Appendix

A   Summary Statistics

Table A: Correlation Matrix

	Distance	Defense Treaty	Polity	Trade Openness
Distance	1			
Defense Treaty	-0.39****	1		
Polity	0.01****	0.06****	1	
Trade Openness	-0.06****	-0.04****	-0.07****	1
PTA Depth	-0.41****	0.19****	0.18****	0.06****
BIT	-0.08****	0.01****	0.02****	0.03****
Mass	0.00	0.07****	0.10****	-0.17****
Alliance Treaty	-0.35****	0.85****	0.07****	-0.04****
GDP pc	-0.08****	0.04****	0.16****	0.24****
Trade Volume	-0.22****	0.18****	0.23****	-0.06****
OECD pair	-0.23****	0.28****	0.20****	0.01****

	PTA Depth	BIT	Mass	Alliance Treaty
PTA Depth	1			
BIT	0.07****	1		
Mass	0.10****	0.14****	1	
Alliance Treaty	0.17****	0.02****	0.14****	1
GDP pc	0.15****	0.09****	0.40****	0.10****
Trade Volume	0.28****	0.14****	0.72****	0.22****
OECD pair	0.31****	-0.01****	0.29****	0.29****

	GDP pc	Trade Volume	OECD pair
GDP pc	1		
Trade Volume	0.34****	1	
OECD pair	0.23****	0.34****	1

Table B: Frequency count bar-plots for binary variables and distribution plots for continuous variables.

