts: both components reported					
Grants	0.265	0.063	< 0.001		3,936
Loans	0.041	0.050	= 0.430		3,936
Grant minus loan	0.225	0.070	= 0.006		3,936
C. Positive-commitment probability (percentage points)					
Grants	0.692	0.321	= 0.039		72,334
Loans	-0.303	0.268	= 0.267		72,334
Grant minus loan	0.995	0.428	= 0.027	0.053	72,334
D. Grant share (percentage points)					
Unweighted	1.422	0.998	= 0.173	0.173	3,936
Aid-weighted	2.235	1.324	= 0.111		3,936

Notes: PPML amount rows include component-specific donor-recipient and donor-year fixed effects. The focal amount contrast uses the observations retained by both component equations. For panels A–C, N is the number of observations in each component equation; panel D reports the number of share observations. All contrasts concern national-leader listing. Panels C and D use linear probability and linear share models, respectively. Coefficient tests use two-way donor and recipient clustered standard errors and the `fixest` t reference distribution. The raw common-support PPML covariance matrix requires positive-semidefinite repair. Holm p-values are shown only for the three-test exploratory family: the common-support grant-minus-loan amount contrast, the grant-minus-loan positive-commitment contrast, and the unweighted grant-share association.

5.3 Inference for the grant–loan contrast

The direct grant–loan contrast stacks the two component equations on common PPML support. The grant-minus-loan point estimate remains positive across sample definitions and donor-exclusion checks. On the common sample, its unadjusted p-value is 0.016 under donor-and-recipient clustering and 0.126 under recipient-only clustering. The directional pattern is therefore more stable than its statistical precision.

Table A18: Inference and sample sensitivity of the grant-minus-loan leader contrast

Inference	Estimate	Std. error	95% CI	Raw p	Donors	Recipients
Common retained PPML support						
Donor and recipient	0.185	0.070	[0.039, 0.331]	= 0.016	19	134
Donor only	0.185	0.049	[0.082, 0.287]	= 0.001	19	134
Recipient only	0.185	0.120	[-0.053, 0.423]	= 0.126	19	134
Donor jackknife	0.185	0.056	[0.068, 0.302]	= 0.004	19	134
Broad completed components						
Donor and recipient	0.175	0.064	[0.044, 0.306]	= 0.011	32	155
Both components reported						
Donor and recipient	0.225	0.070	[0.076, 0.374]	= 0.006	17	122

Notes: Estimates are the grant-minus-loan difference in national-leader coefficients from stacked PPML amount equations, not percentage-point differences. Equations include component-specific donor–recipient and donor–year fixed effects, delegation scale, alignment and trade. Common support retains the same dyad-years in both component equations; the last two rows change the reporting restrictions. Confidence intervals and p-values are unadjusted and use cluster-t inference for the stated clustering scheme; the jackknife uses the donor count minus one degrees of freedom.

Among positive reported dyad-years in the modern predictor sample, the median grant-to-total-ODA ratio equals one, the mean ratio is 0.962, and grants equal total ODA exactly in 91.5 percent of observations. The aggregate dollar ratio is 0.778 because loans are concentrated in comparatively large aid observations. The grant extensive-margin coefficient has an unadjusted $p = 0.039$, but the grant-minus-loan extensive-margin contrast narrowly misses the 5 percent threshold after the stated family adjustment. The grant-share estimate is also imprecise. These distinctions do not establish a shift in aid composition.

6 Political Alignment and Donor Mission Staffing

These comparisons examine whether the association between recipient representation and commitment amounts varies across donor relationships. Political affinity could make cooperation easier, while a larger donor permanent-mission contingent could provide more opportunities for diplomatic interaction. Table A19 examines whether the

associations involving national leaders and recipient mission staffing vary with these two donor characteristics. The models compare donors within the same recipient–year, accounting for recipient circumstances common to all donor relationships that year, alongside donor–recipient and donor–year fixed effects.

