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# Political Business Cycles 40 Years after Nordhaus

Eric Dubois<sup>1</sup>

**Abstract:** The aim of this article is to survey the huge literature that has emerged in the last four decades following Nordhaus's (1975) publication on political business cycles (PBCs). I first propose some developments in history of thought to examine the context in which this ground-breaking contribution saw the light of the day. I also present a simplified version of Nordhaus's model to highlight his key results. I detail some early critiques of this model and the fields of investigations to which they gave birth. I then focus on the institutional context and examine its influence on political business cycles, the actual research agenda. Finally, I derive some paths for future research.

**Keywords:** political business cycles, politico-economic cycles, electoral cycles, opportunistic cycles, conditional political business cycles.

**JEL Classification:** B22, D72, D78, E32

## 1. Introduction<sup>2</sup>

Forty years ago, William Nordhaus was the first to formalize in an analytical framework the idea that the course of macroeconomic variables is influenced by purely political considerations (Nordhaus 1975). Until this ground-breaking contribution, in most academic works, the government was considered in economic models to be a social planner,

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<sup>2</sup> This paper necessitated reading 530 articles or books. The complete list of references is available upon request. For convenience, I have disregarded unpublished papers (with a few exceptions) and papers not written in English. Despite all our efforts, I was not able to locate approximately 20 published articles or books related to the topic. In some contributions, the study of political business cycles is reduced to a simple electoral dummy introduced as a control variable among others and sometimes not related to Nordhaus (1975). I have probably missed some studies like these. Finally, I note that PBCs, explicitly related or not to Nordhaus (1975), have been investigated in somewhat exotic areas (compared to economics): Wasserman (1983) in relation to suicides, Nincic (1990) and Gaubatz (1991) in international relations, Shughart and Tollison (1985), Lagona and Padovano (2008) and Brechler and Gersl (2014) in legislative activity, Block and Vaaler (2004) in ratings published by agencies, Thies and Porche (2007) in agricultural producer protection, Ladewig (2008) in the housing market, Horgos and Zimmermann (2010) in the activity of interest groups, Kachelein *et al.* (2011) in electricity supply, and Wehner (2013) in legislative budgetary decisions. Unusual applications in the economic area include Paiva (1996) on prices in regulated industries, Castro and Veiga (2004) on the timing of stabilization programs, Dreher and Vaubel (2004) on credits from the IMF and IBRD, Ozatay (2007) on public sector prices, Faye and Niehaus (2012) on foreign aid, Sukhtankar (2012) on prices paid to farmers for sugar cane, Lami, et al. (2014) on household consumption spending, and Klien (2014) on water tariffs.

maximizing a social welfare function which coincides with the utility function of the representative agent in the economy. This behavior of a “benevolent dictator” in Knut Wicksell’s words is inherited from Tinbergen (1952, chapters 1 and 9) and Theil (1958, chapter 8). In Nordhaus’s (1975) theory, governments are driven by private interest and care only about their reelection prospects. They exploit the short-term Phillips curve and benefit from the naïve expectations of voters to attain their goal. As voters are concerned about unemployment, the incumbent improves the probability of being reelected by increasing the inflation rate so that the unemployment rate decreases just before the election. After the election, the government faces a high inflation rate and then implements austerity measures, leading to more unemployment. Unemployment and inflation are thus subject to cyclical fluctuations linked to the rhythm of elections and these fluctuations are called “political business cycles” (PBCs).<sup>3</sup> Without going into a detailed presentation of the history of thought, it is interesting to see how this article emerged and in particular to examine both the forerunners in contributions and the context of the era.

The first trace of PBCs can be found in Åkerman (1947), who showed that between 1830 and 1945 in the United States, short-term economic cycles were linked to the four-year presidential election cycle. But his analysis was exclusively empirical and demonstrated no precise causal mechanism. Ten years later, Downs (1957a,b), although not explicitly dealing with cycles in macroeconomic variables, proposed a hypothesis that would serve as a foundation for Nordhaus’s (1975) paper: politicians are driven by private interest. In Anthony Downs’s (1957b, p. 28) words: “We assume that they act solely in order to attain the income, prestige, and power which come from being in office”. This motivation gives rise to an operational objective for politicians: to maximize the number of votes in their favor and win the election. However, Downs says nothing about the macroeconomic variables the government has to manipulate to reach that goal. He simply states that “by means of economic and other actions, [the government] tries to manipulate both present and future utility pay-offs to voters in a way that will win their votes” (Downs 1957b, p. 176). According to Downs (1957a, p. 137), the government “is an entrepreneur selling policies for votes

