

## THE POLITICAL BUSINESS CYCLE: HOW SIGNIFICANT?

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Allen, Stuart D., Joseph Sulock, and William Sabo (1986) "The Political Business Cycle: How Significant?" *Public Finance Quarterly*, 14(1), January, 107-112.

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### **Abstract:**

This article provides evidence that the seasonally adjusted unemployment rate conforms to a four-year political business cycle such as the one hypothesized by Nordhaus (1976) but only when the incumbent party wins the presidential election. The unemployment rate, however, is only reduced by a cumulative effect of .3 to .6 percentage points in the two years preceding a presidential victory.

### **Article:**

hypothesis that the economy is manipulated to gain political advantage has motivated scholars to test for a political business cycle (PBC) in models of either macroeconomic aggregates or policy variables. Models of macroeconomic aggregates such as the unemployment rate test for cyclical movements that are consistent with the hypothesis of political intervention, although no direct test of policy variables is made. Our purpose in this note is to reexamine the works of Nordhaus (1975) and Tufte (1978), who present evidence suggesting that the unemployment rate follows a four-year PBC, and the work of McCallum (1978), who presents contrary evidence.<sup>1</sup> The Nordhaus-Tufte thesis is first presented in the second section. An alternative test based on their insight and McCallum's model is then presented with the results reported in the third section.

### **THE NORDHAUS-TUFTE THESIS**

Nordhaus's analysis suggests a political exploitation of a short-run Phillips curve in which an incumbent president fights inflation with higher unemployment during the first two years and then fights unemployment with expansionary policies during the last two years. Although Nordhaus's international evidence was inconclusive, the U.S. data for 1947-1972 shows that five of the seven election periods support the hypothesis of a PBC. The two periods for which a cycle did not exist also coincide with the incumbent party losing the presidential election. Tulle confirmed this conclusion for the unemployment rate during the 1947-1976 period, and presented evidence of a two-year congressional election cycle for the growth rate of real disposable income.

This hypothesis was formally modeled by McCallum, who tested the significance of six different electoral cycle variables ( $EV_t$ ) in an autoregressive unemployment rate ( $U_t$ ) model in the following equation:

$$U_t = a_0 + \sum_{i=1}^n a_i U_{t-i} + b_1 EV_t + e_t \quad [1]$$

where  $U_t$  is seasonally adjusted data and  $n$  is chosen to ensure that  $e_t$  is a serially independent white-noise disturbance term in the regression in which  $EV$  is omitted. A significant  $b_1$  coefficient rejects the null hypothesis that no political business cycle exists. McCallum could not reject the null hypothesis during the 1949-1974 period and for other autoregressive-moving average models with seasonally adjusted and unadjusted data, and for a model that included administrative-specific electoral variables. McCallum (1978: 513) noted that although the tests were not exhaustive, the evidence "can only be regarded as unfavorable to the political business cycle theory."

The Nordhaus-Tufte hypothesis, however, implies that a political business cycle means electoral success while no cycle would mean political defeat. Such an interpretation suggests an alter-native test of the PBC. Therefore, WEV is substituted for EV in equation 1, in which WEV equals the EV cycle for the four years prior to a presidential election when the incumbent party wins, and is 0 for the four years prior to presidential election when the incumbent party loses.<sup>2</sup> Ten electoral variables (presented in Table 1) are tested for 1949/I-1984/ IV and for the following subperiods: 1949/I-1960/IV, 1961/I-1972/IV, 1973/I-1984/IV, 1949/I-1972/IV, and 1961/I-1984/IV.<sup>3</sup> The sample period is truncated at 1960/ IV because Buchanan and Wagner (1977: 43-47) argue that no discretionary fiscal and monetary policy was pursued prior to the Kennedy administration and at 1972/ IV as a result of demographic changes in the labor force and the end of the draft.

