

Electoral and partisan cycles between US economic performance and presidential popularity: a comment on Stephen E. Haynes

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In this paper we discuss a recent paper by Stephen E. Haynes in which he relates electoral cycles in political support to electoral cycles in economic variables. Haynes finds that the cycle in support for Republican presidents is explained by the cycle in economic variables, whereas the cycle in support for Democratic presidents is not. In our opinion this shortcoming is due to his specification of the popularity function. Haynes estimates a popularity function which incorporates the notion that voters reward the incumbent for favourable outcomes (score hypothesis). Our popularity function combines the score hypothesis and the notion that voters cast their ballots for the party that best fits the current economic situation (issue hypothesis). We show that the electoral cycle in popularity of both Republican and Democratic presidents is explained very well by the cycle in economic variables.

I. INTRODUCTION

How are political cycles in economic variables related to economic cycles in political support? This is the basic question considered by Haynes (1995) in a recent paper in this journal. To answer this question, Haynes takes the following four steps. First, he determines political cycles in economic variables by calculating the means of GNP growth, the unemployment rate and inflation for each quarter of the electoral term. To detect partisan cycles he repeats this analysis, making a distinction between Democratic and Republican administrations. The results from this exercise confirm earlier findings. As to unemployment and real output growth, the performance of Democratic administrations is superior to that of Republican administrations in the second and third year of the electoral term. In the year before the election, real output growth is somewhat higher under Republican administrations than under Democratic administrations. In terms of inflation, the performance of Republican administrations is superior at the end of the electoral term. Second, Haynes calculates the mean of political support for the incumbent for each quarter of the

electoral term. Again his results are consistent with conventional wisdom. Public support for both Democratic and Republican presidents declines when time evolves. However, at the end of the electoral term, public support for Democratic presidents further declines while that of Republican presidents rises. Third, Haynes presents the estimates of popularity functions which support the idea that voters hold the incumbent responsible for economic outcomes.

As with many previous authors, Haynes finds that presidential approval rates increase with real output growth and decrease with unemployment and inflation (see Nannestad and Paldam, 1994, for a recent survey of this literature). So far, there is nothing new under the sun. The novel contribution of Haynes' paper is in the final step, in which he combines the first three steps. Making use of the partisan means of the economic variables for each quarter of the electoral term (step 1), he predicts public support for Democratic and Republican presidents on the basis of the estimates of the popularity functions (step 3). For Republican presidents, the predicted cycle in public support is similar to the cycle determined in step 2. However, for Democratic presidents the results are disappointing.

Predicted and actual popularity for Democratic presidents differ markedly. It seems as if voters hardly reward Democratic presidents for the favourable economic outcomes in the middle of the electoral term.

In this comment, we repeat the third and fourth step of Haynes' analysis, making use of a different specification of the popularity function. The popularity function employed combines the notion that voters reward the incumbent for favourable economic outcomes and the notion that voters cast their ballots for the party which best fits the economic problems the country faces. The reason why we use a different specification of the popularity function is twofold. First, the empirical success of the partisan theory suggests that the US political system is polarized. Recent empirical studies on voter behaviour indicate that voters take into account that political parties pursue different goals (see for example Swank, 1995). Second, the popularity function used by Haynes is successful in predicting the popularity of Republican presidents but fails when predicting the popularity of Democratic presidents. This suggests that the effects of economic outcomes on public support are asymmetric. This is exactly what partisan voter models imply. Thus, we believe that extending the voter model with elements from the partisan theory is a promising road to improve Haynes' results.

This comment is organized as follows. In the next section we briefly discuss a simple partisan model which underlies our voter model. We argue that the economic outcomes generated by the partisan model are consistent with the cycles in economic variables that Haynes has determined in the first step of his analysis. Section III presents the estimates of the new popularity functions. Finally, Section IV confronts the predicted cycle in presidential popularity with the actual cycle in presidential popularity. Unlike Haynes, we find that our predictions of popularity are closely related to actual popularity for both Democratic and Republican presidents. Before proceeding, it is worth emphasizing that this comment is intended to contribute to Haynes' paper, rather than to criticize it.