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<sup>3</sup> Although it is the canonical expression, “political business cycles” can lead to possible confusion as it in fact refers to a particular type of cycle, namely opportunistic. An opportunistic cycle is the result of political manipulations *before* an election. In contrast, partisan cycles appear as a result of manipulation *after* the election. A generic term to designate both opportunistic and partisan cycles could be “politico-economic cycles” or “electoral cycles”. The first author to use the expression political business cycle even if not directly linked to elections was Kalecki (1943, p. 330). Michal Kelecki used this expression to qualify the inflation–unemployment cycle, which reflects fluctuations in the political power struggle between conflicting social classes. Moreover, he was rather silent on the government’s behavior. In his work, the government appears as a passive relay in class struggles, favoring the different classes alternately through stop and go policies.

instead of products for money”. In this view, there is no room for ideology. Politicians treat the possible political choices solely as a means of fulfilling their private objectives, objectives that can only be achieved if they are elected: “parties formulate policies in order to win elections, rather than win elections in order to formulate policies” (Downs 1957b, p. 28). Worried only about reelection, they forget the general interest; the benevolent dictator *à la* Wicksell mentioned earlier vanishes. The private interest hypothesis is certainly not new (see Smith 1776), but it is the first time that it is applied to politicians.<sup>4</sup>

In their two co-written papers, Bruno Frey and Lawrence Lau take up the Downsian hypothesis of self-interest to characterize the government in their model (Frey and Lau 1968; Lau and Frey 1971). Popularity is thus considered a form of pressure upon government that can lead to electoral defeat if neglected.<sup>5</sup>

In 1971, in a speech at a symposium on the appraisal of the Employment Act of 1946, Milton Friedman envisaged the possibility of PBCs under some restrictive assumptions:

...if, in the United States, we had highly precise knowledge of the short-term effects of monetary and fiscal policy, and the authorities were not bound by any rigid and well-enforced rule in the conduct of monetary and fiscal policy, then I would predict with great confidence a four-year cycle, with unemployment reaching its trough in years divisible by four (i.e., presidential election years) and inflation reaching its peak in the following year. (Friedman 1972, p. 196)

Nordhaus’s (1975) paper thus comes after several others. The interesting point here is why this particular paper has received so much attention and has occluded most of the previous literature. To identify the reasons for this success, one has to go back to the beginning of the 1970s when William Nordhaus wrote his paper.

In 1972, Nordhaus wrote a first version of his paper and published it in the *Cowles Foundation Discussion Papers* series (Nordhaus 1972). At the Cowles Foundation, he met Gerald Kramer and Ray Fair, who had both shown that economic conditions influence election results (Kramer 1971; Fair 1975). These works are extremely important because they complete those of Downs: as economic outcomes influence the vote, the incumbent who

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<sup>4</sup> All the same, one notes that the reelection motivation is present, for example, in Tocqueville (1835).

<sup>5</sup> However, in these papers (and in subsequent papers by the same authors and their coauthors), one should note that the concept of cycle is missing, the political pressure being permanent and not only during elections. I will disregard here the literature concerning this “satisficing” version of the PBC model, but this idea will later be taken up and combined in the traditional electoral cycle (see 3.4).

wants to be reelected has an incentive to manipulate the economy in order to gain votes. To some extent, Nordhaus (1975) therefore echoes the works of Gerald Kramer and Ray Fair.

A second reason can be found in the fact that in the 1970s the work of Michal Kalecki received new attention and most of his books were then reprinted (see Boddy and Crotty 1975; Feiwel 1974). Nordhaus (1975) thus emerged in a period when politico-economic cycles were fashionable.

Third, the popularity gained by Nordhaus (1975) can be explained by the fact that he proposed an analytical model that was missing in Åkerman (1947) or Downs (1957a,b) and which probably appeared more appealing and trendy than that of Frey and Lau (1968) or Lau and Frey (1971), notably because of the use of the Phillips curve. He also provided an empirical analysis that only Åkerman (1947) had conducted before him.

Fourth, concerning the economic context, William Nordhaus wrote in a period when the instability of macroeconomic variables was increasing, notably with regard to the inflation rate. These fluctuations, when not expected, are sources of uncertainty that penalize investment and undermine growth. Economic scholars were searching for the origins of this instability and Nordhaus (1975) provided an answer: the volatility of inflation comes from electoral manipulations.