Table A19: Political alignment and donor mission staffing

Test	Estimate	Std. error	Unadjusted p-value	Holm-adjusted p-value
Ideal-point similarity × national leader	0.008	0.045	0.861	0.861
Ideal-point similarity × recipient permanent mission	0.088	0.038	0.021	0.043
National leader × donor permanent mission	-0.010	0.026	0.698	1.000
Recipient permanent mission × donor permanent mission	-0.010	0.022	0.655	1.000

Notes: PPML interaction coefficients for bilateral ODA commitment amounts. National leader is an indicator; mission staffing enters as the log of one plus headcount. Alignment interactions use $t-2$ ideal-point similarity and trade, the $t-1$ representation measure, and 62,826 observations. Donor-mission interactions use $t-1$ measures and 65,893 observations. All models include donor–recipient, donor–year, and recipient–year fixed effects. Standard errors are clustered by donor and recipient. The two alignment interactions and the two donor-mission interactions form separate Holm families. Unadjusted tests concern each interaction individually; Holm-adjusted values account for the two tests in each family.

Table A19 summarizes the amount interactions. Neither political alignment nor donor mission staffing clearly differentiates the leader association. The recipient-mission interaction with alignment is positive under donor-and-recipient clustering; the following subsections report its magnitude, alternative timing, and inference sensitivity.

6.1 Alignment interactions

The primary interaction model measures alignment and trade in $t-2$, before the $t-1$ delegation. Recipient–year fixed effects account for recipient conditions common to all donors in a given year. The interactions are therefore estimated from

differences across donors within recipient-years. The $t-1$ alignment model is a timing sensitivity. The leader interaction is imprecise in the amount models, while the permanent-mission interaction is positive (two-way Holm-adjusted $p = 0.043$ in the primary timing specification). The leader interaction for any commitment is also positive (adjusted $p = 0.033$). Recipient-only clustering weakens these findings: with the same two-coefficient family and a $t(154)$ reference, the adjusted values are 0.122 and 0.171, respectively. The two positive interactions therefore depend on the inference specification for their statistical significance.

For interpretation, let ΔA denote the interquartile range of political similarity and γ the interaction coefficient. Changing leader listing from zero to one changes the ratio of expected commitments at the higher versus lower alignment level by $100[\exp(\gamma\Delta A)-1]$ percent, approximately 0.6 percent in the amount model. For recipient mission staffing M, an increase that doubles $1+M$ changes this ratio by $100[\exp(\gamma\Delta A \log 2) - 1]$ percent. The estimated change is 4.8 percent, with an unadjusted 95 percent interval of 0.7–9.1 percent under donor-and-recipient clustering. This is a change in the relative commitment amounts of more- and less-aligned donors, not an overall increase in commitments. In the supplementary positive-commitment model, the analogous leader contrast changes the probability ratio by approximately 1.0 percent, rather than one percentage point.

Table A20: Alignment targeting within recipient-years

	Amount: t-2 alignment	Amount: t-1 alignment	Any commitment	Reported amounts
Ideal-point similarity	−0.159	−0.072	−0.063	−0.121
	(0.523)	(0.404)	(0.092)	(0.505)
Similarity × national leader	0.008	0.005	0.013	0.005
	(0.045)	(0.047)	(0.006)	(0.045)
Similarity × permanent mission	0.088	0.090	0.008	0.089
	(0.038)	(0.038)	(0.008)	(0.038)
Similarity × delegation scale	0.009	0.020	0.019	0.006
	(0.080)	(0.084)	(0.014)	(0.080)
Log bilateral trade	0.023	0.031	−0.004	0.022
	(0.022)	(0.028)	(0.004)	(0.023)
Observations	62 826	62 826	62 826	48 102

PPML coefficients for the stated outcomes. Columns 1, 3 and 4 use alignment and trade at $t-2$; column 2 uses $t-1$. Representation is dated $t-1$. Leader listing is an indicator; mission staffing and total headcount enter as log one plus the count. All models include donor-recipient, donor-year, and recipient-year fixed effects. Parentheses report standard errors clustered by donor and recipient. The two focal interactions (alignment with leader listing and recipient mission staffing) form a separate Holm family within each outcome specification. Adjusted values for the primary amount specification appear in Table A19.

