

Online Appendix
For "All Alliances are Multilateral: Rethinking Alliance Formation in an International System"

TABLE OF CONTENTS

Robustness Checks for Table 3 (using time, time ² , and time ³)	2
Robustness Checks for Table 4 (alternative codings of polity difference and alternative measures of the k-ad's 'democraticness')	5
Simulations for Results with and without Inverse Probability Weights	12
Robustness: Results with C-Shapes Minimum Distance	26
Robustness: Pre-v-Post World War II	29
Robustness: Proportion of K-ad Members Previously Allied	32
Robustness: Including Country Dummy variables (to account for dependencies)	33
Robustness: Conditioning on the Size of Threat	38
Robustness: Controlling for Average Distance, Not Maximum Distance	43
Robustness: Alternative Draws of "Non-Event" K-ads	45
Robustness: Alternative Measures of Threat	47
Robustness: Use All Alliances (Not Just Defense Pacts)	51
Robustness: Over Sample Major Powers	54
Distribution of K-ads	59
Main Results using alternative sized samples of "non-event" k-ads	62
Summary Statistics of Control Variables	66


```

. ** CHECK 1L use t, t^2, and ^3 instead of cubic splines

. * 1.1 Model of total CINC with no controls
. relogit defpact total_cinc total_cinc_square noallyrs _prefail _spline1 _spline2 _spline3

```

Corrected logit estimates Number of obs = 23075

```

-----
      |
      |             Robust
      |             Coef.   Std. Err.      z    P>|z|      [95% Conf. Interval]
-----+-----
total_cinc |  9.584344   1.311919    7.31  0.000    7.013029   12.15566
total_cinc~e | -16.41323   3.112299   -5.27  0.000   -22.51322  -10.31323
noallyrs |  -.1371712   .0386097   -3.55  0.000   -1.2128448  -.0614975
_prefail |  -1.452453   .2211262   -6.57  0.000   -1.885853  -1.019054
_spline1 |  -.0008222   .0002723   -3.02  0.003   -.0013559  -.0002884
_spline2 |  .0003847   .0001334    2.88  0.004   .0001231   .0006462
_spline3 |  -.0000413   .0000182   -2.27  0.023   -.000077  -5.61e-06
_cons |  -3.944196   .1666839  -23.66  0.000   -4.27089  -3.617502
-----

```

```

. relogit defpact total_cinc total_cinc_square time time2 time3

```

Corrected logit estimates Number of obs = 23075

```

-----
      |
      |             Robust
      |             Coef.   Std. Err.      z    P>|z|      [95% Conf. Interval]
-----+-----
total_cinc |  7.256042   1.221667    5.94  0.000    4.861618   9.650465
total_cinc~e | -11.78145   2.8504    -4.13  0.000   -17.36813  -6.194767
time |  -.0260147   .0110268   -2.36  0.018   -.0476268  -.0044025
time2 |  .0002279   .0002021    1.13  0.259   -.0001682   .0006239
time3 |  -4.76e-07   9.80e-07   -0.49  0.627   -2.40e-06   1.44e-06
_cons |  -4.457415   .1294017  -34.45  0.000   -4.711038  -4.203792
-----

```

```
. * 1.2 Adding the number of members squared
. relogit defpact total_cinc total_cinc_square nummem nummem_square noallyrs _prefail _spline1
_spline2 _spline3
```

Corrected logit estimates Number of obs = 23075

```
-----
```

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	8.688343	1.278807	6.79	0.000	6.181927	11.19476
total_cinc~e	-16.39879	2.945051	-5.57	0.000	-22.17098	-10.62659
nummem	.1193635	.0365272	3.27	0.001	.0477714	.1909556
nummem_squ~e	-.0019929	.0011473	-1.74	0.082	-.0042416	.0002558
noallyrs	-.1199398	.038928	-3.08	0.002	-.1962373	-.0436422
_prefail	-1.526022	.2340884	-6.52	0.000	-1.984827	-1.067217
_spline1	-.0007864	.0002722	-2.89	0.004	-.00132	-.0002528
_spline2	.0003769	.0001331	2.83	0.005	.000116	.0006378
_spline3	-.0000438	.0000181	-2.42	0.016	-.0000793	-8.32e-06
_cons	-4.391657	.2005674	-21.90	0.000	-4.784762	-3.998552

```
-----
```

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square time time2 time3
```

Corrected logit estimates Number of obs = 23075

```
-----
```

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	6.583083	1.227812	5.36	0.000	4.176616	8.98955
total_cinc~e	-12.25336	2.788023	-4.39	0.000	-17.71778	-6.788931
nummem	.0928933	.0300789	3.09	0.002	.0339398	.1518468
nummem_squ~e	-.0011637	.0009027	-1.29	0.197	-.002933	.0006055
time	-.0197026	.0107413	-1.83	0.067	-.0407552	.0013501
time2	.0001659	.0001981	0.84	0.402	-.0002224	.0005542
time3	-2.90e-07	9.57e-07	-0.30	0.762	-2.17e-06	1.59e-06
_cons	-4.778819	.1468133	-32.55	0.000	-5.066567	-4.49107

```
-----
```

.


```

** CHECK 1 use t, t^2, and ^3 instead of cubic splines
. relogit defpact total_cinc total_cinc_square nummem nummem_square kad_max_distance average_s
max_pol_dif total
> _threat min_pol noallyrs _prefail _spline1 _spline2 _spline3
(720 missing values generated)

```

Corrected logit estimates Number of obs = 22355

```

-----
      defpact |           Coef.      Robust
              |           Std. Err.      z    P>|z|      [95% Conf. Interval]
-----+-----
total_cinc | 6.967631 | 1.517804 | 4.59 | 0.000 | 3.99279 | 9.942472
total_cinc~e | -11.94098 | 3.542411 | -3.37 | 0.001 | -18.88398 | -4.997983
nummem | .330672 | .0706395 | 4.68 | 0.000 | .1922212 | .4691228
nummem_squ~e | -.0077704 | .0025686 | -3.03 | 0.002 | -.0128048 | -.0027361
kad_max_di~e | -.0002389 | .0000337 | -7.10 | 0.000 | -.0003049 | -.0001729
average_s | 1.118317 | .3778857 | 2.96 | 0.003 | .3776748 | 1.85896
max_pol_dif | -.0124123 | .0119702 | -1.04 | 0.300 | -.0358735 | .0110489
total_threat | .0520421 | .0636585 | 0.82 | 0.414 | -.0727263 | .1768106
min_pol | -.0104132 | .0142987 | -0.73 | 0.466 | -.0384381 | .0176117
noallyrs | -.1432144 | .0398603 | -3.59 | 0.000 | -.2213391 | -.0650896
_prefail | -1.682169 | .2313021 | -7.27 | 0.000 | -2.135513 | -1.228825
_spline1 | -.0009332 | .0002789 | -3.35 | 0.001 | -.0014799 | -.0003866
_spline2 | .0004417 | .0001357 | 3.25 | 0.001 | .0001756 | .0007077
_spline3 | -.0000488 | .000018 | -2.72 | 0.007 | -.000084 | -.0000136
_cons | -5.052951 | .4530961 | -11.15 | 0.000 | -5.941003 | -4.164899
-----

```

```

. relogit defpact total_cinc total_cinc_square nummem nummem_square kad_max_distance average_s
max_pol_dif total
> _threat min_pol time time2 time3
(720 missing values generated)

```

Corrected logit estimates Number of obs = 22355

```

-----
      defpact |           Coef.      Robust
              |           Std. Err.      z    P>|z|      [95% Conf. Interval]
-----+-----
total_cinc | 5.008148 | 1.392803 | 3.60 | 0.000 | 2.278304 | 7.737992
total_cinc~e | -7.672638 | 3.113534 | -2.46 | 0.014 | -13.77505 | -1.570224
nummem | .2655791 | .0692328 | 3.84 | 0.000 | .1298853 | .401273
nummem_squ~e | -.0055658 | .0024724 | -2.25 | 0.024 | -.0104116 | -.000072
kad_max_di~e | -.0001841 | .0000342 | -5.38 | 0.000 | -.0002511 | -.0001171
average_s | .9642671 | .3655328 | 2.64 | 0.008 | .247836 | 1.680698
max_pol_dif | -.0253343 | .0121368 | -2.09 | 0.037 | -.049122 | -.0015466
total_threat | .0514628 | .0714632 | 0.72 | 0.471 | -.0886026 | .1915281
min_pol | -.0303366 | .0143282 | -2.12 | 0.034 | -.0584194 | -.0022538
time | -.0202028 | .0111273 | -1.82 | 0.069 | -.0420119 | .0016064
time2 | .0002131 | .0001946 | 1.10 | 0.274 | -.0001683 | .0005945
time3 | -5.21e-07 | 9.23e-07 | -0.56 | 0.572 | -2.33e-06 | 1.29e-06
_cons | -5.528148 | .4391963 | -12.59 | 0.000 | -6.388957 | -4.66734
-----

```

* CHECK 2: Sensitivity of Results to different codings of the k-ad's level of `democraticness`

```
. sum min_pol max_pol prop_dem mean_pol
```

Variable	Obs	Mean	Std. Dev.	Min	Max
min_pol	22686	-4.435775	5.986886	-10	10
max_pol	23075	4.793456	4.352559	0	10
prop_dem	23075	.2812631	.3292338	0	1
mean_pol	23075	-.6170394	5.207185	-10	10

```

. relogit defpact total_cinc total_cinc_square nummem nummem_square kad_max_distance average_s
max_pol_dif total
> _threat min_pol noallyrs _prefail _spline1 _spline2 _spline3
(720 missing values generated)

```

Corrected logit estimates

Number of obs = 22355

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	6.967631	1.517804	4.59	0.000	3.99279	9.942472
total_cinc~e	-11.94098	3.542411	-3.37	0.001	-18.88398	-4.997983
nummem	.330672	.0706395	4.68	0.000	.1922212	.4691228
nummem_squ~e	-.0077704	.0025686	-3.03	0.002	-.0128048	-.0027361
kad_max_di~e	-.0002389	.0000337	-7.10	0.000	-.0003049	-.0001729
average_s	1.118317	.3778857	2.96	0.003	.3776748	1.85896
max_pol_dif	-.0124123	.0119702	-1.04	0.300	-.0358735	.0110489
total_threat	.0520421	.0636585	0.82	0.414	-.0727263	.1768106
min_pol	-.0104132	.0142987	-0.73	0.466	-.0384381	.0176117
noallyrs	-.1432144	.0398603	-3.59	0.000	-.2213391	-.0650896
_prefail	-1.682169	.2313021	-7.27	0.000	-2.135513	-1.228825
_spline1	-.0009332	.0002789	-3.35	0.001	-.0014799	-.0003866
_spline2	.0004417	.0001357	3.25	0.001	.0001756	.0007077
_spline3	-.0000488	.000018	-2.72	0.007	-.000084	-.0000136
_cons	-5.052951	.4530961	-11.15	0.000	-5.941003	-4.164899


```
. relogit defpact total_cinc total_cinc_square nummem nummem_square kad_max_distance average_s
max_pol_dif total
> _threat max_pol noallyrs _prefail _spline1 _spline2 _spline3
(358 missing values generated)
```

Corrected logit estimates

Number of obs = 22717

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	7.233522	1.522873	4.75	0.000	4.248745	10.2183
total_cinc~e	-12.5517	3.589022	-3.50	0.000	-19.58605	-5.517343
nummem	.3362061	.0708979	4.74	0.000	.1972488	.4751635
nummem_squ~e	-.0078412	.0025752	-3.04	0.002	-.0128885	-.0027938
kad_max_di~e	-.0002398	.0000336	-7.13	0.000	-.0003057	-.0001738
average_s	1.107842	.3688788	3.00	0.003	.3848529	1.830831
max_pol_dif	.0009319	.0148688	0.06	0.950	-.0282105	.0300743
total_threat	.0451761	.0623566	0.72	0.469	-.0770405	.1673927
max_pol	-.0222003	.022791	-0.97	0.330	-.0668698	.0224693
noallyrs	-.1393581	.0398103	-3.50	0.000	-.2173848	-.0613314
_prefail	-1.67484	.2312597	-7.24	0.000	-2.1281	-1.221579
_spline1	-.0009137	.0002782	-3.28	0.001	-.0014589	-.0003685
_spline2	.0004336	.0001354	3.20	0.001	.0001683	.000699
_spline3	-.0000485	.0000179	-2.70	0.007	-.0000836	-.0000133
_cons	-5.049845	.4219922	-11.97	0.000	-5.876935	-4.222756

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square kad_max_distance average_s
max_pol_dif total
> _threat prop_dem noallyrs _prefail _spline1 _spline2 _spline3
(358 missing values generated)
```

