JAC C. HECKELMAN
Wake Forest University
Winston-Salem, North Carolina

*Partisan Business Cycles under Variable Election Dates**

This paper develops a model where rational economic agents face uncertainty regarding the timing of elections and which party will emerge victorious should an election occur. This electoral uncertainty affects the macroeconomy, where the size and direction of the impacts are dependent on the party in power in the current and previous period, time elapsed since the last election, and party popularity. Leftist governments are expected to sustain higher output levels throughout their electoral term compared to right-wing governments, and the partisan differences will continue to increase until the next election.

1. Introduction

The new wave of political economic models has attempted to develop a connection between partisan policies and economic performance. The traditional Partisan Theory (hereafter, PT), due to Hibbs (1977, 1986), proposed each party adopting different positions on the stable Phillips Curve offering a trade-off between high output (low unemployment) and high inflation. Hibbs argued that leftist governments are more concerned with unemployment than inflation because their core constituency, composed primarily of blue-collar workers, are more vulnerable to unemployment during an economic downturn, whereas right-wing party supporters are primarily white-collar professionals whose employment prospects are much more stable over time and were thus more concerned with retaining the real value of their assets through low inflation. Thus, politicians on the left supported expansionary policies with high inflation to keep unemployment low, whereas right-wing politicians supported contractionary policies to keep inflation low even though real economic output would be slowed.

Rational expectation partisan models, pioneered by Alesina (1987), showed that such partisan policies would only have temporary effects on unemployment and growth. If agents adjust their wage/price contracts to the actual inflation rate, the economy would not deviate from the natural rate

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of growth or full employment levels. Alesina's innovation was to show that since rational agents are unable to perfectly predict the winning party of an upcoming election, they will not know whether a high or low inflation rate will prevail in the future. Thus, to minimize their prediction error, he envisioned risk averse agents forming contracts based on a weighted average of the two parties' preferred inflation rate. After the election, for the duration of the current contract, actual inflation will deviate from the predicted rate. If the left party is victorious, there is an "inflation surprise" and the economy grows more rapidly than normal and vice versa when the right party wins. The next contracts will entail the correct inflation rate and the economy will return to full employment until the next election. Thus, the model predicts that elections lead to temporary economic fluctuations due to the uncertainty over election outcomes with the direction of the fluctuation determined by the winning party.

Questions have arisen regarding Alesina's model, commonly referred to as Rational Partisan Theory (hereafter, RPT), as to how rational the agents behave. Typically, two period models are envisioned where one period covers the election and the next period is no election. Each contract covers a single period and contracts are written at the end of each period for the next period. As pointed out in Hibbs (1992), it is not clear why rational economic agents would design contracts to end before the election instead of immediately following the election. By forming contracts just after the election, the relevant inflation rate would always be known and no cycle would occur. Since presidential elections are known to always be held every fourth November, RPT does not seem to be a fully rational model.

The problem becomes more severe when considering the other advanced democracies. Most parliamentary nations do not have the fixed election schedule as in the U.S. Thus, for the same RPT cycle to hold in these other nations, agents must be able to perfectly predict the timing of an election and therefore implicitly form contracts of variable length that will always end prior to the election, whenever it is actually held, to generate inflation uncertainty at the "correct" time but not earlier. Again, this does not appear to be a rational way to write contracts, nor does it seem reasonable to expect agents to perfectly forecast the timing of elections in advance.

Alesina does concede this point: for parliamentary nations, "in every period there is at least 'some' probability that an election is called and that a change of government may occur" (Alesina and Roubini 1992, 670). However, Alesina and Roubini fail to develop the implications and they ignore the consequences in their empirical work.[1]

[1]Another criticism of their tests focuses on their decision to consider only changes in party power (incumbent party losses) rather than each election as actually predicted by RPT (Sheffrin 1989; Hibbs 1992). This point will be considered below.

In this paper, a different approach to modeling contracts will be taken. Instead of assuming long-term contracts which somehow always end just prior to an election, the model is based on short-term contracts. There is uncertainty over which party will govern during the period of the next contract as in traditional RPT, but also, as in Ellis and Thoma (1991), uncertainty over the timing of elections. Rational agents form expectations regarding the next period's inflation rate, which is a weighted average of the parties' optimal inflation rate as in standard RPT, but here the weights also depend on the probability of an election occurring and the probability of each party winning should an election occur. Thus, in every period there is uncertainty over the expected inflation rate. Since the uncertainty differs in each period, the advantage to short-term contracts enables agents to update their contracts as their expectations on inflation are updated, thereby always utilizing the most up-to-date information in predicting future inflation when setting wages and prices.

