

Government fragmentation and political corruption

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1. Motivation

- Corruption has devastating economic and political effects:

Corruption reduces economic growth (Mauro, 1995), spurs inflation (Al-Marhubi, 2000) and inequality (Gupta et al. 2002), undermines trust in government (Solé-Ollé & Sorribas-Navarro, 2014) and democratic legitimacy (Kostadinova, 2014)

- Can a good institutional design help to mitigate the devastating effects of corruption?

Corruption decreases with democracy

Competitive elections, free press and independent judiciary (e.g., Lederman *et al.*, 2005, Boix & Adsera, 2003) seem to mitigate corruption

Separation of powers (Alt & Lassen, 2008) and federalism (Fisman & Gatti, 2000) can alleviate corruption

1. Motivation

Majoritarian systems are usually associated with lower corruption levels than proportional (PR) systems (Persson *et al.*, 2003)

PR systems with closed list are said to generate more corruption than those with open list (Carey & Shugart, 1995, Kunicova & Rose-Ackerman, 2005)

District magnitude can be important in PR systems.

Corruption increases with district magnitude under open-list systems (Chang and Golden, 2006).

It decreases under closed-list systems (Persson *et al.*, 2003)

PR systems generate fragmented legislatures and different government typologies: **majorities** and **non-majorities**.

1950-1999: 40% of the EU executives formed were coalitions (Muller & Strom, 2000)

1. Motivation

Majorities and non-majority governments:

There is evidence that these governments behave differently (fiscal policies):

- Non-majorities tend to generate larger budget deficits (Edin & Ohlsson, 1991, Volkerink *et al.*, 2001).
It might depend on the ability of parties to make credible promises to their partners (Bäck & Lindvall, 2014)
- Non-majorities tend to have problems in reaching agreements (Smart et al., 2011).
However, coalitions can implement ambitious reform programs (Knotz & Lindvall, 2015)

There are few theoretical papers studying their effect on accountability

Empirical evidence: Single party gov. are negatively correlated with corruption perceptions in a cross-section of countries (Tavits, 2007); coalitions governments are less corrupt (Vega Alavedra, 2015)

Our paper

Aim: To provide causal evidence on the effect of government fragmentation on corruption

Data: Spanish local governments, two term-of-office, 1999-2003, 2003-2007.

PR electoral system that generates a high level of fragmentation (40% non-majority g.)

Large number of corruption episodes related to zoning regulations (281 & 386)

Identification strategy: matched governments design, close-elections non-majorities and majorities that are identical in terms of relevant political traits.

Results: Government type does not affect the probability of being corrupt.

2. Are non-majorities more corrupt than majority governments?

- Reduced accountability

Variable coalitions

If there is a high level of uncertainty regarding the identity of the parties that will get into the government (Diermeier & Merlo, 2004)

Ideological differences between the parties

If there is a pivotal party that is able to get into all possible coalitions (Ayagari, 2012)

Clarity of responsibility

Depends on citizens' ability to identify the politicians responsible for each decision (Powell, 2000)

2. Are non-majorities more corrupt than majority governments?

- Equally accountable

If there is a viable electoral alternative to the incumbent coalition (Kiss, 2009)

Natural coalitions based on ideology.

If gov. formation is based on policy preferences and there is no uncertainty (Myerson, 1993) (or even increase accountability)

- Enhance accountability

Democratic control

In a non-majority gov. there are more (and diverse) eyes watching the decisions of the gov. (Strom *et al.*, 2010).

3. Institutional framework

Spanish local governments

Three tiers of government: central, regional (17), municipalities (>8,000)

Municipalities have competences on traditional responsibilities assigned to local governments.

Revenues: own revenues (2/3) and grants (1/3).

Government formation:

- Elections take place simultaneously in all municipalities every four years.
- The d'Hondt rule is used to translate votes into seats.
- If no party obtains a majority of the seats, a negotiation period starts
- The mayor has to be elected by an absolute majority of the city council
- If no candidate gets this majority, the most voted candidate becomes the mayor

40% non-majority governments (usually based on ideology)

Size of the city council grows with population

3. Institutional framework

Political corruption

Mainly corruption related to zoning regulation (Villoria & Jimenez, 2012)

1997-2007: huge housing boom. Housing prices more than double and housing construction grew at rates of 5% yearly.

