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ANNA KONRADI

A Government is not supported a hundredth part so such by the constant, uniform, quiet prosperity of the country as by those damned spurts which Pitt used to have just in the nick of time.
-Brougham, 1814

I. Introduction

In October of 1972, twenty-five million Americans opened their Social Security checks to find that their benefit payments had increased by twenty percent. In the same mailing, recipients found a note informing them that the new statute had recently passed through Congress and had been signed into law by President Nixon. Perhaps not surprisingly, Nixon won his reelection bid the following month.

Since Tufte's (1978) original publication on the economic origins of election cycles, the public choice literature on the political business cycle has argued that self-interested incumbent politicians and their parties can manipulate the state of the macroeconomy for political gains. The literature supposes that a pattern emerges within a politician's party's term in office where there is "relative austerity in early years" followed by a "potlatch right before the [proceeding] election" (Norhaus, 1975). These cycles can be understood to exist on top of the naturally occurring business cycle as politicians attempt to artificially bolster the economy above its natural point right before the electorate goes to the polls. These positive deviations from the business cycle, if properly timed, have been shown to influence voter behavior.

The relationship between the state of the economy and the point within the election period has been hypothesized most strongly for the United States presidency. Perhaps better than any other politician, the president has the unique ability to influence outcomes in the macroeconomy through his use of executive order and congressional influence.

Furthermore, studies have shown that the president is the most likely to be praised when the economy is in an upturn and the most likely to bear the political brunt of the electoral backlash when it is underperforming. One can then see why an incumbent administration, while operating under the limiting economic and political constraints, might try and manipulate the short-run course of the national economy in order to improve his party's standing in the upcoming elections.

While voters can certainly appreciate a growing economy at any time during the election cycle, political business cycles can be problematic if they distort the true state of the economy from the eyes of the voters. When the electorate sees that its income is increasing and unemployment is falling, they may not consider the possibility that these positive shocks are not permanent and that these distortionary endeavors will inevitably lead to inflation and increase price levels in the long run.

This paper explores the existence of electoral-economic cycles as they apply to recent US presidential elections. It tests the hypothesis that the probability of an incumbent's (or an incumbent's party's) reelection is significantly influenced by movements in macroeconomic variables which can, at least in the short run, be influenced by the executive administration. Though this paper finds limited evidence of consistently enacted political business cycles, it defines a series of motivations that might compel an incumbent government to

manipulate economic variables in hopes of securing reelection.

This article proceeds as follows: Section II reviews literature related to the electoral implications of macroeconomic variable movement under an uncertainty framework. Section III explores the theoretical model for this study and draws hypotheses for empirical results. Section IV discusses the research design and the empirical model. Section V reports on the results of the study. Finally, Section VI concludes the paper by drawing policy implications, acknowledging the limits of the study, and suggesting avenues for future research.

II. Review of the Literature

Arguments made for political business cycles were initially theoretical in nature; however, in recent decades, with the advent of strong Keynesianism in the election periods after World War II, researchers have sought to identify specific trends in the macroeconomy centered around the US presidential election cycle.

The core argument upon which the study of political business cycles rests was first laid out by Edward R. Tufte in his seminal work *Political Control of the Economy* (1978), in which he conducts one of the first empirical analyses of PBCs in the United States. Throughout his work, Tufte made three important contributions to the study of PBCs. First, he demonstrated through historical research that American incumbent presidents did consider economic policy and the electoral calendar when making fiscal policy decisions. More importantly,

however, the work revealed systematic movements in US transfer policies in accordance with the timing of elections, with the majority of the upswings occurring in October and November of the election years. Accompanying the policy movement were subsequent upticks in Tufte's chief economic variable: real disposable income. Consider Figure 1, which details the quarterly change in RDI and government transfer payments surrounding Nixon's 1972 reelection.

