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Legislature and Constituency Size in Italian Regions:  
Forecasting the Effects of a Reform

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**Abstract** - In this paper we analyze the effect of different legislature and constituency size on per capita regional expenditure in Italy. According to the theory, legislature size has an indefinite effect on government spending because logrolling and transaction costs may have canceling effects. In turn, smaller constituency size is predicted to decrease government spending, because of homogeneity of interests and low monitoring costs. We find a large and significantly positive effect of the number of legislators and a negative effect for constituency size. We use these findings to forecast the effects of the increase in the number of legislators that are occurring in some regions.

**Keywords:** Legislature size, constituency size, regional expenditure.

**JEL Codes:** H72, H73

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## **1. Introduction**

The economic theory of government has modeled fiscal policy in democratic regimes as the result of competition between different pressure groups. One class of models developed in this line of research has investigated the relationship between state government expenditure and legislature size. According to these models, two features of the political-institutional system are especially relevant in explaining excessive government spending: the number of legislative districts (Weingast et al., 1981) and the number of seats in a state's legislature (Gilligan and Matsusaka, 1995). This is consistent with the theoretical hypothesis that logrolling leads representatives to spend more than their constituents would like, as common pool problems arise from the tax base and the benefits of a given spending project are internalized by an individual constituent group, while the costs are spread over the entire population. Yet, despite its widespread acceptance as a conceptual proposition, this hypothesis has received mixed support from the existing evidence. In addition, most of the empirical contributions focus on the American institutional setting.

In this paper we build upon the literature outlined above and examine regional government expenditure in Italy from 1980 to 2000. Specifically, we attempt to test the effect of the number of regional legislators and constituency size on regional spending. Two parallel processes have occurred in the Italian administrative regions in the last few years. First, the regions have been invested with the power to write their own constitutions (Statutes), which policy makers tend to use to expand the legislature. Second, an important process of devolution of tax rates has occurred. As these processes of regional institutional and fiscal reform are still in progress, this paper aims to highlight some indications on how important legislative structure is to explain spending behavior in Italian regions. This may be relevant in an evaluation of ongoing changes and to gain a picture of the new institutional setting of these jurisdictions.

The rest of the paper is organized as follows: Section 2 reviews the literature; Section 3 illustrates the reform that has taken place in the institutional structure of the Italian regions over the last few years; in Section 4 we describe the data and specify the

variables used for the empirical analysis. We then present the results in Section 5, and Section 6 offers some concluding remarks.

## 2. Literature review

Since the seminal contribution of Stigler (1976), the size of legislature has been seen to play a pivotal role in explaining the production of legislation and the general tendency of government to grow over time. Crain (1979) finds that the linkage between legislative output and the size of a legislature is not predictable *a priori*. This is because a larger legislature could be associated either with higher production costs required for assembling legislative majorities or, alternatively, with lower decision making costs if the returns from increased labor specialization in the committee apparatus dominate the effect of larger sized groups on decision making costs. The results are contrasting: lower price of votes leads to an increase in government size and *vice versa* higher decision making costs reduce the government size.

McCormick and Tollison (1981) formalize the problem of an interest group deciding how much to spend on buying legislative influence, and its agent (lobby) deciding how to allocate this budget ( $E$ ) across the two houses of the legislature in order to maximize the organization's return from legislative influence. The organization knows that the votes ( $V$ ) it will receive in the two houses are a function of its expenditure in each house ( $E^h$  and  $E^s$ ) and the size of each house ( $h$  and  $s$ ), therefore:  $V^h = V^h(E^h, h)$  and  $V^s = V^s(E^s, s)$ . The problem faced by the interest group is to maximize the net returns from legislative influence  $Y_n = Y - E$  subject to  $E = E^h + E^s$ ,  $Y = Y(V^h, V^s, L, W, P)$ , and the previous vote functions, where  $W$  is the wealth of the community,  $P$  is the population, and  $L$  is legislative size. Larger legislature size (defined as the sum of the lower and upper houses) has an indefinite effect on government spending. On the one hand, an increase in the number of legislators results in a lower cost of lobbying because of additional competition between vote suppliers. Furthermore, when the total number of legislators increases, there are potential gains from increased specialization of labor within the committee apparatus. On the other hand, as long as the number of legislators increases, the transaction costs

needed to find a viable majority of votes are also increased. In the end, the problem is an empirical one.