The stringency of land use regulation, coupled with the huge shift in housing demand, generated enormous rents, providing incentives for corrupt deals between developers and local politicians (Ades & Di Tella, 1999).

1999-2003: 281 corruption cases;

2003-2007: 386

Proposals to fix the problem:

- Improve the efficiency of the judiciary and independence media
- Reform the electoral system: facilitate gov. formation by assigning the majority to the most voted party

4. Empirical analysis

Main hypothesis:

Whether non-majority governments have a different probability of being embroiled in a corruption episode during a given term-of-office

$$Corruption_{it} = \alpha + \beta \cdot non-majority_{it} + \gamma \cdot X_{it} + \lambda_{jt} + u_{it} \quad (1)$$

Corruption_{it}: dummy variable coded 1 if there was a corruption episode in municipality *i* during the term-of-office *t*

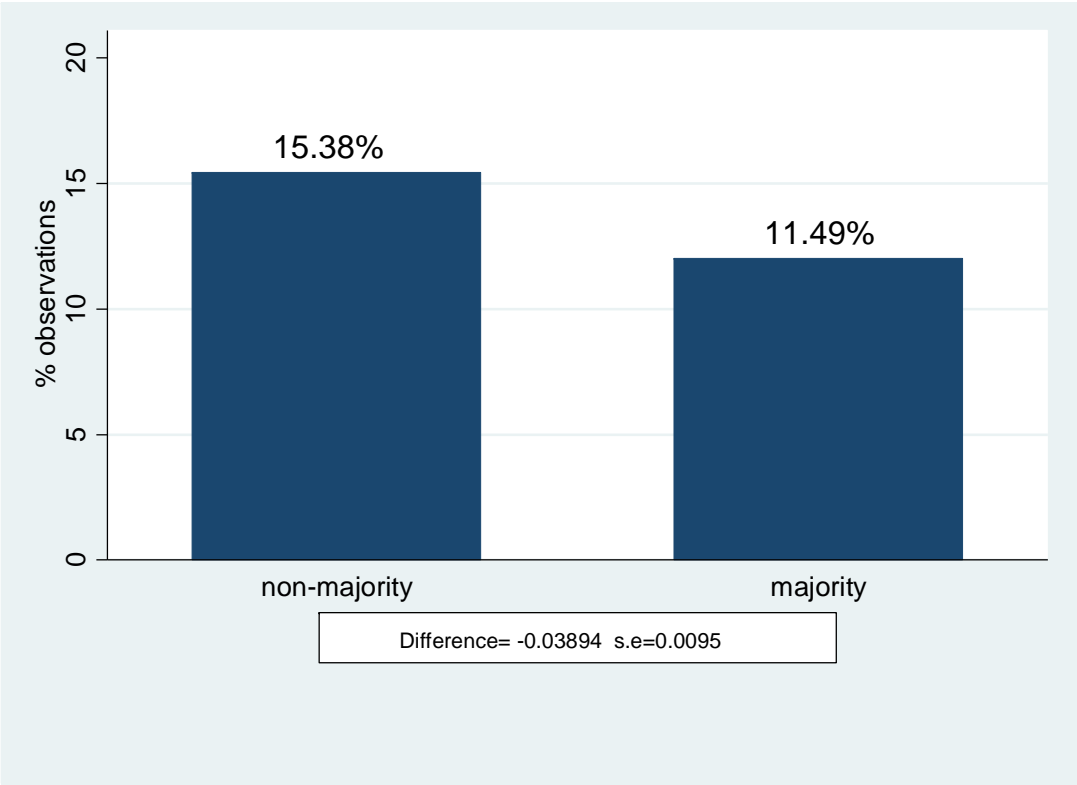
non-majority_{it}: dummy variable coded 1 if there was a non-majority government in municipality *i* during the term-of-office *t*