Alliance Treaty

Defense Treaty

Bilateral Investment Treaty

OECD Pairs

Dyad GDP Product
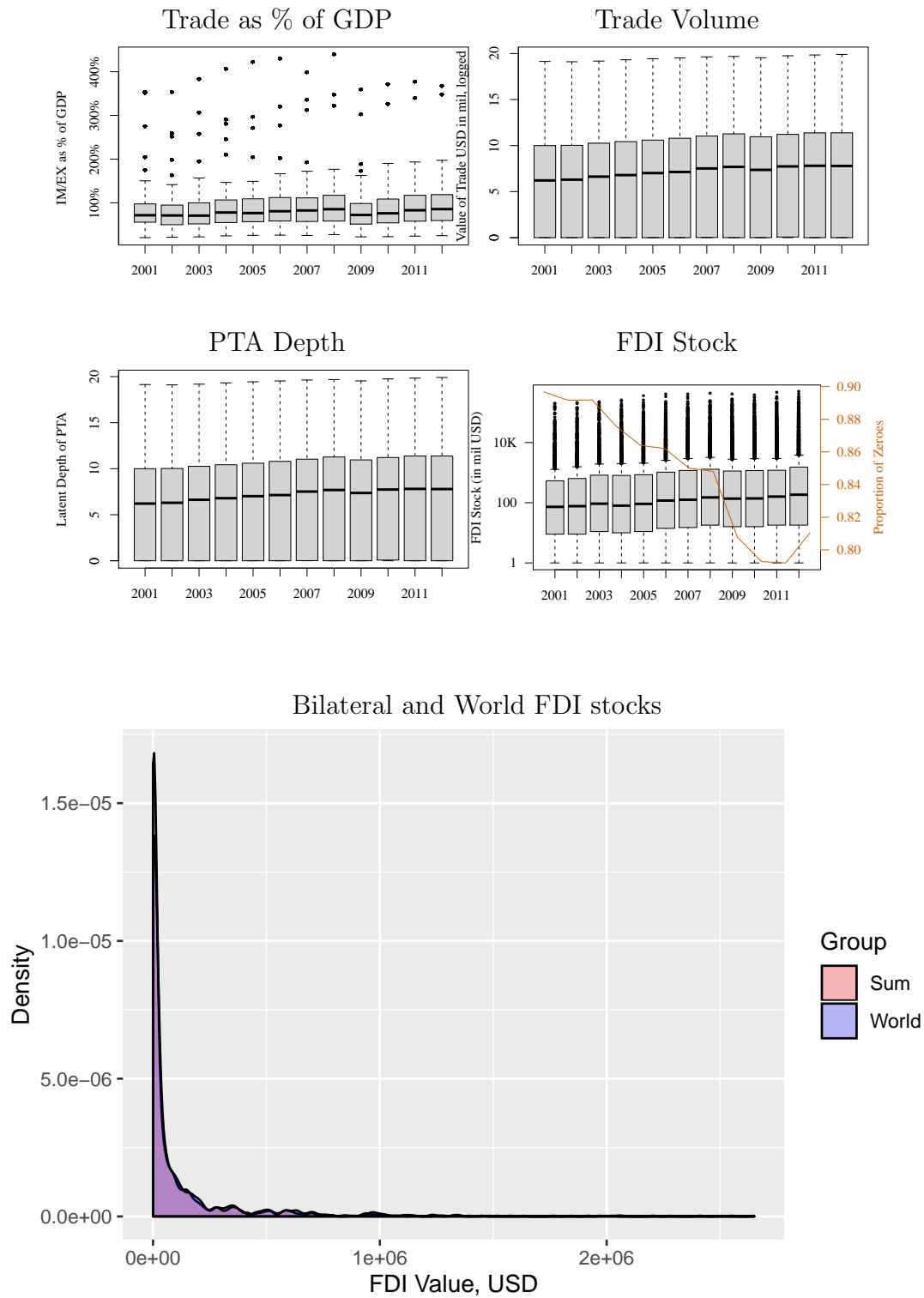

Distance

GDP per capita

Polity
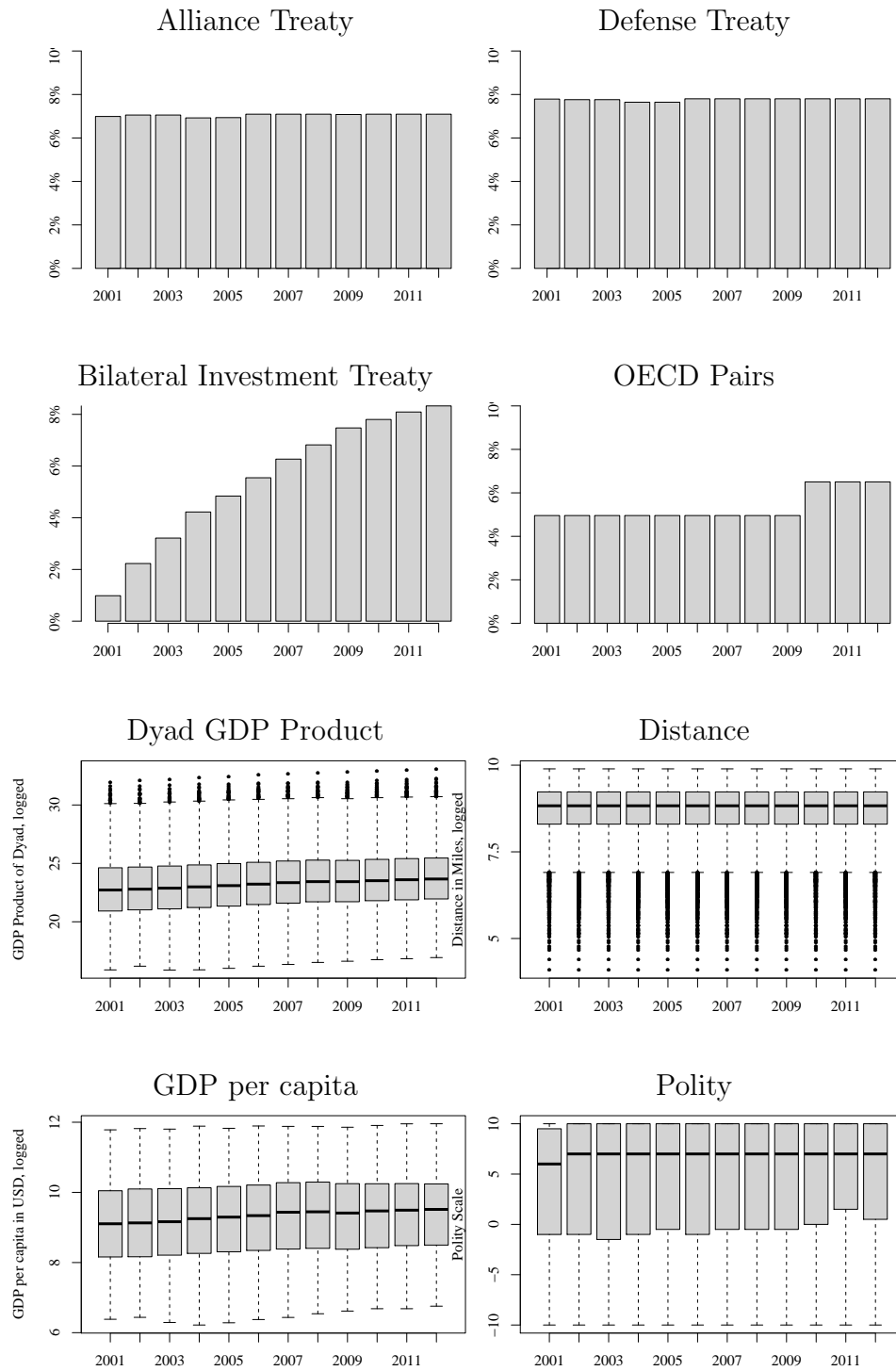
Figure A: Density Plot of Reported World FDI Stocks and Summed Bilateral FDI Stocks.

