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International Organization, Volume 56, Number 1, Winter 2002, pp. 209-221
(Article)

Published by The MIT Press



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International and Domestic Constraints on Political Business Cycles in OECD Economies: A Comment

Erik Leertouwer and Philipp Maier

There are two main reasons why central banks are made independent: First, making them independent 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.”² That the incumbent government may be inclined to stimulate the economy before elections in order to enhance reelection probabilities is well known.³ Are central banks also influenced by electoral deadlines? Put differently, if we observe political business cycles (PBCs) in economic variables such as unemployment and growth rate, who is responsible for creating them—and who should not be blamed?

Surprisingly, with regard to PBCs the empirical literature has little to say about the exact role of governments and central banks. Worse, most previous studies have largely neglected different institutional features: In many economies the scope of electorally motivated monetary policies is reduced, since national or international restrictions bind central bankers. For instance, central banks that are independent 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 PBCs do not explicitly control for them. Indeed, William Clark, Usha Reichert, Sandra Lomas, and Kevin Parker argue that common cross-country studies of PBC models may be seriously flawed because they do not account for institutional differences that constrain national policymakers.⁴ However, these scholars examine only the economic outcomes (output growth and unemployment). A link to central banks cannot be made using only these variables, because a number of other influences may offset

We thank Jakob de Haan, Tom Wansbeek, and two anonymous reviewers for their useful comments.

1. For a survey of the literature, see Eijffinger and de Haan 1996.

2. Muscatelli 1998.

3. For an overview, see Alesina, Roubini, and Cohen 1997.

4. Clark et al. 1998, 105.

or reinforce the impact of monetary policy. In this article we fill this gap by focusing on a policy outcome 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, European countries show no sign of PBCs in their short-term interest rates. Thus we reject the hypothesis that central banks actively engage in opportunistic behavior.

In this article we will first explain the political business models in more detail and show why internal or external constraints can prevent politicians from using monetary policy for shortsighted purposes. Then we will test the main hypotheses, and finally we will summarize our findings.

When Do Political Business Cycles Occur?

Electoral Pressure on the Economy

To test for the existence of PBCs, we first need a theoretical basis to explain why a government or a central bank would pursue such behavior. Second, we must account for restrictive institutional features that limit the possibility of implementing such a policy. Finally, we need an appropriate measure for the central bank's policy stance. The first model on PBCs was developed by William D. Nordhaus, who assumed that governments control both monetary policy and fiscal policy.⁵ In the Nordhaus model, politicians care only about getting reelected, and voters judge an incumbent's performance by the state of the economy. Before an election, the incumbent pursues expansive economic policies to enhance the probability of being reelected; after the election the government has to fight inflation. The testable prediction of the model is that before an election the unemployment rate drops due to expansive policies and after the election inflation is high and contractionary measures must be taken. Similar patterns apply to economic instruments.⁶

Nordhaus assumed (1) that the central bank and the government pursue similar policies and (2) that policymakers have sufficient national autonomy to implement their policies. Clark and his colleagues show that these assumptions need not hold. According to Clark et al.,

1. Central banks are increasingly being made independent. We should not expect these central banks to engage in opportunistic behavior, since one of the main arguments for central bank independence is that the banks can base their optimization on a longer time horizon, not on short-term behavior (*national constraint*).

5. Nordhaus 1975, 20.

6. Rogoff and Sibert reformulated the model for rational assumptions: Their model predicts visible cycles in economic instruments but short and possibly irregular cycles ("blips") in economic outcomes. Rogoff and Sibert 1988.

2. Economic theory shows that under a regime of fixed exchange rates and high capital mobility, the scope of autonomous economic policies is reduced. Following the worldwide increase in capital mobility in the mid-1970s, we can assume that the possibility of implementing a national monetary policy has declined for countries that have been members of a fixed exchange-rate regime or have pegged their currency unilaterally (*international constraint*).

Clark et al. were interested in the positive questions about whether central bank independence or the loss of monetary policy autonomy make PBCs less likely. They showed that PBCs exist in economic outcomes. In this article we take the positive approach of Clark et al. a step further and tackle the following question: Given that these political cycles exist, is there any evidence that central banks *actively create* them?

