Donor national interests or recipient needs? Evidence from EU multinational tender procedures on foreign aid

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- Self-interest aid is **less effective** for growth in recipient countries:
  - Kilby and Dreher (2010) reject the homogeneity of the effect of aid on growth regarding donor motives
  - Dreher et al. (2016), using as exogenous variation the UNSC membership of recipient countries, find that politically motivated aid has less of an impact on economic growth

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- Another major issue on aid effectiveness is **tied aid**, which usually raises the cost of a project by 15% to 30% (Clay et al., 2009; Knack and Smets, 2013)

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- Politics do affect IMF lending (Thacker, 1999)
- There is a positive relationship between the number of World Bank projects a country receives and its temporary membership on the UN Security Council (Dreher et al., 2009)

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- We **test the hypothesis** if variables reflecting self-interest and altruistic motives have a significant effect on aid funded by the EU
- Do companies of a specific nationality obtain systematically more projects in recipient countries where its nationality has more commercial and historical ties?

Literature review : aid allocation framework

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Aid allocation frameworks and typical operationalizations

Framework	Unit	Typical operational definitions
Need	Recipient	GDP per capita, population
Policy environment	Recipient	Democracy, corruption, human rights records
Interest	Dyad	Trade, UN voting similarity, colonial history
Donor Dynamics	Donor	Deficit, press coverage

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- First paper using foreign aid project-level data aggregated at the bilateral level funded either by the European Commission Budget or the 10th European Development Fund

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- Robust to different tests (estimation model, outliers, covariates)
- No heterogeneous effect concerning the usual classification of countries according to their motives (Berthélemy, 2006) or their political ideology (Hühne et al., 2014)

Multilateral Aid: public procurement

Political economy of project contractors in international institutions

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Companies from donor countries also obtain more contracts in recipient countries in which they provide more bilateral aid and have a higher share of import goods

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Indeed, there is evidence of corporate influence in World Bank lending (Malik and Stone, 2018)

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Multilateral aid can be perceived as a complement to or a tool of foreign policy in which a country uses its influence in the institution to assert its strategic goals (French Ministry of the Economy (DGT, 2014))

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This input bias exists in bilateral agencies, although, as Martens (2002) explains, it is augmented in multilateral aid agencies such as the EC, motivated by strong competition from member states to raise their companies' share in the total amount of contracts

How it works

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- The EU aid budget is allocated through two main sources which are the European Commission budget and the European Development Fund (EDF)
- Although both sources of financing are subject to different rules and procedures, both can be distributed through competitive calls for tenders

European Commission Budget

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- In the case of external aid, the EU budget includes geographic and thematic instruments in various areas such as democracy and human rights, economic, social and human development or regional cooperation
- The European Commission takes decisions for the beneficiary country: it is responsible for the procurement process, from invitations to tender to signature of the contracts, which are concluded by the EC acting for the beneficiary country

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- The Member States contribute to the EDF according to a contribution key that they negotiate on the basis of a proposal from the EC
- Projects are financed in areas in which the country and regional strategies' are based, following the Country Strategy Papers, and according to their own medium term development objectives and strategies

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Our **dependent variable**, aid_{ijt}, is the total amount, in euros, of the projects carried by different enterprises, aggregated at the nationality i of the beneficiary, and received by a recipient country j in year t