B   Time-Pooled Model Results

For robustness checks, we re-estimate the count ERGM by pooling the data, which is common in the literature for regression based models. Figure **??** shows that all network dependence terms are significant in the time-pooled models. Non-OECD pairs exhibit less reciprocity than OECD pairs, but the average effect for the time sample is still positive and significant.
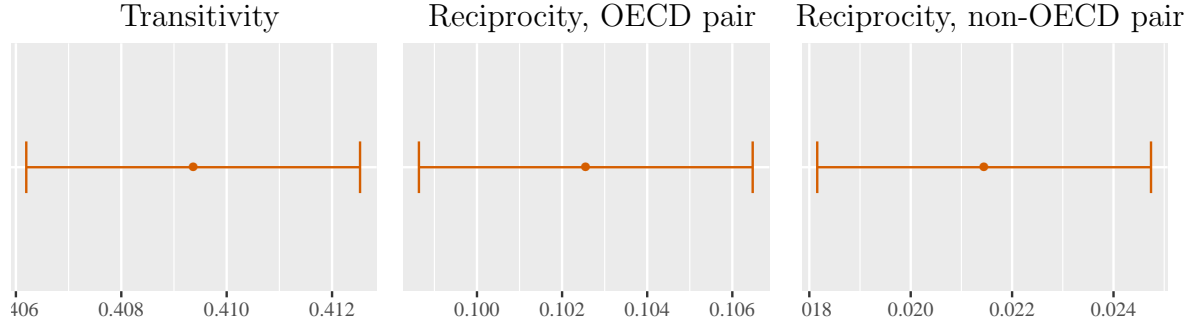

Figure B: Estimates of network terms in time-pooled ERGMs. Bars span 95% confidence intervals.
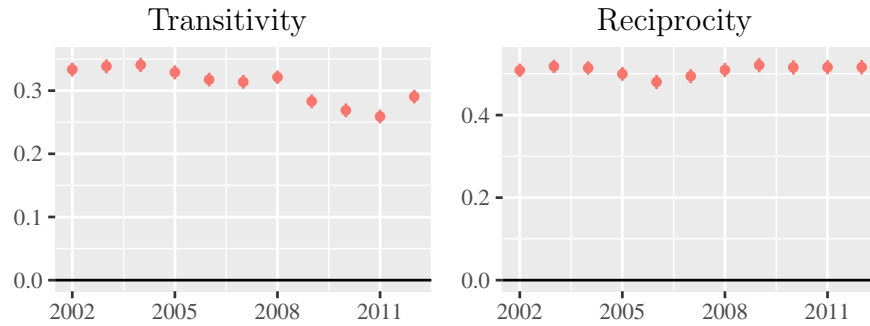
C   Latent Space Model Results

Figure C: Estimates of Dependence terms. Bars span 95% confidence intervals.

D   Subset by Missingness Results

In the paper, we imputed missing values with zeros. In this section, we check whether our results are robust if we analyze a subset of the data set based on the level of missingness. To subset the data, we approximate total level of missingness in the adjacency matrices (q) by using the proportion of missing values for each node (p). We conduct two robustness checks: (1) when $p = 0.86$, $q \approx 0.50$ and $n = 70$; and (2) when $p = 0.72$, $q \approx 0.25$ and $n = 28$. In the first case, we only include nodes with missing values that are 86% or less of the possible edges for the entire data set, which leaves us with an adjacency matrix that is only missing 50% of the values (70 countries in total). Similarly, the second set only includes nodes with missing values that are 72% or less of the possible edges for the entire dataset, which leaves us with an adjacency matrix that is only missing 25% of the values (28 countries in total). Following our approach in the paper, we impute missing values in the two subsets of the data with zeros.

Figures **??** and **??** present the results for the two robustness checks, respectively. We see that FDI networks show strong transitivity for all years, but reciprocity effects become weak and insignificant in some years. This may be because most nodes (i.e. states) in the subsets are developed countries that have substantial two-way FDI flows between them and thus there is little variation in the level of reciprocity.