Figure 1 shows the quarterly path of RDI per capita between 1972 and 1973, with its ever-accelerating climb to the fourth quarter of 1972 followed by post-election decay. The exquisite political precision of this economic course is atypical of the exactness of other political business cycles, and must have partly been attributable to sheer luck. However, one cannot discount that much of the pre-election economic acceleration had to have been the result of deliberate planning and mobilization of policy instruments to produce such significant changes in government transfer payments.

Finally, Tufte was able to show (much weaker) evidence of cyclical movement in other economic indicators such as growth, unemployment, and inflation. He hypothesizes that these variables are more difficult to control inside an administrative framework because they are so tied to real economic conditions. As a result, policy makers must be content to tweak them around the edges.

Beyond Tufte, major works by Lewis-Beck (1988) and Nadeau and Lewis-Beck (2001) support the opportunistic model. Lewis-Beck (1988) extends Tufte's model to a few of the major developed

FIGURE 1: Transfer Payment Growth in Election Period
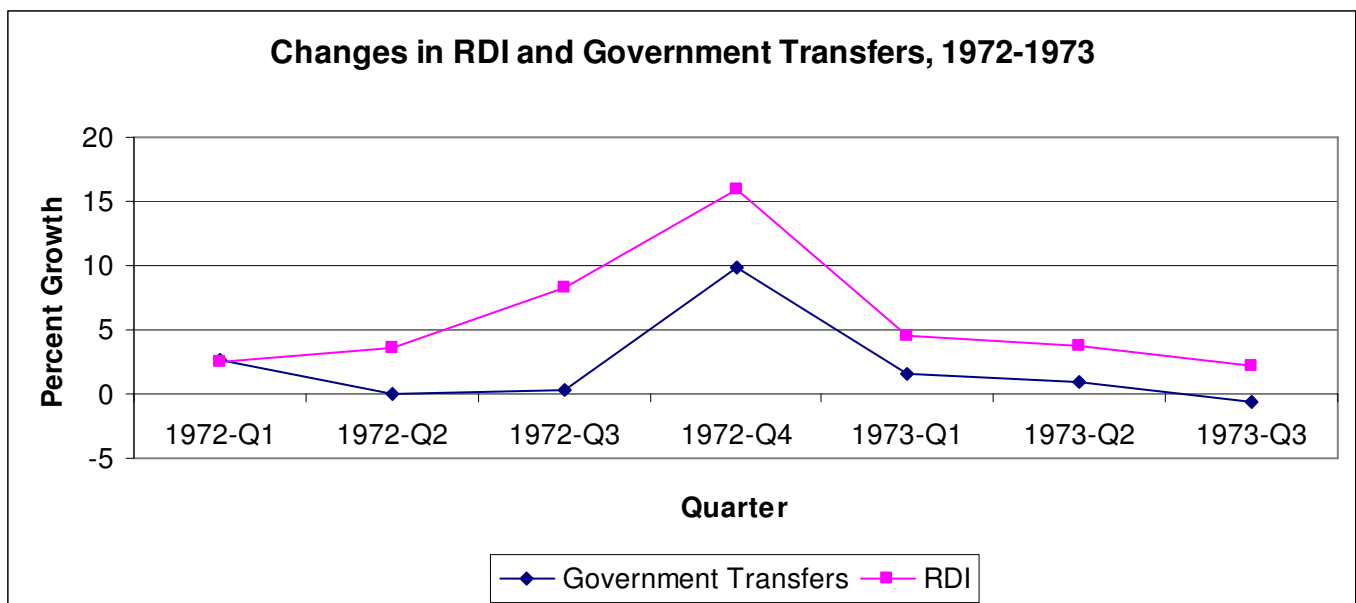
Western-European powers, including Germany, Italy, France, Spain, and the United Kingdom. The results essentially mirror those of Tufte: evidence is varied, but fairly supportive of the existence of economic policy cycles and of growth in nominal indicators (such as RDI), though the evidence is similarly marginal in trending economic indicators to countries' electoral calendars.