To answer this question we must look at economic variables that have a closer link with central banks. Several choices are possible. First, *monetary aggregates* certainly reflect the central bank's decisions. They are influenced, however, by external factors such as supply or demand shocks. A cycle in, say, M1 does not necessarily imply active central bank behavior. If, for instance, the incumbent government uses expansive fiscal policy before elections, and the central bank tolerates this behavior, then obviously a monetary aggregate must reflect pre-electoral manipulation.⁷ However, it would be unfair to fully blame the central bank, because the government created the PBC. To answer the question of whether central banks regularly misuse monetary policy, evidence should be sought in monetary instruments.

Monetary instruments most clearly indicate what central banks are doing. There is one problem, however, with this source of information: For most countries it is nearly impossible to determine a "key variable" that fully characterizes the current monetary policy stance. Focusing on one single instrument is not a good idea, because for most countries, let alone for sixteen OECD countries, a single monetary instrument does not exist.⁸ So while instruments should be used as dependent variables, doing so is impossible in practice. Fortunately, interest rates provide a solution to the dilemma.

All monetary instruments either directly or indirectly influence the behavior of *interest rates*. Short-term interest rates react immediately to innovations in monetary

7. Two countries have been studied in some detail: For the United States, Beck (1987) argued that the Federal Reserve Bank (the "Fed") accommodates electorally induced fiscal policy cycles, a finding that Grier (1989) partly rejects. Beck (1991) concludes that the Fed is not actively creating a PBC. Berger and Woitek (1997 and forthcoming) have looked at Germany. They find cycles in M1 that could indicate opportunistic behavior by the Deutsche Bundesbank. However, their findings indicate that the Bundesbank did not target a monetary aggregate, but rather targeted economic variables such as inflation or output. Berger and Woitek conclude that the cycle in M1 was demand-driven rather than supply-driven.

8. 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 1980s and the 1990s, were fully developed only in 1985.

policy, and this is what we should focus on in order to circumvent the problems attached to monetary instruments. In this respect short-term interest rates could be viewed as capturing the “net effect” or the “sum” of all monetary instruments.⁹ Short-term interest rates are variables that central banks can (and do) control. Their relevance has been stressed by the German Bundesbank, which considers the day-to-day rate to be the “key indicator” for monetary policy.¹⁰

There is a second reason why the interest rate might be an appropriate choice: If politicians try to influence a central bank before elections, in most cases the demand will be formulated not in terms of a monetary aggregate (“Increase the growth rate of M1!”), but in terms of interest rates (“Lower the interest rate!”). Short-term interest rates are tightly controlled by the central banks. If PBCs exist and central banks are creating them, we should be able to find the evidence in the behavior surrounding these rates.¹¹

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 their participation in fixed exchange-rate regimes. Clark et al. have already done this work, so we only need to extend their findings to include the 1990s.

In brief, the main idea is that there were times when the government could not have pursued opportunistic policies. There are two main reasons for this: First, a high degree of central bank independence makes it unlikely that the desire for expansive policies before elections is supported by similar monetary policy. This is a “national constraint” that governments face. Second, fixed exchange-rate regimes restrict the scope of autonomous monetary policies, if capital mobility is high. Clark et al. present evidence that since the breakup of the Bretton Woods system, capital mobility has been high enough that participation in a fixed exchange regime has prevented opportunistic monetary policy, whereas before 1973 capital mobility was too low to be an effective restriction. This is called an “international constraint.”

For the countries in our sample, these time periods are categorized in Table 1.¹² We introduce two sets of 0/1 dummies for each country, with each set showing those

9. See also Maier 2000.

10. Deutsche Bundesbank 1995.

11. Note that if central bank independence is low and capital mobility is very low, monetary and fiscal policy can be aimed at one target. Clark and Hallerberg (2000) have investigated this special case, and it can be argued that if policymakers assign the reelection policy to fiscal policy and if monetary policy accommodates that assignment, the central bank has served as an accomplice. Only under this scenario might our procedure fail to correctly detect the exact role of central banks. We cannot exclude this scenario, but it covers only a limited period of time (as we assume capital mobility to be high from 1975 on) and should therefore not critically influence our results.

