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# *On the Existence of a Political Monetary Cycle\**

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This paper examines electoral influence on monetary policy as measured by M1 money growth. I find a significant four-year electoral cycle in money growth even when controlling for the influence of interest rates, income, and budget deficits. Further, the residual electoral cycle produces the income and inflation movements associated with the political business cycle when it is used in simulations of simple reduced form macro models. The paper concludes by discussing the difficulties in rationalizing cyclical monetary policy with rational expectations.

## **Introduction**

The relation between politics and macroeconomic policies continues to be an area of interest and controversy in both economics and political science. In a recent issue of the *American Journal of Political Science*, Nathaniel Beck (1987) reviews the literature and presents some empirical evidence on the question of electorally induced monetary policy which he calls the political monetary cycle (PMC). The starting point for his empirical analysis is my own work (Grier, 1984, 1987), which Beck partly replicates but then finally argues is irrelevant for determining whether the Fed actively conducts a PMC.

This paper briefly reviews the original empirical results and outlines Beck's substantive objections in Section 1. Sections 2 and 3 address these objections both theoretically and empirically, arguing that there is valid statistical evidence of active Fed pursuit of a PMC. Section 4 discusses the possibility of reconciling the theories of rational expectations and the political business cycle both in general and specifically in Beck's paper, and Section 5 is a brief conclusion.

### **1. The Evidence and the Controversy**

Grier (1984) simply extends McCallum's (1978) classic test for an election cycle in unemployment to money growth. Several variables, manufactured to represent possible patterns of electorally desirable money growth, are included in autoregressions on M1 growth. Contrary to McCallum's negative findings, three of these electoral patterns are significant over a 1961–80

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sample. Beck chooses one of these variables (ELCYCLE in his notation, EC2 in mine) and replicates these results over a longer sample.<sup>1</sup>

Beck then raises two major objections toward interpreting ELCYCLE (and presumably the other variables) as the result of deliberate Fed action. First, he argues that the timing of this electoral component in money growth is inconsistent with politically desirable macroeconomic movements before an election. Second, he argues that since money is an endogenous variable not directly controlled by the Fed, the observed cycle may be due to automatic or endogenous monetary responses to other events, not specific political policy actions, and suggests that fiscal policy is the confounding event. The next two sections consider these points in reverse order.

## 2. Endogenous Money and the PMC

It is indisputably true that M1 is not under the direct control of the Fed. The two instruments under its direct control affect bank reserves. The Fed can use open market operations directly to change the total amount of un-borrowed reserves in the banking system. It also can influence total reserves by changing the discount rate, which is the interest rate the Fed charges banks that borrow reserves. While changing reserves through open market operations or the price of borrowing reserves (the discount rate) certainly does affect the money stock, so can factors on the demand side of the market. Holding Fed policy constant, the supply of money will move endogenously to accommodate changes in money demand. These demand shifts can occur because of changes in income, inflation, or expectations about the future. Beck argues that since M1 is subject to these other influences, cyclical movements in money growth cannot be attributed to Fed policy. He then argues that the correct test is to look for an election cycle in some instrument that the Fed directly controls. He uses un-borrowed reserves and the Fed funds interest rate and finds no regular cyclical movement corresponding to presidential elections.<sup>2</sup>

<sup>1</sup>Beck takes issue with the fact that I estimate these cyclical variables with and without an intercept. He claims that “excluding the constant term implies that the equilibrium growth rate of M1 is zero, which is patently false” (Beck, 1987, p. 200 n. 11). This claim is not correct. In the models with no intercept, the average level of money growth is simply the mean of the cyclical variable times its coefficient divided by  $1 - \sum$  of lagged money coefficients. For example, my no intercept 1961–80 equation for ELCYCLE implies a mean level of money growth of 5.42. The actual sample mean is 5.37.