Finally, at the beginning of the 1970s, the United States experienced a confidence crisis in its elected representatives that reached its climax in August 1974 with President Nixon's resignation after the Watergate scandal. A cynical vision of manipulator politicians was in the air and Nordhaus (1975) caught that atmosphere.<sup>6</sup>

Having addressed these considerations of the history of thought, this article aims to survey the existing literature on this topic. Of course, many good surveys already exist on PBCs.<sup>7</sup> The aim here is not only to update these studies, but also to complete them, as many aspects developed below are generally not tackled. In section 2, a simplified version of Nordhaus's model, drawn from Artus (1993), is presented with key assumptions and key results. As this model, despite its appealing formalization, led to mixed empirical conclusions, scholars have put forward several critiques, which have opened up new research fields. These main developments are summarized in section 3. Section 4 is devoted to exploration of a particular critique addressed to Nordhaus's model: the fact that the cycle could be conditional,

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<sup>6</sup> One might note that other articles or books dealing with the idea of PBCs, sometimes written independently of Nordhaus (1975), exist: Schumpeter (1939, in particular p. 391), Breton (1974, in particular p. 49), Ben-Porath (1975), Lindbeck (1976), Frey and Ramser (1976), Umstead (1977), Wagner (1977) and Lächler (1978).

<sup>7</sup> See de Haan (2013), de Haan and Klomp (2013), Drazen (2000, chapter 7; 2001), Franzese (2000, 2002), Franzese and Long-Jusko (2006), Olters (2001) and Shi and Svensson (2003) for the most recent references.

especially conditional on the institutional context. Section 5 envisages some promising directions for future research.

## 2. Nordhaus's (1975) model: a simple presentation of the theory and conclusions of first tests

The economy is characterized by an expectation-augmented Phillips curve:

$$Y_j = \bar{Y} + \gamma(\pi_j - \pi_j^e), \quad (1)$$

where  $Y_j$  is the output level in period  $j$ ,  $\bar{Y}$  is the equilibrium output level,  $\pi_j$  is the inflation rate in period  $j$ ,  $\pi_j^e$  is the expected inflation rate for the period  $j$  and  $\gamma$  is a positive constant.

The government is penalized by both unemployment and inflation. It maximizes a vote function defined as follows:

$$V_j = -l(\tilde{Y} - Y_j)^2 - m\pi_j, \quad (2)$$

where  $\tilde{Y}$  is the target level of output and  $l$  and  $m$  are parameters measuring discontent with unemployment and inflation, respectively. Even if the government does not control it directly, the inflation rate is the action variable of the government. The result of the minimization of (2) can be interpreted as the inflation rate the government would like see implemented; it is the preferred inflation rate of the government.

One supposes that there are two periods, noted  $t$  and  $t+1$ , and that elections take place at the end of period  $t+1$ .

The government minimizes the following intertemporal loss function:

$$V = \frac{V_t}{1+\rho} + V_{t+1}, \quad (3)$$

where  $\rho$  is a "forgetting rate" which is supposed to be  $> 0$ . This kind of discount rate applied to the first period models the fact that individuals have a short memory. At the time of the elections, voters have partially forgotten the first period. In combining (1) and (2) and in setting  $\tilde{Y} - \bar{Y} = \alpha > 0$ , one obtains:

$$V_j = -l[\alpha - \gamma(\pi_j - \pi_j^e)]^2 - m\pi_j. \quad (4)$$

And then:

$$V = \frac{-l[\alpha - \gamma(\pi_t - \pi_t^e)]^2 - m\pi_t}{1+\rho} - l[\alpha - \gamma(\pi_{t+1} - \pi_{t+1}^e)]^2 - m\pi_{t+1}. \quad (5)$$

The key assumption of the model is the characterization of the individuals' expectations. One supposes here that individuals form their expectations in a naïve way:<sup>8</sup>

$$\pi_j^e = \pi_{j-1}. \quad (6)$$

In incorporating (6) in (5) and minimizing with respect to  $\pi_t$  and  $\pi_{t+1}$ , one obtains the first-order conditions for the government program:

$$\pi_{t+1} = \pi_t + \frac{\alpha}{\gamma} - \frac{m}{2l\gamma^2} \quad (7)$$

$$\pi_t = \pi_{t-1} + \frac{\alpha}{\gamma} - \frac{m(2+\rho)}{2l\gamma^2} \quad (8)$$

For  $\frac{m}{2l\gamma^2} < \frac{\alpha}{\gamma} < \frac{m(2+\rho)}{2l\gamma^2}$ , one has the classic Nordhaus (1975) result:

$$\pi_t < \pi_{t-1} \text{ and } \pi_{t+1} > \pi_t. \quad (9)$$

A politico-economic cycle occurs. In the period after the elections, the actual inflation rate is less than expected. Output declines, which leads to higher unemployment (this will be forgotten in the next period). Post-electoral periods are therefore recession periods. In the period before the elections, the actual inflation rate is higher than expected. Output increases, which leads to lower unemployment. Pre-electoral periods are therefore expansion years. Voters are manipulated as they rely on the (low) inflation rate in the previous period to build their expectations.

