Aarhus, September 13, 2021
Martin Paldam

Net-appendix to:

Meta-mining. The political economy of meta-analysis

Content

A1 Some descriptive statistics

Table A1 expands he descriptive statistics of Table 3 in the paper. The rightmost column reports a normality test. The power of the test grows rapidly with *N,* so normality is only accepted (not rejected) for $N = 22$, but see section 3. The median is smaller than the mean in the Table A3, while the median is always larger than the mean in the Table A4, so the skewness differs. The skewness is small in both cases, but it proves enough to reject normality.

Table A1. Descriptive statistics for the primary data and the PET

				Mean of primary studies					
		N	**Mean**	Std	Median	Min	Max	% ins.	Nor-test
(1)	Primary	1,779	**0.0663**	0.1911	0.0555	−0.9478	0.9083	60.7	0
			PET	Meta-averages for basic and augmented PAT-PET					
(2)	Basic	1	**0.0295**						
(3)	1 au	22	**0.0425**	0.0225	0.0338	0.0120	0.0986	9.09	9.91
(4)	2 au	231	**0.0525**	0.0265	0.0527	0.0020	0.1174	7.79	0.1
(5)	3 au	1,540	**0.0602**	0.0274	0.0595	-0.0045	0.1304	5.00	0
(6)	4 au	7,315	**0.0662**	0.0272	0.0656	-0.0059	0.1464	3.17	0
(7)	5 au	26,334	**0.0709**	0.0267	0.0679	-0.0067	0.1561	2.11	0
			FAT	Funnel Asymmetry Test for basic and augmented PAT-PET					
(2)	Basic	1	**0.4031**						
(3)	1 au	22	**0.3407**	0.0794	0.3587	0.1457	0.4485	4.55	6.12
(4)	2 au	231	**0.2917**	0.0937	0.3120	0.0358	0.4814	10.39	0.31
(5)	3 au	1,540	**0.2562**	0.0963	0.2684	-0.0048	0.4831	16.30	0
(6)	4 au	7,315	**0.2270**	0.0961	0.2272	-0.0405	0.4831	24.90	0
(7)	5 au	26,334	**0.2034**	0.0944	0.2176	-0.0741	0.4832	31.73	0

Nor-test is the skewness kurtosis tests for normality.

The controls are listed in Table A2 (expanding Table 2). Column (1) gives the average of the estimates of β, when the control is included and excluded. Column (2) is a t-test for the equality of the two averages. If equality is not rejected, the rows are shaded in gray. Column (3) is the number of regressions out of $N = 1{,}779$ where the control is included. The sum of this column is $S = 11{,}938$. $S/N = 6.7$ is the average number controls in the typical estimate. Column (4) is the correlation for all N observations between the control variable and the estimates of β.

Table A2. Descriptive statistics for the 22 controls

		(1) Average estimate of β		(2) t-test	(3) Nr.	(4) Cor
	Control variable	In	Not in	%	included	
1	Aid *x* institutions	−0.019	0.070	0.01	70	−0.091
2	Aid *x* policy	0.004	0.085	0.00	411	−0.180
3	Aid squared	0.090	0.061	1.15	333	0.060
4	Aid lagged	0.069	0.065	75.41	463	0.029
5	Capital controls	0.133	0.041	0.00	483	0.213
6	Human capital	0.100	0.061	0.32	238	0.070
7	FDI	0.171	0.051	0.00	224	0.209
8	Policies	0.024	0.084	0.00	530	−0.143
9	Aid instability	0.024	0.102	0.00	815	−0.204
10	Inflation	0.055	0.073	6.07	644	−0.045
11	Fiscal stance	0.044	0.073	0.74	409	−0.063
12	Size of government	0.136	0.055	0.00	250	0.148
13	Regional dummies	0.036	0.090	0.00	789	−0.142
14	Ethno ling index	0.007	0.097	0.00	605	−0.224
15	Financial dev	0.030	0.097	0.00	731	−0.158
16	Trade openness	0.092	0.045	0.00	740	0.132
17	Population	0.121	0.055	0.00	292	0.128
18	Income	0.044	0.123	0.00	1,274	−0.185
19	2 growth savings	0.162	0.064	0.07	44	0.080
20	2 growth aid	0.013	0.068	3.11	58	−0.049
21	OLS	0.070	0.062	40.33	1,000	0.020
22	Africa	0.057	0.125	0.00	1,535	−0.130

A2. All augmentations for the PET and FAT

Tables A3 and A4 report the average results for the PET and the FAT when all permutations of 1, 2 …, 5 controls are used to augment the FAT-PET regression. The number of regressions done for each column is given as the N-column in Table A1.

