

UN Voting Similarity and Bilateral Democracy Aid: Does Voting Similarity Lead to an Increase in Democracy Aid?

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1 Introduction

In most studies on developing countries, aid plays a crucial, multi-dimensional role that is able to penetrate many economic, social, and government sectors. Although it is hard to justify the exclusion of aid in quantitative studies that concern developing countries, the inclusion of aid in statistical analysis is not without its own problems. Aid occurs through an endogenous allocation process that is also affected by other possible covariates, such as GDP, regime type, or life expectancy, and sometimes it is even affected by the dependent variable itself. In particular, endogeneity and reverse causality issues are ubiquitous in emerging studies on the effect of aid on civil conflict, because donors may allocate more aid in response to past or current civil conflict or in anticipation of civil conflict (Savun and Tirone 2011; Rudloff and Scott 2014; Nielsen et al. 2011; Daxecker 2012).

One common way to address the issue of endogeneity with aid is to isolate the exogenous effect through an instrumental variables analysis. By identifying predictors of foreign aid that does not affect the dependent variable and using these predictors as the instrument for the endogenous aid variable, it is possible to construct a new aid variable that is not endogenous any more. The first stage of the IV-2SLS analysis identifies other factors that can strongly predict the endogenous aid variable. This study was inspired by previous research on aid that identified several different instruments of aid for the instrumental variables approach (Savun and Tirone 2011; Dietrich and Wright 2014; de Ree and Nillesen 2006). This paper aims to contribute to existing research by asking what factors affect aid in a more comprehensive manner, so that

future instrumentation of aid can be more informed and standardized.

To do this, it must first be noted that aid is not just a homogeneous flow of funds. There are many different kinds of aid- such as economic aid, food aid, military aid- and each has its own data generating process. Therefore, a research effort on the factors of aid should not study aid as one whole. This study will focus on democracy aid, which has grown in its monetary flow, impact on society, and scholarly attention since the end of the Cold War (Scott and Steele 2011). Democracy aid is, in the broad sense, aid for democracy promotion, and many scholars agree that it consists of election assistance, institution-building, and support for civil society (Savun and Tirone 2011; Heinrich and Loftis 2017; Scott and Steele 2005; Scott and Steele 2011; Finkel et al. 2008). Democracy aid includes well- known activities such as election monitoring (Savun 2011; Cornell 2013).

There are some distinct characteristics of democracy aid. First, its main function does not involve the distribution of physical resources. Thus, it is more difficult to be used by the elites as a channel of personal wealth accumulation. Second, democracy aid may actually be shunned by some recipient states, because some of the activities funded by democracy aid, such as election observer missions, may threaten the incumbent leader's grip on power (Daxecker 2012). These characteristics come from the fact that democracy aid is more concerned with political ideology and political preferences than other types of aid.

Therefore, one particular explanatory factor that is of interest in this study is the similarity in voting patterns between donors and potential recipients in the United Nation's General Assembly. Voting records from the UN General Assembly have been used by scholars as a measure of state preference (Bearce and Bondanella 2007; Bailey, Strezhnev, and Voeten 2017; Savun and Tirone 2011). Although it is very difficult to measure the real, latent preferences of a state, General Assembly resolutions are non-binding and so it is more likely to represent the preference or position of a state rather and it less likely that a country would vote against their interest for strategic reasons (Bailey, Strezhnev, and Voeten 2017). It is also related to political ideology in a broader sense, since a substantial portion of the questions that the member states vote on deal with issues such as human rights, environment, and peacekeeping. I argue that a greater similarity in UN General Assembly voting patterns between a pair of a potential donor and a recipient increases the amount of bilateral democracy aid because aid based on ideology is more likely to flow between pairs that are more politically compatible and less likely to be rejected by recipients if it comes from donors with similar

political preferences.

2 Data and Methods

2.1 Data

The sample used in this study consisted of bipartite donor-recipient dyads. The donors were OECD member states while recipients were states eligible for Official Development Aid (ODA) during the period of 1991-2014. The unit of analysis was dyad-year. The sample of donor states and the sample of recipient states are only almost mutually exclusive; South Korea and Slovenia were recipients of ODA at first, but they joined the OECD and became donors in 1996 and 2010, respectively (OECD 2018). However, the bilateral flows always formed bipartite networks for each year, since these two countries were never simultaneously donors and recipients. The descriptive statistics for the variables that will be described below can be found in Table 1.

The outcome of interest is democracy aid. Democracy aid in this study refers to aid classified under the sector code for "Government and Civil Society" by the OECD (2018). OECD's "Government and Civil Society" aid data has been used by other scholars as a measure for democracy aid (Savun & Tirone 2011, Cornell 2013; Heinrich & Loftis 2017), because it includes aid that falls under the democracy promotion efforts mentioned previously, such as election assistance, institution building by strengthening civil services as well as assisting legal reforms, and supporting civil society organization for governance-related activities (OECD, 2018). The measure of democracy aid was constructed using bilateral aid disbursement in constant 2015 US dollars, which was scaled by population to show the aid disbursement per 1000 people. Finally it was logged to account for its skew and the wide numeric range of values.

The explanatory variable of special interest in this study was the absolute difference in the ideal points scores between recipients and donors. This is essentially a dissimilarity matrix between donors and recipients. Ideal points is a spatial measurement model proposed by Bailey, Strezhnev, and Voeten (2017), who also built the dataset for it, where the position of state preference is constructed so that countries can all be placed on one spectrum depending on different individual vote choices (among "Yea," "Nay," and "Abstain"). There was an earlier measure of preference similarity based on UNGA votes called *Affinity* (Gartzke and Jo 2006) that calculated similarity using Euclidean distance measures between a dyad. However, this measurement was

dependent on the composition of questions that were voted on in the General Assembly. A disproportionate number of questions asked on an area of disagreement would exaggerate the extent preference difference between the two countries. This issue was fixed by using weights in the ideal points measurement (Bailey, Strezhnev, and Voeten 2017), and therefore this measurement of similarity was selected for this study. To see how the change in ideal points differences would affect aid distribution, a first difference measure that indicates the change in ideal point difference was also constructed.

