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**Fiscal policy in Italy in relation to the political
business cycle**

Summary

The main purpose of this work is to show that elections in Italy have not been neutral with regard to the growth trend of government expenditure but have made a substantial contribution to its expansion.

This result is based on the identification of electoral cycles characterised by an asymmetrical structure.

It has, in fact, been shown that, as election time drew near, the government reacted by expanding public expenditure during the period leading up to the elections while afterwards spending continued or went down only a little.

This policy was partly aimed at financing the granting of various types of structural benefits to a large number of voters, with a view to increasing the chance of victory.

This triggered off a cycle the main effect of which was to boost the structural growth of expenditure.

If the cycle had been symmetrical, with only contingent expansion of expenditure, as Nordhaus, at least implicitly, theorised, the results would not have been so detrimental.

In fact, in such a case the pre-electoral expansion phase would have been followed by fiscal restraints in order to balance the budget.

However the cycle found in Italy during the post-electoral phase went in the opposite direction, because of the rigidity of the new expenditure, and the rehabilitation action needed to offset the pre-electoral expansion was not taken.

This result implies that elections can be considered as one of the main structural growth factors of public expenditure.

Another important sector on which elections had considerable influence was that of tax revenues, of which little account is usually taken in studies on electoral political cycles.

In this case also, the electoral cycle was found to be asymmetrical. In other words, taxation, which had remained stable during the electoral period, become heavier after the elections in order to cover, at least in part, the costs of the earlier expansion.

Generally, during the electoral period the Government did not want to increase tax revenues so as not to lose the support acquired as a result of the expansion of public expenditure. However, after the elections, more taxes were imposed, since the elections were far off and it was therefore politically possible for the government to cope with the continuously growing expenditures. Nevertheless, the cycle of increased taxation was not capable of offsetting the increased expenditure. On the other hand, the public deficit got worse during the electoral period, when expenditure went up sharply while revenues remained constant. The new deficit was reduced only during the following period through new taxes by the government. An electoral deficit cycle was thus created by the interaction between the public expenditure cycle and the higher-taxation cycle.

Because of the lag in the effects of tax measures that cycle was asymmetrical: it was characterised by two expansion phases, in election year and the following year, and only one contraction phase, two years after the elections, when the higher revenues decided on during the post-electoral year had already started coming in.

However, it happened that the contraction phase was not sufficient to offset the earlier expansion and the level of the deficit at the end of the electoral cycle was therefore greater than at its beginning.

On the other hand, as a result of all this, the recovery action was disappointing because it was left merely to the increase in revenues while expenditure, as compared to the GDP, continued to grow according to its asymmetrical cycle. A vicious circle was thus created because, in order to cope with the expansion of the expenditure cycle, the government had to increase taxes during non-electoral years. Nevertheless, the deficit increased because of the proliferation of interest costs caused by the public expenditure cycle. To sum up, an empirical analysis of the dynamics of expenditure and revenues shows that the progressive deterioration of public finances in Italy is, to a great extent, due to the asymmetrical structure of the electoral cycle of expenditure.

1. A review of the literature on the political business cycle

1.1 Many researchers have noted the inadequacy of traditional economic models where the government is seen as a benevolent agent with only one objective, that of maximising social welfare. This idea takes no account of the multiple objectives that inspire the government's action, one of the most important of which is the quest for the approval needed to stay in power. (Frey, 1979). Therefore, during the pre-electoral period, re-election becomes the government's main objective and its activities are aimed at improving its image with the voters.

The literature on the subject is divided into two main schools: one emphasises the opportunistic behaviour of governments regardless of their political tendency, the other stresses the party ideologies that influence the behaviour of governments with different political tendencies.

In the "opportunistic" models the government maximises its probability of being re-elected by adopting a policy aimed at manipulating the economy for electoral purposes. In the "partisan" models, on the other hand, different political parties represent the interests of different groups of voters and when they get into power they adopt policies in favour of their electorate. "Left-wing" governments will try to adopt policies aimed at reducing unemployment while "right-wing" governments will be more inclined to adopt price-stabilisation policies at the expense of other economic policy objectives.

This literature developed in two different phases, separated by the advent of the theory of rational expectations in macroeconomics, which completely changed the second-generation models.

The first phase¹ was characterised by the use of models in which the behaviour of the voters was not rational. The second phase² is characterised by more sophisticated models of the economy in which voters behave rationally.

Four groups of models : "opportunistic-traditional", "opportunistic-rational", "partisan-traditional" and "partisan-rational" are thus identified.

1.2 The first type, usually called "Opportunistic traditional", is that referred to by Nordhaus in the "Political Business Cycle" (1975).

In the period leading up to elections, the aim of the government becomes that of laying the foundations for its future re-election, in order to hold on to the power acquired. This new objective is sought through a policy aimed at gaining as much support as possible by taking measures that confer advantages on citizens during the electoral period but are counteracted by postponing their costs to the future without taking the consequences this has on the economy into account. They can act like this because voters, according to Nordhaus, are "forgetful and short-sighted".

The main way the government manipulates voters' preferences is through fiscal policy extremely expansive. This causes a considerable increase in public expenditure and therefore, according to Nordhaus, after the elections the victorious party has to implement a restrictive fiscal policy with sacrifices for the citizens if it wants to keep the public deficit under control. However, elections are far off and this is not a serious problem because, as already mentioned, voters have hazy memories. On the whole, this alternation of pre-electoral expansion and post-electoral restriction has no effect on the growth trend of public spending³.

The estimation methodology used in empirical testing of these theory consists of multivariate regression models in which the dependent variable is based on an economic policy objective, such as the rate of inflation, the unemployment level, the growth rate of the GDP or public expenditure, broken down in various ways, and the explicative variables consist of dummy variables that show the influence of the different electoral phases on the dependent variable.

