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Popularity functions, partisan effects and support in Parliament

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Abstract

This paper analyzes the popularity of the main political entities in Portugal. After describing the recent evolution and structure of the Portuguese political system, we present estimations of popularity functions for the Assembly, Government, Prime Minister, and President using several estimation techniques to incorporate the time-series and cross-equation aspects of the models. The results strongly favor the responsibility hypothesis, with unemployment, and to a lesser extent inflation, affecting popularity levels. There is also evidence that voters' evaluations of incumbents' economic performance depends on the ideology and support in Parliament of the latter. Finally, there is evidence of popularity erosion over consecutive terms and of honeymoon effects.

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1. Introduction

Although the international literature on the influence of economic conditions on the popularity of politicians and electoral results is extensive and started several years ago,[1] there is very little work on the Portuguese case.[2] This paper tries to fill that gap in the literature by analyzing the main determinants of the popularity of the Portuguese Assembly, Government, Prime Minister, and President, from May 1986 to October 1999. We start by testing the responsibility hypothesis and the existence of honeymoon effects, popularity depreciation over consecutive terms in office, and personality effects. Then, we account for partisan effects in our popularity functions, and investigate if the way voters hold the political entities responsible for economic outcomes depends on the entities' ideology. Finally we test the hypothesis that voter's evaluations of incumbents' economic performance depends on their support in Parliament, implying that governments that enjoyed a smaller support in Parliament would be less penalized for bad economic outcomes.

We start by estimating our popularity functions models using OLS. Then, in order to appropriately take into account the time series properties of the series, we apply the Box-Jenkins analysis to the data, and estimate the ARIMAX model suggested as appropriate. Finally, because the popularity of the four political entities is likely to be influenced by common factors, we estimate a system of popularity functions for the four entities using Seemingly Unrelated Regressions (SUR) with AR components.

Sections 2 and 3 describe the evolution and structure of the Portuguese political system in order to provide some background to the analyses performed. Section 4 presents the data set used in the paper. The empirical results are reported in section 5. Section 6 concludes the paper.

2. The Portuguese political system since April 25, 1974[3]

In a bloodless coup on April 25, 1974, the Armed Forces Movement (*Movimento das Forças Armadas – MFA*), a group of mainly left-wing military officers, seized power and put an end to the so-called New State (*Estado Novo*), an authoritarian regime that had lasted 48 years. In the following two years there was considerable turmoil in the Portuguese political system. Initially, the country was run by the Junta of National Salvation (which was replaced by the Council of the Revolution on March 1975), but there then followed six temporary governments and two presidents. Over this period, independence was given to the African Overseas Territories, and two military uprisings took place (in March and November, 1975). Elections for the Constituent Assembly, that would prepare and approve a new constitution, were held in April 1975.

The new constitution came into effect on April 25, 1976, and elections for the Assembly of the Republic, the Portuguese unicameral parliament, were held on the same day. Two months later, on June 27, General Ramalho Eanes, an independent military candidate, was elected President of the Republic. He then invested a minority government led by Mário Soares, the leader of the socialist party, on July 16. Eleven years of great political instability followed, during which about ten minority and coalition governments failed before completing their terms, and five legislative elections took place. After two terms of Ramalho Eanes as President of the Republic, Mário Soares won the second runoff of a disputed presidential election (on February 16, 1986), and became the first civilian head of state in 60 years.

On July 19, 1987, the Social Democratic Party (PSD) became the first political party in the thirteen years since the fall of dictatorship to win an absolute majority of

seats in parliament. Cavaco Silva, who had led a minority government in the two previous years, was able to form an all-PSD government, and to be the first prime minister since 1974 to complete his term. He was then reelected by an overall majority of the electorate on October 1991, ruling the country for another four years.

Insert Table 1 about here

Economic recession and scandals involving members of government led to a growing erosion of the government's popularity, which prompted Cavaco Silva to abandon the leadership of PSD on January 1995, and prepare his bid for the presidency. The Socialist Party (PS) won the October 1995 elections, coming very close to an overall majority in Parliament (112 of a total of 230 deputies), and António Guterres became prime minister. Three months later, Jorge Sampaio, former mayor of Lisbon and candidate of the socialist party, won the presidential elections against Cavaco Silva.

For the first time since 1974, a minority government managed to stay in power for the entire term. The most recent legislative elections took place on October 10, 1999, and were again won by the socialists, who got exactly half of the seats in parliament. Although they do not have an overall majority, they cannot be removed by a no-confidence vote, suggesting they are likely to stay in power until the 2003 elections.