D.1   q ≈ 0.50

D.2   q ≈ 0.25

E   Tax Incentives and FDI

One potential concern with bilateral FDI data is that they include round-tripping FDI, in which domestic firms transfer funds to a foreign country (typically a tax haven) and invest back as "foreign capital" to take advantage of preferential policies that their home countries
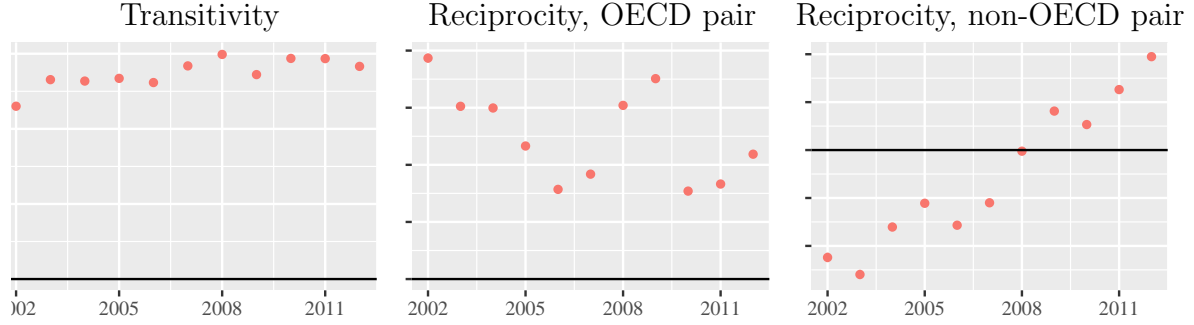
Figure D: Estimates of Dependence terms. Bars span 95% confidence intervals.
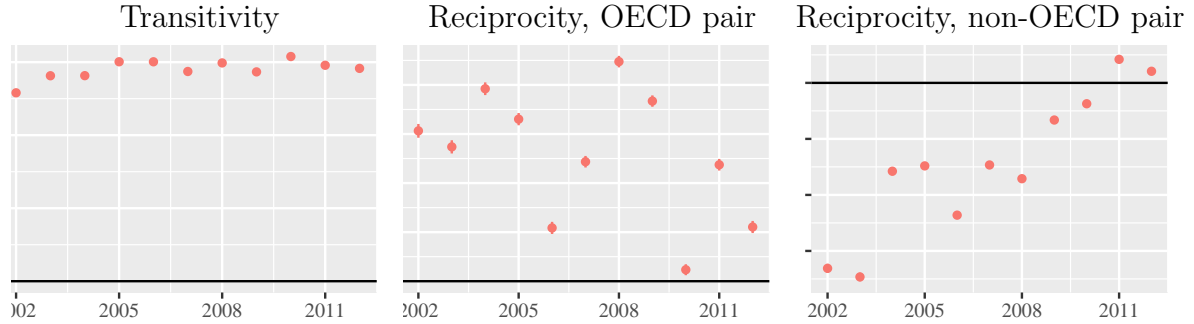

Figure E: Estimates of Dependence terms. Bars span 95% confidence intervals.

offer to foreign investors (**?**). Round-tripping FDI could inflate reciprocity. Further, firms may use tax havens to channel funds to other countries (**?**). If firms in one country use a tax haven to invest in another country whose firms also invest in the former country, it creates an artificial triangle closure of investment flows (i.e., transitivity). To address these issues in bilateral FDI data and check the robustness of our findings, we re-estimated the model by including the corporate tax rate for both the sending and receiving country[1] and estimating models that exclude tax havens. The countries dropped as tax havens are Namibia, Trinidad and Tobago, Bahrain, Luxembourg, the United Kingdom, Ireland, and the Netherlands. We used the EU list of 17 countries as a base list, although most of them were not in our sample due to data availability.[2] We also added Luxembourg, the United Kingdom, Ireland, and the Netherlands since they are often considered cooperative tax havens.[3] Figure **??** plots

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[1]Corporate tax rate data comes from the World Bank's *World Development Indicators.*

[2]https://ec.europa.eu/taxation_customs/tax-common-eu-list_en

[3]Matthew C. Klein. "What the Foreign Direct Investment Data Tell Us About Corporate Tax Avoidance." *Financial Times*, November 23, 2017. https://ftalphaville.ft.com/2017/11/23/