<sup>2</sup>Given Beck’s desire to investigate exogenous Fed-controlled variables, his use of the Fed funds rate is puzzling because it is not under the direct control of the Fed. It is simply the rate that equates the supply and demand of overnight reserves between banks. The Fed can move this rate by changing reserves or the discount rate, but changes in deposits affect banks’ demand for these funds which will also change the rate, holding Fed policy constant. That is, the nature of the Fed’s control over any market interest rate is the same as its control over money. It may be easier, however, for the Fed to control an interest rate with reserve actions because

This approach misses the point on the endogeneity of money. The instruments that the Fed directly controls are not inherently important for macroeconomic outcomes. That is, economists generally advocate that the Fed should manipulate these direct instruments to control some target variable more directly related to output. These targets are such things as a market interest rate, or a monetary aggregate, or the price level, or nominal GNP.<sup>3</sup> Since these target variables respond to factors other than Fed policy instruments, simply hewing to a set reserve or discount rate policy will not ensure the desired target outcomes.

In order to be electorally effective, monetary policy must influence voters. In the PBC, this means it must affect income and inflation. The basic theory is that the Fed uses monetary policy to create surprise inflation by fooling an adaptive public. This raises output temporarily until people catch up. Then disinflation and recession is required to reset the stage for future manipulation. The target variable with the strongest link to inflation is money, not reserves or the discount rate. To produce a PBC, the Fed must move money. This is done, *ceteris paribus*, by reserve or discount rate changes. But because money also moves endogenously, simply repeating a pattern of reserve movements is not sufficient to produce a desired pattern of money growth. If the PBC strategy calls for a given increase in money, the reserve movement required to achieve that increase depends on endogenous demand conditions.

For example, an increase in money demand raises interest rates, causing banks to economize on excess reserves and reduces the price of borrowing reserves. This automatically expands the money stock and means that the Fed may need only to provide a small reserve stimulus to create some given money increase when money demand is increasing. On the other hand, if at the same point in the next election cycle, money demand is falling, the money stock is automatically contracting, and the reserve movement required to achieve the same money growth level as last time is much greater. It is precisely the endogeneity of money that makes looking for an election cycle in reserves an empty exercise.<sup>4</sup>

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of fewer institutional constraints (e.g., lagged reserve accounting) or if the demand for loanable funds is more stable than the demand for money.

<sup>3</sup>In monetary policy jargon, open market operations and the discount rate are called instruments. The Fed is supposed to use its instruments to hit an "intermediate target" variable like the ones listed in the text. Keeping this target on a particular path should produce desirable results on the ultimate variable, real income. The choice of the correct intermediate target depends on its controllability by the Fed and the strength of its relationship to real income.

<sup>4</sup>Apart from the problem of money demand, there may be other constraints on the Fed that mask an electoral cycle in any one instrument. For example, suppose that the Treasury was marketing a large issue of government debt at the same time that the Fed wished to reduce money growth for political purposes. There would be pressure on the Fed not to use open mar-

*Evidence on the PMC from a Reduced-Form Money Growth Equation*

The way to incorporate these factors into the analysis of the PMC is to ask, holding constant other relevant supply and demand factors, does the timing of presidential elections exert a significant influence on money growth? This requires the enumeration of the relevant factors and the estimation of a multiple regression. On the demand side, interest rates, income, and expected inflation are the major determinants of money demand. On the supply side, the Fed has been urged or alleged to respond to a host of factors including unemployment, interest rates, exchange rates, inflation, and deficits. In particular, Beck argues that anything hinting of a monetary election cycle can be explained by cyclical movements in the deficit that are monetized at a constant rate.<sup>5</sup>

