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Comments welcome

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THE OPPOSITE CYCLES OF LAWS AND DECREES

ABSTRACT

We test two predictions of the political legislation cycle theory, that legislators maximize their reelection probabilities concentrating the approbation of general purpose laws, in the interest of unorganized voters, before the elections, while they satisfy special interest groups' demands in return of rents at the beginning of the legislature. This discrimination in time and the choice of legislative instruments with different degrees of visibility minimizes the electoral costs of satisfying lobbies' interests. The empirical analysis of the sample of Italian legislation between 1948 and 2008 strongly supports the hypothesis of opposite cycles in decrees and laws.

Keywords: Economic theory of legislation – Political legislation cycle – voters – special interest groups

JEL Classification codes: H61 · H62 · C49

1. Introduction

This paper examines two joint empirical restrictions of the theory of the political legislation cycle (Padovano and Lagona, 2008; Wittman, 1997; Padovano, 1995) that has not been tested so far, namely: a) under certain constraints, legislators tend to use different legislative instruments to satisfy the demands of organized special interest groups and unorganized voters; b) to maximize political returns, they concentrate the supply of these legislative acts in two separate periods of the legislature.

The theory underlying these predictions is based on Padovano and Lagona (2008) and Padovano (1995); to avoid repetitions, here we will describe the logic of the argument. The model is based on the interactions between organized special interest groups, unorganized voters and elected legislators. Interest groups and voters demand legislation in exchange of, respectively, resources and votes. Legislators supply legislation and maximize a utility function that includes resources from interest groups and votes from voters. To legislators resources obtained from interest groups represent a rent from holding office, while votes are needed for reelection. To supply legislation, legislators must gather a 51% majority of votes in the Parliament throughout the duration of the legislature. In line with the economic theory of legislation, legislation is assumed to be redistributive in nature; legislators act as brokers, in that they supply laws to groups that are politically more rewarding to benefit at the expense of groups that are politically less costly to damage. It can be demonstrated that this implies concentrating the benefits on interest groups that are high demanders of a particular legislation and spreading the costs over the largest possible pool of unorganized voters. This creates a trade-off between satisfying the demands of interest groups' and those of voters (Olson, 1970; McCormick and Tollison, 1981). Padovano and Lagona (2008) show that the finite horizon created by the legislature generates incentives to discriminate in time the supply of legislative acts to special interest groups and to voters, thus solving the trade-off. Specifically, legislators concentrate on special interest group legislation at the beginning of the legislation, when re-election concerns are discounted away and resources are gathered. As the next election draws near, time discounting raises the value of votes relative to the marginal utility of (the already gathered) resources, and makes it optimal for legislators to satisfy voters' demands, by means of broad based, public goods type of legislation, rather than securing private rents.

Padovano and Lagona (2008) show that the strategy of discriminating the two types of legislation in time keeps the majority cartel, viz. the government coalition, together. This because such a strategy leaves enough time to punish eventual defectors when the majority is satisfying the demands of special interest groups', by switching immediately to a vote-maximizing strategy, from

whose returns in terms of reelection the defector gets excluded. (Padovano, 1995; Harrington, 1987). Finally, insofar as rents do not go beyond an optimal value, voters find it optimal to keep the majority in office because a strategy of not reelecting legislators that had appropriated a positive amount of rents would incentivize them to divert all they can grab while they are in office (Persson et al., 1997). Only if legislators appropriate more than this optimal amount of rents voters vote for the opposition at the end of the legislature – only to face the same trade-offs as before.

The model generates a number of interesting predictions. The first is that the legislation that favors interest groups and voters at large should have opposite cycles: the production of special interest group legislation have a peak close to the beginning of the legislature and then taper off as the next election draws near; conversely, general type of legislation that favors voters should be at a minimum at the beginning of the legislature and have a maximum at the end of the legislature. Although evidence of this has been found (the so-called *leggine*: Pasquino, 1995), distinguishing between types of legislation – narrow focused vs. general, public goods oriented - is arbitrary and inevitably leads to controversial categorizations. To avoid these problems we exploit a feature of the comparative statics of the model, namely that legislators have an incentive to minimize the visibility (i.e., the information costs) of legislative acts that favor special interest groups, to tilt the trade-off between interest groups and voters' interests in favor of the former. In terms of the model, this pushes the optimal time to switch to the satisfaction of voters' demands closer to the end of the legislature, which allows legislators to secure a higher amount of rents holding their reelection probabilities constant.