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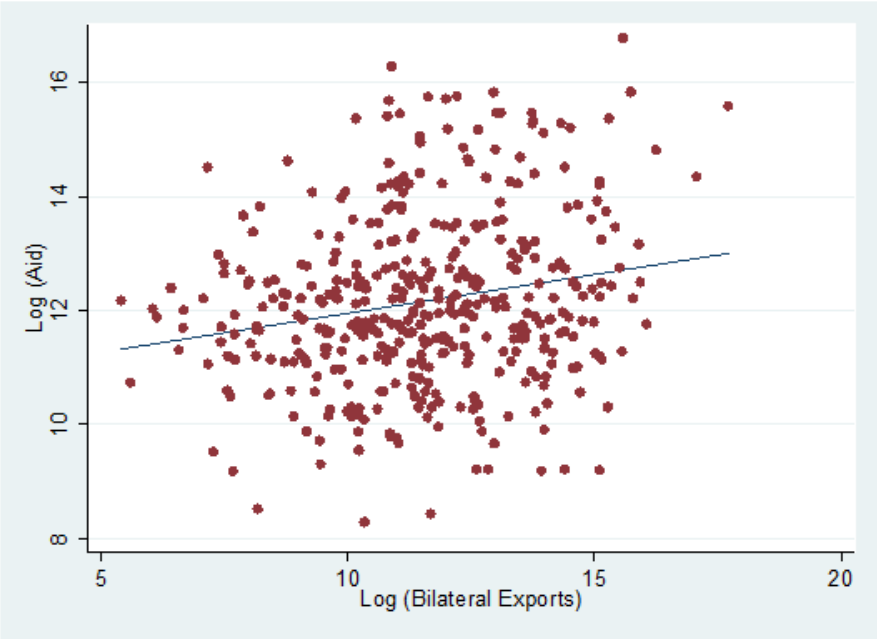
- International trade data from the BACI database (Gaulier and Zignago, 2010), to compute the bilateral trade exports from country i to country j in year t

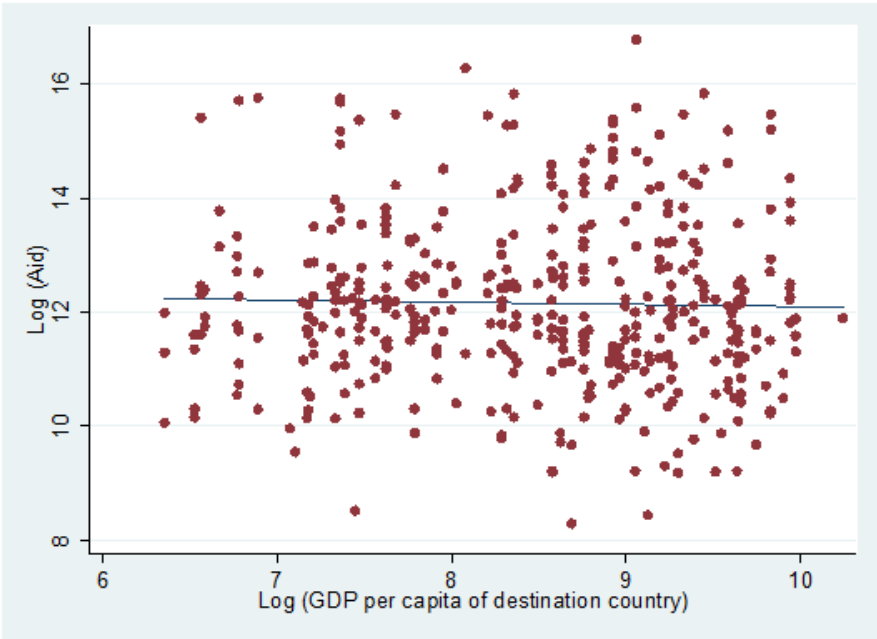
Descriptive Statistics

Table 1: Summary Statistics. Number of observations = 2,198

Variable	Mean	Std. Dev.	Min	Max
Aid (euros)	751783	1886814	156.83	3.29e+07
GDP per capita Origin i(dollars)	38005.14	5193.793	22333.49	54982.73
Population Origin i (thousands)	42400	32300	4560155	319000
GDP per capita Destination j(dollars)	7221.05	6033.132	566.846	31179.77
Population Destination j(thousands)	63600	201000	9844	1360000
Contiguity	0.0041	0.064	0	1
Common Language	0.17	0.38	0	1
Colonial Past	0.12	0.33	0	1
Distance (in km)	6129.64	3133.61	469.70	17744.08
Bilateral Exports (dollars)	877240.9	3981545	1.15	8.76e+07
Rule of Law Origin i	1.40	0.44	0.34	2.12
Rule of Law Destination j	-0.62	0.55	-1.93	1.37

Descriptive statistics





Left figure : Bilateral Trade and Aid in 2010
Right figure : GDP per capita and Aid in 2010

