International and domestic constraints on political business cycles in OECD economies

Leertouwer, Erik; Maier, Philipp

International and domestic constraints on political business cycles in OECD economies: A Comment

Erik Leertouwer and Philipp Maier[1]

[1]University of Groningen, Faculty of Economics, P.O. Box 800, 9700 AV Groningen, The Netherlands

Abstract

We attempt to assess the effect of monetary policy in a panel model for 16 OECD countries. To answer the question whether central banks actively create political business cycles we focus on the short-term interest rate as a proxy for the use of monetary instruments. Our results indicate that central banks do not create political business cyles. This conclusion holds no matter whether central banks are independent or not or are constrained by the exchange rate system in force.

1 Introduction

There are mainly two reasons why central banks are made independent: First, it reduces the inflationary bias. Many empirical studies provide evidence for that.[1] Second, "the most obvious advantage a fully independent central bank has is that of not being influenced by electoral deadlines" (Muscatelli, 1998). That the incumbent government may be inclined to stimulate the economy before elections to enhance re-election probabilities is well-known.[2] Are central banks also influenced by electoral deadlines? Put differently, if we observe political business cycles (PBC) in economic variables such as unemployment and growth rate, who is responsible for creating them – and who should not be blamed?

Surprisingly, the empirical literature has little to say about the exact role of governments and central banks when it comes to PBCs. Worse, in most previous studies different institutional features have largely been neglected: In many economies the scope for electorally-motivated monetary policies is reduced, since national or international restrictions bind central bankers. Independent central banks, for instance, are less likely to be involved in electorally motivated policies than central banks that are under the spell of government. The restricting effects of these institutional features are recognized in economic theory, yet many empirical papers on political business cycles do not explicitly control for them. Indeed, Clark et al. (1998) argue that common cross-country studies of PBC models may be seriously flawed since they do not account for institutional differences that constrain national policymakers. However, these authors only examine economic outcomes (output growth and unemployment). A link to central banks cannot be given as there are a number of other influences that may offset or reinforced the impact of monetary policy. This paper tends to fill this gap by focusing on policy outcomes for which the central bank can be held responsible, namely the short-term interest rate. The results are simple and strikingly robust: With the possible exception of Austria, the short-term interest rate does not show any sign of a political business cycle. Thus we reject the hypothesis that central banks actively engage in opportunistic behavior.

The outline of the paper is as follows: In the next section, we explain the political business models in more detail and show why internal or external constraints can prevent politicians from using monetary policy for short-sighted purposes. The main hypotheses will be tested in section 3, before we summarize our findings in the final section.

2 When Do Political Business Cycles Occur?

2.1 Electoral Pressure On The Economy

A test for the existence of political business cycles requires the following: First, we need a theoretical basis to explain why such behavior could be pursued by the government or the central bank. Second, one has to account for restricting instutitutional features that limit the possibility to implement such a policy. And finally, we need an appropriate measure for the central bank's policy stance.

[1] Eijffinger and de Haan (1996) provide a survey of the literature.
[2] See Alesina, Roubini and Cohen (1997) for an overview.

The first model on political business cycles (PBC) was developed by Nordhaus (1975), who assumed that governments control both monetary and fiscal policy. In the model politicians care only about their re-election and voters judge the incumbent's performance by the state of the economy. Before elections, the incumbent pursues expansive economic policies to enhance its probability of re-election, after elections the government has to fight inflation. The testable prediction of the model is that before elections the unemployment rate drops due to expansive policies, after elections inflation is high and contractionary measures are taken. Similar patterns apply to economic instruments.[3]

Nordhaus made the assumptions that (a) the central bank and the government pursue similar policies, and (b) policymakers have sufficient national autonomy to implement their policies. Clark et al. show that these assumptions need not hold:

1. Central banks are increasingly made independent. One should not expect these central banks to engage in opportunistic behavior, as one of the main arguments for central bank independence (CBI) is that their optimization can be based on a longer time-horizon, not on short-sighted behavior (*National Constraint*).