Table A3. The reaction of PET to 1 to 5 augmentations ('au')

	Basic PET for	Average change from the basic PET				
	No au is 0.029	1 au	2 au	3 au	4 au	5 au
1	Aid x institutions	0.004	0.017	0.027	0.035	0.040
2	Aid x policy	0.025	0.033	0.039	0.044	0.048
3	Aid squared	**−0.012**	0.003	0.014	0.022	0.029
4	Aid lagged	**−0.003**	0.012	0.023	0.031	0.038
5	Capital controls	0.001	0.011	0.019	0.025	0.031
6	Human capital	**−0.002**	0.012	0.023	0.031	0.038
7	FDI	0.006	0.016	0.024	0.031	0.036
8	Policies	0.022	0.030	0.036	0.040	0.044
9	Aid instability	0.044	0.046	0.047	0.048	0.049
10	Inflation	0.005	0.020	0.031	0.039	0.045
11	Fiscal stance	0.007	0.019	0.028	0.035	0.040
12	Size of government	**−0.015**	**−0.000**	0.012	0.021	0.029
13	Regional dummies	0.028	0.032	0.035	0.039	0.042
14	Ethno ling index	0.035	0.038	0.041	0.043	0.045
15	Financial dev	0.029	0.034	0.038	0.041	0.044
16	Trade openness	**−0.017**	**−0.002**	0.009	0.018	0.025
17	Population	0.000	0.013	0.023	0.030	0.036
18	Income	0.069	0.067	0.065	0.064	0.063
19	2 growth savings	**−0.000**	0.013	0.023	0.031	0.037
20	2 growth aid	0.002	0.015	0.025	0.033	0.039
21	OLS	0.002	0.017	0.028	0.037	0.044
22	Africa	0.058	0.063	0.066	0.068	0.070
	Average change	0.013	0.023	0.031	0.037	0.041
	Average PET	0.043	0.052	0.060	0.066	0.071

The average changes for variable *x* are for *x* and all combinations of the other 21 variables. Thus, the 1 au column is the estimate for *x*. Under 2 au the estimates where the first is for *x* and the 21 other variables, etc. Finally, the 5 au column is for the variable and all $\binom{21}{4}$ = 5,985 combinations of the other 21 variables. All $\binom{22}{5}$ = 26,334 combinations are (22/5) *x* 5,985, where the division by 5 is because each variable appears five times in the 5 au column.

Given the publication bias found at the basic level, most augmentations increase the PET. The six dark shaded cells are the exceptions where controls decrease the PET, and hence show a smaller effect of aid. The nine lightly shaded cells are the weak controls, i.e., they are below 0.01, so the effect is marginal. When the negative and weak controls are combined with other variables, the effect increases, but the order of the effects is still almost the same. The controls that increase the PET the most are *income*, *africa* and *aid instability*.

Table A4. The reaction of FAT to 1 to 5 augmentations ('au')

	Basic FAT for	Average change from the basic FAT				
	no au is 0.403	1 au	2 au	3 au	4 au	5 au
1	Aid x institutions	−0.009	−0.072	−0.119	−0.155	−0.184
2	Aid x policy	−0.089	−0.128	−0.159	−0.185	−0.207
3	Aid squared	**0.045**	−0.024	−0.077	−0.117	−0.149
4	Aid lagged	−0.003	−0.067	−0.116	−0.153	−0.182
5	Capital controls	−0.257	−0.266	−0.273	−0.278	−0.283
6	Human capital	−0.021	−0.080	−0.126	−0.161	−0.188
7	FDI	−0.217	−0.241	−0.259	−0.272	−0.283
8	Policies	−0.061	−0.105	−0.140	−0.168	−0.192
9	Aid instability	−0.123	−0.146	−0.166	−0.185	−0.202
10	Inflation	−0.014	−0.101	−0.138	−0.178	−0.208
11	Fiscal stance	−0.008	−0.071	−0.117	−0.152	−0.180
12	Size of government	**0.035**	−0.028	−0.077	−0.116	−0.148
13	Regional dummies	−0.066	−0.103	−0.135	−0.162	−0.186
14	Ethno ling index	−0.066	−0.094	−0.120	−0.144	−0.165
15	Financial dev	−0.062	−0.100	−0.132	−0.160	−0.184
16	Trade openness	−0.028	−0.094	−0.143	−0.180	−0.208
17	Population	−0.094	−0.139	−0.173	−0.200	−0.222
18	Income	−0.218	−0.230	−0.240	−0.249	−0.258
19	2 growth savings	−0.020	−0.079	−0.124	−0.158	−0.185
20	2 growth aid	−0.008	−0.071	−0.119	−0.155	−0.184
21	OLS	**0.011**	−0.066	−0.097	−0.134	−0.164
22	Africa	−0.101	−0.147	−0.182	−0.210	−0.231
	Average change	−0.062	−0.111	−0.147	−0.176	−0.200
	Average FAT	0.341	0.292	0.256	0.227	0.203

