Generic vs Alternative Specific Coefficients in Conditional Logits: An Application to Party Choice

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Stata Users Group meeting
Universitat pompeu Fabra

Motivation

Car

Bus

Train

- Decision-maker (individual), alternatives, attributes, decision rule (utility theory).

Conditional logit

Supose a discrete choice among J alternatives. Then the Utility of the j-th choice to the i-th individual will be:

$$U_{ij} = \sum_{k=1}^{k} \alpha_k |x_{ik} - p_{ijk}|$$

$$U_{ij} = V_{ij} + \epsilon_{ij}$$

$$P_{ij} = P(V_{ij} - V_{ih} > \epsilon_{ih} - \epsilon_{ij}), \forall h \neq j$$

Conditional logit

$$P_{ij} = \frac{exp(V_{ij})}{\sum_{h=1}^{J} exp(V_{ih})}$$

$$V_{ij} = \beta_{j0} + s_i^T \beta_j + z_{ij}^T \alpha$$

Conditional logit

$$V_{ij} = \beta_{j0} + s_i^T \beta_j + z_{ij}^T \alpha$$

- With regard to individual characteristics, the corresponding coefficients β_j indicate varying segment-specific evaluations of alternatives.
- z_{ij} the related coefficient α has not alternative-specific subscript.

Generic or alternative-specific parameters

- Difference between fixed or generic and alternative-specific issue distance parameters.
- Assume that V_{ij} consists of the following components: (1) a base utility of a party j, constituted by the alternative specific constant β_{j0} (2) the individual-specific evaluation of candidate j (i.e. voter's evaluation of party *jth* leader) represented by $\beta_j Candidate_i$ (3) the perceived issue distance between voter i and party j represented by $\alpha IssueDistance_{ij}$

$$V_{ij} = \beta_{j0} + \beta_j Candidate_i + \alpha IssueDistance_{ij}$$

Generic or alternative-specific parameters

- 'splitting' the generic parameter into so-called alternative-specific parameters.
- specifying for each party a specific partial utility function for each *kth* issue, and therefore by estimating for each party–issue–distance combination a separate parameter
- Parties: PP (P); PSOE (S); Podemos (M), C's (C)

$$
\begin{aligned}
V_{iP} &= \alpha_C \, IssueDistance_{ic}, \\
V_{iS} &= \beta_{so} + \beta sCandidate_i + \alpha_S \, IssueDistance_{is}, \\
V_{iM} &= \beta_{mo} + \beta mCandidate_i + \alpha_m \, IssueDistance_{im}, \\
V_{iC} &= \beta_{co} + \beta cCandidate_i + \alpha_c \, IssueDistance_{ic},
\end{aligned}
$$

Generic or alternative-specific parameters

- H_0 There are no party-specific issue effects, implying that issues are identically valuated with regard to all parties.

Empirical test

- Astudillo, J and Toni Rodon (2013) *El comportamiento electoral del votante en la mediana y las "paradojas" de la competición política espanola*. Revista Espanola de Investigaciones Sociológicas, 144: 3-21.