Given that money is simultaneously determined by both supply and demand and that the arguments in the demand function cannot be excluded from the supply function, a reduced form equation is all we can extract from the data.<sup>6</sup> Here I have chosen to use lagged interest rate changes, structural deficits, and the GNP gap (the percentage deviation of GNP from trend) to control for endogenous factors. Grier and Neiman (1987) demonstrate that the structural deficit is a significant determinant of money growth and also show that any effect of the business cycle on money growth depends on having a Democrat in the White House. The equation also uses Beck's lags of money growth and estimates the PMC with a 15-quarter, second-degree, polynomial distributed lag (PDL) on a dummy variable that equals 1.0 in the quarter of a presidential election and 0.0 elsewhere. The PDL, or Almon, lag model conserves degrees of freedom by forcing lag coefficients to lie on a smooth polynomial function. Rather than using 16 degrees of freedom to directly estimate dummy variables, only the coefficients that determine the shape of the polynomial function are directly estimated, then the individual lag coefficients are derived from the estimated polynomial func-

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ket operations (a further selling of debt) so the Fed might then use a discount rate change or moral suasion to reduce reserve borrowing. The PMC would be intact, but the cyclical pattern in unborrowed reserves would be broken.

<sup>5</sup>This is also the contention of Laney and Willett (1983) and Allen (1986).

<sup>6</sup>Formally, since there are no exogenous variables in the demand equation that can be excluded from the supply equation, the structural supply equation is unidentified. The fact that several of the explanatory variables are probably not exogenous with respect to money growth is a further statistical problem in this type of work. Beck and I both use the simple approach of lagging these potentially endogenous regressors. As long as the lagged variable is strongly autocorrelated ( $r(x_t, x_{t-1})$  is large) and the error term in the original equation is not autocorrelated, this is a statistically valid approach. See Cooley and Leroy (1981) for a thoughtful discussion of identification and simultaneity problems in typical econometric money demand equations.

tion. While this technique puts a smoothness constraint on the shape of any cycle, it is much more flexible than prespecifying a few 16-quarter patterns and testing for their significance. The PDL allows the data to determine the cyclical pattern in money growth subject to the constraint that the lag coefficients lie on a polynomial function.

The reduced form regression for money (M1) growth described above is estimated using quarterly data from 1961 through 1982 and a second degree polynomial with no endpoint constraints.<sup>7</sup> The results are reported in Table 1, and the shape of the electoral dummy variable's lag distribution is graphed in Figure 1. The equation plainly shows that the timing of elections significantly influences money growth, even when holding output, interest rate, and deficit fluctuations constant. The lag distribution is significant overall at the 0.01 level and implies a pattern of six quarters of monetary deceleration following an election, a three-quarter trough, and then seven quarters of rising money growth. This is strong statistical evidence against Beck's view that the cycle in money growth comes from movements in money demand or from a constant rate of monetization of electorally inspired deficits, since these factors are held constant when the cyclical lag is estimated.<sup>8</sup>

#### *Fiscal Policy and the PMC*

Note that the shape of the cycle is different from the shape implied by the dummy variable from my 1984 paper that Beck uses and calls ELCYCLE. ELCYCLE declines sharply for four quarters after an election then rises for 12 quarters, with the 12-quarter rise equaling the four-quarter drop. The PDL-derived cycle reported here declines more gradually and for a longer period before turning up, and then money growth increases faster and faster until the election. In a regression like Beck's specification 11

<sup>7</sup>Given the dramatic redefinition of money, the rapid pace of financial innovation, and the puzzling movements in velocity in the past four years, the sample is limited to 1961–82. Earlier stopping points do not have any material effect on the results. Extending the equation through 1984 weakens the entire reduced form equation but does not eliminate the PMC. Because my equation uses 10 degrees of freedom, there is not enough post-1982 data to conduct a formal test of the stability of the model coefficients. All the data used in this paper are from the Citibase data bank.

I used this PDL-dummy variable technique in my 1987 paper, but the sample there is only through 1980, and I did not include any other exogenous variables in the equation. I also experimented with higher-order PDLs that allow multiple turning points in the lag distribution, but the cyclical pattern reported here does not change when the degree of the polynomial changes.

<sup>8</sup>I (1987) also examined models including lagged inflation rates and real income growth as predictors of money growth. These variables are consistently insignificant, and their presence or absence has no effect on the shape or significance of the reported electoral cycle.