The model does not predict a stable business cycle that should emerge timed around each actual election. The business cycle is affected both by actual election outcomes and also the *possibility* of an election. Since some degree of uncertainty exists in every period, leftist governments are expected to sustain higher output levels compared to right-wing governments, and the partisan differences will increase throughout their electoral term. The partisan effect on output from a new election is smaller the later in the term the election was held.

2. The Model

The timing of events in this model is as follows. At the end of each period, a contract is written to cover the next period in which nominal wages and prices are set based on the expected inflation rate to prevail in the next period. At the start of the next period, an election may be announced to take place. If so, an election is held where the winning party implements its preferred inflation rate. Otherwise, the party in power from the previous period remains in power and continues the same inflation rate. At the end of the period, new contracts are formed to cover the next period. The process repeats every period.

The model thus incorporates the standard partisan theory of inflation (Hibbs 1986) with the rational expectations approach of uncertainty over future electoral outcomes (Alesina 1987) and modifies the RPT framework by explicitly including uncertainty over the timing of elections (Ellis and Thoma 1991). For simplicity, we can dub this model as Variable Rational Partisan Theory (VRPT, hereafter). The model is similar in spirit to that of Ellis and Thoma (1991), but the focus of their study is different than the

one here. Ellis and Thoma concentrate on determining the conditions under which different government types will call for an early election (by following an optimal stopping rule) given their preferences over distributional issues and voter uncertainty. They are unable to derive closed-form solutions for leftist governments. For tractability, in this study forecasts on election timing and the subsequent winning party are assumed to be exogenous to economic conditions to focus attention on the partisan effects on the business cycle.

It is assumed the economy operates on the expectations-augmented Phillips Curve of the form

$$y(t) = \lambda\breve{y} + [1 - \lambda]y(t - 1) + \eta[\pi(t) - E\pi(t)] , \qquad (1)$$

where $y(t)$ is real output at time t, $\breve{y}$ is the natural rate of output, $\pi(t)$ is the actual inflation rate, E is the rational expectations operator utilizing all available information from the previous period $t - 1$, η is a positive parameter signalling output will fluctuate due to expectational errors in predicting inflation, and $0 \leq \lambda \leq 1$ is a parameter measuring the degree of output persistence.

Alesina (1987, 1988) developed his RPT model by analyzing the effect of electoral uncertainty regarding partisan inflation rates on output *growth*.[2] As Gartner (1994b) points out, even temporary deviations to growth under standard RPT will lead to permanent deviations from trend in the level of output. In essence, Alesina's macroeconomic framework assumed a demand-side hysteresis effect on the level of output. In contrast, when developing their innovation of election timing uncertainty, Ellis and Thoma (1991) assumed the absence of any persistence to output.

Rather than force a specific structure on the aggregate supply curve, the flexible form of Equation (1) is adopted which can accommodate either pure hysteresis ($\lambda = 0$) or natural rate ($\lambda = 1$) as limiting cases, or partial persistence for $0 < \lambda < 1$. The comparative-statics of the VRPT model developed below are robust to differing values of the λ parameter, but the expected long-run output will depend on the degree of persistence. As will be shown, the long-run output pattern under an RPT-type model with hys-

[2]The RPT literature has not been consistent in its representation of the Phillips Curve. Alesina himself has fluctuated in the presentation of his structural equations by alternately including a constant (Alesina 1987) or linear trend component to growth (Alesina and Sachs 1988) or allowing some persistence to growth by adopting an AR(1) specification (Alesina 1988). Some RPT models have utilized a Phillips Curve representation on the level of output assuming a natural trend (Balke 1991; Gartner 1994a). Still others have concentrated on unemployment effects assuming either partial persistence (Alogoskoufis, Lockwood and Philippopoulos 1992) or the absence of persistence (Chappell and Keech 1988; Ellis 1991).

teresis may be similar to the VRPT model with no output persistence under certain circumstances.

Following convention of the literature, each of the political parties is assumed to target a non-stochastic optimal inflation rate, denoted here as π^S and π^C ($\pi^S > \pi^C$) for the Socialist/Leftist party (S) and the Conservative/Right-wing party (C), respectively. Thus, we can formulate the current inflation rate simply as

$$\pi(t) = \pi^S S(t) + \pi^C C(t) , \tag{2}$$

where $S(t)$ ($C(t)$) is a dummy variable equal to 1 when party S (C) comprises the majority party and 0 when party C (S) is the majority party.