Table 1: Descriptive Statistics, 1991 - 2014

Statistic	N	Mean	St. Dev.	Min	Max
Aidflow (per 1000, logged)	18,895	3.372	2.107	-6.326	11.193
Ideal Point Difference	18,778	1.695	0.760	0.000	4.608
Δ Ideal Point Difference	18,766	-0.003	0.159	-1.345	1.126
Conflict, Prior Year, R	18,510	0.223	0.417	0	1
Democratization (ord), R	17,507	0.286	2.105	-14	16
Democratization (dummy), R	17,507	0.067	0.249	0	1
Democracy (ord), R	17,560	3.186	5.610	-10	10
GDP growth, R	18,895	4.750	8.705	-39.240	93.775
GDP growth, D	18,894	1.908	3.185	-24.395	19.385
GDP (logged), R	18,895	8.322	0.952	4.997	10.813
GDP (logged), D	18,894	10.585	0.211	9.776	11.463
Population (logged), R	18,895	9.611	1.643	3.793	14.130
Population (logged), D	18,894	10.124	1.336	5.772	12.674
Women in Parliament (%), D	18,894	26.726	11.008	1.500	47.300
Common Official Lang.	18,579	0.168	0.374	0	1
Past Colonial Relationship	18,579	0.076	0.264	0	1
Distance (km, logged)	18,579	8.748	0.617	4.765	9.885
# of PTAs	16,588	0.014	0.117	0	1
Military Intervention (dummy)	16,588	0.002	0.041	0	1
Unemployment Rate, R	18,656	8.483	6.784	0.160	44.157
Unemployment Rate, D	18,771	7.027	3.351	1.640	27.470
Unemployment Difference	18,656	-1.450	7.556	-37.957	25.770
Immigration (logged), R to D	15,207	5.153	2.430	0.000	12.155
Export (logged), R to D	15,635	16.846	3.611	0.000	26.634
Export (logged), D to R	16,524	17.885	2.508	5.220	26.144

The selection of the other covariates are based on the existing literature and analyses of aid. Some of the common and intuitive controls are the GDP per capita for both the donor and recipient, since richer donors

have more capacity to give aid and poorer recipients are seen as more needy of aid. This measure is in constant 2011 USD and was logged to avoid numerical instability. The growth of GDP was also included in many models for similar reasons. Another common measure was population for both donors and recipients, and this was also logged. Some scholars argue that countries with fewer people are discouraged to give aid due to the idea of a minimum threshold of meaningful aid, which is harder to meet in a small donor country (Dreher and Fuchs 2011). These economic and demographic variables were collected from the Penn World Tables (Heston et al. 2006).

The remaining covariates are not frequently used to estimate aid, but they have theoretical relevance to either democracy aid allocation in specific or to the aid allocation process as a whole. The measurements of democracy and democratization have an effect on other types of aid, but it is a factor that cannot be neglected for democracy aid. The extent of democracy was recorded as an ordinal variable using the Polity IV score (Marshall & Jaggers, 2002), where a high positive score indicates a strongly established democracy that would have less need for democracy aid. Democratization was first calculated as a dummy variable where a positive change in Polity scores equal or greater than three during the two preceding years was coded as 1. However, measuring democratization using a cutoff based on Polity scores or Freedom House scores has been criticized for having arbitrary cutoffs, so an ordinal variable that measures all changes in the Polity score from two years prior ($Democracy_t - Democracy_{t-2}$) was calculated to measure the intensity of democratization (or autocratization) (Cook and Savun 2016; Geddes, Wright and Frantz 2014; Bogaards 2010).

When analyzing democracy aid or aid in general, there is an unfortunate lack of analysis using dyadic data, which results in the loss of donor-recipient relational characteristics that most likely have an effect on the aid allocation process. It also misrepresents the data as an individual attribute data instead of a network that is actually is. This study uses relational data in dyad-year, so there are several relational variables that are included. An obvious variable to include the existence of a past colonial relationship, since former colonies and former colonizers are likely to have political alliances and investment, especially if the colonizer implemented direct rule, like France did (Alesina and Dollar 2000). It is suspected that this would be most relevant for European donors and African recipients due to the high concentration of former colonies and colonizers in these regions. Common official language is also likely to facilitate aid flow, and this is important for democracy aid, which involves training of civil workers and citizen education that requires

frequent communication and coordination with the local populace. Similarly, distance is a variable that is argued to facilitate bilateral flows in general, which includes bilateral aid flow. The data on distance comes from the GeoDist dataset built by Mayer and Zignago (2011). Military intervention was not included in the dataset initially, but upon inspection of the democracy aid network data, it was shown that Iraq remained the biggest recipient of democracy aid for several years that coincided with the Iraq war. Therefore it was added to the dataset. The data on military intervention comes from the dataset on international military intervention built by Kisangani and Pickering (2008). Past colonial relationship, common official language, and military intervention are all dummy variables.

The number of PTA variable refers to the number of PTAs that came into force in year t between a particular dyad $_{ij}$. This data comes from the DESTA dataset developed by Dr, Baccini, and Elsig (2014). From the descriptive statistics, it is shown that the number of PTAs that are signed between developed and developing countries are still quite low. This is a count variable, not a dummy variable, but it looks like a dummy variable because the maximum number of PTAs that were enforced in a year is one. The reason PTA was included was because trade is often argued to be related to aid (Menard and Gary 2018; Scott and Steele 2011; Pettersson and Johansson 2013). Continuous measures of trade were also included, such as the logged export in USD from donor i to recipient j and the logged export in USD from recipient j to donor i . The data for trade came from the IMF's Direction of Trade Statistics (DOTS) database (IMF 2018).