TABLE 1  
 Estimating the PMC with a Polynomial Distributed Lag in a Multiple Regression of  
 M1 Money Growth, 1961–82

Variable	Coefficient	<i>T</i> -statistic
DM <sub>-1</sub>	0.29	3.58
DM <sub>-4</sub>	-0.26	3.19
DM <sub>-5</sub>	0.36	5.00
DM <sub>-9</sub>	0.26	3.63
FEDEF1	1.09	3.94
GNPGAP1 × DEM	0.27	2.39
DT201	-3.55	6.57
PDL0	2.60	3.04
PDL1	-0.35	2.10
PDL2	0.02	2.22

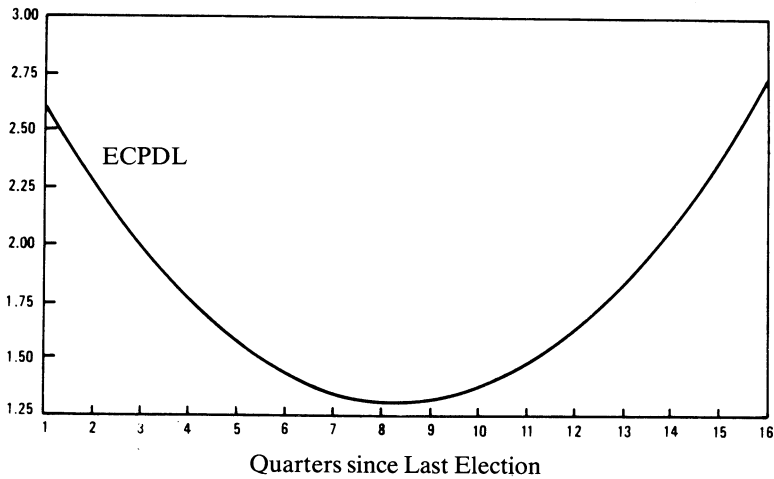
Lag Distribution of Election Dummy					
Variable	Coefficient	<i>T</i> -Stat.	Variable	Coefficient	<i>T</i> -Stat.
ELECT <sub>-15</sub>	2.60	3.04	ELECT <sub>-7</sub>	1.32	2.05
ELECT <sub>-14</sub>	2.27	2.97	ELECT <sub>-6</sub>	1.38	2.14
ELECT <sub>-13</sub>	1.99	2.83	ELECT <sub>-5</sub>	1.48	2.30
ELECT <sub>-12</sub>	1.76	2.64	ELECT <sub>-4</sub>	1.64	2.52
ELECT <sub>-11</sub>	1.57	2.43	ELECT <sub>-3</sub>	1.84	2.75
ELECT <sub>-10</sub>	1.44	2.23	ELECT <sub>-2</sub>	2.09	2.96
ELECT <sub>-9</sub>	1.34	2.10	ELECT <sub>-1</sub>	2.39	3.10
ELECT <sub>-8</sub>	1.31	2.04	ELECT	2.74	3.17

$\bar{R}^2 = .61$ , DW = 2.14. Sum of lags = 29.2 (*T*-statistic = 2.86).

FEDEF1 is the high employment deficit as a percentage of trend GNP lagged one quarter; GNPGAP1 is the lagged percentage deviation of output from trend. DEM is a (0, 1) dummy indicating a Democratic president. DT201 is the lagged change in 20-year Treasury bond interest rates. This lag distribution is graphed in Figure 1.

(Beck, 1987, p. 210, Table 4), using ELCYCLE and the high employment deficit from 1961–82 produces his result that ELCYCLE is insignificant. However, the fact that one manufactured dummy variable is not significant in every sample with all combinations of variables does not mean there is no PMC. The results here show that accounting for fiscal policy mainly changes the shape of the residual electoral cycle. Less of any postelection monetary decline and more of any preelection acceleration is now attributed to the PMC.

FIGURE 1  
The PDL-Derived PMC, 1961–82, Controlling for Income, Interest Rates, and Deficits



ECPDL is simply the lag coefficients from the PDL in Table 2.