Corrected logit estimates

Number of obs = 22717

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	7.322094	1.523402	4.81	0.000	4.33628	10.30791
total_cinc~e	-12.68907	3.592364	-3.53	0.000	-19.72998	-5.64817
nummem	.3378838	.0709602	4.76	0.000	.1988043	.4769633
nummem_squ~e	-.0078271	.0025883	-3.02	0.002	-.0129001	-.002754
kad_max_di~e	-.0002407	.0000332	-7.24	0.000	-.0003058	-.0001755
average_s	1.099585	.3666829	3.00	0.003	.3808997	1.81827
max_pol_dif	-.0035541	.0122066	-0.29	0.771	-.0274785	.0203703
total_threat	.0357186	.0643934	0.55	0.579	-.0904901	.1619273
prop_dem	-.3443352	.276307	-1.25	0.213	-.885887	.1972166
noallyrs	-.1385786	.039793	-3.48	0.000	-.2165714	-.0605857
_prefail	-1.660312	.2320987	-7.15	0.000	-2.115217	-1.205407
_spline1	-.0009067	.0002783	-3.26	0.001	-.0014521	-.0003612
_spline2	.0004303	.0001355	3.18	0.001	.0001647	.0006958
_spline3	-.0000482	.0000179	-2.68	0.007	-.0000833	-.000013
_cons	-5.030458	.4187232	-12.01	0.000	-5.85114	-4.209775

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square kad_max_distance average_s
max_pol_dif total
> _threat mean_pol noallyrs _prefail _spline1 _spline2 _spline3
(358 missing values generated)
```

Corrected logit estimates

Number of obs = 22717

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	7.167772	1.498151	4.78	0.000	4.231451	10.10409
total_cinc~e	-12.27766	3.512299	-3.50	0.000	-19.16164	-5.393677
nummem	.3444177	.0718243	4.80	0.000	.2036447	.4851907
nummem_squ~e	-.0079697	.0026089	-3.05	0.002	-.013083	-.0028563
kad_max_di~e	-.0002344	.0000336	-6.98	0.000	-.0003002	-.0001686
average_s	1.139157	.3718844	3.06	0.002	.4102775	1.868037
max_pol_dif	-.0036249	.0118086	-0.31	0.759	-.0267692	.0195194
total_threat	.0307174	.063306	0.49	0.628	-.09336	.1547948
mean_pol	-.0261649	.0159192	-1.64	0.100	-.0573659	.0050362
noallyrs	-.1406706	.0396946	-3.54	0.000	-.2184706	-.0628707
_prefail	-1.654665	.2312826	-7.15	0.000	-2.107971	-1.20136
_spline1	-.0009165	.0002777	-3.30	0.001	-.0014607	-.0003723
_spline2	.0004332	.0001352	3.20	0.001	.0001683	.0006982
_spline3	-.0000477	.0000179	-2.66	0.008	-.0000829	-.0000126
_cons	-5.197959	.4529794	-11.48	0.000	-6.085782	-4.310136

SIMULATIONS FOR RESULTS WITH AND WITHOUT INVERSE PROBABILITY WEIGHTS

NOTE: Since the dataset on which the model is estimated is a stratified sample, one may consider weighing the observations from each strata by the inverse probability of being drawn from the sample. However, applying an inverse probability weighting is not without costs. Specifically, for k -ads of size $k=4$, the probability of a single observation being drawn is so exceedingly small (if there are 150 countries in the system in a given year, then the probability of a particular 4-ad being drawn is $1/20,260,275$) and the corresponding inverse probability weight so massively large, that it can generate convergence problems for the model (i.e. the standard errors may not be identified). Thus, one faces a trade off: apply inverse probability weights, but lose the ability to include k -ads of a particular size (perhaps $k=4$) and larger; or retain all k -ads, but do not apply inverse probability weights. We choose the latter approach, as we think it is critical to include the larger k -adic observations. The following Monte Carlo simulations show that, so long as rare-events logit estimation is applied, the difference in the coefficient estimates from the applying inverse probability weights compared to not applying inverse probability weights is trivially small.

Description of the Simulation (based on Poast 2010 simulations):

```
** DGP
```

```
gen b1 = 1
```

```
gen cons = -9.85
```

```
gen xb = cons + b1*cap_ratio + u
```

```
gen y = 0
```

```
replace y = 1 if xb > 0
```

```
** Create Random Sample (observations in the sample are identified by the variable `keep`).
```

```
* All observations in which y=1 will be included in the sample.
```

```
gen keep = 1 if y==1
```

```
replace ipw=1 if y==1
```

```
* A random sample of the y=0 observations will be included in the sample (notice the sample is twice the number of observations in which y=1).
```

```
gen keep_p = uniform() if y~=.
```

```
local k 1
```

```
while `k' <=(`number') {
```

```
sum y if y==1 & nummem==`k'
```

```
local n_t = r(N)
```

```
sort keep_p
```

```
gen n_t = _n if y~= . & nummem==`k'
```

```
replace keep = 1 if y~= . & nummem==`k' & n_t < 2*(`n_t')
```

```
local k = `k' + 1
```

```
drop n_t
```

```
}
```

```
** Finally, attempt to reestimate the the parameter on "cap_ratio" using relogit model
```

```
* Model using inverse probability weights
```

```
relogit y cap_ratio if keep==1
```

```
/* Store the estimated coefficient on cap_ratio */
```

```
capture local b1 = _b[cap_ratio]
```

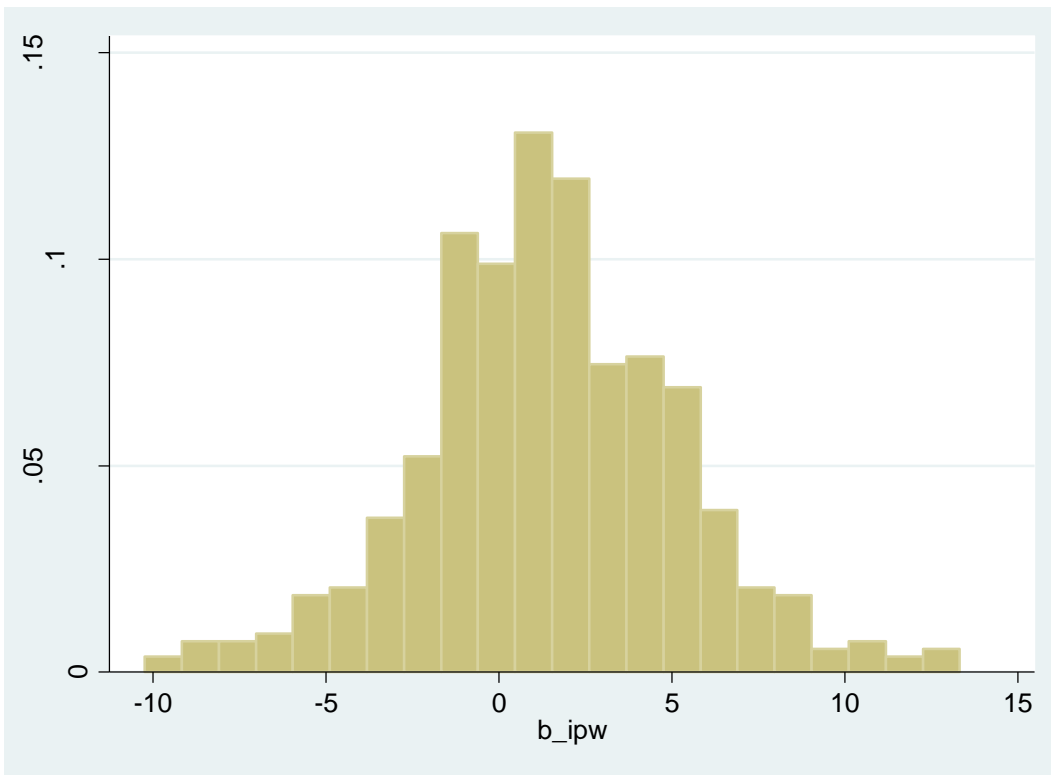
```
* Model not using inverse probability weights
```