A more recent article authored by Nadeau and Lewis-Beck, *National Economic Voting in US Presidential Elections* (2001), focuses on the specific indicators that influence the probability that an incumbent will be reelected, which indirectly gives politicians an incentive to implement certain policy instruments. They point out correctly that individual voters use information in different ways; in accounting for the state of the economy, some will focus more on growth rates while others will be more concerned with inflation or unemployment. That being said, politicians cannot simply optimize one of these economic indicators. It becomes necessary during an election cycle for the incumbent party to keep all economic indicators in good standing with the electorate. The problem is confounded then when we recognize that many of these variables, such as inflation and unemployment, are naturally negatively related. Democrats may choose to focus on unemployment rates, whereas Republicans might choose to run political business cycles by keeping inflation in check. Readers can then appreciate that such policy measures must be intricately woven in order to operate effectively.

Berlemann and Markwardt (2006) extend this analysis to include forward looking expectations, explaining that voters will incorporate speculative expectations into their assessment of two presidential candidates before an election. However, they contend, there is a strong autocorrelative effect between reelection and positive economic conditions, helping to explain why, even in a prospective expectations model, incumbent politicians who preside over a strong economy are more likely to be reelected for another term.

According to Filburn (2006), the basic underlying theory associated with political business cycles is simple and its basic premises have remained intact since Tufte (1978). The theoretical foundation of the PBC argument rests upon two realities and three necessarily stated assumptions. Taken together, the realities (which are generally accepted at face value) and the assumptions establish incentive and opportunity for incumbent politicians to engage in electioneering in the form of producing electoral economic cycles:

Reality 1: Incumbent politicians desire reelection, both in terms of themselves and, to a lesser degree, their party.

Reality 2: Incumbents control policies which can affect perceived or actual economic outcomes.

Assumption 1: Voters favor positive economic activity—high growth, low inflation and unemployment, increasing wealth, and low taxes—when retrospectively evaluating the performance of an incumbent presidential candidate.

Assumption 2: Voters tend to discount past outcomes relative to present events in their evaluation of economic performance.

Assumption 3: Economic performance plays a significant role in the voters' decision to reward or punish an incumbent politician at the ballot box.

All of these assumptions have been regularly supported throughout the literature as "economic voting" has become a major presumption through the developed, democratic world. Taken together, these points create a clear incentive structure for incumbent electioneering. Incumbent politicians desire reelection (R1) and require electoral support to achieve that end. The support is dependent (to some extent) upon real economic outcomes (A3) which can be manipulated by those same incumbents (R2). Furthermore, the specific economic movements (A1) and timing (A2) suggest that election years should produce economic upswings where increased growth and wages, as well as lower inflation, unemployment, and taxes are anticipated.

III. Theoretical Model

One of the most common frameworks used to explain the existence of political business cycles is the macroeconomic model of aggregate supply (AS) and aggregate demand (AD). Traditionally this model has been used to relate the price level with the level of output, and for this purpose it suits us well. The AD curve relates the aggregate quantity of output demanded to the price level, and the AS curve relates the quantity of output supplied to the price level.

From a political economist's perspective, a policy maker's attempt to manipulate the short run state of the economy has two potential outcomes: The first can be observed in the classical Lucas framework, where increased government spending is anticipated by the electorate, who then incorporate it into their own expectations. The AD curve shifts right, but there is an immediate response in aggregate supply, which

shifts left and instantaneously returns the model to full employment, long run equilibrium. These voters are not likely to be influenced by short-term economic boosts in the economy in the months before an election because they recognize the incumbent's actions as self-interested and distortionary. The economic impact of a targeted PBC will simply be increased price levels.