II. A PARTISAN MODEL

In this section we discuss a partisan model based on Hibbs (1994). This model shows how economic outcomes depend on the type of president in office. The reason for discussing this model is twofold. First, at the end of this section we will argue that the outcomes generated by the model are consistent with the empirical results presented by Haynes. The second reason is that this partisan model underlies the estimated popularity functions presented in the next section.

The model describes aggregate demand policy and consists of two parts. The first part of the model describes the presidents' preferences. Both Democratic and Republican administrations are assumed to care about real output

growth, Δy_t , and inflation, π_t . Their preferences are represented by a linear-quadratic utility function:

$$U_{i,t} = \Delta y_t - \beta_i \pi_t^2 \quad (\beta_i > 0) \quad (1)$$

where β_i is the weight party i attributes to the inflation target relative to the real output target, and t is a time index. The basic premise on which the partisan theory is based is that due to distributional interests of their core constituencies, Republican presidents give higher weight to the inflation target than Democratic presidents, so that $\beta_R > \beta_D$. As for Equation (1), the partisan model employed in this paper is similar to the models employed in previous studies (Alesina, 1987; Hibbs, 1977).

The second part of the model describes the working of the economy. Policy makers are assumed to affect real output growth and inflation by a nominal demand policy. Equation (2) expresses how a change in nominal demand affects inflation:

$$\pi_t = \gamma_1 + \gamma_2 \pi_{t-1} + \gamma_3 \Delta x_t + \gamma_4 \left(\frac{y}{y_{\text{trend}}} \right)_{t-1} \quad (2)$$

where Δx_t denotes the change in nominal demand and (y/y_{trend}) denotes the deviation of log real output from its trend. Since by definition $\Delta y_t \equiv \Delta x_t - \pi_t$, real output growth can be written as:

$$\Delta y_t = (1 - \gamma_3) \Delta x_t - \left[\gamma_1 + \gamma_2 \pi_{t-1} + \gamma_4 \left(\frac{y}{y_{\text{trend}}} \right)_{t-1} \right] \quad (3)$$

In modern economic literature, Equations (2) and (3) are frequently used to assess the short run effects of a change in nominal demand on inflation and real output growth. The basic idea behind this short run Phillips curve is that, in the long-run, real output returns to its natural path (y_{trend}). As a consequence, in the long run, excess nominal demand fully shows up inflation. However, due to price rigidities the short run effects of nominal demand on inflation may differ from the long run effects. In Equation (2), γ_3 measures how much of a change in nominal demand instantaneously shows up in inflation ($0 \leq \gamma_3 \leq 1$). Likewise, in Equation (3), $(1 - \gamma_3)$ measures how much of a change in nominal demand shows up in real output. The effects of lagged inflation and the lagged deviation of log real output from its trend (the output gap) on inflation describe how prices gradually adjust after a shock in nominal demand, to restore the long run equilibrium ($0 \leq \gamma_2 \leq 1$, $\gamma_4 > 0$). The higher are γ_2 and γ_4 , the quicker is the price adjustment process.

Each president is assumed to maximize Equation (1) with respect to Δx_t , subject to Equations (2) and (3). Substitution of the resultant expression into Equations (2) and (3) yields the economic outcomes generated by the model. Does the model generate the potential cycles in economic variables observed by Haynes?

Haynes' observations that for real variables the overall performance of Democratic administrations is superior,

while for inflation the overall performance of Republican administrations is (mildly) superior are a straightforward consequence of the assumption of partisan motives. There remains the question whether we can explain the more subtle movements in economic outcomes observed by Haynes. For Republicans, Haynes observes that GNP growth is much lower in the first two years of the electoral term than for Democrats, but at the end of the electoral term GNP growth is above average under Republican administrations and below average under Democratic administrations. The estimates of the popularity functions presented in the next section indicate that a Republican candidate is most likely to win the elections when inflationary pressures are high. Since Republicans give a high weight to the inflation target relative to the output target, inflationary pressures induce Republicans to implement a contractionary policy. This immediately leads to a fall in real output growth. Since inflation reacts to nominal demand policy with a lag, it remains temporarily high. However, inflationary pressures gradually decline, because $(y/y_{\text{trend}})_{t-1}$ falls. In the middle of the electoral term, inflationary pressures are low. From Equation (3) it is easy to see that low inflationary pressures increase the scope for real output growth. Thus, when a Republican president has succeeded in reducing inflationary pressures, real output growth has a tendency to rise. Because, after the trough in real output growth, the level of real output is likely to be below its trend, this tendency to higher real output growth can be accommodated by nominal demand policy without danger of inflation.