The main results can be summed up as follows: "opportunistic-traditional" models are generally contradicted by the data on the dynamics of the GDP and the inflation and unemployment rates, while

¹ This phase started in the mid-seventies and is linked to the names of Nordhaus (1975), Lindbeck (1976) and MacRae (1977), for the "opportunistic-traditional" models, and Hibbs for the "partisan-traditional" ones.

² This phase started in the mid-eighties with the work of Cuckierman and Meltzer (1986), Rogoff and Siebert (1988) concerning "partisan-rational" models.

³ From the statistical point of view, many works have tried, by making use of data related to various nations, to test the "opportunistic-traditional" models empirically. To quote a few examples, McCallum (1978), Tufte (1978), Golden and Poterba (1980) and Hibbs (1987) dealt with the case of the United States, while Paldam (1979), Alesina (1989), Alesina and Roubini (1990) analysed the leading OECD countries. For the case of Italy, attention is drawn to the works of Brosio, Ferrero and Santagata (1982), Ferrero and Santagata (1981) and Santagata (1981).

the pattern of public spending is, in most cases, found to be consistent with the theory of an asymmetrical electoral cycle.

1.3 The second type taken into consideration is that of "opportunistic-rational" models⁴. This theory, like Nordhaus' "Political Business Cycle", is based on the assumption that the main objective of politicians in power is re-election. However, they are faced with voters who have rational expectations and are therefore more difficult to manipulate. This type of voter is able to realise when the government is implementing fiscal expansion for electoral purposes and, disapproving of such behaviour, will vote for the opposition. The only way politicians can deceive the rational voter is to take advantage of the fact that the asymmetry in information acts to their advantage.

Therefore, Rogoff and Siebert also prepare a model in which the behaviour of the politicians aims at the creation of an electoral-political cycle but they have to reckon with voters who are smarter because guided by reason. There are two points in which we do not agree with this model:

1) It is more realistic to imagine that many voters are not capable of evaluating the government's economic policy and vote on the basis of the emotional impulse of the moment or on the basis of the ideology with which they identify (Santagata, 1995).

2) Even assuming that the voters are rational, as Rogoff and Siebert maintain, there are significant contradictions in the "Opportunistic-Rational" theory. In fact, it is difficult to imagine how the government could manipulate a rational individual for a long time.

The many empirical checks done on such models contradicted the basic assumptions. (Lewis-Beck (1990), Alt and Chrystal (1990), Gartner (1994)).

1.4 The third type considered here is that of "partisan-traditional" models, based on the studies by Hibbs (1977). According to the "Partisan Theory", the cycle originates from the alternation in power of parties with different ideologies. For example, left-wing governments are traditionally inclined to implement an expansive fiscal policy in favour of employment, even at the cost of increasing inflation⁵.

Right-wing governments, on the other hand, tend to implement a restrictive fiscal policy so as to keep inflation under control, even if this leads to more unemployment. In this way they try to protect their electorate, mainly composed of the entrepreneurial class.

The "Partisan Theory" makes no distinction between electoral and non-electoral periods because it assumes that politicians always behave in the same way. The cycle originates from the alternation of progressives and conservatives in the government and therefore from the alternation between expansion on the part of left-wing governments and restriction by conservatives. From the empirical point of view, the tests on the "partisan" models are very like those on the "opportunistic" ones. The only marked difference is that the group of explicative variables is enriched by the presence of additional dummy variables, capable of identifying the "colour" of the government in power. Multivariate regressions are then conducted in order to find whether the behaviour of the principle macroeconomic variables is systematically influenced, not

⁴ This theory is related to the contributions of Cuckierman and Meltzer (1986), Rogoff and Siebert (1988) and Rogoff (1990)

⁵ Such a policy obviously meets the preferences of their voters, mainly consisting of the less affluent classes, who are thus favoured by better redistribution of incomes. (Hibbs 1977 a, 1977 b, 1992)

only by electoral events, but also by substantial changes of government and whether this effect is permanent or only transitory⁶.

It is noted that "partisan" effects on the dynamics of the variables of economic policy can be found in pure two-party systems, such as the United States and Britain, or in other political systems, like Germany and France, where the "colour" of different governments is clearly identifiable. The propositions derived from the "partisan-rational" models are, on the other hand, firmly rejected by the data for multiparty parliamentary systems characterised by coalition governments, including Italy.

1.5 The last type of model considered originates from the work of Alesina (1987) and Alesina and Sachs (1988). This theory is based on Hibbs' "Partisan Theory" and introduces the concept of rational behaviour by the voters. According to Alesina, they vote prospectively, evaluating the activity of the government and its ideology. The rational elector who votes for a progressive party expects higher inflation and lower unemployment as a result of a more expansive fiscal policy. However, the same elector, being rational, is convinced that this policy should be pursued with moderation to avoid the negative effects of an excessive balance deficit. The same type of reasoning is valid *mutatis mutandis* for rational electors who vote for a conservative party (Alesina and Sachs (1988)). The "Rational Partisan Theory" thus implies transitory cycles during the electoral period, followed by corrections capable of bringing public expenditure back to an economically balanced level. The trouble with this model is the same as for all the theories that assume that the voter is rational. As already mentioned, it is difficult to sustain a model in which the voter is knowledgeable about the economy and capable of evaluating the government's fiscal policy and its consequences in the future (Hibbs, 1989)⁷.