This appears to indicate that the high employment deficit falls immediately before and after a presidential election. Kiewiet and McCubbins (1985) have argued that the Federal budget contains a two-year election cycle; that is, congressional appropriations are larger in even-numbered years. Without specifying a complete model of the deficit process, I simply use the PDL-dummy variable technique described above in an equation for FEDEF that also includes one lagged dependent variable and the lagged change in interest rates. The results are shown in Table 2 for a fourth-order PDL with no endpoint constraints and demonstrate why the inclusion of fiscal policy changes the shape of the election cycle. These results also provide some independent support for Kiewiet and McCubbins. The lag coefficients peak twice. In each case the peak is three quarters before an election (midterm or presidential). Also the coefficients decline drastically from one quarter before to two quarters after the presidential election. With a constant rate of monetization, this decline helps to explain the change in the PMC shape. Part of the sharp decline in money growth after the election is now attributed to the decline in the deficit rather than to the PMC, and the immediate pre-election increase in money is even more strongly attributed to the PMC because the deficit is already falling.

TABLE 2  
A Simple Test for Electoral Fluctuations in the Structural Deficit Using a  
Polynomial Distributed Lag, 1961–82

Variable	Coefficient		T-statistic	
FEDEF <sub>-1</sub>	0.740		10.78	
DT201	-0.244		1.48	
PDL0	-0.307		1.42	
PDL1	0.365		1.69	
PDL2	-0.080		1.28	
PDL3	0.007		1.10	
PDL4	-0.001		1.00	

Lag Distribution of Election Dummy					
Variable	Coefficient	T-Stat.	Variable	Coefficient	T-Stat.
ELECT <sub>-15</sub>	-0.307	1.41	ELECT <sub>-7</sub>	0.216	1.75
ELECT <sub>-14</sub>	-0.015	0.11	ELECT <sub>-6</sub>	0.221	1.83
ELECT <sub>-13</sub>	0.155	1.13	ELECT <sub>-5</sub>	0.238	1.94
ELECT <sub>-12</sub>	0.239	1.81	ELECT <sub>-4</sub>	0.259	1.93
ELECT <sub>-11</sub>	0.266	2.29	ELECT <sub>-3</sub>	0.274	1.85
ELECT <sub>-10</sub>	0.260	2.43	ELECT <sub>-2</sub>	0.264	1.75
ELECT <sub>-9</sub>	0.241	2.16	ELECT <sub>-1</sub>	0.208	1.39
ELECT <sub>-8</sub>	0.224	1.86	ELECT	0.077	1.32

$\bar{R}^2 = .62$ , DW = 2.05. Sum of lags = 2.82 ( $T$ -statistic = 2.51).

### 3. The Consistency of the PMC with a PBC

Beck's second objection about the validity of these results is that the timing of money growth implied by the cycle will not produce the output-inflation movements typically associated with the PBC: "The Grier ELCY-CLE variable is maximal the quarter of the election . . . [however] an increase in M1 during the electoral quarter would not show up in variables that have an electoral impact until after the election."<sup>9</sup>

The macroeconomic effects of the money growth cycle will clearly depend on the nature of the model used to describe the economy. An extreme

<sup>9</sup>Beck (1987, p. 203). Beside the formal argument that follows, it is important to remember that this is a stochastic model. The observed peak at the quarter of the election is probabilistic. The important thing is that we find a significant cycle that basically corresponds to intuition about how electoral money growth should work in a world of adaptive expectations. The rest of this section formalizes this intuition.

example of this point is the market-clearing rational expectations model, where any predictable money movements have no effect on output. There are large neo-Keynesian models where money has strong and quickly felt real effects, most notably the MIT-Penn Social Science Research Council (MPS) model associated with the work of Franco Modigliani. These models have hundreds of equations and attempt to specify the individual structural mechanisms of how policy affects the economy. Here I take the very simple approach of examining a simple reduced form model of money growth's effect on output and prices. In a reduced form approach, the transmission mechanisms of policy are ignored in an effort simply to quantify the net effect of policy.