As to GNP growth and inflation, the story for Democratic presidents is almost the reverse. Democratic candidates are most likely to be elected when inflationary pressures are low and the level of real output is below its trend. Democratic presidents respond to these economic circumstances by an expansionary policy. Economic growth rises and, as time evolves, inflationary pressures rise. Through Equation (3), this implies that there is less scope for real output growth. At the end of the electoral cycle, inflation rises, which implies that the cost of expansionary policy increases. As a consequence, at the end of a Democratic administration's term, real output growth is likely to be low.

In the above explanation of the political cycles in economic variables, the output gap plays an important role. Figure 1 is a plot of the electoral patterns for (y_t/y_{trend}) .¹ Following Haynes, the electoral patterns are specified as a regression on 32 dummy variables, one for each quarter of the Democratic and Republican presidential term.

At the beginning of the electoral term, the output gap is lower for Democrats than for Republicans. This is in line with the prediction of our model that a Democratic (Republican) president is likely to enter office when inflationary

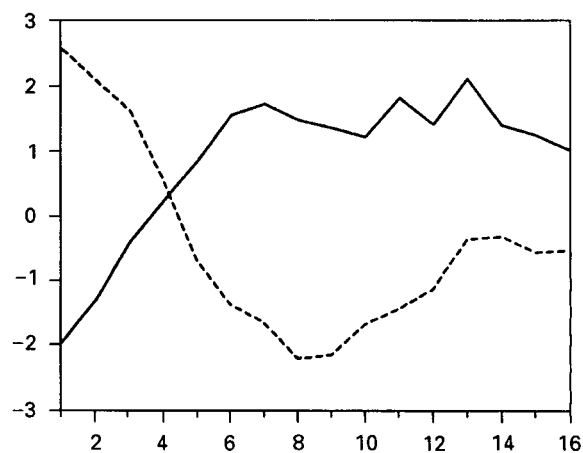


Fig. 1. y_t/y_{trend} (Democrats —; Republicans - - -)

pressures are low (high). For Democrats, the output gap rises until the sixth quarter of the electoral term, while for Republicans the output gap falls till the eighth quarter. For Democrats, after the sixth quarter the output gap remains rather stable until the twelfth quarter after which it slightly falls. This fall is due to the response of Democratic presidents to rising inflation. In the second part of the Republican electoral term, the output gap rises, although it does not approximate the output gap for Democrats. The output gap can rise, because the decline in inflationary pressures reduces the need for contractionary policy. Overall, Fig. 1 is consistent with the predictions of the partisan theory. The observation that, at the end of the terms of Republican administrations, real output growth tends to be higher than the mean real output growth rate, is probably the result of the dynamics of the economic system, rather than the result of electoral objectives.

III. ECONOMIC VARIABLES AND PRESIDENTIAL POPULARITY

Following Haynes (1995), we first estimate a popularity function which identifies the relationship between economic variables and presidential approval rates. Next, using this equation we calculate the predicted response of popularity to economic performance. These results are used to calculate electoral and partisan patterns in popularity.