FIGURE 2: AS-AD Under Rational Expectations
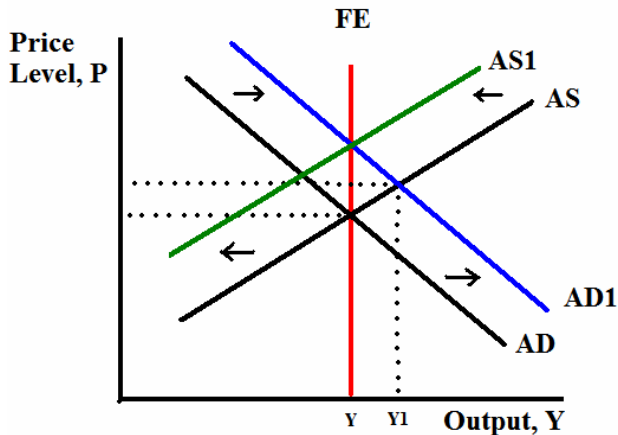
An alternative explanation which is more prevalent in PBC research circles involves Keynesianism's assumption of adaptive expectations. In this model, voters can be swayed by pre-election fiscal policies, even if those policies will have long-term costs after the election. Consider Figure 3:

**FIGURE 3: AS-AD Under Irrational Expectations, Short Run**
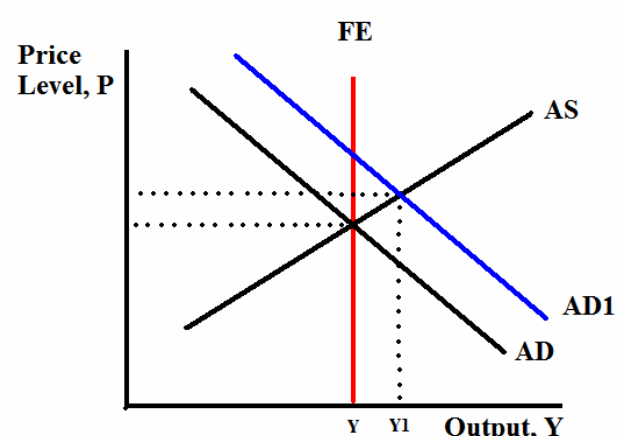
In the months before the general election, the sitting government can try to alter the short term state of the economy by shocking AD to the right. This can be done through increased government spending,

additional transfers to the electorate to increase real disposable income, or by encouraging the Federal Reserve to lower interest rates. Because these changes are unanticipated, from a Keynesian perspective the impact of these policies will be felt by individuals in the economy for a certain period of time. Managed well, incumbent politicians could conceivably alter the short run state of the economy, with economic indicators reaching their maximums close to Election Day. In terms of Figure 3, aggregate demand shifts from AD to AD1 and output shifts up to Y1. The price level also increases slightly from P1 to P2.

However, like in the classical perspective, the benefits of fiscal policy cannot be felt in the long run. Eventually, the AS curve will shift left again, bringing the economy back to its long run equilibrium, but at a higher equilibrium price level.

The cyclical nature of the political business cycle phenomenon can then be interpreted through the Keynesian lens. Figure 4 shows that the economy grows in the period before the election, peaking as time approaches the Election Day. Post election, the reelected government, which is now insulated for another four years, can constrain the economy in the first two years of their term in office by raising taxes, reducing government expenditures, and allowing for higher interest rates.

FIGURE 4: The Political Business Cycle
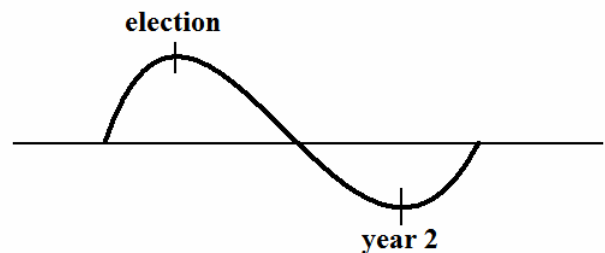
Furthermore, it is important to understand the relationship between the political business cycle and the naturally occurring business cycle. Whereas it might be possible to isolate the variables influencing electoral cycles, from a practical perspective, the electorate is mostly concerned with the impact fiscal policy has on the traditional business cycles. In evaluating the state of the economy before heading to the polls, the irrational voter superimposes the political business cycle on top of the naturally occurring cycle, and his evaluation focuses on the additive influence of the PBC and the amount by

which it can pull and distort the real economy. Consider Figure 5:

FIGURE 5: The Distortionary Effect of the Political Business Cycles
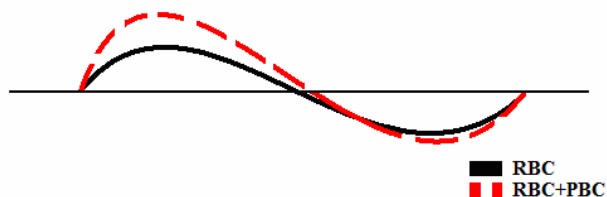
The solid line represents the naturally occurring business cycle, whereas the dashed line shows the perceived state of the economy when political forces are acting. The effect of the PBC can thus be understood as the deviation from the naturally occurring cycle. This simple model operates under the strong and most times unrealistic assumptions that the business cycle period is concurrent with the election cycles and these two cycles are naturally procyclical. In reality, the real business cycle's period is independent of PBCs and the true state of the economy in the months before an election could be anything from growth to recession. In the case of a recession, the government would still have a strong incentive to operationalize a PBC as they try to minimize the negative impact of the economic slump.

Under Keynesian assumptions for adaptive expectations, this research moves forward with the following hypotheses:

1) The probability for incumbents' reelection increases when economic performance indicator variables are optimized.

2) Variables for economic growth are positively and directly related to incumbent performance at the polls.
3) Unemployment and interest rate variables are negatively and directly related to incumbent performance at the polls.

IV. Data and Empirical Model

The macroeconomic data used in this study are obtained from the Economic Indicators database, published by the Council of Economic Advisors and cover the time period starting with the presidential election of 1948 and going through the presidential election in 2004 (CEA, 2008). This time period was chosen because all presidents during this period have, to some extent, incorporated a Keynesian, interventionist economic strategy into their administration. Prior to this time, most politicians did not believe that the government should involve itself in the country's major macroeconomic affairs. Also, it excludes the World War II period, an unusual era in history when large budget deficits were run and many controls were placed on the economy for national defense reasons.

The dependent variable for this study, a dichotomous variable for the reelection of the incumbent president or party was obtained from the American National Election Study (NES). A separate independent variable which looks at the relationship between presidential incumbency and probability of reelection (as opposed to party reelection) was also obtained from the NES.

Table 1 details the individual variables, their definitions, and the expected coefficient signs.

Table 1: Data Definitions

Variable	Definition	Expected Sign
Dependent		
REELECT	Dichotomous variable, 1 if president or in-party is re-elected, 0 if they are not	
Explanatory		
GROWTH	Average growth rate of real GDP per capita in the first three quarters of the election year	+
UNEMPLOYMENT	Percent of the labor force that is unemployed	-
RDI	Percent change in real disposable income compared to the year prior to the presidential election	+
TRANSFERS	Percent change in government transfer payments compared to the year prior to the presidential election	+
PARTY	Dichotomous variable, 1 if the incumbent party is running an incumbent candidate, 0 if they are not	+

I expect the signs for the growth, real disposable income, and transfer payment variable to all be positive. Large growth or increase in per capita consumer welfare should increase the probability that individuals will view the incumbent president and/or party favorably. In a Keynesian model of adaptive expectations they should then be more willing to vote to re-elect the president and/or party for another term. Inversely, inflation is generally viewed negatively by voters, as it decreases their purchasing power in the economy. I therefore predict that high inflation numbers will decrease the probability that a president will be reelected.

