



Popularity functions for the Portuguese Prime Minister, Government, Parliament and President

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Abstract. The purpose of this paper is to estimate popularity functions for the Portuguese Prime Minister, Government, Parliament and President using the ordinary least squares (OLS) and seemingly unrelated regressions (SUR) methods. The results indicate that: (1) popularity polls for the Prime Minister and Government are better explained by economic conditions than are similar polls for the Parliament and President; (2) unemployment is a significant variable determining popularity while inflation is not; (3) honeymoon effects are significant; (4) popularity deteriorates over consecutive terms.

Introduction

The importance of analyzing interactions between economic and political systems has long been recognized.¹ The first papers dealing with the influence of economic variables on election outcomes and on Government popularity appeared twenty-five years ago, with the pioneering works of Mueller (1970), Goodhart & Bhansali (1970), and Kramer (1971). Recently, interest in this matter has increased, as numbers of publications indicate.

An important question in political economy is how, if at all, economic events affect voting behavior. The theory starts from the responsibility hypothesis: voters hold the Government responsible for economic conditions. Policymakers are rewarded (punished) for good(bad) economic performance. This relationship is reflected in *popularity functions*, which explain poll support for the Government with variables measuring economic and political conditions. A good review of the early literature on this question can be found in Nannestad & Paldam (1994).

The main purpose of this paper is (1) to estimate popularity functions for the Portuguese Prime Minister, Government, Parliament and President using the ordinary least squares (OLS) and seemingly unrelated regressions (SUR) methods, (2) to find out if unemployment, inflation, honeymoon effects, and number of terms in office are significant in explaining popularity, and (3) to determine which political entity the electorate considers more responsible for

economic performance. To that end, Section 1 presents a short description of the Portuguese political system. Section 2 explains the model to be tested. The data used in the paper are described in Section 3. In Section 4 the empirical results are discussed. The last section summarizes the results, presents a critique, and suggests possible extensions.

Portuguese political system: Brief explanation

In order to provide some background concerning the Portuguese political system, we shall start with a short summary of its political history, highlighting the 1986–95 period covered in this paper (including Cavaco Silva's terms as Prime Minister and Mário Soares's terms as President of the Republic). A description of the political entities covered in the paper and their roles follows.

The military coup of April 1974 ended 48 years of dictatorship in Portugal and created the conditions for the re-establishment of democracy. A new constitution, still in effect today with some revisions, was promulgated in April 1976. The first legislative election, held in April 1976, was followed by a period of political instability with a series of minority Governments falling before the ends of their terms.

Starting in 1985 with a minority Government, Cavaco Silva served as Prime Minister for 10 consecutive years, the longest time in office for a Prime Minister since the end of the dictatorship in 1974. After 13 years of frequently changing administrations, in 1987 he headed the first single-party majority Government, and was reelected for a second term in 1991, again with an overall majority.

While Cavaco Silva served as Prime Minister (1985–87; 87–91; 91–95), Mário Soares served as President of the Republic (1986–91; 91–96). He was the first civilian head of state in 60 years, following the two terms of former President António Ramalho Eanes (a non-party military candidate first elected in 1976).

The political entities covered in the paper are the President of the Republic, the Government, the Prime Minister and the Parliament.

The President of the Portuguese Republic serves as the head of the state, as military chief of staff, and represents the nation internationally. His main powers consist of: (1) the authority to ask the head of the party receiving most votes in legislative elections to form the Government and become Prime Minister, (2) the power to veto laws and decrees, or send them to the Constitutional Tribunal for consideration, and (3) the authority to dissolve the Parliament and call for future elections.

Presidential candidates must be Portuguese citizens, 35 or older, who can either run as independents or as the appointed candidate of a political party. They are elected by adult universal suffrage, using a majoritarian system with a second round runoff between the two leading contenders if no candidate receives more than 50% of the votes in the first round. Presidents cannot serve more than two consecutive five-year terms.

The Portuguese Government consists of the Prime Minister, the ministers, and the secretaries of state. The Prime Minister is the head of Government, and is usually the leader of the party receiving most votes in the legislative elections. He chooses his ministers who in turn appoint their secretaries of state.

The Government performs the executive function, which allows it to control fiscal policy² and have an influence on monetary policy. The latter comes from the fact that the Governor of the Bank of Portugal is appointed by the Minister of Finance, who can replace him before the end of his term. The Government also performs part of the legislative function by issuing decrees.