The data

We use quarterly data for the period 1952:1–1990:4. Presidential popularity is measured by the percentage

¹ The variable y_t/y_{trend} is described in Section III.

respondents who answer 'approve' to the well-known Gallup survey question: 'Do you approve or disapprove the way that [____] is handling his job as President' listed in Haynes (1995). The economic variables we consider are real GNP growth, inflation and unemployment. We calculate these variables using real GNP data (RGNP), the consumer price index (CPI) and unemployment data (UNEM) which are published in Haynes (1995). Real GNP growth (Δy_t) and inflation (π_t) are:

$$\Delta y_t = 100 \left(\frac{\text{RGNP}_t}{\text{RGNP}_{t-4}} - 1 \right) \quad (4)$$

$$\pi_t = 100 \left(\frac{\text{CPI}_t}{\text{CPI}_{t-4}} - 1 \right) \quad (5)$$

The variable $(y/y_{\text{trend}})_{t-1}$ is equal to the residual of the following equation, ε_t , which we estimate for the period 1953:1–1990:4 by the method of ordinary least squares:²

$$\log(\text{RGNP}_t) = 7.200 + 0.008 \text{tr} - 0.002 \text{tr}75 + \varepsilon_t \quad (6)$$

(0.006) (0.001) (0.0002)

tr is a standard trend term and tr75 is an additional trend variable which starts in 1975:1.³

In many studies where the response of presidential popularity to economic variables is measured, it is argued that one should control for the effects of some non-economic variables (Hibbs, 1982; Chappell and Keech, 1985; Chappell, 1990). Following these studies we consider three additional types of explanatory variables. First, we include intercept dummies to account for individual characteristics of the presidents. Secondly, episodic events may influence the approval rates of presidents. We control for the involvement of the US in the Vietnam war and we measure the impact of the Watergate and Iran-Contra scandals on presidential popularity. The Watergate-dummy equals one from 1973:4 to 1974:2, and is zero otherwise. The dummy for the Iran-Contra scandal is defined as one from 1986:4 to 1987:4, and is zero otherwise. To proxy the growing dissatisfaction of the US electorate with the involvement in the Vietnam war we experiment with several dummy specifications to account for this effect. For example, we try a dummy which equals one in 1964:3 and which increases by one after every 4 quarters until 1968:2, and is zero otherwise. Thirdly, we consider the relevance of honeymoon effects. We estimate the honeymoon effect with six dummy variables *Posti* which equal one in the *i*th quarter after each election, and are zero otherwise.

The competency model

Our popularity function partly reflects a tradition according to which voters evaluate economic performance in order to assess the incumbent's competence (cf. Kramer, 1971; Fair, 1978; Hibbs, 1982; Chappell and Keech, 1985). In line with this notion, voters vote to retain the incumbent when the economy performs well, while if the economy deteriorates the voters hold the incumbent responsible and then voters punish. Hence, we expect that voters reward the incumbent party when real GNP growth is high, but shift their votes to the opposition when inflation is high.

The partisan voter model

Our popularity function also incorporates the notion that voters may use their vote 'to pick the party that best fits the current economic situation' (Balke, 1991). A rationale for this idea is that parties pursue partisan policies (Hibbs, 1977; Alesina and Sachs, 1988). These studies suggest that for the United States the Republican party finds fighting inflation more important, whereas the Democratic party attaches higher priority to stimulating real output growth. If voters are aware of this difference, they may select a government considering the parties' reputation of being able to solve a specific set of economic problems (see also Swank, 1993). Hence, we expect that higher inflation makes the Republican party more attractive to the electorate than the Democratic party, because the Republican party has a reputation of being tough on inflation.

High positive values of the output gap reduce the appeal to the Democratic party. The reason for this is that stimulating economic growth during a period when real GNP exceeds its trend value triggers inflationary pressures, because then the economy operates near full-capacity. As we just argued, in that case Republicans gain popularity, implying a reduction of Democratic support, because of their relatively high inflation aversion. If, however, the output gap is low then the opposite argument holds, since then inflationary pressures are less prevailing, so that the marginal costs of stimulating economic growth are small in terms of higher inflation.

Swank (1996) argues that one may doubt whether the output gap is a variable that is easily ascertainable to voters. Since voters have little incentives to gather sophisticated information about the economy, they are likely to vote on the basis of economic variables that are easy to understand. Therefore, following Swank (1996), we also estimate a popularity function in which the output gap is replaced with unemployment. The reason for this is twofold. First, for the

² Standard errors are given in parentheses.