The legislative procedures that govern the production of legislation in most countries provide legislators with a menu of legislative instruments they can choose from, each characterized by different degrees of visibility/information costs. One goes from ministerial decrees, which do not require an explicit vote of the parliament due to their administrative nature and hence are hardly visible to voters, to legislative decrees that are often approved by parliamentary committees, to formal laws that, insofar they require an explicit vote of the plenary assembly, have a maximal visibility and engender lower information costs to voters. Furthermore, because the legislative procedures regarding the choice of these legislative instruments are often vague or even conveniently interpreted, if not ignored, legislators enjoy considerable discretion in the choice of type of act to implement any type of decision. They will then prefer a less visible legislative instrument, such as administrative and legislative decrees, to implement decisions that favor special interest groups. Conversely, legislation that aims at satisfying the interests of voters at large will tend to be enacted by means of very visible legislative instruments, such as formal laws that require a majority vote in the plenary assembly. Hence we assume that the different types of legislation can

be identified by the legislative instrument. This correlation probably engenders a high degree of approximation; but to the extent that such approximation exists, it slants the empirical estimates against the predictions of the model. If general purpose legislation is passed by decrees and laws are used to approve narrow interest decisions, the cycles should be less evident, and the precision of the estimates should fall below statistically significant levels.

The model generates two more empirical restrictions that help to identify the conditioning phenomena to be introduced in the estimating equation. First, insofar as voters' rewards in terms of votes must be shared between all the members of the government coalition, the magnitude of the cycle should be positively correlated with the number of legislators (or parties) members of the coalition. In other words, larger majorities (larger number of legislators supporting the government) should approve both a higher number of decrees to satisfy interest groups' demands and a higher number of laws to satisfy voters. Second, if any conditioning phenomena, such as a war of attrition within the coalition, prevent attaining the legislative production required to ensure re-election, a change of the government coalition should take place. In this case we should not observe a peak in legislative production at the end of the legislature, but we should still observe one in the production of decrees at the beginning of the legislature. In other words, interest groups will be satisfied, but voters won't.

2. Data set and explanatory variables

The empirical analysis exploits a newly assembled dataset about the legislative production of the Italian Parliament from May 1948, when the Constitution of the Republic was enacted, to April 2008, when the XV legislature ended. The dataset reports the monthly counts of ordinary laws, constitutional laws and government legislative acts (such as the *decreti legge*, the *decreti legislativi* and the *decreti delegati*), that require a vote of the Parliament to come into effects, as well as the monthly counts of legislative instruments that do not require such a vote to be implemented, namely the decrees of the President of the Republic (D.P.R.s), the ministerial decrees (*decreti ministeriali*) and the administrative decrees (*decreti amministrativi*) directly implemented by the Ministries. Moving from the underlying assumption explained in the previous section, the first group of legal instruments compose the category of "general interest legislation", while the second group is composed by the preferred instruments to promote "special interest" legislation.

The first 11 legislatures, generally known as those of the first Republic, i.e., before a series of scandals and an electoral reform completely overhauled the party system, saw 47 different governments. Notwithstanding this number, there were few effective changes of coalitions and of political equilibria, as the Christian Democracy was the leading party of all the government

coalitions, and the Socialist Party participated in almost all of them since 1962. Only since 1994, i.e., with the XII legislature, the first of the so-called "Second Republic", has an effective alternation in government taken place, with center-left and center right coalitions replacing each other. In this period, a change of government coalition always implied a change of legislature, at the cost of calling an early election. From 1994 to 2008 the count of Italian governments rises to 56. .

