The Effects of Relaxing Fiscal Rules on Political Budget Cycle:

a Difference-in-Discontinuities Analysis on Italian Municipalities

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Outline

Political Budget Cycle (PBC)

- PBC is a periodic fluctuation in fiscal policy implemented by governments as an election period draws near in order to boost their probability of re-election (Rogoff, 1990; Drazen and Eslava, 2006; Shi and Svensson, 2006):
  - Public spending increase (total or just some components);
  - Tax revenues reduction;
  - Budget deficit rise.

- Size and occurrence of PBC have been recently related to:
  - Fiscal intransparencies (Alt and Lassen, 2006);
  - Features of the electoral system (Aidt and Mooney, 2014);
  - Media freedom (Veiga et al., 2017);
  - Introduction of gender quotas (Ordine et al., 2022).

Fiscal Rules

- Fiscal rules are permanent numerical constraints on fiscal policy defined in terms of an indicator of overall fiscal performance such as government deficit, debt or expenditure (Kopits and Symansky, 1998). Fiscal rules are useful for:

- Limiting budget deficits (Caselli and Reynaud, 2020);

- Lowering public debt accumulation (Azzimonti et al., 2016);

- Reducing the likelihood of experiencing a sovereign debt crisis (Asatryan et al., 2018).

From a PBC perspective:

- Reduce governments' tendency to behave opportunistically by narrowing their discretionary fiscal space (Halac and Yared, 2014);

- Politicians in office bounded by strict fiscal rules might put into action some ingenious accounting practices to sidestep these constraints (Milesi-Ferretti, 2004).

Outline

This Paper

Research questions

- Do fiscal rules limit electoral cycles in local public spending by constraining governments' tendency to behave opportunistically?
- If yes, what is the size of the effect, and what are involved investments?

The provision of precise answers to these questions is important:

- fiscal rules can have also negative consequences when they hit the provision of crucial public goods such as kindergarten or assistance for the elderly, so that understanding what are the revenues achieved by means of these rules is needed in order to inform politicians about the consequences of these policy measures.

Identification strategy

- Fiscal rule in Italy: the European Stability and Growth Pact has been introduced at local levels through the so-called Domestic Stability Pact (DSP). `literature`

- Since 2001 municipalities with fewer than 5,000 inhabitants have been excluded from the DSP fiscal constraints;

- Exogenous partition of Italian municipalities into two sub-groups.

Literature

Cross-country studies:

- Ademmer and Dreher [2016]: fiscal institutions only help to limit the sizes of PBCs in those European Union countries characterized by weak media environments;

- Gootjes et al. [2021]: suggest that, by using data for 77 democracies over the 1984-2015 period, strong fiscal rules constrain PBCs.

Evidence on Italy:

- Bonfatti and Forni [2019]: the impact of fiscal rules (i.e. DSP) on PBC is quite moderate in Italian municipalities ($\approx$ 25 percent).

A Step Forward in Studying the Effects of Fiscal Constraints on PBC

Bonfatti and Forni [2019]'s caveats:

- PBC index:
  - local legislatures last for 5 years in Italy;
  - dummy equals to 1 in the first three years of the electoral cycle and 0 otherwise (electoral and post-elections years).
- Estimation strategies:
  - Diff-in-Diff;
  - RDD.

Outline

Domestic Stability Pact - Law 448/1998

Since 1998, all municipalities:

- In case of fiscal distress must go through a special procedure of budget consolidation (*Piano di Risanamento*);
- Budget rules have been set in terms of budget deficit (Budget Balance Target) and main variable under control was the fiscal gap, defined as municipal deficit net of transfers and debt service;

Punishments

- 5 percent cut in the annual transfer from central government;
- Ban on municipalities hires;
- 30 percent cut on reimbursement and non-absenteeism bonuses for the municipal administration's employees.

Since 2001, municipalities under 5,000 inhabitants are exempted.

Outline

Data

- 6,700 Italian municipalities out of about 8,100;
- Years: 1999 - 2012;
- Excluded municipalities:
    - Municipalities belonging to Special Autonomy Regions (*Regioni a Statuto Speciale*): own fiscal and electoral rules;
    - Municipalities with more than 15,000 inhabitants: electoral system changes;
    - Municipalities with less than 1,000 inhabitants: too small;
- Dependent variable: Capital Expenditures.

Outline

Identification Strategy: Diff-in-Diff?