```
relogit y cap_ratio [fw=ipw] if keep==1
```

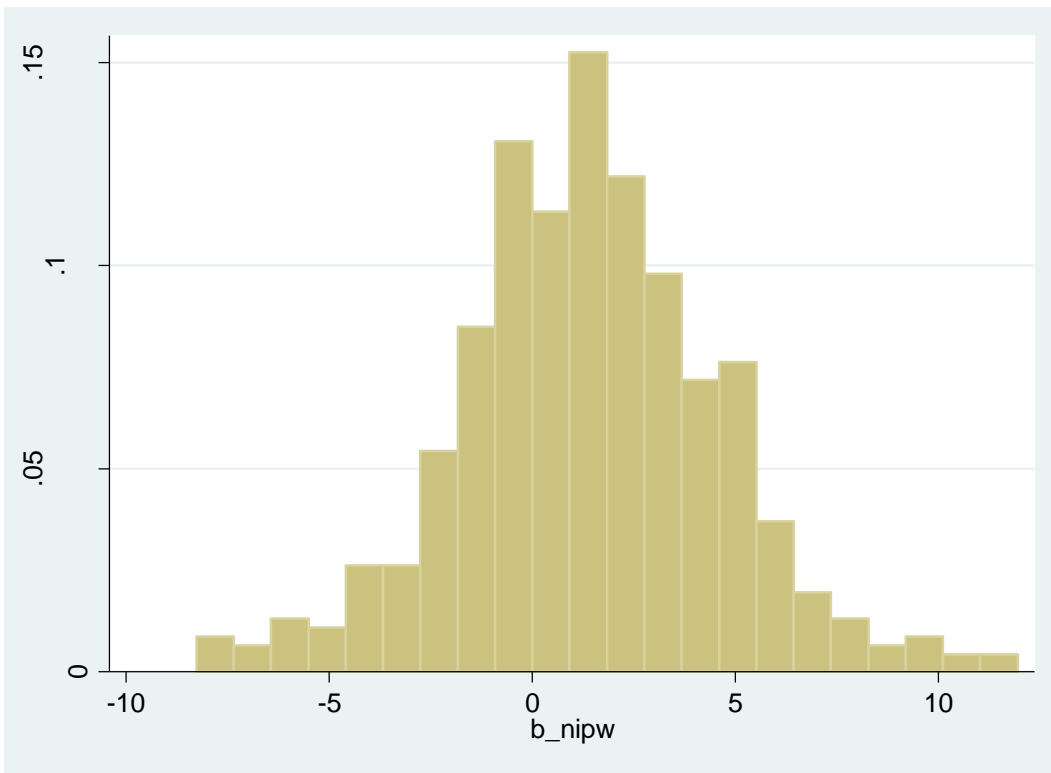
```
capture local b2 = _b[cap_ratio]
```

Simulation results when dataset includes just dyads and triads (500 iterations):

Distribution of estimates of coefficient on cap_ratio from regressions using inverse probability weights

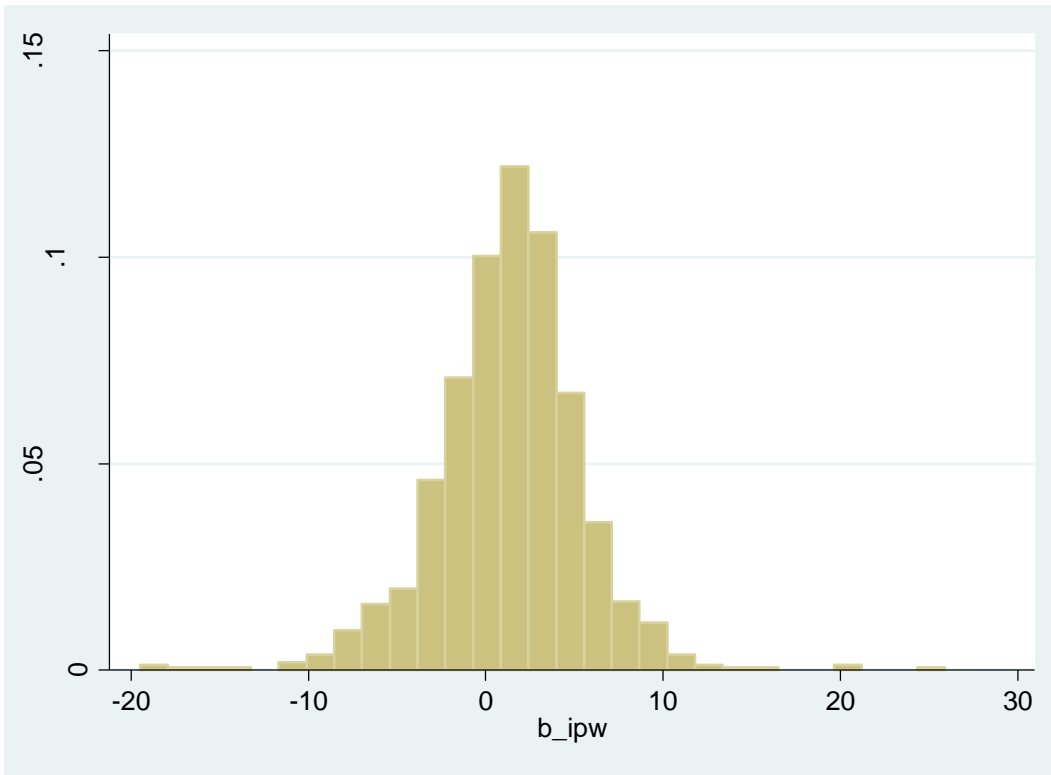


Distribution estimates of coefficient on cap_ratio coefficient from regressions not using inverse probability weights

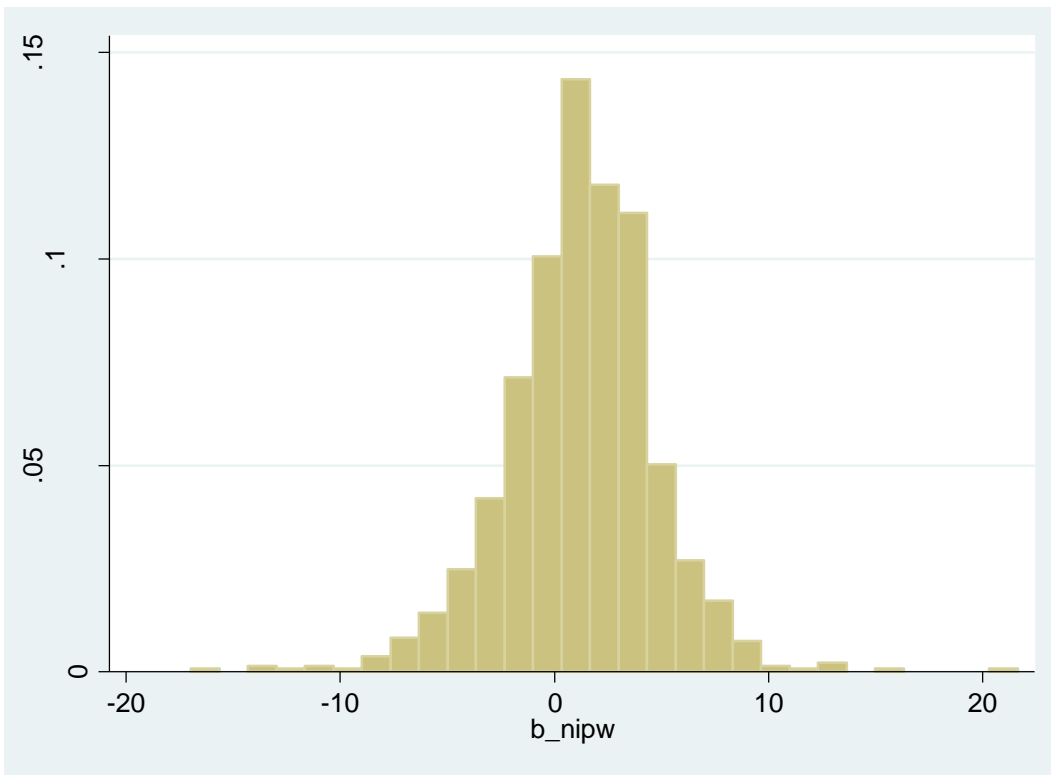


Simulation results when dataset includes just dyads and triads (1000 iterations):

Distribution of estimates of coefficient on cap_ratio from regressions using inverse probability weights



Distribution estimates of coefficient on cap_ratio coefficient from regressions not using inverse probability weights



```
. sum b_nipw b_ipw
```

Variable	Obs	Mean	Std. Dev.	Min	Max
b_nipw	1000	1.229318	3.493357	-16.97039	21.6324
b_ipw	1000	1.265557	4.104735	-19.50317	25.89379

```
. hist b_nipw  
(bin=29, start=-16.970388, width=1.3311307)
```

```
. hist b_ipw  
(bin=29, start=-19.503172, width=1.5654123)
```

```
.  
. ttest b_nipw==b_ipw
```

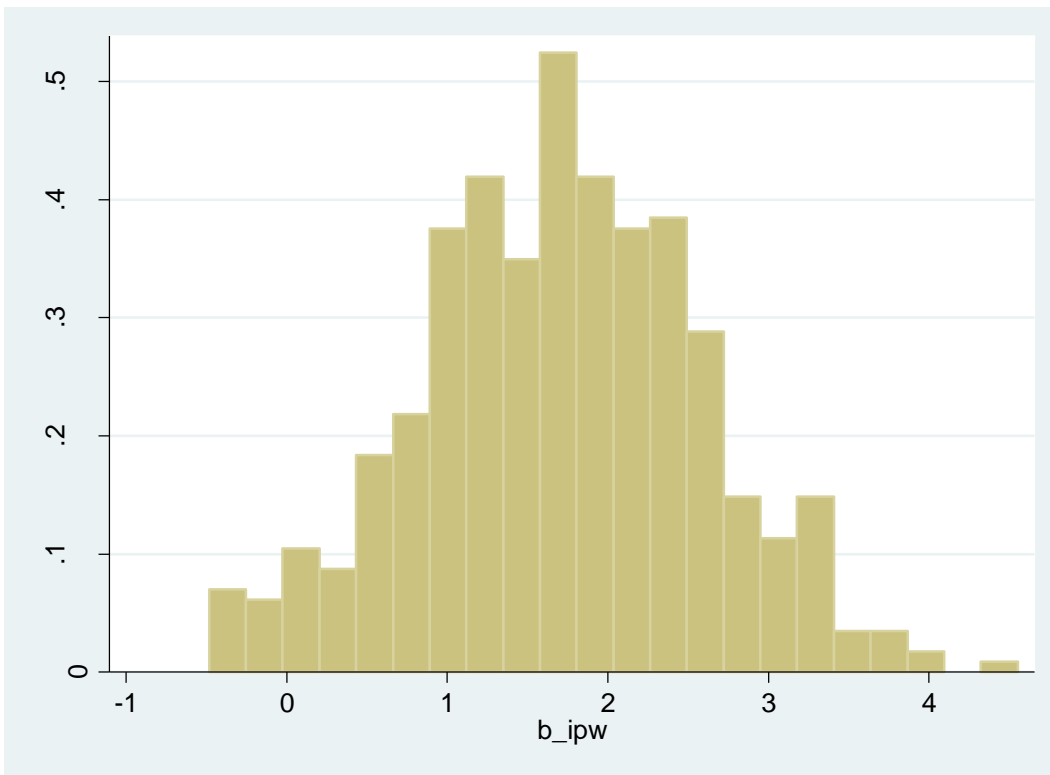
Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
b_nipw	1000	1.229318	.1104697	3.493357	1.012539	1.446097
b_ipw	1000	1.265557	.1298031	4.104735	1.010839	1.520275
diff	1000	-.0362393	.021581	.6824517	-.0785886	.0061101

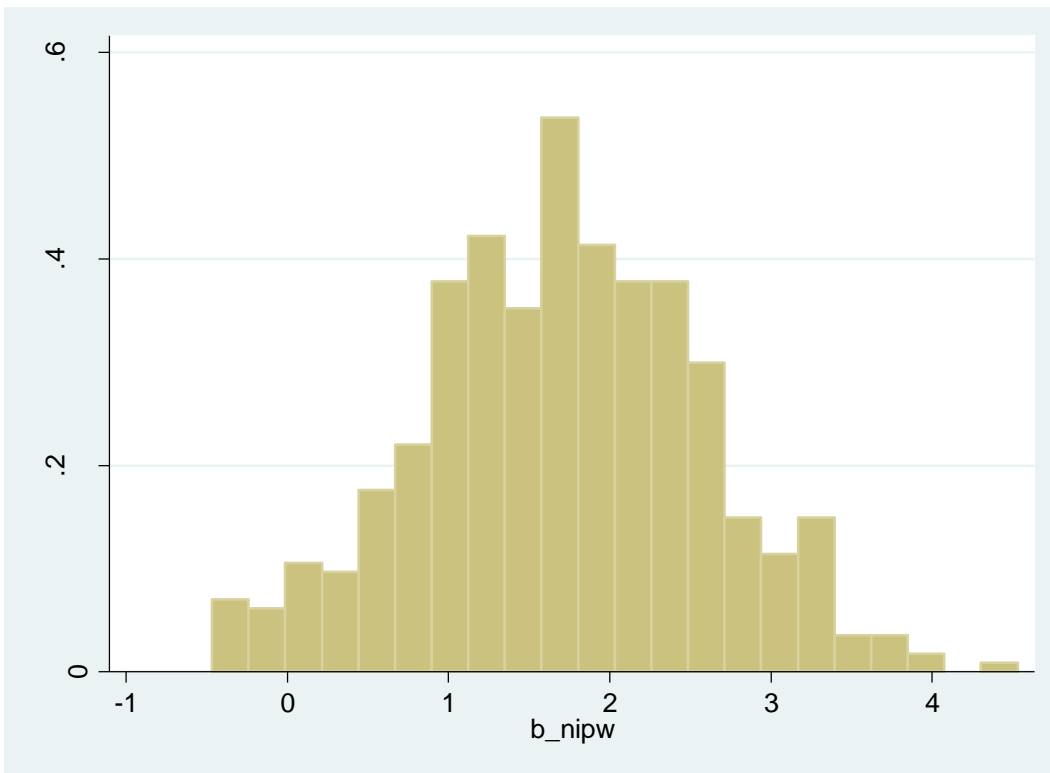
```
mean(diff) = mean(b_nipw - b_ipw)          t = -1.6792  
Ho: mean(diff) = 0                        degrees of freedom = 999  
  
Ha: mean(diff) < 0                        Ha: mean(diff) != 0          Ha: mean(diff) > 0  
Pr(T < t) = 0.0467                        Pr(|T| > |t|) = 0.0934      Pr(T > t) = 0.9533
```

Simulation with dyads, triads, and quad-ads (500 iterations):

Distribution of coefficient from regressions using inverse probability weights



Distribution of coefficient from regressions not using inverse probability weights