The legislative production of the Italian Parliament represents an ideal sample to test the PLC theory. Not only it provides a very large number of observations (719 months of legislative activity) that ensures the efficiency of the estimates; it also offers a considerable variability in the conditioning variables foreseen by the model. The time length of the legislatures, for instance, shows a remarkable amount of variation. Only 7 legislatures out of 15 ended in the 5 year period set by the Constitution (specifically, legislatures I, II, III, IV, X, XIII and XIV), while in the other 8 elections were called in advance. This variability in the length of the legislature is important, since the PLC model restricts the prediction of the legislation cycle to the case that the length of the legislature be known in advance. If the legislature comes to an unexpected end, as it is the case when elections are called early, there should not be an increase of the production of laws in the final months of the legislature.

We have two dependent variables in the model, *LAW*, which includes all legislative acts voted by the Parliament; and *DEC*, which features all decrees that do not require a vote of the Parliament. These variables report the counts of the legislative instruments of each type approved in each month. According to the theory, the production function underlying these two types of legislative acts is the same, what changes is the preferred timing for their approval within the legislation. This prediction is subject to a series of *ceteris paribus* conditions that must be proxied in the empirical analysis. We have therefore grouped the explanatory variables in three vectors: the proper PLC variables, the war of attrition controls, and the "other" controls. PLC variables are *STARTGOV*, a dummy that marks the first three months of activity of each government; *ENDGOV*, that takes the value of 1 in the last 3 months of activity of the government, and 0 otherwise; and *ENDLEG*, a dummy equal to 1 for the last three months of a normally ending, 5 years long legislature. Theory predicts that the production of decrees (*DEC*) should be positively correlated with *STARTGOV* and negatively with *ENDGOV* and *ENDLEG*.

Three are the regressors included in the wars of attrition vector. The first is *MAJ*, that reflects the minimum percentage of votes that the government majority received by either Parliamentary chamber at the time of the initial confidence vote. Since the Italian parliamentary system is a perfect bicameralism (all laws must be approved in the same reading by both Chambers), not disposing of the majority in either Chamber *de facto* reduces the government to a minority one. The PLC theory

assigns to *MAJ* the role of a scale factor, which should be positively correlated with both *LAW* and *DEC*. The second is *H*, which meters the degree of homogeneity of the government coalition, weighted by the heterogeneity of the opposition. The information gathered from this index improves on the working assumption of the theoretical model, that parties in the government and in the opposition coalition are assumed of equal size. In month *t*, the homogeneity index is given by

$$H_t = HG_t \times (1 - HO_t)$$

where

$$HG_t = \sum_{g=1}^{G} f_{gt}^2 \qquad\qquad HO_t = \sum_{o=1}^{O} f_{ot}^2$$

f_{gt}^2 and f_{ot}^2 are the squared relative frequencies of the number of the overall parliamentary seats (Chamber of Deputies plus Senate) held by the government and the opposition coalition, respectively, in month *t*. The theoretical range of *HG* and *HO* is between 0 and 1. They are equal to 1 when there is a single party in the coalition (maximum cohesion), while they approach 0 as the number of parties increases (maximum heterogeneity). As it might be expected, the *HG* and *HO* indexes are highly correlated; we have thus decided to mix them into the regressor H_t, so to avoid problems of multicollinearity. Empirical tests of the war of attrition literature (Padovano and Venturi 2001) show that in the Italian Parliament more homogeneous government coalitions (compared to the opposition) are less plagued by internal hold-out problems; a positive sign should thus be associated to this regressor with respect to laws (as *H* is linear in homogeneity), while a negative one with respect to decrees. The idea is that more homogeneous majorities should have fewer problems to obtain a favorable parliamentary vote, while more fragmented one eschew likely parliamentary defeats by approving more non-voted decrees. The third war of attrition control variable is *NMIN*, which captures the heterogeneity of the government coalition at the cabinet level. *NMIM* is the number of the portfolio and without portfolio ministers that compose the Council of Ministers of each of the 57 governments in the history of the Italian Republic. In Italy, as elsewhere, more fragmented or more ideologically polarized government coalitions often require a larger number of ministerial positions to find a political equilibrium in the cabinet. Since *NMIN* is linear in fragmentation, it should be positively correlated with *DEC* and negatively with *LAW*.