Weingast *et al.* (1981) provide a formal model on the size of legislatures, in which they consider each chamber in itself, rather than the overall number of legislators. The main testable restriction of this model is that government spending increases as the number of legislative districts increases. To summarize, let  $b_i(x)$  be the benefit to the constituents of legislator  $i$  of spending  $x$  dollars in district  $i$ , and let  $c(x)$  be the cost of spending. The efficient level of spending is such that  $b'_i(x) = c'(x)$ . If there are  $n$  districts and taxes are spread evenly across the districts, the legislator  $i$  bears  $(1/n)^{\text{th}}$  of the cost of spending in district  $i$ . Therefore, legislator  $i$  pushes  $x$  up to the point in which  $b'_i(x) = (1/n)c'(x)$ . This implies that the optimal level of spending for each legislator is increasing in  $n$ . If legislators logroll and defer to each other regarding such expenditure, then the total spending is increasing in  $n$ . This implication is called “the Law of  $1/n$ ”.

Shughart and Tollison (1986) find a positive relationship between real per capita government spending and the number of public and private bills enacted into law. The results hold in the long-run, using data from US states for legislature and laws ranging from 1889 to 1980. Gilligan and Matsusaka (1995), after controlling for constituent interests, show the number of seats in the upper house to be positively associated with per capita state and local direct general expenditure. Furthermore, a large legislature leads to higher spending in both capital and non-capital programs, welfare, education and highway expenditures. Possibly, these results do not extend to lower chamber because bicameralism is not taken into account as an explanatory variable.

A different measure of legislature size has been explored by the subsequent literature. Thornton and Ulrich (1999) argue that constituency size, defined as the number of constituents per legislator, is the relevant size variable in the determination of government spending, rather than the absolute size of the legislature. They maintain that a larger ratio reduces monitoring of representatives by voters, enabling the representatives to be less accountable and to deviate from their preferences. In addition, a larger constituency encompasses more interest groups calling for

representation and transfers. They show that larger constituency size produces a higher level of state government spending per capita both in the upper and lower chambers in US States.

Finally, Bradbury and Crain (2001) analyze a panel of 24 bicameral countries and 14 unicameral countries for the period 1971-1989. The results support the positive relationship between legislature size and spending across countries.<sup>1</sup>

### **3. A closer look at Italian regional government**

Municipalities, Provinces, Metropolitan Areas, Regions and the State constitute the Italian Republic. The autonomy of these jurisdictions is an important feature of the Italian political and institutional system. The 1948 Constitution states that the regions, provinces and municipalities are autonomous entities, with their own Statutes, powers and functions (art. 114). The regions of Friuli Venezia Giulia, Sardinia, Sicily, Trentino-Alto Adige and Valle d'Aosta enjoy particular forms of autonomy, according to their special Statutes adopted by constitutional law. Furthermore, the Trentino-Alto Adige region encompasses the Autonomous Provinces of Trento and Bolzano (art. 116).

The Constitution also establishes the regional branches of government, which are the Council, the Cabinet and its President. While the Council exercises the legislative power granted to the Region and all other functions conferred on it by the Constitution and by law, the Cabinet is the executive branch of regional government. The rules that regulate the functions and the mechanism of election or appointment of such bodies of government have changed during our sample period. Until the reform passed in February 1995, the Council was elected under a proportional system and the legislators held office for a 5-year term. The number of legislators varied according to the regional population<sup>2</sup> and, in the regions with special Statutes, was established by the relevant Statute. The Council appointed the Cabinet, which was composed of the President and a certain number of members, usually called “*assessori*”.