Lastly, there are some variables that are usually not included in the analysis of aid flow that deserved closer inspection. Dietrich and Wright (2014) uses the percent of women in the donor country's parliament as an instrument for aid. They argue that an increase in women in the government indicates a move in society towards social equality and results in aid oriented towards social equality. Supporting human rights and women's equality movements are a subsection of democracy aid, so if this mechanism is true, this is also a good factor to include. The dataset about women in parliament was built by Paxton, Green, and Hughes (2008). Menard and Gary (2018) also proposes an interesting theory about the relationship of unemployment and aid. They argue that when the unemployment rate is higher in recipient countries, migration from these recipient countries to the donor countries increases and is perceived as an "undesired (but legal) immigration" (Menard and Gary 2018, pg. 431). To address this issue, the donor country government then increases aid to the recipient countries with high unemployment rate to stem immigration. This very recent article was probably written with the recent migrant crisis in mind, but there is no reason found in their argument

why it wouldn't apply to previous times. Immigration may also have a particular effect on democracy aid, since immigrants who moved due to repression would have an interest in lobbying for democracy promotion in their country of origin. Therefore, the logged value of immigration, unemployment rates of both donors and recipients, as well as the unemployment different (*Donor Unemployment – Recipient Unemployment*) were included in the dataset, although the recipient unemployment was dropped in the analysis due to high correlation with the difference in unemployment. The data for unemployment came from the International Labour Organization's ILOSTAT database (ILO 2017) and the data for immigration came from the OECD's International Migration database (OECD 2015).

From the descriptive statistics, the issue of rare events stands out. Among the dummy variables, military intervention occurs in less than 1% of the observations, while less than 2% of all cases have a PTA between the dyad. This could lead to extrapolated estimates when running regression. The analysis of the results of these rarely occurring dummy variables should be cautious when interpreting results

2.2 Methods

The main model for this paper employs linear regression with HC3-inflated, two-way clustered errors to account for structural correlation that is found in network data. Although this method is not used exclusively for network analysis as QAP (Quadratic Assignment Procedures) or ERGM (Exponential Random Graph Models) are, it has shown to be as accurate as double semi-partialling MRQAP (Lindgren 2010). Furthermore, QAP tests are designed for square matrices, but the aid flow network used in this study is rectangular since recipients don't give democracy aid to the donors (Dekker, Krackhardt, and Snijders 2007). Transforming these matrices into square matrices would change the subject of the study. On the other hand, ERGM is designed for binary ties and would require the aid flow data to be dichotomized, which would result in the loss of valuable information (Cranmer and Desmarais 2011). Therefore, a linear regression model with clustered and inflated errors is the most appropriate for aid flow network data, and it sufficiently accounts for correlation within rows (donors) and columns (recipients) as other network analysis models do, by clustering each donor and recipient. The HC3-inflated errors reduce the chance of Type-I error to a level that is comparable to MRQAP (Lindgren 2010). For even more accuracy, fixed effects are also applied for each country and year to account for omitted variables at the country and year levels.

Table 2: Linear Regression with Two-way Clustered Errors: Different Lags of I.P. Difference

	<i>Dependent variable:</i>		
	(1)	(2)	(3)
Ideal Point Diff. (5 year lag)	-0.236** (0.109)		
Δ Ideal Point Diff. (5 year lag)	0.049 (0.113)		
Ideal Point Diff. (3 year lag)		-0.266* (0.155)	
Δ Ideal Point Diff. (3 year lag)		0.085 (0.108)	
Ideal Point Diff. (1 year lag)			-0.238* (0.128)
Δ Ideal Point Diff. (1 year lag)			-0.024 (0.118)
Conflict, Prior Year, R	0.068 (0.050)	0.069 (0.053)	0.069 (0.052)
Democratization (ord), R	-0.016** (0.007)	-0.017** (0.007)	-0.016** (0.008)
Democracy (ord), R	0.043*** (0.016)	0.043*** (0.016)	0.044*** (0.016)
GDP growth, R	0.0005 (0.003)	0.0002 (0.003)	0.0002 (0.003)
GDP growth, D	-0.014 (0.017)	-0.016 (0.015)	-0.015 (0.016)
GDP (logged), R	-0.151 (0.127)	-0.183 (0.125)	-0.189 (0.130)
GDP (logged), D	0.438 (1.334)	0.521 (1.310)	0.551 (1.402)
Population (logged), R	-1.323* (0.774)	-1.285 (0.799)	-1.338* (0.804)
Population (logged), D	3.333 (4.735)	2.680 (4.751)	2.397 (4.936)
Women in Parliament (%), D	-0.008 (0.011)	-0.010 (0.012)	-0.009 (0.012)
Common Official Lang.	0.478* (0.270)	0.476* (0.271)	0.477* (0.271)
Past Colonial Relationship	1.030*** (0.126)	1.045*** (0.128)	1.043*** (0.126)
Distance (km, logged)	0.013 (0.265)	0.010 (0.267)	0.009 (0.267)
# of PTAs	-0.022 (0.186)	-0.019 (0.186)	-0.027 (0.186)
Military Intervention (dummy)	-0.298 (0.444)	-0.252 (0.427)	-0.252 (0.438)
Unemployment Difference	-0.0003 (0.013)	0.0003 (0.014)	-0.0004 (0.014)
Immigration (logged), R to D	0.194*** (0.039)	0.194*** (0.039)	0.194*** (0.039)
Export (logged), R to D	0.039*** (0.015)	0.040*** (0.015)	0.039*** (0.015)
Export (logged), D to R	0.169*** (0.043)	0.168*** (0.043)	0.168*** (0.043)
Constant	-33.827 (51.822)	-26.440 (53.193)	-22.837 (54.810)

Note:
 *p<0.1; **p<0.05; ***p<0.01
 - All independent variables lagged 1 year
 - With country and year fixed effects
 - Robust clustered s.e. (Clusters: Recipient, Donor)

After running the first regression, I test for autocorrelation using an auxiliary regression of the error and also for non-stationarity using the Augmented Dickey-Fuller test because the dataset being used is panel data.

Although non-stationarity is not detected, autocorrelation of errors is detected and it is fixed through a ρ - transformed model. Lastly, the model is tested for robustness across different samples by running the ρ - transformed model for different sub-samples. These are the final models that are used to interpret the results. For additional checks, the regional results for the first model and reverse causality models were run and can be found in the appendix.

3 Results

The first model is a linear regression with HC3-inflated, two-way clustered errors, where democracy aid flow is the dependent variable. The results for this model are shown in Table 2. Column 1 of Table 2 uses the 5th lag of ideal point difference as recommended by Savun and Tirone (2011). Columns 2 and 3 checks different lags of the ideal points variable

to see if there are any significant changes, but the results of the first model are robust and therefore the 5th lag of the ideal point variables will be used in subsequent analysis.