1.6 It seems reasonable to wonder whether there might not be an "inverse causation" between the economic cycle and the political cycle. We may, in fact, ask ourselves whether the behaviour of the economic cycle, and therefore the results of a government's economic policy, contributes to explaining early elections and/or government crises. We shall deal here with some of the studies that have tried to formulate and test inverse causation theories (from the economic to the political cycle) in relation to the duration of governments in parliamentary systems. According to these studies (Ito (1990), Terrones (1989)), the government, instead of manipulating the economy with a view to future elections, may adopt an "opportunistic" strategy with regard to the choice of *timing* by calling an election during a period of autonomous expansion of the economy⁸.

The theory is not confirmed by the data, except in the case of Japan for which the positive results found by Ito and Park (1988) and Ito (1990) are confirmed by the analysis done by Alesina and Roubini (1990).

⁶ Empirical verifications of such theories like, for example, those proposed by Alesina and Sachs (1988) and Hibbs (1987) for the United States and by Alt (1985), Paldam (1989 a, b), Sheffrin (1989), Alesina (1989) and Alesina and Roubini (1990) for samples of OECD countries, are in agreement in only accepting the implications of the "partisan-traditional" models in particular situations

⁷ This consideration is also supported by the empirical evidence, since subsequent works (Hibbs (1989), Alt (1990), Paldam (1989)) are all agreed in rejecting the implications of the "Partisan rational" models because of the very uncertain suppositions on which they are based (Hibbs (1989)).

⁸ Ito (1990) and Terrones (1989) maintain in these models that the choice of the moment at which to call an election is the basic strategic variable available to the government, which, instead, has no direct control over real macroeconomic variables. The basic difference between the model of Ito (1990) and that of Terrones (1989) is that the former assumes unsophisticated behaviour by the voters whereas the latter considers the voters to be rational. However the different hypotheses do not change the nature of the basic results which can be summed up as follows: elections are held to capitalise on a favourable economic situation.

Empirical tests of this theory were done by Ito and Park (1988) and Ito (1990) for Japan and by Alesina and Roubini (1990) on a sample of 14 parliamentary democracies

A last limitation of this theory is that it takes as implicit the hypothesis that changes in government can only take place as the result of an election and ignores the possibility, quite frequent in Italy, of the government changing between elections.

1.7 A review of the empirical verifications of the theories on the political business cycle shows that, generally, the "traditional" theories (Nordhaus' "Political Business Cycle" and Hibbs' "Partisan Theory") have been confirmed many times by statistics. On the contrary, the "rational" theories have not received sufficient support from the statistical point of view. For this reason we shall, from now on, devote more attention to the "traditional" models.

We realise that only the "Political Business Cycle" can fit in with our political situation, while there are no grounds for speaking of a Partisan Cycle. In fact, the latter assumes the existence of a two-pole political system, where there are two parties clearly identifiable as left and right.

Such a situation has never occurred in Italy and therefore the "Partisan Theory" does not appear to be a suitable model for our country. On the other hand, Nordhaus' "Political Business Cycle" is certainly closer to the Italian politico-economic situation.

2. The asymmetrical cycle of public spending

2.1 A check on the presence of electoral economic cycles in Italy could well start with a separate analysis of current expenditure, capital expenditure and final expenditure, which are the main "headings" of public expenditure. The appropriation component and the residuals on previous appropriations were brought out for each of these variables since, as we shall see, the results are often qualitatively different.

The data needed to construct the historical series used in this analysis were extracted from the "Conto Riassuntivo del Tesoro", which shows the payments made by the state for the balance sheet expenditures⁹.

The results obtained were deflated and the rates of variation of each quarter calculated on an annual basis. Nine historical series were thus constructed, each composed of 120 observations for a total of 1080 data items concerning public finance from 1969 to 1996. Eight political elections took place during that period, all in the second quarter of years 1972, 1976, 1979, 1983, 1987, 1992, 1994, 1996. The data were processed by Multiple Regression analysis, linking the different public spending variables with qualitative variables expressing the electoral phenomenon.

The qualitative variables used were called:

- 1) PREL
- 2) POST

The first indicates a pre-electoral period equal to the two quarters preceding the elections and the second a post-electoral period of the same length¹⁰.

⁹ This is a monthly document but, in view of the great variability of single payments over various months, the data were grouped into quarters, starting with the 1st quarter of 1969 until the 4th quarter of 1996.

Instead, we consider that the basic requirement for the analysis to be correct is that periods of the same duration be compared and the PREL and POST variables must both be of the same size.

The structure of the qualitative variables selected by us was as follows:

Prel =	{	<p>1 when it indicates an observation related to a pre-electoral period (two quarters preceding the elections)</p> <p>0 when it indicates an observation related to a period outside the pre-electoral period</p>
Post =	{	<p>1 when it indicates an observation related to a post-electoral period (two quarters following the elections)</p> <p>0 when it indicates an observation related to a period outside the post-electoral period</p>

The model is therefore as follows:

$$Y = \alpha + \beta \text{PREL} + \gamma \text{POST}$$

The variable Y, to which the various items of public expenditure will correspond each time, is linked to two electoral type variables in order to verify their contribution to the dynamics of expenditure. If the hypotheses of the economic political cycle are confirmed, the variable PREL should involve an increase of Y, following the fiscal expansion implemented before the elections; therefore we shall have $\beta > 0$. Instead, the variable POST indicates the action of the government after the elections. The latter will make a positive contribution ($\gamma > 0$) if the expansion continues or a negative contribution ($\gamma < 0$) if expenditure contracts.

¹⁰ Some authors (Santagata, 1991) use different temporal profiles for the PREL and POST variables each time, generating equations in which the pre-electoral period and the post-electoral period have different lengths.

We do not agree with that methodology because it implies a comparison of periods of different lengths and this produces results with little significance from the economic point of view.