³ Results based on other trend shifts are discussed later.

United States, unemployment is a reasonable substitute for the output gap, because they are both related to the business cycle. Secondly, in many studies it is found that unemployment is an important determinant of voter decisions. We expect that high unemployment increases the popularity of the Democratic party, because this party is prone to solve this problem, and we expect that low unemployment favours Republican popularity.

It is worthwhile noting that the partisan voter model implies that economic variables affect presidential popularity asymmetrically: we expect that higher (lower) unemployment, lower (higher) (y/y_{trend}) and lower (higher) inflation increase the popularity of the Democratic (Republican) party. In order to account for the asymmetric effects of these economic variables we define a dummy variable, dem_t , which equals one during democratic incumbencies, and is zero otherwise. We introduce the following variables to measure the implications of the partisan voter model for presidential popularity: $dem_t(y_t/y_{\text{trend}}) - (1 - dem_t)(y_t/y_{\text{trend}})$, $dem_t unem_t - (1 - dem_t)unem_t$, and $dem_t \pi_t - (1 - dem_t)\pi_t$. As discussed above, the expected signs of these variables are negative, positive and negative, respectively.

Estimation results

The popularity function is estimated using an ordinary least squares technique which corrects for first order autocorrelation. The estimation results are presented in Table 1. All parameter estimates are found to be significant at conventional levels. The results show that both the terms, representing the competency model and the PVM, contribute to the explanation of presidential popularity. The estimates corresponding to the variables that are labelled [competency model] indicate that presidential popularity decreases if real growth decreases or if inflation rises. Hence, voters are found to hold the incumbent responsible for unfavourable economic conditions. We also find support for the implications of the PVM. In Equations (a) and (b) these estimates show that Republican support increases when inflation rises irrespective of the incumbent's political colour. Equation (b) shows that high unemployment raises the popularity of the Democratic party and Equation (a) shows that if the economy operates near full capacity (high (y/y_{trend})), which triggers inflationary pressures, then the Republican party gains public support.

We have estimated several extensions of Equations (a) and (b), none of them being successful. For example, we have estimated popularity functions including dummies to control for special circumstances like the Vietnam war and the Iran-Contra scandal. Neither of these variables contributes significantly to the explanation of presidential popularity. We have also estimated popularity functions taking into account the honeymoon-effect discussed earlier. Again,

Table 1. *Estimated popularity function, 1953:1–1990:4*

Regressor	(a)	(b)
Eisenhower	63.00 (3.39)	73.48 (5.91)
Kennedy	64.66 (4.46)	54.48 (7.00)
Johnson	70.36 (4.76)	57.34 (6.61)
Nixon	47.71 (4.64)	62.43 (6.44)
Ford	37.12 (5.54)	52.51 (8.25)
Carter	75.14 (9.84)	59.64 (13.23)
Reagan	50.13 (4.25)	67.37 (7.87)
Bush	53.54 (5.30)	69.99 (7.65)
Watergate	- 25.26 (3.99)	- 24.44 (4.01)
Δy_t [Competency model]	0.63 (0.29)	0.68 (0.29)
π_t [Competency model]	- 1.42 (0.71)	- 1.61 (0.71)
$dem_t(y_t/y_{\text{trend}}) - (1 - dem_t)(y_t/y_{\text{trend}})$ [PVM]	- 1.28 (0.37)	—
$dem_t unem_t - (1 - dem_t)unem_t$ [PVM]	—	2.48 (0.87)
$dem_t \pi_t - (1 - dem_t)\pi_t$ [PVM]	- 2.30 (0.59)	- 2.42 (0.60)
ar(1)	0.70 (0.07)	0.70 (0.07)
R^2	0.84	0.84
Adjusted R^2	0.83	0.83
Standard error of regression	4.95	5.01
Ljung-Box (10)	6.97	8.67
Ljung-Box (20)	16.93	15.01
Box-Pierce (10)	7.34	8.25
Box-Pierce (20)	15.57	13.90

Notes: The dependent variable is the percentage approval rate from Gallup. Estimates for the effects of personal attributes of presidents and the Watergate-scandal are presented. The label [competency model] ([PVM]) refers to variables consistent with the competency (partisan voter) model. Standard errors are given in parentheses. All parameters are significant at the 0.05 level or better and are properly signed. The Ljung-Box(k) and Box-Pierce(k) statistics are calculated using k autocorrelations and do not reject the hypothesis of no serial correlation of the error terms. We rescaled the variable (y/y_{trend}) by multiplying by a factor 100.

none of the dummies *Post1* to *Post6* is associated with significant parameter estimates.