The results in the first model support the hypothesis and show that democracy aid decreases as the difference in ideal points between a donor i and recipient j increase, and the result holds for the 3rd and 1st lags of ideal point difference. However, the first difference of the ideal point difference, signifying the change in the level of similarity or dissimilarity, is never significant, which implies that a short term change, whether widening or narrowing the gap, does not have an effect on democracy aid. This shows that donors do not reward potential recipients with democracy aid for growing closer in political preferences and position.

For the other covariates, there are some expected results as well as unexpected results. The existence of a past colonial relationship and common official language are shown to increase democracy aid, which agrees with the results of previous literature. Trade in both directions are also shown to have significant positive effects on democracy aid. Immigration also increases democracy aid, but this finding does not support the mechanism explained by Menard and Gary (2018), where unemployment rate differences lead to immigration and then democracy aid, because unemployment rate differences are not shown to affect democracy aid. If the argument of Menard and Gary (2018) is correct, the effect of unemployment rate differences could be masked by immigration due to high correlation, but a preliminary correlation test (included in appendix) of all covariates demonstrated a weak relationship between immigration and unemployment differences. The surprising results came from the variables related to democracy. They had significant effects on democracy aid as expected, but the signs of the estimates were opposite of what would have been expected. Recipient countries that were going through rapid democratization received less democracy aid than countries that were not democratizing or countries that were reverting back to autocratic regimes. One explanation could be that these recipient countries already had efficient policies and capacity to democratize and therefore had less utility for democracy aid. On the other hand, donors may have increase democracy aid to countries that were reverting back to autocratic regimes to stop the process of autocratization. The result that democracies receive more democracy aid is also puzzling, but this could be due to a non-linear effect of the level of democracy. Consolidated autocracies can reject democracy aid and consolidated democracies would not need democracy aid, while the countries towards the middle of the spectrum would be more likely to accept or need democracy aid, resulting in an upside-down parabola-like trend.

Table 3: Autoregression (AR(1)) Model with TWC: By Region Subsamples

	<i>Dependent variable:</i>						
	All (1)	Africa (2)	Asia (3)	No Iraq (4)	Europe (5)	Americas (6)	USA (7)
Ideal Point Diff. (5 year lag)	-0.087 (0.097)	-0.555** (0.273)	-0.137 (0.224)	-0.291* (0.169)	-0.168 (0.228)	-0.638** (0.274)	-0.298 (0.470)
Δ Ideal Point Diff. (5 year lag)	0.064 (0.121)	0.294* (0.171)	-0.045 (0.179)	0.145 (0.116)	0.178 (0.132)	0.013 (0.249)	0.258 (0.224)
Conflict, Prior Year, R	0.093 (0.059)	0.011 (0.064)	0.070 (0.063)	0.039 (0.044)	0.083 (0.054)	0.032 (0.074)	0.029 (0.139)
Democratization (ord), R	-0.011 (0.009)	-0.034 (0.031)	-0.009 (0.008)	-0.018 (0.016)	-0.027* (0.016)	-0.025 (0.020)	-0.043 (0.029)
Democracy (ord), R	0.030* (0.018)	0.085 (0.064)	0.008 (0.016)	0.034 (0.033)	0.049 (0.034)	0.050 (0.072)	0.123** (0.051)
GDP growth, R	0.001 (0.001)	-0.0003 (0.003)	0.009 (0.006)	0.003* (0.002)	0.002 (0.002)	0.003** (0.001)	0.001 (0.005)
GDP growth, D	-0.017 (0.014)	-0.001 (0.021)	0.017 (0.013)	0.005 (0.016)	0.001 (0.020)	-0.095*** (0.014)	
GDP (logged), R	-0.464*** (0.175)	-0.314 (0.389)	-1.063 (0.867)	-0.802** (0.380)	-0.432 (0.338)	-0.919*** (0.352)	-0.497 (1.344)
GDP (logged), D	0.006 (1.419)	-3.406 (2.142)	-4.716** (2.203)	-4.238** (1.871)	-3.474 (2.121)	0.198 (3.844)	
Population (logged), R	-2.156** (0.996)	-11.688*** (3.618)	-1.816 (5.036)	-4.407* (2.368)	-3.666 (2.990)	-4.440 (3.816)	-4.772 (4.116)
Population (logged), D	0.326 (4.711)	-3.878 (7.469)	-0.334 (10.128)	-3.866 (9.941)	-6.302 (10.776)	-28.790*** (8.006)	
Women in Parliament (%), D	-0.005 (0.012)	-0.008 (0.018)	-0.006 (0.009)	-0.011 (0.012)	-0.007 (0.015)	0.221* (0.129)	
Common Official Lang.	0.680* (0.361)	2.406** (1.100)	0.438 (1.121)	1.830** (0.885)	3.834*** (1.113)	1.601* (0.890)	
Past Colonial Relationship	1.625*** (0.225)	3.604*** (1.226)	1.867*** (0.648)	3.934*** (0.547)	2.781*** (0.828)	-6.499*** (1.931)	
Distance (km, logged)	-0.575** (0.255)	-1.014 (1.379)	-2.407** (1.008)	-1.176* (0.668)	-2.420* (1.431)	25.417** (10.644)	
# of PTAs	-0.091 (0.141)	0.087 (0.147)	-0.182 (0.589)	0.003 (0.122)	-0.086 (0.103)	0.308	0.191 (0.340)
Military Intervention (dummy)	-0.458* (0.236)	-0.893 (0.764)	-0.286*** (0.080)	-0.325** (0.133)	-0.442*** (0.111)	-0.316*** (0.048)	-0.225 (0.409)
Unemployment Rate, D	-0.005 (0.030)	-0.028* (0.017)	-0.008 (0.090)	-0.028 (0.041)	-0.043* (0.025)	0.660 (0.452)	
Unemployment Difference	-0.012 (0.011)	-0.039* (0.024)	-0.016 (0.034)	-0.013 (0.019)	-0.025 (0.021)	0.006 (0.046)	-0.041 (0.062)
Immigration (logged), R to D	0.043 (0.032)	0.242** (0.097)	0.107 (0.085)	0.214*** (0.061)	0.139*** (0.045)	0.062 (0.059)	-0.030 (0.143)
Export (logged), R to D	-0.006 (0.008)	0.017 (0.023)	0.053 (0.037)	0.035** (0.016)	0.040** (0.017)	-0.044* (0.024)	-0.046 (0.052)
Export (logged), D to R	0.046** (0.023)	0.040 (0.063)	0.018 (0.044)	0.110*** (0.043)	0.047 (0.044)	0.046 (0.093)	0.076 (0.130)
Constant	8.400 (24.359)	66.074** (31.420)	35.545 (42.359)	54.304 (43.582)	60.095 (40.759)	73.422 (56.507)	19.890 (13.451)
R-squared	0.28	0.45	0.63	0.55	0.6	0.68	0.84
F-stat	22.19	29.73	53.84	67.88	29.73	25.29	32.06
Obs.	10025	3931	3207	9958	6772	1891	956