Insert Table 2 about here

3. Structure of the Portuguese political system

Since the constitutional revision of 1982 that eliminated the Council of the Revolution, the organs of sovereignty in Portugal are the President of the Republic, the Assembly of the Republic, the Government, and the Courts.

The President of the Republic is directly elected for a five-year term via a secret ballot with universal adult suffrage. There is a second round runoff between the two top vote-getters if none of the contenders receives a majority of the votes in the first round. Presidential candidates must be Portuguese citizens, aged 35 or over. They can either run as independents, or be the appointed candidate of a political party. No President can serve for more than two consecutive terms.

The main duties of the President are: to serve as the head of State and the Commander-in-Chief of the armed forces; to set the dates of legislative elections after consulting the parties; to appoint the Prime Minister and the members of the Government suggested by the latter; to dissolve the parliament and call for anticipated elections; and, to promulgate and have published laws, decree-laws and regulations. The President also has the power to veto laws and decrees, or to send them for consideration by the Constitutional Tribunal.

The Assembly of the Republic is the Portuguese unicameral parliament, currently composed of 230 deputies elected for a period of four years by direct and secret universal adult suffrage, using a proportional electoral system. The duties of the Assembly include (among others): enacting legislation in all areas except those reserved to the Government; approving amendments to the Constitution; approving the government’s general budget and plan of activities; passing motions of confidence or

censure to the government; and appointing ten of the thirteen members of the Constitutional Tribunal.

The Government formulates the general policy of the country and is the highest organ of public administration. It therefore has political, legislative, and executive powers. Its legislative power consists of proposing laws to the Assembly and issuing decrees. Its executive power extends to the execution of the general plans of activities and budgets of the State. The Government is responsible to both the President, who can dismiss it, and to the Assembly of the Republic, which must approve its plans and budgets and may dismiss it by passing a censure motion (a no-confidence vote).

The Government consists of the Prime Minister (generally the leader of the party that received the most votes in the last elections), the Ministers, the Secretaries of State, and the Under-Secretaries of State. The President usually consults the political parties (and takes into account recent election results) when appointing or dismissing a Prime Minister. The other members of the Government are appointed by the President at the proposal of the Prime Minister.

Finally, the Courts are organs of sovereignty with competence to administer justice in the name of the people. They are independent of the other organs and subject only to law. Their decisions are binding on all public and private institutions and prevail over the decisions of all other authorities.

Since the Government is responsible for the conduct of economic policy, we expect it to be the organ of sovereignty whose popularity depends most upon the performance of the Portuguese economy. The popularity of the Prime Minister - the most visible member of the Government – is likely to be next in sensitivity to economic performance. Because the Assembly is usually dominated by the party in government

and approves the laws, plans, and budgets proposed by the latter, it may also be held responsible for the performance of the economy. Finally, the President can only veto the laws or decrees proposed by the Government, or dismiss it. Thus, we expect the popularity of the President to be the least affected by economic performance.

Taking into account the evolution of the political system described in the previous section and increasing influence of the European Union on domestic policies, especially on monetary issues, we expect the way voters hold national political entities responsible for economic conditions to vary over time.

4. The data

The period analyzed in this paper begins in May 1986 and ends in October 1999. This period includes three terms of social democratic governments and a term of a socialist government. Popularity data is available from a weekly national journal called *Expresso*. *Euroexpansão* conducts the polls on a monthly basis, by telephone interviews to a representative sample of about 600 Portuguese adults. The respondants are asked to classify the performance of the Prime Minister, the Government, the Assembly of the Republic, and the President of the Republic as very good (*VG*), fairly good (*FG*) or bad (*B*). We calculate a popularity index, POP_t, for each of the four entities, where the index is a weighted sum of the percentages responding very good and fairly good. Specifically, the index is defined as $POP_t=(2*VG_t+FG_t)/2$.[4] The values of the index over the period studied are shown in Figure 1.

Monthly unemployment rates, seasonally adjusted and standardized, were collected from OECD-Main Economic Indicators. Inflation rates, nominal exchange rates, real effective exchange rates, interest rates, and the industrial production index

were collected from the International Financial Statistics data of the International Monetary Fund.