Finally, the vector of the "other controls" includes two covariates: *SUMMER*, a dummy equal to one in the months of Parliamentary recess (usually August), when the production of laws basically drops to 0, and should be negatively correlated with both dependent variables; and *PARLESP*, which counts the average number of years that the ministers of each government had served as either deputies or senators (or both) at the time they sworn in. If they had never been members of the Parliament before (as it is the case for the so-called "technical" ministers), the reported value is

0. More experienced ministers, with greater political weight, will find it easier to make legislation pass through the hurdles of a parliamentary debate and vote. Other things being equal, we expect parliamentary experience to be negatively correlated with *DEC* and positively with *LAW*.

Equation 1 illustrates the model specification, while table 1 reassumes the predicted signs for each dependent variable:

$$\begin{cases} LAW_t = a_{LAW} + a_1 STARTGOV_t + a_2 ENDGOV_t + a_3 ENDLEG_t + a_4 H_t + a_5 MAJ_t \\ \qquad\qquad + a_6 NMIN_t + a_7 SUMMER_t + a_8 PARLESP_t + e_t \\ DEC_t = b_{DEC} + b_1 STARTGOV_t + b_2 ENDGOV_t + b_3 ENDLEG_t + b_4 H_t + b_5 MAJ_t \\ \qquad\qquad + b_6 NMIN_t + b_7 SUMMER_t + b_8 PARLESP_t + u_t \end{cases} \quad (1)$$

Table 1. Expected signs

Covariate	*LAW*	*DEC*
STARTGOV	-	+
ENDGOV	+	-
ENDLEG	+	-
MAJ	+	+
H	+	-
NMIN	-	+
SUMMER	-	-
PARLESP	-	+

3. Model estimates

We start the empirical analysis assuming that the observed counts of legislative acts y_i, i=1,..,, n are realizations of independent Poisson random variables with parameter λ_i, i = 1,..,, n. In count data analysis, the interest is usually focused upon the parameter vector $\lambda = (\lambda_1,..., \lambda_n)$, which is usually modeled, in a regression context, by defining a generalized linear model (GLM) for the analyzed response. Formally, the response is modeled as a function of a set of p covariates $x_i = (x_{i1},..., x_{ip})$, specified as follows:

$$\log(\lambda_i) = \mathbf{x}_i'\beta$$

where a canonical link has been adopted and $\beta = (\beta_1,..., \beta_p)$ represents the p+1-dimensional vector of regression parameters. Failure of the adopted model to fit the data could be due to the

misspecification of any of the elements defining the GLM. A simple way to unify these possibilities is through omitted variables. We assume that some fundamental covariates were not considered in the specification of the model and that their joint effect can be summarized by adding a set of unobserved variables u_i, i=1,.., n, to the linear predictor:

$$\log(\lambda_i) = \mathbf{x}_i'\beta + u_i$$

Various alternative parametric specifications have been proposed for the random terms; yet only in the case of log-gamma distributed additive random effects the above integral has an analytical solution, leading to the well-known negative binomial model, which is adopted here. The two models in equation (1) are estimated jointly and simultaneously, to maximize the comparability of the results between the responses to the regressands *LAW* and *DEC*. Table 2 illustrates the estimates of the GLM estimations.

Table 2. Regreession results

Response	coefficient	Std. err.	z-stat	P>|z|
$STARTGOV_{LAW}$	-0.978	0.056	-17.45	0.000
$ENDGOV_{LAW}$	0.013	0.140	0.09	0.926
$ENDLEG_{LAW}$	0.551	0.032	17.19	0.000
MAJ_{LAW}	2.091	0.169	12.36	0.000
H_{LAW}	1.575	0.109	14.50	0.000
$NMIN_{LAW}$	-0.057	0.003	-17.72	0.000
$SUMMER_{LAW}$	-1.003	0.037	-26.97	0.000
$PARLESP_{LAW}$	0.028	0.014	2.01	0.044
$STARTGOV_{DEC}$	0.179	0.087	2.05	0.040
$ENDGOV_{DEC}$	0.443	0.281	1.58	0.115
$ENDLEG_{DEC}$	-0.508	0.167	-3.04	0.002
MAJ_{DEC}	1.996	0.371	5.38	0.000
H_{DEC}	-1.088	0.38	3.56	0.000
$NMIN_{DEC}$	0.068	0.012	5.74	0.000
$SUMMER_{DEC}$	-0.259	0.072	-3.56	0.000
$PARLESP_{DEC}$	0.029	0.045	-0.65	0.516
C_{LAW}	2.410	0.166	14.55	0.000
C_{DEC}	-1.674	0.449	-3.73	0.000
Log likelihood	-5683.3664			