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- Our panel has 13,530 potential observations (22 enterprise nationalities X 123 recipient countries X 5 years), although we only observe 2,198 strictly positive ones as not all enterprises obtain projects in all possible recipient countries in every single year

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- The censored nature of the aid variable makes the process of aid allocation to be divided in two:

  1. The first one is to decide where aid is allocated
  2. The second one is to decide how much, in the event of a positive response

Specification

Selection equation:

$$P(Y_{ijt} > 0) = F(\alpha_1 Z_{it} + \alpha_2 Z_{jt} + \alpha_3 Z_{ijt} + \delta t + \nu_{ijt}) \quad (1)$$

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- Three categories of explanatory variables:
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  2. Destination country j
  3. Bilateral ij

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  4. PPML

Table 2: Benchmark results - Two-part model

Table 2: Two-part estimation (allocation equation) of Bilateral Aid.

VARIABLES	(1)	(2)	(3)	(4)
GDP per capita (origin i)	-0.413	-0.475	0.447	0.527
	(1.215)	(1.273)	(1.399)	(1.497)
Population (origin i)	1.454	2.814	5.450	5.103
	(4.530)	(4.982)	(5.356)	(5.776)
GDP per capita (destination j)	-0.547	-0.811	-0.947	-0.607
	(0.741)	(0.743)	(0.779)	(0.918)
Population (destination j)	1.494	1.523	1.310	0.363
	(2.082)	(2.100)	(2.104)	(2.365)
Contiguity	0.011	-0.158	-0.165	0.053
	(0.510)	(0.517)	(0.514)	(0.846)
Common Language	0.669***	0.585***	0.586***	0.624***
	(0.109)	(0.113)	(0.113)	(0.124)
Colonial Past	0.203	0.153	0.155	0.143
	(0.129)	(0.133)	(0.133)	(0.141)
Distance	0.112	0.247	0.240	0.219
	(0.187)	(0.210)	(0.210)	(0.228)
Bilateral Exports		0.107***	0.105***	0.108**
		(0.038)	(0.038)	(0.049)
Rule of Law (origin i)			-1.568*	-1.441
			(0.949)	(1.065)
Rule of Law (Destination j)			0.315	0.317
			(0.420)	(0.454)
Bilateral Aid Commitments				0.000
				(0.000)
Constant	-36.919	-50.333	-94.876	-95.562
	(93.268)	(83.065)	(89.894)	(120.643)
Year Fixed Effects			YES	
Country Fixed Effects			YES	
Observations	2,247	2,198	2,198	1,860
R-squared	0.284	0.286	0.288	0.297

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Benchmark results - Heckman Two-step estimator

Table 3: Heckman two-step estimator (allocation equation) of Bilateral Aid.

VARIABLES	(1)	(2)	(3)	(4)
GDP per capita (origin i)	0.297	0.234	0.846	0.518
	(1.222)	(1.261)	(1.392)	(1.508)
Population (origin i)	3.042	1.260	3.359	5.068
	(4.533)	(4.941)	(5.177)	(5.525)
GDP per capita (destination j)	-1.140*	-1.583**	-1.873***	-1.438*
	(0.632)	(0.653)	(0.696)	(0.764)
Population (destination j)	2.681	2.662	2.368	0.968
	(2.171)	(2.209)	(2.201)	(2.447)
Contiguity	0.311	0.099	0.087	0.296
	(0.545)	(0.553)	(0.551)	(0.818)
Common Language	0.864***	0.775***	0.773***	0.835***
	(0.135)	(0.141)	(0.141)	(0.155)
Colonial Past	0.324**	0.266*	0.266*	0.221
	(0.142)	(0.148)	(0.147)	(0.154)
Distance	-0.419*	-0.309	-0.306	-0.278
	(0.235)	(0.257)	(0.256)	(0.276)
Bilateral Exports		0.134***	0.131***	0.162***
		(0.042)	(0.042)	(0.053)
Rule of Law (origin i)			-1.108	-1.113
			(1.015)	(1.144)
Rule of Law (Destination j)			0.668	0.564
			(0.439)	(0.464)
Bilateral Aid Commitments				0.000
				(0.000)
Inverse Mills Ratio	1.256***	1.338***	1.310***	1.294***
	(0.301)	(0.303)	(0.301)	(0.333)
Constant	-80.424	-46.703	-80.835	-88.928
	(88.886)	(95.221)	(100.138)	(108.757)
Year Fixed Effects		YES		
Country Fixed Effects		YES		
Observations	13,539	12,509	12,509	8,513

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 4: PPML

Table 4: PPML estimation (allocation equation) of Bilateral Aid.