The first econometric tests searching for PBCs in inflation and/or unemployment led to mixed conclusions. Allen *et al.* (1986), McGavin (1987), Haynes and Stone (1988, 1989, 1990), Keil (1988) and Findlay (1990) conclude in favor of Nordhaus's theory, whereas McCallum (1978), Golden and Poterba (1980), Alt and Chrystal (1981), Beck (1982), Alesina (1988, 1989) and Davidson *et al.* (1990) do not. This inconclusive literature has raised some questions about Nordhaus's model, which has been criticized on both theoretical and empirical grounds.

### 3. First critiques, new fields

I present here a list of the main critiques<sup>9</sup> addressed to Nordhaus's model and the developments that issued from these critiques.

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<sup>8</sup> Naïve rather than adaptive expectations, as in the Nordhaus model, are used here without loss of generality.

### 3.1. Heterogeneous preferences over inflation and unemployment: partisan cycles

In the Nordhaus model, when inflation increases around the election owing to political manipulations, one might think that it does not affect all voters in the same way as it may penalize those, for example, who are owners of capital. Nordhaus (1975, p. 173) foresees this possibility of a heterogeneous electorate when he states: “It is probably accurate to say that in the United States Republicans have consistently been more concerned about inflation and Democrats about unemployment”. Kirschen *et al.* (1964) are the first to classify economic policy goals according to the ideology of political parties. They consider, for example, that full employment is the first priority of socialist or labor parties, whereas price stability is the chief objective of conservative parties. In Frey and Lau (1968), besides the reelection constraint, there is an internal pressure on the government, namely ideological satisfaction. The government therefore faces a trade-off as both vote maximization and ideological satisfaction are entered as arguments in the “felicity function” that the government seeks to maximize. This idea of a dual behavior would be taken up by Lau and Frey (1971) and empirically tested by several papers at the end of the 1970s and the beginning of the 1980s, the more frequently quoted papers being Frey and Schneider (1978a,b). Finally, in 1977, Donald Wittman demonstrates analytically that parties with policy preferences as well as private interests do not converge (Wittman 1977; completed by Wittman 1983). This goes against Downs (1957b), who argues that parties in competition tend to move closer to a median platform in order to capture the maximum number of voters. Donald Wittman’s works therefore provide a foundation for partisan cycles, developed by Hibbs (1977). According to Hibbs’s theory – and unlike Nordhaus (1975) – voters have heterogeneous preferences and therefore parties have different ideological goals. The usual way of accounting for these differences between parties (and therefore governments) is to consider that they do not have the same ideal positions on the short-term Phillips curve. Specifically, conservative governments prefer lower inflation and therefore higher unemployment than liberal

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<sup>9</sup> For example, the specification of Nordhaus’s (1975) vote function has been criticized (e.g., Frey and Ramser 1976; Paldam 1981). I do not develop this point here because the debate about vote function was older and the critique of Nordhaus (1975) did not give rise to a new strand of literature in this area. However, this issue is related to the effectiveness of PBCs. Do the PBCs pay off in terms of votes? Examining the impact of pre-election budget deficit on reelection probability, Brender and Drazen’s (2008) conclusion is negative. Aidt *et al.* (2011) challenge this view and find that greater expenditures in the election year lead to greater vote differences between the incumbent and the main opponent (see also Veiga and Veiga 2007b, in this line). Moreover, some refinements of the Nordhaus model are not shown here because they have not yet given rise to further developments.



governments. The changeover of political power between conservative and liberal governments leads to “partisan cycles”.<sup>10</sup> Partisan theory would later be developed and tested by, among many others, Chappell and Keech (1986), Alesina (1987, 1988, 1989), Alesina and Roubini (1992), Alesina *et al.* (1992, 1993, 1997) and Hibbs (1994).