12. As our measure for central bank independence we have used the index developed by Cukierman, Webb, and Neyapti (1992). Other measures of central bank independence yielded qualitatively similar results. Great Britain is not classified in Cukierman, Webb, and Neyapti’s index, but it experienced a change in central bank independence sufficiently large to place it below the median for one part of the

TABLE 1. *National and international constraints*

<i>National constraint (central bank independence)</i>	<i>International constraint</i>	
	<i>For part of period</i>	<i>For entire period</i>
Above median	Austria, Denmark, Germany, United Kingdom (1960–71)	Australia, Canada, United States
Below median	Belgium, Finland, France, Italy, New Zealand, Norway, Spain, Sweden, United Kingdom (1972–98)	Japan

periods during which the national constraint and/or the international constraint was present. Again, we closely follow the methodology adopted by Clark et al.¹³

In a regression analysis, we would not expect to find PBCs in countries that are constrained in either way. Clark et al. have shown that this hypothesis holds for policy outcomes, such as inflation or unemployment rates. Here we will test whether it also holds for monetary variables the central bank can closely control.

The Results

Country-Specific Tests

In our country-specific tests, we divided the countries into two groups. In the first group are countries that did not experience a qualitative shift in their constraints during the sample period; that is, they were either always unconstrained or always constrained during the estimation period. In the second group are countries that experienced a shift in the external constraint such that they were able to follow an autonomous monetary policy for part of the time and were constrained for a

period and above the median for the other part: In 1971 the Bank of England became less independent, which means that our central bank independence dummy for Great Britain is zero from 1971 to 1997.

13. Note two things: First, Clark et al. do not consider the Bretton Woods system to be a restriction on the ability to determine monetary policy autonomously, because capital mobility was low until 1973. To make our results comparable with their estimates we have decided to follow their classification. Second, implicitly we have made the following assumption: Moving from one exchange-rate regime to another produces the same effects; that is, our dummies do not differentiate between different exchange-rate regimes. Since the focus is on the institutional restriction that a fixed exchange rate places on monetary policy, and since we believe that there are no fundamentally different consequences between joining the European Monetary System (EMS) and holding membership in any other fixed exchange-rate system, this might be justified. Note, finally, that we do not consider the EMS to be a restriction for Germany.

sub-period.¹⁴ To obtain comparable figures on the short-term interest rate for sixteen OECD countries, we used monthly IFS data. For most countries, the sample period begins in the 1960s and goes until 1997.¹⁵ With respect to the stationarity of the series, we adopted the approach of Herman J. Bierens and took the short-term interest rates to be nonlinear trend stationary processes.¹⁶

For all country-specific tests, the models include lagged dependent variables, the order of which we determined by examining the (partial) autocorrelation function. To see whether it would be necessary to include lagged disturbances, we performed a Breusch–Godfrey serial correlation LM test; we found no evidence of serial correlation. We used the White test to check for heteroskedasticity. When necessary, we used a heteroskedasticity-consistent covariance matrix to calculate standard errors.¹⁷ We used least squares techniques to estimate the model coefficients.¹⁸

No qualitative shift in the constraints. The first country-specific test we applied seeks to determine whether, for countries experiencing no qualitative change in internal and external constraints during the period of observation, a significant degree of covariation exists between elections and the short-term interest rate. The following countries were either always unconstrained or always constrained during the estimation period: Australia, Austria, Canada, Denmark, Germany, Japan, and the United States. Following Alberto Alesina, Nouriel Roubini, and Gerald Cohen,¹⁹ we started with the following model specification:

$$I_{it} = \beta_{0i} + \beta_{1i}E_{it} + \sum_j \beta_{j+1,i}I_{it-j} + \epsilon_{it}. \quad (1)$$

Here, I_{it} is the short-term interest rate, and E_{it} is the election dummy, which is defined as +1 in the month containing a general election and the eleven preceding months, and zero otherwise.²⁰ We subdivide the countries into three groups, the first containing Australia, Canada, and the United States, all of which have high levels of central bank independence and monetary policy autonomy for the whole sample period. The second group consists of Austria, Denmark, and Germany (high central bank independence and monetary policy autonomy were present only part of the time), and the third group contains only Japan, which experienced neither constraint

14. 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. 1998.