The constant α indicates the average percentage variation of Y throughout the period considered (1969-1996), regardless of the electoral phenomenon. Since α is a constant it is not influenced by either the variable PREL or the variable POST.

In a non-electoral period, since PREL and POST have no contribution to make, the variation in expenditure will only be equal to α .

On the other hand, during "electoral" quarters, α will be added to the coefficient of either PREL or POST, depending on whether the period is pre-electoral or post-electoral.

Given the particular structure of the qualitative variables, when PREL = 1, and we are therefore in a pre-electoral period, POST = 0 and vice versa. For a given election, we shall never have PREL = 1 and POST = 1.

The average percentage variation of Y will therefore have the following structure:

$$Y = \begin{cases} \alpha & \text{in a non-electoral period} \\ \alpha + \beta & \text{in a pre-electoral period} \\ \alpha + \gamma & \text{in a post-elect. period} \end{cases}$$

The results obtained by regression analysis are set out in the following tables 1, 2, 3

TABLE 1a

CURRENT EXPENDITURE (1969-1996)				
CURR. EXP. (APPR.) = 8.66 + 4.47 PREL + 4.5 POST (2.1)** (2.2)** (2.3)**				
R^2 (adj.) = 0.15	F = 3.0*	D.W. = 1.9	n. obs. = 120	
CURR. EXP. (RES.) = 7.85 - 3.81 PREL - 1.83 POST (1.1) (1.5)* (1.6)*				
R^2 (adj.) = 0.10	F = 3.3**	D.W. = 1.9	n. obs. = 120	
CURR. EXP. (TOT.) = 7.76 + 5.78 PREL + 3.98 POST (3.8)* (1.3)* (1.9)**				
R^2 (adj.) = 0.18	F = 4.1**	D.W. = 1.8	n. obs. = 120	
- t within brackets	- ** = 0.00 α < 0.05	- * = 0.05 α < 0.10	- CURR. EXP. : current expenditure	- APPR. : appropriation
			- RES. : residuals	

1b

VARIABLE	ELECT. CYCLE	PRE-ELECT.	POST-ELECT.	TYPOL.
CURRENT EXPEND. (APPR.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
CURRENT EXPEND. (RES.)	ABSENT	CONTRAC.	CONTRAC.	-----
CURRENT EXPEND. (TOT.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
<ul style="list-style-type: none"> - ELECT. : electoral - TYPOL. : typological - EXPANS. : expansion - CONTRAC. : contraction - ASYMMET. : asymmetric 				

TABLE 2a

CAPITAL EXPENDITURE (1969-1996)				
CAP. EXP. (APPR.) = 4.08 + 11.52 PREL + 15.21 POST (1.45)* (1.6)* (1.8)**				
R^2 (adj.) = 0.13	F = 2.9*	D.W. = 2.1	n. obs. = 120	
CAP. EXP. (RES.) = 5.14 + 12.73 PREL + 15.85 POST (1.2) (2.3)** (1.6)*				
R^2 (adj.) = 0.14	F = 3.0*	D.W. = 2.1	n. obs. = 120	
CAP. EXP. (TOT.) = 5.83 + 13.23 PREL + 18.15 POST₁ (1.5)* (2.8)** (1.69)**				
R^2 (adj.) = 0.18	F = 2.8*	D.W. = 2.1	n. obs. = 120	
- t within brackets - ** = 0.00 α < 0.05 - * = 0.05 α < 0.10		- CAP. EXP. : capital expenditure - APPR. : appropriation - RES. : residuals		

2b

VARIABLE	ELECT. CYCLE	PRE-ELECT.	POST-ELECT.	TYPOL.
CAPITAL EXPEND. (APPR.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
CAPITAL EXPEND. (RES.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
CAPITAL EXPEND. (TOT.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
- ELECT. : electoral - TYPOL. : typology - EXPANS. : expansion - CONTRAC. : contraction - ASYMMET. : asymmetric				

TABLE 3a

FINAL EXPENDITURE (1969-1996)				
FINAL EXP. (APPR.) = 7.58 + 7.37 PREL + 5.82 POST				
(1.9)** (1.4)* (1.5)*				
R ² (adj.) = 0.11 F = 3.4** D.W. = 2.0 n. obs. = 120				
FINAL EXP. (RES.) = 4.73 + 3.85 PREL + 4.81 POST				
(1.1) (1.9)** (1.7)**				
R ² (adj.) = 0.12 F = 2.9* D.W. = 2.0 n. obs. = 120				
FINAL EXP. (TOT.) = 7.76 + 9.18 PREL + 4.41 POST				
(3.2)** (1.3)* (2.4)**				
R ² (adj.) = 0.16 F = 4.7** D.W. = 1.8 n. obs. = 120				
- t within brackets - ** = 0.00 < alpha < 0.05 - * = 0.05 < alpha < 0.10		- FINAL. EXP. : final expenditure - APPR. : appropriation - RES. : residuals		

3b

VARIABLE	ELECT. CYCLE	PRE-ELECT.	POST-ELECT.	TYPOL.
FINAL EXPEND. (APPR.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
FINAL EXPEND. (RES.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
FINAL EXPEND. (TOT.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
- ELECT. : electoral - TYPOL. : typology - EXPANS. : expansion - CONTRAC. : contraction - ASYMMET. : asymmetric				

2.2 The regression analysis of the historical series related to the appropriation and residuals on previous appropriations expenditure headings of the State Balance Sheet showed the presence of recurrent electoral economic cycles. The variables analysed almost always show dynamics characterised by expansion, both in the pre-electoral and post-electoral period, in other words, an asymmetrical cycle. It can, in fact, be seen that the coefficients of the variable PREL related to the six months preceding the elections are all positive except for "current expenses in residuals account".