6.2 Recipient and donor permanent missions

These models ask whether recipient representation becomes more predictive when the donor also has a larger permanent-mission delegation. Both models include recipient–year fixed effects, donor–recipient fixed effects, and donor–year fixed effects. The interaction estimates are small and imprecise.

Table A21: Recipient-by-donor diplomatic presence

	Leader representation	Permanent-mission size
National leader × donor mission	−0.010	
	(0.026)	
Recipient mission × donor mission		−0.010
		(0.022)
Ideal-point similarity, $t-1$	0.024	0.021
	(0.351)	(0.356)
Log bilateral trade, $t-1$	0.033	0.033
	(0.025)	(0.025)
Observations	65 893	65 893

PPML coefficients for bilateral ODA commitment amounts. Leader listing is an indicator; donor and recipient mission staffing enter as log one plus headcount. Representation, alignment and trade are dated $t-1$. All models include donor-recipient, donor-year, and recipient-year fixed effects. Parentheses report standard errors clustered by donor and recipient. The two displayed interaction tests form one Holm family; adjusted values appear in Table A19.

6.3 Leader co-listing: a supplementary specification

A supplementary model interacts recipient and donor leader listing while including donor–recipient, donor–year and recipient–year fixed effects. The estimation sample contains 65,893 observations. The interaction coefficient is 0.080 (two-way normal-reference $p = 0.101$) when entered alone with alignment and trade, and 0.104 ($p = 0.013$) when entered jointly with recipient-leader interactions with donor mission staffing and alignment. Its recipient-clustered t-reference p-value is 0.050 before family adjustment. The evidence is therefore specification- and inference-sensitive. Co-listing is not verified simultaneous attendance or a meeting; recipient–year fixed effects remove common annual recipient shocks but do not make the donor-specific interaction exogenous. This secondary check is not an estimate of the average leader association.

7 Supplementary Composition and Confounding Assessment

7.1 Combined personnel measure and common estimation sample

The combined economic/development–foreign-affairs measure counts people whose listed titles or affiliations indicate finance, economics, development, planning, international cooperation, treasury, budget or central-bank responsibilities; home foreign-affairs service; foreign-minister or deputy-minister office; or permanent-mission service. A person meeting several criteria is counted once. National leaders and explicitly identified support staff are excluded from this count and retained in total headcount. Titles and affiliations identify functions broadly; they do not measure technical competence or actual negotiating responsibilities.

Person-level totals reconcile with the manuscript's civil-society-excluded headcount in all 3,198 baseline-linked recipient-years. The combined count has a median of 10 and an interquartile range of 6–16, and varies within 155 recipients. This aggregation reduces overlapping attributes to one personnel count while retaining leader presence separately. It supplements the four role specifications in the main analysis.

The supplementary models use a common sample of 63,253 donor–recipient–year observations from 31 donors and 154 recipients. Starting from the 66,323 baseline observations, complete covariates retain 63,483; fixed-effect estimation support removes a further 230. With s denoting roster year, the outcome is commitments in $s + 1$. Representation, alignment and trade are dated s; prior bilateral aid, GDP per capita, population and GDP growth are dated $s - 1$. Alignment and trade inherit

the baseline's annual timing and are not wholly prior to the UNGA. Negative prior-aid observations are treated as unavailable. Counts, prior aid, income and population enter as $\log(1+x)$; leader presence is binary. These models retain donor–recipient and donor–year fixed effects.

