The influence of elections on federal reserve behavior

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Abstract:
A political business cycle is tested in a monetary reaction function. Positive evidence is a result of the 1930s and 1940s and not post-war elections. In addition, there is no evidence of such a cycle in a rational expectations model.

Article:

1. *Introduction*

The search for evidence of political influence on economic policy has focused on the post-war period when policy makers were given discretionary powers as a result of the Bretton Woods system and the Employment Act of 1946. According to public choice theory the political business cycle (PBC) literature argues that policy changes that occur prior to elections will be used by the incumbent to insure reelection of the individual/party. The purpose of this paper is to test for PBC effects on Fed policy for the 1917-1984 period in a reduced-form reaction function to determine when attempts to change monetary policy before elections emerged in accordance with the PBC hypothesis.[1]

2. The model

A monetary reaction function which could result from the Fed minimizing a quadratic loss function of public policy objectives including economic variables plus an electoral cycle variable *(EV)* is tested:[2]

$$B = a_0 + a_1 y_{t-1} + a_2 CPR_{t-1} + a_3 D_{t-1} + a_4 U_{t-1} + a_5 P_{t-1} + a_6 EV, \qquad (1)$$

where *B, M, y, D,* and *P* are the first differences of the logs of the monetary base, the M1 money supply, real GNP, Treasury debt, and the GNP deflator and where *CPR* and *U* are the level of the 4-6 month commercial paper rate and the unemployment rate. These variables are lagged one period to reflect the information set available to the Federal Reserve in period *t*. Positive signs are expected for a_1 through a_4 assuming the Federal Reserve increases the base to accommodate an increased demand for real cash balances *(a_1)* during an expansion, to dampen interest rate changes *(a_2),* and to accommodate deficit spending *(a_3)*. A policy to offset increases in the unemployment rate results in a predicted positive sign for a_4, while a policy to dampen inflation results in a predicted negative sign for a_5.

EV is proxied by four dummy variables that capture extra policy stimulus prior to an electron: *EV1 (0, 0, 0,1); EV2 (1, 0,* 1, 2); *EV3 (0, 0,1,* 1); and *EV4 (0,1, 0,1). EV1 (EV4)* hypothesizes monetary stimulus every presidential (Congressional) election year, while *EV3* hypothesizes monetary stimulus in the third and fourth years to allow for lagged policy effects. *EV2* hypothesizes a four-year cycle of increased monetary tightness in the two years following an election and increased monetary stimulus in the two years prior to an election. Several electoral interaction terms are tested. The hypothesis could be made that if no electoral cycle is implemented, then no advantage is created for the incumbent party. Thus, W is a dummy variable equal to 0 (1) for the preceding four years when an incumbent party loses (wins) an election and *WEV1—WEV4* are formed by the multiplication of W and *EV* where the expected sign is positive. The null hypothesis that the electoral cycle

affects the degree to which the Fed accommodates the deficit also is tested by interaction terms *DDEVI—DDEV4,* equal to EV times the debt variable where the expected sign is positive.[3]

Table 1

Test of political business cycle variables (1917–1984). [a]

Eq.	a	y_{t-1}	CPR_{t-1}	D_{t-1}	U_{t-1}	P_{t-1}	$EV3$	$WEV3$	$DDEV2$	R^2/Se	DW/p
(1.1)B	0.02	0.52	−0.002	0.13	0.004	−0.004	0.02			0.43	2.08
	(1.53)	(2.32)	(0.40)	(3.75)	(0.65)	(0.03)	(1.86)			0.047	0.54
(1.2)B	0.03	0.53	−0.002	0.13	0.004	0.004		0.02		0.43	2.08
	(1.61)	(2.38)	(0.45)	(4.03)	(0.76)	(0.03)		(1.81)		0.047	0.53
(1.3)B	0.03	0.32	−0.002	0.12	0.000	0.013			0.08	0.47	2.00
	(2.38)	(1.33)	(0.51)	(3.72)	(0.03)	(0.10)			(2.42)	0.046	0.38
(1.4)M	0.05	−0.37	−0.011	0.07	−0.012	−0.014			0.05	0.34	1.67
	(3.41)	(1.89)	(2.95)	(2.27)	(2.58)	(0.12)			(1.91)	0.041	0.64

[a] *T*-scores in parentheses.
 * Dependent variable: *B* = monetary base, *M* = *M1* money stock.