```
. sum b_nipw b_ipw
```

Variable	Obs	Mean	Std. Dev.	Min	Max
b_nipw	500	1.710101	.8729113	-.4677179	4.53008
b_ipw	500	1.712282	.8792412	-.4826396	4.552428

```
. hist b_nipw  
(bin=22, start=-.46771792, width=.22717265)
```

```
. hist b_ipw  
(bin=22, start=-.48263955, width=.2288667)
```

```
.  
. ttest b_nipw==b_ipw
```

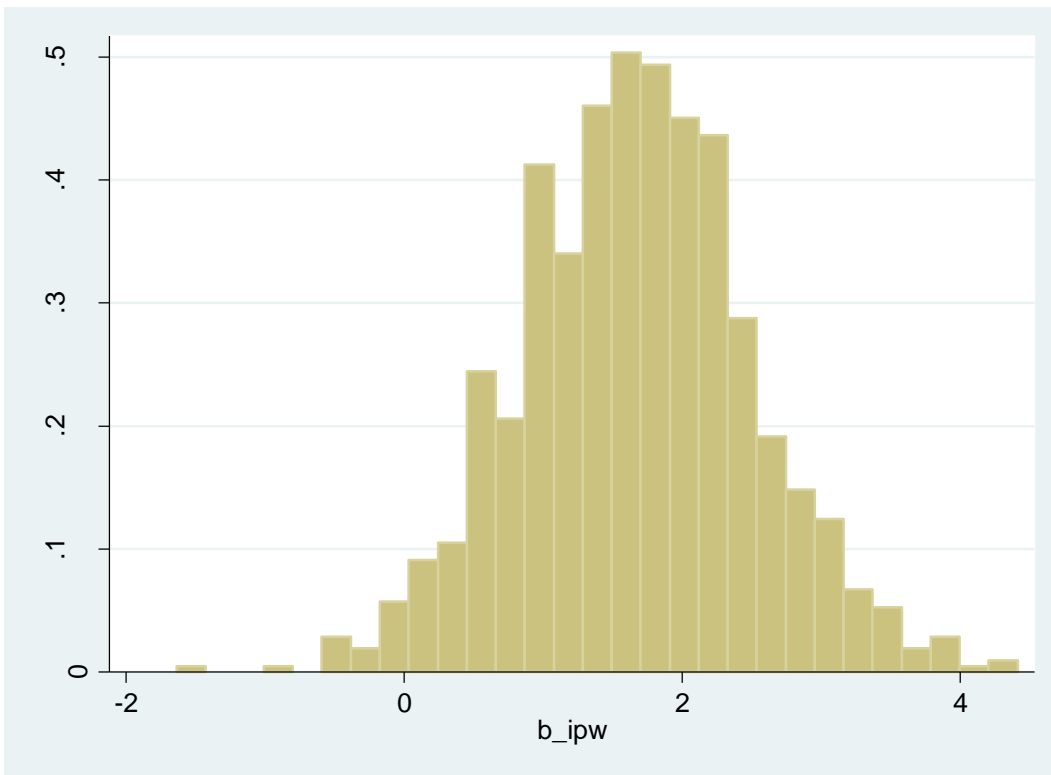
Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
b_nipw	500	1.710101	.0390378	.8729113	1.633402	1.786799
b_ipw	500	1.712282	.0393209	.8792412	1.635027	1.789537
diff	500	-.0021815	.000288	.0064398	-.0027473	-.0016157

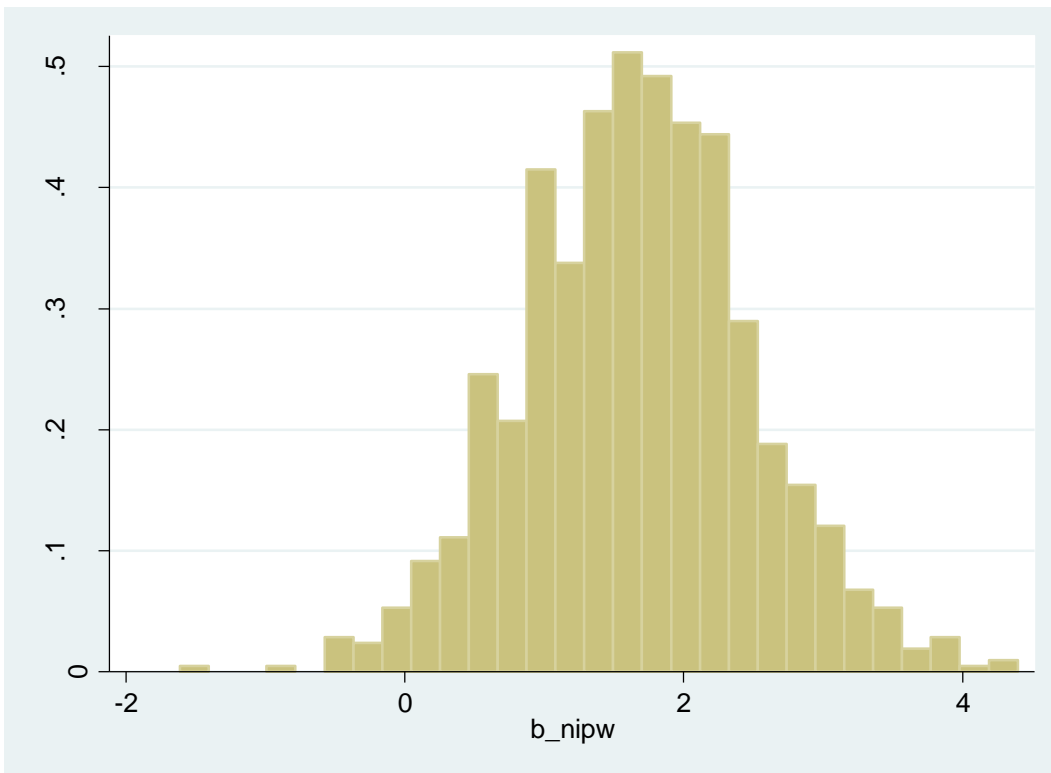
```
mean(diff) = mean(b_nipw - b_ipw)                                t = -7.5748  
Ho: mean(diff) = 0                                             degrees of freedom = 499  
  
Ha: mean(diff) < 0      Ha: mean(diff) != 0      Ha: mean(diff) > 0  
Pr(T < t) = 0.0000      Pr(|T| > |t|) = 0.0000      Pr(T > t) = 1.0000
```

Simulation with dyads, triads, and quad-ads (1000 iterations):

Distribution of coefficient from regressions using inverse probability weights



Distribution of coefficient from regressions not using inverse probability weights




```
. sum b_nipw b_ipw
```

Variable	Obs	Mean	Std. Dev.	Min	Max
b_nipw	1000	1.661392	.8226816	-1.614166	4.394714
b_ipw	1000	1.663286	.8285648	-1.63533	4.415054

```
. hist b_nipw  
(bin=29, start=-1.6141665, width=.20720277)
```

```
. hist b_ipw  
(bin=29, start=-1.6353304, width=.20863396)
```

```
.  
. ttest b_nipw==b_ipw
```

Paired t test

Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
b_nipw	1000	1.661392	.0260155	.8226816	1.610341	1.712444
b_ipw	1000	1.663286	.0262015	.8285648	1.61187	1.714702
diff	1000	-.0018934	.0001894	.0059904	-.0022652	-.0015217

```
mean(diff) = mean(b_nipw - b_ipw)                                t = -9.9952  
Ho: mean(diff) = 0                                               degrees of freedom = 999  
  
Ha: mean(diff) < 0          Ha: mean(diff) != 0          Ha: mean(diff) > 0  
Pr(T < t) = 0.0000          Pr(|T| > |t|) = 0.0000          Pr(T > t) = 1.0000
```

ROBUSTNESS: RESULTS WITH C-SHAPES MINIMUM DISTANCE

Model 2.1 Redo with Minimum Distance

Corrected logit estimates

Number of obs = 12763

```

-----
      |               Robust
      |               Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-----+-----
total_cinc |   15.29668   2.522846     6.06  0.000     10.352   20.24137
total_cinc~e | -20.60443   7.270209    -2.83  0.005    -34.85378  -6.355087
  nummem |    .2551545   .0543832     4.69  0.000     .1485653   .3617437
nummem_squ~e |  -.0044395   .0020155    -2.20  0.028    -.0083897  -.0004893
kad_max_di~e |  -.0003787   .000061     -6.20  0.000    -.0004983  -.000259
  prop_contig |   .3785818   .2386446     1.59  0.113    -.0891531   .8463167
  noallyrs |  -.0814826   .0550846    -1.48  0.139    -.1894464   .0264811
  _prefail |  -3.24835   .3531925    -9.20  0.000    -3.940595  -2.556106
  _spline1 |  -.0007964   .0003761    -2.12  0.034    -.0015336  -.0000593
  _spline2 |   .0004384   .0001832     2.39  0.017     .0000794   .0007975
  _spline3 |  -.0000731   .0000249    -2.94  0.003    -.0001219  -.0000244
  _cons |  -3.837688   .3197384   -12.00  0.000    -4.464364  -3.211012
-----

```

Model 2.3 Redo with Minimum Distance

Corrected logit estimates

Number of obs = 12507

```

-----
      |
      |      Robust
defpact |      Coef.  Std. Err.      z    P>|z|      [95% Conf. Interval]
-----+-----
total_cinc | 15.89394  2.359178    6.74  0.000    11.27003   20.51784
total_cinc~e | -21.63378  6.800438   -3.18  0.001   -34.96239  -8.305167
nummem | .1852301  .0803965    2.30  0.021    .0276558   .3428044
nummem_squ~e | -.0048859  .0025759   -1.90  0.058   -.0099345   .0001627
kad_max_di~e | -.0003538  .000062    -5.70  0.000   -.0004754  -.0002322
prop_contig | .280965   .2667755    1.05  0.292   -.2419055   .8038354
max_pol_dif | -.0320631  .016692    -1.92  0.055   -.0647788   .0006526
min_pol | -.0387398  .0185261   -2.09  0.037   -.0750504  -.0024293
average_s | -.1800956  .4703847   -0.38  0.702   -1.102033   .7418414
total_threat | .2489958  .1355747    1.84  0.066   -.0167257   .5147174
noallyrs | -.092268   .0579351   -1.59  0.111   -.2058187   .0212828
_prefail | -3.254711  .3843183   -8.47  0.000   -4.007961  -2.501461
_spline1 | -.0008409  .0003914   -2.15  0.032   -.0016081  -.0000738
_spline2 | .0004455   .000189    2.36  0.018    .000075    .000816
_spline3 | -.0000678  .0000251   -2.70  0.007   -.0001171  -.0000186
_cons | -3.721936  .5421778   -6.86  0.000   -4.784585  -2.659287
-----

```



```
. relogit defpact total_cinc total_cinc_square nummem nummem_square noallyrs _prefail _spline1
_spline2 _spline3 if year<=1945
```

Corrected logit estimates

Number of obs = 9835

```
-----+-----
```

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	5.161259	2.092895	2.47	0.014	1.059259	9.263258
total_cinc~e	-7.909744	4.617936	-1.71	0.087	-16.96073	1.141243
_nummem	.0557663	.1128985	0.49	0.621	-.1655107	.2770433
nummem_squ~e	-.0009806	.0057079	-0.17	0.864	-.0121679	.0102067
noallyrs	-.0533445	.0646011	-0.83	0.409	-.1799604	.0732715
_prefail	-.7074394	.3168204	-2.23	0.026	-1.328396	-.0864827
_spline1	-.0004578	.0004405	-1.04	0.299	-.0013212	.0004055
_spline2	.0002415	.0002166	1.11	0.265	-.0001831	.000666
_spline3	-.0000377	.000031	-1.21	0.225	-.0000985	.0000232
_cons	-4.835462	.4456293	-10.85	0.000	-5.708879	-3.962044

