THE CANADIAN POLITICAL BUSINESS CYCLE

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ABSTRACT

This paper will discuss the existence of a Canadian Political Business Cycle (PBC) during the period 1946-1989. Logit analysis was used to determine if changes in the unemployment rate, growth of real GNP, and the rate of inflation are significantly different in the period before an election than during the rest of the electoral term. It was found that the rate of growth in the unemployment rate declines and the rate of growth of real GNP increases in the four quarters before an election. The behavior of these variables reverses in the period after an election. These findings are consistent with a political business cycle. Policy variables, under a *majority* government, also behave in a manner associated with a PBC, with the government stimulating the economy approximately two years into its term so that good economic news will occur before it has to call an election. Minority governments tend to simulate the economy immediately after taking office.

The Canadian Political Business Cycle

Traditionally, economic fluctuations have been viewed as either random events or functions of structural instability. Since the "Keynesian Revolution," it is assumed that the fiscal and monetary authorities have the responsibility of either preventing these fluctuations when possible, or at the very least, ameliorating their severity (Tobin, 1988). Recently, there have been suggestions that rather than preventing economic fluctuations governmental authorities, in their quest for re-election, cause them. This political business cycle (PBC) is based on several assumptions: (1) politicians desire to be re-elected; (2) redistribution programs are effective, at least in the short run; and (3) voters are either myopic or indifferent to the longer run effects of political manipulation of the economy. Thus, the economic activities of the government, preoccupied by a desire for re-election, can increase the length or severity of economic fluctuations if the PBC coincides with exogenous economic shocks or an increase in structural inflexibility.

Interest in the PBC was stimulated by Nordhaus's 1975 paper in which he formally sets out the macroeconomic framework of the PBC.[1] The studies on the U.S. economy that followed this article have not presented overwhelming evidence either proving or disproving the existence of a PBC in the United States.[2] While most of the studies on the PBC have been done on the United States, some investigations have tried to detect it in countries with a parliamentary rather than a presidential form of government. It would seem that a PBC should be easier to achieve under a parliamentary system since (1) the executive does not have to deal with a legislature under the control of a different political party; the central bank does not receive conflicting signals from the legislative and executive branches of government (Havrilesky, 1988; Weintraub, 1978; Libby, 1987); and the incumbent administration has the privilege of holding an election when at its convenience. The findings of the studies on the PBC in parliamentary governments are again mixed. Many of these studies examine countries with a wide variety of political regimes with various degrees of political and economic stability. The political spectrum goes from Japan with the same party in power since World War II to Italy with almost constant minority and coalition governments during the same period. With this range of political stability and governmental power, it is not surprising that the results are not conclusive. In fact, Alesina, Cohen and Roubini (1992) do find evidence of a PBC in Germany and New Zealand, two politically stable countries, which because of either economic power (Germany) or geographic isolation (New Zealand), have more control over their economies than some of the other countries in the study.[3]

In an important paper, Ito and Park (1988) distinguished between opportunistic and manipulative governments, i.e. opportunistic governments call elections in response to 'good news' that is externally generated while manipulative ones cause the 'good news'. In a recent article, Heckelman and Berunment, (1998) found that Japan and the U.K. seem to exhibit opportunistic cycles. They also feel that parliamentary governments are prone to this type of business cycle. It is important that any study of the existence of a PBC should include some type of test that distinguishes between an opportunistic cycle and a manipulative one.

Most of the work on the relationship between the Canadian economy and elections has looked at the connection between the economy and support for a particular political party (Archer and Johnson, 1988; Archer, 1987; and Clarke and Kornberg 1992). There have also been studies attempting to connect the popularity of the governments under changing economic conditions (Winer, 1986 and Branden, 1991) although Blais and Nadeau (1992) offer proof of a political budgetary cycle at the provincial level. In a paper that does test for the existence of a PBC in Canada, Serletis and Afxentiou, (1998) do not find evidence of a Canadian PBC. However, they do not separate the behavior of majority governments from that of minority ones. As will be demonstrated later in this paper, this is an important distinction since minority governments have much less time and freedom to manipulate the economy than do majority governments.