X_{it}: matrix of political, demographic and economic variables

λ_{jt}: province x term-of-office fixed effects

4. Empirical analysis

Figure 1: Probability of being corrupt
Full sample



4. Empirical analysis

	(i) Full sample		
	<i>Treated</i>	<i>Control</i>	<i>Diff. (s.d.)</i>
<i>Total number of seats</i>	14.462	13.292	1.170*** (0.221)
<i>Mayor's ideology</i>	0.369	0.509	-0.140*** (0.033)
<i>Opposition's ideology</i>	0.657	0.487	0.170*** (0.034)
<i># Parties in the opposition block</i>	1.482	1.254	0.228*** (0.055)
<i># Independent parties</i>	0.578	0.228	0.350*** (0.034)
<i>#Seats mayor's block</i>	7.85	8.877	-1.027*** (0.161)
<i>#Seats of the opposition block</i>	5.395	4.365	1.030*** (0.142)
<i>#Seats of independent parties</i>	1.378	0.47	0.908*** (0.088)
<i>Turnout</i>	71.948	74.335	-2.387*** (0.529)
<i>Historical turnout</i>	73.659	75.079	-1.420*** (0.499)
<i># Observations</i>	1,927	2,876	4,803

	(i) Full sample		
	<i>Treated</i>	<i>Control</i>	<i>Diff. (s.d.)</i>
<i>Population</i>	18,366	15,315	3,051 (3,329)
<i>Population growth</i>	2.109	0.812	1.297** (0.615)
<i>Education level</i>	35.969	34.362	1.607*** (0.540)
<i>Population under 16 years</i>	16.717	16.58	0.137 (0.262)
<i>Population over 65 years</i>	16.942	18.576	-1.634*** (0.478)
<i>Housing construction growth</i>	0.768	0.789	0.021 (0.013)
<i>Coast</i>	0.23	0.159	0.071*** (0.024)
<i>Urban area</i>	0.43	0.333	0.101*** (0.023)
<i># Observations</i>	1,927	2,876	4,803

4. Empirical analysis

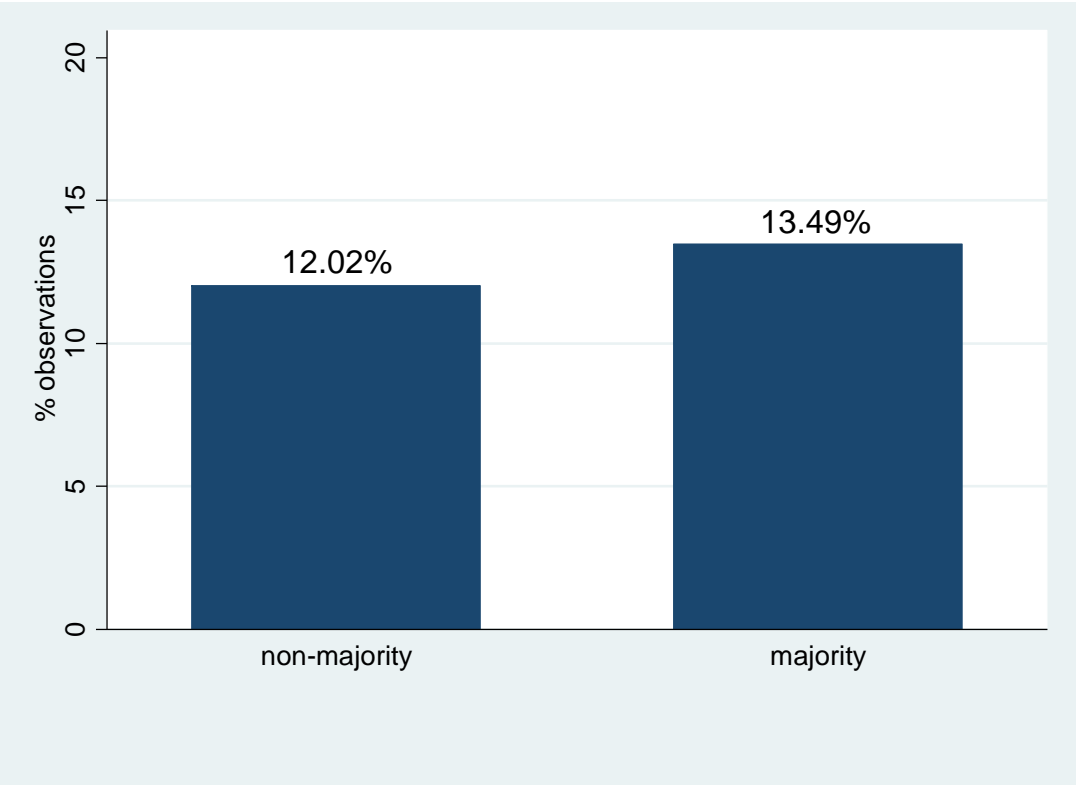
Identification strategy:

- Restrict the sample to municipalities in which:
 - the winning party (seats) obtained just the minimum number of seats needed to have a majority in the council [$(n/2)+1$: *majority*] and
 - to those where the most voted party just needed an additional seat to have a majority gov. [$(n/2)-1$: *non-majority*]

Differences in the popularity of the mayor are low. Incumbent's popularity is probably a key determinant of corruption.