What emerges is, in other words, an expansive type of fiscal policy during the pre-electoral period.

The POST variable, which expresses the policy implemented by the government during the six months following the elections, was also found to be almost always characterised by positive coefficients (with the exception of current expenses for residuals insensitive to the cycle). On the whole, the expenditure cycle continued even immediately after the elections.

A combined analysis of the PREL and POST variables therefore reveals an asymmetrical type of electoral cycle, characterised by fiscal expansion in both phases.

The main effect of this cycle has naturally been to boost the growth of public expenditure.

In particular it can be noted that the asymmetrical cycle is of considerable proportions as far as capital expenditure is concerned. The variable of capital expenditure is obviously particularly advantageous for the purposes of efficacious electoral manipulation: take, for example, the positive effect new public works can have on the voters.

The result of the cycle found in current expenditures is not so extensive but, in this case also, the non-reversibility of pre-electoral expansion can clearly be seen even though the residuals are not affected by the cycle, in fact, their behaviour is anticyclic. The anomaly that current expenditures in the residual account contract both before and after the elections, in terms of payments, can be explained by the need of the Treasury to prevent overall expenditures becoming excessive, and leading to dangerous inflation. Therefore, before the elections, payment of arrears on previous debts is delayed to leave room for capital expenditure on appropriation and residual liabilities.

This policy is continued after the elections because part of the current and capital expenditure that expanded before the elections continues to expand.

However, the manoeuvre on the residuals is not particularly relevant from the quantitative point of view, particularly if compared with appropriation expenditures. For this reason, the total current expenditures have a very asymmetrical cycle.

In fact, if the ratio between Final Expenditure and Gross Domestic Product for the period 1969-1996 is expressed as a graph, the influence that the dates of elections have had on the growth of public expenditure can clearly be seen.

Fig. 1 : Final expenditure /GDP

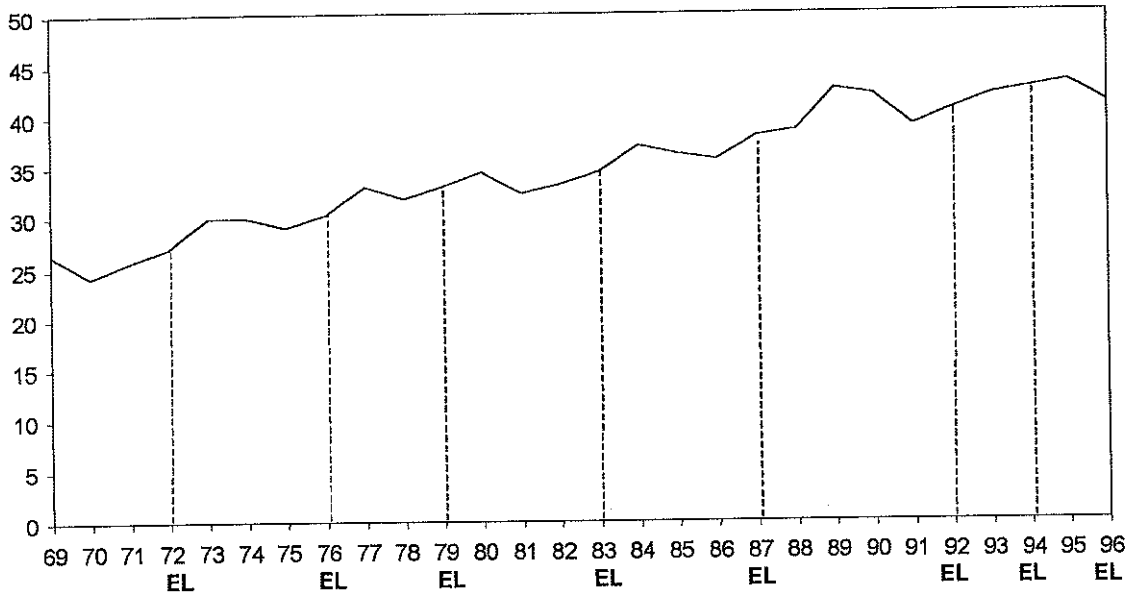


Fig. 1 shows that in every election that took place during the period 1969-1996 there was an expansive fiscal policy during both the pre-electoral and post-electoral periods.

This caused many asymmetrical electoral cycles that generated structural growth in public expenditure.

The only case where public expenditure had an anticyclic trend was the 1996 elections. Nevertheless those elections were held during a period of shock, due to the restrictive fiscal policy adopted by the government in order to achieve the Maastricht parameters, and were therefore held under unusual conditions.

The presence of asymmetrical electoral cycles contradicts what Santagata (1991) maintained with regard to the period 1969-1986. He finds electoral cycles characterised by a phase of expansion of the expenditure during the pre-electoral period and a phase of contraction during the post-electoral period. In this way the cycle assumes a symmetrical type of structure and is therefore neutral with regard to the public expenditure's growth trend.

That conclusion is not acceptable because it is based on a biased analysis methodology: each time, in selecting the reference period of the electoral variables, Santagata uses the time profile most sensitive to the electoral phenomenon; in this way the variables PREL and POST assume different sizes in the different cycles and no comparison can therefore be made between the pre-electoral and post-electoral fiscal policy because the values are not homogeneous.

Instead, if the period studied by Santagata is analysed by means of our econometric model, in which the dummy variables are of equal size and uniform during both the pre- and post-electoral periods, the cycle obtained is obviously asymmetrical. This result can be clearly seen from the tables 4, 5, 6.