The estimated coefficients lend strong support to the prediction of an opposite cycle in laws and decrees. At the beginning of their activity, governments tend to approve more decrees than the average calculated along their mandate, as the positive and statistically significant coefficient on $STARTGOV_{DEC}$ shows, and a lower number of laws, as indicated by the negative and statistically significant coefficient on $STARTGOV_{LAW}$. On the other hand, when the regular elections are near, the government significantly increases its production of laws (positive and significant coefficient on $ENDLEG_{LAW}$) and reduces that of decrees (negative and significant coefficient on $ENDLEG_{DEC}$). This is exactly the prediction of the theory predicts. Interestingly, these two effects are of almost equal magnitude ($ENDLEG_{LAW}$=0.55; $ENDLEG_{DEC}$=-0.51). If, on the other hand, the government loses the confidence of the parliament during the legislature, or if the legislature ends early, the production of neither laws nor decrees changes significantly: neither $ENDGOV_{LAW}$, nor $ENDGOV_{DEC}$ are statistically significant. Also this result is consistent with the PLC theory. These results confirm and extend those presented in Lagona and Padovano (2008) for the production of laws in the first XIII legislatures.

The controlling covariates for wars of attrition in the activity of the Italian governments are also in line with the PLC theory. A larger majority facilitates the approbation of both decrees and laws, but the stronger effect is for the legislative acts that require a parliamentary vote (MAJ_{DEC}=1.99, MAJ_{LAW}=2.09). Both estimated coefficients are significant at the 1% level. *Ceteris paribus*, more homogeneous government coalitions tend to resort to decrees less, in order to implement their decisions (H_{DEC}=-1.09) and to laws more (H_{LAW}=1.57). When the war of attrition is considered at the government, rather than parliamentary, level, the results do not change: the estimated coefficient on $NMIN_{LAW}$ is negative and significant, while that on decrees, $NMIN_{DEC}$, is positive and significant.

Finally, the other controls show the predicted signs. The summer recess coincides with a drop in legislative production of both kinds, but, quite interestingly, the drop is much more evident for laws ($SUMMER_{LAW}$=-1.002) than for decrees ($SUMMER_{DEC}$=-0.256). The Parliament closes in August, but Ministries remain open; moreover interest groups seem to take advantage of the fact that holidays distract the unorganized voters. The average parliamentary experience of ministers seems not to affect the production of decrees, but it is positively correlated with the approbation of laws.

4. Conclusion

This paper tests an important restriction of the PLC theory, not examined so far for lack of suitable data, that the political legislation cycles of decrees and laws are countercyclical. Decrees in fact peak at the beginning of the legislature and taper off towards the end, while the number of laws approved increases as the elections draw near. Padovano and Lagona (2008) were able to test the

latter implication of the theory on a dataset of the first XIII legislatures of the Italian Parliament. Here we extend the test to XV legislatures (i.e., 7 more years) and, most of all, to the series of decrees of the President of the Republic, of ministerial and administrative decrees, neither of which necessitates a parliamentary vote to come into effect.

The analysis, conducted via joint GLM estimates of the responses to both types of legislative instruments, lends strong support to the core predictions of the theory. Also the controlling factors, which proxy the ceteris paribus conditions of the model, are in fact satisfied in the estimates.

This new successful test of the PLC theory corroborates its explanatory logic, namely, that legislation cycles are a strategy for governing coalitions to remain cohese and to satisfy the conflicting demands of organized interest groups and of unorganized voters with a minimum of political costs. Concentrating the approbation of legislative instruments, that are poorly visible for unorganized voters but not for special interest groups, such as the abovementioned decrees, at the beginning of the legislature (or of the government activity) and of highly visible legislative instruments, such as formal laws, at the end of the legislature, is a way to maximize lobby support (and resources) when the next election loom large and voters' suffrages when, instead, elections draw near.

More tests on non-Italian datasets seem the logical next step ahead in this strand of literature.

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