Note:

*p<0.1; **p<0.05; ***p<0.01
 All independent variables lagged 1 year unless otherwise specified
 With country and year fixed effects
 Robust clustered standard errors (clusters: Recipient Countries, Donor Countries)

The results of Table 1, however, does not account for temporal dependence, which is usually present in panel data. The augmented Dickey-Fuller test (not shown) rejected the null hypothesis of non-stationarity, and so it was not necessary to run an error correction model. However, autocorrelation was detected when an auxiliary regression (not shown) of the error and lagged error was carried out. Column 1 of Table 3 presents the ρ -transformed model for the entire sample that fixes the issue of autocorrelation. In this model, many of the effects shown in model 1 lose significance, including the ideal point difference. It seems that the significant effect of ideal point difference was due to autocorrelation, and researchers should be cautious in using UN General Assembly voting similarities to predict democracy aid. The effects that remain robust are the past colonial relationship, common official language, and the level of exports from the donor to the recipient. Although past colonial relationship is very robust, it has a weakness in predicting democracy aid because it cannot account for variation within a dyad, since its value always remains the same. The fact that this static variable has a strong positive effect implies that democracy aid does not have a volatile trend.

Lastly, a final robustness test was carried out by running the ρ -transformed model on different samples. The first sample chosen were observations where the recipient country was in Africa, which was the continent with the most observations on the recipient side, and then the second sample chose observations where the recipient was in Asia, which was the continent with the second most observations. Next, other samples where the donor country was in Europe, which was the continent with the most observations on the donor side, and then a sample of cases where the donor country was in the Americas, which was the continent with the second most observations, were chosen. There were two additional sub-samples chosen after visually inspecting bilateral democracy aid network and how it evolved during the time-frame of 1991-2014. There were 24 yearly democracy aid networks that were mapped. However, since these are too many to show in this paper, Fig. 2 shows just the networks in 5-year intervals. The network for the year 2002 was added because it demonstrated a dramatic, world-wide reduction of democracy aid flow, presumably due to the impact of the 9/11 terror attacks. Other than the year 2002, the plots of the aid network show a steady increase of democracy aid flow over years. What is notable here is the domination of the United States as donor and the domination of Iraq as a recipient after 2001. The years where Iraq is the biggest recipient of democracy aid by far coincides with the Iraq war and the US-led state-building efforts in Iraq. Therefore, it is possible that Iraq is an outlier that is driving the results, and so a model was run on a sub-sample that excludes Iraq. The same could be done for the United States, since it was the only target of the 9/11 attacks, but since it is such a prominent donor, a model where the only the United States is the donor was run.

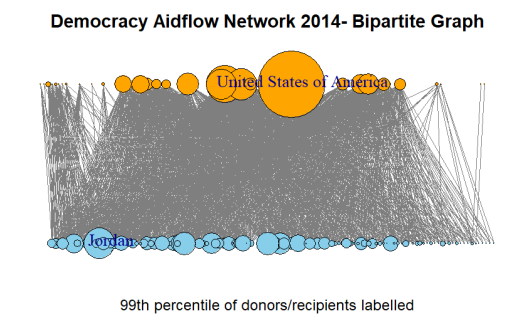
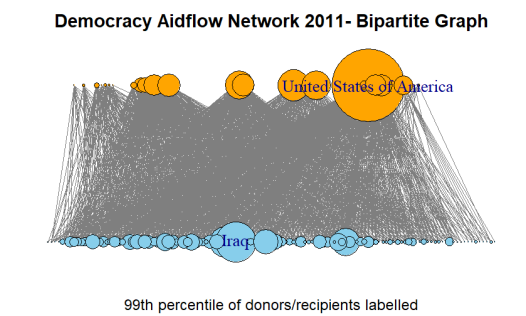
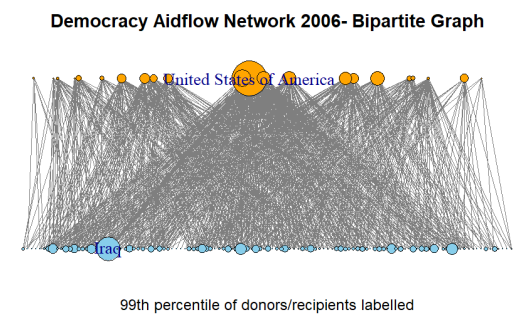
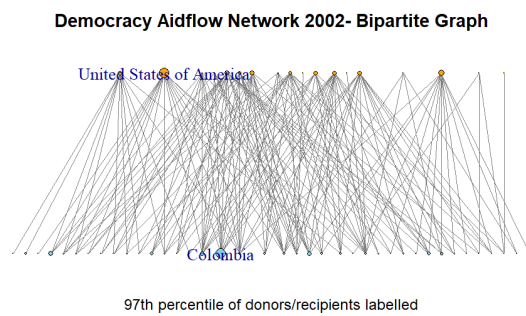
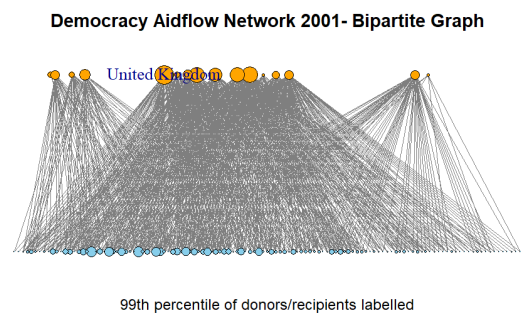
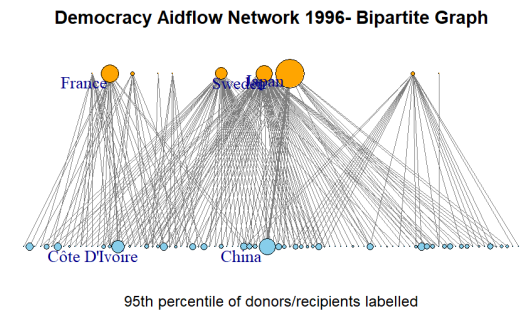
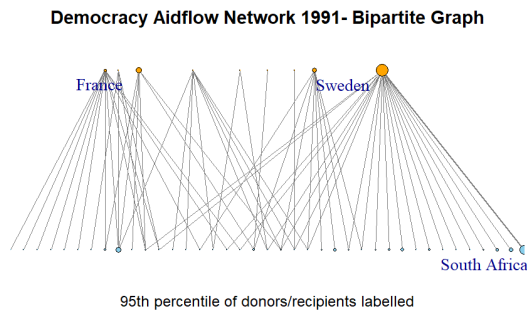