TABLE 1  
Ten Electoral Variables

EV1	1	2	3	4	5	6	7	8	7	6	5	4	3	2	1	0
2	1	2	3	4	5	6	7	8	9	10	11	12	9	6	3	0
3	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
4	2	3	4	5	6	7	8	9	10	11	12	13	14	7	0	1
5	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
6	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	1
7	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	1
8	1	1	1	1	0	0	0	1	1	1	1	1	0	0	0	1
9	1	1	1	1	1	0	0	1	1	1	1	1	1	0	0	1
10	1	2	3	4	3	2	1	0	1	2	3	4	3	2	1	0

## THE RESULTS

The results for the unemployment rate indicate that WEV1- WEV7 are predicted negative sign and significant for 1961/I- 1972/ IV, whereas WEV1, 3, 5, and 6 are negative and significant for 1973/I-1984/ IV for a one-tailed test at the 5% level of significance. The electoral variables are insignificant for the other periods. The results are reported in Table 2 for WEV1, which was the most significant coefficient for the 1961/I-1972/ IV and 1973/I-1984/ IV periods. This is also the political business cycle variable that is most consistent with Nordhaus's original hypothesis. WEV1, however, is insignificant for the 1961/I-1984/ IV period, and a Chow test reveals structural instability for this period with 1972/ IV as the break point.<sup>4</sup> The instability is not surprising given the upward trend in the unemployment rate as a result of the demographic changes in the economy, and the existence of three recessions in the latter period versus one in the former.

TABLE 2  
 $U_t = a_0 + a_1 U_{t-1} + a_2 U_{t-2} + a_3 U_{t-3} + a_4 U_{t-4} + a_5 U_{t-5} - b_1 WEV$

Period	$a_0$	$U_{t-1}$	$U_{t-2}$	$U_{t-3}$	$U_{t-4}$	$U_{t-5}$	WEV1	$R^2$	SE	DW	$\bar{U}_t$
1961/I-1972/IV	0.37 (2.72)	1.33 (10.60)	-0.42 (1.85)	0.17 (0.72)	-0.46 (2.10)	0.27 (2.41)	0.040 (3.63)	.976	.175	2.21	4.9
1973/I-1984/IV	1.19 (3.36)	1.50 (9.71)	-0.68 (2.47)	-0.03 (0.10)	-0.10 (0.36)	-0.06 (0.40)	0.076 (2.35)	.955	.348	2.00	7.25

NOTE: T-scores in parentheses.

The significant coefficient for WEV1 means that the unemployment rate was lowered by .040 percentage points during the 1961/I-1972/IV period and by .076 percentage points during the 1973/I-1984/ IV period for each of the last eight quarters of the electoral cycle preceding an incumbent party's presidential victory. Thus, the cumulative reductions over the entire two years are .320 percentage points and .608 percentage points and represent increases of 240,000 and 580,000 jobs, respectively. Given that the annual increase in jobs average 1.36 million over 1961-1972 and 1.89 million over 1973-1984, the decrease in the unemployment rate and the increase in jobs associated with the estimated electoral coefficients are not particularly economically significant although they are statistically significant.

## CONCLUSIONS

Although the evidence suggests that the seasonally adjusted unemployment rate data conform to Nordhaus's four-year political business cycle hypothesis when the incumbent party is re-elected, the significance of other electoral variables also suggests that the data conform to other electoral cycles. But the size of the effect, however statistically significant, may not be as economically relevant as often is presumed. The tests, of course, do not indicate the political importance in terms of votes that may be associated with the political business cycle.

## NOTES

1. Using a Box-Tiao analysis, Beck (1982) reports evidence that provides little support for a political business cycle in the monthly unemployment and inflation rates during the 1961-1973 period.
2. The autoregressive structure of  $U$  is a five-period lag to ensure white-noise residuals.
3. EV 1 -EV6 represent McCallum's original variables and EV7-EV10 are added to test for Tufte's two-year congressional election cycle.
4. The null hypothesis of structural stability is easily rejected as the calculated F-statistic is 15.07 where  $F(7,82) = 2,15$  at the 5% level of significance.

## REFERENCES

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