The changes occurred in the political and institutional scenario of the early '90s and the difficulties in reaching stable governments led to an important reform of the

regional and local government electoral system. The reform has modified both the electoral system and the tenure length of regional legislators. In 1995 the mechanism by which the members of the regional Council are elected switched from a pure proportional representation system to a mixed one. Specifically, 80 percent of the legislators are elected on the basis of provincial lists (art. 1, par. 2) and the remaining 20 percent by a majoritarian system on the basis of regional lists (art. 1, par. 3). A *premium for the majority* in two steps was also introduced, so that the absolute majority of the legislators will be held by the coalition linked to the regional list that has obtained the relative majority of the votes.<sup>3</sup> Furthermore, the law reduces the tenure length of the Council from five to two years if the relationship of confidence between the Council and the Cabinet breaks down during the first two years. The law was first applied in the 1995 regional elections.

Art. 122 (par. 1) was modified by a constitutional law passed in 1999. It states that the President of the regional Cabinet is elected by universal and direct suffrage, unless the regional Statute establishes otherwise. The elected President appoints and dismisses the members of the regional Cabinet. The first direct election of the President took place in the 2000 regional elections. The constitutional law of 1999 also gives the regions the opportunity to write their own statutes (art. 123). The statute determines the form of government and the fundamental principles of the organization and functioning of the Region, in accordance with the Constitution. In other words, the regions can choose their own form of government and electoral rules, within some boundaries. In particular, they can set the number of legislators. Table 1 reports the current and proposed number of regional legislators according to draft regional constitutions. Twelve out of twenty regions plan to increase the number of legislators. This change will come into effect during the regional elections in 2005. Data in Table 1 shows the variety in the number of legislators in Italian regions (from 30 in Molise and Umbria to 90 in Sicily), and highlights the large variation in the ratio of inhabitants to legislators (which ranges from as few as 3,445 in Valle d'Aosta to as many as 114,096 in Lombardy). The current changes do not modify the range of legislators or inhabitants-to-legislators ratio but vary their mean (from 53.55 to 59.50 and from 49,632 to 43,778, respectively).

[Table 1 about here]

#### 4. Variables and data

Virtually no changes have occurred to the number of legislators in Italian regions, with the exception of Apulia, which increased the number of legislators from 50 to 60 in 1985. For this reason we use cross-sectional data by averaging our data for the time span 1980-2000.<sup>4</sup> An important issue concerns the Trentino-Alto Adige (TAA) region and its constituent provinces Bolzano and Trento. Unlike all other Italian regions, for historical and ethnic reasons, TAA has very limited power, which is devolved to the two provinces. Italian statistics put the two provinces together with the other regions. For this reason TAA and its provinces may represent outliers, therefore we check the consistency of the results with and without them.<sup>5</sup>

The benchmark specifications are:

$$EXP_i = \alpha_0 + \alpha_1 LEG_i + \alpha_2 GDP_i + \alpha_3 TRANS_i + \alpha_4 OR_i + \varepsilon_i, \quad (1)$$

$$EXP_i = \beta_0 + \beta_1 CS_i + \beta_2 GDP_i + \beta_3 TRANS_i + \beta_4 OR_i + \varepsilon_i, \quad (2)$$

where  $EXP$  is regional expenditure,  $LEG$  is the number of legislators,  $CS$  is constituency size defined as the population-to-legislators ratio, using population as a proxy for voters,  $GDP$  is regional gross domestic product,  $TRANS$  represents transfers from the national government,  $OR$  indicates the revenue raised by the region itself, and  $\varepsilon_i$  is a stochastic error.<sup>6</sup> In the light of the previous discussion, we expect both  $LEG$  and  $CS$  to be positive. All data are in real per capita terms (1995 base = 100), and are expressed in euros. Data on expenditure, transfers, and own revenue are taken from Istat (various years).  $GDP$  and population are taken from Crenos (2004). Table 2 reports the summary statistics for the above variables.<sup>7</sup>

[Table 2 about here]



## 5. Results

We first analyze the effect of different legislature sizes. Estimates (1) – (4) include all twenty regions plus the two autonomous provinces of Trento and Bolzano, while equation (5) excludes them. Finally, equation (6) also excludes the Trentino-Alto Adige region. The same procedure applies for constituency size.