Insert Figure 1 about here

5. Empirical Analysis

In this section we describe the results of our empirical analysis. Our popularity functions model support for incumbent politicians as a function of economic and political variables. Economic variables are included to test the responsibility hypothesis, which suggests that voters hold politicians responsible for economic conditions. Several economic series have been used in previous studies of popularity functions, but unemployment and inflation are the most commonly used and have received the greatest empirical support. The underlying idea is that the evolution of these series affects the utility of voters, who therefore, punish (or reward) politicians for increases (or decreases) in unemployment and inflation.[5] The influence of political factors is typically taken into account by including variables to control for the erosion of popularity over time in office, or to reflect honeymoon effects of the newly elected politician with the electorate immediately after an election. It is also common to include dummy variables to control for personality factors or special events.

The popularity functions we estimate are of the following form:

$$POP_t = a + b(L)POP_t + fP_t + hH_t + d_iT_{it} + jX_t + u_t \qquad (1)$$

The dependent variable, *POP*, is the popularity index for each of the four political entities. The underlying idea is that popularity levels depend on previous levels of

popularity, *(L)POP*, dummy variables indicating the Prime Minister or President in office, *P*, honeymoon effects, *H*, dummy variables for consecutive terms in office, T_i, and a set of variables representing overall economic performance, *X*.

Portugal had two Prime Ministers and two Presidents during the time period under analysis. It is possible that the popularity levels they enjoyed depended partly on their personal characteristics. In order to account for personal effects on the popularity of the political entities considered in the paper, two dummy variables were included in the set of explanatory variables. The first, *GUTERRES*, takes the value of one when António Guterres is the Prime Minister, and zero otherwise. It was included in the estimations for the Prime Minister, Government, and Assembly. The second, *SAMPAIO*, takes the value of one when Jorge Sampaio is the President of the Republic, and zero otherwise. It was included in the estimations of the President's popularity.

Honeymoon effects are captured by a discrete variable, *H*, that takes the value of six in the first month of each term, declining to one in the sixth month, and taking the value of zero thereafter. The hypothesis being investigated is that politicians have higher popularity indexes during the first months of their administration. Since longer time in office is usually associated with erosion of popularity, we expect negative coefficients for the dummy variables *T2* and *T3*, representing the second and the third terms in office, when the dummy for the first term is not included in the estimation.

In our basic specification, overall economic performance is captured by the rates of inflation and unemployment. We also tested for the effects of the percentage changes of the industrial production index, the nominal exchange rate (Portuguese escudos per US dollar), the real effective exchange rate, and real interest rates. The economic variables were always lagged because economic data is released with a time lag, in

some cases of a few months, making it impossible for the interviewed people to know their current values.

We first estimated all of our models using OLS. To take into account the time series properties of the series we also applied the Box-Jenkins analysis to the data, and then estimated the ARIMAX model suggested as appropriate. Because the popularity of the four entities analyzed is likely to be influenced by common factors, we estimated a system of popularity functions for the four entities by SUR.

Finally, we tested for partisan effects, for the importance of the incumbent's support in Parliament, and for the influence of the entrance to the Exchange Rate Mechanism of the European Monetary System (on April, 1992) or to the European Monetary Union (on January 1999) on the way voters hold the political entities accountable for economic outcomes. That was done by adding to the set of independent variables interaction variables between the economic variables and the dummy variables accounting for the above-mentioned effects.

5.1. OLS results

Results of OLS estimations are shown in Table 3.[6] The first lag of the popularity index is always highly statistically significant and a second lag is also significant in all estimations, although to a lesser degree.[7] The coefficients associated with the dummy variables *GUTERRES* and *SAMPAIO* have negative signs in the four estimations. They are statistically significant in the estimations for the Prime Minister and Government, showing that the popularity of these two entities tended to be smaller when António Guterres was Prime Minister (a socialist government was in office). The same cannot be said about the Assembly, whose popularity does not seem to depend on the particular

Prime Minister or the ideology of the government in office. With respect to the President's popularity, results suggest that it was not affected by the replacement of Mário Soares by Jorge Sampaio on January 1996.

Insert Table 3 about here

The coefficients associated with the dummy variables that represent the second and the third terms in office (*T2* and *T3*, respectively) have a negative sign in all estimations, as expected. The estimated coefficients are highly statistically significant in all but one instance: *T2* is not significant in the estimation for the Assembly. But, *T3* is highly significant in the same estimation, meaning that there is still evidence in favor of the hypothesis that consecutive terms in office lead to the erosion of popularity.[8] The results support the existence of honeymoon effects for all entities except the President. That is, the Assembly, the Government and the Prime Minister seem to enjoy a higher level of popularity in the beginning of their terms.