Perhaps the best-known reduced form model is the so-called St. Louis model.<sup>10</sup> This model consists of an equation to explain nominal income growth (the Andersen-Jordan equation) and an equation explaining inflation. Real income growth is calculated as the difference between these two values:

1. 
$$\Delta \log(YP_t) = a_0 + \sum_{i=0}^4 b_i \times \Delta \log(M1_{t-i}) + \sum_{i=0}^4 C_i \times \text{FEDEF}_{t-i} + e1_t$$
2. 
$$\Delta \log(P_t) = g_0 + g_1 \times \text{ENDIFF} + \sum_{i=0}^{16} h_i \times \Delta \log(M1_{t-i}) + e2_t$$
3. 
$$\Delta \log(Y_t) \equiv \Delta \log(YP_t) - \Delta \log(P_t)$$

Here ENDIFF in a moving average of petroleum prices and FEDEF is the high employment deficit. Historically, the lag coefficients on money growth sum to 1.0 in both equations, while the fiscal policy coefficients sum to 0.0. The statistical properties of this model tell a very simple story: money growth works initially on real income and then feeds into inflation with longer lags. The biggest money coefficients in the nominal income equation occur at lags of zero and one quarter; the inflation equation lag coefficients peak at lags of six and seven quarters. Money is neutral only in the long run which is consistent with adaptive expectations.

While the St. Louis model is somewhat controversial, disputes mainly center around its implied ineffectiveness of fiscal policy and its lack of rational expectations. Historically, the model's estimates of the effect of monetary policy are generally consistent with simulations of the MPS model.<sup>11</sup>

<sup>10</sup>See Andersen and Jordan (1968), Carlson (1980), Meyer and Varvares (1981), and Grier (1984) for a further development of this model.

<sup>11</sup>See Mishkin (1986, pp. 520–44) for a good discussion of the difference between a structural and a reduced form approach as well as a comparison of the effects of money in the St.

Since we are not directly concerned with fiscal effects here and since PBC theory is mainly built on adaptive expectations, using this model to investigate the PBC effects of the electoral cycle in money growth has some validity.

The exercise proceeds by estimating the Andersen-Jordan and inflation equations from 1961 to 1982 and then taking the cyclical PDL pattern from Table 1 and using it as money growth to simulate the performance of the economy over the election cycle as if this cyclical component were the sole influence on money growth. The results for inflation and real income growth appears in Figure 2.

This simulation exercise reveals an almost perfect example of a Nordhausian PBC. The lag structure of the inflation equation is such that inflation decelerates steadily for eight quarters leading to the election. In the election quarter, it is at its minimum point, almost 1.5 standard deviations below its mean. Real income growth accelerates for the seven quarters leading to the election, reaching a point about 1.5 standard deviations above its mean in the election quarter. The only "imperfection" in the results is that output growth does not actually peak until the quarter after the election. Following that, income growth falls and inflation rises, an unpleasantly familiar phenomenon often called *stagflation*, right up until the midterm election.<sup>12</sup>