TABLE 4a

CURRENT EXPENDITURE (1969-1987)				
CURR. EXP. (APPR.) = 4.89 + 4.10 PREL + 5.31 POST (1.6)* (1.7)* (1.8)*				
R ² (adj.) = 0.02 F = 1.4* D.W. = 2.0 n. obs. = 74				
CURR. EXP (RES.) = 7.23 - 0.40 PREL - 3.62 POST (1.7)* (2.4)** (1.90)**				
R ² (adj.) = 0.09 F = 2.8** D.W. = 1.8 n. obs. = 74				
CURR. EXP. (TOT.) = 4.77 + 3.56 PREL + 5.11 POST (3.5)** (2.1)** (2.2)**				
R ² (adj.) = 0.09 F = 3.4** D.W. = 2.2 n. obs. = 74				
<ul style="list-style-type: none"> - t within brackets - ** = 0.00 <math>\alpha</math> <math>< 0.05</math> - * = 0.05 <math>\alpha</math> <math>< 0.10</math> 		<ul style="list-style-type: none"> - CURR. EXP. : current expenditure - APPR. : appropriation - RES. : residuals 		

4b

VARIABLE	ELECT. CYCLE	PRE-ELECT.	POST-ELECT.	TYPOL.
CURRENT EXPEND. (APPR.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
CURRENT EXPEND. (RES.)	ABSENT	CONTRAC.	CONTRAC.	-----
CURRENT EXPEND. (TOT.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
<ul style="list-style-type: none"> - ELECT. : electoral - TYPOL. : typology - EXPANS. : expansion - CONTRAC. : contraction - ASYMMET. : asymmetric 				

TABLE 5a

CAPITAL EXPENDITURE (1969-1987)				
CAP. EXP. (APPR.) = 6.34 + 17.81 PREL + 13.03 POST				
(1.2) (1.5)* (1.9)**				
R ² (adj.) = 0.05 F = 2.1** D.W. = 2.1 n. obs. = 74				
CAP. EXP. (RES.) = 4.65 + 15.93 PREL + 9.81 POST				
(1.4)* (1.7)* (1.3)*				
R ² (adj.) = 0.14 F = 4.0** D.W. = 2.1 n. obs. = 74				
CAP. EXP. (TOT.) = 5.82 + 17.39 PREL + 8.99 POST				
(1.9)** (1.5)* (1.09)				
R ² (adj.) = 0.11 F = 9.9** D.W. = 2.1 n. obs. = 74				
- t within brackets - ** = 0.00 α <math>< 0.05</math> - * = 0.05 α <math>< 0.10</math>		- CAP. EXP. : capital expenditure - APPR. : appropriation - RES. : residuals		

5b

VARIABLE	ELECT. CYCLE	PRE-ELECT.	POST-ELECT.	TYPOL.
CAPITAL EXPEND. (APPR.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
CAPITAL EXPEND. (RES.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
CAPITAL EXPEND. (TOT.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
- ELECT. : electoral - TYPOL. : typology - EXPANS. : expansion - CONTRAC. : contraction - ASYMMET. : asymmetric				

TABLE 6a

FINAL EXPENDITURE (1969-1987)				
FIN. EXP. (APPR.) = 4.11 + 5.91 PREL + 5.75 POST				
(1.2) (2.1)** (1.3)*				
R^2 (adj.) = 0.01	F = 1.6*	D.W. = 1.9	n. obs. = 74	
FIN. EXP. (RES.) = 5.88 + 4.33 PREL + 2.56 POST				
(2.0)** (4.2)** (1.3)*				
R^2 (adj.) = 0.16	F = 4.5**	D.W. = 2.0	n. obs. = 74	
FIN. EXP. (TOT.) = 4.09 + 5.73 PREL + 4.77 POST				
(2.1)** (2.0)** (1.5)*				
R^2 (adj.) = 0.07	F = 2.5*	D.W. = 2.1	n. obs. = 74	
- t within brackets	- ** = 0.00 α < 0.05	- * = 0.05 α < 0.10	- FINAL. EXP. : final expenditure	- APPR. : appropriation
			- RES. : residuals	

6b

VARIABLE	ELECT. CYCLE	PRE-ELECT.	POST-ELECT.	TYPOL.
FINAL EXPEND. (APPR.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
FINAL EXPEND. (RES.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
FINAL EXPEND. (TOT.)	PRESENT	EXPANS.	EXPANS.	ASYMMET.
<ul style="list-style-type: none"> - ELECT. : electoral - TYPOL. : typology - EXPANS. : expansion - CONTRAC. : contraction - ASYMMET. : asymmetric 				

3. The taxation electoral cycle

3.1 Now we want to verify the effect of the elections as for revenues. However, we believe that a study of tax revenues is essential because the measures adopted by the government in this sector can play a decisive role in winning the elections.

In most cases the government goes before the voters with a promise to reduce the pressure of taxation or, at least, to keep it constant ¹¹.

The analysis will use the multiple regression model used in the previous section.

However, the structure of the variables needs to be altered in order to include those aspects typical of tax revenues that are not found for public expenditure. We refer to the need to "delay" the dependent variable by one year, in order to allow for the lag existing between the time when tax revenues become due and the time when they are collected ¹².

The model will make reference to a historical series that gives the real rates of variation, on an annual basis, of tax revenues from 1969 to 1996 ¹³.

The qualitative variables that express the electoral phenomenon have been called POL and POST(1). The first is to test the government's tax policy during the electoral year and the second in the following year.

The model is therefore formulated as follows:

$$Y = \alpha + \beta \text{ POL} + \gamma \text{ POST}(1)$$

¹¹ On the other hand, non-tax revenues seem to have no particular relevance for the purposes of electoral manipulation. Infact they include:

- income on State property
- interest and refunds of miscellaneous Treasury advances and loans
- recoveries and reimbursements
- items offset by expenditure
- sale on property and redemption of rents
- ammortisation of assets

A change in these revenues only affects a few voters and is therefore not felt by the majority of taxpayers. The only possible case where non-tax revenues could give rise to electoral advantages would be if, thanks to their expansion, the government could at the reduce taxation at the same moment. This hypothesis will be verified later.