```
-----+-----
```

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square noallyrs _prefail _spline1
_spline2 _spline3 if year>1945
```

Corrected logit estimates

Number of obs = 13240

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
defpact						
total_cinc	17.4155	2.091326	8.33	0.000	13.31658	21.51443
total_cinc ²	-32.02254	5.683796	-5.63	0.000	-43.16257	-20.8825
nummem	.1022269	.0430278	2.38	0.018	.0178939	.1865599
nummem ²	-.0017547	.0012925	-1.36	0.175	-.004288	.0007786
noallyrs	-.1096493	.0504785	-2.17	0.030	-.2085853	-.0107132
_prefail	-2.659266	.3576382	-7.44	0.000	-3.360224	-1.958308
_spline1	-.0007998	.0003582	-2.23	0.026	-.0015019	-.0000978
_spline2	.0004001	.0001781	2.25	0.025	.0000511	.0007492
_spline3	-.0000527	.0000261	-2.02	0.043	-.0001039	-1.54e-06
_cons	-4.310573	.2510902	-17.17	0.000	-4.802701	-3.818446

ROBUSTNESS: PROPORTION OF K-AD MEMBERS PREVIOUSLY ALLIED

* Control for proportion of k-ad members that were previously part of the same alliance (for model 1.2)

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square prop_prev_allied noallyrs
_prefail _spline1 _spline2 _spline3
(160 missing values generated)
```

Corrected logit estimates

Number of obs = 22915

```
-----
```

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	7.171579	1.574235	4.56	0.000	4.086136	10.25702
total_cinc~e	-14.08903	4.076996	-3.46	0.001	-22.0798	-6.098269
_nummem	.1376851	.0697957	1.97	0.049	.000888	.2744822
nummem_squ~e	-.0028075	.0030756	-0.91	0.361	-.0088356	.0032206
prop_prev~d	9.00738	1.506912	5.98	0.000	6.053888	11.96087
noallyrs	-.148465	.0408433	-3.63	0.000	-.2285164	-.0684135
_prefail	-2.868087	.2480479	-11.56	0.000	-3.354252	-2.381922
_spline1	-.0008399	.0002824	-2.97	0.003	-.0013934	-.0002864
_spline2	.0003932	.0001372	2.87	0.004	.0001244	.0006621
_spline3	-.0000426	.0000182	-2.34	0.019	-.0000784	-6.91e-06
_cons	-11.5232	1.562563	-7.37	0.000	-14.58577	-8.460632

```
-----
```

ROBUSTNESS: Including Country Dummy Variables (to account for dependencies)

```
. logit defpact total_cinc total_cinc_square noallyrs _prefail _spline1 _spline2 _spline3 i_*
```

```
Iteration 0: log likelihood = -1365.8356
Iteration 1: log likelihood = -1279.522
Iteration 2: log likelihood = -1220.4826
Iteration 3: log likelihood = -1213.7622
Iteration 4: log likelihood = -1198.779
Iteration 5: log likelihood = -1198.2485
Iteration 6: log likelihood = -1198.2442
Iteration 7: log likelihood = -1198.2442
```

Logistic regression

```
Number of obs = 17279
LR chi2(110) = 335.18
Prob > chi2 = 0.0000
Pseudo R2 = 0.1227
```

Log likelihood = -1198.2442

defpact	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	10.91249	2.60694	4.19	0.000	5.80298	16.022
total_cinc_square	-18.30023	4.149231	-4.41	0.000	-26.43257	-10.16789
noallyrs	-.1068868	.0383663	-2.79	0.005	-.1820834	-.0316902
_prefail	-2.014214	.2236449	-9.01	0.000	-2.45255	-1.575878
_spline1	-.0008114	.0002708	-3.00	0.003	-.0013423	-.0002806
_spline2	.0003976	.0001334	2.98	0.003	.0001362	.0006591
_spline3	-.0000491	.0000187	-2.62	0.009	-.0000857	-.0000124
i_2	.3625985	.5133947	0.71	0.480	-.6436366	1.368834
i_20	1.01419	.4556606	2.23	0.026	.1211115	1.907268
i_31	2.267724	.7180041	3.16	0.002	.8604622	3.674986
i_40	.5797922	.6012469	0.96	0.335	-.59863	1.758214
i_41	1.143464	.5305677	2.16	0.031	.1035705	2.183358
i_42	0	(omitted)				
i_51	0	(omitted)				
i_52	0	(omitted)				
i_53	1.361801	1.849023	0.74	0.461	-2.262218	4.985819
i_54	.0406821	1.149673	0.04	0.972	-2.212635	2.293999
i_55	0	(omitted)				
i_56	0	(omitted)				
i_57	0	(omitted)				
i_58	0	(omitted)				
i_60	0	(omitted)				
i_70	0	(omitted)				
i_80	0	(omitted)				
i_90	-.7927248	1.003023	-0.79	0.429	-2.758615	1.173165
i_91	1.420988	.99694	1.43	0.154	-.5329789	3.374954
i_92	-.6626007	1.331711	-0.50	0.619	-3.272706	1.947505
i_93	0	(omitted)				
i_100	3.402181	1.699696	2.00	0.045	.0708373	6.733525
i_101	0	(omitted)				
i_110	0	(omitted)				
i_115	0	(omitted)				
i_130	-1.379934	1.370494	-1.01	0.314	-4.066053	1.306186
i_135	3.269063	1.290491	2.53	0.011	.7397472	5.798378
i_140	0	(omitted)				
i_145	-1.374497	1.580432	-0.87	0.384	-4.472086	1.723092
i_150	0	(omitted)				
i_155	-1.449033	1.17087	-1.24	0.216	-3.743897	.8458305
i_160	.1268204	1.855964	0.07	0.946	-3.510803	3.764444
i_165	0	(omitted)				
i_200	-.1240756	.3816076	-0.33	0.745	-.8720128	.6238616
i_205	.0062094	.8786591	0.01	0.994	-1.715931	1.72835
i_210	.2449782	.619989	0.40	0.693	-.9701779	1.460134
i_211	-.3721512	.7167825	-0.52	0.604	-1.777019	1.032717
i_212	0	(omitted)				
i_220	.3828912	.3735146	1.03	0.305	-.349184	1.114966
i_221	0	(omitted)				
i_223	0	(omitted)				

i_225		0	(omitted)				
i_230		-.090027	.5345712	-0.17	0.866	-1.137767	.9577134
i_232		0	(omitted)				
i_235		-1.09904	.7548223	-1.46	0.145	-2.578464	.380385
i_240		-.1010878	.7299517	-0.14	0.890	-1.531767	1.329591
i_245		1.250712	.7240552	1.73	0.084	-.1684104	2.669834
i_255		-.2102413	.3979361	-0.53	0.597	-.9901817	.5696992
i_260		2.029059	1.208817	1.68	0.093	-.3401787	4.398297
i_265		1.454582	.4928887	2.95	0.003	.4885379	2.420626
i_267		-.5920709	1.046475	-0.57	0.572	-2.643123	1.458982
i_269		0	(omitted)				
i_271		.1436229	.9400787	0.15	0.879	-1.698898	1.986143
i_275		.659346	1.12966	0.58	0.559	-1.554747	2.873439
i_280		.4355388	1.260644	0.35	0.730	-2.035279	2.906357
i_290		.9215408	.4241316	2.17	0.030	.0902581	1.752824
i_300		1.460485	.4278292	3.41	0.001	.621955	2.299015
i_305		0	(omitted)				
i_310		.7007422	.4309564	1.63	0.104	-.1439168	1.545401
i_315		1.438165	.4115658	3.49	0.000	.6315114	2.24482
i_316		-.5761964	1.267805	-0.45	0.649	-3.061049	1.908656
i_317		1.905343	1.168131	1.63	0.103	-.3841525	4.194839
i_325		-.1264902	.4992019	-0.25	0.800	-1.104908	.8519276
i_327		0	(omitted)				
i_329		0	(omitted)				
i_331		0	(omitted)				
i_332		.9020418	1.099035	0.82	0.412	-1.252028	3.056111
i_335		0	(omitted)				
i_338		1.561601	.7189033	2.17	0.030	.1525759	2.970625
i_339		1.112107	.6742929	1.65	0.099	-.2094829	2.433697
i_343		0	(omitted)				
i_344		1.976355	1.14873	1.72	0.085	-.2751151	4.227825
i_345		.6489049	.4225926	1.54	0.125	-.1793614	1.477171
i_349		0	(omitted)				
i_350		.6884991	.5600648	1.23	0.219	-.4092078	1.786206
i_352		0	(omitted)				
i_355		.9946311	.3960418	2.51	0.012	.2184034	1.770859
i_359		0	(omitted)				
i_360		1.385178	.4115516	3.37	0.001	.5785519	2.191805
i_365		.5654748	.3783744	1.49	0.135	-.1761254	1.307075
i_366		.5527289	.781392	0.71	0.479	-.9787713	2.084229
i_367		1.138678	.7899115	1.44	0.149	-.4095198	2.686876
i_368		-1.661704	1.305329	-1.27	0.203	-4.220102	.8966933
i_369		0	(omitted)				
i_370		1.614339	.6599988	2.45	0.014	.3207651	2.907913
i_371		1.799593	.6446196	2.79	0.005	.5361614	3.063024
i_372		.8707249	1.157146	0.75	0.452	-1.39724	3.13869
i_373		.7818206	.830371	0.94	0.346	-.8456767	2.409318
i_375		-.3984403	1.08009	-0.37	0.712	-2.515377	1.718497
i_385		0	(omitted)				
i_390		0	(omitted)				
i_395		0	(omitted)				
i_402		1.178083	1.350649	0.87	0.383	-1.46914	3.825306
i_403		.8372254	1.203297	0.70	0.487	-1.521193	3.195643
i_404		1.507108	1.025887	1.47	0.142	-.5035931	3.51781
i_411		.3427237	1.175078	0.29	0.771	-1.960387	2.645834
i_420		.5443522	.8429817	0.65	0.518	-1.107862	2.196566
i_432		1.002487	.7682558	1.30	0.192	-.5032665	2.508241
i_433		1.947056	.6605812	2.95	0.003	.6523404	3.241771
i_434		.1537243	.9295431	0.17	0.869	-1.668147	1.975595
i_435		-.28685	1.080362	-0.27	0.791	-2.404322	1.830621
i_436		-.5200804	1.117092	-0.47	0.642	-2.709541	1.66938
i_438		2.344577	.7819833	3.00	0.003	.8119182	3.877237
i_451		.6537903	1.21334	0.54	0.590	-1.724312	3.031892
i_461		0	(omitted)				
i_471		0	(omitted)				
i_475		3.329901	1.110438	3.00	0.003	1.153483	5.506319
i_481		0	(omitted)				

i_482		-.3590638	.8330413	-0.43	0.666	-1.991795	1.273667
i_483		.5084637	.8004323	0.64	0.525	-1.060355	2.077282
i_484		0	(omitted)				
i_490		1.085855	1.204063	0.90	0.367	-1.274065	3.445776
i_500		3.013219	1.336719	2.25	0.024	.3932986	5.63314
i_501		.3717897	1.215911	0.31	0.760	-2.011351	2.754931
i_511		0	(omitted)				
i_516		0	(omitted)				
i_517		0	(omitted)				
i_520		1.118036	.7236051	1.55	0.122	-.3002043	2.536276
i_522		1.313124	.7660363	1.71	0.086	-.1882799	2.814527
i_530		1.131134	.67701	1.67	0.095	-.195575	2.458255
i_531		0	(omitted)				
i_540		2.105451	1.618957	1.30	0.193	-1.067646	5.278547
i_541		0	(omitted)				
i_552		0	(omitted)				
i_560		.6717297	1.073485	0.63	0.531	-1.432263	2.775722
i_565		0	(omitted)				
i_570		0	(omitted)				
i_571		0	(omitted)				
i_580		0	(omitted)				
i_581		.2624449	1.147327	0.23	0.819	-1.986275	2.511165
i_591		0	(omitted)				
i_600		1.337058	.5594728	2.39	0.017	.2405112	2.433604
i_615		1.722032	.6760412	2.55	0.011	.3970155	3.047048
i_616		.9987681	1.232406	0.81	0.418	-1.416703	3.414239
i_620		1.379048	.4818569	2.86	0.004	.4346257	2.32347
i_625		-.6105885	.8931344	-0.68	0.494	-2.3611	1.139923
i_640		-.3257932	.4456442	-0.73	0.465	-1.19924	.5476534
i_645		1.053808	.5558142	1.90	0.058	-.0355674	2.143184
i_651		1.250047	.4705953	2.66	0.008	.3276975	2.172397
i_652		1.245475	.5549506	2.24	0.025	.1577923	2.333159
i_660		-.4816104	1.124565	-0.43	0.668	-2.685718	1.722497
i_663		1.509262	.7534523	2.00	0.045	.0325222	2.986001
i_670		1.275498	.6901489	1.85	0.065	-.0771687	2.628165
i_679		0	(omitted)				
i_680		0	(omitted)				
i_690		-.5886924	1.247116	-0.47	0.637	-3.032996	1.855611
i_694		0	(omitted)				
i_696		0	(omitted)				
i_703		4.387646	1.299198	3.38	0.001	1.841265	6.934027
i_704		1.764196	.8198767	2.15	0.031	.1572672	3.371125
i_705		1.743416	.7220017	2.41	0.016	.3283182	3.158513
i_710		-.3058136	.6034992	-0.51	0.612	-1.48865	.877023
i_713		.3345763	1.085413	0.31	0.758	-1.792795	2.461947
i_730		.4313632	1.092216	0.39	0.693	-1.70934	2.572067
i_740		-.4121076	.5182735	-0.80	0.427	-1.427905	.6036899
i_770		1.118057	1.094187	1.02	0.307	-1.026509	3.262624
i_790		0	(omitted)				
i_800		1.212359	1.146678	1.06	0.290	-1.035089	3.459808
i_812		0	(omitted)				
i_820		1.832363	.9804953	1.87	0.062	-.0893722	3.754099
i_835		0	(omitted)				
i_910		0	(omitted)				
i_935		0	(omitted)				
i_940		0	(omitted)				
i_946		0	(omitted)				
i_947		0	(omitted)				
i_970		0	(omitted)				
i_983		0	(omitted)				
_cons		-5.083112	.5320234	-9.55	0.000	-6.125859	-4.040366

ROBUSTNESS: Conditioning on the Size of the Threat