15. Further details on the data can be found in the appendix.

16. Bierens 1997.

17. The order of the lags is not reported in the tables.

18. The bias of the OLS estimator disappears because the number of time periods is large; see Kennedy 1998, 149–50.

19. Alesina, Roubini, and Cohen 1997.

20. We report the results for a twelve-month pre-election period. Additional tests with eighteen and twenty-four months did not change the overall conclusions.

TABLE 2. *Effect of elections on the short-term interest rate*

<i>Country</i>	E_{it}
1. High central bank independence and monetary policy autonomy for entire period	
Australia	0.075 (0.091)
Canada	0.107 (0.168)
United States	0.018 (0.124)
2. High central bank independence, shifting levels of monetary policy autonomy	
Austria	-0.165*** (0.055)
Denmark	0.058 (0.147)
Germany	-0.032 (0.056)
3. Countries with neither constraint	
Japan	0.070 (0.044)

Note: Standard errors are in parentheses.

*** $p < .01$.

during the period of observation. The results for all three groups are shown in Table 2, where we report the result for the election coefficient E_{it} . If the hypothesis of a PBC holds, then this coefficient should be significantly lower than zero.

Japan, the country with the highest probability of a PBC, does not yield a significant coefficient.²¹ This is a clear sign that PBCs are not visible in the short-term interest rate. Only Austria and Germany yield negative coefficients, which means that the interest rate decreases before elections. This behavior indicates a PBC, and the coefficient for Austria is significantly different from zero. Therefore Austria, despite its relatively independent central bank, experiences a PBC.²²

21. Note that Japan is a special case: Elections in Japan are endogenous, 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. For more information on Japan, see also Cargill, Hutchinson, and Ito 1997.

22. In Leertouwer and Maier (2001) we report additional robustness checks and also control for economic determinants, such as inflation and industrial production. This does not qualitatively influence our results.

TABLE 3. *Effect of elections on the short-term interest rate in countries experiencing shifting international constraint but no national constraint*

Country	β_1	β_2 NOMPA	β_3 $E * NOMPA$	$\beta_1 + \beta_3$	F (Wald)
Belgium	-0.088 (0.110)	0.241** (0.117)	0.184 (0.180)	0.096	0.446
Finland	0.071 (0.321)	-0.279* (0.152)	-0.023 (0.336)	0.048	0.178
France	0.078 (0.101)	0.018 (0.080)	0.057 (0.191)	0.135	0.619
Italy	0.088 (0.142)	0.163 (0.126)	-0.156 (0.161)	-0.068	0.824
Norway	0.568 (0.410)	0.072 (0.265)	-0.768* (0.461)	-0.200	1.606
Spain	0.742 (0.790)	-0.745** (0.372)	-0.215 (0.902)	0.527	6.248**
Sweden	0.261 (0.213)	0.298* (0.158)	-0.173 (0.249)	0.088	0.494
New Zealand	0.028 (0.162)	-0.009 (0.089)	-0.007 (0.168)	0.021	0.299

Note: Standard errors are in parentheses.

** $p < .05$.

* $p < .1$.

Partly constrained countries with changes in the external constraint. Next to be considered is the group of countries that 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.

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

$$I_{it} = \beta_{0i} + \beta_{1i}E_{it} + \beta_{2i}NOMPA_{it} + \beta_{3i}E_{it}NOMPA_{it} + \sum_j \beta_{j+3,i}I_{i,t-j} + \epsilon_{it}. \quad (2)$$

If the absence of monetary policy autonomy decreases the probability of PBCs, we should expect the sum of the first and third coefficients to not be significantly different from zero. The results are shown in Table 3.