The results indicate that higher rates of unemployment decrease the popularity of the political entities considered. The estimated coefficients have a negative sign, as expected, and are statistically significant in all but one estimation: that of the Assembly. Regarding the President, the results are a bit surprising given his small influence on economic policy. We would expect his popularity to be the least affected by economic conditions. Finally, there is no evidence that higher average inflation[9] leads to lower popularity. This variable is never statistically significant.

Recursive Least Squares[10] was used to evaluate the stability of the model over time[11] in several ways. We started by simply checking whether the recursive residuals

tended to lie within the ±2 standard errors bands. Then, one-step-ahead and n-step-ahead forecast tests[12] were performed. All these tests fail to reject the hypothesis that the parameters of the four equations of Table 3 are stable.

5.2. ARIMAX results

The high persistence of popularity indexes is usually taken into account by including lags of the dependent variable in the estimations, as we did in Table 3. But, the time series structure of a series may be more appropriately addressed by applying the Box-Jenkins methodology for model selection.

Our first step was to find out if the popularity indexes of our four political entities followed an ARIMA process. Since Dickey-Fuller and Phillips-Perron tests show evidence of stationarity for the popularity indexes, these can only follow ARMA processes. Autocorrelations and partial correlations of those series suggest autoregressive processes of order two, AR(2), for all indexes.

Then, we also estimated an ARIMA model that incorporates the explanatory variables used in our OLS estimations of Table 3. The results of this ARIMAX model, which in our case has only autoregressive (AR) components, are shown in Table 4. They are somewhat similar to those of OLS estimations. The major differences are the lack of evidence of personality effects (the dummy *GUTERRES* is no longer significant) and the fact that the average inflation rate becomes marginally statistically significant for the Assembly and Government. Conclusions regarding other variables remain the same.

Insert Table 4 around here

5.3. SUR results

Because the popularity of the four political entities analyzed may be influenced by common factors, and the residuals of the estimations may be correlated, we estimated the four equations as a system, using the seemingly unrelated regressions technique, commonly known as SUR.

Results, presented in Table 5, reveal a few minor differences from those of the ARIMAX models shown in Table 4. First, there is more evidence of personality effects. The dummy variable *GUTERRES* is now statistically significant for the Government and Prime Minister. The negative signs of the coefficient estimates suggest that António Guterres and his Government are less popular than were their antecessors. Second, all the estimated coefficients for average inflation are again insignificant, as in OLS estimations. Finally, the estimated coefficient for the unemployment rate is statistically significant for the Assembly. Since Wald tests reject the hypotheses of equal coefficients for the unemployment rate across the four political entities, we can say that Portuguese voters do not tend to hold these political entities equally responsible for the evolution of the unemployment rate. The highly statistically significant effect of unemployment on the President's popularity is a bit surprising, given his very small power over economic policy.

Insert Table 5 around here

The residual correlation matrix at the bottom of Table 5 indicates that there is considerable correlation between the error terms of the estimations for the Prime

Minister, Government and Assembly of the Republic. The correlations of these equations' residuals with that of the President are smaller but not negligible. Thus, we can safely argue that it was appropriate to estimate the equation as a system, by SUR.

5.4. Partisan effects and support in parliament

The analysis performed above assumes that the electorate holds the political entities responsible for higher inflation or unemployment in a way that is independent of the entities' political orientation. Although the dummy variable *GUTERRES* also represents the left,[13] a negative coefficient would only mean that the left-wing-oriented political entities tended to be less popular in general.

Swank (1993) introduced partisan considerations into popularity functions. Following Hibbs (1977), he assumed that left-wing parties care more about unemployment and economic growth than right-wing parties, which are more concerned with inflation. Therefore, during recessions the demand for expansionary policies increases, making left-wing proposals more attractive, and the reverse occurs during expansions. Assuming that politicians and voters behave optimally, left-wing parties lose support when inflation rises, unemployment falls or economic growth rises, while right-wing parties gain support from these economic changes.

We tested this hypothesis by adding two interaction variables to the model. We included the product of average inflation, and of the unemployment rate, with a dummy variable, *LEFT*, that takes the value of one when the political entity in office is left-wing oriented, and zero otherwise. A positive estimated coefficient was expected for *UnempRate(-1)*LEFT*, as the left is supposed to gain support when unemployment rises, and a negative coefficient was expected for *AvInflation(-2)*LEFT*, as the left loses

support when inflation rises. Since the President was always left-wing-oriented in our sample, it was not possible to test for partisan effects on the President's popularity. Thus, we estimated a SUR model just for the other three political entities.