Figure 1: Bipartite Democracy Aid Network over the Years

The results for each sub-sample are shown in Table 3, columns 2 to 7. The one variable that has a robust effect for all the samples is past colonial relationship. In the sub-sample containing only African countries as the recipient, the ideal points variables are significant again. For Africa, a greater difference (dissimilarity) in ideal points reduces aid, but a short term decrease in the ideal points gap actually decreases democracy aid. It seems that ideal points can be used to predict aid in Africa, but for changes in ideal points difference, the effect is not what is expected. It is possible that donors react to a new divergence in preference and so increase democracy aid in the short term to encourage the recipient country to have similar preferences again. Interestingly, Menard and Gary's (2018) argument about unemployment and immigration might hold in Africa. Immigration and both measures of unemployment are significant and the sign is in the expected direction for two of these variables. Immigration increase democracy aid while a high unemployment rate in the donor country reduces democracy aid.

When the sub-sample is Asia, only donor GDP, past colonial relationship, distance and military intervention have significant effects. It shows that a countries with more capacity to help are actually less likely to do so in Asia. Past colonial relationship increases democracy aid, while longer distances between countries decreases democracy aid, as expected. One interesting result is that military intervention is negative and significant here and in all regions except Africa. This estimate of the effect of military intervention should be interpreted with caution since military intervention is a very rare event and is prone to extreme extrapolation.

Column 4 shows the sample without Iraq. Although the observations where Iraq was a recipient countries were just a few relative to all the observations, there are interesting differences between this sub-sample and the entire sample, which implies that Iraq was driving at least some of the effects in the entire sample. Without Iraq, greater similarity in ideal points leads to more democracy, which supports the hypothesis of this paper. Like Asia, it seems that the countries with more capacity to help are actually less likely to do so. In addition, an increase in population decreases democracy aid, regardless of whether the country with a higher population is a donor or the recipient. Military intervention, whose inclusion was based on the prominence of the United States and Iraq, reduces democracy aid. Lastly, immigration, and both sides of exports all had a positive, significant effect of democracy aid allocation.

Columns 5 to 7 looked at sub-samples based on donors. Column 5 shows the sample with just European donors. This is the only sub-sample where rapid democratization is shown to reduce the amount of democracy aid, which implies that European donors are more like to increase democracy aid to countries reverting to authoritarianism. On the other hand, the ideal point variables are not significant here. This may be due to democracy aid policy that prioritizes preventing authoritarianism rather than supporting countries with similar preferences. This is in line with Alesina and Dollar's (2001) observation that Nordic countries tend to give aid for reasons that are directly related to the holistic purpose of the type of aid, rather on strategic reasons. As Europe is the continent with the highest number of past colonizers, past colonial relationship and common official language have significant positive effects on democracy aid as expected. Military intervention has significant negative effect. The effects of donor country unemployment and immigration are interesting because they exhibit the same pattern as Africa, showing that much of the immigration out of Africa is heading to Europe during the time frame of this study. High unemployment rate in a donor country reduces democracy aid, while higher immigration numbers lead to more democracy aid. Exports from the recipient countries to donors increase democracy aid.

Column 6 shows the sub-sample where countries from the Americas are the donors. Ideal point difference reduces democracy aid significantly, meaning that donors from the Americas prioritize recipients with similar political preferences. The effects of economic indicators are interesting. Countries with high GDP per capita are given less democracy aid, which is not surprising, but an increase in the donor's GDP growth rate actually reduces democracy aid while an increase in GDP growth rate for the recipient increases democracy aid. Another interesting factor is that a higher percentage of women in parliament does increase democracy aid in this sub-sample. At least for the Americas, the argument of Dietrich and Wright (2014) that more political participation of women lead to increased support for social equality movements abroad seems to hold. Also, exports from the recipient country to the donor county reduces democracy aid. Overall, it can be seen that aid allocation tactics between Europe and the Americas are quite different. Lastly, column 7 shows the sub-sample where only the United States is included. Donor-side variables drop because they do not vary across recipients and non-time varying dyadic characteristics also drop as well because there is only one donor. The only significant effect is democracy, which has a positive significant effect on aid. Despite the official policy of the United States that requires aid distribution to reflect voting patterns of recipients countries in the UN, ideal point variables surprisingly do not have an effect when the United States is a donor (Carter and Stone 2015). This may be due to the fact democracy aid allocation is an exception to the

forementioned conflict or that the policy is not being followed in practice.

4 Conclusion

This paper investigated factors that lead to democracy aid with a special focus on the effect of ideal point differences, meaning the dissimilarity network in UN General Assembly voting patterns. Contrary to the belief that aid is allocated to countries with similar political preferences as indicated by the UN General Assembly voting patterns, this was only found to be true in certain regional sub-samples and not in the United States, as it would have been expected. It also showed that past colonial relationship and common official language were robust predictors of democracy aid. Lastly, it was highlighted throughout the study that not all donors and recipients are the same. In particular, the differences aid allocation process of Europe and the Americas were apparent in the results.