The average changes are calculated as in Tables A3 and A4. Given the publication bias, the augmentations should decrease the FAT, and in general they do, but with a few exceptions. The three dark shaded cells are the exceptions where the FAT increases. The 27 light shaded cells are the augmentations with a small effect (below 0.1).

The correlation between the changes in the PET and FAT is only –0.51, so that the corresponding cells are not always shaded. Only *aid squared* and *size of government* are darkly shaded in both tables.

Note the *capital controls* and *trade openness* variables. It is perhaps logical that trade openness decreases the effect of aid, while capital controls have no effect, but the effects of both variables are to reduce the FAT, and it is even the strongest variable in this respect.

A3. Extending the average PETs and FATs for more augmentations

The average PET and FAT is easy to extend for more augmentations. The estimated parts of the two curves drawn both have a clear and smooth curvature, as seen on Figures A1a and A1b. The dashed gray curves on the two figures are the extension. It is done by eyeball econometrics.

Figure A1a. PET extended to 10 augmentations

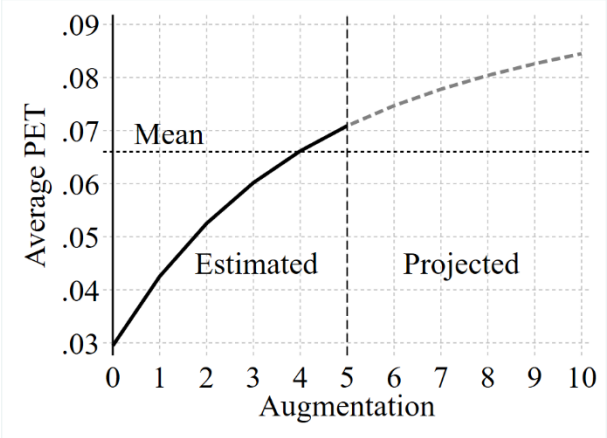
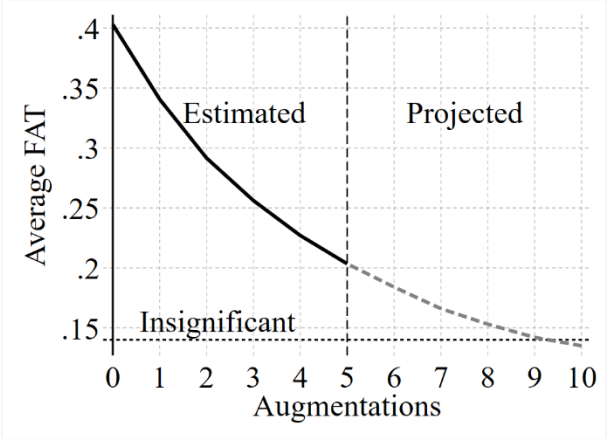


Figure A1b. FAT extended to 10 augmentations



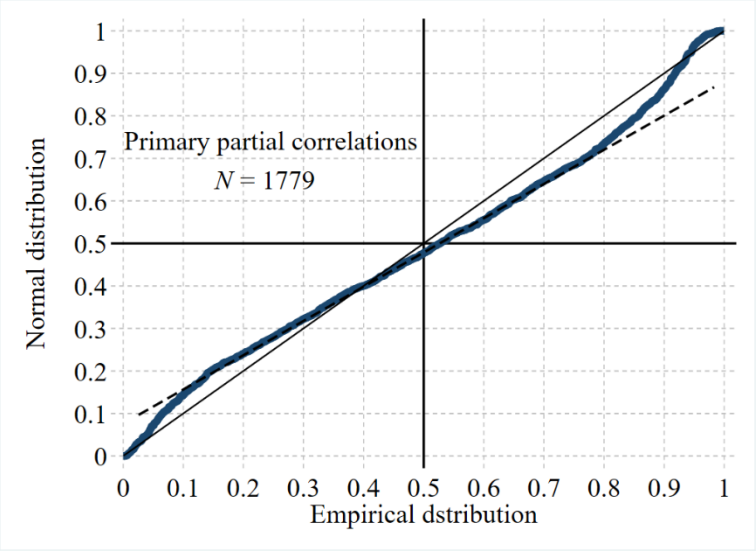
The average PET already reaches the mean of the primary estimated for 4 au, but even for 10 au it is unlikely to reach two means. The ‘best’ 1% of the results are above twice the mean already for 4 au. The average FAT is only insignificant for about 9 au.