### **3.2. Rational expectations: rational political business cycles**

In the same year and the same month (April 1975) that William Nordhaus’s article was published, an article written by Thomas Sargent and Neil Wallace launched what was called “the rational expectations revolution” (Sargent and Wallace 1975). Some even spoke about “evangelism” (Price 1997, 408). The impact on PBC theory was so important that Alberto Alesina (1988, p. 15) would speak about a presumed “devastating effect”. Indeed, if people are able perfectly to anticipate government policy, there is no longer a politico-economic cycle in the Nordhaus (1975) sense. Minimizing the loss function leads the government to set an inflation rate equal to zero for both periods, thus making any expansive policy impossible; PBCs disappear.<sup>11</sup>

More than 10 years would pass by before scholars tried to reconcile Nordhaus’s (1975) model with rational expectations theory. The two main contributions here are Rogoff and Sibert (1988) and Rogoff (1990).<sup>12</sup> These articles no longer envisage an inflation/unemployment trade-off but a state budget problem. Moreover, temporary information asymmetry between voters and governments is substituted for the hypothesis of non-rational voters. Voters are rational but do not have complete information about the government’s competence; they observe it with a delay. Competence is defined as the capacity to provide public goods and transfers in an efficient way (i.e., by limiting waste). To appear competent, the government pursues an expansive budgetary policy while temporarily hiding the harmful consequences from the agents (the increase in the budget deficit). By doing

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<sup>10</sup> One notes, however, that in partisan theory, the cycle is involuntary: the electoral calendar is a source of uncertainty and disrupts the agents who, not knowing which policy will be implemented after the elections, anticipate an inflation rate between the parties’ preferred rates. After the elections, expectations necessarily turn out to be false, which generates a cycle.

<sup>11</sup> Another way, as chosen by Nordhaus (1989), is to defend adaptive expectations by showing that people do not have rational expectations. Early critics of Nordhaus’s view of expectations include, among others, McCallum (1978), Keech (1980) and Paldam (1981). In these studies, voters’ sophistication and memory are also debated.

<sup>12</sup> Cukierman and Meltzer (1986) are also often quoted, but if they emphasize the role of information asymmetries, they do not deal explicitly with PBCs. Persson and Tabellini (1990) translate Rogoff (1990) into an inflation-unemployment setting.

so, the government creates the illusion of prosperity until the time when voters realize that they will have to “reimburse” by one means or another the deficit thus caused.

Generally, following a distinction first introduced by Persson and Tabellini (2000), these models are labelled adverse selection models because the government has an informational advantage over voters concerning its true competence. Lohmann (1998a) is the first to relax this assumption. Both voters and the government have the same information about the government’s competence. However, if voters no longer face an adverse selection problem, they face a moral hazard problem. The incumbent can indeed modulate his or her level of effort and appear better than he or she really is by using policy instruments unobservable to the public.

In taking advantage of information asymmetry and/or trying to appear as competent as possible before the election, politicians behave as in Nordhaus’s model. His conclusions hold even when voters are not short-sighted and naïve as long as they are poorly informed about the environment, the government’s objectives and/or its ability to manage the economy.

### **3.3. Instruments versus outcomes**

As one has seen above, two key variables in the Nordhaus model are the unemployment and inflation rates, outcome variables that are not actually under the direct control of the government. This could be one of the reasons why PBCs are not detected in these kinds of variables. Tufte (1978) is the first to address the question of the means of action available to the government to generate economic expansion before the elections. According to him, “the economic policy instruments involved must be easy to start-up quickly and must yield clear and immediate economic benefits to a large number of voters” (Tufte 1978, p. 9). An increase in real disposable income seems to be a good candidate. Indeed, through taxes and transfers, it can quickly be manipulated and with much greater ease and flexibility than unemployment, inflation or output growth. If a cycle actually exists, it has to be sought not in the outcomes of economic policy, but rather in the instruments of economic policy, which are by definition more directly controllable.

Empirical tests of the PBC in instruments are much more convincing so that nowadays, tests in relation to outcomes are scarce.<sup>13</sup> It is impossible to cite all the hundreds of articles

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<sup>13</sup> One should note, however, that an old and persisting literature exists that highlights the presence of PBCs in stock markets. For early references, see Umstead (1977) and Allvine and O’Neill (1980); for more recent references, see Sturm (2013) and Kräussl *et al.* (2014).

that seek PBCs in budgetary and monetary variables.<sup>14</sup> The most complete studies in terms of the sample include Ames (1987), Remmer (1993), Neto and Borsani (2004), and Nieto-Parra and Santiso (2012) for Latin America, Block (2002) for Africa, Hallerberg *et al.* (2002) for East Europe, Alesina *et al.* (1997), Mink and de Haan (2006) and Klomp and de Haan (2013a,c) for industrial democracies and Schuknecht (1996, 1999, 2000) for developing countries.

Of course, the underlying hypothesis is that the government has perfect control over policy instruments. This issue will be examined in section 4.

### 3.4. The political and economic context

Many scholars have emphasized that the context of an election has an influence on the PBC. Clearly, if the political and economic conditions are considered good by the agents, success is certain for the incumbent government and there is no need to generate a PBC (Dinkel 1981).<sup>15</sup> Two main indicators have been privileged in assessing the electoral context and therefore measuring the risk of a government losing the election.