VARIABLES	(1)	(2)	(3)	(4)
GDP per capita (origin i)	0.847	0.685	0.349	-0.029
	(0.676)	(0.682)	(0.748)	(0.783)
Population (origin i)	1.442	-1.505	-2.340	-0.556
	(2.427)	(2.405)	(2.542)	(2.629)
GDP per capita (destination j)	-0.777**	-0.958***	-1.157***	-1.050***
	(0.312)	(0.315)	(0.332)	(0.353)
Population (destination j)	1.354	1.276	1.203	0.613
	(1.068)	(1.070)	(1.073)	(1.141)
Contiguity	0.767**	0.702**	0.703**	0.508
	(0.331)	(0.330)	(0.330)	(0.412)
Common Language	0.271***	0.229***	0.230***	0.263***
	(0.055)	(0.056)	(0.056)	(0.059)
Colonial Past	0.134**	0.105*	0.105*	0.051
	(0.059)	(0.061)	(0.061)	(0.064)
Distance	-0.787***	-0.716***	-0.716***	-0.602***
	(0.109)	(0.115)	(0.115)	(0.126)
Bilateral Exports		0.058**	0.057**	0.092***
		(0.025)	(0.025)	(0.028)
Rule of Law (origin i)			0.511	0.292
			(0.461)	(0.492)
Rule of Law (Destination j)			0.401**	0.311
			(0.193)	(0.198)
Bilateral Aid Commitments				0.000*
				(0.000)
Constant	-30.182	3.198	21.323	16.562
	(34.762)	(42.767)	(44.548)	(53.028)
Year Fixed Effects		YES		
Country Fixed Effects		YES		
Observations	13,517	12,489	12,489	8,388
R-squared	0.442	0.445	0.445	0.456

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Robustness checks & Heterogeneity

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- Robustness checks:
  1. Location of beneficiary

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  1. Only recipient fixed effects

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  2. Donor-year and recipient-year fixed effects

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  3. Donor type (Berthélemy, 2006; Hühne et al., 2014)
  4. Donor political ideology (Hühne et al., 2014)

Table 5: Robustness checks on the allocation equation

Table 5: Robustness checks on Allocation Equation

VARIABLES	No Belgium (1)	No Outliers (2)	Count Data Model (3)
GDP per capita (origin i)	0.117	0.494	0.724
	(1.436)	(1.377)	(0.863)
Population (origin i)	7.632	6.466	-1.475
	(5.658)	(5.248)	(2.936)
GDP per capita (destination j)	-1.071	-0.798	-0.995***
	(0.857)	(0.782)	(0.367)
Population (destination j)	0.885	1.446	2.768**
	(2.382)	(2.106)	(1.136)
Contiguity	-0.380	-0.166	0.398
	(0.533)	(0.515)	(0.409)
Common Language	0.552***	0.594***	0.335***
	(0.172)	(0.112)	(0.084)
Colonial Past	0.228	0.144	0.154*
	(0.163)	(0.131)	(0.091)
Distance	0.201	0.263	-0.733***
	(0.217)	(0.209)	(0.149)
Bilateral Exports	0.106**	0.109***	0.058**
	(0.045)	(0.038)	(0.028)
Rule of Law (origin i)	-0.967	-1.667*	0.009
	(1.081)	(0.944)	(0.518)
Rule of Law (Destination j)	0.338	0.227	0.393*
	(0.478)	(0.419)	(0.223)
Constant	-140.129	-141.710	-11.833
	(111.905)	(107.832)	(56.548)
Year Fixed Effects	YES	YES	
Country Fixed Effects	YES	YES	
Observations	1,729	2,165	12,509
R-squared	0.314	0.285	