Legislative authority is vested in a unicameral Parliament, which can also precipitate elections by a vote of no confidence on the Government. Since the 1991 elections, the Portuguese Parliament (*Assembleia da República*) has been composed of 230 deputies (before there were 250). Elections are held every four years, with political parties presenting lists of candidates in the eighteen districts. The number of deputies per district depends on its population and the number of seats obtained by parties is proportional to the number of votes obtained.

Among the four political entities studied, the Government has most power over economic policies. Therefore, this article will argue that Government's popularity is more likely to be affected by economic conditions than any of the others.

The empirical model

This study proposes a simple theoretical hypothesis concerning the nature of the relationship between the economy and poll support for incumbent politicians. Following Kramer (1971) and Downs (1957) it is hypothesized that voters assess expected future utilities under competing candidates, and that popularity of the incumbent is a positive function of assessments of his performance. We further assume that there are only two macroeconomic variables, unemployment and inflation, in the individual's utility function.

In the popularity functions, the independent variables (unemployment and inflation)³ are included in the form of levels, since Nelson and Plosser (1982), Perron (1989), and Zivot and Andrews (1992) present evidence that the un-

employment rate is stationary and the last two also find evidence that the inflation rate is stationary.⁴ If the independent variables are stationary, then cointegration is not an issue even if the dependent variable is integrated.⁵ A once-lagged dependent variable was included in the popularity functions to capture the inertia in the support process.

Two specifications of our empirical model are given in the following equations:

$$POP_t = \beta_0 + \beta_1 POP_{t-1} + \beta_2 H + \beta_3 T2 + \beta_4 T3 + \beta_5 U_{t-1} + \beta_6 AI_{t-2} + \epsilon_t \quad (1)$$

$$POP_t = \alpha_0 + \alpha_1 POP_{t-1} + \alpha_2 H + \alpha_3 T2 + \alpha_4 U_{t-1} + \alpha_5 AI_{t-2} + \delta_t, \quad (2)$$

where POP_t is the popularity index in month t ; POP_{t-1} is the lagged dependent variable; H is a dummy variable reflecting the honeymoon effects, taking the value of 6 in the first month of each term, declining to 1 in the sixth month and taking a value of 0 for all remaining months; $T2$ is a dummy variable for the second term in office; $T3$ is a dummy variable for the third term in office; U_{t-1} is the one-month lagged unemployment; AI_{t-2} is the two-month lagged average inflation; β_i , α_i are parameters; ϵ_t and δ_t are the random error terms.

Equation (1) will be employed to model the popularity of the Prime Minister, Government and Parliament, and equation (2) will be employed for the President.

It is hypothesized that policymakers lose popularity if the rate of unemployment rises and/or the rate of inflation rises. Both variables are included with lags under the assumption that individuals need some time to recognize changes in economic conditions.⁶ Inflation is defined as the average of the inflation rate of the second, third, fourth and fifth previous months⁷ ($AI_{t-2} = (I_{t-2} + I_{t-3} + I_{t-4} + I_{t-5})/4$).

Since popularity does not depend exclusively upon economic conditions, other factors are also taken into account. The model includes three dummy variables designed to capture the effects of non-economic variables on popularity levels. Following Smyth et al. (1989) we assume that the public recognizes that the economic conditions which persist during the first few months of term are not attributable to the new administration's economic policies. The honeymoon dummy variable, H , is introduced to measure this phenomenon. Dummy variables were also introduced for each term, $T2$ and $T3$ (T_i is equal to one in the i th term in office), to permit the possibility that popularity levels are negatively related to the number of terms in office. The erosion of popularity over consecutive terms in office is sometimes referred as the cost of ruling. It is assumed that all other factors are random and are included in ϵ_t . The theoretically expected signs of the coefficients are $\beta_0 > 0$, $\alpha_0 > 0$, β_1