The first indicator is the level of popularity. Schultz (1995) was the first to amend the traditional PBC dummy variable to take account of the popularity of the government, the latter being measured as the differential between the governing party and the main opposition party. The test showed that whereas the unconditional electoral dummy and permanent popularity lead (in Frey and Schneider's style) are not significant, the product of both is. This conclusion would be confirmed by Carlsen (1997) in relation to re-election probability, Price

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<sup>14</sup> The legitimacy of tests in terms of instruments rather than outcomes is reinforced by the fact that instruments are the action variables in rational PBC models. Besides all of their properties, their use for political purposes is, moreover, grounded theoretically. One also notes that budgetary variables are privileged over monetary variables because of the conjunction of two elements: 1) for one-country studies, there is a need for a degree of freedom which implies resorting to local data; 2) monetary policy is centralized at the national (or supra-national) level and is therefore not an instrument available to local governments.

<sup>15</sup> Conversely, when the incumbent expects to lose the election, it may prefer to use the debt strategically instead of generating a PBC. In doing so, it can constrain the next government by reducing the latter's room for maneuver. In Borooah and van der Ploeg (1983), the "kamikaze" government, knowing it will lose power, pursues a ruinous economic policy, penalizing its successor to the point that the latter will not be reelected, which puts the suicidal government back at the helm. While Alesina and Tabellini (1990) predict an increase in debt whatever the party, Persson and Svensson (1989) highlight partisan differences according to the preferences of each party. The lowest spending party reduces taxes and in doing so, increases debt, thus forcing the next party to spend less. However, the highest spending party raises taxes, which creates a surplus and makes the next party's policy easier to implement. This theory was tested with success by Petterson-Lidbom (2001). In Tabellini and Alesina (1990), as the preferences of the next majority concerning the composition of expenditures are uncertain, the current median voter prefers higher debt to be sure that the next majority will have sufficient scope to implement its desired policy. Finally, in Aghion and Bolton (1990), the conservative party accumulates deficits when in power and voters reelect it as they deem the opposition (liberal) party unable to fight against deficits.

(1998) for popularity level, Alt and Rose (2007) for the level of approval, Efthyvoulou (2012) in terms of voting intention polls and Klomp and de Haan (2013b) using a measure of popular protest.<sup>16</sup>

The second indicator is the level of electoral competitiveness. When an election is not competitive, the incumbent has no incentive to generate a PBC. By splitting their sample between high competition states and low competition states, Baber and Sen (1986) show that the PBC in the situation of debt is stronger in the former. Clingermayer and Wood (1995) seem to have been the first to substitute an index of electoral competition for the traditional PBC dummy. They conclude that this index has a significant impact on debt before the election: debt is higher in states with strong interparty competition in the year preceding an election. The presence of such an effect is found in Vergne (2009), Aidt *et al.* (2011) and Benito *et al.* (2013b), but is rejected by Chaudhuri and Dasgupta (2005) and Schneider (2010).<sup>17</sup>

The threat of losing an election is only one aspect of the context. Some authors have suggested that the identity of the party in power could have an impact on the PBC. Swank and Swank (1993) show that in the United States, Republican administrations aim to reduce tax rates when elections are approaching, whereas Democratic administrations are more concerned with inflation and unemployment. Partisan differences are found in Haynes and Stones (1990), Kneebone and McKenzie (2001), Krause (2005), Aidt *et al.* (2011), Garcia-Sanchez *et al.* (2011) and Benito *et al.* (2013b), but not in Grier (1987) and Haynes and Stone (1989). Besides the identity of the party, the distance between parties' platforms (polarization) can also play a role. The larger the distance, the greater the utility loss from losing office and the greater the manipulation the incumbent is willing to engage in to be reelected (Alt and Lassen 2006; Klomp and de Haan 2013c). Finally, other dimensions of the context include

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<sup>16</sup> Popularity can be considered a proxy for economic conditions, which can also have a direct impact on PBC. In Efthyvoulou (2012), the magnitude of a PBC is weaker when non-economic voting (measured by replies to a survey about households' financial situation) is high. In Hanusch (2012), economic disturbances blur competence signals, which dampen PBCs. In Canes-Wrone and Park (2012), the traditional PBC is invisible because it is cancelled by another cycle in private investment which drops before the election owing to electoral uncertainty. In Alpanda and Honig (2010), the government is constrained in generating a PBC by its borrowing capacity. Finally, endowment in natural resources can play a role (Vergne 2009).