4. Empirical analysis

Figure 1: Probability of being corrupt
Close elections



4. Empirical analysis

	(ii) <i>Close elections</i>		
	<i>Treated</i>	<i>Control</i>	<i>Diff. (s.d.)</i>
<i>Total number of seats</i>	13.974	13.318	0.656*** (0.220)
<i>Mayor's ideology</i>	-0.32	-0.053	-0.267*** (0.055)
<i>Opposition's ideology</i>	1.376	1.283	0.093** (0.042)
<i># Parties in the opposition block</i>	0.398	0.26	0.138*** (0.034)
<i># Independent parties</i>	13.974	13.318	0.656*** (0.220)
<i>#Seats mayor's block</i>	8.115	8.091	0.024 (0.181)
<i>#Seats of the opposition block</i>	5.239	5.074	0.165 (0.168)
<i>#Seats of independent parties</i>	0.812	0.539	0.273*** (0.075)
<i>Turnout</i>	72.816	75.267	-2.451*** (0.633)
<i>Historical turnout</i>	74.188	75.585	-1.397** (0.552)
<i># Observations</i>	599	961	1,560

	(ii) <i>Close elections</i>		
	<i>Treated</i>	<i>Control</i>	<i>Diff. (s.d.)</i>
<i>Population</i>	15,613	12,254	3,358 (2,867)
<i>Population growth</i>	15.34	11.883	3.459* (1.998)
<i>Education level</i>	35.76	34.418	1.344*** (0.437)
<i>Population under 16 years</i>	16.71	16.879	-0.171 (0.176)
<i>Population over 65 years</i>	17.50	18.414	-0.917*** (0.295)
<i>Housing construction growth</i>	21.82	21.01	0.809 (1.012)
<i>Coast</i>	0.15	0.131	0.021 (0.015)
<i>Urban area</i>	0.37	0.314	0.058* (0.031)
<i># Observations</i>	599	961	1,560

4. Empirical analysis

Identification strategy:

- Matched governments' design

Exact matching on political characteristics: council size, ideology of the mayor, number of parties of the opposition block & number of independent parties (for each term-of-office)

Balance also on demographical and economic variables that could be correlated with corruption and with non-majority status.

Socio-economic characteristics influence the evolution of party systems (Lipset and Rokkan, 1967; Stoll, 2013)

- ✓ Estimation: OLS using the close-elections matched sample.

4. Empirical analysis

Identification strategy:

	Municip.A	Municip.B	Municip.C	Municip.D
<i>Term of office</i>	1999- 2003	1999- 2003	2003- 2007	2003- 2007
<i>Total number of seats</i>	11	11	17	17
<i>Mayor's ideology</i>	L	L	R	R
<i># Parties in the opposition block</i>	2	2	3	3
<i># Independent parties</i>	0	0	1	1
<i>Mayor's seats</i>	5	6	8	9
	<i>Treated</i>	<i>control</i>	<i>treated</i>	<i>control</i>

4. Empirical analysis

Differences in means of Political traits between Treated (non-majority) and Control (majority) groups