A4. Graphical tests for the distributions of the results

The method used is to present the probit diagrams for the distribution, i.e., it is drawn relative to a normal distribution. The empirical distribution is normal if it is the close to the line from (0,0) to (1,1) also drawn.

Figure A2 show the primary estimates as also drawn as the funnel of Figure 7 in the main paper. It is clear that there is bends at both ends. As the partial correlation is bounded to be in the interval from -1 to 1 this is not surprising. However, the dashed line show that the curve is linear over most of its range.

Figure A2. Probit diagram for the primary estimates (partial correlations)



The central limit theorem in statistics say that if we replace the original observations with averages of two, three , … , observations we soon reach a normal distribution.

The PETs and the FATs are calculated as some sort of an average especially when they are augmented, but it is surely not a plain average, so it is not clear that the central limit theorem applies. The rightmost column in Table A1 seems to reject that it does.

The 2 *x* 3 graphs of Figures A3 and A4 tells a different story. Here the augmentations make the distribution more and more normal. While the graphs look better the augmentations also increase *N* to make the test more powerful as well. The increased power wins in the end. Thus, we conclude that the augmentations make the distributions almost normal. All tests I know of are robust to so small deviations as we have found even with three augmentations.

Figure A3. Probit diagrams for the augmented estimates of PET

Figure A3a

1 au

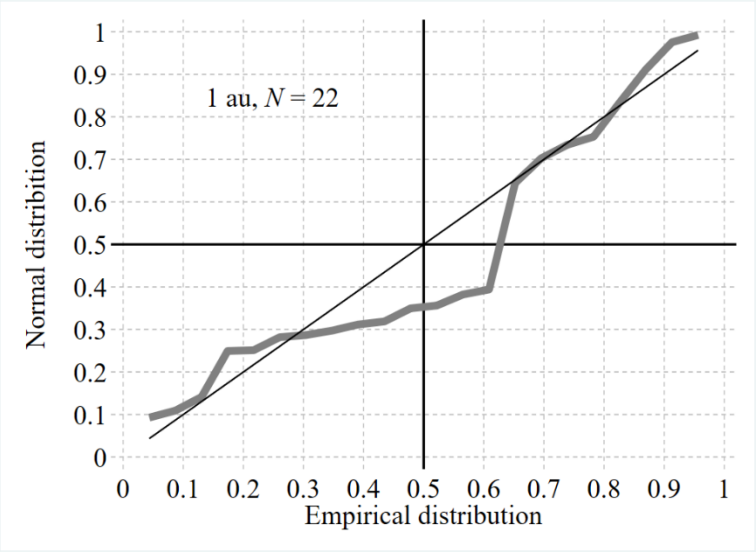


Figure A3b

3 au

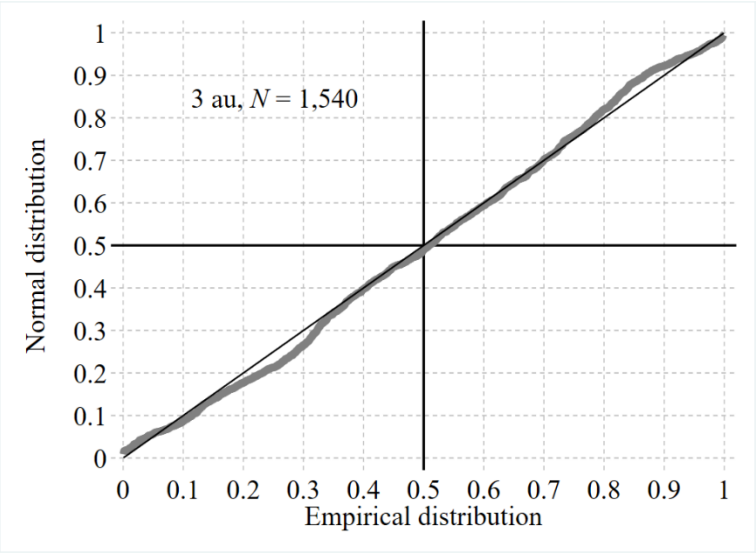


Figure A3c

5 au

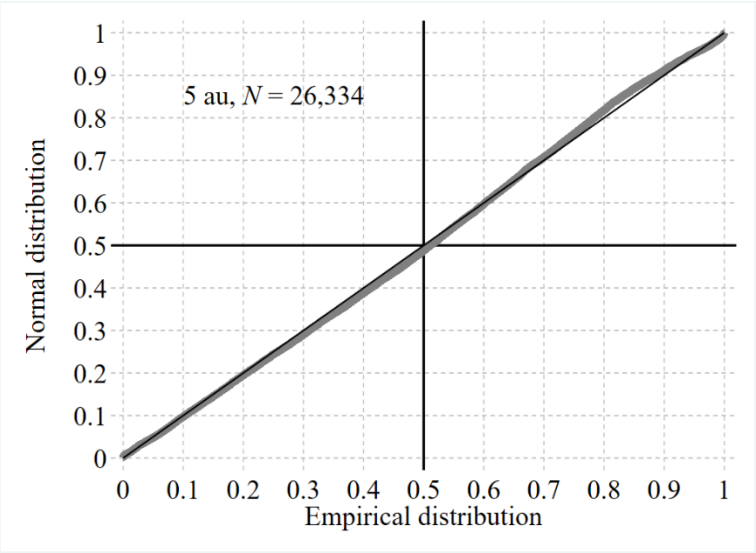


Figure A4. Probit diagrams for the augmented estimates of FAT

Figure A4a

1 au

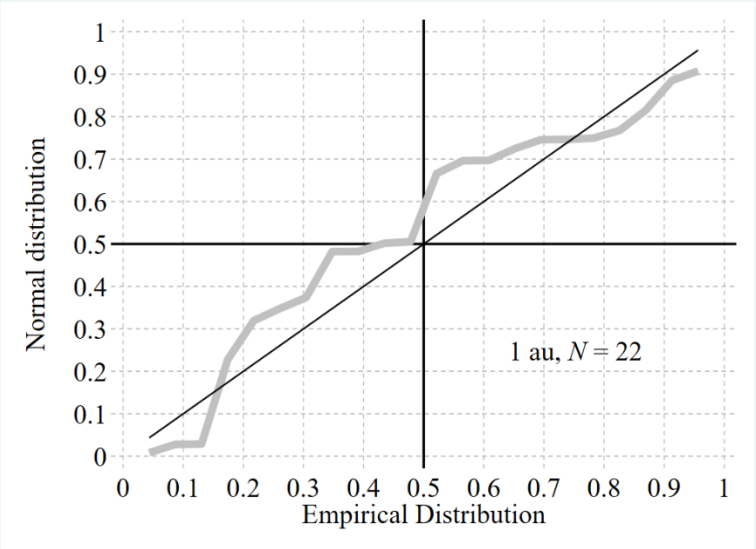


Figure A4b

3 au

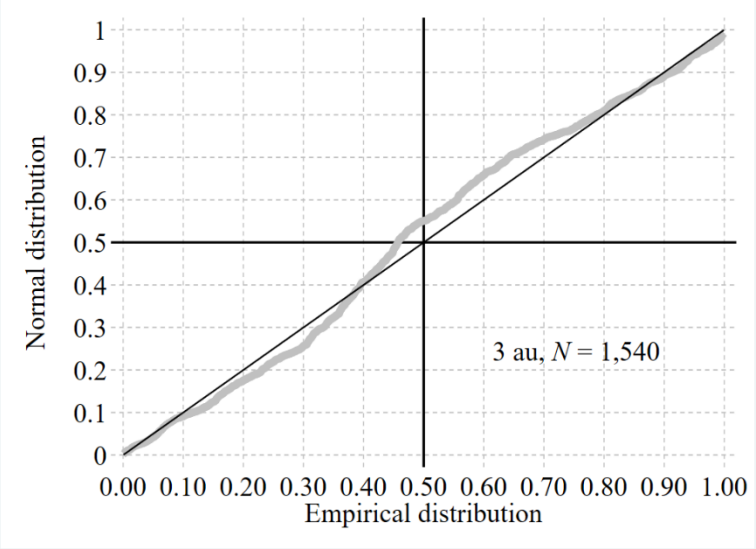


Figure A4c

5 au