Agents in this model form contracts to cover the next period where nominal wages are a function of the expected inflation rate. If no election occurs in the next period, the inflation rate will remain the same as current. However, if an election does occur, the inflation may change but only if the current majority party is voted out. Rational agents know that in any subsequent period an election may be held and that the current party may not control policy in the next period. Thus, inflation may differ in the next period compared to the current period under which contracts are devised. If we denote the probability of an election as $\rho(t)$ and the probability of the Socialists winning an election (hereafter, party S popularity) as $\phi(t)$, then expectations on inflation take the form of

$$E\pi(t) = [1 - E\rho(t)]\,[\pi^S S(t-1) + \pi^C C(t-1)] + E\,\rho(t)\,\{\pi^S E\phi(t) + \pi^C[1 - E\phi(t)]\} . \tag{3}$$

The first term is based on the expected inflation in the event that no election occurs, in which case the party in control when the contract is formed in period $t - 1$ will also determine next period's inflation. The second term reveals that the expected inflation to prevail should an election occur depends on the predicted winning party. Thus in any given period, as long as there is a positive probability of an election occurring, i.e. $E\rho(t) > 0$, the actual inflation rate that will prevail will not be equal to the expected inflation rate. The only periods in which $E\pi(t) = \pi(t)$ are when both an election and the outcome, or no election, are correctly predicted with probability 1, or no election is predicted with probability 1 but a surprise election is held in which the incumbent party happens to win. If agents are not perfect prognosticators, there is likely to be an "inflation surprise" in every period. The direction and size of the surprise depends on which party is in power in the current period and the previous period when the contract was written, the

expected probability of an election occurring during the next period, and the popularity of each party.

How rational agents form their expectations on $\rho(t)$ and $\phi(t)$ has been considered explicitly in previous studies. For the case of fixed elections and partisan voters, Ellis (1991) finds that endogenizing the election outcome affects the magnitude but not the direction of traditional RPT economic deviations. Balke (1991) assumes that non-partisan voters will choose the party which will stabilize the economy if there are market distortions present. His model predicts business cycles are offset, rather than created, by elections.

The rational timing of elections by the incumbent government has typically been derived only for pure office-seeking, rather than partisan, political parties (Chappell and Peel 1979; Balke 1990; Smith 1996). Ellis and Thoma (1991) consider governments who rely upon an optimal stopping mechanism within an RPT-type framework. However, the model becomes intractable for determining the timing of an election under Socialist party rule. In all the various studies, election timing is a function of, among other things, the discount rates of the parties which is information the other economic agents are not likely to know. Empirically, Alesina, Cohen and Roubini (1993) find that election timing is not determined by growth[3] or inflation conditions, but is related to the amount of time passed since the previous election.

For tractability, we assume $E\rho(t)$ and $E\phi(t)$ are exogenous to the other economic variables under consideration here. Under these conditions, the impact of the inflation surprises on the overall economy can be found by simply substituting Equations (2) and (3) into (1). After some minor algebra and noting that $S(t) = 1 - C(t)$ by construction, the reduced-form equation simplifies to

$$y(t) = \lambda\breve{y} + [1 - \lambda]y(t - 1) + \eta[\pi^S - \pi^C]\{\Delta S(t) + E\rho(t)[S(t - 1) - E\phi(t)]\}, \qquad (4)$$

where Δ denotes the change operator. The information contained in Equation (4) is not transparent and is considered in detail in the next section.

3. Partisan Effects Caused by Electoral Uncertainty

The VRPT model derived above suggests real economic output responds to current and past party control, the inflation rate expected to pre-

[3]An exception is Japan. However, see Heckelman and Berument (1998) for a criticism of their methodology.

vail, and the probability of each party to emerge victorious should an election be held. Each of these effects will be considered in turn.