Results, presented in Table 6, show evidence of partisan effects related to unemployment, but not to inflation. Although all estimated coefficients for the interaction variables have the expected signs, those for *AvInflation(-2)*LEFT* are not statistically significant. *UnempRate(-1)*LEFT* is always statistically significant, which provides evidence that left-wing-oriented political entities are less penalized by increases in unemployment than right-wing ones.

Another interesting result is that the estimated coefficients for average inflation are statistically significant for the Government and Prime Minister, as in the ARIMAX models, providing some additional evidence that voters also tend to punish these political entities for higher inflation.

Insert Table 6 around here

According to Anderson (2000) and Powell and Witten (1993), evaluations of the political entities' performance should take into account their power and responsibility over economic policy. That is, political entities with greater authority to set economic policy should be those most accountable for economic outcomes. Then, governments that are not supported by a majority of seats in parliament should be less accountable than those that are, since lapses in performance can be blamed on actions taken by the opposition.

We tested the hypothesis that the Assembly, the Government, and the Prime Minister are less accountable for economic outcomes when the party in power does not have a majority of seats in the parliament. That was done by adding two interaction variables that are the products of inflation and unemployment with a dummy variable that indicates when there is a minority government.[14] Since the President is always elected by a majority of voters and his policies do not depend on his support in parliament, he was not considered in these estimations.

The results are shown in Table 7. As in our tests of partisan effects, all estimated coefficients for the interaction variables have the expected signs, but only those concerning unemployment are statistically significant. That is, entities not supported by a majority of deputies in Parliament tend to be less penalized for higher unemployment, but that effect is not statistically significant for inflation.[15] Thus, we only find limited support for Anderson (2000) and Powell and Witten's (1993) hypothesis that the evaluations of the political entities' performance takes into account their power and responsibility over economic policy.

Insert Table 7 about here

5.5. Other results

We also considered the robustness of our results to a number of specification choices. First, we used alternative weights in defining the popularity index.[16] Second, we allowed popularity to deteriorate smoothly with time in office (and not just over consecutive terms) by including an independent variable measuring time in office (in months). Third, we allowed for different definitions of the honeymoon effects dummy,

H.[17] Fourth, we used alternative definitions of average inflation.[18] Finally, we estimated specifications that added as independent variables the monthly percentage change of the industrial production index, the nominal exchange rate, the real interest rate, and the real effective exchange rate (both jointly, and one at a time). None of these changes had important effect on the previous results.[19]

Finally, we tested the hypothesis that the additional constraints on economic policy that resulted from the entrance of the Portuguese Escudo to the Exchange Rate Mechanism (ERM) of the European Monetary System, on April 1992, changed the way in which voters held the political entities accountable for economic outcomes. This was done by including a dummy variable, *ERM*, that takes the value of one after April 1992, and two interaction variables that are the product of that dummy with the unemployment rate, *ERM*UnempRate(-1)*, and with average inflation, *ERM*AvInflation(-2)*. The same procedure was used to test a similar hypothesis about the entrance to the Economic and Monetary Union (EMU), in January 1999. In both cases, there is no evidence that the voters' evaluation of the political entities changed after those events.[20]

6. Conclusions

Our estimates of popularity functions for Portugal are consistent with the responsibility hypothesis: voters hold the four political entities under investigation responsible for economic outcomes, especially unemployment. They also provide some evidence that Portuguese voters hold incumbents responsible for inflation. Results suggest the existence of honeymoon effects and of popularity depreciation over consecutive terms in office. In most of the estimations, we additionally find that the

popularity of the Government and of the Prime Minister tended to be smaller when António Guterres was Prime Minister (a socialist government was in office), while personality effects do not generally affect the popularity of the Assembly and President.

We also find some support for Swank's (1993) partisan hypothesis. Results regarding unemployment are consistent with his hypothesis, but those concerning inflation are not. Similar conclusions are reached when testing for Anderson's (2000) and Powell and Witten's (1993) hypothesis that the effect of economic outcomes on popularity should be affected by whether or not the party in power has a majority of seats in the Assembly of the Republic. That is, we find evidence that minority governments are less penalized for higher unemployment, but that effect is not statistically significant for inflation. Finally, there is no evidence that the effect of economic outcomes on the popularity of the political entities analyzed in this paper changed after the adherence to the Exchange Rate Mechanism of the European Monetary System or to the European Monetary Union.

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[1] Seminal papers are Goodhart and Bansali (1970), Kramer (1971) and Mueller (1971). See Lewis-Beck (1988) and Nannestad and Paldam (1994) for surveys on the topic.

[2] One exception is Veiga (1998).