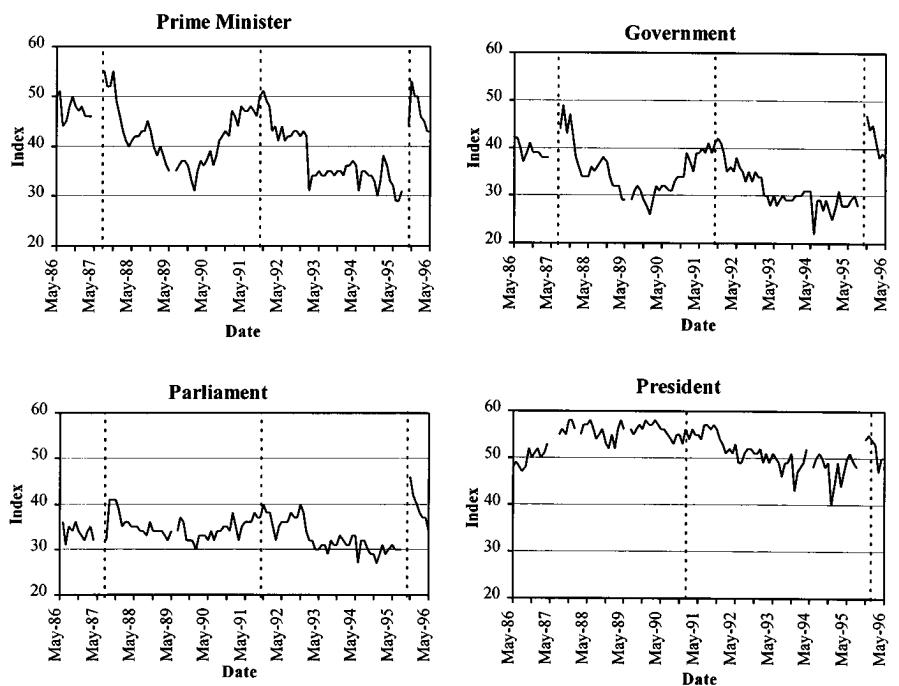


Figure 1. Popularity index. Notes: Vertical hatched lines represent election dates.

$> 0, \alpha_1 > 0, \beta_2 > 0, \alpha_2 > 0, \beta_3 < 0, \alpha_3 < 0, \beta_4 < 0, \alpha_4 < 0, \beta_5 < 0, \alpha_5 < 0$ and $\beta_6 < 0$.

The data

The data used for the dependent variable, POP_t , were obtained from monthly polls conducted by Euroexpansão (published by *Jornal Expresso*) beginning in May 1986. This poll shows the percentage share of the population responding that the job performance of policymaker 'X' is very good/good, fairly good, bad/very bad.

The dependent variable, POP_t , was calculated as a weighted average of the proportion of individuals rating the policymaker as very good/good or fairly good. POP_t is calculated according to: $POP_t = (2^* \text{very good/good} + 1^* \text{fairly good})/3$.

The basis for the popularity function is the responsibility hypothesis, which assumes that the Government has some control over economic policies and outcomes. However, it is not clear that voters will hold an unstable minority Government responsible for economic conditions, since such a Government is not able to rule on its own. This is usually not a problem in the sample

Table 1. Legislative elections and parties in government

Dates	Party	Share in Parliament	Prime Minister
25 April 1983	Socialist	40%	Mário Soares
6 October 1985	Social Democratic	34%	Cavaco Silva
19 July 1987	Social Democratic	59%	Cavaco Silva
6 October 1991	Social Democratic	58%	Cavaco Silva
1 October 1995	Socialist	48%	António Guterres

Table 2. Presidential elections

Dates	President (Major opponent)
26 January 1986	Mário Soares (Freitas do Amaral)
13 January 1991	Mário Soares (Basílio Horta)
13 January 1996	Jorge Sampaio (Cavaco Silva)

period employed in this paper. Although the sample starts with a short period during which there was a minority Government, most data points were obtained during two terms of majority Governments. A dummy for the majority Government was also tested but it proved not to be significant.

The period analyzed starts in May 1986, when a Social Democratic minority Government led by Prof. Cavaco Silva was in power. In the following elections (July 1987 and October 1991), under the leadership of Cavaco Silva, the Social Democrats achieved an overall majority. In January 1995, Cavaco Silva resigned the PSD leadership, although still remaining as Prime Minister until the next legislative election.⁸ The October 1995 elections were won by the socialists, headed by António Guterres, although with a minority.

The analysis ends in September 1995, meaning that the popularity function for the Prime Minister only considers Cavaco Silva, and the popularity functions for the Government and Parliament only covers a period when the Social Democratic party was in power.

The President's popularity data goes from May 1986 to December 1995. This period covers most of the first term and the entire second term of President Mário Soares.

The inflation rate monthly series were obtained from INE (National Institute of Statistics) and include all items except housing. The unemployment rate monthly data were obtained from EUROSTAT; they are not seasonally adjusted series.