First, the effect of uncertainty over the election timing is found from

$$\frac{\partial y(t)}{\partial E\rho(t)} = \eta[\pi^S - \pi^C]\,[S(t-1) - E\phi(t)]\,. \tag{5}$$

The sign of this is indeterminate since it depends on which party is in office when contracts were formed in the previous period. Specifically, the impact of the probability of an election when party S was in power is

$$\left.\frac{\partial y(t)}{\partial E\rho(t)}\right|_{S(t-1)=1} = \eta[\pi^S - \pi^C]\,[1 - E\phi(t)] > 0\,, \tag{6}$$

and the impact when party C was in power is

$$\left.\frac{\partial y(t)}{\partial E\rho(t)}\right|_{S(t-1)=0} = -\eta[\pi^S - \pi^C]E\phi(t) < 0\,. \tag{7}$$

These evaluated derivatives are as expected. An increase in the expected probability of an election implies a higher likelihood for a change in policy, for a given popularity of party S. Thus when party S controlled policy, more weight is placed on the low inflation state prevailing in the next period.[4] If the Socialists retain control the next period, either due to no election or winning an election, the "surprise inflation" is greater and the economy temporarily grows faster. If an election is held and the Conservatives take control, the subsequent surprise is not as large and the economic contraction will be lessened, compared to a lower election probability. Of course, as seen in (7), the reverse occurs if the Conservatives are in control when the contract is developed. The higher election probability causes the inflationary expectation to rise in (3) and thus continued lower inflation in the next period is more harmful to output, while a change to the high inflation state from a Socialist victory is less unexpected and leads to a smaller expansion compared to a more unexpected election.

These results also suggest the expected popularity of each party plays a role in the economy due to its impact on inflation expectations. Specifically,

$$\frac{\partial y(t)}{\partial E\phi(t)} = -\eta[\pi^S - \pi^C]E\rho(t) < 0\,, \tag{8}$$

[4]Specifically, $[\partial E\pi(t)]/[\partial E\rho(t)]|_{S(t-1)=1} = [\pi^C - \pi^S][1 - E\phi(t)] < 0.$

which implies the economy will grow slower the more popular the Socialists are compared to the Conservatives. The more popular is party S, the greater the weight assigned to the high inflation state, for any non-zero probability of an election occurring. Thus, high inflation in the next period will have a smaller impact, and a low inflation state will be deemed a larger surprise, relative to lower popularity for party S. In this framework, voters' perceptions of the political parties actually have a causal effect on real output.

The long-run output response to the expectational errors created from electoral uncertainty depends on the type of uncertainty created as well as the underlying form of the Phillips Curve. Suppose an election occurs in period t, and the next election is held in period $t + z$. Then from Equation (1),

$$y(t + f) = \lambda\breve{y} + [1 - \lambda]^{f+1}\, y(t - 1) + \eta[\pi(t + f) - E\pi(t + f)]$$
$$+ \sum_{j=1}^{f} \lambda[1 - \lambda]^{j}\, \breve{y} + \sum_{j=0}^{f-1} \{[1 - \lambda]^{f-j}\, \eta[\pi(t + j) - E\pi(t + j)]\} . \quad (9)$$

This can be contrasted with an RPT-type model where the electoral uncertainty is limited to the actual election period t and thus $\pi(t + f) = E\pi(t + f)$ for all $0 < f < z$. In this case, the above equation simplifies to

$$y(t + f) = \lambda[1 - \lambda]\breve{y} + [1 - \lambda]^{f+1}\, y(t - 1)$$
$$+ \sum_{j=1}^{f} \lambda[1 - \lambda]^{j}\, \breve{y} + [1 - \lambda]^{f}\, \eta[\pi(t) - E\pi(t)] . \quad (10)$$

In the absence of hysteresis, the long-run natural rate of output $\breve{y}$ will eventually be reached. The smaller the value of λ (larger degree of persistence) the longer it will take for the expectational error to wear off. In the limit, if $\lambda = 0$ (hysteresis), then

$$y(t + f) = y(t - 1) + \eta[\pi(t) - E\pi(t)] , \quad (11)$$

so that the error effect remains permanent for all future periods.

Under the VRPT model, uncertainty over the timing of elections implies expectational errors may occur in each period. Thus even under a pure natural rate of output Phillips Curve ($\lambda = 1$), output will never be expected to be at its natural rate. Substitution into and simplification of Equation (9) reveals

$$y(t + f) = \breve{y} + \eta[\pi(t + f) - E\pi(t + f)] . \quad (12)$$

Thus it would be difficult to empirically differentiate between an RPT model of pure hysteresis and a single period of electoral uncertainty, as shown in (11), and a VRPT model of continued electoral uncertainty without persis-

tence, as shown in (12), if the expectational errors in VRPT remain constant over time. It might normally be expected, however, that the expected probability of an election occurring would increase over time during a given electoral term, in which case expectational errors on inflation will continually increase until the next election, resulting in a greater partisan divergence of output in each subsequent period, as developed in Equations (7) and (8), thereby distinguishing the output patterns given in (11) and (12).