Hypothesis and Methodology

The basic hypothesis of PBC theory is that the government manipulates the economy so that there is "good" economic news; (i.e. increasing real GNP or decreasing unemployment and/or inflation,) just before an election. Prior investigators, no matter which countries they studied, have used three approaches in their attempts to determine the existence of a political business cycle. In the first, an attempt is made to determine if and what economic variables are important in predicting the votes or popularity of a particular political party (Ito and Park, 1988; Cargill and Hutchinson, 1991). The second uses the occurrence of an election as an independent variable in estimating policy variables (Ito and Park, 1988; Cargill and Hutchinson, 1988; Haynes and Stone, 1989). The third uses economic variables to differentiate the election quarters (or some finite time before elections) from non-election quarters (Ito and Park, 1989; Soh, 1986; Haynes and Stone, 1989). While the first approach can be useful in determining if and what economic variables are important to voters and the second may be able to explain anomalies in policy choices, neither directly confront the question of the existence of a political business cycle. This analysis will follow the third approach and use a modification of the methodology of Haynes and Stone (1989) in which they find growth in real GNP peaking near the election and unemployment and inflation troughing near the election. They also find that expansionary economic policies peak approximately mid term, decrease and then increase again near election time. It was not possible to use the Hayes and Stone methodology directly, since the length of the Canadian electoral term is variable rather than fixed[4] and under minority governments, the date of the election may not be under control of the government. (The presence of three national parties can make the tenure of a minority government tenuous since the two opposition parties can unite and force an election). It is assumed that most evidence of a Canadian PBC will be found during the terms of majority governments. Since these periods are not continuous it was necessary to use a less direct approach than that used by those studying the US PBC. In this work, Logit analysis is used to compare the growth of certain macroeconomic outcomes during a set period before and after an election, to the growth of these same variables during the rest of the term. This will test the hypothesis that the periods around the election differ in some statistically significant way from the rest of the electoral term.[5] The same type of analysis will also be performed on policy variables. In this way, it will be possible to discern a pattern consistent with the existence of a political business cycle. In essence, the analysis will be comparing one slice of time during the electoral term against other slices of time during the term. Nordhaus (1975) and Ito (1991) used a similar methodology.

Results

The first section of results will examine the behavior of the growth of real GNP, the rate of inflation and the change in the unemployment rate before and after the election for all governments and then for majority governments. The next section will compare pre-election to post election quarters under majority governments. The third will see if there is an election-induced pattern in the use of policy instruments, both monetary and fiscal, under majority governments. (Table 1 defines and explains the variables used in all of the analyses).

Table 1 List of Variables Used in Analysis

PRECALL	Quarter the election is called and three previous quarters (T, T-1, T-2, T-3)
PREEL	Quarter the election is held and 3 previous quarters (T, T_{-1}, T_{-2}, T_{-3})
POSTEL	Quarters 1-4 after an election is held ($T+_1$, $T+_2$, $T+_3$, $T+_4$)
POSTEL2	Quarters 5-8 after an election is held ($T+_5$, $T+_6$, $T+_7$, $T+_8$)
POSTEL3	Quarters 9-12 after an election is held ($T+_9$, $T+_{10}$, $T+_{11}$, $T+_{12}$)
POSTEL4	Quarters 13-16 after an election is held ($T+_{13}$, $T+_{14}$, $T+_{15}$, $T+_{16}$)
LDRGNP	Year to year difference in the logarithm of real GNP
DUNEMP	Year to year difference in the unemployment rate.
LDM1	Year to year difference in the logarithm of M1
LDPI49	Year to year difference in CPI, base year 1949 (the inflation rate)
~~DNLGNP~~	~~Year to year difference in the ratio of budget surplus to GNP~~
DREVGNP	Year to year difference in the ratio of government revenue to GNP
DGOVGNP	Year to year difference in the ratio of government payments to GNP

All data is quarterly, non-seasonally adjusted and from either the Bank of Canadian Review, Statistics Canada or Canadian Statistical Review. Non seasonally adjusted data was used because of the problem associated with the use of seasonally adjusted data as discussed in Pagan and Wickens (1989). All of the analysis goes from the first quarter 1946 through the third quarter 1989.

