Online Appendix: Does Increasing District Magnitude Increase the Number of Parties?

Evidence from Spain, 1982-2011

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Appendix 1: What Districts Gain or Lose Seats?

In the analysis I assert that there is no direct connection between previous levels of electoral fragmentation and electoral system reforms. To confirm that they are endogenous to baseline levels of electoral system fragmentation, I test whether changes in district magnitude are correlated with lagged electoral fragmentation, controlling for the size of the electorate and language diversity. I also include an estimate of language diversity within the autonomous community at which the district is located that was coded by Jolly (2007). This measure is coded from descriptions of the autonomous community regions' languages from Ethnologue (Lewis 2009) and measures the languages that were traditionally used in a region and the difference they have from the language used in the national capital.[1] A multinomial logit analysis comparing the

[1] To quote from Jolly (2007, 61-2): "The Language Difference variable is an indicator based on the *Ethnologue*'s classification of languages into language families. Rather than compare the most commonly used language in the region to that of the capital, Fearon and Laitin introduce a variable called Language Family (2000). Basically, they utilize the *Ethnologue's* categorization of languages into different language families to determine how similar the region's language is to the capital's language. In addition, they use the traditional language used in the region rather than the most commonly used language today. Using the historic language rather than the current language allows the measure to serve as a proxy for cultural differences in a way that using current language does not because it may underestimate preference differences due to linguistic

odds of gaining a seat/losing a seat relative to not changing shows that large districts are more likely to either gain a seat or lose a seat than are smaller districts (a similar pattern emerges if you control instead for the previous district magnitude). There is no evidence that gains in losses in seats are concentrated in areas that are more ethnically diverse. Finally, there is no evidence that electoral system reforms between elections are more or less common in fragmented electoral contexts. Thus changes in district magnitude are not correlated with previously high levels of electoral fragmentation.

Lost a Seat		
Effective Number of Parties, Previous Election	0.428	(0.281)
Log(Number of Registered Voters)	1.403**	(0.474)
Language Diversity	-0.263	(0.570)
Constant	-11.993***	(2.669)
Gained a Seat		
Effective Number of Parties, Previous Election	-0.057	(0.787)
Log(Number of Registered Voters)	2.779***	(0.743)
Language Diversity	-10.489	(21.792)
Constant	-17.451***	(4.423)
Multinomial logit, Standard Errors adjusted for clustering by region in parentheses. *p<0.05, ** p<0.01, *** p<0.001, n=416, χ^2=81.51***		

Appendix 2: Descriptive Data

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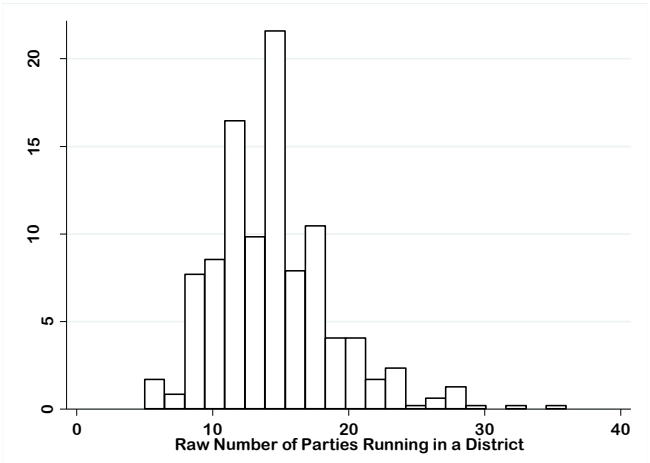
but not cultural assimilation (Fearon and Laitin 2000). By following the guidelines, I coded each region's Language Family from the *Ethnologue* database. Following Fearon and van Houten, I also convert the Language Family variable to Language Difference by using the reciprocal (2002). This simple conversion emphasizes the differences that are earlier in the family trees (e.g. Spanish is more different from Basque than Catalan), both because branches earlier in the family tree are more significant and because larger differences between languages are more reliably coded in the *Ethnologue*."

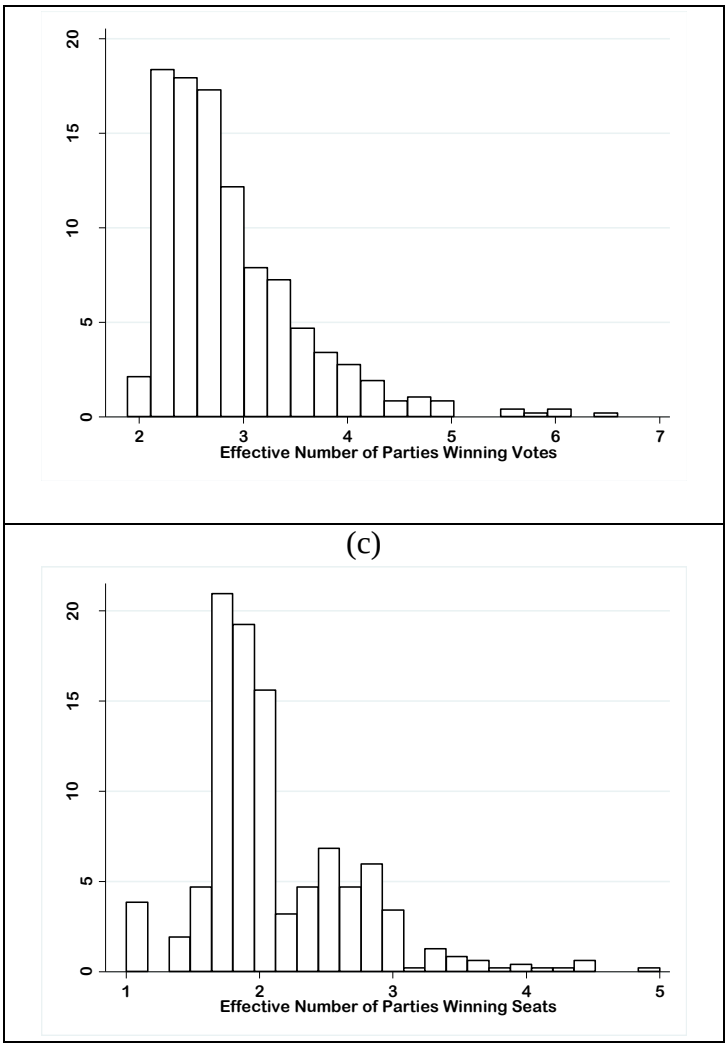
	Mean	Standard Deviation	Min	Max
Number of Parties Running	14.36	4.46	5.00	36.00
Effective Number of Parties Getting Votes	2.89	0.70	1.89	6.60
Effective Number of Parties Winning Seats	2.13	0.57	1.00	5.00
Percent of the Vote Going to Parties Besides the PP and PSOE	21.69	14.66	1.99	73.07
Percent of Seats Going to Parties Besides the PP and PSOE	10.04	16.60	0.00	71.43
Ln(M)	1.69	0.63	0.00	3.58
Log(Number of Registered Voters)	5.60	0.43	1.48	6.67
Turnout	73.22	6.73	49.43	86.60

Figure 1: Electoral Fragmentation across Districts, 1982-2011

(a)



(b)



(c)

Fearon, James and David Laitin. 2000. Violence and the social construction of ethnic identity. *International Organization* 54 (4): 845-877.

Jolly, Seth. 2007. A Europe of Regions? Regional Integration, Sub-National Mobilization and the Optimal Size of States. PhD Dissertation, Duke University.

Lewis, M. Paul. 2009. *Ethnologue*. Dallas: SIL International