	(i) Full sample			(ii) Close elections			(iii) Matching		
	<i>Treated</i>	<i>Control</i>	<i>Diff. (s.d.)</i>	<i>Treated</i>	<i>Control</i>	<i>Diff. (s.d.)</i>	<i>Treated</i>	<i>Control</i>	<i>Diff. (s.d.)</i>
<i>(a) Political variables used in the matching</i>									
<i>Total number of seats</i>	14.462	13.292	1.170*** (0.221)	13.974	13.318	0.656*** (0.220)	13.275	13.276	-0.001 (0.222)
<i>Mayor's ideology</i>	0.369	0.509	-0.140*** (0.033)	-0.32	-0.053	-0.267*** (0.055)	1.675	1.675	0.000 (0.037)
<i># Parties in the opposition block</i>	1.482	1.254	0.228*** (0.055)	1.376	1.283	0.093** (0.042)	1.336	1.336	0.000 (0.040)
<i># Independent parties</i>	0.578	0.228	0.350*** (0.034)	0.398	0.26	0.138*** (0.034)	0.327	0.327	0.000 (0.039)
<i>(b) Other political variables</i>									
<i>#Seats mayor's block</i>	7.85	8.877	-1.027*** (0.161)	8.115	8.091	0.024 (0.181)	7.848	8.454	-0.606*** (0.172)
<i>#Seats of the opposition block</i>	5.395	4.365	1.030*** (0.142)	5.239	5.074	0.165 (0.168)	4.893	4.274	0.619*** (0.150)
<i>#Seats of independent parties</i>	1.378	0.47	0.908*** (0.088)	0.812	0.539	0.273*** (0.075)	0.643	0.661	-0.018 (0.082)
<i>Turnout</i>	71.948	74.335	-2.387*** (0.529)	72.816	75.267	-2.451*** (0.633)	73.704	73.904	-0.200 (0.576)
<i>Historical turnout</i>	73.659	75.079	-1.420*** (0.499)	74.188	75.585	-1.397** (0.552)	74.848	74.386	0.462 (0.494)
<i># Observations</i>	1,927	2,876	4,803	599	961	1,560	560	606	1,166

4. Empirical analysis

Differences in means of Socio-economic traits between Treated (non-majority) and Control (majority) groups

	(i) Full sample			(ii) Close elections			(iii) Matching		
	Treated	Control	Diff. (s.d)	Treated	Control	Diff. (s.d)	Treated	Control	Diff. (s.d)
(a) Demographic variables									
<i>Population</i>	18,366	15,315	3,051 (3,329)	15,613	12,254	3,358 (2,867)	9,704	9,383	321 (1,703)
<i>Population growth</i>	2.109	0.812	1.297** (0.615)	15.34	11.883	3.459* (1.998)	11.93	11.261	0.673 (1.882)
<i>Education level</i>	35.969	34.362	1.607*** (0.540)	35.76	34.418	1.344*** (0.437)	35.78	35.672	0.112 (0.480)
<i>Population under 16 years</i>	16.717	16.58	0.137 (0.262)	16.71	16.879	-0.171 (0.176)	16.51	16.826	-0.321 (0.236)
<i>Population over 65 years</i>	16.942	18.576	-1.634*** (0.478)	17.50	18.414	-0.917*** (0.295)	18.14	18.269	-0.127 (0.408)
(b) Economic variables									
<i>Income p.c.</i>	0.973	0.945	0.028** (0.011)	0.96	0.937	0.022** (0.010)	0.95	0.931	0.021* (0.011)
<i>% Vacation homes</i>	16.86	16.523	0.337 (0.718)	15.76	16.14	-0.379 (0.887)	14.54	14.258	0.284 (0.685)
<i>Vehicles p.c.</i>	0.527	0.493	0.034*** (0.010)	0.50	0.487	0.016* (0.008)	0.49	0.479	0.013 (0.008)
<i>Property value p.c.</i>	18.41	15.546	2.864*** (0.823)	16.01	15.386	0.622 (1.022)	14.71	13.664	1.044 (0.628)
<i># Observations</i>	1,927	2,876	4,803	599	961	1,560	560	606	1,166

4. Empirical analysis

Differences in means of Socio-economic traits between Treated (non-majority) and Control (majority) groups