¹² In some cases the state takes longer to collect but, on an average, 85.16% of tax revenues are collected after one year (Relazione Corte dei Conti, 1996). The model can therefore be simplified, delaying the dependent variable for this period of time only, without the analysis losing significance.

¹³ We decided to use observations on an annual basis since, because of the lag in the collection procedures, there would be no point in referring to quarterly data as was done for the analysis of public expenditure.

By means of regression analysis, we verify the hypothesis that the government endeavours to keep tax revenues constant during the electoral year. The objective of this policy is to prevent the support acquired thanks to the expansion of public expenditure being lost as a result of an increase in tax rates.

Tax revenues should therefore have variation rates of close to zero, confirming the hypothesis that the tax rates were not changed during the electoral year. This is the same as saying that coefficient β of variable POL should be nil because the elections make no contribution to the average growth of revenues (α).

The other hypothesis to be verified is the one according to which the government tends to increase taxation during the year after the elections in order to reduce the public deficit. If such a situation did occur it would be shown in the regression model by coefficient $\gamma > 0$, because the post-electoral period would make a positive contribution to the average variation in tax revenues indicated by α .

The results of the regression analysis are shown in the table 7

TABLE 7a

TAX REVENUES ANALYSIS			
TAX REVEN. = 9.72 - 0.24 POL + 2.78 POST(1) (1.9)** (1.5)* (2.3)*			
R^2 (adj.) = 0.12	F = 4.8**	D.W. = 2.0	n. obs. = 28
- t within brackets - ** = 0.00 α < 0.05 - * = 0.05 α < 0.10		- TAX. REVEN. : tax revenues	

7b

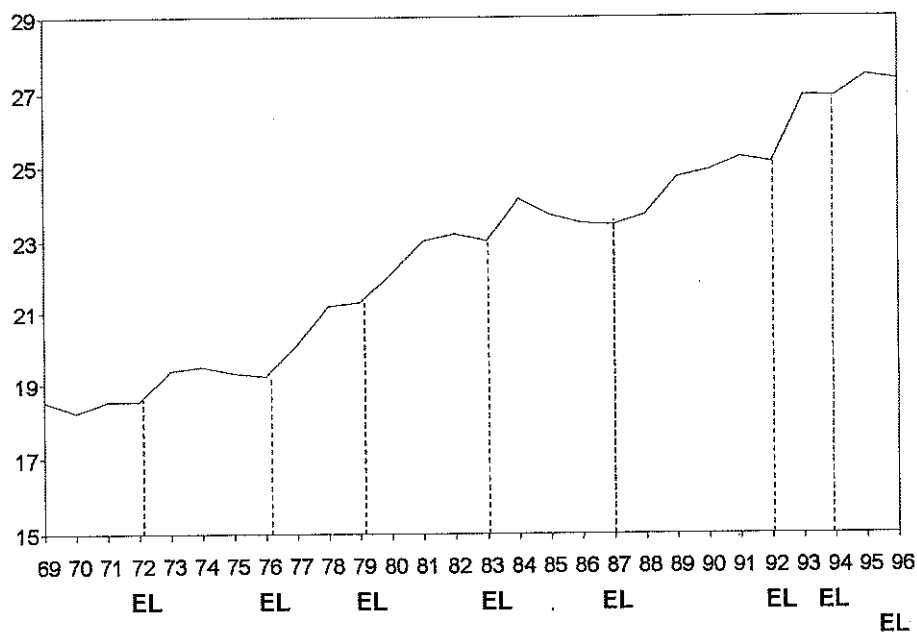
VARIABLE	ELECT. CYCLE	PRE-ELECT.	POST-ELECT.	TYPOL.
TAX REV.	PRESENT	CONTRAC.	EXPANS.	ASYMMET.
- ELECT. : electoral - TYPOL. : typology - EXPANS. : expansion - CONTRAC. : contraction - ASYMMET. : asymmetric				

3.2 The regression analysis of tax revenues confirmed that, during the electoral period, the government did not merely act on public expenditure but decided to carry out an opportunistic manoeuvre with regard to revenues also. This can be seen from the dynamics of the tax revenues, which go down by an average of 0.24% during the electoral year and up by 2.7% the next year (lag).

This policy generated an asymmetrical cycle that can be defined as a “heavy taxation electoral cycle” since it originates from the tax measures adopted.

Another way of verifying the presence of opportunistic behaviour in this sector is to analyse tax revenues compared to the GDP as in fig.2.

Fig 2 - Tax Revenues / GDP



It can be seen that, for all the elections, the tax revenues remained almost constant during the electoral year and increased in the post-electoral year.

Consideration of the taxation cycle enables a more detailed analysis of the government's economic policy to be made than the one emerging from the study of public expenditure.

A joint analysis of the two cycles shows that the government engaged in a restoration operation that was, on the whole, partial and ineffective. This policy had negative effects in the long term.

This kind of policy did not make it possible to offset properly the increase in expenditure, which reached its maximum expansion precisely during the electoral period.

In other words, even though both cycles are asymmetrical they are characterised by different structures because the expenditure cycle has two expansion phases while the revenue has one

phase during which it remains constant and one in which expands. The result is that the increase in public spending is greater than the increase in tax revenues.

Adding to this the fact that non-tax revenues had been going down steadily over the years and were therefore not capable of adequately supplementing the tax revenues (Relazione Corte dei Conti, 1996) it can be seen why the deficit worsened.