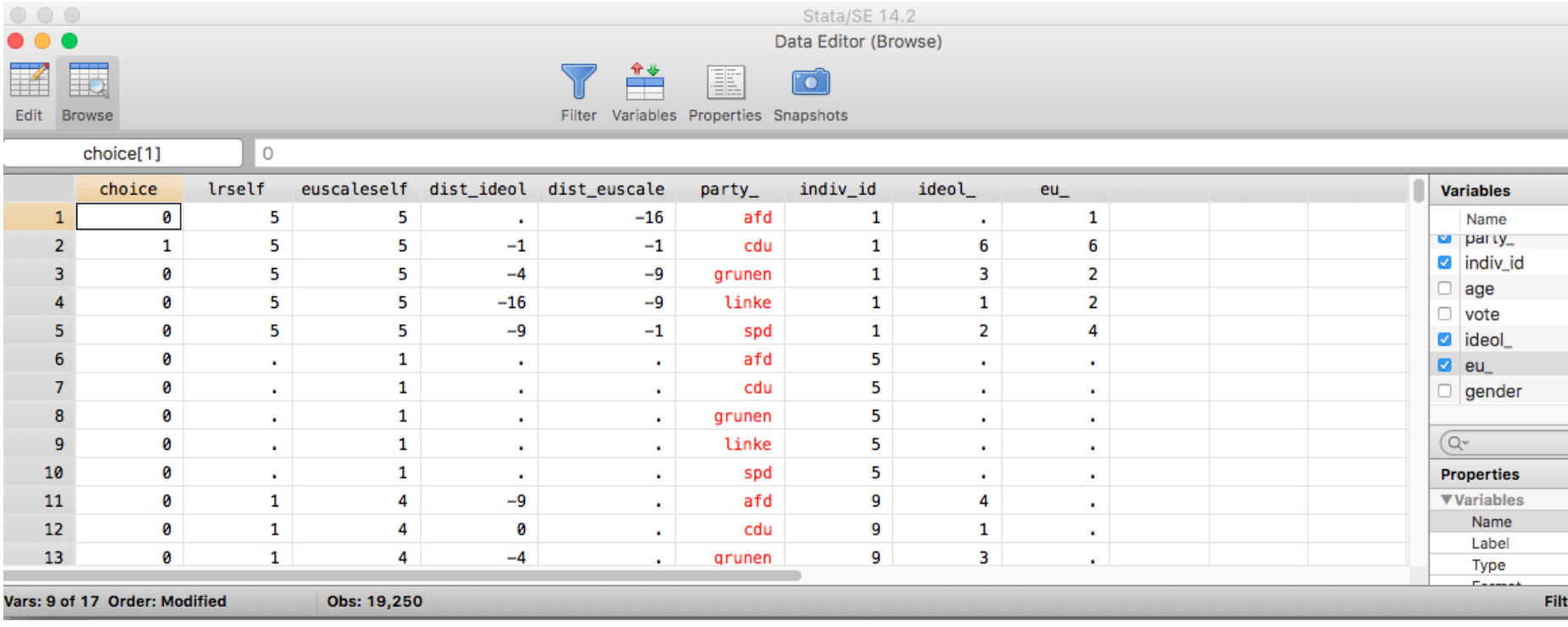
Empirics

- The nationalization of EU politics versus the Europeanization of national politics. Party supply and EU voting in Germany, Italy and Spain (with Mariano Torcal)
- EU does not matter when voting in EU elections.
- We argue this depends on the degree of Europeanization, based on the pivotal role the country plays in Europe.
- First stage: presence of anti-EU parties.
- Second stage: the pivotal role is internalized among citizens and drives voting patterns across the board.
- *EU elections are of second-order, so the traditional LR dimension will still be more relevant.

Empirical analysis

- Spain, Italy and Germany (panel surveys).
- Left-right scale, EU integration scale.
- Controls (party identification, gender, income, leadership evaluation...)