2. Economic theory shows that under a regime of fixed exchange rates and high capital mobility, the scope for autonomous economic policies is reduced. Since the worldwide increase in capital mobility in the 70s we can assume that the possibility to implement a national monetary policy has declined for those countries who have either been member of a fixed exchange rate regime, or who have pegged their currency unilaterally (*International Constraint*).

Clark et al. show that PBCs exist in economic outcomes, but lack evidence that central banks create them. To answer the question of whether central banks *actively create* PBCs evidence should be found in monetary instruments. There is, however, one problem: It is nearly impossible to determine a 'key variable' which fully characterizes the current monetary policy stance. Focusing on one single instrument is for most countries not possible, as for most countries *the* monetary instrument does not exist.[4] Still, the use of monetary instruments either directly or indirectly influence the behavior of interest rates. To circumvent the problems attached to monetary instruments this is what one should focus on.[5]

There is a second argument why the choice of an interest rate might be appropritate: If politicians try to influence a central bank before elections, the demand will in most cases not be formulated in terms of a monetary aggregate ('Increase the growth rate of M1!'), but in term of interest rates ('Lower the

[3]Rogoff and Sibert (1987) reformulated the model for rational assumptions: Their model predicts visible cycles in economic instruments, but short and possibly irregular cycles ('blips') in economic outcomes.

[4]Take the example of Germany: Different instruments were used over time, and the relative weight of these instruments changed considerably. Open market operations which were the most powerful monetary tool in the late 80s and 90s, were fully developed only in 1985.

[5]In this respect interest rates could be viewed as capturing the 'net effect' or the 'sum' of all monetary instruments. See also Maier (1999). As monetary aggregates are subject to external influences one cannot conclude that central banks manipulate the economy if PBCs are found in there.

interest rate!'). Therefore, we use short-term interest rates. They are tightly controlled by the central banks, and if political business cycles exist and if they be created by central banks, we should be able to find them here.

2.2 Institutional Constraints

To account for national and international constraints, we first need to classify the degree of statutory central bank independence in the various countries and check the participation in fixed exchange rate regimes. Based on the work of Clark et al. we derive table 1.[6]

In a regression analysis, we would not expect to find PBC in countries that are constrained in either way. Clark et al. (1998) have shown this hypothesis to hold for policy outcomes, such as inflation or unemployment rates. However, this test cannot reveal the precise role of central banks, since these policy outcomes are influenced by many additional factors (e.g. supply and demand shocks). If we find cycles in policy outcomes, we cannot conclude that the central bank actively creates them.

National Constraint *CBI*	International Constraint	
	For part of period	For entire period
Above Median	Austria, Denmark, Germany, UK (1960-71)	Australia, Canada, US
Below Median	Belgium, Finland, France Italy, New Zealand, Norway Spain, Sweden, UK (1972-98)	Japan

Table 1: National and International Constraints

3 The Results

3.1 Country-Specific Tests

First we report country-specific tests. We divide the countries in two groups: Those who were not experiencing any change in internal and external constraints during the period of observation and those experiencing a change in the external constraint.[7] To get comparable figures, we use monthly IFS data on the short-term interest rate for 16 OECD countries. The sample period starts for most countries in the 1960s and goes until 1997. Further details on the data can be found in appendix A. For all country-specific tests, the models include lagged dependent variables and lagged disturbances if necessary, the order of which

[6] As measure for central bank independence we have used the index by Cukierman et al. (1992). Other measures of central bank independence yielded qualitatively similar results. Great Britain is not classified by the CWN index, but experienced a change in central bank independence sufficiently large to place it below the median for one part of the period and above the median for the other part: In 1971 the Bank of England became less independent, which means that our CBI dummy for Great Britain is 0 from 1971 to 1997.