[3] For a more complete description of the evolution and structure of the Portuguese political system, see several issues of Arthur Banks' *Political Handbook of the World* and of the *World Europa Yearbook.*

[4] The weighted sum of VG_t and FG_t is divided by two in order to force the index to lie between 0 and 100.

[5] Whether voters are forward-looking or backward-looking in their vote decisions will not be an issue for the moment. For simplicity, we assume expectations to be based on competence revealed by politicians in the past. Nannestad and Paldam (1994) state on page 238: "voting is retrospective; but the relevant expectations are very static. Forward looking expectations consequently work equally well."

[6] Tests of stationarity were performed on the variables. This is very important, as classical OLS inference is invalid in the presence of nonstationary variables. Results of ADF and Phillips-Perron tests, indicate that the popularity indexes, the monthly inflation rate, and the unemployment rate are stationary. Concerning other economic variables used in alternative estimations, the monthly percentage changes of the industrial production index, of the end-of-period nominal exchange rate, and of the real effective exchange rate are also stationary. These results are available from the authors upon request.

[7] The number of lags of the dependent variable was chosen according to the Schwartz Bayesian Information Criterion and absence of autocorrelation.

[8] In the case of the Assembly, "consecutive terms in office" means that the same party dominated the parliament over consecutive terms.

[9] The variable used in the estimations of Table 3 to account for the effects of inflation on popularity levels is the second lag of the four-month moving average of monthly inflation:

$$AvInflation_t=(Inf_t+Inf_{t-1}+Inf_{t-2}+Inf_{t-3})/4.$$

Other definitions of average inflation were tried, but results remained essentially the same.

[10] This procedure estimates an equation repeatedly, using increasing subsets of the sample data. The first estimation of the coefficient vector uses the number of observations that is strictly necessary to run the model. Then, the next estimation uses one more observation, and this process is repeated until the entire

sample is used. At each step, a one-step-ahead forecast of the dependent variable is performed using the last estimate of the parameter vector. The errors resulting from the series of predictions are the recursive residuals, which are independently and normally distributed with zero mean and constant variance if the model is valid.

[11] Structural breaks at election dates are accounted for in our model by the dummy variables for the terms in office (*T2* and *T3*) and for the personal effects (*GUTERRES/SAMPAIO*).

[12] The n-step-ahead forecast test uses the recursive calculations to perform Chow Forecast tests for all feasible time periods, adding one observation at a time.

[13] In our sample, the socialist party is in power when António Guterres is Prime Minister (*GUTERRES=1*) and the social democrats rule when he is not (*GUTERRES=0*).

[14] That happened during the first terms of Cavaco Silva (October 1985 to October 1987) and António Guterres (October 1995 to October 1999) as Prime Minister, which correspond to the cases in which the dummy variable *T1* is equal to one (thus, *MINORITY=T1*). The new variables are then: *MINORITY*AvInflation(-2)* and *MINORITY*UnempRate(-1).*

[15] But, as in the previous tests, the estimated coefficients for average inflation are statistically significant for the Government and Prime Minister, providing further evidence that voters also penalize these political entities for higher inflation.

[16] $POP_t=VG_t+FG_t$ and $POP_t=VG_t$. Where VG_t and FG_t are the percentage of the interviewed people classifying the performance of a political entity as *Very Good* or *Fairly Good*, respectively, at time *t*.

[17] In particular, we variously tried dummy variables that took the value of one in the first 6, 5, 4 or 3 months of an administration, and zero afterwards.

[18] Namely, we tried a moving average of the last five or six values of monthly inflation. We also tried a simple first or second lag of monthly inflation.

[19] There results are available from the authors upon request.

[20] These results are available upon request.

Table 1. **Legislative elections and parties in government**

Dates of elections	Winning party or coalition	Share in Parliament	Prime Minister	Form of government
April 25, 1976	PS	43%	Mário Soares	One party, minority
December 2, 1979	AD=PSD+CDS+PPM	51%	Sá Carneiro	Coalition
October 5, 1980	AD=PSD+CDS+PPM	54%	Sá Carneiro	Coalition
April 25, 1983	PS	40%	Mário Soares	Coalition (PS+PSD)
October 5, 1985	PSD	34%	Cavaco Silva	One party, minority
July 19, 1987	PSD	59%	Cavaco Silva	One party
October 6, 1991	PSD	58%	Cavaco Silva	One party
October 1, 1995	PS	48%	António Guterres	One party, minority
October 10, 1999	PS	50%	António Guterres	One party

Note: PS – Socialist Party (center left); PSD – Social Democratic Party (center right); CDS – Social Democratic Center (right), PPM – Monarchic Popular Party (right, monarchic).