In Table 3 the estimates concerning *LEG* are positive, quite large and significant at the 1% level, with the exception of (6) where the size of the coefficient is reduced, as well as its significance level. These estimates tell us that a 10% increase in the number of legislators leads to a 22.7% increase in regional per capita spending for estimates (1-5), and this is reduced to 15.6% in the last estimate. *GDP* is always negative but insignificant, whilst *TRANS* is significantly positive, with an increasing significance level, as long as the sample is progressively refined to exclude possible outliers. *OR* is never significant. *TRANS* is probably a more important determinant of regional government expenditure than *OR* because while monetary transfers play an important role in the policy of cohesion between North and South; regional taxes have not played a major role in regional public finances until the last decade. To avoid possible correlation between *GDP* on the one hand, and transfers and revenue on the other hand (negative and positive, respectively) we exclude *GDP* from some estimates. These results do not modify previous ones but slightly reduce the explicative power of the estimated equations. Reducing the sample improves the results, but it does not change the qualitative results we are mainly interested in. The estimated equations explain about 60% of the variability of regional expenditure - which is quite satisfactory - and the joint significance of the variables (F test) is high.

[Table 3 about here]

Table 4 reports results for constituency size. *CS* is significantly positive as expected, at the highest significance level. These estimates maintain that a 10% increase in the constituency size leads to a 10.6% increase in regional per capita

spending. The other variables basically confirm the above results. However, moving from the complete to the reduced sample, the estimated size of the coefficient of *OR* is significantly positive, and the size of the coefficient of *TRANS* (but not its significance) increases. The estimated equations explain on average more than 70% of the variability of regional expenditure in estimates (1) – (4), and more than 80% in the last two columns and the variables are again jointly different from zero at the 1% significance level.

[Table 4 about here]

In this cross-section it is impossible to use a dummy variable for the electoral reform from 1995 onwards. Averaging the observations will lead to a variable that has the same value for all the observations, making regressors linearly dependent. However, the shift towards an institutional system in which the President is *de facto* directly elected, regional governments last longer, legislators are elected according to a mixed system, and there is greater accountability than before, may constitute a structural change. Therefore, we re-estimate our cross-section using only data from 1995 to 2000.

Results in both tables are consistent with previous estimates. With respect to *LEG* we observe a reduction in the absolute value of the coefficient (although the significance level is still the highest), but when expressed in logs a 10% increase in the number of legislators leads to a typical 22.3% increase in per capita regional government spending, which is very similar to highest estimates for the whole sample. Yet, other variables do not appear to be affected by the reduced sample, and the  $R^2$  and the F statistic perform less well than before. Table 6 confirms this for *CS*, where a 10% increase in constituency size commands an 11.1% increase in spending. Other variables basically perform as in the whole sample. Notably, *TRANS* is smaller and less significant, and *GDP* is now significant when possible outliers are removed. In this case the ability of the estimates to describe the variability of government spending and the joint significance of the variables involved in the regressions are as good as before.

[Table 5 about here]

[Table 6 about here]

## **6. Conclusions**

In this paper we have analyzed the effect of different legislature and constituency sizes on regional government spending. An increase in the number of legislators induces an increase in regional expenditure in both models. Regional expenditure also appears to be linked to the size of national transfers but neither to revenue raised by the regional authority nor to the regional GDP. However, these results are less consistent than those related to legislature and constituency size.

Our estimates allow us to forecast a significant increase in government spending per capita in the regions that are enlarging their legislatures using the window of opportunity created by new Statutes. At a minimum, our estimates suggest a 15.6% increase in per capita spending for a 10% increase in the number of legislators. These results are confirmed when we concentrate our analysis on the period 1995-2000, in which an institutional reform was in place. This effect is not in line with current attempts to curb government spending in Italy, and potentially places the efforts of regional policies in contrast with national goals. We believe that this kind of Public Choice analysis should be considered before designing and implementing institutional reforms.