<sup>17</sup> This can be related to the growing literature on leviathan behavior (Brennan and Buchanan 1980), in which politicians are viewed as power-maximizing agents whose only purpose is to maximize the size of the public sector. In this literature, the electoral constraint modelled by the margin (the difference in vote shares or the distance from a 50% vote share) affects budget outcomes. Ultimately, the empirical test looks very much like a classic PBC test in which the margin is substituted for the traditional electoral dummy. However, the interpretation is different. In the leviathan model, the margin is expected to be related positively to expenditure and taxes. The larger the margin, the greater the government's capacity to increase expenditures and taxes (Dubois *et al.* 2007; Solé-Ollé 2003, 2006). In the PBC model, the larger the margin, the lower the incentive to intervene to secure reelection and the lower the expenditures and the higher the tax.

political alignment or affiliation (i.e., when local and national executives belong to the same party) as shown in Lema and Streb (2013) and Rumi (2014), the strength of political parties (Shelton 2014) and the strength of the incumbent government, a divided or fragmented government being less able to generate a PBC because of coordination costs (Alt and Rose 2007; Rose 2008; Klomp and de Haan 2013c; but see Geys 2007, for a challenging view).

#### **4. Taking into account the institutional context: conditional political business cycles**

I focus here on three features of the institutional context: the electoral calendar, the governance system, regime and rule, and the constraints on economic policy.<sup>18</sup>

##### **4.1. The electoral calendar: length of terms and endogenous elections**

In Nordhaus's (1975) model, the institutional context appears as a watermark throughout the lengths of office terms. For Nordhaus (1975), reducing the length of terms or the number of terms imposes a time constraint on the government, which is no longer able to generate a cycle (see, in a similar vein, Besley and Case 1995; Streb 1999; Grier and Grier 2000; Bordignon *et al.* 2003; Rose 2006, 2008; Alt and Rose 2007; Klein 2010; Aidt *et al.* 2011; Benito *et al.* 2013b; Sjahrir *et al.* 2013; Klein and Sakurai 2015).<sup>19</sup> For Amacher and Boyes (1978), reducing the frequency of elections reduces their cost. At the extreme, an infinite length of the electoral cycle could enable such a result (MacRae 1977). Lindbeck (1976) suggests choosing the date of elections randomly. In both cases, if the date of the next election is not known, the government cannot anticipate when it has to generate the cycle. However, these options are not compatible with a democratic system. On the optimal length of the electoral term, see also Chappell and Peel (1979), Ginsburgh and Michel (1983), Keech and Simon (1983), Baleiras and Santos (2000) and Ferris and Voia (2009).

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<sup>18</sup> Several other institutional variables that may exert an impact on the magnitude of PBCs have been studied: the quality of institutions by Shi and Svensson (2006), government transparency by Akhmedov and Zhuravskaya (2004), corruption by Shi and Svensson (2006), globalization by Efthyvoulou (2011), social capital measured by the level of generalized trust by Kouvas (2013), direct versus indirect elections by Sjahrir *et al.* (2013) and the degree of decentralization (Vergne 2009; Shelton 2014). Among these miscellaneous issues, the special role of the media emerges. As one has seen, information is crucial in the formation of PBCs as informational asymmetries could be at their heart. The better informed the voters, the better their evaluation of government competence, which diminishes the incentives for the government to generate a PBC. Shi and Svensson (2006), Akhmedov and Zhuravskaya (2004), Alt and Rose (2007), Vergne (2009) and Shelton (2014) have found that voters' access to media or media freedom does indeed have an impact on the magnitude of a PBC.

<sup>19</sup> Some of these studies do not deal explicitly with term limits but investigate an issue that is quite close, i.e., what happens to the PBC when the incumbent is seeking reelection (on the understanding that it is allowed to do so).

Besides the considerations linked to term length, one of the hypotheses of the Nordhaus (1975) model is the exogeneity of the electoral calendar. Elections are held on dates set by law, known to everyone. Frey and Schneider (1978b) and Lächler (1982) were among the first to remark that this hypothesis is not valid for all countries, as in Japan and the United Kingdom, for example, elections are organized by the government on the date desired (as long as it falls before the constitutional or statutory “sell by” date, e.g., six years in the UK). Elections are thus labelled “endogenous”. This institutional feature has an important implication for Nordhaus’s (1975) theory: rather than generate an economic cycle at the moment of the elections, the government will call elections in an expansionary economic period to ensure its reelection. As Inoguchi (1979) puts it, they “surf” on the economic cycle. It is no longer the economic cycle that follows the political cycle but the reverse. This can be viewed as a means of reducing distortions as the government no longer has to manipulate the business cycle but only to choose the election date with care (Terrones 1989). Nothing is changed in empirical terms as an election should be observed during an economic expansion, whereas in the exogenous version, an economic expansion should be observed in the run-up to an election. Finally, one can imagine a combination of both in which the government generates an economic expansion and then chooses the election date in consequence.