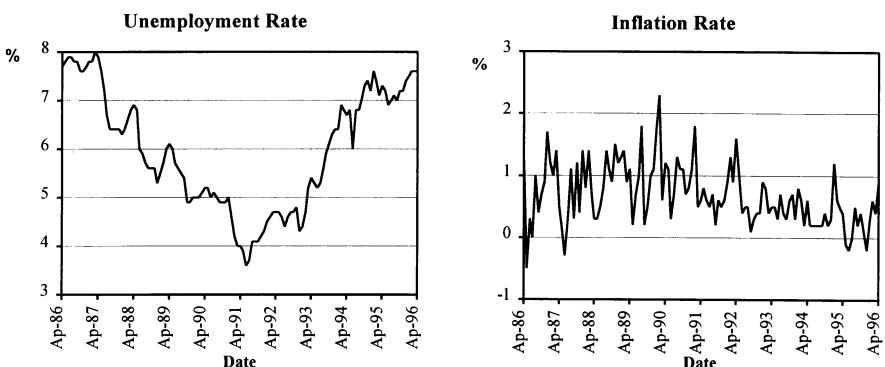


Figure 2. Unemployment and inflation rates.

Empirical results

The popularity functions were estimated using OLS and SUR methods, with monthly data for the periods from May 1986 to October 1995 for the Prime Minister, Government and Parliament, and from May 1986 to December 1995 for the President.

The OLS estimates are reported in Table 3. The results show that all regressions are significant at the 1% level and the Ljung-Box Q statistic is not significant up to 24 lags. All coefficients have the expected signs and are statistically significant at the 5% level, with exception of the dummy regarding the second term for the Parliament and the inflation variable in all equations.

To assess the robustness of the results to alternative specifications, several other formulations of the variables were explored in preliminary research, with results similar to those reported here. Alternative specifications for the dependent variable⁹ were considered, such as the simple average of the proportion of individuals who consider the performance of the political entity in question very good or fairly good ($POP = (VG + FG)/2$), or just the percentage of voters who consider it very good ($POP = VG$). The choice of the specification is always subjective, but the weighted average is arguably the most reasonable in theory, and is also the one that performs better empirically. Results for alternative specifications can be found in Appendix A. Concerning the independent variables, a dummy for the majority Government was tested but turned out not to be significant; other specifications for inflation (Appendix B), as well as separate dummies for each honeymoon period were also tested, but the results were qualitatively unchanged.

Because the popularity of the Prime Minister, Government, Parliament, and President are likely to be related, a seemingly unrelated regression (SUR)

Table 3. Popularity functions: OLS method

	Prime Minister	Government	Parliament	President
<i>Coefficients</i>				
Constant	18.77***	17.79***	19.52***	35.17***
β_0	(4.42)	(4.91)	(5.21)	(5.79)
Lagged dependent variable	0.72***	0.67***	0.54***	0.45***
POP_{t-1}	(12.91)	(11.43)	(7.22)	(5.18)
Honeymoon	0.75***	0.75***	0.55***	0.49**
H	(3.21)	(3.59)	(3.43)	(1.95)
Second term	-3.59***	-2.94**	-0.65	-3.01***
T_2	(-3.35)	(-3.19)	(-0.90)	(-4.26)
Third term	-4.99***	-4.45***	-1.72**	
T_3	(-4.03)	(-4.18)	(-2.19)	
Unemployment	-0.65**	-0.55**	-0.52**	-0.90**
U_{t-1}	(-2.48)	(-2.43)	(-2.41)	(-3.46)
Inflation	-0.73	-1.08	-0.27	0.23
AI_{t-2}	(-0.87)	(-1.43)	(-0.39)	(0.30)
Adjusted R-squared	0.87	0.84	0.60	0.69
F-statistic	127.411***	101.681**	29.192***	50.412***
Ljung-Box Q statistic	14.16	14.99	26.17	24.73

Ljung-Box Q statistic to 24 df: insignificant in each case.

T-statistics at in parentheses.

* Significant at the 0.10 level; ** Significant at the 0.05 level; *** Significant at the 0.01 level.

model (Zellner 1962), which treats the equations as a system, was also estimated. The SUR estimates are presented in Table 4.

The gains in efficiency resulting by the SUR estimator over OLS increase directly with the correlation between disturbances from the different equations. Looking at the estimated cross-equation errors correlations reported in Table 4, we can conclude that efficiency is gained by estimating the equations jointly as a generalized regression. Thus, most of our comments will be based on the results of SUR estimations.

Like in the OLS estimates, SUR's estimated coefficients have the expected signs, except the one associated with inflation in the President's popularity function. Unlike OLS, the inflation variable now becomes significant for the Government and the variable measuring honeymoon effects for the President is not significant.

