

## Appendix

Table 3 presents the full results from our replication of the study by Rose (2004) with the replication materials provided by Tomz et al. (2007). The underlying dataset combines the replication data provided by Tomz et al. (2007) with information on bilateral trade flows from the IMF DOTS database, which we downloaded in March 2017 (IMF DOTS database is also the primary data source of Tomz et al.)

Model 1 exactly replicates Model 1 in Table 1 on page 53 in Tomz et al. (2007); using import data from both sides to estimate bilateral trade flows. The dependent variable is the natural log of imports measure in 1967 U.S. dollars. Model 2 runs the same model, using a reconstruction of the dependent variable based on our newer version of the IMF DOTS dataset. To ensure consistency, dyad-year observations in which the log-difference between import records in Tomz's original and import records in the updated DOTS data exceeds 0.025 are dropped, as well as all dyad-year observations in which the IMF indicates the use of partner records to estimate mirror flows. To evaluate the impact of switching between import records and their export mirror, Model 3 first replicates Model 2, but limiting the analysis to the sample for which both the import and relevant export mirror are available (which reduces the sample by 57,526 observations). Finally, Model 4 replicates Model 3, using the mirror data based on export records.

As noted in the text, these results are here only included to give an illustration of the implications of measurement errors. We provide a fuller discussion of the replication exercise as well as strategies to mitigate these problems in a separate research article.

**Table 3. Full replication results**

	(1)	(2)	(3)	(4)
	DV: log trade flow, import records, Tomz et al.	DV: log trade flow, import records, IMF DOTS	DV: log trade flow, import records, IMF DOTS	DV: log trade flow, export records, IMF DOTS
Both formal GATT/WTO members	-0.0701***	-0.0661**	-0.116***	0.499***
	(0.0257)	(0.0326)	(0.0366)	(0.0946)
Only one formal GATT/WTO member	-0.211***	-0.162***	-0.194***	0.367***
	(0.0250)	(0.0322)	(0.0367)	(0.0966)
Reciprocal PTA	0.334***	0.317***	0.295***	0.727***
	(0.0266)	(0.0302)	(0.0335)	(0.0669)
Nonreciprocal PTA	0.139***	0.126***	0.154***	0.627***
	(0.0350)	(0.0405)	(0.0425)	(0.0730)
GSP	-0.0970***	-0.0772***	-0.0888***	0.455***
	(0.0216)	(0.0246)	(0.0278)	(0.0609)
Currency union	1.010***	1.035***	1.043***	1.085***
	(0.0751)	(0.0855)	(0.0957)	(0.280)
Colonial orbit	1.755***	1.125**	1.638***	2.578***
	(0.104)	(0.472)	(0.155)	(0.531)
Log product real GDP	0.771***	0.809***	0.832***	1.284***
	(0.00518)	(0.00597)	(0.00667)	(0.0137)
Log of distance	-0.708***	-0.759***	-0.781***	-1.248***
	(0.0150)	(0.0176)	(0.0199)	(0.0431)
Common language	0.357***	0.358***	0.411***	1.098***
	(0.0340)	(0.0384)	(0.0446)	(0.0855)
Land border	0.577***	0.494***	0.465***	0.800***
	(0.0595)	(0.0696)	(0.0791)	(0.165)
Number landlocked	-0.142***	-0.0908***	-0.130***	-0.426***
	(0.0198)	(0.0229)	(0.0256)	(0.0662)
Number of islands	0.237***	0.351***	0.315***	0.552***
	(0.0317)	(0.0354)	(0.0416)	(0.0758)
Log product land area	-0.0950***	-0.0773***	-0.0858***	-0.192***
	(0.00487)	(0.00609)	(0.00685)	(0.0146)
Constant	-11.75***	-13.56***	-14.17***	-30.70***

	(0.252)	(0.283)	(0.321)	(0.627)
Observations	381,656	255,670	198,144	198,144
R-squared	0.613	0.640	0.652	0.378

NOTE: Ordinary OLS estimates. Robust standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1; data and commands adapted from replication files provided by Tomz et al. (2007)