[7] Great Britain is the only country experiencing a shift in the internal constraint. Estimates not reported here show that the Bank of England has not engaged in PBCs, which is quite in line with the findings of Clark et al.

is determined by examining the (partial) autocorrelation function and by performing a Breusch-Godfrey serial correlation LM test.[8] The model coefficients are estimated using OLS techniques.[9]

3.1.1 No change in the constraints

The first country-specific test we apply seeks to examine whether a significant degree of covariation exists between elections and the short-term interest rate for countries experiencing no change in the internal and external constraint during the period of observation: Australia, Austria, Canada, Denmark, Germany, Japan and the United States. Following Alesina, Roubini and Cohen (1997), we start with the following first model specification:

$$I_{it} = \beta_{0i} + \beta_{1i} E_{it} + \sum_j \beta_{j+1,i} I_{i,t-j} + \epsilon_{it} \tag{1}$$

I_{it} is the short-term interest rate and E_{it} the election dummy, which is defined as $+1$ in the month containing a general election and the eleven preceding months, and 0 otherwise.[10] We subdivide the countries into three groups, the first being Australia, Canada and the US, which all have high levels of CBI and monetary policy autonomy (MPA) present for the whole sample period, the second group consists of Austria, Denmark and Germany (high CBI and MPA present only for part of the time) and finally Japan, which experienced neither constraint during the period of observation and which is the country with the highest probability for a PBC. The results for all three groups are shown in Table 2.

None of the countries for which we expect a PBC to occur yields a significant coefficient.[11] This is a clear sign that PBC are not visible in the short-term interest rate. Only Austria yields a negative coefficient which means that the interest rate decreases before elections. This behavior indicates a PBC, and the coefficient is significantly different from zero. Therefore Austria, despite its relatively independent central bank, experiences a PBC.

3.1.2 Changes in the external constraint

Next, we consider the group of countries which experienced a change in the external constraint during the sample period: Belgium, Finland, France, Italy, Norway, Spain, Sweden and New Zealand. These countries have low levels of central bank independence and shifting levels of monetary policy autonomy.

[8] The order of the lags is not reported in the tables. The significance of the estimates is marked with the superindex ***/**/* if $p < 0.01/0.05/0.1$.

[9] The bias of the OLS estimator disappears since the number of time periods is large, see Kennedy (1998), p. 149-150.

[10] We report the results for a 12-month pre-election period. Additional tests with 18 and 24 months did not change the overall conclusions.

[11] Note that Japan is a special case: Elections are endogeous in Japan, which means that the parliament has the ability to call elections when the ruling party experiences a favorable situation. There is a broad consensus that elections are more likely to be held when economic conditions are favorable for the incumbent (see Ito and Park, 1988), which is difficult to capture in a common PBC model. See also Cargill et al. (1997) for more information on Japan.

Country	Coefficients	S.E.
1. High CBI, MPA for entire period present		
Australia	0.075	(0.089)
Canada	0.107	(0.158)
US	0.018	(0.095)
2. High CBI, shifting levels of MPA		
Austria	-0.165***	(0.058)
Denmark	0.058	(0.135)
Germany	-0.032	(0.065)
3. Countries with neither constraint		
Japan	0.070	(0.061)

Table 2: The effect of elections on the short-term interest rate

To conduct country-specific tests, a dummy variable $NOMPA$ is added to model (1). This dummy has a value equal to +1 when a country lacks monetary policy autonomy. An additional dummy variable $E * NOMPA$ is included as interaction term, equaling +1 during electoral periods in countries lacking monetary policy autonomy. Thus, for countries experiencing shifting international constraints but no domestic constraint we estimate:

$$\begin{aligned} I_{it} &= \beta_{0i} + \beta_{1i}E_{it} + \beta_{2i}NOMPA_{it} + \beta_{3i}E_{it}NOMPA_{it} \\ &\quad + \sum_j \beta_{j+3,i} I_{i,t-j} + \epsilon_{it} \end{aligned} \tag{2}$$

If the absence of monetary policy autonomy decreases the probability of PBCs, we should expect the sum of the first and third coefficient not to be significantly different from zero. Therefore, a Wald test is performed to test for $\beta_1 + \beta_3 = 0$. The results are shown in Table 3.