- Before/After 2001 variation;
- Cutoff at 5,000 inhabitants;
- Exogenous treatment vs control groups;
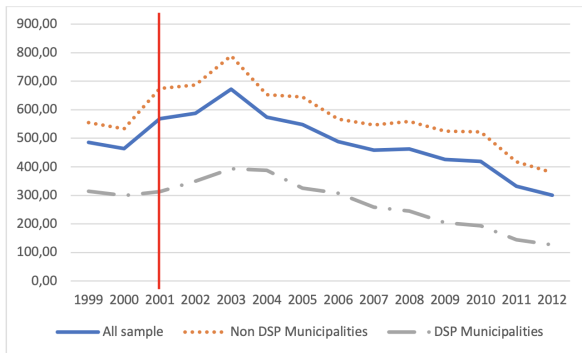
Note: Per-capita local capital expenditures.

- Parallel-trend assumption violated.

Identification Strategy: RDD?

- Cutoff at 5,000 inhabitants;
- Exogenous threshold;

Population	Mayor's Wage	Executive Committee's Wage	Executive Committee's Size	City Council's Size	Electoral System
< 1,000	1,291	15%	4	12	Single
1,000 - 3,000	1,446	20%	4	12	Single
3,000 - 5,000	2,169	20%	4	16	Single
5,000 - 10,000	2,789	50%	4	16	Single
10,000 - 15,000	3,099	55%	6	20	Single
15,000 - 30,000	3,099	55%	6	20	Runoff
30,000 - 50,000	3,460	55%	6	30	Runoff
50,000 - 100,000	4,132	75%	6	30	Runoff
100,000 - 250,000	5,010	75%	10	40	Runoff
250,000 - 500,000	5,784	75%	12	46	Runoff
> 500,000	7,798	75%	14 -16	50 - 60	Runoff

- Confounding effect.

Difference-in-Discontinuities Setup

$$Y_{i,t} = \sum_{k=0}^{p} \left(\alpha k P_{i,t}^{*k} \right) + Z_{i,t} \sum_{k=0}^{p} (\gamma_k P_{i,t}^{*k}) +$$

$$+ Ele_{i,t} \left[\sum_{k=0}^{p} (\delta k P_{i,t}^{*k}) + Z_{i,t} \sum_{k=0}^{p} (\zeta k P_{i,t}^{*k}) \right] + \tag{1}$$

$$+ \beta' \mathbf{X}_{i,t} + \mu_i + \lambda_r \times \tau_t + \epsilon_{i,t}$$

- $P_{i,t}$: normalized running variable around the cutoff;
- $Z_{i,t}$: treatment indicator equals to one for municipalities exempted from the DSP and zero otherwise;
- $Ele_{i,t}$: electoral cycle's dummies;
- $\mathbf{X}_{i,t}$: age, gender and education of mayors; term-limited mayors; early resignation; number of inhabitants per km^2;

- μ_i: municipal fixed-effect;
- τ_t: time fixed-effect;
- λ_r: regional fixed-effect;
- $\epsilon_{i,t}$: error term.

PBC Index

$$Ele_{i,t} = \left\{ \begin{array}{l} Ele_{i,t}^{-3} = 1 \text{ Three years before election} \\ Ele_{i,t}^{-2} = 1 \text{ Two years before election} \\ Ele_{i,t}^{-1} = 1 \text{ One year before elections} \\ Ele_{i,t}^{+1} = 1 \text{ One year after election} \end{array} \right\}$$

Outline

Main Results: Capital Expenditures

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1)	(2)	(3)	(4)	(5)	(6)
	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.

Panel A: 1999-2004

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1)	(2)	(3)	(4)	(5)	(6)
	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.
Conventional	38.76	9.67	-105.00	220.20**	53.37	26.59
	(38.82)	(96.61)	(71.16)	(92.08)	(50.92)	(56.34)
Robust	51.58	20.25	-94.14	232.4**	65.32	39.41
	(47.58)	(101.2)	(76.03)	(97.15)	(58.61)	(62.55)
h	1,524.3	1,526.9	1,528.3	1,646.9	1,543.6	1,541.7
Mean of dep. var.	449.00	449.00	449.00	449.00	449.00	449.00
Obs.	6,218	6,231	6,242	6,797	6,317	6,307

Panel B: 1999-2012

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1)	(2)	(3)	(4)	(5)	(6)
	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.
Conventional	18.43	-55.17	-104.3	180.4*	11.99	40.10
	(33.77)	(90.50)	(63.76)	(93.06)	(42.49)	(37.79)
Robust	24.95	-49.42	-99.01	186.2*	17.90	48.32
	(41.15)	(94.25)	(67.77)	(97.82)	(49.04)	(44.29)
h	1,524.3	1,526.9	1,528.3	1,646.9	1,543.6	1,541.7
Mean of dep. var.	370.25	370.25	370.25	370.25	370.25	370.25
Obs.	15,899	16,081	16,122	16,447	16,122	16,179
Controls	Y	Y	Y	Y	Y	Y
Year Effects	Y	Y	Y	Y	Y	Y
Year-Region Effects	Y	Y	Y	Y	Y	Y
Municipality Effects	Y	Y	Y	Y	Y	Y

Note: * p <0.1; ** p<0.05; *** p<0.001.