Table 1 reports eq. (1) results when *EV* is significant at the five percent level for a one-tailed test. The Fed practices monetary accommodation as the debt coefficient is positive and significant and pro-cyclical policies as the real GNP coefficient is positive and significant. The evidence shows that the Fed provides stimulus in the third and fourth years of an election cycle [a significant *EV3* coefficient in eq. (1.1)] and that the reelection of an incumbent party is related to the Fed's extra stimules [a significant *WEV3* coefficient in eq. (1.2)]. The significant *DDEV2* coefficient in eq. (1.3) shows that the Fed's accommodation of the debt varies with the political cycle. This evidence supports the PBC hypothesis that the monetary base is influenced by the time prior to the election during the history of the Federal Reserve.

Is there enough evidence to conclude that a BPC has occurred since 1917? We think not. First, substituting *M/* for *B* causes *EV* to be insignificant in eq. (1.1) and (1.2). If the Fed pursued an electoral cycle by stimulating the base prior to an election, *M/* did not grow at any significant additional rate. Only for the electoral cycle-debt interaction term *(DDEV2)* is there consistent evident with a PBC hypothesis of a statistically significant effect in both the base and *M/* equations [see eq. (1.3) and (1.4)]. Second, advocates of a PBC hypothesis would expect positive coefficients in at least some of the postwar elections. The Dufour (1984) procedure is employed to test for election specific *EVs* (denoted as *EV3D..* where `..' is the specific election year) for every election. For example, the *EV3* variable is reconstructed as follows: *EV3D20* is equal to 1 for 1919 and 1920 and 0 elsewhere, *EV3D24* is equal to 1 for 1923 and 1924 and 0 elsewhere, etc. A positive and significant election-specific *EV* coefficient indicates that eq. (1) without *EV* underpredicted the actual rate of growth of the base or *M/* in these particular election years.

Table 2

T-statistics of specific election year dummary variables. [a]

Year	EV3D..		EV1D..	
	Base	M1	Base	M1
1920	−0.89	−1.52	−1.04	0.73
1924	−0.19	0.09	1.04	0.48
1928	0.12	0.02	−1.02	0.20
1932	2.34*	−2.17	3.08*	−1.75
1936	1.01	2.44*	−0.83	1.17
1940	2.32*	3.46*	2.16*	−0.03
1944	−0.66	1.94*	−0.35	−1.67
1948	3.69*	0.74	1.97*	−0.41
1952	0.58	−0.12	0.22	0.56
1956	0.18	−0.26	−0.14	−0.26
1960	−0.26	−0.53	−0.08	−0.57
1964	0.26	0.14	0.26	0.14
1968	0.56	0.77	0.46	0.04
1972	0.24	0.34	−1.58	−0.89
1976	0.43	−0.06	−0.58	−1.29
1980	−0.42	1.44	−0.38	0.07
1984	0.33	0.14	−0.55	−0.99

[a] * Significant at the 5 percent level for a one-tailed test.

The evidence in table 2 shows that the *EV* coefficients are positive and significant for only the 1932, 1940 and 1948 elections for either the *EV3D..* or *EVID..* variable in the base equation and for only the 1936, 1940 and 1944 elections for the *EV3D..* variable in the M1 equation. The *EVID..* coefficients are never positive and significant in the *M/* equation and *EV2D..* or *EV4D..* coefficients were never positive and significant in either the base or the *M/* equation. Only the 1940 election has a significant election-specific coefficient *(EV3D40)* in both the base and *M/* equations. Thus, the positive evidence of a systematic PBC is dominated by the election years that occur during the period of the depression and the war years and prior to any policy activism following the Employment Act of 1946.[4]