4. The asymmetrical electoral cycle of the deficit

4.1 In the previous paragraph it was seen how the phenomenon of electoral manipulation not only affects public expenditure but also tax revenues, creating two distinct electoral cycles.

We now want to find out how their interaction influences the public deficit.

Obviously we shall consider entire revenues as so non-tax revenues ¹⁴.

The regression analysis by which we were able to test the following hypothesis gave the result of table 8.

TABLE 8a

NON-TAX REVENUES ANALYSIS			
$\text{NON-TAX REVEN.} = 17.2 - 0.11 \text{ POL} - 0.17 \text{ POST}(1)$			
(1.1) (1.2) (1.12)			
$R^2(\text{adj.}) = 0.09$	$F = 2.5$	$D.W. = 2.0$	$n. \text{ obs.} = 28$
- t within brackets - ** = $0.00 < \alpha < 0.05$ - * = $0.05 < \alpha < 0.10$		- NON-TAX REVEN: non-tax revenues	

8b

VARIABLE	ELECT. CYCLE	PRE-ELECT.	POST-ELECT.	TYPOL.
NON-TAX REVENUES	ABSENT	Insignificant electoral variable	Insignificant electoral variable	-----
- ELECT. : electoral - TYPOL. : typology - EXPANS. : expansion - CONTRAC. : contraction - ASYMMET. : asymmetric				

¹⁴ There is no need to phase the dependent variable in the regression analysis to be done on such revenues. In fact, we find in the "Relazione Corte dei Conti, 1996" that an average of 85.95% of non-tax revenues is collected during the fiscal year concerned and there is therefore no significant lag due to collection procedures.

It can be seen that the electoral variables make no contribution that could support the theory of manipulation.

4.2 Let us now consider the Deficit/GDP ratio in relation to the dates of elections.

The hypothesis to verify is that there is an increase in the deficit both in the electoral year and the following year and that there is a contraction only two years after the elections. This is related to the delay of revenues by one year, as compared to the time the decisions are made, and to the fact that expenditure does not contract during the post-electoral period.

In order to test such a trend, the variable POL, related to the electoral year, the variable POST(1), related to the year after the elections and the variable POST(2), related to the two years following the elections, have to be introduced.

The model will therefore be as follows:

$$Y = \alpha + \beta \text{ POL} + \gamma \text{ POST}(1) + \delta \text{ POST}(2)$$

Since there is a lag of one year between the expenditure cycle and the revenue cycle, we have to analyse a cycle composed of three phases (POL, POST(1), and POST(2)) in order to consider the phenomenon as a whole.

In particular, the deficit should show:

- a) an increase in the electoral year, due to the expansion of expenditure which is not offset by an increase in revenues.
- b) a further increase during the year after the elections because the expenditure continues to expand during that period, due to the asymmetrical cycle, while the revenues remain constant.
- c) A decrease two years after the elections because the revenues increase during that period due to higher taxation.

From the statistical point of view, this means to say that:

- a) The coefficient of the variable POL is positive ($\beta > 0$)
- b) The coefficient of the variable POST(1) is positive, ($\gamma > 0$)
- c) The coefficient of the variable POST(2) is negative, ($\delta < 0$)

Following two phases of expansion and only one phase of contraction, unless the latter is very great, at the end of the electoral cycle the deficit should have increased compared to the start of the cycle. In this case also, therefore, there should be asymmetry in the electoral cycle, thus confirming the theory that elections are not neutral with regard to the deficit but make a noticeable contribution to its growth.

TABLE 9a

DEFICIT/GDP				
$\text{DEFICIT/GDP} = 6.21 + 0.92 \text{ POL} + 0.75 \text{ POST}(1) - 1.24 \text{ POST}(2)$ <div style="display: flex; justify-content: space-around; font-size: small;"> (1.9)** (1.5)* (1.6)* (1.31)* </div>				
$R^2(\text{adj.}) = 0.12$ $F = 3.8^{**}$ $D.W. = 1.9$ $n. \text{ obs.} = 28$				
<ul style="list-style-type: none"> - t within brackets - ** = $0.00 < \alpha < 0.05$ - * = $0.05 < \alpha < 0.10$ 				

9b

ELECT. CYCLE	ELECTION YEAR	1 YEAR LATER	2 YEARS LATER	TYPOL.
PRESENT	EXPANS.	EXPANS.	CONTRAC.	ASYMMET.
<ul style="list-style-type: none"> - ELECT. : electoral - TYPOL. : typology - EXPANS. : expansion - CONTRAC. : contraction - ASYMMET. : asymmetric 				

4.3 The regression analysis has confirmed the presence of an asymmetrical electoral cycle. In particular, it can be seen that electoral years made a contribution to the deficit of equal to 0.92% of the GDP. Thus, the deficit/GDP ratio, which was around 6.21% in non-electoral years, went up to 7.13% in electoral years.

The estimated equation also shows that the variable POST(1), indicating the policy implemented in the year following the elections, contributes to the growth of the deficit in an amount equal to 0.75% of the GDP. The expansion of the expenditure cycle and the stability of the increased taxation cycle have caused an increase in the deficit. The analysis shows a partial contraction of the deficit only two years after the elections. In fact, variable POST(2) causes a decrease of 1.24% in the deficit/GDP ratio, due to the higher tax revenues occurring during that period.

The two periods of expansion contribute to an increase in the deficit of 1.67%, the restriction phase, on the other hand, causes a reduction in the deficit of only 1,24%.

There is therefore a differential of 0,43% of the GDP that is not recovered and thus the deficit at the end of the electoral cycle is higher than in the previous period..

The progressive deterioration of public finances in Italy is to a great extent due to the asymmetrical structure of the electoral cycles.

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