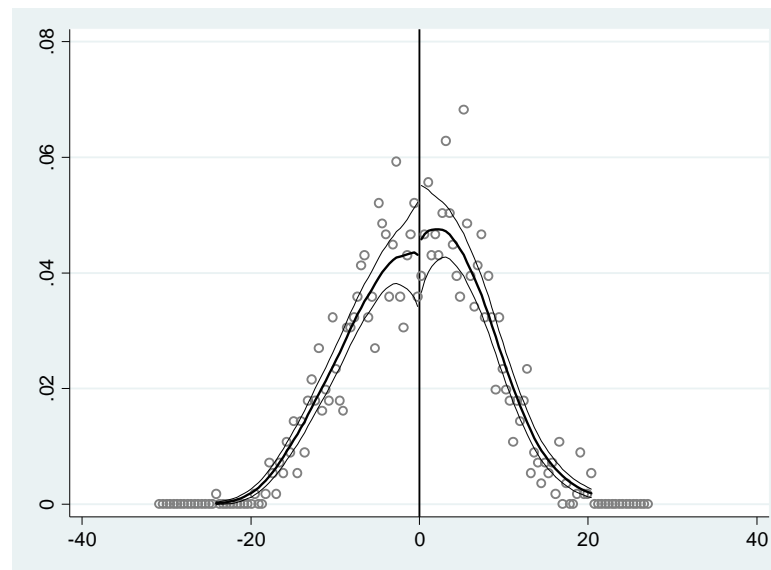
	(i) Full sample			(ii) Close elections			(iii) Matched pairs		
	Treated	Control	Diff. (s.d)	Treated	Control	Diff. (s.d)	Treated	Control	Diff. (s.d)
<i>(c) Budget variables</i>									
<i>Current expenditure p.c.</i>	395.30	367.53	27.77*** (7.481)	388.34	372.008	16.328* (8.542)	378.78	369.895	8.889 (9.199)
<i>Total expenditure p.c.</i>	566.67	566.09	0.579 (13.484)	577.08	568.684	8.391 (15.162)	573.71	563.909	9.803 (14.947)
<i>Current revenues p.c.</i>	502.36	469.84	32.52** (12.186)	492.20	471.431	20.770 (13.614)	479.15	471.319	7.828 (13.735)
<i>Debt burden</i>	0.082	0.073	0.009** (0.004)	0.08	0.072	0.008** (0.003)	0.08	0.07	0.007* (0.004)
<i>(d) Housing boom variables</i>									
<i>Housing construction growth</i>	-0.768	-0.789	0.021 (0.013)	21.82	21.01	0.809 (1.012)	15.738	15.642	0.096 (0.762)
<i>(e) Geographical variables</i>									
<i>Coast</i>	0.23	0.159	0.071*** (0.024)	0.15	0.131	0.021 (0.015)	0.12	0.113	0.002 (0.021)
<i>Urban area</i>	0.43	0.333	0.101*** (0.023)	0.37	0.314	0.058* (0.031)	0.30	0.315	-0.020 (0.026)
<i># Observations</i>	1,927	2,876	4,803	599	961	1,560	560	606	1,166

4. Empirical design

RDD

- RDD: share of votes that the winning party has to lose (win) in order to lose (win) its last seat and become a non-majority (majority) government.