```
. * Normal Model
. logit defpact total_cinc total_cinc_square noallyrs _prefail _spline1 _spline2 _spline3
```

```
Iteration 0: log likelihood = -1442.7108
Iteration 1: log likelihood = -1383.3027
Iteration 2: log likelihood = -1370.9245
Iteration 3: log likelihood = -1370.1957
Iteration 4: log likelihood = -1370.1881
Iteration 5: log likelihood = -1370.1881
```

```
Logit estimates                                     Number of obs   =      23075
                                                    LR chi2(7)      =      145.05
                                                    Prob > chi2     =      0.0000
Log likelihood = -1370.1881                       Pseudo R2       =      0.0503
```

defpact	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	9.668159	1.268448	7.62	0.000	7.182046	12.15427
total_cinc~e	-16.70782	2.825494	-5.91	0.000	-22.24568	-11.16995
noallyrs	-.1363911	.0366523	-3.72	0.000	-.2082282	-.064554
_prefail	-1.471865	.2039224	-7.22	0.000	-1.871546	-1.072185
_spline1	-.0008146	.0002594	-3.14	0.002	-.0013231	-.0003062
_spline2	.0003803	.0001275	2.98	0.003	.0001303	.0006302
_spline3	-.0000404	.0000177	-2.29	0.022	-.0000751	-5.78e-06
_cons	-3.957077	.1668297	-23.72	0.000	-4.284057	-3.630097

```

. * Model with threat above mean
. logit defpact total_cinc total_cinc_square noallyrs _prefail _spline1 _spline2 _spline3 if
> total_threat>=`mean'

```

```

Iteration 0: log likelihood = -596.64126
Iteration 1: log likelihood = -574.39865
Iteration 2: log likelihood = -570.28472
Iteration 3: log likelihood = -569.94694
Iteration 4: log likelihood = -569.94294
Iteration 5: log likelihood = -569.94294

```

```

Logit estimates                                     Number of obs =      6647
                                                    LR chi2(7)      =      53.40
                                                    Prob > chi2     =      0.0000
Log likelihood = -569.94294                       Pseudo R2      =      0.0447

```

defpact	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	3.954117	1.702042	2.32	0.020	.6181761	7.290057
total_cinc~e	-7.899017	3.162613	-2.50	0.013	-14.09762	-1.700409
noallyrs	-.060504	.0548289	-1.10	0.270	-.1679667	.0469588
_prefail	-1.59474	.3138555	-5.08	0.000	-2.209886	-.9795946
_spline1	-.0001921	.0004027	-0.48	0.633	-.0009814	.0005972
_spline2	.0000409	.000205	0.20	0.842	-.0003609	.0004426
_spline3	.0000185	.0000324	0.57	0.567	-.000045	.0000821
_cons	-3.462707	.2629358	-13.17	0.000	-3.978052	-2.947362

.


```

. * Model with threat below mean
. logit defpact total_cinc total_cinc_square noallyrs _prefail _spline1 _spline2 _spline3 if
> total_threat<`mean'

```

```

Iteration 0: log likelihood = -830.20946
Iteration 1: log likelihood = -794.501
Iteration 2: log likelihood = -782.79343
Iteration 3: log likelihood = -782.12034
Iteration 4: log likelihood = -782.11228
Iteration 5: log likelihood = -782.11228

```

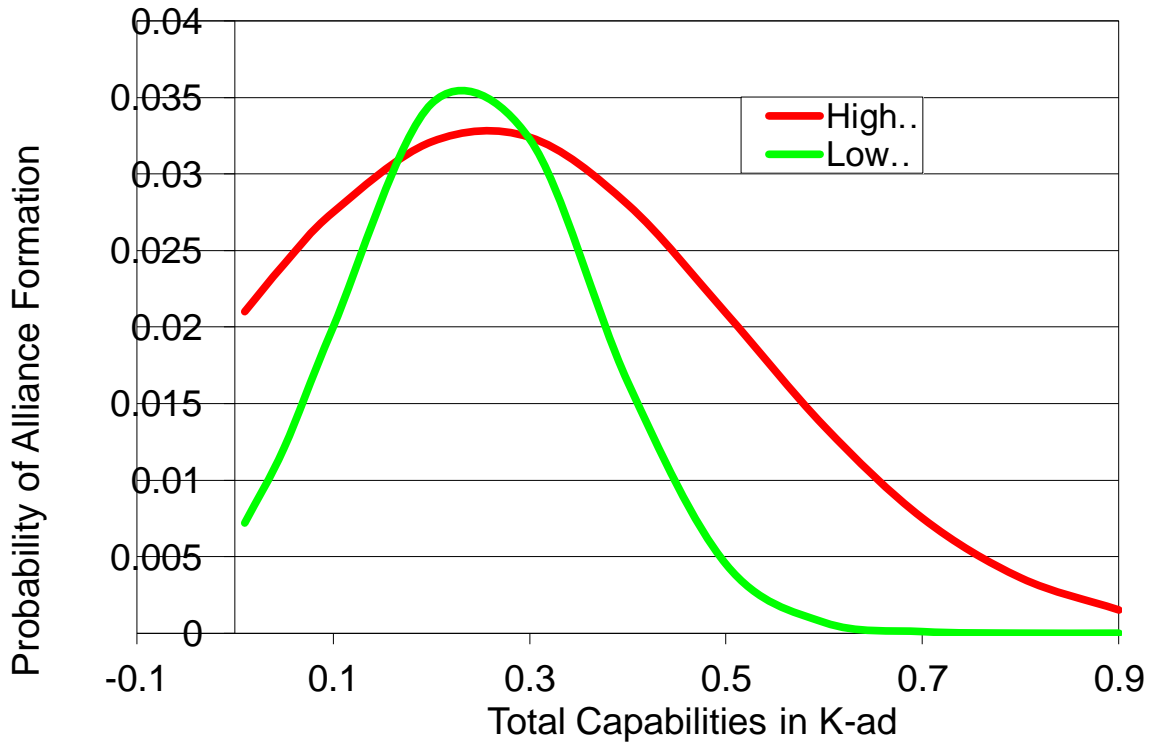
```

Logit estimates
Number of obs = 16428
LR chi2(7) = 96.19
Prob > chi2 = 0.0000
Pseudo R2 = 0.0579
Log likelihood = -782.11228

```

defpact	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	14.96729	2.34566	6.38	0.000	10.36988	19.5647
total_cinc~e	-32.05448	7.408054	-4.33	0.000	-46.574	-17.53496
noallyrs	-.1875469	.0503449	-3.73	0.000	-.286221	-.0888728
_prefail	-1.406173	.2687561	-5.23	0.000	-1.932925	-.8794203
_spline1	-.0012005	.0003537	-3.39	0.001	-.0018937	-.0005072
_spline2	.0005764	.0001722	3.35	0.001	.000239	.0009139
_spline3	-.0000681	.0000229	-2.97	0.003	-.000113	-.0000231
_cons	-4.127125	.2188225	-18.86	0.000	-4.556009	-3.698241

Threats, Total Capabilities, and Alliance Formation



ROBUSTNESS: Controlling for Average Distance, not Maximum Distance

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square avg_distance prop_contig
> noallyrs _prefail _spline1 _spline2 _spline3
(10312 missing values generated)
```

Corrected logit estimates

Number of obs = 12763

```
-----
```

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	17.19958	2.502471	6.87	0.000	12.29482	22.10433
total_cinc~e	-29.13995	6.929627	-4.21	0.000	-42.72177	-15.55813
nummem	.088535	.0564148	1.57	0.117	-.022036	.1991059
nummem_squ~e	-.0021847	.0019493	-1.12	0.262	-.0060052	.0016358
avg_distance	-.0002426	.0000457	-5.30	0.000	-.0003322	-.0001529
prop_contig	.2647896	.2555633	1.04	0.300	-.2361054	.7656845
noallyrs	-.0791441	.0544965	-1.45	0.146	-.1859552	.027667
_prefail	-3.34111	.3573758	-9.35	0.000	-4.041554	-2.640667
_spline1	-.0007759	.0003729	-2.08	0.037	-.0015068	-.000045
_spline2	.0004254	.0001817	2.34	0.019	.0000692	.0007817
_spline3	-.0000703	.0000248	-2.84	0.005	-.0001188	-.0000217
_cons	-3.43838	.3541516	-9.71	0.000	-4.132505	-2.744256

```
-----
```


Variable	Obs	Mean	Std. Dev.	Min	Max
b1	1000	8.579632	.5171634	6.902876	10.0971
s1	1000	1.260284	.0283795	1.157086	1.358039
b2	1000	-14.19395	.9605884	-17.03249	-10.94605
s2	1000	2.996689	.104717	2.627972	3.363551

Note 1: ``b1'' corresponds to the coefficient on the *Total Capabilities* variable, ``s1'' corresponds to the coefficient on the *Total Capabilities* variable, ``b2'' corresponds to the coefficient on the *Total Capabilities Square* variable, and ``s2'' corresponds to the coefficient on the *Total Capabilities Square* variable.