Table A22: Supplementary joint specification: size, leader presence and personnel composition

Contrast	Difference (%)	Two-way 95% CI	Recipient 95% CI
Size: double $(1+H)$	2.9	[-9.3, 16.8]	[-10.3, 18.1]
Leader: absent to listed	14.9	[5.7, 24.8]	[3.3, 27.8]
Combined personnel: double $(1+C)$	-4.9	[-19.6, 12.4]	[-21.6, 15.2]

Notes: PPML; 63,253 donor–recipient–year observations, 31 donors and 154 recipients. All three representation measures enter together. Controls are alignment, trade, prior bilateral aid, GDP per capita, population and GDP growth, with donor–recipient and donor–year fixed effects. Two-way intervals use donor/recipient clustering and a normal reference; recipient intervals use a $t(153)$ reference. Intervals are unadjusted for multiple testing. H is total headcount and C counts economic/development and foreign-affairs personnel, counting each person once. Count contrasts double one plus the count.

The joint specification retains a positive leader association and imprecise size and combined-personnel associations. At fixed size, a higher combined count implies fewer other personnel. Holding that count fixed while increasing size instead changes the remainder. These are distinct model-based contrasts, and not every doubling of the combined count is feasible at every headcount. The contrasts separate personnel functions from leader representation; they do not estimate officials' causal effectiveness.

Four specifications—size alone, size with leader presence, size with combined personnel, and all three—were each refitted after omitting alignment, trade, prior aid or economic conditions one block at a time. All 20 fits use identical observations and converge. In the joint model, the leader contrast ranges from 12.9 to 16.1 percent across these omissions. Removing prior aid produces the largest absolute change in each representation contrast: size rises from 2.9 to 6.5 percent, leader representation falls from 14.9 to 12.9 percent, and combined personnel changes from -4.9 to -8.3 percent.

These observed-control comparisons provide context for sensitivity, not a bound on omitted-variable bias. Prior aid may also reflect earlier representation.

The two-way covariance matrices required positive-semidefinite repair in the full-control leader and joint specifications. Table A22 therefore also reports recipient-clustered intervals with a $t(153)$ reference. These supplementary intervals are not adjusted for multiple testing.

7.2 Executive representation: presence rather than personnel counts

A supplementary specification distinguishes whether an executive category is represented from the number of officials in that category. It enters national-leader presence and the presence of at least one other executive official together, alongside log headcount, alignment and trade, with the baseline fixed effects and all 66,323 baseline observations. Other executives include vice-presidents and ministerial officials, including deputy and assistant ministers, but exclude national leaders and diplomatic minister ranks. The indicators can both equal one; the comparison does not assign each delegation to a single rank category. These titles indicate listed offices rather than uniform authority or verified attendance.

Other-executive presence is recorded in 2,827 of the 3,198 baseline-linked recipient-years; 96 recipients change status. The estimated leader association is 18.2 percent, with a two-way normal-reference 95 percent interval of 6.0–31.8 percent. The other-executive association is 1.8 percent, with an interval of −9.5–14.5 percent. The leader point estimate is larger. A direct test of coefficient equality gives $p = 0.052$ using the two-way covariance and a $t(31)$ reference, and $p = 0.088$ with recipient clustering and a $t(154)$ reference. Using a normal reference with the two-way covariance instead gives

$p = 0.043$. These exploratory tests are unadjusted for multiple comparisons; they do not provide a robust rejection of equal associations. The executive interval also leaves room for a positive association of meaningful magnitude.

7.3 Influence, headcount form and inference

The follow-up checks retain three specifications: headcount alone with the baseline controls; headcount and leader listing with those controls; and the joint model with combined personnel, prior bilateral aid and economic controls. The first two contain 66,323 observations; the joint model contains 63,253. On the joint sample, the baseline leader contrast is 16.7 percent. Adding prior aid and economic controls changes it to 16.3 percent, and adding combined personnel gives 14.9 percent. Thus the change from the full-sample 18.2 percent estimate does not measure the contribution of composition controls alone.

Deleting one recipient at a time yields baseline leader contrasts of 11.2–21.1 percent, with the smallest estimate when Iraq is omitted. Deleting one donor at a time yields 17.2–20.3 percent. The corresponding joint-model ranges are 9.9–17.1 percent across recipient deletions and 13.6–15.9 percent across donor deletions. These are ranges of point estimates, not confidence intervals. The size-only doubling contrast ranges from 2.6 to 8.3 percent across recipient deletions and 1.6 to 8.4 percent across donor deletions. Joint-model size and combined-personnel point estimates change sign across recipient deletions.