Here we would expect β_1 to be significantly lower than zero. Otherwise, a PBC does not occur even during periods when a country faces no institutional constraints. If Clark et al. are correct, then β_3 must offset the negative value of β_1 ; that is, the restriction effectively prevents opportunistic behavior that otherwise would have occurred. Therefore, we performed a Wald test to test for $\beta_1 + \beta_3 = 0$.

As can be seen in Table 3, Belgium is the only country with a negative value of β_1 . Furthermore, for all countries except Spain the sum of the coefficients is not significantly different from zero.²³ Since the election dummy is never significant, PBCs never occurred in our sample, and the additional test for the monetary policy autonomy restriction was in fact superfluous.

For Belgium, Finland, Spain, and Sweden the coefficient for the dummy variable NOMPA is significant, and no simple interpretation can be given: A positive value (in the case of Belgium and Sweden) indicates that during periods of flexible exchange rates these countries experienced lower interest rates, whereas in the case of Finland and Spain flexible exchange rates increased the short-term interest rate significantly. Our results for Finland may suffer from data insufficiencies (only one election period was covered during monetary policy autonomy), but still we would expect a clearer result—regardless of whether flexible exchange rates tend to increase or lower the short-term interest rate.

Panel Data Estimation

By pooling the data, we were able to examine the effects of cross-national differences in the internal and external constraints. We used an autoregressive panel data model with fixed effects,²⁴ in which the relevant parameters are estimated using the estimator for least-squares dummy variables.²⁵ As before, we determined the number of lags by examining the (partial) autocorrelation function and we computed White heteroskedasticity-consistent standard errors. Only estimates of the relevant dummy variables are reported in the tables.

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

$$I_{it} = \beta_{1i} + \beta_2 E_{it} + \beta_3 \text{CBI}_{it} + \gamma_4 E_{it} \text{CBI}_{it} + \sum_j \beta_{j+4} I_{i,t-j} + \epsilon_{it}. \quad (3)$$

The results are reported in the first column of Table 4. The coefficient for central bank independence shows that countries with a high degree of central bank

23. Our results for Spain are quite different from all our other results. This might be due to the relatively short sample period for Spain.

24. Since our focus is on a specific set of sixteen countries instead of countries drawn randomly from a large population, a fixed-effects model is the appropriate specification here. See Baltagi 1995, 10.

25. Judson and Owen 1999 show that for an unbalanced panel with a very large time dimension, the least-squares dummy variables estimator is recommended.

TABLE 4. *The context-specific effects of elections on the short-term interest rate for all countries pooled*

	<i>National constraint (central bank independence) coefficient</i>	<i>National constraint (monetary policy autonomy) coefficient</i>
<i>E</i>	0.020 (0.059)	0.045 (0.057)
<i>CBI</i>	-0.159* (0.091)	—
<i>E * CBI</i>	-0.021 (0.081)	—
NOMPA	—	0.004 (0.044)
<i>E * NOMPA</i>	—	-0.077 (0.081)
Wald test	-0.001 $F < 0.001$	-0.032 $F = 0.298$

Note: Standard errors are in parentheses.

* $p < .1$.

independence tend to have lower interest rates (weakly significant). In contrast to our expectations, the coefficient for elections had a positive sign, indicating that before elections monetary policy is comparatively restrictive. However, as in our previous regressions, the estimated election coefficient remained insignificant. This confirms our findings of the country-specific model: Elections do not influence the short-term interest rate, and since we found no evidence for an electoral pattern, this absence of influence holds regardless of the degree of central bank independence.

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

$$I_{it} = \gamma_{1i} + \gamma_2 E_{it} + \gamma_3 \text{NOMPA}_{it} + \gamma_4 E_{it} \text{NOMPA}_{it} + \sum_j \beta_{j+4} I_{i,t-j} + \epsilon_{it}. \quad (4)$$

The results are reported in the second column of Table 4. Again, the estimated coefficients γ_i were not significant. Apparently, participation in a fixed exchange-rate regime has no significant impact on short-term interest rates. Again, the election coefficient had a positive sign that cannot be explained by the PBC theory. The interaction of the monetary policy autonomy dummy and the election dummy shows that if a country participates in a regime of flexible exchange rates, the short-term interest rate is lower before elections. Again, this is counterintuitive, because it implies that if a country faces fewer restrictions, the possibility for PBCs increases.