Disaggregated Estimates

We disaggregate by functions the overall amount of capital expenditure into seven different groups:

- roads and territory;
- justice and local police;
- education and culture;
- sport, social and development;

- administration;
- services;
- tourism.

Revenues into:

- disposals,
- borrowing,
- services,

- transfers,
- tax;
- non-tax.

Disaggregated Expenditures: Roads and Territory

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1) Invest. exp.	(2) Invest. exp.	(3) Invest. exp.	(4) Invest. exp.	(5) Invest. exp.	(6) Invest. exp.
Conventional	59.03*	-66.95	31.61	273.6***	26.42	44.59
	(35.11)	(115.40)	(57.70)	(105.80)	(45.51)	(35.13)
Robust	72.88*	-53.06	42.84	283.6***	38.64	56.26
	(40.11)	(117.10)	(60.17)	(108.10)	(49.69)	(39.69)
h	818.5	818.1	812.6	816.3	812.2	811.5
Mean of dep. var.	207.42	207.42	207.42	207.42	207.42	207.42
Obs.	7,537	7,537	7,481	7,526	7,481	7,471

Note: * p <0.1; ** p<0.05; *** p<0.001.

- 1 year before elections increase of 283,6 euro per capita ($\approx 137\%$ of the average value).

Disaggregated Expenditures: Sport, Social and Development

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1) Invest. exp.	(2) Invest. exp.	(3) Invest. exp.	(4) Invest. exp.	(5) Invest. exp.	(6) Invest. exp.
Conventional	19.25	21.22	-27.17	54.80**	12.20	35.03**
	(11.96)	(22.36)	(19.01)	(27.78)	(16.18)	(14.56)
Robust	22.85	24.54	-23.64	58.36**	15.77	38.59**
	(14.92)	(23.90)	(20.80)	(29.61)	(19.06)	(17.29)
h	1398.6	1,397.9	1,443.9	1,372.1	1,382.2	1,438.8
Mean of dep. var.	55.11	55.11	55.11	55.11	55.11	55.11
Obs.	13,236	13,224	13,616	12,985	13,080	13,585

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.001$.

- 1 year before elections increase of 58,36 euro per capita ($\approx 106\%$ of the average value).

Disaggregated Expenditures: Justice and Local Police

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1) Invest. exp.	(2) Invest. exp.	(3) Invest. exp.	(4) Invest. exp.	(5) Invest. exp.	(6) Invest. exp.
Conventional	-1.06	-2.83*	-2.52	0.84	-0.66	-1.54
	(1.37)	(1.57)	(2.67)	(1.66)	(1.15)	(1.89)
Robust	-1.20	-2.99*	-2.66	0.70	-0.80	-1.71
	(1.70)	(1.74)	(2.94)	(1.88)	(1.47)	(2.18)
h	1,481.9	1,471.7	1,470.1	1,456.1	1,485.3	1,467.5
Mean of dep. var.	1.42	1.42	1.42	1.42	1.42	1.42
Obs.	14,011	13,909	13,902	13,755	14,066	13,880

Note: * p <0.1; ** p<0.05; *** p<0.001.

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1)	(2)	(3)	(4)	(5)	(6)
	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.
Conventional	14.83*	3.89	9.12	13.06	13.85	23.61**
	(7.89)	(14.17)	(14.93)	(15.56)	(9.39)	(11.87)
Robust	18.84**	7.77	13.00	16.77	17.87	27.75**
	(9.31)	(14.89)	(15.70)	(16.44)	(10.57)	(13.14)
h	1,059.4	1,064.3	1,052.2	1,060.8	1,063.3	1,067.8
Mean of dep. var.	45.59	45.60	45.60	45.60	45.60	45.60
Obs.	9,973	10,009	9,891	9,978	9,998	10,030

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.001$.

Disaggregated Expenditures: Administration

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1)	(2)	(3)	(4)	(5)	(6)
	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.
Conventional	-26.70**	-14.01	-43.60*	-7.81	-15.37	-42.87**
	(13.40)	(18.74)	(27.30)	(33.59)	(19.80)	(19.30)
Robust	-30.55**	-17.60	-46.87*	-11.14	-19.23	-46.93**
	(15.30)	(20.11)	(28.35)	(34.49)	(21.23)	(21.07)
h	905.8	905.1	906.5	897.7	905.1	902.5
Mean of dep. var.	60.29	60.29	60.29	60.29	60.29	60.29
Obs.	8,485	8,485	8,492	8,389	8,485	8,446

Note: * p $<$0.1; ** p$<$0.05; *** p$<$0.001.