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 6: Robustness checks

Table 6: Robustness checks on the Allocation Equation (OLS)

VARIABLES	(1)	(2)	(3)
GDP per capita (origin i)	0.045	0.452	0.440
	(1.442)	(1.399)	(1.405)
Population (origin i)	5.282	5.405	5.537
	(5.515)	(5.355)	(5.362)
GDP per capita (destination j)	-0.902	-0.963	-0.966
	(0.785)	(0.779)	(0.780)
Population (destination j)	1.238	1.397	1.221
	(2.166)	(2.112)	(2.116)
Contiguity	-0.170	-0.165	-0.166
	(0.513)	(0.514)	(0.522)
Common Language	0.592***	0.587***	0.587***
	(0.115)	(0.113)	(0.113)
Colonial Past	0.160	0.154	0.156
	(0.135)	(0.133)	(0.133)
Distance	0.235	0.242	0.242
	(0.212)	(0.210)	(0.210)
Bilateral Exports	0.099***	0.106***	0.105***
	(0.038)	(0.038)	(0.038)
Rule of Law (origin i)	-1.564	-1.558	-1.563*
	(0.964)	(0.950)	(0.948)
Rule of Law (Destination j)	0.371	0.333	0.353
	(0.425)	(0.421)	(0.428)
Ideal Points	-0.172		
	(0.237)		
UNSC		-0.113	
		(0.140)	
Democratic Distance			-0.142
			(0.199)
Constant	-96.870	-95.622	-94.354
	(109.251)	(89.968)	(90.003)
Year Fixed Effects		YES	
Country Fixed Effects		YES	
Observations	2,139	2,198	2,198
R-squared	0.286	0.288	0.288

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 7: Varying fixed effects and heterogeneity

Table 7: Varying Fixed Effects and Donor Heterogeneity

	Varying Fixed Effects		Donor Heterogeneity	
	Only Recipient	Donor-Year and Recipient-Year		
VARIABLES	(1)	(2)	(3)	(4)
GDP per capita (origin i)	0.584	-2.282***	-3.028	1.074
	(0.392)	(0.786)	(3.600)	(1.459)
Population (origin i)	-0.048	-0.720***	-4.316	4.192
	(0.046)	(0.239)	(9.346)	(6.039)
GDP per capita (destination j)	-1.142	-0.098	-0.988	-1.250
	(0.787)	(0.086)	(0.859)	(0.804)
Population (destination j)	0.775	-0.020	-1.048	1.702
	(2.195)	(0.074)	(2.355)	(2.216)
Contiguity	-0.649	-0.536		-0.267
	(0.549)	(0.625)		(0.527)
Common Language	0.471***	0.636***	0.478***	0.559***
	(0.111)	(0.115)	(0.126)	(0.113)
Colonial Past	0.136	0.092	-0.006	0.180
	(0.131)	(0.135)	(0.145)	(0.133)
Distance	0.013	0.146	0.393	0.191
	(0.218)	(0.251)	(0.345)	(0.232)
Bilateral Exports	0.120***	0.125***	0.162***	0.123***
	(0.036)	(0.045)	(0.054)	(0.039)
Rule of Law (origin i)	0.052	3.695**	-1.742	-1.858*
	(0.110)	(1.715)	(1.236)	(0.975)
Rule of Law (Destination j)	0.296	-0.184	0.079	0.404
	(0.431)	(0.156)	(0.469)	(0.446)
Altruistic * Bilateral Exports			-0.079*	
			(0.047)	
Egoistic * Bilateral Exports			-0.047	
			(0.041)	
Right Wing Government				-0.010
				(0.028)
Country & Year Fixed Effects		NO	YES	YES
Observations	2,198	2,198	1,786	1,999
R-squared	0.233	0.463	0.291	0.307

Note: Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Main results

- Recipient's needs have a weak significant effect on foreign aid allocation, and only when estimating using a Heckman model

Main results

- Recipient's needs have a weak significant effect on foreign aid allocation, and only when estimating using a Heckman model
- Bilateral trade has a positive and strongly significant impact on aid allocated by the European Union, same for common language

Donor national interests or recipient needs? Evidence from EU multinational tender procedures on foreign aid

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