The expected value for the party variable relies on the assumption that a sitting president already has a large organization to help him in his campaigning effort. Whereas a new candidate from the sitting president's party would still need to win the nomination against other candidates of the same party, an incumbent president is usually insulated from primary politics. He receives all of the party's campaign donations, which he can save to use for the general election in the summer and fall prior to the general election in November (while non-incumbents have to spend large sums of money during the primary season to win reelection). Therefore, I predict that presidential incumbency will have a positive effect on the party's reelection bid.

The explanatory variables will be subjected to logistical regression to determine their significance predicting executive branch party reelection outcomes. However, because this study only uses post-Keynesian presidential election data, any model that included all of the independent variables listed in Table 1 above would be grossly over-specified. Instead, to take account of the degrees of freedom problem in this dataset, I will test the variables in pairs. However, for simplicity's sake, the theoretical empirical model is delineated here below:

P(reelection) = α + β_1(Growth) + β_2(Inflation) + β_3(RDI) + β_4(Transfers) + β_5(Party) + ε

V. Results and Discussion

The results presented in this paper, while possibly clinically important for strategizing purposes given the small sample size, have not proven statistically significant.

Descriptives:

Running initial descriptive calculations helps to paint a broad image of what is going on in the data. In Table 2, I have presented the descriptive statistics for each variable used. Note that I am using data for only

15 presidential election cycles (every election between 1948 and 2004). The small number of individual election cases creates a significant degrees of freedom problem, and as a consequence, OLS regressions using multiple independent variables could not be run responsibly. In an attempt to partially alleviate this problem, data for the economic indicators were collected in quarterly terms, and the election variables were coded for their respective years. This meant, for example, that every quarter in 1996 was coded as 'reelect' for the dependent variable.

TABLE 2: Descriptive Statistics

Variable	Mean	Standard Deviation
Dependent		
REELECT	0.533	0.516
Explanatory		
GROWTH	3.399	2.332
UNEMPLOYMENT	5.562	1.504
RDI	3.408	4.310
TRANSFERS	1.463	7.618
PARTY	0.533	0.516
N=248		

Recall from the theory section of this paper that political business cycles are hypothesized to occur over a four year period, beginning with fiscal bolstering in the two years preceding the presidential election, followed by a downturn in the two years after the president is inaugurated. Tables 3 and 4 report the descriptive statistics for both these 'up' (the two years before the national election) and 'down' (the two years after the national election) periods. Theoretically, the GROWTH, RDI, and TRANSFER variables should be larger as parties and candidates run for reelection, while UNEMPLOYMENT should fall. Thus, I ran a series of one-tailed 2-sample t-tests to compare the values of the indicators around the time of the election.

TABLE 3: Descriptive Statistic for 'Up' Years

Variable	Min	Max	Mean	Std. Dev.
GROWTH	-8.07	13.14	3.65*	3.37
UNEMPLOYMENT	2.83	10.37	5.51	1.57
RDI	-8.95	18.58	3.79*	4.16
TRANSFERS	-33.97	53.90	1.21	7.41
N=126				

*indicates statistical significance at the α=0.10 level

TABLE 4: Descriptive Statistics for 'Down' Years

Variable	Min	Max	Mean	Std. Dev.
GROWTH	-10.87	17.19	2.93*	4.47
UNEMPLOYMENT	2.57	10.67	5.63	1.43
RDI	-8.29	29.89	3.01*	4.45
TRANSFERS	-31.19	71.91	1.73	7.86
N=120				

*indicates statistical significance at the $\alpha=0.10$ level

The results of these comparison of means tests were mixed. The growth and real disposable income variables both prove to be significantly larger in the pre-election period, indicating that there may be some pre-election fiscal bolstering for these indicators. This makes sense, as previous literature predicts that rational individuals will vote retrospectively, looking at their financial situation when deciding whether to reelect the in-party. Policymakers, aware of this general trend, would therefore have an incentive to stimulate the economy as voters make their reelect or oust decisions.

The unemployment variable between the 'up' and 'down' periods did not prove to be statistically significant, though its inability to reach the significance threshold does not disprove the hypothesized relationship between unemployment and the political business cycle.