Since the dissimilarity in UN General Assembly voting, measured through ideal points difference, was highlighted among the covariates, this study tested for reverse causality of UN General Assembly voting dissimilarity. However, there are other covariates that could have reverse causality with democracy aid that were not tested in this paper. There are studies that say that trade increases aid (Menard and Gary 2018; Scott and Steele 2011) and others that argue that aid increases trade (Pettersson and Johansson 2013). An improvement to this study would be to test for reverse causality in the other covariates as well, since aid and factors correlated with aid have the potential to mutually influence one another.

There can also be improvements that can be made to the model itself. The effects of democratization and democracy were opposite was what was expected. However, this is under the assumption that the effects of democratization and democracy are linear. It is easy to see how the effect of the level of democracy could be non-linear, since consolidated autocracies can reject democracy aid and consolidated democracies would not need democracy aid, while the countries towards the middle of the spectrum would be more likely to accept or need democracy aid. One area to improve in this study would be the inclusion of non-linear effects.

The visual inspection of how democracy aid evolved was very interesting. The impact of 9/11 was clear and it seemed that the structure of democracy aid pre- and post- 9/11 were very different. Further quantitative or qualitative studies into the structure of democracy aid and how it changed could be a potential new area of research.

In conclusion, the hypothesis that similarities in UN General Assembly voting patterns increase democracy aid is only partially supported in Africa and Europe. Although democracy aid is perceived as a specific type of aid, it cannot be assumed to be homogeneous across all regions and different democracy aid allocation tactics should be taken into account when predicting democracy aid.

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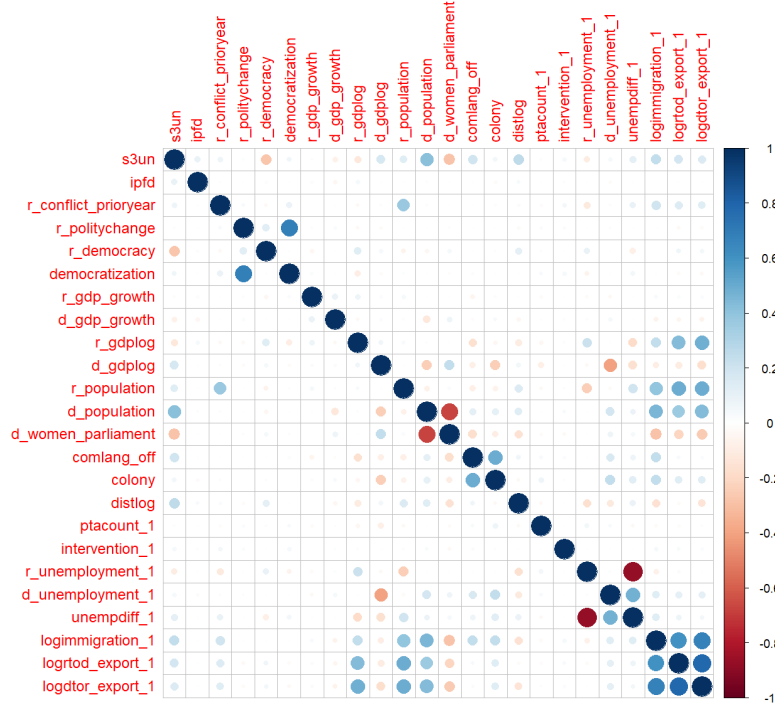


Figure 2: Correlation of Covariates

A Appendix

A.1 Correlation of Covariates

Due to the high negative correlation between the difference of unemployment and unemployment rate in the recipient country, the unemployment rate of the recipient country was dropped. However, the variation in the difference of unemployment between the recipient and donor pair captures much of the variation in recipient unemployment rate.

A.2 Reverse Causality

Since it is possible that an increase in democracy aid may result in the recipient country reciprocating by voting in support of the donor country in the UN General Assembly or that democracy aid may cause the recipient country to have similar preferences as the donor country, reverse causality was tested by having the ideal point difference as the dependent variable and different lags of democracy aid as the independent variable. The effects of democracy aid on ideal point difference was not significant, showing that reverse causality is not likely.

Table 4: Reverse Causality Check TWC: Different Lags of Democracy Aid

	<i>Dependent variable: Ideal Point Difference</i>		
	(1)	(2)	(3)
Democracy Aid (logged, 5 year lag)	−0.009 (0.007)		
Democracy Aid (logged, 1 year lag)		−0.006 (0.004)	
Democracy Aid (logged, 3 year lag)			−0.004 (0.006)
Conflict, Prior Year, R	−0.014 (0.019)	−0.027 (0.019)	−0.022 (0.019)
Democratization (ord), R	0.002 (0.003)	0.001 (0.003)	0.001 (0.003)
Democracy (ord), R	−0.005 (0.005)	−0.008 (0.005)	−0.007 (0.005)
GDP growth, R	−0.0001 (0.001)	−0.0002 (0.001)	−0.0004 (0.001)
GDP growth, D	0.003 (0.007)	0.002 (0.009)	−0.0002 (0.010)
GDP (logged), R	−0.152 (0.095)	−0.114 (0.083)	−0.148* (0.088)
GDP (logged), D	−1.228 (1.119)	−0.720 (1.149)	−0.930 (1.123)
Population (logged), R	−0.176 (0.227)	−0.416** (0.190)	−0.242 (0.207)
Population (logged), D	3.007 (2.125)	2.676 (1.806)	2.851 (2.016)
Women in Parliament (%), D	−0.001 (0.005)	−0.003 (0.003)	−0.001 (0.004)
Common Official Lang.	−0.001 (0.019)	0.001 (0.014)	−0.005 (0.016)
Past Colonial Relationship	0.042** (0.017)	0.043*** (0.012)	0.043*** (0.014)
Distance (km, logged)	−0.011 (0.010)	−0.004 (0.009)	−0.006 (0.008)
# of PTAs	0.203** (0.093)	0.093 (0.062)	0.152* (0.081)
Military Intervention (dummy)	0.239*** (0.071)	0.128** (0.051)	0.196*** (0.066)
Unemployment Difference	0.010* (0.005)	0.010** (0.004)	0.010** (0.005)
Immigration (logged), R to D	−0.002 (0.002)	−0.003 (0.004)	−0.002 (0.002)
Export (logged), R to D	0.003* (0.002)	0.005** (0.002)	0.004* (0.002)
Export (logged), D to R	0.009 (0.006)	0.002 (0.007)	0.004 (0.007)
Constant	−18.811 (16.680)	−18.071 (13.687)	−19.364 (15.906)

Note:

*p<0.1; **p<0.05; ***p<0.01
All independent variables lagged 1 year unless otherwise specified
With country and year fixed effects
Robust clustered standard errors
(clusters: Recipient countries, Donor Countries)

A.3 Model 1 by region (without autoregression correction)

Before fixing the issue of autocorrelation, I also ran Model 1 (Table 2 Column 1) for different sub-samples. This results are inaccurate since there is autocorrelation, but I include it here in the appendix for comparison with the ρ -transformed model.