In the first set of analyses (Table 2) the policy outcomes during the 4 quarters preceding the call for the election (PRECALL), the 4 quarters preceding the election (PREEL) and the 4 quarters after the election (POSTEL) are compared to *all* other quarters for *all* governments. 2A shows that there is a small but statistically significant increase in the growth of real GNP before an election is called and held and a statistically insignificant decrease in the growth of real GNP after the election. The rate of inflation does not seem to be affected by the timing of the election. 2B examines changes in the unemployment rate/inflation rate trade-off. In the quarters before an election, there is a strong statistical decline in the growth of unemployment with a weak increase afterwards. Again, there seems to be no inflation effects.

Since the data used in the analyses in Table 2 include forced elections where the timing of the election is not under the control of the government, another set of analyses was done on only majority governments (Table 3). The results in these tables more strongly show an election induced cycle with a highly statistically significant increase in the growth of real GNP, and a decrease in the growth of unemployment in the quarters preceding the election AND a statistically significant decline in the growth of real GNP and an increase in the growth of unemployment in the four quarters after an election. These results are consistent with those in Nordhaus 1974, Nordhaus 1989, Hayes and Stone 1989, Beck 1991, and all of the other investigators who have found evidence of a political business cycle. The crucial difference between this study and those studies, which did not find a PBC under parliamentary governments, is that this study examines economic outcomes only under majority governments while the other studies include all governments.

Table 2 Economic Outcomes-All Governments

2A	CONST	LDRGNP	LDPI49	LOG LIKE
PRECALL	-1.21	.10*	-0.004	-102.2
	(-2.40)	(-1.85)	(-0.07)	
PREEL	-1.13	.09*	0.006	-104.75
	(-2.64)	(-1.75)	(-0.12)	
POSTEL	-0.29	-.06	-0.005	-101.98
	(-0.71)	(-1.10)	(-1.04)	

2B	CONST	DUNEMP	LDPI49	LOG LIKE
PRECALL	-.68	-0.36	-0.05	-100.91**
	(-2.26)	(-2.07)**	(-0.60)	
PREEL	-0.59	-0.29	-0.05	104.09
	(-2.16)	(-1.74)**	(-0.38)	
POSTEL	-0.63	.16	-0.04	-101.83
	(-2.29)	-1.23	(-.81)	

t Statistics are in parenthesis

N=167
CASES WITH PRCALL=1 53
CASES WITH PREEL=1 56
CASES WITH POSTEL=1 52

* p<.10
**p<.05
** p<.01

Table 3 Economic Outcomes-Majority Governments

A	CONST	LDRGNP	LDPI49	LOG LIKE
PRECALL	-1.97	.17**	.02	-69.45**
	(-3.31)	(-2.46)	(-0.33)	
PREEL	-1.95	.17**	.02	-69.77**
	(-3.29)	(3.26)	(0.37)	
POSTEL	-.29	-.14**	-.08	-65.92*
	(-.57)	(-2.07)	(-1.3)	
B	**CONST**	**DUNEMP**	**LDPI49**	**LOG LIKE**
PRECALL	-.93	-.60***	-.04	-67.65***
	(-2.73)	(-2.91)	(-.55)	
PREEL	-.96	-.61***	-.06	-67.66***
	(-2.79)	(-2.92)	(-.51)	
POSTEL	-1.13	.30*	-.04	-66.39
	(-3.32)	(1.86)	(-.64)	
t Statistics are in	parentheses	PRECALL 1=33		* p<.10
		PREEL 1=33		**p<.05
		POSTEL 1=20		***p<.01

Table 4 shows the results from Logit analyses comparing the post-election quarters to the pre-election quarters under majority governments. The growth in unemployment and the decrease in growth in real GNP in the post-election quarters as compared to the pre-election quarters support the idea of a manipulative government since these changes will lay the foundation for future expansions.[6]

Table 4 Preel versus Postel-Majority Governments

		LOG LIKE	
CONST	2.35	-35.18***	
	(2.4)		
LDRGNP	-0.45***		
	(-3.06)		
LDPI49	-0.10		
	(-1.14)		
CONST	-0.24	-34.19***	
	(-0.51)		
DUNEMP	1.24***		
	(3.10)		
LDPI49	0.02		
	(0.29)		
t Statistics are in parentheses			
N=61			
CASES WITH POSTEL=1 29			* p<.10
			**p<.05
			**p<.01

Since some investigators have found changes in either government spending and/or monetary growth approximately two years before an election (Alesina 1989, Hayes and Stone 1989, Beck 1991, Nordhaus 1989, Keil 1988), another set of analyses was performed comparing selected periods during the electoral cycle to all other quarters under majority governments. Only majority governments were used in this part of the analysis because these governments have both the time and the power to enact these expansionary policies (Table 5 reports these results).