Table 4. Popularity functions: SUR method

	Prime Minister	Government	Parliament	President
<i>Coefficients</i>				
Constant	25.52***	22.48***	19.98***	35.13***
β_0	(6.92)	(7.26)	(6.06)	(6.14)
Lagged dependent variable	0.63***	0.59***	0.53***	0.45***
POP_{t-1}	(13.39)	(12.44)	(8.40)	(5.57)
Honeymoon	0.91***	0.87***	0.51***	0.35
H	(4.32)	(4.63)	(3.35)	(1.48)
Second term	-4.93**	-3.82***	-0.78	-3.07***
$T2$	(-5.10)	(-4.56)	(-1.12)	(-4.57)
Third term	-6.61***	-5.54***	-1.81**	
$T3$	(-5.97)	(-5.84)	(-2.43)	
Unemployment	-0.90***	-0.71***	-0.55***	-0.92***
U_{t-1}	(-3.66)	(-3.29)	(-2.70)	(-3.72)
Inflation	-0.91	-1.21*	-0.31	0.21
AI_{t-2}	(-1.13)	(-1.66)	(-0.46)	(0.28)
<i>Log-likelihood function</i>	438.03***			
<i>Estimated cross-equation error correlations</i>				
Prime Minister	1.0			
Government	0.65	1.0		
Parliament	0.36	0.53	1.0	
President	0.26	0.23	0.18	1.0

T-statistics are in parentheses.

* Significant at the 0.10 level; ** Significant at the 0.05 level; *** Significant at the 0.01 level.

Economic conditions

The analysis shows that policymakers' popularity is significantly reduced when the rate of unemployment rises. A one percentage point decrease in the unemployment rate is estimated to increase the popularity of the Prime Minister by 0.90 percentage points; the Government by 0.71; the Parliament by 0.55; and the President by 0.92.

The inflation rate is only significant for the Government and only at the 10% level, implying that Portuguese voters either don't hold the other entities responsible for this economic indicator or that they are relatively unconcerned with it. The fact that Portuguese voters were accustomed to high levels of inflation in the previous two decades makes the second alternative more plausible.

According to Nannestad and Paldam (1994: 216) unemployment and inflation rates normally give significant coefficients in popularity functions, the typical orders of magnitude are between -0.4 and -0.8 in developed low-inflation countries. The results found in this paper show that unemployment is a significant variable, but inflation does not seem to be an important variable in Portuguese popularity functions, excepting the Government.

The responsibility hypothesis may be more important for the Prime Minister and Government than for the Parliament, since these two entities have higher estimated coefficients associated with unemployment and inflation than the Parliament.¹⁰ Portuguese people seem to have a less clear image of the Parliament than of the Government and Prime Minister. Members of the Parliament may be seen as instruments of the Prime Minister and Government, who set the party's agenda and determine its goals.¹¹

The President's popularity is significantly affected by the unemployment rate, but the low R^2 of the OLS regression suggests that his popularity is also more affected by personality factors and other non-economic events not considered in the model.

Popularity deterioration over consecutive terms and honeymoon effects

Figure 3 shows that the Prime Minister's popularity always exceeds that of the Government and Parliament. Changes in his popularity seem to precede changes in that of the Government. The popularity of the Prime Minister is highly correlated with that of the Government (96%), but less correlated with that of the Parliament (76%).¹² These facts lead us to conclude that Cavaco Silva's strong personality made him the image of the Government.

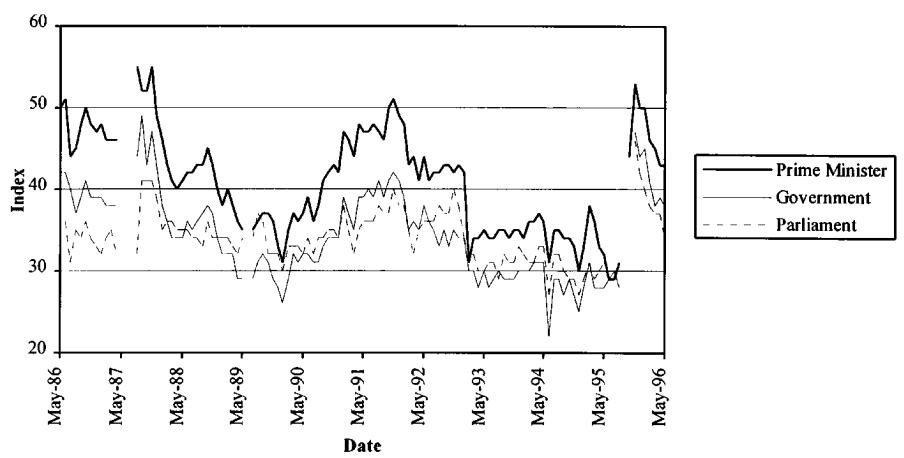


Figure 3. Popularity index.