Our estimates are robust to all of the extensions to Equations (a) and (b) just mentioned. Furthermore, our conclusions regarding Equation (a) remain if we use alternatives to the variable (y/y_{trend}) . Obvious alternatives are obtained by replacing *tr75* with *trjj* ($jj = 69$ to 81) and re-estimating Equation (4) to calculate (y/y_{trend}) .⁴ We have also estimated Equation (4) without an additional trend term *trjj* and obtained (y/y_{trend}) . Finally, we have replaced (y/y_{trend}) in Equation (a) with one of its alternatives. The nature of the results is not affected.

In our popularity function, the variables Δy_t and π_t are annual percentage changes using quarterly data. One problem with these variables is that the performance of a new president depends on data from the previous administration (see for example, Chappell and Keech, 1985 and Chappell, 1990). We have recalculated Δy_t and π_t using within term data for those quarters that are subject to this problem. Although estimates of the popularity function based on the adjusted variables show that the response of presidential popularity to Δy_t is lower than in Table 1, the results are not changed qualitatively.⁵

IV. PREDICTED POPULARITY

In this section we show that our estimated popularity function performs very well regarding the explanation of both Republican and Democratic popularity. To this end, we compute electoral means of actual and fitted popularity using Equation (a) from Table 1.⁶ Following Haynes (1995), the cycle of electoral means of a variable is obtained by regressing this variable on 16 dummies, one for each quarter of the four-year presidential term. The regression equation does not specify an intercept term, which implies that the coefficients of the dummies denote the mean for each quarter of the electoral period. We calculate the electoral cycle of actual and fitted popularity for Republicans and Democrats separately.

In Fig. 2 the electoral means for actual Republican popularity are given by the solid line. The dashed line depicts the electoral means of fitted Republican popularity.⁷ It appears from Fig. 2 that the electoral means of fitted popularity track the corresponding values for actual popularity very closely. Thus, Fig. 2 indicates that our popularity function

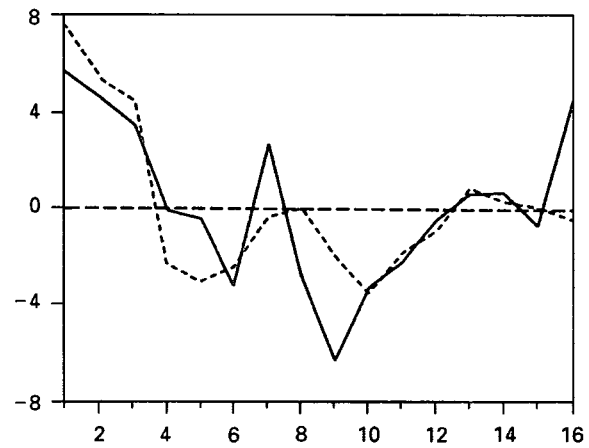


Fig. 2. Republican popularity by electoral quarter (fitted values -----, actual values —)

explains Republican popularity very well. In fact, the correlation coefficient between actual and fitted Republican popularity is equal to 0.903.

Figure 3 depicts the electoral cycles of actual (solid line) and fitted (dashed line) Democratic popularity.⁸ We observe that the electoral means of fitted popularity are close to the electoral means of actual Democratic popularity. Hence, Fig. 3 suggests that our popularity function is a good description of Democratic popularity. This conclusion is supported by the correlation coefficient of actual and fitted Democratic popularity, which equals 0.941.