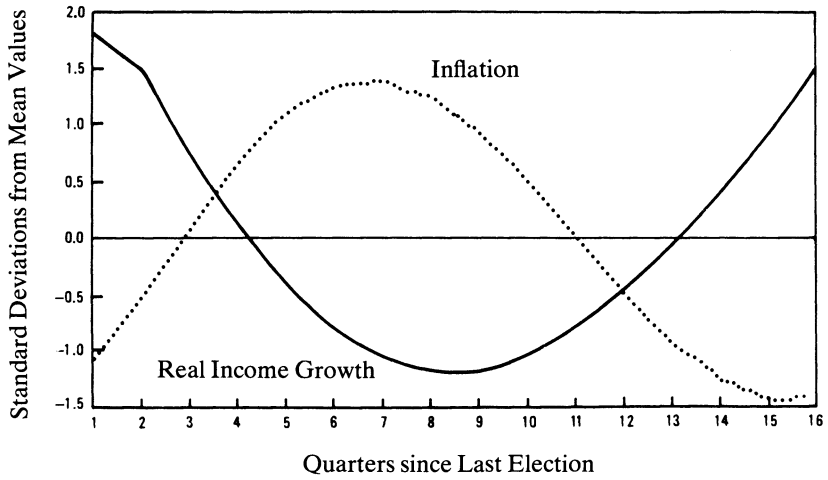
While other macro models will give different results, this simple exercise indicates that the cyclical component of money growth is broadly consistent with a PBC in macro models with adaptive expectations that emphasize money. Again, this is evidence indicating that the cyclical component is money growth cannot be dismissed on the grounds that it is clearly inconsistent with a PBC in output and inflation. As a further check on the consistency of the electoral cycle in money with PBC outcomes, I use another reduced form macro model to simulate the effect of the PMC. This model, reported in Haynes and Stone (1987), uses 12 quarter lags of money growth and the structural deficit along with time trends and some intercept shifts to predict real GNP and inflation. This simulation, reported in Figure 3, is quite similar to the St. Louis model results except that here income growth

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Louis and MPS models. Mishkin and Modigliani (1977) both argue that the monetarists' insistence on the importance of money was correct and that the MPS model contains many structural channels of monetary policy that were excluded in earlier Keynesian models where money was not important. Mishkin outlines six mechanisms for money to influence output, mostly relating to money's effects on interest rates and stock prices that increase consumption by increasing the value of consumer's assets (wealth effects), that are in the MPS model. Again, the reduced form approach is to bypass the specific mechanisms and quantify the net result. Controversy occurs where the two approaches disagree, that is, on the issue of fiscal policy.

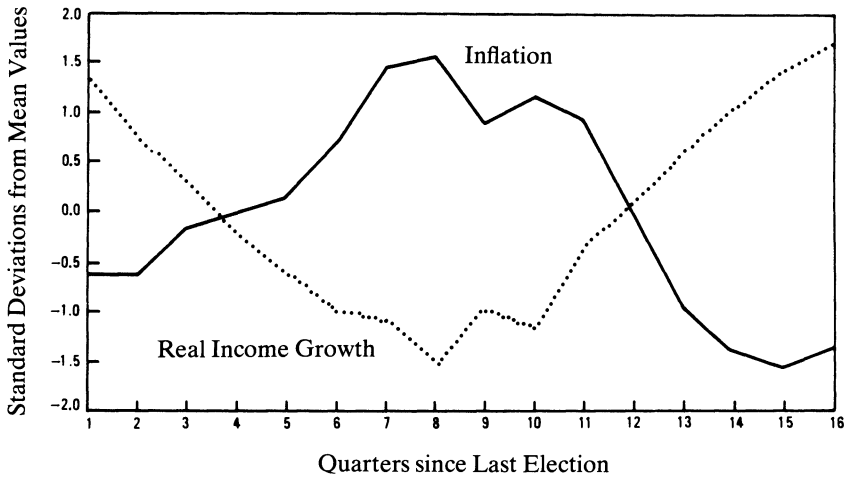
<sup>12</sup>This serves to illustrate a linkage between two political phenomena that is not widely appreciated: a well-functioning PBC implies a serious vote loss for the president's party in Congress in midterm elections. These two events are different sides of the same coin.

FIGURE 2  
The PBC from ECPDL in the St. Louis Model



Simulation of St. Louis model with ECPDL the sole source of money growth and all other exogenous variables fixed.

FIGURE 3  
The PBC from ECPDL in the Haynes-Stone Model



is maximal in the quarter of the election, while inflation is minimal in the quarter before the election.<sup>13</sup>

These results are not meant to imply that the Fed is “monetarist” or that reduced form models are preferable to structural approaches. The point is simply that these reduced form models, which are consistent with a wide variety of structural models where money is important and expectations are adaptive, imply that the estimated cycle in money growth is remarkably consistent with PBC movements in inflation and output.