Disaggregated Expenditures: Services

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1) Invest. exp.	(2) Invest. exp.	(3) Invest. exp.	(4) Invest. exp.	(5) Invest. exp.	(6) Invest. exp.
Conventional	-3.98	-11.33	-18.70	-0.035	3.80	-1.72
	(8.03)	(10.89)	(25.88)	(15.52)	(7.40)	(7.90)
Robust	-2.28	-9.83	-16.93	1.56	5.47	-0.04
	(10.38)	(12.60)	(27.19)	(16.69)	(9.48)	(10.11)
h	887.4	888.6	893.9	885.9	885.9	884.3
Mean of dep. var.	9.63	9.63	9.63	9.63	9.63	9.63
Obs.	8,283	8,293	8,344	8,270	8,270	8,258

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.001$.

Disaggregated Expenditures: Tourism

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1) Invest. exp.	(2) Invest. exp.	(3) Invest. exp.	(4) Invest. exp.	(5) Invest. exp.	(6) Invest. exp.
Conventional	5.21	-7.32	7.46	14.79	3.31	5.01
	(3.64)	(5.45)	(5.67)	(16.63)	(3.37)	(3.75)
Robust	5.74	-6.73	7.99	15.17	3.89	5.64
	(4.25)	(5.81)	(5.90)	(16.83)	(3.99)	(4.45)
h	1019.6	1,015.5	1,025.3	1,014.3	1,021.1	1,023.7
Mean of dep. var.	6.62	6.62	6.62	6.62	6.62	6.62
Obs.	9,575	9,531	9,634	9,525	9,594	9,613

Note: * p $<$0.1; ** p$<$0.05; *** p$<$0.001.

Disaggregated Revenues: Disposals

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1) Invest. exp.	(2) Invest. exp.	(3) Invest. exp.	(4) Invest. exp.	(5) Invest. exp.	(6) Invest. exp.
Conventional	-2.55	-146.30	-76.22	152.6**	-22.98	23.94
	(26.47)	(90.73)	(53.64)	(63.37)	(41.28)	(32.31)
Robust	5.52	-140.20	-68.47	152.6**	-15.54	31.87
	(31.52)	(92.91)	(55.45)	(65.44)	(46.18)	(36.81)
h	1,238.0	1,238.9	1,207.1	1,182.6	1,214.8	1,208.7
Mean of dep. var.	267.10	267.10	267.10	267.10	267.10	267.10
Obs.	11,640	11,640	11,351	11,093	11,416	11,358

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.001$.

Disaggregated Revenues: Borrowing

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1) Invest. exp.	(2) Invest. exp.	(3) Invest. exp.	(4) Invest. exp.	(5) Invest. exp.	(6) Invest. exp.
Conventional	-13.56	40.56	-25.32	-27.36	-22.48	-17.36
	(18.66)	(40.87)	(52.90)	(45.73)	(22.65)	(21.69)
Robust	-7.67	45.88	-19.45	-20.09	-16.91	-11.41
	(22.12)	(42.42)	(55.20)	(47.05)	(25.54)	(24.83)
h	1,098.0	1,103.5	1,102.4	1,095.5	1,101.1	1,090.1
Mean of dep. var.	110.00	110.00	110.00	110.00	110.00	110.00
Obs.	10,307	10,346	10,339	10,286	10,331	10,250

Note: * p <0.1; ** p<0.05; *** p<0.001.

Disaggregated Revenues: Services

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1)	(2)	(3)	(4)	(5)	(6)
	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.
Conventional	-7.15	3.57	-8.71	-9.16	-9.17	-5.10
	(4.42)	(8.76)	(8.09)	(10.60)	(7.33)	(6.66)
Robust	-9.41*	1.51	-10.91	-11.36	-7.90	-7.37
	(5.22)	(9.24)	(8.59)	(10.95)	(7.87)	(7.35)
h	1,629.3	1,602.9	1,623.5	1,657.3	1,566.3	1,648.6
Mean of dep. var.	91.55	91.55	91.55	91.55	91.55	91.55
Obs.	15,487	15,229	15,429	15,788	14,845	15,694

Note: * p <0.1; ** p<0.05; *** p<0.001.