The results show that regardless of the draw, our substantive findings hold (though the size of the exact values of the coefficients do change). Specifically, the coefficient on *Total Capabilities* ranges from 6.9 to 10.1 with a mean value of 8.58 (and a standard error ranging from 1.16 to 1.35 with a mean value of 1.26) and the coefficient on *Total Capabilities Square* ranges from -17.03 to -10.94, with a mean value of -14.19 (and a standard error ranging from 2.62 to 3.3, with a mean value 2.99)

. ** Model with Average Threat

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square kad_max_distance prop_c
> ontig max_pol_dif avg_threat min_pol average_s noallyrs _prefail _spline1 _spline2 _spline
> 3
```

Corrected logit estimates

Number of obs = 22355

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	6.468606	1.481951	4.36	0.000	3.564035	9.373177
total_cinc~e	-10.94737	3.3442	-3.27	0.001	-17.50188	-4.392856
nummem	.3490662	.0698688	5.00	0.000	.2121258	.4860065
nummem_squ~e	-.0078214	.0024076	-3.25	0.001	-.0125402	-.0031025
kad_max_di~e	-.0001895	.0000372	-5.09	0.000	-.0002625	-.0001165
prop_contig	.5039056	.1866006	2.70	0.007	.1381752	.8696361
max_pol_dif	-.004565	.0124486	-0.37	0.714	-.0289637	.0198338
avg_threat	.6869199	.3963232	1.73	0.083	-.0898593	1.463699
min_pol	-3.31e-07	.0155978	-0.00	1.000	-.0305714	.0305707
average_s	1.005734	.3838682	2.62	0.009	.2533661	1.758102
noallyrs	-.1430661	.0392184	-3.65	0.000	-.2199328	-.0661994
_prefail	-1.710344	.2324093	-7.36	0.000	-2.165858	-1.25483
_spline1	-.0009309	.000275	-3.38	0.001	-.0014699	-.0003918
_spline2	.0004421	.0001341	3.30	0.001	.0001792	.000705
_spline3	-.0000496	.0000179	-2.77	0.006	-.0000847	-.0000145
_cons	-5.424082	.4710227	-11.52	0.000	-6.34727	-4.500895

. ** Model with Maximum Threat

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square kad max_distance prop_c
> ontig max_pol_dif max_threat min_pol average_s noallyrs _prefail _spline1 _spline2 _spline
> 3
```

Corrected logit estimates

Number of obs = 22355

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	6.951406	1.459087	4.76	0.000	4.091648	9.811165
total_cinc~e	-11.60376	3.350007	-3.46	0.001	-18.16965	-5.037863
nummem	.3360037	.069345	4.85	0.000	.2000901	.4719174
nummem_squ~e	-.0074668	.0023673	-3.15	0.002	-.0121067	-.0028269
kad_max_di~e	-.0001914	.0000369	-5.19	0.000	-.0002637	-.0001192
prop_contig	.5277784	.1858493	2.84	0.005	.1635206	.8920363
max_pol_dif	-.0103976	.0123089	-0.84	0.398	-.0345226	.0137274
max_threat	-.0284221	.3291574	-0.09	0.931	-.6735588	.6167145
min_pol	-.0105277	.015291	-0.69	0.491	-.0404975	.0194421
average_s	.9156146	.401706	2.28	0.023	.1282852	1.702944
noallyrs	-.1389817	.0393395	-3.53	0.000	-.2160857	-.0618778
_prefail	-1.722356	.2328418	-7.40	0.000	-2.178717	-1.265994
_spline1	-.000908	.0002748	-3.30	0.001	-.0014465	-.0003695
_spline2	.0004316	.0001339	3.22	0.001	.0001692	.0006939
_spline3	-.0000486	.0000178	-2.72	0.006	-.0000835	-.0000136
_cons	-5.154038	.4887195	-10.55	0.000	-6.111911	-4.196165

```

. ** Model with Minimum Threat
. relogit defpact total_cinc total_cinc_square nummem nummem_square kad_max_distance prop_c
> ontig max_pol_dif min_threat min_pol average_s noallyrs _prefail _spline1 _spline2 _spline
> 3

```

Corrected logit estimates

Number of obs = 21532

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	6.831915	1.499263	4.56	0.000	3.893413	9.770417
total_cinc~e	-11.63559	3.439413	-3.38	0.001	-18.37672	-4.894462
nummem	.3453139	.0688414	5.02	0.000	.2103871	.4802406
nummem_squ~e	-.0077413	.0023896	-3.24	0.001	-.0124248	-.0030577
kad_max_di~e	-.0001948	.0000391	-4.98	0.000	-.0002714	-.0001182
prop_contig	.4890815	.189824	2.58	0.010	.1170334	.8611297
max_pol_dif	-.00023	.0124413	-0.02	0.985	-.0246145	.0241546
min_threat	1.156641	.4095101	2.82	0.005	.3540162	1.959266
min_pol	.0055342	.0153502	0.36	0.718	-.0245517	.0356201
average_s	.8887907	.3731306	2.38	0.017	.1574681	1.620113
noallyrs	-.1587522	.0401444	-3.95	0.000	-.2374337	-.0800707
_prefail	-1.728693	.2410877	-7.17	0.000	-2.201216	-1.25617
_spline1	-.0010558	.0002798	-3.77	0.000	-.0016042	-.0005074
_spline2	.000504	.0001362	3.70	0.000	.0002372	.0007709
_spline3	-.0000575	.0000181	-3.18	0.001	-.0000929	-.000022
_cons	-5.387871	.4622762	-11.66	0.000	-6.293916	-4.481827

ROBUSTNESS: USE ALL ALLIANCES (NOT JUST DEFENSE PACTS)

NOTE: Results produced using a sample of `non-event' k-ads that is twice the size of event k-ads.

Corrected logit estimates

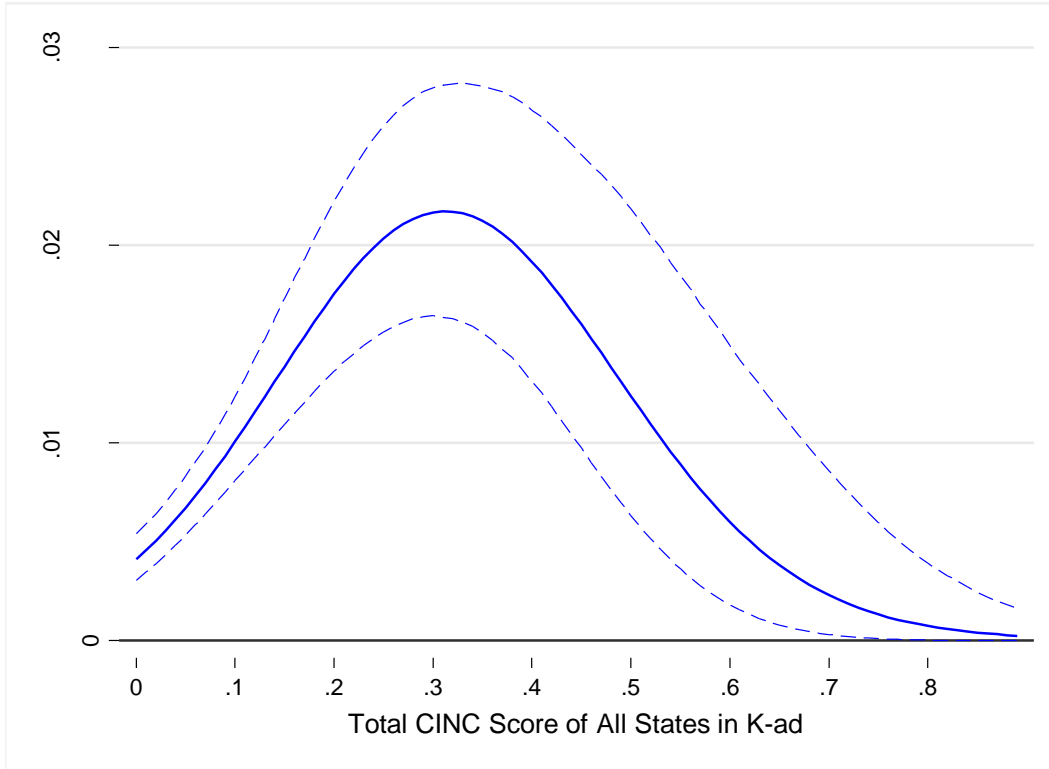
Number of obs = 33779

```
-----+-----
```

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	9.624374	1.099248	8.76	0.000	7.469887	11.77886
total_cinc~e	-16.47723	2.67302	-6.16	0.000	-21.71625	-11.2382
nummem	.0741879	.0296294	2.50	0.012	.0161153	.1322606
nummem_squ~e	-.0011472	.0009111	-1.26	0.208	-.0029329	.0006385
noallyrs	-.121435	.0337209	-3.60	0.000	-.1875268	-.0553432
_prefail	-1.123335	.177461	-6.33	0.000	-1.471152	-.7755177
_spline1	-.000477	.0002645	-1.80	0.071	-.0009954	.0000414
_spline2	.0001606	.0001372	1.17	0.242	-.0001082	.0004295
_spline3	.000013	.000019	0.68	0.495	-.0000243	.0000502
_cons	-4.257447	.165915	-25.66	0.000	-4.582635	-3.93226

```
-----+-----
```

The above regression output produces the following graph, which is very similar to the graph produced using just defensive pacts.



ROBUSTNESS: Over Sample for Major Power Presence

Note on Procedure for Oversampling: Creating a dataset that ``oversamples'' on the major powers is a very interesting suggestion. To accomplish this, we ran a new test in which the non-event observations are randomly generated as before, but with a small adjustment. Specifically, when the algorithm identifies the first member of a k-ad, it generates a random number between 0 and 1. If the number is greater than or equal to 0.5, the first member of the k-ad is drawn from a list exclusively comprised of the major powers. If the number is less than 0.5, the first member of the k-ad is drawn from the regular list of countries (which includes the major powers).

With Random Number threshold set to 0.5

** Summary of Major Power Presence:

```
. sum prop_majpow
  Variable |      Obs      Mean   Std. Dev.   Min   Max
-----+-----
prop_majpow |    26582   .3384574   .31129     0     1

. sum prop_majpow if prop_majpow>0
  Variable |      Obs      Mean   Std. Dev.   Min   Max
-----+-----
prop_majpow |    16559   .5433224   .2103428   .0208333   1
. local N2 = r(N)

. di "Proportion with Major Power = " `N2'/'N1'
Proportion with Major Power = .62294034
```

* Results Using Oversampled Dataset

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square /*prop_majpow*/ noallyrs
_prefail _spline1 _spline2 _spline3
```

Corrected logit estimates Number of obs = 26582

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
defpact	2.752366	1.2455	2.21	0.027	.3112308	5.193501
total_cinc	-5.070599	2.322237	-2.18	0.029	-9.6221	-.5190978
total_cinc~e	.1357147	.0358268	3.79	0.000	.0654954	.2059339
nummem	-.0023708	.0011575	-2.05	0.041	-.0046395	-.0001021
nummem~e	-.0851473	.0368796	-2.31	0.021	-.1574299	-.0128647
noallyrs	-1.140116	.2273261	-5.02	0.000	-1.585667	-.6945655
_prefail	-.0004803	.0002331	-2.06	0.039	-.0009372	-.0000233
_spline1	.0002557	.0001258	2.03	0.042	9.14e-06	.0005022
_spline2	-.0000341	.0000185	-1.84	0.066	-.0000703	2.19e-06
_spline3	-.0000341	.0000185	-1.84	0.066	-.0000703	2.19e-06
_cons	-4.511503	.2224338	-20.28	0.000	-4.947465	-4.075541

Probability when using results from oversampled data

2.75	-5.07	-4.51	0.01	4.48301	0.011173
			0.05	4.38518	0.012307
			0.1	-4.2857	0.013577
			0.2	-4.1628	0.015325
			0.3	-4.1413	0.015653
			0.4	-4.2212	0.014469
			0.5	-4.4025	0.012099
			0.6	-4.6852	0.009146
			0.7	-5.0693	0.006248
			0.8	-5.5548	0.003854
			0.9	-6.1417	0.002147

With Random Number threshold set to 0.6

** Summary of Major Power Presence:

```
. sum prop_majpow
```

Variable	Obs	Mean	Std. Dev.	Min	Max
prop_majpow	25471	.3046614	.3210562	0	1

```
. sum prop_majpow if prop_majpow>0
```

Variable	Obs	Mean	Std. Dev.	Min	Max
prop_majpow	14102	.5502788	.2258669	.0208333	1

```
. di "Proportion with Major Power = " `N2'/'N1'
Proportion with Major Power = .55364925
```

* Results Using Oversampled Dataset

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square /*prop_majpow*/ noal
> lyrs _prefail _spline1 _spline2 _spline3
```

Corrected logit estimates Number of obs = 25471

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	3.932052	1.183484	3.32	0.001	1.612467	6.251638
total_cinc~e	-6.889216	2.271791	-3.03	0.002	-11.34184	-2.436588
nummem	.1162626	.0346328	3.36	0.001	.0483835	.1841416
nummem_squ~e	-.001994	.0010953	-1.82	0.069	-.0041408	.0001529
noallyrs	-.0937963	.0396312	-2.37	0.018	-.171472	-.0161205
_prefail	-1.192709	.2255904	-5.29	0.000	-1.634858	-.7505604
_spline1	-.0005694	.0002731	-2.08	0.037	-.0011048	-.000034
_spline2	.0002619	.0001328	1.97	0.049	1.61e-06	.0005222
_spline3	-.0000258	.0000177	-1.46	0.145	-.0000606	8.87e-06
_cons	-4.477905	.2190885	-20.44	0.000	-4.907311	-4.048499

With Random Number threshold set to 0.4

** Summary of Major Power Presence:

```
. sum prop_majpow
```

Variable	Obs	Mean	Std. Dev.	Min	Max
prop_majpow	25198	.3474309	.3104148	0	1

```
. sum prop_majpow if prop_majpow>0
```

Variable	Obs	Mean	Std. Dev.	Min	Max
prop_majpow	16228	.5394727	.2145094	.0208333	1

```
. di "Proportion with Major Power = " `N2'/'N1'
Proportion with Major Power = .64401937
```

* Results Using Oversampled Dataset

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square /*prop_majpow*/ noal
> lyrs _prefail _spline1 _spline2 _spline3
```

Corrected logit estimates Number of obs = 25198

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
defpact	1.333561	1.238609	1.08	0.282	-1.094069	3.761191
total_cinc	-2.84707	2.250062	-1.27	0.206	-7.25711	1.562971
nummem	.1303678	.0362593	3.60	0.000	.0593009	.2014348
nummem_square	-.002319	.0012044	-1.93	0.054	-.0046796	.0000416
noallyrs	-.0917691	.0400992	-2.29	0.022	-.170362	-.0131762
_prefail	-1.19076	.2287471	-5.21	0.000	-1.639096	-.7424235
_spline1	-.0005817	.0002789	-2.09	0.037	-.0011283	-.0000351
_spline2	.0002765	.0001376	2.01	0.045	6.77e-06	.0005463
_spline3	-.0000323	.0000196	-1.64	0.100	-.0000708	6.20e-06
_cons	-4.403298	.2246155	-19.60	0.000	-4.843536	-3.96306

With Random Number threshold set to 0.3

** Summary of Major Power Presence:

. sum prop_majpow

Variable	Obs	Mean	Std. Dev.	Min	Max
prop_majpow	27164	.3619895	.2982876	0	1

. local N1 = r(N)

. sum prop_majpow if prop_majpow>0

Variable	Obs	Mean	Std. Dev.	Min	Max
prop_majpow	18719	.5252996	.208152	.0208333	1

. local N2 = r(N)

. di "Proportion with Major Power = " `N2'/'N1'
 Proportion with Major Power = .68911059

* Results Using Oversampled Dataset

. relogit defpact total_cinc total_cinc_square nummem nummem_square /*prop_majpow*/ noal
 > lyrs _prefail _spline1 _spline2 _spline3

Corrected logit estimates

Number of obs = 27164

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
defpact						
total_cinc	.3981145	1.243563	0.32	0.749	-2.039223	2.835452
total_cinc~e	-.9010252	2.167018	-0.42	0.678	-5.148302	3.346251
nummem	.1291851	.0389474	3.32	0.001	.0528496	.2055206
nummem_squ~e	-.0024264	.0012958	-1.87	0.061	-.0049661	.0001132
noallyrs	-.0919525	.0362752	-2.53	0.011	-.1630506	-.0208543
_prefail	-1.068609	.2247864	-4.75	0.000	-1.509183	-.6280362
_spline1	-.0004896	.0002265	-2.16	0.031	-.0009336	-.0000457
_spline2	.0002441	.00012	2.03	0.042	8.83e-06	.0004793
_spline3	-.0000243	.0000163	-1.49	0.136	-.0000563	7.66e-06
_cons	-4.364357	.2258475	-19.32	0.000	-4.80701	-3.921704

DISTRIBUTION OF K-ADS:

Distribution of ``Event`` k-ads

. tab nummem

nummem	Freq.	Percent	Cum.
2	155	58.27	58.27
3	29	10.90	69.17
4	12	4.51	73.68
5	10	3.76	77.44
6	6	2.26	79.70
7	4	1.50	81.20
8	2	0.75	81.95
9	3	1.13	83.08
10	3	1.13	84.21
11	1	0.38	84.59
12	3	1.13	85.71
13	2	0.75	86.47
14	3	1.13	87.59
15	2	0.75	88.35
16	2	0.75	89.10
17	1	0.38	89.47
18	1	0.38	89.85
19	3	1.13	90.98
20	3	1.13	92.11
21	3	1.13	93.23
22	2	0.75	93.98
23	1	0.38	94.36
24	1	0.38	94.74
25	1	0.38	95.11
27	2	0.75	95.86
29	1	0.38	96.24
30	1	0.38	96.62
31	1	0.38	96.99
32	2	0.75	97.74
34	2	0.75	98.50
43	1	0.38	98.87
45	1	0.38	99.25
47	1	0.38	99.62
48	1	0.38	100.00
Total	266	100.00	

Distribution of ``Non-event'' k-ads

. tab nummem

nummem	Freq.	Percent	Cum.
2	310	58.27	58.27
3	58	10.90	69.17
4	24	4.51	73.68
5	20	3.76	77.44
6	12	2.26	79.70
7	8	1.50	81.20
8	4	0.75	81.95
9	6	1.13	83.08
10	6	1.13	84.21
11	2	0.38	84.59
12	6	1.13	85.71
13	4	0.75	86.47
14	6	1.13	87.59
15	4	0.75	88.35
16	4	0.75	89.10
17	2	0.38	89.47
18	2	0.38	89.85
19	6	1.13	90.98
20	6	1.13	92.11
21	6	1.13	93.23
22	4	0.75	93.98
23	2	0.38	94.36
24	2	0.38	94.74
25	2	0.38	95.11
27	4	0.75	95.86
29	2	0.38	96.24
30	2	0.38	96.62
31	2	0.38	96.99
32	4	0.75	97.74
34	4	0.75	98.50
43	2	0.38	98.87
45	2	0.38	99.25
47	2	0.38	99.62
48	2	0.38	100.00
Total	532	100.00	

Main Results using alternative sized samples of ``non-event'' k-ads

Results using ``Non-Event`` K-ads Sample that is 3 times the ``Event`` K-ads Sample

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square max_pol_dif min_pol noal
> lyrs_prefail _spline1 _spline2 _spline3
(1567 missing values generated)
```

Corrected logit estimates

Number of obs = 30769

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	9.848314	1.233376	7.98	0.000	7.430942	12.26569
total_cinc~e	-16.41044	2.79391	-5.87	0.000	-21.8864	-10.93447
nummem	.1329084	.0396994	3.35	0.001	.055099	.2107178
nummem_squ~e	-.0021343	.001189	-1.80	0.073	-.0044646	.0001961
max_pol_dif	-.0665107	.0107782	-6.17	0.000	-.0876356	-.0453858
min_pol	-.0845097	.0114801	-7.36	0.000	-.1070102	-.0620091
noallyrs	-.1126434	.0399456	-2.82	0.005	-.1909354	-.0343515
_prefail	-1.114959	.2240907	-4.98	0.000	-1.554168	-.675749
_spline1	-.0006641	.0002766	-2.40	0.016	-.0012062	-.000122
_spline2	.0003048	.0001352	2.25	0.024	.0000398	.0005697
_spline3	-.0000306	.0000184	-1.66	0.097	-.0000667	5.53e-06
_cons	-4.885803	.2334204	-20.93	0.000	-5.343299	-4.428308

Results using ``Non-Event'' K-ads Sample that is 4 times the ``Event'' K-ads Sample

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square noallyrs _prefail _splin
> e1 _spline2 _spline3
```

Corrected logit estimates Number of obs = 37652

defpact	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	8.996874	1.142445	7.88	0.000	6.757723	11.23603
total_cinc~e	-14.41763	2.648204	-5.44	0.000	-19.60802	-9.227247
nummem	.1116863	.0329396	3.39	0.001	.0471258	.1762468
nummem_squ~e	-.0019228	.0010461	-1.84	0.066	-.003973	.0001275
noallyrs	-.0955308	.0414133	-2.31	0.021	-.1766994	-.0143622
_prefail	-.9511965	.2251383	-4.22	0.000	-1.39246	-.5099335
_spline1	-.0006383	.0003099	-2.06	0.039	-.0012457	-.000031
_spline2	.0003134	.0001569	2.00	0.046	5.95e-06	.0006209
_spline3	-.0000327	.0000199	-1.64	0.100	-.0000716	6.30e-06
_cons	-5.160267	.2191765	-23.54	0.000	-5.589845	-4.730689

Results using ``Non-Event'' K-ads Sample that is 5 times the ``Event'' K-ads Sample

```
. relogit defpact total_cinc total_cinc_square nummem nummem_square noallyrs _prefail _splin
> e1 _spline2 _spline3
```

Corrected logit estimates Number of obs = 45902

	Coef.	Robust Std. Err.	z	P> z	[95% Conf. Interval]	
total_cinc	7.286977	1.094086	6.66	0.000	5.142606	9.431347
total_cinc~e	-11.00083	2.426244	-4.53	0.000	-15.75618	-6.245482
nummem	.1361533	.0342426	3.98	0.000	.069039	.2032677
nummem_squ~e	-.0024456	.001109	-2.21	0.027	-.0046192	-.000272
noallyrs	-.0845232	.0400608	-2.11	0.035	-.1630409	-.0060055
_prefail	-.6864366	.2219709	-3.09	0.002	-1.121491	-.2513816
_spline1	-.000523	.0002738	-1.91	0.056	-.0010596	.0000136
_spline2	.0002507	.000133	1.88	0.060	-.0000101	.0005115
_spline3	-.0000294	.0000178	-1.65	0.098	-.0000644	5.47e-06
_cons	-5.417313	.2252829	-24.05	0.000	-5.858859	-4.975767

Summary Statistics of Control Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Number of Members	38074	3.146951	4.125544	2	48
Number of Members^2	38074	26.92297	137.2913	4	2304
Max Distance	34118	4110.008	3277.357	0	12244
Prop. Contiguous	37896	.1308817	.322245	0	1
Max Polity Diff.	38074	6.851867	7.34936	0	20
Average Threat	38074	.8517615	1.156511	0	18.84993
Minimum Polity	36204	-2.831041	6.979847	-10	10
Average S Score	37896	.5483516	.3462469	-.168831	1
Non-alliance Years	38074	27.71069	28.91733	0	184