A natural cubic spline replaces linear log headcount, using three interior knots at its recipient-year quartiles and boundary knots at its observed minimum and maximum. The leader contrasts are 19.3 percent in the baseline and 15.6 percent in the joint model. Moving headcount from 10 to 26, the recipient-year interquartile range, gives a size-only spline contrast of 4.3 percent, with a recipient-clustered 95 percent interval

of −12.5 to 24.2 percent. The linear counterpart is 8.4 percent, with an interval of −3.8 to 22.2 percent. The joint-model spline contrast is also imprecise. Its fixed-composition comparison is feasible at both headcounts in only 43.6 percent of the joint sample's dyad-year rows, underscoring the support restriction on composition-held-fixed size comparisons.

Capping the dependent variable at its within-sample 99.5th percentile retains every observation but changes the outcome and its conditional mean. The baseline leader contrast falls to 8.1 percent, with a recipient-clustered 95 percent interval of 0.8–15.9 percent; the joint contrast falls to 7.1 percent, with an interval of 0.9–13.7 percent. The size-only contrast remains imprecise at 6.0 percent. The positive leader association therefore extends beyond uncapped extreme commitments, but its magnitude is sensitive to them. Capping assesses sensitivity to the largest amounts without classifying those observations as errors.

Moving alignment and trade from roster year s to $s-1$ also changes data availability. On the common 62,883 observations, the baseline leader contrast is 15.5 percent with the inherited timing and 16.3 percent with earlier controls. The joint-model counterparts are 16.1 and 16.9 percent on 61,676 observations. These checks address annual control timing, not unobserved anticipation of future aid.

The crossed-cluster pairs bootstrap independently resamples the observed donors and recipients with replacement, retaining full time histories and weighting each dyad by the product of its two sampling multiplicities. Each of 999 draws per specification refits PPML and its fixed effects; all draws converge with finite focal coefficients. The procedure applies crossed-cluster resampling to the fitted PPML models.[5] Unique retained row counts vary across draws because clusters repeat or are omitted and

[5]The crossed-resampling construction follows Owen (2007). The reported PPML percentile intervals are approximate.

estimation support is recalculated. Table A23 reports approximate percentile intervals. They remain above zero for leader listing and span zero for size and combined personnel; they are not family-adjusted tests.

Table A23: Crossed-cluster bootstrap sensitivity

Model and contrast	Estimate (%)	Lower (%)	Upper (%)
Size-only: headcount	6.4	-6.3	23.3
Size + leader: headcount	2.8	-10.8	21.0
Size + leader: leader	18.2	1.5	38.4
Joint: headcount	2.9	-13.5	19.7
Joint: leader	14.9	1.9	34.2
Joint: combined personnel	-4.9	-20.5	16.3

Notes: Approximate 95 percent percentile intervals from 999 successful refits per model. Donor and recipient clusters are independently sampled with replacement; their multiplicities multiply each dyad's weight, preserving its time history. Every draw refits PPML with donor–recipient and donor–year fixed effects. All models include lagged alignment and trade; the joint model adds combined economic/development and foreign-affairs staffing, prior bilateral aid and recipient economic controls. Size and combined-personnel contrasts double one plus the count; leader changes from zero to one. Joint-model contrasts hold the other representation measures fixed. These intervals are unadjusted for multiple testing.

7.4 Council status and election timing

Elected Security Council membership is coded from the UN's official service-year list, which reconciles to ten elected members in every year from 1992 through 2017. There are 159 sitting-member recipient-years in baseline support. The controls distinguish service in roster year s from already-elected status known before that year's UNGA. The latter identifies Bolivia, Ethiopia and Kazakhstan in 2016: the election for 2017 seats occurred in June, whereas the 2015 election occurred in October.[6] Permanent-member status is time-invariant and absorbed by the fixed effects. A separate specification conditions on membership in $s + 1$. Because most such elections occur after the UNGA, this last variable is not uniformly predetermined and may condition on a later outcome of diplomacy.