It is important to notice the popularity depreciation associated with each term. Comparing with the first term the popularity of the Prime Minister (Government) is estimated to have decreased on average by 4.93 (3.82) in the second term and by 6.61 (5.54) in the third term.

Recalling Figure 1, we can see that the President's popularity is the highest of all entities analyzed and is quite stable during the first term, declining in the second. This is probably explained by the increasing tension between the President and the Government during the second term. We should note that Mário Soares had been the president of the Socialist Party for several years and that Portuguese law does not allow the reelection of a President for 3 consecutive terms.

With the exception of the President, the results also suggest that popularity is significantly affected by honeymoon effects. The coefficients associated with this variable are lower for the Parliament than those associated with the Prime Minister and Government.

Conclusion

The period covered in this paper concerns the leadership of Cavaco Silva as Prime Minister and Mario Soares as President of the Republic. Undoubtedly, these two leaders played a major role in the short history of post-1974 Portuguese democracy, presenting an interesting case study.

The popularity functions presented in this paper are extremely simple. They can at best be considered a first step towards the formulation of a more complete approach to politico-economic interdependence. Currently the data series available are short, and more variables might be included in the popularity functions, namely those associated with social and political factors.

Taking into account the simplicity of the model, the econometric results are quite compelling. The popularity functions are able to explain a large share of the variance, particularly for the Prime Minister and the Government. Our results confirm previous studies in showing that unemployment has a significant impact on popularity levels. Therefore, for the period analyzed in the paper (the three consecutive terms of Social Democratic Governments, with Cavaco Silva as Prime Minister) it appears that the responsibility hypothesis holds. The results also confirm the existence of honeymoon effects and the deterioration of popularity over consecutive terms in office, however they show little or no impact of inflation on popularity.

Another possible link between the economy and politics is suggested by the political business cycle, according to which incumbent politicians manipulate the economy in order to maximize its reelection probabilities, by

stimulating the economy before elections and creating post-election stagflation. The inspection of the data presented in the paper (recall Figures 1 and 2), suggests that unemployment decreases before elections and increases afterwards (specially for the October 1991 election), which is in accordance with the political business cycle theory. This point certainly deserves a more detailed analysis. The linkages between the popularity of the Prime Minister and the popularity of his party, also suggests an interesting direction of research.

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Notes

1. See Mueller (1989: 280–84) and Nannestad & Paldam (1994).
2. It should be mentioned that the Government's proposal for the national budget has to be approved by the Parliament.
3. The other independent variables are dummy variables.
4. Although these authors use US data, it is argued that the results can be extended to Portugal. Unit root tests (Dickey & Fuller 1979) were performed in our sample and the results indicate that the average inflation rate is stationary while unemployment is nonstationary. However, these results are not reliable since unit root tests, especially using a short span of data, are not powerful enough to distinguish between values close to one that are truly equal to one or not.
5. Cointegration is only an issue when the dependent and independent variables are nonstationary (Engle & Granger 1987).
6. The unemployment rate is included with one lag, while inflation has two lags, because inflation statistics are released with a longer lag than unemployment.
7. Other specifications for inflation were tested but the results did not change significantly.
8. Although Cavaco Silva did not seek reappointment, he contested the Presidency in the January 1996 elections, and was defeated by Jorge Sampaio, a former leader of the Socialist Party.
9. The dependent variable, POP, was calculated as a weighted average of the proportion of individuals thinking the way policy maker 'X' handles his job is Very Good (VG) or Fairly Good (FG) ($POP = 2*VG + 1*FG$).
10. A Wald-test was performed for the hypothesis that the coefficients on unemployment and inflation are the same for the four political entities. The results do not allow us to reject the null hypothesis.
11. Most of the period covered in this paper is characterized by a majority Government and party rules strongly discourage deputies from voting against party positions.
12. These are simple correlations between the variables.