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1) Invest. exp.	(2) Invest. exp.	(3) Invest. exp.	(4) Invest. exp.	(5) Invest. exp.	(6) Invest. exp.
Conventional	-13.16**	-39.75**	-18.83	-16.26*	-9.12	-5.27
	(6.63)	(17.17)	(11.69)	(8.78)	(8.25)	(8.83)
Robust	-11.63	-38.34**	-17.28	-14.54	-7.58	-3.66
	(7.88)	(17.70)	(12.53)	(9.41)	(9.28)	(10.07)
h	1,060.2	1,059.5	1,075.2	1,063.4	1,060.8	1,085.9
Mean of dep. var.	188.70	188.70	188.70	188.70	188.70	188.70
Obs.	10,015	10,010	10,145	10,036	10,015	10,227

Note: * p <0.1; ** p<0.05; *** p<0.001.

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1) Invest. exp.	(2) Invest. exp.	(3) Invest. exp.	(4) Invest. exp.	(5) Invest. exp.	(6) Invest. exp.
Conventional	-0.31	-8.19	-1.97	5.63	5.62	-3.47
	(4.36)	(12.47)	(8.22)	(8.65)	(6.24)	(6.09)
Robust	0.20	-7.57	-1.40	5.84	6.34	-2.68
	(5.22)	(12.89)	(8.72)	(9.10)	(6.96)	(6.81)
h	1,729.0	1,721.1	1,711.6	1,725.1	1,730.6	1,672.3
Mean of dep. var.	347.70	347.70	347.70	347.70	347.70	347.70
Obs.	16,617	16,520	16,421	16,584	16,637	16,003

Note: * p <0.1; ** p<0.05; *** p<0.001.

Disaggregated Revenues: Non-Tax

	Baseline	3 Years Before Election	2 Years Before Election	1 Year Before Election	Election Year	1 Year After Election
	(1)	(2)	(3)	(4)	(5)	(6)
	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.	Invest. exp.
Conventional	-6.41	17.72	-27.86	19.91	-7.24	-12.41
	(9.26)	(15.18)	(25.18)	(17.03)	(11.55)	(10.90)
Robust	-10.05	13.87	-32.20	16.64	-11.19	-16.83
	(11.48)	(16.41)	(27.14)	(18.06)	(13.28)	(12.74)
h	1,570.0	1,546.8	1,526.8	1,577.4	1,572.4	1,520.4
Mean of dep. var.	156.70	156.70	156.70	156.70	156.70	156.70
Obs.	14,917	14,657	14,447	14,987	14,936	14,379

Note: * p <0.1; ** p<0.05; *** p<0.001.

Outline

Conclusions

- No difference in capital expenditure emerges during the overall legislature of municipalities not exposed to fiscal rules in comparison with those bounded by fiscal constraints;

- Very strategic use of budgetary resources in the form of a substantial, pre-election-year, one-off spending shock;
  - 137 percent for road maintenance;
  - 106 percent for sport and social activities;
  - much higher than previous evidence (≈ 25 percent over first 3 years of the electoral cycle).

- Fiscal limitations are actually effective in limiting the 1-year before elections' (opportunistic) increase of public expenditure.

- However, a more precise evaluation in terms of overall welfare should consider whether PBC narrowing is more than offset by the reduction in local investments.

THANK YOU

BACK-UP SLIDES

DSP Literature

Effects of fiscal rules (DSP) in Italy:

- Grembi et al. [2016]: unconstrained municipalities lowered tax rates and revenues since the relaxation of fiscal rules;
- Picchio and Santolini [2020]: relaxing fiscal rules has significantly increased budget forecast errors;
- Coviello et al. [2022]: permanent reduction in local spending translated in an exogenous drop in the revenues of procurement firms; this demand shock has been offset by cutting capital rather than labor.

Year	Fiscal target	Constrained municipalities
1999	Fiscal gap	All
2000	Fiscal gap	All
2001	Fiscal gap	> 5,000 inh.
2002	Fiscal gap	> 5,000 inh.
2003	Fiscal gap	> 5,000 inh.
2004	Fiscal gap	> 5,000 inh.
2005	Total expenditure	> 5,000 inh.
2006	Current expenditures	> 5,000 inh.
	Capital expenditures	
2007	Fiscal gap	> 5,000 inh.
2008	Fiscal gap	> 5,000 inh.
2009	Fiscal gap	> 5,000 inh.
2010	Fiscal gap	> 5,000 inh.
2011	Fiscal gap	> 5,000 inh.
2012	Fiscal gap	> 5,000 inh.
2013	Fiscal gap	> 1,000 inh.
2014	Fiscal gap	> 1,000 inh.
2015	Fiscal gap	> 1,000 inh.

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