Empirical analysis

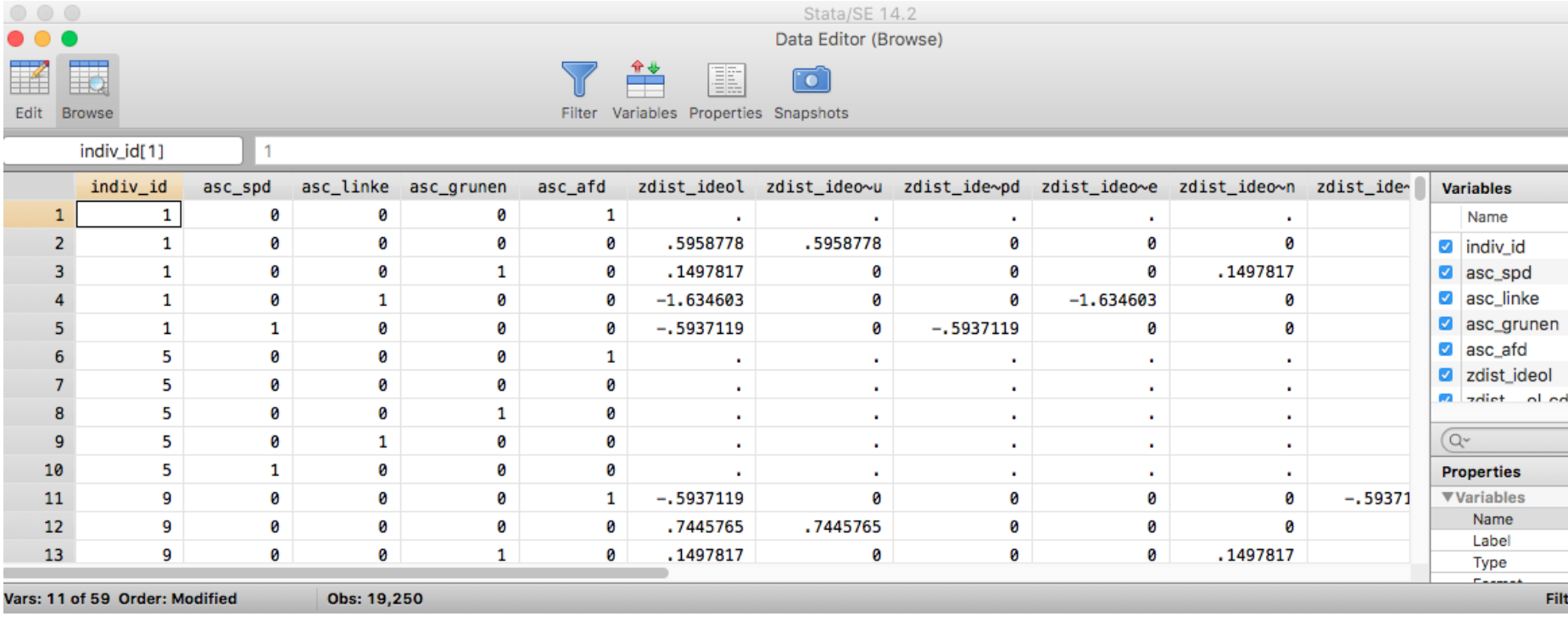


	choice	lrself	euscaleself	dist_ideol	dist_euscale	party_	indiv_id	ideol_	eu_
1	0	5	5	.	-16	afd	1	.	1
2	1	5	5	-1	-1	cdu	1	6	6
3	0	5	5	-4	-9	grunen	1	3	2
4	0	5	5	-16	-9	linke	1	1	2
5	0	5	5	-9	-1	spd	1	2	4
6	0	.	1	.	.	afd	5	.	.
7	0	.	1	.	.	cdu	5	.	.
8	0	.	1	.	.	grunen	5	.	.
9	0	.	1	.	.	linke	5	.	.
10	0	.	1	.	.	spd	5	.	.
11	0	1	4	-9	.	afd	9	4	.
12	0	1	4	0	.	cdu	9	1	.
13	0	1	4	-4	.	grunen	9	3	.