Table 2. **Presidential elections**

Dates of elections	President (Major opponent)
June 27, 1976	General Ramalho Eanes (Otelo S. de Carvalho)
December 10, 1980	General Ramalho Eanes (Soares Carneiro)
January 26 and February 16, 1986	Mário Soares (Freitas do Amaral)
January 13, 1991	Mário Soares (Basílio Horta)
January 14, 1996	Jorge Sampaio (Cavaco Silva)

Table 3: **OLS Estimates**

	Assembly of the Republic	Government	Prime Minister	President
C	25.43 (7.38)***	21.07 (4.90)***	25.91 (4.65)***	40.94491 (3.97)***
POP (-1)	0.443 (6.48)***	0.551 (6.12)***	0.659 (9.32)***	0.387 (5.01)***
POP (-2)	0.110 (1.99)**	0.172 (2.44)**	0.085 (1.67)*	0.179 (2.77)***
GUTERRES	-0.536 (-0.58)	-2.933 (-2.52)**	-3.768 (-2.48)**	
SAMPAIO				-1.224 (-1.26)
T2	-0.271 (-0.31)	-2.647 (-3.06)***	-3.860 (-3.61)***	-2.962 (-2.63)***
T3	-2.293 (-2.61)***	-4.542 (-3.77)***	-6.189 (-3.85)***	
H	1.097 (4.43)***	0.860 (3.64)***	1.042 (3.86)***	0.196 (0.70)
AvInflation (-2)	-0.558 (-0.69)	-1.601 (-1.55)	-1.879 (-1.36)	0.085 (0.07)
UnempRate (-1)	-0.321 (-1.49)	-0.600 (-2.44)**	-0.947 (-3.14)***	-0.966 (-2.93)***
Adjusted R-squared	0.67	0.81	0.86	0.65
Schwarz criterion	4.69	5.16	5.32	5.29
F-statistic	38.06	79.51	117.98	40.49

Notes: - the dependent variable is the popularity index of the political entity shown in the column heading;

- monthly observations from May 1986 to October 1999;
- t-statistics, using Newey-West heteroscedasticity and autocorrelation consistent standard errors, are in parentheses;
- significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Table 4: **ARIMAX Models Results**

	Assembly of the Republic	Government	Prime Minister	President
C	57.01 (14.93)***	70.46 (13.51)***	91.95 (14.58)***	93.98 (30.11)***
GUTERRES	-1.303 (-0.68)	-4.601 (-1.20)	-5.054 (-0.95)	
SAMPAIO				-2.590 (-1.65)
T2	0.562 (0.38)	-5.613 (-2.40)**	-8.879 (-2.98)***	-5.592 (-3.37)***
T3	-4.371 (-2.15)**	-9.769 (-2.53)**	-13.90 (-2.66)***	
H	1.285 (5.94)***	1.438 (4.59)***	1.858 (4.60)***	0.465 (1.07)
AvInflation (-2)	-2.122 (-1.89)*	-2.267 (-1.90)*	-2.316 (-1.52)	0.477 (0.35)
UnempRate (-1)	-0.703 (-1.37)	-2.404 (-3.43)***	-3.934 (-4.71)***	-2.267 (-5.41)***
AR (1)	0.523 (6.15)***	0.591 (7.49)***	0.730 (10.71)***	0.370 (4.89)***
AR (2)	0.153 (2.00)**	0.219 (2.76)***	0.109 (1.89)**	0.162 (2.81)***
Adjusted R-squared	0.66	0.81	0.86	0.64
Schwarz criterion	4.72	5.16	5.31	5.30
F-statistic	36.55	80.15	118.88	39.80

Notes: - the dependent variable is the popularity index of the political entity shown in the column heading;

- monthly observations from May 1986 to October 1999;
- t-statistics, using Newey-West heteroscedasticity and autocorrelation consistent standard errors, are in parentheses;
- significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Table 5: **Seemingly Unrelated Regressions (SUR) with AR components**