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Appendix A. Popularity functions (OLS method) using alternative measures for the dependent variable (POP_t). (1) $POP_t = (2^* VG + 1^* FG)/3$ (adopted in the paper); (2) $POP_t = (VG + FG)/2$; (3) $POP_t = VG$

	Prime Minister			Government			Parliament			President		
	$(2VG + FG)/3$	$(VG + FG)/2$	VG	$(2VG + FG)/3$	$(VG + FG)/2$	VG	$(2VG + FG)/3$	$(VG + FG)/2$	VG	$(2VG + FG)/3$	$(VG + FG)/2$	VG
<i>Coefficients</i>												
Constant	18.77***	15.47***	28.37***	17.79***	19.57***	18.88***	19.52***	18.93***	17.79***	35.17***	39.66***	34.39***
β_0	(4.42)	(4.15)	(4.58)	(4.91)	(4.97)	(4.32)	(5.21)	(5.15)	(4.08)	(5.79)	(7.65)	(4.23)
Lagged dep. variable	0.72***	0.73***	0.68***	0.67***	0.64***	0.64***	0.54***	0.58***	0.51***	0.45***	0.24**	0.60***
POP_{t-1}	(12.91)	(12.38)	(11.38)	(11.43)	(9.89)	(10.37)	(7.22)	(8.05)	(6.44)	(5.18)	(2.58)	(7.59)
Honeymoon	0.75***	0.44**	1.59***	0.75***	0.60***	1.26***	0.55***	0.38***	0.89***	0.49*	0.31*	0.81
H	(3.21)	(2.60)	(3.71)	(3.59)	(3.45)	(3.54)	(3.43)	(3.07)	(3.14)	(1.95)	(1.88)	(1.53)
Second term	-3.59***	-2.13***	-7.31***	-2.94***	-2.53***	-4.53***	-0.65	0.50	-3.21**	-3.01***	-2.02***	-4.53***
$T2$	(-3.35)	(-2.66)	(-3.89)	(-3.19)	(-3.12)	(-3.06)	(-0.90)	(1.86)	(-2.39)	(-4.26)	(-4.63)	(-3.25)
Third term	-4.99***	-3.06***	-9.96***	-4.45***	-3.81***	-6.80***	-1.72**	-0.90	-3.38**			
$T3$	(-4.03)	(-3.40)	(-4.51)	(-4.18)	(-4.04)	(-4.07)	(-2.19)	(-1.46)	(-2.46)			
Unemployment	-0.65**	-0.42	-1.25***	-0.55**	-0.52**	-0.75**	-0.52**	-0.27	-1.01***	-0.90***	-0.41***	-1.43**
U_{t-1}	(-2.48)	(-2.06)	(-2.76)	(-2.43)	(-2.54)	(-2.03)	(-2.41)	(-1.59)	(-2.71)	(-3.46)	(-2.91)	(-2.58)
Inflation	-0.73	-0.57	-1.16	-1.08	-0.60	-2.12*	-0.27	-0.19	-0.48	0.23	-0.06	0.67
I	(-0.87)	(-0.87)	(-0.79)	(-1.43)	(-0.92)	(-1.67)	(-0.39)	(-0.34)	(-0.40)	(0.30)	(-0.13)	(0.41)
Adjusted R-squared	0.87	0.82	0.87	0.84	0.81	0.81	0.60	0.67	0.54	0.69	0.43	0.72
F-statistic	127.4***	88.7***	125.4***	101.6***	80.3***	79.7***	29.1***	39.2***	23.1***	50.41***	20.02***	58.6***
Ljung-Box Q statistic	14.16	20.73	20.88	14.99	18.22	27.07	26.17	43.56	20.05	24.73	26.44	24.03

Ljung-Box Q statistic to 24 df; insignificant in each case.

T-statistics at in parentheses.

***Significant at the 0.01 level; ** Significant at the 0.05 level; * Significant at the 0.10 level.

Appendix B. Popularity functions (OLS) alternative measures for inflation (I). (1) $I = (I_{t-2} + I_{t-3} + I_{t-4} + I_{t-5})/4$ (used in the paper); (2) $I = I_{t-1}$; (3) $I = (I_{t-1} + I_{t-2} + I_{t-3} + I_{t-4})/4$; (4) $I = (I_{t-1} + I_{t-2} + I_{t-3} + I_{t-4} + I_{t-5})/5$