Country	β_1 E	S.E.	β_2 NOMPA	S.E.	β_3 E*NOMPA	S.E.	$\beta_1 + \beta_3$ Wald	S.E.
Belgium	-0.088	(0.156)	0.241*	(0.129)	0.184	(0.191)	0.096	0.751
Finland	0.071	(0.270)	-0.279*	(0.146)	-0.023	(0.296)	0.048	0.160
France	0.078	(0.125)	0.018	(0.091)	0.057	(0.167)	0.135	1.448
Italy	0.088	(0.119)	0.163*	(0.098)	-0.156	(0.170)	-0.068	0.315
Norway	0.568	(0.753)	0.072	(0.379)	-0.768	(0.768)	-0.200	2.154
Spain	0.583	(0.574)	-1.053*	(0.561)	0.039	(0.866)	0.622	0.883
Sweden	0.261	(0.233)	0.298*	(0.176)	-0.173	(0.267)	0.088	0.476
N. Zealand	0.028	(0.141)	-0.009	(0.156)	-0.007	(0.275)	0.021	0.008

Table 3: The effect of elections on the short-term interest rate in countries experiencing shifting international constraints, but no national constraint

As can be seen the sum of the coefficients is not significantly different from zero for all eight countries. As the election dummy is never significant, PBCs

never occurred in our sample at all, and the additional test for the restriction was in fact superfluous. For Belgium, Finland, Spain and Sweden the coefficient for the dummy $NOMPA$ is significant. A simple interpretation cannot be given: A positive value (in the case of Belgium and Sweden) indicates that during periods of flexible exchange rates these countries experienced higher interest rates, whereas in the case of Finland and Spain flexible exchange rates lowered the short-term interest rate significantly. Our results for Finland may suffer from data insufficiencies (only one election period covered during monetary policy autonomy), but still one would expect a clearer result whether flexible exchange rates tend to increase or to lower the short-term interest rate.

UK	Institutionally naive		Context dependent	
	Coefficient	S.E.	Coefficient	S.E.
$\beta_2 : E$	-0.047	(0.109)	-0.055	(0.132)
$\beta_3 : CBI$	-	-	-0.109	(0.123)
$\beta_4 : E * CBI$	-	-	0.014	(0.236)

Table 4: The effect of elections on the short-term interest rate in the UK under alternative specifications

3.2 Panel Data estimation

By pooling the data, we can examine the effects of cross-national differences in the internal and external constraint. We use an autoregressive panel data model with fixed effects, in which the relevant parameters can be estimated using the LSDV estimator.[12] As before, the number of lags is determined examining the (partial) autocorrelation function. Only estimates of the relevant dummy variables are reported in the tables.

First, we focus on the impact of central bank independence. The constraint on PBC behavior in terms of high levels of CBI can be modeled as follows:

$$\begin{aligned} I_{it} &= \beta_0 + \beta_{1i} + \beta_2 E_{it} + \beta_3 CBI_{it} + \beta_4 E_{it} CBI_{it} \\ &\quad + \sum_j \beta_{j+4} I_{i,t-j} + \epsilon_{it} \end{aligned} \tag{3}$$

The results are reported in Table 5. First, we only focus on the left column, that is the β_i's. As in our previous regressions, the estimated coefficients remain insignificant. This confirms our findings of the country-specific model: Elections do not influence the short-term interest rate, and as we do not find any evidence for an electoral pattern, regardless of the degree of CBI.

Second, we examine the impact of monetary policy autonomy. The loss of monetary policy autonomy of the existence of PBCs is modeled as follows:

[12]The LSDV (Least Squares Dummy Variables) estimator is obtained by applying the Within transformation to eliminate the individual effects and then performing OLS on the transformed model. Since in our sample the number of time periods is very large, the inconsistency of OLS estimates disappears, see Baltagi (1995), p. 125-126.