	Assembly of the Republic	Government	Prime Minister	President
C	57.07	71.03	92.69	94.01
	(16.25)***	(14.28)***	(16.05)***	(27.80)***
GUTERRES	-0.482	-6.524	-7.991	
	(-0.25)	(-2.34)**	(-2.37)**	
SAMPAIO				-2.458
				(-1.43)
T2	0.181	-8.154	-11.98	-5.764
	(0.10)	(-3.36)***	(-4.26)***	(-4.22)***
T3	-3.749	-12.34	-17.42	
	(-1.94)*	(-4.31)***	(-5.01)***	
H	1.161	1.587	2.138	0.234
	(4.15)***	(4.29)***	(5.16)***	(0.70)
AvInflation (-2)	-1.420	-2.047	-2.277	0.711
	(-1.23)	(-1.42)	(-1.46)	(0.47)
UnempRate (-1)	-0.823	-1.983	-3.397	-2.279
	(-2.00)**	(-3.19)***	(-4.61)***	(-5.10)***
AR (1)	0.465	0.547	0.576	0.364
	(7.49)***	(9.40)***	(9.64)***	(4.67)***
AR (2)	0.138	0.141	0.151	0.179
	(2.39)**	(2.51)**	(2.58)**	(2.32)**
Adjusted R-squared	0.65	0.80	0.85	0.64
S.E. of regression	2.28	2.90	3.14	3.08
Residual Correlation Matrix				
Assembly	1.00	0.66	0.54	.022
Government	0.66	1.00	0.71	0.24
Prime Minister	0.54	0.71	1.00	0.27
President	0.22	0.24	0.27	1.00

Notes: - the dependent variable is the popularity index of the political entity shown in the column heading;

- monthly observations from May 1986 to October 1999;

- t-statistics are in parentheses;

- significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Table 6: **Tests of partisan effects using SUR with AR components**

	Assembly of the Republic	Government	Prime Minister
C	61.20 (16.15)***	76.69 (13.99)***	98.48 (15.49)***
GUTERRES (LEFT)	-10.87 (-2.15)**	-22.27 (-2.91)***	-24.01 (-2.69)***
T2	-0.694 (-0.41)	-9.987 (-3.87)***	-13.18 (-4.74)***
T3	-4.907 (-2.77)***	-14.26 (-5.30)***	-19.56 (-6.02)***
H	1.386 (5.02)***	1.948 (5.22)***	2.536 (6.11)***
AvInflation (-2)	-1.889 (-1.51)	-2.841 (-1.76)*	-3.070 (-1.76)*
UnempRate (-1)	-1.343 (-2.98)***	-2.639 (-3.83)***	-4.055 (-4.89)***
AvInflation (-2)*LEFT	-0.259 (-0.07)	-0.286 (-0.06)	-0.383 (-0.08)
UnempRate (-1)*LEFT	1.607 (2.19)**	2.408 (2.11)**	2.438 (1.78)*
AR (1)	0.432 (6.77)***	0.535 (9.08)***	0.559 (9.17)***
AR (2)	0.116 (1.97)**	0.115 (2.00)**	0.136 (2.31)**
Adjusted R-squared	0.65	0.79	0.85
S.E. of regression	2.27	2.92	3.17

Notes: - the dependent variable is the popularity index of the political entity shown in the column heading;

- monthly observations from May 1986 to October 1999;

- t-statistics are in parentheses;

- significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Table 7: **Tests of minority effects using SUR with AR components**

	Assembly of the Republic	Government	Prime Minister
C	49.38 (11.19)***	61.03 (9.39)***	83.58 (11.02)***
GUTERRES	0.386 (0.20)	-5.588 (-2.08)**	-7.456 (-2.30)**
T2	12.68 (2.46)**	8.734 (1.16)	4.335 (0.49)
T3	9.518 (1.72)*	5.377 (0.64)	-0.434 (-0.04)
H	0.974 (3.14)***	1.340 (3.20)***	1.937 (4.12)***
AvInflation (-2)	-1.838 (-1.40)	-3.168 (-1.85)*	-3.753 (-2.00)**
UnempRate (-1)	-1.748 (-3.38)***	-3.216 (-3.94)***	-4.640 (-4.67)***
AvInflation(-2)*MINORITY	0.468 (0.20)	2.617 (0.89)	3.583 (1.12)
UnempRate (-1)*MINORITY	2.060 (2.68)***	2.682 (2.25)**	2.581 (1.79)*
AR (1)	0.442 (7.15)***	0.531 (9.06)***	0.561 (9.20)***
AR (2)	0.118 (2.06)**	0.132 (2.35)**	0.148 (2.51)**
Adjusted R-squared	0.66	0.80	0.85
S.E. of regression	2.25	2.90	3.14

Notes: - the dependent variable is the popularity index of the political entity shown in the column heading;

- monthly observations from May 1986 to October 1999;

- t-statistics are in parentheses;

- significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Figure 1. **Popularity index**