The interplay between the aim of the paper, data and related econometric technique leaves aside interesting issues such as the effects of the electoral reform and the switch from a parliamentary to a presidential system. We leave these topics to further research.

## Endnotes

<sup>1</sup> Bradbury and Crain (2001) also find that the effect is far greater in unicameral legislatures than in bicameral legislatures; furthermore, while the size of the lower chamber is positively related to government expenditure, the sign of the upper chamber is negative.

<sup>2</sup> On the basis of the law passed in 1968 (n. 108) the number of regional legislators is 80 for regions with more than six million inhabitants; 60 for regions with more than four million inhabitants; 50 for regions with more than three million inhabitants; 40 for regions with more than one million inhabitants and, finally, 30 in all other regions. This relationship between regional population and legislature size makes possible endogeneity between regional government spending and legislature size irrelevant (according to the argument that says that higher government spending needs more legislators because of increased specialization).

<sup>3</sup> To allow for this premium, the number of legislators can be increased if votes do not provide such a majority when translated into seats. This is the case of Abruzzo and Calabria in our sample.

<sup>4</sup> Although the population shows some changes, the time variation of *CS* is also very limited, therefore we decided to use a cross-section in this case too.

<sup>5</sup> We have not estimated the equations without special statute regions in order to avoid the problem of having too few observations compared with the number of parameters.

<sup>6</sup> To capture healthcare spending, the major outlay in Italian regions, we experimented the variable *PROP65* (the proportion of citizens aged over 65) but it turned out to be insignificant in all cases, and it has been dropped from estimations. This is possibly due to the role of the National Healthcare Fund that administered the transfers from the central government to the regions until 2000.

<sup>7</sup> A correlation matrix is available upon request from the authors.

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Table 1 - Number of current and proposed legislators

Regions	Current legislators	Proposed legislators	Current inhabitants/ legislators	Future inhabitants/ legislators
Abruzzo	43	50	29,797	25,625
Apulia	60	70	68,110	58,380
Basilicata	30	40	20,160	15,120
Calabria	43	54	47,518	37,838
Campania	60	80	96,371	72,278
Emilia Romagna	50	65	80,173	61,671
Friuli Venezia Giulia	60	60	19,810	19,810
Lazio	60	71	88,372	74,680
Liguria	40	51	40,525	31,784
Lombardy	80	80	114,096	114,096
Marche	40	42	36,730	34,980
Molise	30	30	10,906	10,906
Piedmont	60	60	71,495	71,495
Sardinia	80	80	20,600	20,600
Sicily	90	90	56,408	56,408
Tuscany	50	65	70,952	54,578
Trentino Alto Adige	70	70	13,473	13,473
Umbria	30	37	28,016	22,715
Valle d'Aosta	35	35	3,445	3,445
Veneto	60	60	75,681	75,681

Source: [www.parlamentiregionali.it](http://www.parlamentiregionali.it)

Table 2 – Summary statistics, overall sample

	Mean	S.D.	Min	Max
CS	47,399	30,043	3,841	111,520
EXP	373.941	292.006	6.066	1026.981
GDP	15700.751	5189.284	8865.412	28436.247
LEG	48.682	17.404	30.000	90.000
OR	223.908	452.823	5.252	2149.576
TRANS	55.870	22.810	0.393	102.505

Table 3 – Legislature size and regional expenditure, 1980-2000

	(1)	(2)	(3)	(4)	(5)	(6)
C	74.747 (42.857)	88.492* (41.623)	102.744* (51.865)	136.442* (64.954)	106.725 (64.464)	116.920* (62.161)
LEG	11.499*** (2.734)	11.478*** (2.656)	12.726*** (2.534)	12.728*** (2.491)	11.427*** (2.935)	8.417** (3.282)
GDP	-0.012 (0.014)	-0.016 (0.013)			-0.020 (0.026)	-0.045 (0.029)
OR	0.016 (0.099)		-0.034 (0.098)	-0.041 (0.096)	0.007 (0.117)	0.018 (0.110)
TRANS	2.437* (1.187)	2.453** (0.903)	2.158** (0.951)		3.861** (1.256)	8.571*** (2.424)
Adj-R <sup>2</sup>	0.618	0.618	0.589	0.581	0.574	0.608
Obs.	22	22	22	22	20	19
F	6.891***	9.703***	8.611***	13.191***	5.054***	7.736***