Table 5: Linear Regression with Two-way Clustered Errors: By Region Subsamples

	<i>Dependent variable:</i>						
	All (1)	Africa (2)	Asia (3)	No Iraq (4)	Europe (5)	Americas (6)	USA (7)
Ideal Point Diff. (5 year lag)	-0.236** (0.109)	-0.304 (0.193)	0.067 (0.130)	-0.220** (0.108)	-0.224** (0.102)	-0.331 (0.310)	-0.413 (0.294)
Δ Ideal Point Diff. (5 year lag)	0.049 (0.113)	-0.094 (0.173)	-0.156 (0.206)	0.038 (0.114)	0.173 (0.143)	-0.195 (0.316)	0.250 (0.311)
Conflict, Prior Year, R	0.068 (0.050)	0.048 (0.058)	0.132*** (0.041)	0.067 (0.050)	0.133** (0.062)	-0.009 (0.023)	0.009 (0.178)
Democratization (ord), R	-0.016** (0.007)	-0.024 (0.015)	-0.021* (0.011)	-0.016** (0.007)	-0.025** (0.011)	0.002 (0.006)	-0.001 (0.028)
Democracy (ord), R	0.043*** (0.016)	0.090*** (0.028)	0.031*** (0.010)	0.043*** (0.016)	0.052*** (0.019)	0.044 (0.040)	0.095** (0.044)
GDP growth, R	0.0005 (0.003)	-0.001 (0.003)	0.001 (0.003)	0.0003 (0.003)	0.003 (0.002)	-0.002 (0.004)	-0.003 (0.006)
GDP growth, D	-0.014 (0.017)	-0.031* (0.016)	-0.019 (0.017)	-0.013 (0.017)	-0.016 (0.013)	-0.025* (0.014)	
GDP (logged), R	-0.151 (0.127)	0.055 (0.213)	-0.316 (0.451)	-0.161 (0.129)	-0.034 (0.186)	-0.310*** (0.110)	-0.051 (0.496)
GDP (logged), D	0.438 (1.334)	3.105*** (0.809)	-0.215 (1.444)	0.495 (1.329)	2.700* (1.500)	-14.673*** (4.618)	
Population (logged), R	-1.323* (0.774)	-0.594 (1.574)	-1.280 (1.276)	-1.363* (0.779)	-0.727 (0.772)	-2.510* (1.459)	-1.437 (1.767)
Population (logged), D	3.333 (4.735)	3.314 (2.191)	2.030 (4.524)	3.287 (4.755)	-0.670 (3.929)	41.121** (16.292)	
Women in Parliament (%), D	-0.008 (0.011)	0.012 (0.018)	-0.016 (0.016)	-0.009 (0.011)	-0.006 (0.010)	0.529*** (0.072)	
Common Official Lang.	0.478* (0.270)	0.902*** (0.262)	0.157 (0.370)	0.482* (0.271)	1.075*** (0.327)	0.492 (0.362)	
Past Colonial Relationship	1.030*** (0.126)	1.242*** (0.286)	0.460** (0.233)	1.022*** (0.124)	0.732*** (0.244)	-1.985*** (0.528)	
Distance (km, logged)	0.013 (0.265)	-0.274 (0.420)	-0.553 (0.357)	0.010 (0.267)	-0.513 (0.476)	9.549*** (3.234)	
# of PTAs	-0.022 (0.186)	-0.036 (0.217)	-0.024 (0.767)	-0.027 (0.187)	-0.171 (0.152)	0.347 (0.394)	-0.097 (0.363)
Military Intervention (dummy)	-0.298 (0.444)	-0.962 (0.758)	-0.306 (0.243)	-0.272 (0.466)	-1.069*** (0.385)	-0.039 (0.316)	-0.138 (0.535)
Unemployment Rate, D	-0.008 (0.028)	-0.005 (0.018)	0.013 (0.047)	-0.008 (0.028)	0.006 (0.024)	0.699*** (0.160)	
Unemployment Difference	-0.0003 (0.013)	-0.020 (0.015)	0.001 (0.018)	-0.0002 (0.013)	-0.019 (0.014)	-0.004 (0.010)	-0.006 (0.036)
Immigration (logged), R to D	0.194*** (0.039)		0.061 (0.057)	0.192*** (0.038)	0.167*** (0.034)	0.023 (0.060)	0.175 (0.123)
Export (logged), R to D	0.039*** (0.015)	0.039** (0.019)	0.038 (0.031)	0.040** (0.016)	0.036** (0.014)	0.001 (0.038)	0.0002 (0.058)
Export (logged), D to R	0.169*** (0.043)	0.157** (0.064)	0.090 (0.061)	0.170*** (0.044)	0.111** (0.056)	0.233** (0.094)	0.043 (0.135)
Constant	-33.827 (51.822)	-65.258** (29.830)	-8.952 (41.798)	-33.457 (52.080)	-8.603 (40.004)	-417.502*** (160.999)	16.809 (17.290)
R-squared	0.54	0.44	0.44	0.44	0.59	0.59	0.59
F-stat	74.99	36.23	36.23	36.23	64.48	64.48	64.48

Note:

*p<0.1; **p<0.05; ***p<0.01
All independent variables lagged 1 year unless otherwise specified
With country and year fixed effects
Robust clustered standard errors (clusters: Recipient Countries, Donor Countries)