[6]Service years are checked against the UN Security Council elected members by year; UN General Assembly, June 2016 election record; and UN Secretary-General, October 2015 election account.

Election indicators use the Election Timing across Autocracy and Democracy (ETAD) data of Higashijima et al. (2025). Presidential and legislative elections enter separately, with indicators for the preceding calendar year and January–August of roster year s. This cutoff predates the UNGA, not necessarily the delegation decision. Coverage requires recorded election years to bracket that window; missing dates within it are treated as unavailable. Countries outside coverage are excluded rather than assigned zero elections. The election comparison retains 53,066 observations from 110 recipients; the joint model retains 50,756 from 109 recipients. Each restricted sample is refitted without the new controls before adding them.

Table A24 shows little change in the leader estimates. Joint-model headcount remains about 2.0 percent on election-covered support, and combined personnel about -6.3 to -6.6 percent; both remain imprecise. Recipient-clustered intervals are reported because the two-way covariance matrix requires positive-semidefinite repair in the joint specifications and in the baseline election-plus-Council specification. These checks address observed political status, not exogeneity. Elections need not change the incumbent, and the data do not cover turnover without elections. A complete, consistently dated series of pre-UNGA Council candidacies was not available from the bounded source check, so campaigning remains unmeasured.

Table A24: Political-status controls on matched support

Specification	Size-only	Leader model	Joint leader
Full-support baseline	6.4	18.2	14.9
	[-3.0, 16.8]	[3.0, 35.6]	[3.3, 27.8]
Known Council status	6.5	18.1	14.7
	[-2.9, 16.8]	[2.9, 35.7]	[2.8, 27.9]
Also subsequent Council status	6.3	18.0	14.5
	[-3.1, 16.7]	[2.7, 35.6]	[2.4, 28.1]
Election-covered baseline	2.4	18.6	14.5
	[-6.2, 11.7]	[3.0, 36.5]	[2.1, 28.5]
Election indicators	2.6	19.2	15.0
	[-5.9, 11.9]	[3.1, 37.8]	[2.1, 29.6]
Elections and known Council status	2.6	19.1	14.8
	[-6.0, 12.0]	[2.9, 37.8]	[1.6, 29.8]

Notes: Percentage differences and unadjusted 95 percent recipient-clustered t intervals. Size-only doubles one plus headcount; the other columns change leader listing from zero to one conditional on headcount. Full support contains 66,323 observations (63,253 for the joint model); election coverage leaves 53,066 (50,756). All models include lagged alignment and trade and donor–recipient and donor–year fixed effects. The joint model also includes combined personnel, prior aid and economic controls. Council status refers to nonpermanent UN Security Council membership during the roster year and membership already announced for the following year. Council membership in the following year is a separate sensitivity, not uniformly predetermined.

7.5 Aid already in preparation

A bounded review of three financing programs examined whether official donor records distinguish development from later agreement dates. The cases were selected for accessible documentation within the paper's period, before their roster changes were inspected. They are not a representative sample of aid projects.

For Nepal, the Millennium Challenge Corporation (MCC) selected the country for compact development in December 2014, preceding the 2016 UNGA; the compact was signed in September 2017. For Benin, eligibility to develop a second compact dated to December 2011, preceding the 2014 UNGA; approval and signing followed in 2015. Japan's Cross-Border Road Network Improvement Project in Bangladesh documents preparatory work in July 2015 and a loan agreement in June 2016.[7]

[7]The project chronology distinguishes selection and signing using MCC's Nepal selection announcement and signing announcement; MCC's Benin development account and signing announcement; JICA's preparatory survey and ex-ante evaluation.

These sequences show that agreements signed after a UNGA session can arise from an existing project pipeline. Representation might advance that pipeline, and anticipated financing might influence representation. The records do not date delegation choices or establish either direction of influence. Agreement dates have not been matched to individual OECD commitment records, so the examples cannot quantify the share of the dependent variable already anticipated. Nor can they establish how common such sequences are across donors and recipients.