Empirical analysis

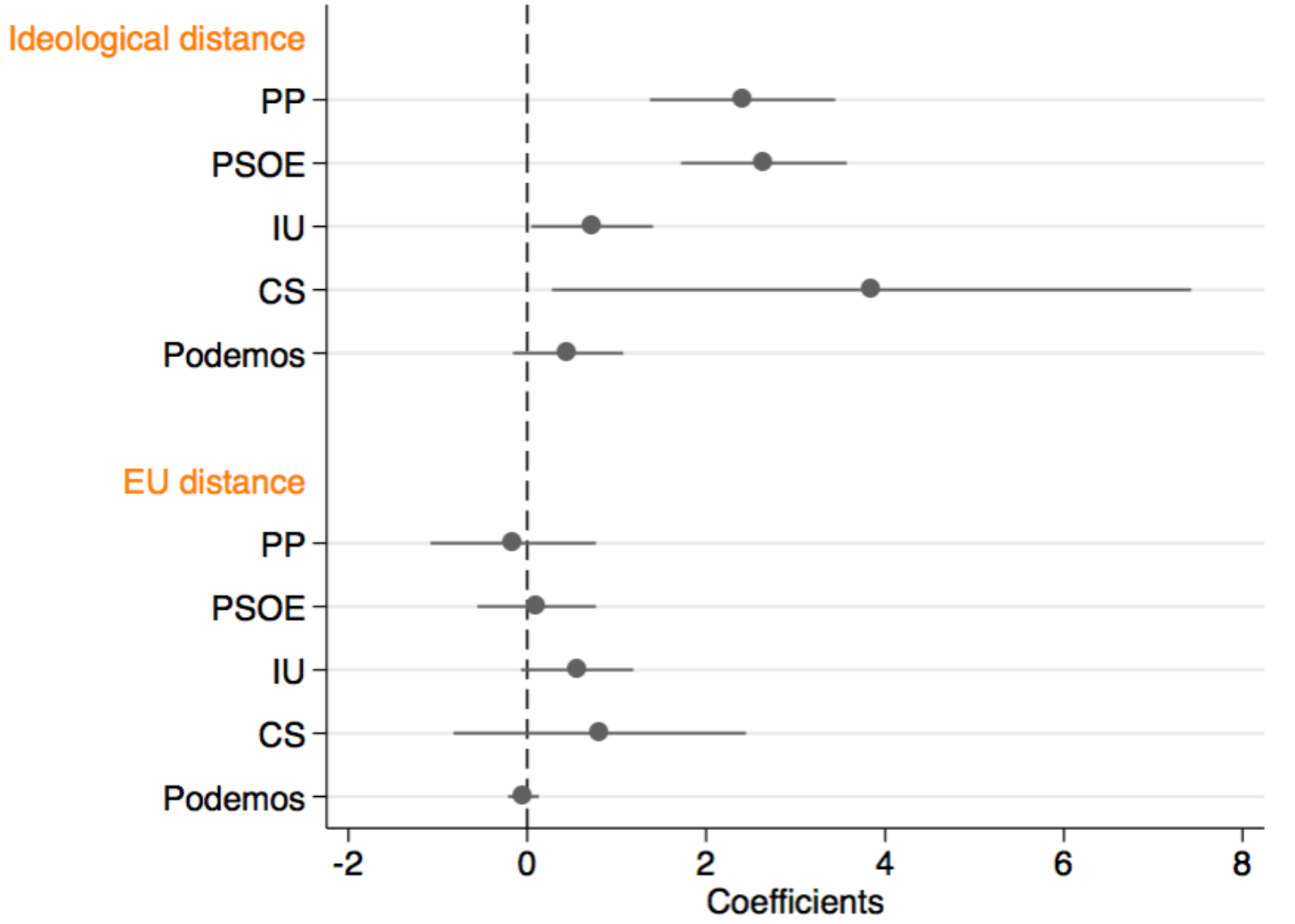
```
gen asc_spd = (party==2)
gen asc_linke = (party==3)
gen asc_grunen = (party==4)
gen asc_afd = (party==5)

foreach i in zdist_ideol {
gen `i'_cdu = `i' * (party==1)
gen `i'_spd = `i' * (party==2)
gen `i'_linke = `i' * (party==3)
gen `i'_grunen = `i' * (party==4)
gen `i'_afd = `i' * (party==5)
}
```