In all cases contractionary fiscal policy is observed during the first half of the electoral term (POSTEL and POSTEL2) and expansionary fiscal policy is observed during the second half of the term (POSTEL3 and POSTEL4). The contrast is especially striking in comparing the fiscal policies during POSTEL2 and POSTEL3. No matter how fiscal policy is represented, there is a change in sign consistent with a PBC between these two periods. There is also a statistically significant increase in the growth of the money supply late in the term. All of these results are similar to the patterns found in Hayes and Stone, 1989 and Beck, 1991. (In examining minority governments, there was a statistically significant stimulatory fiscal policy in the four quarters *immediately after* the election). This again supports the hypothesis that incumbent administrations attempt to manipulate the economy in order to get re-elected.

Table 5 Policy Variables-Majority Governments

A	CONST	DLNGNP	LDM1	LOG LIKE
POSTEL	-0.88	-0.32	-0.05	-70.44
	(-2.89)	(-0.34)	(-1.12)	
POSTEL 2	-1.31	4.50***	-0.03	-58.74***
	(-3.7)	(3.45)	(-0.59)	
POSTEL 3	-1.09	-3.08**	-0.04	-65.66**
	(-3.34)	(-2.56)	(-0.85)	
POSTEL 4	-2.03	-8.31	0.11**	-63.99**
	(-5.03)	(-0.82)	(2.39)	
B	**CONST**	**DGOVGNP**	**LDM1**	**LOG LIKE**
POSTEL	-0.93	1.31	-0.05	-70.02
	(-2.98)	(0.98)	(-1.06)	
POSTEL 2	-1.1	-4.82***	-0.04	-62.75**
	(-3.23)	(-2.79)	(-0.84)	
POSTEL 3	-1.17	3.54**	-0.03	-66.51**
	(-3.54)	(2.37)	(-0.61)	
POSTEL 4	-2.03	-0.025	0.11**	-64.34**
	(-4.99)	(-0.02)	(2.41)	
C	**CONST**	**DREVGNP**	**LDM1**	**LOG LIKE**
POSTEL	-0.91	0.79	-0.05	-70.37
	(-2.92)	(0.51)	(-1.08)	
POSTEL 2	-1.41	5.49***	-0.02	-61.45**
	(-3.96)	(3.17)	(-0.34)	
POSTEL 3	-0.95	-3.17*	-0.04	-68.18
	(-3.01)	(-1.61)	(-0.92)	
POSTEL 4	-1.97	-2.65	0.11**	-63.36**
	(-4.89)	(-1.32)	(2.27)	

t Statistics in parentheses

CASES WITH POSTEL=1 31
CASES WITH POSTEL2=1 28
CASES WITH POSTEL3=1 30
CASES WITH POSTEL4=1 28

n=129

* P<.10

** P<.05

*** P<.01

Discussion

In all of the Logit analyses, the behavior of the growth of real GNP and the decline in the growth of unemployment are consistent with the existence of a political business cycle. The evidence of a PBC is even stronger under majority governments. The behavior of inflation is not consistent with a PBC. This may be explained by the influence of the U.S. inflation rate on the Canadian price level since there is some evidence that under floating exchange rates, inflation is not endogenous (Backus, 1986; Johnson, 1990). Carmichael (1991) has also presented evidence that the Bank of Canada sometimes shifts its monetary policy in response to changes in the U.S. economy instead of reacting to domestic economic conditions.

The results from the analyses using the policy variables indicate that shortly after the election of a majority government, the government cuts spending and increases taxes in order to increase the budget surplus. The effects of these measures show up as the large and statistically significant growth in the coefficient of these variables between POSTEL and POSTEL2. Between POSTEL2 and POSTEL3 the change in sign in the coefficients of the fiscal policy variables show that the government has switched its potion and is now pursuing expansionary policies. These expansionary policies are validated by expansionary monetary policy during POSTEL4. The government uses its influence on the Bank of Canada for this purpose (Coleman, 1991). The government hopes that both the expansionary fiscal and monetary policies will cause good economic news immediately before the election. This behavior is consistent with that found in the United States by Bizer and Durlouf (1989). The exact timing of the next election would then be determined by how well the economy responds to these stimuli and the popularity of the incumbent administration (Balke, 1989; Ito, 1990). Holding the election in a subsequent quarter to the call may occur when the government has inside information that some "good news" about the economy will be announced at the beginning of the next (election) quarter. It could be said that majority governments are manipulative while minority ones are opportunistic. Thus, in the minority government case, elections are called by the government when there is 'good' economic news and forced by the opposition when there is 'bad' news.