3. A rational expectations model

A rational expectations approach to the PBC argues that the incumbent party influences the Fed to provide monetary stimulus in period t that is undetected by economic agents/ voters in period t.[5] A forecast error $(e_t = M_t - \widehat{M}_t)$ can be derived from eq. (1) that includes an *EV* term because rational economic agents are assumed to factor into their base or *M/* estimates a positive stimulus due to the upcoming elections. The forecast errors must follow a process showing that the Fed producing positive unanticipated policy changes prior to the election. Therefore, e_t is modeled as follows:

$$e_t = a_1 + a_2 EV + u_t,$$
(2)

where a positive and significant a_2 coefficient is evidence that extra stimulus $(e_t > 0)$ beyond the electoral cycle tested in the reaction function is present.

A rolling regression technique is employed where eq. (1) including *EV* is estimated with the last thirty-one years of data to provide a one-year-ahead forecast in order to obtain a vector of e_{it} where $i = 1953\text{-}1984$. The result of regressing e_t on the same *EV* (not reported) shows that a_2 is never positive and significant in eq. (2) when *EV3, EV2, WEV2* or *WEV3* is employed as *EV* in either the base or *M/* equations. This evidence would suggest that there is no evidence of a PBC within the framework of a rational expectations model.

This conclusion depends on the specification of the reaction function and on the degree of rationality or astuteness modeled. Because knowledge of the winner is not known prior to the election, the error terms derived from the reaction function do not reflect all of the available information (past knowledge of whether the incumbent party won or loss). The estimates of eq. (2) may reject evidence of a PBC within a rational expectations model because the e_t are biased estimates based on incomplete knowledge of past electron results.

The rationally-astute electorate is assumed to anticipate policy stimulus from an incumbent party (as proxied by *EV3* or any *EV).* If the incumbent party loses an election, the rationally-astute electorate goes back and adjusts EV3 to conform to *WEV3.* which predicts no stimulus prior to an election in which the incumbent party loses. This variable denoted *WEV.** (where '.' is 1 to 4) is substituted for *EV* in eq. (1) to obtain error terms by a rolling regression technique. The results, not reported, show that the *WEV.** coefficients are not positive and significant in eq. (2) for the base or *M/.* Therefore, there is no evidence of a PBC based on the one-period ahead forecast errors computed from the reaction function that includes the modified *WEV* variables *(WEV.*).*

4. Conclusion

A necessary condition for a political business cycle (PBC) is that there is purposeful tampering with economic policy variables prior to elections. This paper employs annual data and initially presents evidence of extra growth in the monetary base (but not the money supply) in the two years prior to an election and in the two years prior to the successful reelection of the incumbent party. The significant electoral specific coefficients, however, occur only during the 1930 s and 1940s. A rational expectations model that explicitly allows the voters to be rational and astute (because they change their forecast model after an incumbent party fails to win reelection) provides no evidence of a PBC.

Notes:

[1] Examples of the lack of the Fed's independence include Congressional pressure leading to the open-market operations in 1932, the Fed's acceptance of a bond price support program in 1942, the Fed's returning interest income to the Treasury in 1947, the continued assistance to the Treasury following the Accord of 1951, Congressional oversight extended by Resolution 133 in 1975 and the Humphrey—Hawlcins Act of 1978, and possible presidential pressure in 1966, 1972 and 1980.

[2] See Shughart and Tollison (1983), Joines (1985), Allen, Cartwright, DeLorme, and McCrickard (1988), and Allen and McCrickard (1988).

[3] See Allen (1986) and Beck (1987) for evidence that the Fed responds to the degree of fiscal expansion.

[4] If eq. (1) is estimated for the 1953-1984 period, neither *EV3D..* or *EVID..* is positive and significant in both the base and *M/* equations.

[5] See Rogoff and Sibert (1988) who find some evidence of a PBC given rational but not fully-informed voters and Richards (1986) who finds evidence of a PBC with respect to unanticipated monetary growth over 1960-1974. Our results do not support Richards' conclusion.

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