Empirical analysis

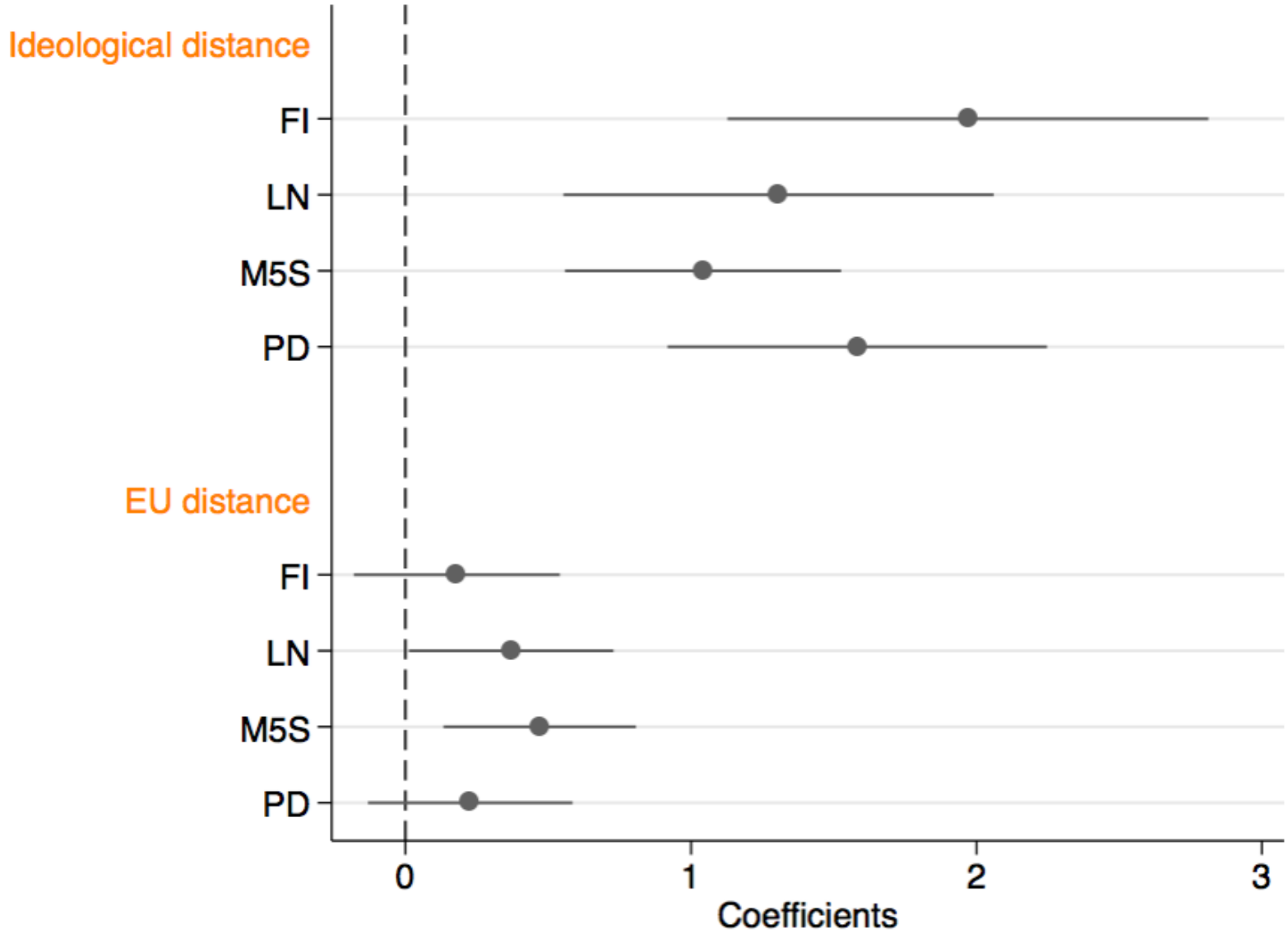


	indiv_id	asc_spd	asc_linke	asc_grunen	asc_afd	zdist_ideol	zdist_ideo~u	zdist_ide~pd	zdist_ideo~e	zdist_ideo~n	zdist_ide~
1	1	0	0	0	1	.	.	.	.	.	
2	1	0	0	0	0	.5958778	.5958778	0	0	0	
3	1	0	0	1	0	.1497817	0	0	0	.1497817	
4	1	0	1	0	0	-1.634603	0	0	-1.634603	0	
5	1	1	0	0	0	-.5937119	0	-.5937119	0	0	
6	5	0	0	0	1	.	.	.	.	.	
7	5	0	0	0	0	.	.	.	.	.	
8	5	0	0	1	0	.	.	.	.	.	
9	5	0	1	0	0	.	.	.	.	.	
10	5	1	0	0	0	.	.	.	.	.	
11	9	0	0	0	1	-.5937119	0	0	0	0	-.59371
12	9	0	0	0	0	.7445765	.7445765	0	0	0	
13	9	0	0	1	0	.1497817	0	0	0	.1497817	