Haynes (1995) is interested in the question of how movements in economic conditions contribute to presidential popularity. He computes predicted electoral means of popularity by multiplying the electoral means of economic variables by the appropriate parameters from the popularity function. Predicted popularity is therefore independent of non-economic variables. Haynes reports that the estimated popularity function implies that the correlation between the electoral means of actual and predicted *Republican* popularity is significant at 0.632, whereas the correlation coefficient of the electoral means of actual and predicted *Democratic* popularity is insignificant. Hence, according to Haynes' results economic conditions do not explain very well the actual electoral cycle of Democratic support. Following the same procedure as Haynes we obtain Figs 4 and 5, which

⁴ The trend term *trjj* starts in 19jj: 1.

⁵ It is not a problem to base the three variables, which measure the implications of the partisan voter model, on data outside the electoral term. In the partisan voter model, voters are not primarily interested in who is responsible for the economic situation.

⁶ Using Equation (b) yields similar results.

⁷ The pooled mean of presidential popularity (i.e. 56.56) is subtracted from the electoral means of both actual and fitted values of popularity.

⁸ Again, the pooled mean of presidential popularity (i.e. 56.56) is subtracted from the electoral means of both actual and predicted popularity.

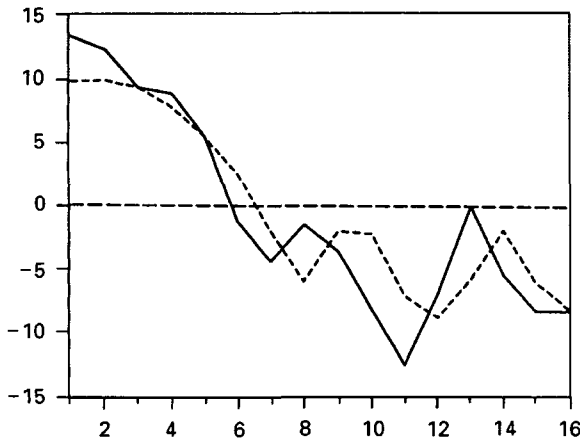


Fig. 3. Democratic popularity by electoral quarter (fitted values -----, actual values —)

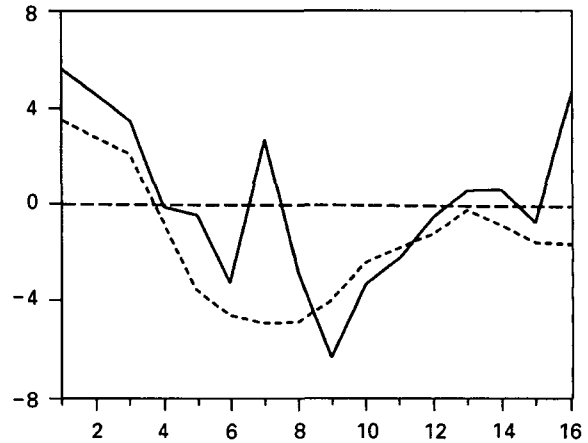


Fig. 4. Republican popularity by electoral quarter (predicted values -----, actual values —)

present the results for the Republican and Democratic case, respectively. The solid line depicts the electoral cycle of actual popularity. The dashed line gives the electoral cycle of popularity due to movements in economic variables.⁹ The correlation coefficient between the electoral means of actual and predicted popularity of both *Republican* and *Democratic* presidents are very high: 0.69 and 0.88, respectively.¹⁰ Hence, we find that the electoral cycle of presidential popularity is highly determined by the response of popularity to changes in economic performance.

It appears from Fig. 4 that the popularity of Republican presidents declines due to economic forces until the 8th quarter of the electoral term. After the 8th quarter popularity recovers, but remains below its initial value. Figure 5 shows that due to economic changes Democratic popularity decreases until the 8th quarter, then stabilizes until the 12th quarter and decreases again until the end of the electoral term. Hence, irrespective of their political colour, all presidents face declining popularity due to economic movements during the first 2 years of their incumbency. However, Republican presidents witness a reversal of this process in the last two years of their terms whereas Democrats do not.