	Prime Minister		Government				Parliament				President					
	$(I_{t-2} + \dots + I_{t-1})/4$	$(I_{t-1} + \dots + I_{t-1} + \dots + I_{t-5})/5$	$(I_{t-2} + \dots + I_{t-1})/4$	$(I_{t-1} + \dots + I_{t-1} + \dots + I_{t-5})/4$	$(I_{t-2} + \dots + I_{t-1})/4$	$(I_{t-1} + \dots + I_{t-1} + \dots + I_{t-5})/5$	$(I_{t-2} + \dots + I_{t-1})/4$	$(I_{t-1} + \dots + I_{t-1} + \dots + I_{t-5})/4$	$(I_{t-2} + \dots + I_{t-1})/4$	$(I_{t-1} + \dots + I_{t-1} + \dots + I_{t-5})/5$	$(I_{t-2} + \dots + I_{t-1})/4$	$(I_{t-1} + \dots + I_{t-1} + \dots + I_{t-5})/5$	$(I_{t-2} + \dots + I_{t-1})/4$			
<i>Coefficients</i>																
Constant	18.77*** (4.42)	17.51*** (4.34)	18.22*** (4.37)	18.85*** (4.38)	17.79*** (4.91)	15.48*** (4.44)	16.40*** (4.57)	17.58*** (4.73)	19.52*** (5.21)	19.15*** (5.35)	19.12*** (5.20)	19.62*** (5.21)	35.17*** (5.79)	36.19*** (5.89)	35.20*** (5.70)	35.32*** (5.70)
β_0																
Lagged dep. variable	0.72*** POP_{t-1}	0.73*** (12.91)	0.73*** (12.96)	0.72*** (12.97)	0.67*** (12.90)	0.68*** (11.43)	0.68*** (11.46)	0.67*** (11.42)	0.54*** (11.36)	0.54*** (7.22)	0.54*** (7.24)	0.54*** (7.23)	0.45*** (5.18)	0.44*** (5.08)	0.45*** (5.17)	
Honeymoon	0.75*** (3.21)	0.80*** (3.44)	0.76*** (3.21)	0.76*** (3.59)	0.75*** (3.96)	0.82*** (3.74)	0.79*** (3.66)	0.77*** (3.43)	0.55*** (3.66)	0.57*** (3.66)	0.57*** (3.50)	0.55*** (3.39)	0.49* (1.95)	0.52** (2.13)	0.49* (1.97)	0.50* (1.96)
H																
Second term	-3.59*** (-3.35)	-3.48*** (-3.25)	-3.50*** (-3.28)	-3.56*** (-3.33)	-2.94*** (-3.19)	-2.81*** (-3.04)	-2.81*** (-3.04)	-2.89*** (-3.12)	-0.65 (-0.90)	-0.61 (-0.84)	-0.63 (-0.87)	-0.64 (-0.89)	-3.01*** (-4.26)	-3.21*** (-4.64)	-3.03*** (-4.14)	-3.05*** (-4.09)
$T2$																
Third term	-4.99*** (-4.03)	-4.64*** (-3.94)	-4.82*** (-3.98)	-5.00*** (-4.01)	-4.45*** (-4.18)	-3.83*** (-3.76)	-4.08*** (-3.87)	-4.37*** (-4.04)	-1.72** (-2.19)	-1.62** (-2.23)	-1.62** (-2.11)	-1.75** (-2.21)				
$T3$																
Unemployment	-0.65*** (-2.48)	-0.58** (-2.30)	-0.62** (-2.40)	-0.66** (-2.47)	-0.55** (-2.43)	-0.43* (-1.93)	-0.49** (-2.13)	-0.54** (-2.34)	-0.52** (-2.41)	-0.50** (-2.41)	-0.50** (-2.33)	-0.53** (-2.42)	-0.90*** (-3.46)	-0.95*** (-3.62)	-0.90*** (-3.37)	-0.91*** (-3.37)
U_{t-1}																
Inflation	-0.73	-0.04	-0.52	-0.81	-1.08	0.23	-0.39	-0.99	-0.27	-0.09	-0.04	-0.36	0.23	-0.19	0.16	0.11
I	(-0.87)	(-0.10)	(-0.61)	(-0.84)	(-1.43)	(0.52)	(-0.51)	(-1.11)	(-0.39)	(-0.23)	(-0.07)	(-0.45)	(0.30)	(-0.41)	(0.20)	(0.12)
Adjusted R^2	0.87	0.87	0.87	0.87	0.84	0.84	0.84	0.84	0.60	0.60	0.60	0.60	0.69	0.69	0.69	0.69
F -statistic	127.4***	126.3***	126.8***	127.3***	101.6***	99.6***	99.6***	100.7***	29.1***	29.1***	29.1***	29.2***	50.4***	50.4***	50.3***	50.3***
Ljung-Box Q	14.16	14.51	14.28	14.23	14.99	15.47	14.82	14.77	26.17	26.01	25.74	26.48	24.73	24.32	24.58	24.55
Q statistic																

Ljung-Box Q statistic to 24 df; insignificant in each case.

T-statistics at in parentheses.

*** Significant at the 0.01 level; ** Significant at the 0.01 level; * Significant at the 0.01 level.

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