7.6 Documented engagement and financing links

A follow-up to the same three program cases links named officials in the rosters to official accounts of diplomatic activity. The cases were selected for accessible program documentation, not to estimate how frequently particular delegates engage donors or secure financing. An unreported meeting remains unobserved, not absent.

Bangladesh's September 2015 roster lists Sheikh Hasina. Japan's account records her meeting with Shinzo Abe in New York on September 28 and discussion of the 36th yen-loan package and assistance already promised. Nepal's 2016 roster lists Foreign Minister Prakash Sharan Mahat without a national leader. Nepal's foreign ministry records his brief exchanges with Barack Obama and John Kerry at a September 20 reception for delegation heads, but does not specify aid or an MCC negotiation (Ministry of Foreign Affairs of Japan 2015; Ministry of Foreign Affairs of Nepal 2016).

Benin's 2014 roster includes Environment Minister Raphael Edou and Permanent Representative Jean-Francis Régis Zinsou. UNCDF documents their participation in a LoCAL climate-financing discussion following the September 23 UN Climate Summit. Edou spoke on behalf of President Boni Yayi; the account does not establish the listed president's attendance. This is evidence of ministerial and mission engagement with a

multilateral financing initiative, not a documented negotiation with the United States over the power compact (United Nations Capital Development Fund 2014).

The records distinguish documented engagement from a verified link to an individual aid commitment. Bangladesh's road project appears in JICA's June 2016 financing package but is not named in the September 2015 meeting account. Nepal's readout names no compact. Benin's compact text records a March 2013 proposal and a September 2014 shift toward power-sector investment following project development and due diligence; it does not attribute that revision to the UNGA.[8] No case supplies a verified meeting-to-program-to-OECD-activity link. The accounts substantiate diplomatic activity by listed officials and show that financing discussions can concern existing initiatives. They do not identify an incremental effect of these exchanges on the recorded commitments.

7.7 Reported objectives and public scrutiny

A supplementary search of recipient-country reporting places these official meeting accounts in context. The search began with Bangladesh, Nepal and Benin and extended to eight other countries, including Malawi. Coverage was purposive and uneven across countries; the examples illustrate stated objectives and public debate rather than their prevalence in the estimation sample.

Bangladesh's September 2015 predeparture reporting describes planned bilateral and business meetings. Malawi's contemporaneous controversy concerns delegation size and public expense, with the presidency attributing some participants' funding to outside sponsors. Plans do not establish completed meetings, and the official funding response is not an audited expenditure account (Daily Star 2015; Nyasa Times

[8]The financing package is documented in JICA's June 29, 2016 loan agreements; project development is recorded in the United States–Benin power compact, Annex I.

2015). Their descriptions of traveling or sponsored participants are not used to recode government-roster headcounts.

A September 2016 report of Malawi's foreign minister's predeparture briefing explicitly identifies aid and investment as hoped-for benefits of participation. The same briefing announces tighter approval requirements for delegation travel following the 2015 controversy (Kitta 2016). This is evidence of an announced aid-seeking objective alongside limits on delegation size, not a claim that additional delegates secured aid. The briefing records planned, rather than verified, bilateral meetings.

Zambia's foreign minister provides a complementary account of delegates' roles. His October 2015 parliamentary statement describes the mines minister's participation in a United Nations Development Programme meeting on extractive industries and a business forum arranged for the delegation (Kalaba 2015). This official explanation illustrates specialized participation and investment promotion. Together, the accounts motivate attention to both delegation size and composition while distinguishing investment promotion and broader diplomatic objectives from bilateral aid commitments.