Numbers in parentheses are robust standard errors. \*, \*\*, and \*\*\* denote significance at 10%, 5%, and 1% levels, respectively



Table 4 – Constituency size and regional expenditure, 1980-2000

	(1)	(2)	(3)	(4)	(5)	(6)
C	151.877 (97.744)	159.148** (63.797)	148.83* (62.196)	153.842** (65.439)	357.738** * (103.464)	412.770*** (182.732)
CS	7.933*** (1.295)	7.546*** (1.294)	8.544*** (1.224)	8.142*** (1.203)	8.983*** (1.060)	7.863*** (1.131)
GDP	-0.013 (0.011)	-0.006 (0.009)			-0.013 (0.021)	-0.066 (0.047)
OR	0.722 (1.784)		1.094 (1.882)	0.649 (0.555)	0.233*** (0.072)	0.194** (0.069)
TRANS	1.227** (0.573)	-0.633 (0.567)	1.838*** (0.558)		4.323* (2.229)	4.110** (2.824)
Adj-R <sup>2</sup>	0.757	0.731	0.734	0.710	0.852	0.871
Obs.	22	22	22	22	20	19
F	13.271***	16.276***	16.570***	23.244***	21.548***	23.411***

Numbers in parentheses are robust standard errors. \*, \*\*, and \*\*\* denote significance at 10%, 5%, and 1% levels, respectively.

Table 5 – Legislature size and regional expenditure, 1995-2000

	(1)	(2)	(3)	(4)	(5)	(6)
C	118.899 (96.855)	118.113 (86.987)	79.832* (35.951)	33.639* (23.387)	35.721* (20.003)	32.299** (14.471)
LEG	2.844*** (0.969)	2.839*** (0.911)	2.673*** (0.783)	2.4799*** (0.781)	3.219*** (0.981)	2.807*** (0.957)
GDP	1.021 (3.243)	1.011 (3.114)			11.036* (5.998)	3.958 (7.819)
OR	0.0133 (0.685)		0.020 (0.659)	0.815 (0.653)	0.326 (0.706)	0.533 (0.677)
TRANS	0.842* (0.441)	0.539 (0.507)	0.707** (0.319)		1.232** (0.683)	1.244* (0.870)
Adj-R <sup>2</sup>	0.419	0.419	0.416	0.364	0.442	0.489
Obs.	22	22	22	22	20	19
F	3.076**	4.343**	4.283**	5.429**	2.968*	3.359***

Numbers in parentheses are robust standard errors. \*, \*\*, and \*\*\* denote significance at 10%, 5%, and 1% levels, respectively

Table 6 – Constituency size and regional expenditure, 1995-2000

	(1)	(2)	(3)	(4)	(5)	(6)
C	17.580** (6.504)	24.711** (9.168)	20.776* (15.714)	14.998 (12.701)	18.090** (8.676)	18.055* (11.754)
CS	1.993*** (0.315)	1.958*** (0.298)	2.048*** (0.299)	2.012*** (0.285)	2.172*** (0.344)	2.029*** (0.383)
GDP	1.258 (1.862)	1.323 (1.816)			6.538* (4.109)	8.419** (4.324)
OR	0.209 (0.457)		0.232 (0.449)	0.329 (0.504)	0.516 (0.516)	0.371 (0.545)
TRANS	1.213*** (0.308)	1.256*** (0.296)	1.149** (0.511)		1.313*** (0.391)	1.633*** (0.534)
Adj-R <sup>2</sup>	0.740	0.737	0.733	0.729	0.737	0.726
Obs.	22	22	22	22	20	19
F	12.143***	16.886***	16.483***	25.571***	10.536***	9.284***

Numbers in parentheses are robust standard errors. \*, \*\*, and \*\*\* denote significance at 10%, 5%, and 1% levels, respectively.