The importance of the unemployment rate (and unimportance of the inflation rate) on votes for the incumbent party is in contrast to much of the scholarly work done using United States data. Both Hibbs (1987) and Fair (1987) find the growth of real income and the inflation rate are important determinants of U.S. election results. However, Rosenbaum in the *New York Times* (1991) has connected the re-election of incumbent Presidents to changes in the unemployment rate in the second quarter of the election year. The Canadian results in this paper are also consistent with results from Chile reported by Panzer and Paredes, 1991, in which votes for the incumbent Senators are strongly related to the unemployment rate in a particular area at the time of the election. The relative strength of the labor movement in Canada (as compared to the United States) could also account for the importance of the unemployment rate in Canadian elections as compared to U.S. elections.

CONCLUSIONS

This paper has identified the existence of a political component in the growth of real GNP and the decline in the growth of unemployment in Canada. This is especially true under majority governments, which have both the political power and time in office to achieve the desired economic goals. They also can prevent an election until the desired outcomes are realized. Since an election much be called every five years, the government will stimulate the economy through fiscal policy approximately two years into its term and then pressure the Bank of Canada to increase the growth of the money supply. Other things being equal, these actions will lead to economic growth in the following year. The exact timing of the election will be determined by the popularity of the government and any inside information that it has on the behavior of the economy. It must be noted that no matter how hard a government tries to attain certain economic conditions, sometimes it cannot achieve them, and then is voted out of office.[7]

Notes

1. Interest in the PBC has been expanding. There is a new journal *Economics and Politics* that emphasizes the interactions between economic and political behavior.

2. The author will be glad to supply a list of articles on the U.S. PBC.

3. A list of these articles is also available from the author.

4. Between World War II and 1990, there have been a total of 15 governments of which 6 have been minority one. The term (in quarters) of minority governments is 6.33+/-3,14 quarters while that of majority governments is 17.125+/-1.25 quarters. In either case an election must be called within 5 years of the last one. Elections must be held with 90 days after they are called. It is possible for an election to be called one quarter and held in the next.

Summary of Elections

Date of Call for Elections	Date of Election	Winning Party	Prime Minister	Majority of Minority
4/45	6/45	Liberal	King	Majority
4/49	6/49	Liberal	St. Laurent	Majority
5/53	8/53	Liberal	St. Laurent	Majority
4/57	6/57	Cons.	Diefenbaker	Minority
2/58	4/58	Cons.	Diefenbaker	Majority
4/62	6/62	Cons	Diefenbaker	Minority
2/63	4/63	Liberal	Pearson	Minority
9/65	11/65	Liberal	Pearson	Minority
4/68	6/68	Liberal	Trudeau	Majority
9/72	10/72	Liberal	Trudeau	Minority
5/74	7/74	Liberal	Trudeau	Majority
3/79	5/79	Cons.	Clark	Minority
12/79	2/80	Liberal	Trudeau	Majority
7/84	9/84	Cons.	Mulroney	Majority
10/88	11/88	Cons.	Mulroney	Majority

5. Logit models deal with qualitative data reflecting a choice between one alternative and another. The Logit model estimates the probability of:

Prob [y=0]=1/(1+exp(b0 + b1x1 +b2x2. . . n + error term)

The coefficients, standard errors, t-statistics and significance levels have similar interpretation to those produced in OLS (see Aldrich and Nelson, 1984 for a fuller explanation of Logit analysis).

6. Similar analyses were performed on all governments and minority governments. The results for all governments were statistically weaker than for majority governments and the results for governments showed no differences in economic outcomes between pre and post election quarters. These results are available from the author.

7. Still to be examined is the influence of the international sector since van der Ploeg (1989) has suggested that governments may us exchange rate manipulation to achieve export growth just before an election. Ito (1991) has found the timing of the US elections was an important factor in the timing of Japanese economic activity.

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