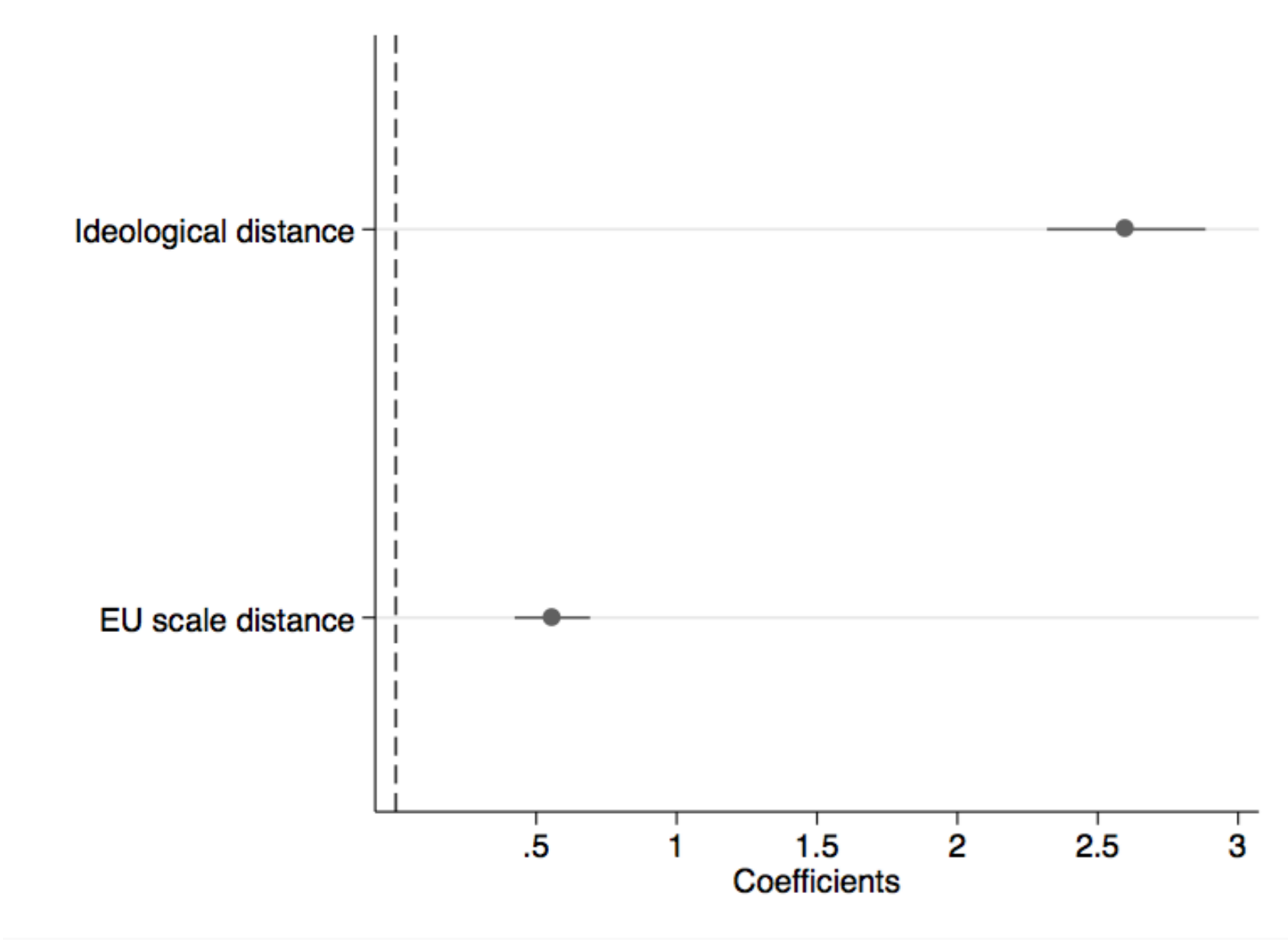
Results - Spain



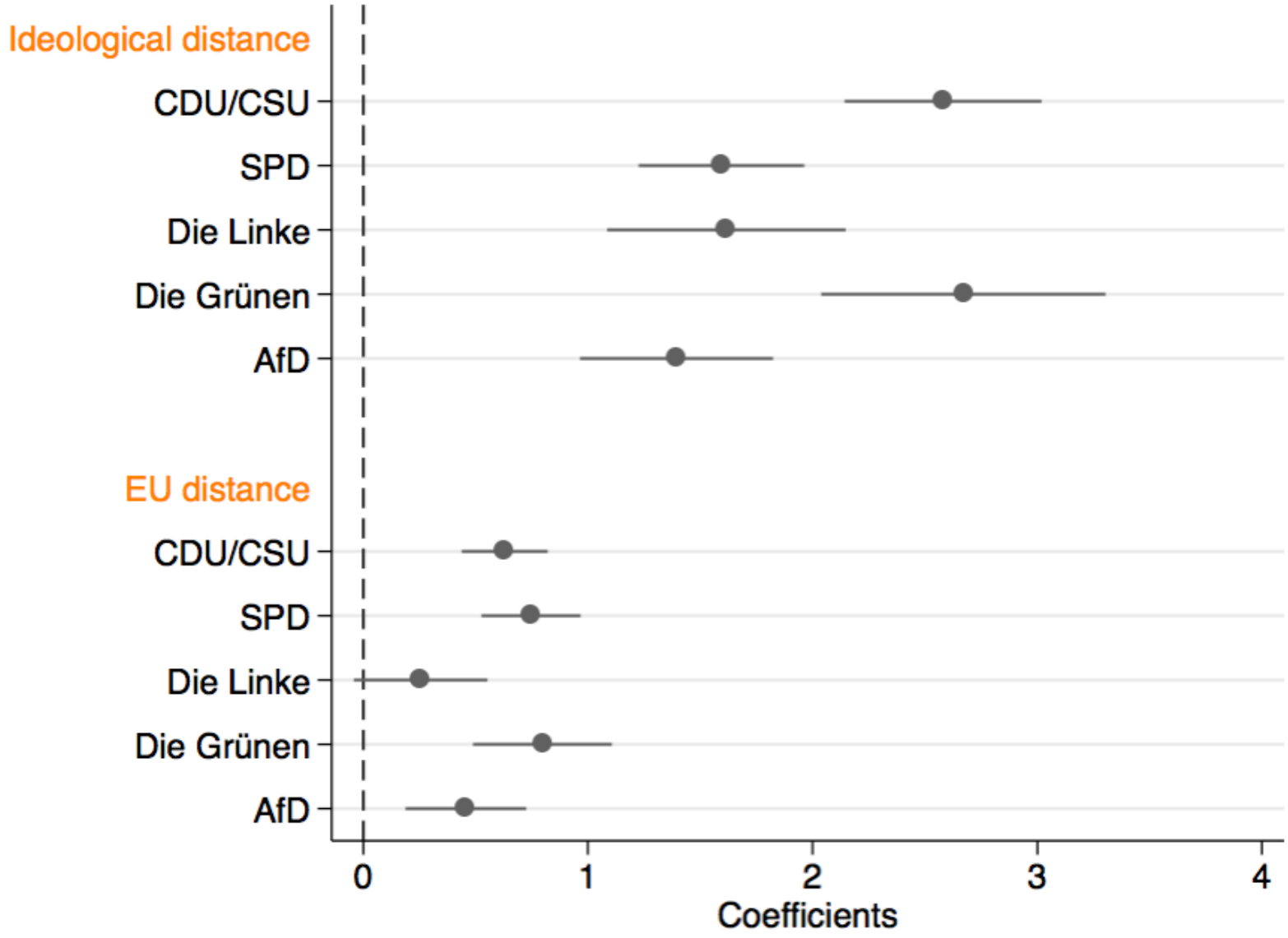
Results - Italy



Results - Italy (generic)



Results - Germany



Conclusions

- Not all parties are equally effective and successful in attracting electoral responsiveness on the same issues.
- Issue voting substantially varies across parties.
- We need to statistically identify such party-varying issue reactions within the established paradigm of the Spatial Theory of Voting.
- We showed the validity of this approach using the EU elections as an example.

Next steps

- Endogeneity!
- Link demand and party supply.
- Extend it to other contexts.

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