Our model sheds some light on the phenomenon described above. We have found that voters base their vote on the competency of the candidates and on the reputation of

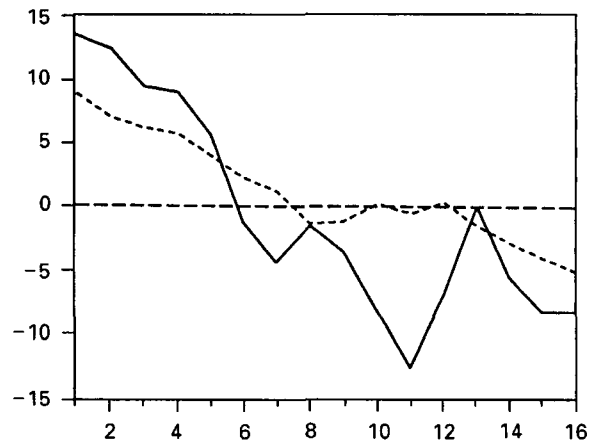


Fig. 5. Democratic popularity by electoral quarter (predicted values -----, actual values —)

the candidates' political parties to solve a specific set of economic problems (PVM). In light of the PVM it is not surprising that incumbent presidents are initially very popular. The elected president is chosen because voters perceive that his preferences are likely to fit the most urgent economic problems. Consequently, the political preferences of the president assure voters that the president will start

⁹ We choose the intercept dummy for Republican (Democratic) presidents equal to 50 (72.5). This choice is not important for our analysis, since the pattern of both the Republican and the Democratic electoral cycle is invariant to transformations by adding or subtracting constant terms. Equivalently, the correlation coefficients reported in the text are not affected by different constant terms, since it holds that $\text{corr}(x_i; y_i) = \text{corr}(x_i + a; y_i)$

¹⁰ Calculating predicted popularity using the presidential intercepts presented in Table 1, we find corresponding correlation coefficients of 0.69 and 0.91 for the Republican and Democratic case respectively. Note that the Watergate dummy is the only non-economic variable in this case.

dealing with the economic problems once he is in office. Republicans fight inflation by inducing a recession. Democrats deal with unemployment and stimulate growth at the cost of higher inflation. Gradually, once the partisan policy becomes effective the demand for solving the problems decreases and, according to the PVM, the incumbent president becomes less popular.

Previous studies on presidential popularity account for the high popularity of presidents at the beginning of their terms by the inclusion of honeymoon dummy variables. In contrast to those studies we find honeymoon variables to be insignificant at conventional levels. The honeymoon effect is often introduced to capture the notion that voters give the president the benefit of the doubt, because the just elected president inherits the state of the economy from his predecessor and therefore has no performance record that can be taken seriously. The PVM provides an alternative rationale for the honeymoon effect. It suggests that presidents are very popular initially, because they are thought to be the suitable type to solve the problems. The president becomes less popular, because dealing with the economic problems makes him more or less redundant.

The next question is why presidents of different political colour face different electoral patterns in popularity during the second part of their incumbency. As noted before, Republican presidents pursue restrictive policies and Democratic presidents follow expansionary policies. The distinct policy stances have different consequences for the last two years of a president's term. In line with the working of the economy we described in Section II (see Equations (2) and (3)), the last two years of a Republican incumbency are characterized by an environment in which inflation remains stable and economic growth recovers since, if real GNP is low, it tends to grow to its trend value. However, a Democratic president faces an economic situation in which inflationary pressures show up and where economic growth declines because if real GNP is high it tends to decline to return to its trend value again. These different economic patterns may contribute to an explanation of the dissimilar popularity movements of Republican and Democratic presidents during the last years of their terms. The popularity function we reported in the previous section shows that, in line with the competency model, the electorate holds the incumbent responsible for unfavourable economic conditions. Presidents are rewarded for economic growth but punished for inflation. We observed that the last two years of a Republican term are characterized by favourable economic conditions, whereas the opposite holds for

Democratic incumbents. Hence, the distinct patterns of popularity during the last two years of a presidential term can be explained by the implications of the competency model.

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