It is also interesting to see how the economy performs under each party overall. First, we evaluate whether it is better to write contracts under a Socialist or Conservative regime.

$$y(t)|_{S(t-1)=1} = \lambda\check{y} + [1 - \lambda]y(t - 1) + \eta[\pi^S - \pi^C]\{S(t) - 1 + E\rho(t)[1 - E\phi(t)]\}; \quad (13)$$

$$y(t)|_{S(t-1)=0} = \lambda\check{y} + [1 - \lambda]y(t - 1) + \eta[\pi^S - \pi^C]\{S(t) - E\rho(t)\,E\phi(t)\}. \quad (14)$$

Next, we consider output production based on the current party in power.

$$y(t)|_{S(t)=1} = \lambda\check{y} + [1 - \lambda]y(t - 1) + \eta[\pi^S - \pi^C]\{1 - S(t - 1) + E\rho(t)\,[S(t - 1) - E\phi(t)]\}; \quad (15)$$

$$y(t)|_{S(t)=0} = \lambda\check{y} + [1 - \lambda]y(t - 1) + \eta[\pi^S - \pi^C]\{-S(t - 1) + E\rho(t)[S(t - 1) - E\phi(t)]\}. \quad (16)$$

We can see from Equations (13)–(16) that economic performance depends on which party controls policy when contracts are formed in the previous period and also which party controls policy in the current period. In this respect, there is no difference between no election and reelection, although future performance will differ since expectations of an election in the next period $(t + 1)$ will likely differ.

Utilizing these four equations, we can evaluate the expected economic performance from each party. There are four possible combinations of party control during the two periods. Party S in both, party C in both, transition from party S to party C and transition from party C to party S.

In a counter-factual framework, Party S would always generate higher real output compared to party C rule in that same given period. For either value of $S(t - 1)$, it holds that $y(t) \mid_{S(t)=1} > y(t) \mid_{S(t)=0}$. This implication is consistent with PT but not RPT in which the improved economic perfor-

mance of the Socialists would be short-lived.[5] However, in PT the differences in performance are non-stochastic whereas here the exact difference depends on which party was in control in the prior period (as well as the stochastic expectations variables). No direct comparison can be made between Equations (13) and (14) since different values of $S(t)$ will alter the conclusions. Thus, although party S will always generate higher output than party C would in the current period, this does not necessarily hold for future output.

Specifically, if the same party retains power for both periods we have

$$y(t)|_{S(t-1)=S(t)=1} = \lambda\check{y} + [1 - \lambda]y(t - 1) + \eta[\pi^S - \pi^C]\{E\rho(t)[1 - E\phi(t)]\}, \quad (17)$$

under continuous Socialist rule, or

$$y(t)|_{S(t-1)=S(t)=0} = \lambda\check{y} + [1 - \lambda]y(t - 1) + \eta[\pi^S - \pi^C]\{-E\rho(t)\,E\phi(t)\}, \quad (18)$$

under continuous Conservative party rule.

Similarly the effect of party change is found by either

$$y(t)|_{S(t-1)=1,S(t)=0} = \lambda\check{y} + [1 - \lambda]y(t - 1) + \eta[\pi^S - \pi^C]\{1 - E\rho(t)\,E\phi(t)\} \quad (19)$$

or

$$y(t)|_{S(t-1)=0,S(t)=1} = \lambda\check{y} + [1 - \lambda]y(t - 1) + \eta[\pi^S - \pi^C]\{1 + E\rho(t)[1 - E\phi(t)]\}. \quad (20)$$

For shorthand case, denote the equations in (17)–(20) as $a - d$ respectively. Consider first the case of a pure natural rate of output ($\lambda = 1$). For given expectations on election timing and winning probabilities, $d > a > b > c$. The effects are summarized in Table 1.

Regardless of which party controlled policy when contracts were written in the previous period, party S will be expected to generate higher output than party C. For a given party rule in the following period, higher output

[5]Recall that in Alesina's RPT models, economic performance refers to growth so the output levels are permanently altered (Gartner 1994b). This sustained difference is due to assumptions regarding persistence (pure hysteresis) in output and not from the direct impact of electoral uncertainty which is being compared here. A more direct comparison is to the other RPT models which assume the absence of persistence in real variables. See the references given in note 2.