7.8 Interpreting an unobserved-factor scenario

Consider an unrecorded binary condition U, such as whether a recipient has an advanced project pipeline. The binary condition is an illustrative simplification. Let ρ be the factor by which $U = 1$ multiplies expected commitments relative to $U = 0$, holding measured covariates, fixed effects and representation constant. Let p_0 and p_1 be the probabilities of $U = 1$ in otherwise comparable cases without and with leader listing. Assume that ρ is common to both groups and that the resulting bias factor is common across the covariate strata summarized by the coefficient. Averaging over

this hypothetical condition gives the multiplicative factor

$$B = \frac{1 + (\rho - 1)p_1}{1 + (\rho - 1)p_0}.$$

Under these assumptions, dividing the observed conditional mean ratio by B removes the contribution attributed to U. This is a conditional-mean scenario compatible with a multiplicative outcome model, not an OLS robustness value or an arbitrary-confounder PPML refit.

For illustration, set $\rho = 2$ and $p_0 = 0.25$. The first assumption says that the condition doubles *expected* aid for otherwise comparable cases; it does not say that every recipient's aid doubles. The second says that the condition occurs in 25 of every 100 comparable cases without a leader listing. Setting p_1 to approximately 0.436—about 44 of every 100 comparable cases with a leader listing—produces $B \simeq 1.149$, enough to account for the joint-model leader point contrast. The relevant imbalance is about 19 percentage points in the frequency of the hypothetical condition.

Neither the doubling assumption nor these conditional frequencies is estimated from the data. Their plausibility cannot be assessed from the three project chronologies. With $p_0 = 0.25$, a smaller expected-aid multiplier of $\rho = 1.5$ would require $p_1 \simeq 0.585$, while $\rho = 3$ would require $p_1 \simeq 0.362$. A stronger association between the omitted condition and aid can explain the observed contrast with a smaller prevalence imbalance.

Under the $\rho = 2$, $p_0 = 0.25$ scenario, the corresponding imbalance needed to account for the size point contrast is approximately 3.6 percentage points. For the negative combined-personnel contrast, it is 6.5 percentage points with the condition more frequent on the *lower*-combined-personnel side. These are separate hypothetical contrasts, not one jointly specified confounder distribution. Both estimates already have

intervals spanning zero. The calculations quantify the imbalance required under the stated assumptions; they do not estimate whether such a condition exists in the data.

8 Historical Evidence

The long-run analysis begins with 1966 delegation sources and 1967 outcomes. It is secondary to the 1994–2017 design for two reasons. First, the pre-1994 eligible-zero risk set is reconstructed less exactly than the modern OECD risk set. Second, missing addenda and source-quality differences make historical total delegation headcount more measurement-sensitive. Historical leader classification is also exposed to damaged titles and changing body/footnote conventions. The targeted source checks do not validate the full long-run panel.

The table excludes outcome years whose lagged delegation source is flagged. The completed-risk-set and reported-cell estimates are shown side by side. The leader point estimates remain positive in both historical samples. The historical headcount coefficients are positive and significant at 10 percent, but not at 5 percent under the reported unadjusted tests. Their interpretation also depends on the comparability of the underlying rosters.

Table A25: Historical leader representation and total delegation, 1967–2017

	Leader: completed risk set	Leader: reported cells	Total: completed risk set	Total: reported cells
Log delegation scale, t-1			0.082*	0.085*
			(0.049)	(0.047)
National leader present, t-1	0.193***	0.182***		
	(0.068)	(0.059)		
Ideal-point similarity (-distance), t-1	0.489***	0.463***	0.504***	0.477***
	(0.187)	(0.165)	(0.190)	(0.166)
Log bilateral trade, t-1	0.010	−0.005	0.007	−0.009
	(0.046)	(0.046)	(0.045)	(0.045)
Observations	94 707	66 737	94 707	66 737

* p <0.1, ** p <0.05, *** p <0.01
PPML coefficients for bilateral ODA commitment amounts. Leader listing is an indicator; delegation scale is log one plus headcount. Each column uses the stated representation measure with lagged alignment and trade. All models include donor-recipient and donor-year fixed effects. Parentheses report standard errors clustered by donor and recipient; stars use unadjusted p-values. Outcome years 1972, 1975, 1984, 1987, 1990 and 1991 are excluded because their lagged roster sources are flagged. Completed samples include eligible analytical zeros; reported-cell samples do not. Historical headcount is measurement-sensitive.

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