Histogram for the vote distance to the cut-off

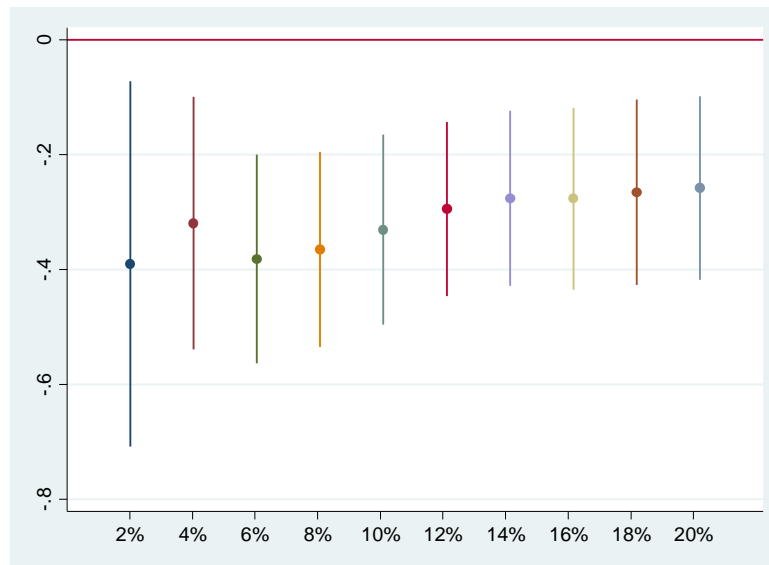


4. Empirical design

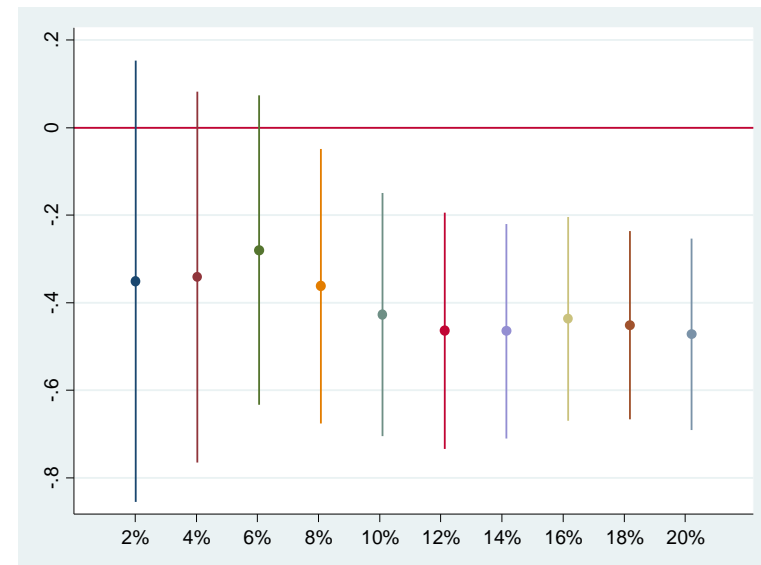
RDD is inapplicable due to the lack of balance of some important political variables at the cut-off

Mayor's ideology discontinuity

i) difference in means



ii) controlling for a local polynomial



Notes: number of observations in the regressions: 2% 230; 4% 482; 6% 714; 8% 920 10% 1062; 12% 1163; 14% 1248; 16% 1290; 18% 1313; 20% 1322.

Robustness: combine matching and RDD (Keele et al. 2015)

4. Empirical design

Data

- *Corruption*: Scandals from Fundación Alternativas (2001) and internet guided searches in Factiva. We use the data of the corruption episode, not when it was published
- *Non-majority*: if the most voted party obtained $(n/2)-1$ seats
- *Natural non-majority*: non-majority gov. where the mayoral ideological block does hold a majority of seats
- *Non-natural non-majority*: non-majority gov. where the mayoral ideological block does not hold a majority of seats

5. Results

Effects of non-majority governments on corruption

	<i>Close elections: +1 v. -1 seats</i>			<i>Close elections: + 10% v. -10% votes</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Non-majority</i>	-0.010 (0.021)	-0.018 (0.020)	-0.011 (0.021)	-0.023 (0.026)	-0.034 (0.025)	-0.029 (0.027)
<i>Region * time fixed effects</i>	X	✓	✓	X	✓	✓
<i>Control variables</i>	X	X	✓	X	X	✓
<i># Observations</i>	1, 183	1, 183	1, 183	933	933	933

Non-majority governments are not more (neither less) corrupt than the majority ones

5. Results

Effects of non-majority governments on corruption

	<i>Close elections: +1 v. -1 seats Natural non-majority</i>			<i>Close elections: +1 v. -1 seats Non-natural non-majority</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Non-majority</i>	-0.008 (0.026)	-0.009 (0.023)	-0.008 (0.023)	-0.014 (0.026)	-0.039 (0.024)	-0.037 (0.028)
<i>Region * time fixed effects</i>	X	✓	✓	X	✓	✓
<i>Control variables</i>	X	X	✓	X	X	✓
<i># Observations</i>	927	927	927	505	505	505

The no effect result holds for these types of non-majority governments

5. Results

Effects of non-majority governments on scandal breakout

	<i>Close elections: unmatched</i>			<i>Close elections: +1 v. -1 seats</i>		
	(1)	(2)	(3)	(4)	(5)	(6)
<i>Non-majority</i>	0.038 (0.044)	0.061 (0.043)	0.057 (0.039)	0.044 (0.043)	0.076 (0.050)	0.074 (0.046)
<i>Region * time fixed effects</i>	X	✓	✓	X	✓	✓
<i>Control variables</i>	X	X	✓	X	X	✓
<i># Observations</i>	204	204	204	175	175	175

scandal breakout=1 if corruption happens and is published in the same term-of-office; 0 otherwise

6. Conclusion

- Government fragmentation does not lead to more political corruption *per se*.
- Natural non-majorities behave like majority governments
- Non-ideological non-majorities are not more corrupt than majority governments
- Media coverage of corruption scandal does not depend on the type of government