TABLE 1. *Model Predictions for Party Impact*

Party in power in period t − 1	Party in power in period t	Size of impact	Rank of Size of Impact
C	S	$\eta[\pi^S - \pi^C] * [1 - E\rho(t)\, E\phi(t)] > 0$	1
S	S	$\eta[\pi^S - \pi^C] * \{E\rho(t)\, [1 - E\phi(t)]\} > 0$	2
C	C	$\eta[\pi^S - \pi^C] * [E\rho(t)\, E\phi(t)] < 0$	3
S	C	$\eta[\pi^S - \pi^C] * \{1 - E\rho(t)\, [1 - E\phi(t)]\} < 0$	4

NOTE: Impacts determined from Equations (13)–(16) and assumes the absence of any output persistence ($\lambda = 1$).

will occur if the contract was written under party C control since this will lower inflationary expectations, the exception being when an election is predicted with probability 1, in which case the parties' inflation targets in the contract-forming period are irrelevant. Of course, whichever party rules in any given period $t - 1$, it is also more likely to be in power in period t as well (except when an election must occur in period t), and continuous rule leads to lower output levels under party C compared to party S. As shown above in Equations (6) and (7), the election effect depends on which party controls policy when contracts are formed. The threat of an election improves output prospects (i.e. output is less hindered) under party C compared to no election possibility, and vice versa for party S.

Party reelection has the same effect as no election, and output will be highest under a change from C to S and lowest for a change from S to C. This is consistent with the findings of Alesina and Roubini (1992). They investigated the effect of party change from leftist governments to rightist governments, and the reverse, compared against the default of no change. However, they treated all continuations of party rule (after a six or eight month period following an incumbent party defeat) the same regardless of which party it was (consistent with the predictions of RPT) whereas the VRPT model developed here further distinguishes between party S continuation and party C continuation. Also, if the expected probability of an election is a function of time elapsed since the previous election (Balke 1990; Alesina, Cohen and Roubini 1993), then the timing of transition becomes important and economic performance, even under party continuation, has a stochastic element. Specifically, if the expected probability of an election is an increasing function of time elapsed since the last election (not to be confused with t) then each period without a new election results in inflation expectations converging toward 1/2 ($\pi^S + \pi^C$) so the effect on output of a government transition is less dramatic later in the parties' term.

Under output persistence, it is more difficult to determine when output would be greatest since low output under the Conservative party rule in the previous period will limit the positive response of output to the larger inflation surprise generated by a transition to the Socialists, and the higher output expected under Socialist rule will at least partially continue into the next period regardless of which party controls policy. For a given value of $y(t - 1)$, it is clear that $d > a > b > c$ (as under the pure natural rate case) but under persistence $y(t - 1)$ is also a function of $S(t - 1)$ (as well as $S(t - 2)$) so it does not make much sense to hold $y(t - 1)$ constant in all four cases.

4. Conclusions

The model presented here takes Partisan Theory to the next logical step. RPT incorporated the notion of rational expectations and showed par-

tisan differences in policy will only generate deviations in real macroeconomic variables when there is uncertainty over who will control policy. The VRPT model shows that uncertainty over the election timing will also generate uncertainty over policy control and thus fluctuations in the business cycle will not be limited to actual election periods.

In RPT, expansionist policies by the leftist party are expected to increase output only for a short time relative to the life of its current electoral term (assuming the absence of hysteresis effects), but higher inflation will be a permanent fixture of its tenure. In the case of variable election timing, however, the partisan effects on output are maintained, even in the absence of persistence, and in fact the degree of divergence grows each period since the previous election.

When elections are fixed by constitution however, there is no uncertainty over election timing and the VRPT model collapses into a standard RPT-type model. This implies fixed elections would lead to less variation in the business cycle than for variable elections. Heckelman and Berument (1998) argue that fixed elections would generate greater variability when both parties are pure-office seekers and voters have adaptive expectations. This paper reaches the opposite conclusion if parties pursue differentiated policies and agents have rational expectations.

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Appendix

Notation:

$y(t)$ = real output.

$\breve{y}$ = natural rate of output.

η = positive-valued parameter.

λ = persistence parameter.

$\pi(t)$ = inflation rate.
$E\pi(t)$ = expected inflation rate.
π^S = party S inflation target.
$S(t)$ = dummy variable for party S controls policy.
π^C = party C inflation target.
$C(t)$ = dummy variable for party C controls policy.
$E\ \rho(t)$ = expected probability of election being held.
$E\phi(t)$ = expected probability of party S winning election.