Finally, we examined a model in which both effects are included:

TABLE 5. *Joint test for national and international constraints (all countries pooled)*

	<i>National and international constraints coefficient</i>
<i>E</i>	0.057 (0.101)
<i>CBI</i>	-0.158 (0.095)
<i>E * CBI</i>	-0.030 (0.113)
<i>NOMPA</i>	0.020 (0.046)
<i>E * NOMPA</i>	-0.073 (0.116)
<i>CBI * NOMPA</i>	-0.042 (0.108)
<i>E * CBI * NOMPA</i>	-0.016 (0.183)

Note: Standard errors are in parentheses.

$$I_{it} = \delta_{1i} + \delta_2 E_{it} + \delta_3 CBI_{it} + \delta_4 E_{it} CBI_{it} + \delta_5 NOMPA_{it} + \delta_6 E_{it} NOMPA_{it} + \delta_7 CBI_{it} NOMPA_{it} + \delta_8 E_{it} CBI_{it} NOMPA_{it} + \sum_j \beta_{j+8} I_{i,t-j} + \epsilon_{it} \quad (5)$$

The results are reported in Table 5. We see that the results of Table 4 hardly change: Again central bank independence is only weakly significant, and all other institutional variables are insignificant. The election coefficient remains insignificant, as it did in nearly all other regressions. Given these results, we not only question the findings of Clark et al. but also have to reject the PBC theory as a whole as far as central banks are concerned. We found no evidence that central banks actively engage in shortsighted behavior before elections. Indeed, we conclude that if cycles occur in monetary aggregates (as has been reported in previous studies), they are probably fiscally induced. However, we believe that central banks should not be held responsible for them, because we cannot find any regular pre-electoral pattern.

Conclusion

A large body of literature examines the relationship between central bank independence and PBCs. Similarly, the relationship between exchange-rate regimes and PBCs has been investigated, but strangely enough, the combination of the two 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 sixteen OECD countries, are encouraging for central banks; overall, we find hardly any support for the PBC hypothesis. There are two possible explanations for this: First, we could simply conclude that central banks do not manipulate interest rates before elections. This suggests either that governments are not able to force central banks to yield or that central banks have effectively resisted the wishes of government. Our results do not suggest that the degree of statutory central bank independence matters in this respect. Second, our results could indicate that central banks do not control the short-term interest rate as tightly as we assumed. This, however, would have the following implication: If (as the theory suggests) central banks use the 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 PBCs—if they exist in macroeconomic data, such as GNP growth or unemployment—cannot be due to central bank action, because these actions have no effect.

From our second piece of evidence—our panel data regressions—we get more or less the same picture; that is, we find no evidence that central banks actively create PBCs. 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 shortsighted behavior.

Appendix

Data Sources

We used monthly data from International Financial Statistics (IFS). Additionally, data were provided directly by the central banks of Denmark, Sweden, the United Kingdom, and New Zealand. Data for Germany were obtained from the CD-ROM “Deutsche Bundesbank: 50 Jahre Deutsche Mark.” Data for the United States were obtained from FRED (Federal Reserve Economic Time-Series Database), (www.stls.frb.org/fred/).

The election dummy is +1 for the eleven months before the election and during the election month, and zero otherwise. The dummy for central bank independence is +1 if the level of central bank independence is above median, and zero otherwise. The dummy for monetary policy autonomy is +1 if monetary policy autonomy is absent, and zero otherwise. The sample period differs for each country due to data availability: Austria 1967:1–1997:12; Australia 1969:7–1996:6; 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; United Kingdom 1960:1–1997:12; United States 1960:1–1997:12; New Zealand 1973:1–1997:12. Due to lack of election data, the sample period for Canada reduces to 1975:1–1996:7. Due to lack of democratic elections, the sample period for Spain reduces to 1977:1–1997:12.

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