the results for reciprocity and transitivity for the models with corporate tax rates. We see that the results on reciprocity become a little weaker when tax rates are included, but they remain significant in most years. Including tax rates does not affect transitivity. Figure **??** plots the results for reciprocity and transitivity for the models that exclude tax havens and the results are nearly identical to those with corporate tax rates.
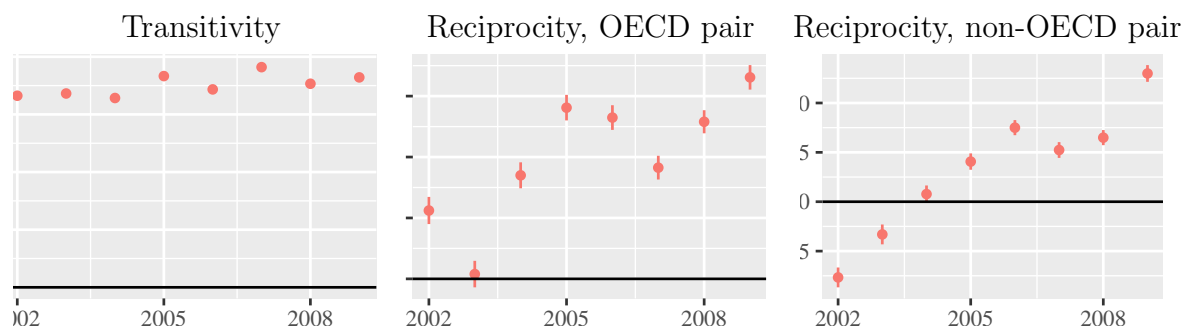

Figure F: Estimates of Dependence terms for models with corporate tax rates. Bars span 95% confidence intervals.
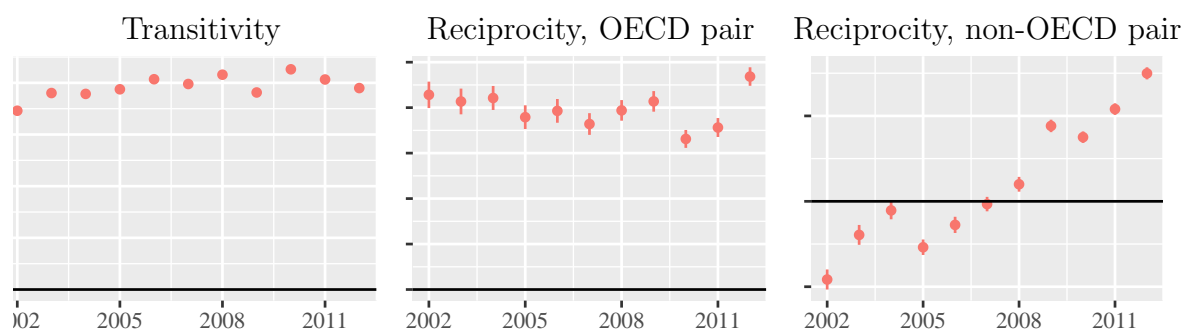

Figure G: Estimates of Dependence terms for models without tax havens. Bars span 95% confidence intervals.

F   Excluding the European Union

A significant portion of the FDI in the global economy involves the European Union and the majority of the top partners for the EU are other EU countries. This is because of proximity,

similar business environments and endowments, and few barriers for EU firms to send FDI to other EU countries. Because of this, there is a high degree of clustering within the EU, and so we run models that drop all EU countries to test if reciprocity and transitivity is still significant for the rest of the global economy. We find that the transitivity statistic remains largely unchanged after dropping EU countries, but that reciprocity is either insignificant or negative for all years except the last two. This supports our point that reciprocity is stronger for Western democracies. However, the positive trend beginning in 2005 indicates that this is changing as FDI between developing countries increases.
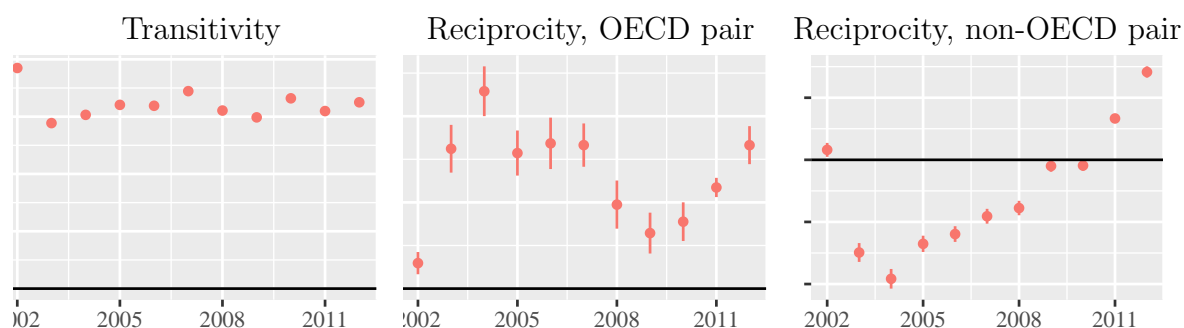

Figure H: Estimates of Dependence terms. Bars span 95% confidence intervals.

References

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