It is interesting to note that the change in transfer payments is, on average, larger during the 'down' periods of the political business cycle. This could be due to the fact that much of the change that can occur is driven by automatic stabilizers, which are partly independent of the election cycle.

Regressions:

The OLS regression presented in Table 5 regresses the real GDP growth indicator (the real GDP growth rate between quarters from 1948-2006) against RDI, transfer income, unemployment, and reelection variables in the 'up' years of the hypothesized political business cycle. While this regression does not expressly look at reelection as the independent variable relying on economic factors, it does allow for additional degrees of freedom cases to be calculated for every quarter between 1948 and 2008.

TABLE 5: RGDP Regression

Variables	
CONSTANT	2.009** (2.001)
Explanatory	
GROWTH	0.872** (5.678)
UNEMPLOYMENT	0.054 (0.321)
RDI	0.415*** (6.098)
TRANSFERS	-0.129 (-3.491)***
PARTY	-0.241 (-0.384)
N=126	
R²=0.357	

**indicates statistical significance at the $\alpha=0.05$ level
***indicates statistical significance at the $\alpha=0.01$ level

The results of this regression do not allow me to make any general statements about the pull of the general election on the national economy, although the other economic indicators generally have the expected coefficients. Note that while unemployment has a positive coefficient, it does not reach the significance threshold in this regression. The party reelection variable is also insignificant statistically. Thus, the incumbent party having a candidate does not have a significant effect on real GDP.

The PARTY variable, which is defined in every quarter of an election year in which an incumbent is running, is also insignificant and is not an important determinate of real GDP.

A second series of probit regressions looks at the relationship between probability of party reelection to the executive office and economic indicators. The data used in this model include all election year quarters since 1948. As mentioned above, due to a limited number of cases, these regressions are restricted to bivariate comparisons between variables. See Table 6 on the following page:

TABLE 6: Election Regressions

Variable	Model 1	Model 2	Model 3	Model 4
CONSTANT	0.142 (0.85)	-0.013 (0.408)	-0.015 (-0.13)	-0.053 (-0.35)
Explanatory				
RGDP	-0.044 (-1.31)			
UNEMPLOYMENT		-0.013 (-0.03)		
TRANSFERS			-0.004 (-0.26)	
RDI				0.009 (0.32)
Pseudo R²	0.01	0.00	0.0004	0.0006

These models show no clear relationship between the economic indicators and election years. This is perhaps not too surprising, however, when we take into account the small sample size (only 15 election cases) and the variety of fiscal control mechanisms that presidents might use to manipulate the economy. It could well be that the indicators observed for this paper were too broad to take account of specific programs.

VI. Conclusions

This study attempted to extend Tufte's theories on political business cycles into the present. Unfortunately, significant results proved difficult to find.

It is important to consider the possibility that, while Tufte's theories predicted that voters were adaptive in their economic estimations, voters in more recent decades have come to adjust their expectations about the economy to fit with the presidential elections. When they see that their social security or Medicare payments are increasing, they may calculate that this is a short run adjustment in government policy designed to increase the vote share of the incumbent party. Realizing as much, voters may not be inclined to cast their ballots for a specific incumbent party on the basis of short term economic trends. In this sense, we might say that the American electorate has become more rational minded in recent decades.

The other possibility that exists is that the political business cycle, while functional theoretically, is not significantly played out on the national stage. Many adjustments that occur on the fiscal side of the economy are automatic stabilizers, such as transfers, and their movements depend more on the state of the real economy than they do on politician's election cycles.

It could also be the case that the variables observed in this study are too broad to adequately capture the intricacies of government policymaking. Future research would thus be well served to examine more specific government programs that are not as subject to automatic fluctuations. In order to increase the sample size, it might also prove useful to look at data from many developed countries with electoral systems similar to that in the United States to determine if such systems have similar political business cycles.

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