#### 4. Rational Expectations and the PBC

The finding of regular, electorally inspired movements in money growth seems inconsistent with market-clearing rational expectations (RE) models and rational politicians.<sup>14</sup> After all, if predictable money movements have no real effects, then what good does it do to engineer a PMC? One possible interpretation of this result is that politicians correctly believe that predictable policy does have real effects. There is a growing body of empirical work indicating that the distinction between anticipated and unanticipated policy is not useful in explaining output fluctuations (see Mishkin, 1982; Frydman and Rappoport, 1987).<sup>15</sup> Here I discuss one possible reconciliation of market-clearing RE with the PMC and then examine Beck’s efforts in this direction.

Consider the simulated cycle in inflation from Figures 2 and 3. If the PMC can help to produce a sequence of inflation rates like this, a proposition fully consistent with RE, then it may be the vote-enhancing effect of lower inflation that drives political monetary policy. This view requires voters to punish incumbents for high (or rising) inflation rates near the time of the election.

Early time-series evidence on the effect of macro variables on presidential elections found little or no role for inflation (e.g., Kramer, 1971). However, time-series studies including data from the 1970s (Fair, 1982), as well as quarterly statistical models of presidential popularity (Frey and Schneider, 1978; Chappell and Keech, 1985) find that inflation significantly hurts the incumbent president. Most directly relevant here is Peltzman (1987), who shows that changes in inflation reduce the vote share of governors of the same party as the president in a pooled cross-section/time-series study. This

<sup>13</sup>Haynes and Stone test for and find 16 quarter cycles in output and inflation. The reason this second simulation is not smooth like the first is that the St. Louis model coefficients are estimated with a PDL while the Haynes-Stone coefficients are not.

<sup>14</sup>In my (1987) paper I show that the PMC variable is significant in different subsamples from 1961–80 and is not an artifact of one particular episode (i.e., the famous 1972 election).

<sup>15</sup>Once the distinction between anticipated and unanticipated money is lost, econometric RE models approach the simple reduced form models employed here in section 3.

effect of changing inflation most directly corresponds to the evidence presented above.

The general argument here is that monetary policy can influence nominal variables under RE, and the observed PMC lowers inflation leading into elections which enhances the prospects of the incumbent president's party. This means the PMC can be politically desirable even if it produces no real effects. Of course, the peculiar part of this explanation is that people are rational and forward looking in labor and product markets, but retrospective and myopic in the political arena.

In any case Beck's specific attempt to merge the PMC and rational expectations is not informative. He argues that "another possibility is that the rational expectations argument is correct, and the Fed is creating a cycle in monetary surprises, that is, unanticipated monetary policy eases before an election" (1987, p. 212). Of course, if the rational expectations argument is correct, then by definition there can be no such thing as a pattern (or cycle) in unanticipated money. Beck looks for this "surprise cycle" by predicting money growth with an autoregression, then regressing the residuals on the ELCYCLE variable. This methodology contradicts the basic core of rational expectations, that expectations are based on all relevant information and are unbiased. Beck excludes knowledge about the timing of elections from the public's information set, creating the possibility of consistent underpredictions of money growth before elections and overpredictions afterward. Serially correlated errors in expectations are firmly ruled out under the rational expectations hypothesis (see Attfield, Demery, and Duck, 1985, pp. 17-21).

## 5. Conclusion

Regression analysis is regrettably a very blunt instrument. Social scientists cannot infer the intentions of the parties that generate our data sets, and no amount of statistical evidence can ever prove that the Fed actively manipulates monetary policy to the advantage of incumbent presidents. In this paper I have simply argued that, contrary to Beck's position, the case is not closed. Presidential elections significantly influence money growth even when allowing for the effects of interest rates, deficits, and GNP. Further, the cyclical monetary pattern produces a plausible PBC in simple, money-driven, adaptive expectations macroeconomic models. Given these results, further work in this area is important. The relationships between macro policies and electoral politics and the political links between fiscal and monetary policies are deserving of careful attention.

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