	National Constraint	(CBI)		International Constraint	(MPA)
	Coefficient	S.E.		Coefficient	S.E.
β_2	0.032	(0.045)	γ_2	0.069	(0.048)
β_3	-0.159	(0.129)	γ_3	0.031	(0.048)
β_4	-0.033	(0.073)	γ_4	-0.102	(0.071)

Table 5: The context-specific effects of elections on the short-term interest rate for all countries pooled

$$I_{it} = \gamma_0 + \gamma_{1i} + \gamma_2 E_{it} + \gamma_3 NOMPA_{it} + \gamma_4 E_{it} NOMPA_{it} + \sum_j \gamma_{j+4} I_{i,t-j} + \epsilon_{it} \quad (4)$$

The results are reported in the right column of Table 5. Again, the estimated coefficients γ_i are not significant. Moreover, in contrast to our expectations, the coefficient for elections has a positive sign, which indicates that before elections monetary policy is comparatively restrictive. The interaction of the dummy concerning monetary policy autonomy with the election dummy shows that if a country participates in a regime of flexible exchange rates, then the short-term interest rate is lower before elections. This is counterintuitive, as it would imply that if a country faces less restrictions, the possibility for PBCs increase.

Given these results, we have to reject the whole PBC theory as far as central banks are concerned: We do not find evidence that central banks actively engage in short-sighted behavior before elections. Indeed, we conclude that if cycles occur in monetary aggregates (as have been reported in previous studies), they are probably fiscally-induced, but central banks should not be held responsible for them, as we cannot find a regular pattern in the short-term interest rate.

4 Conclusion

A large body of literature examines the relationship between central bank independence and political business cycles. Similarly, the relationship between exchange rate regimes and PBCs has been investigated, but strangely enough, the combination of both has rarely been used. We have combined both approaches using a short-term interest rate as a proxy for the use of monetary instruments.

We derived two pieces of evidence: First, our results for the country-specific tests, based on the short-term interest rate for 16 OECD countries, are encouraging for central banks: Overall, we find hardly any support for the PBC hypothesis. Two possible explanations arise: First, we could simply conclude that central banks do not manipulate interest rates before elections. This suggests that either governments do not have possibilities to force central banks to yield, or central banks have effectively resisted government's wishes. Our results do not suggest that the degree of statutory central bank independence matters in this respect. Second, our results could be due to the fact that the short-term interest rate is not as tightly controlled by the central banks as we

have assumed. This, however, would have the following implication: If (as the theory suggests) central banks use interest rate to manipulate monetary growth (and finally the inflation rate), and if their actions before elections have no effect on the short-term interest rate, then PBC's – if they exist in macroeconomic data, such as GNP growth or unemployment – cannot be due to central bank action, as these actions have no effect.

The second piece of evidence stems from our panel data regressions: We get more or less the same picture, that is no evidence for central banks actively creating political business cycles. Overall, the implications are clear: If political business cycles in macroeconomic variables such as unemployment show up – the central banks should not be blamed. Either their actions have no effect, or they simply do not engage in short-sighted behavior.

Appendix

A Data Sources

We use monthly data from IFS statistics. Additionally data have been provided directly by the following central banks: Denmark, Sweden, UK and New Zealand. Data for Germany have also been used from the CD-ROM "Deutsche Bundesbank: 50 Jahre Deutsche Mark". Data for the United States have been obtained from FRED (http://www.stls.frb.org/fred/).

The election dummy is +1 eleven months before the election and during the election month, and 0 otherwise. The dummy for central bank independence is +1 if the level of central bank independence is above-median, and 0 otherwise. The dummy for monetary policy autonomy is +1 if monetary policy autonomy is absent, and 0 otherwise. The sample period differs for each country due to data availability: Austria 1967:1-1997:12; Australia 1969:7-1996:06; Belgium 1960:1-1997:12; Canada 1975:1-1997:12; Denmark 1972:1-1997:12; France 1964:1-1997:12; Finland 1972:10-1997:12; Germany 1960:1-1997:12; Italy 1971:1-1997:12; Japan 1960:1-1997:12; Norway 1971:8-1997:12; Spain 1974:1-1997:12; Sweden 1965:12-1997:12; UK 1960:1-1997:12; US 1960:1-1997:12, New Zealand 1973:1-1997:12. Due to lack of election data, the sample period for Canada reduces to 1975:1-1996:07. Due to lack of democratic elections, the sample period for Spain reduces to 1977:1-1997:12.

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