Following Inoguchi (1979), numerous empirical studies have been undertaken in which the occurrence of elections is explained by, among other determinants, the economic conditions: Ito and Park (1988), Ito (1990, 1991), Kohno and Nishizawa (1990), Cargill and Hutchison (1991), Suzuki (1994) and Heckelman and Berument (1998) for Japan, Annett (1993) for Ireland, Chowdhury (1993) and Khemani (2004) for India, Balke (1990), Heckelman and Berument (1998) and Smith (2003, 2004) for the United Kingdom, Reid (1998), Dickson *et al.* (2013) and Voia and Ferris (2013) for Canada and Telatar (2003) and Karakas (2014) for Turkey.<sup>20</sup> In their panel study, Shi and Svensson (2006) reject a direct effect of the timing of the election date on the magnitude of the PBC observed for the surplus. References that distinguish between pre-determined elections and endogenous elections in the detection of PBCs include Brender and Drazen (2005), Vergne (2009), Katsimi and Sarantides (2012) and Ehrhart (2013).

Finally, it has been shown that a political business cycle in a particular country could generate cross-country spillovers (Tufté 1978; Thompson and Zuk 1983; Ito 1991; Dobson

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<sup>20</sup> See also the panel data studies of Alesina *et al.* (1997) and Palmer and Whitten (2000). It should be noted that besides these empirical studies, analytical models of the choice of election date have been proposed (see, among others, Smith 1996; Kayser 2005).

and Dufrene 1993; Foerster 1994; Foerster and Schmitz 1997; Katada and McKeown 1998; Sapir and Sekkat 1999, 2002; Nippani and Arize 2005). To eliminate such imported cycles, some scholars wonder about the opportunity to synchronize electoral calendars and to set a uniform election date for all countries belonging to the same geographic area (Sapir and Sekkat 1999; Breuss 2008).

#### **4.2. System, regime and rule**

Regarding the system, the impact of two dimensions on PBC has been studied: an authoritarian versus democratic system and new versus old democracy. In a quite intuitive way, in a country where the incumbent is the sole candidate, the probability of losing power is nil and there is therefore no incentive to generate a PBC. Block *et al.* (2003) find support for this hypothesis. Nevertheless, it has been shown that PBCs occur even in non-democratic systems: in Egypt (Blaydes 2011), in Mexico (Gonzalez 2002), in China (Guo 2009), in Malaysia (Pepinsky 2007) and in the Republic of Korea (Soh 1988). The idea is that even in authoritarian systems, political leaders have to be sufficiently popular to avoid contestation and removal.

Block *et al.* (2003) hypothesize that initial or founding multiparty elections would present both the greatest incentives for and the fewest constraints on electoral economic manipulation. On the one hand, through the entry of challengers, an election introduces uncertainty for the authoritarian incumbent, who is therefore more likely to generate a PBC. On the other hand, in founding elections, there is little chance of a free press or other institutional constraints. In a similar vein, according to Brender and Drazen (2005), PBCs are more pronounced in new democracies because of lack of experience with electoral politics, lack of information available to voters, or both. This hypothesis is confirmed by Brender and Drazen (2007) and Klomp and de Haan (2013b,c) but rejected by Hagen (2007) and Barberia and Avelino (2011). Other articles on this topic include Veiga and Pinho (2007), Efthyvoulou (2012) and Shelton (2014). Although the debate has focused on old versus new democracy issues in recent years, some studies show that democracy reduces PBCs, mostly because it is a proxy for other factors that may mitigate PBCs, such as governmental transparency or the media (Akhmedov and Zhuravskaya 2004).

Persson and Tabellini (2003) were the first to study the impact of the political regime (parliamentary versus presidential) and electoral rule (proportional versus majority) on PBCs (see also Chang 2008; Efthyvoulou 2012; Klomp and de Haan 2013c; Shelton 2014). They

expect different patterns in PBCs because, according to them, majoritarian elections are associated with stronger individual accountability than proportional elections, in which politicians are more accountable collectively. Moreover, proportional electoral rules give politicians stronger incentives to seek support by endorsing broad policy programs, such as welfare state spending, whereas majoritarian electoral rules instead induce them to target spending to smaller geographic groups (marginal districts with more swing voters). As individual political accountability supplies greater incentives to manipulate than collective accountability, stronger electoral cycles are expected under presidential regimes as decisions are concentrated in the hands of a few decision makers. Linked to the voting rule, Aidt and Mooney (2014) use the natural experiment of a change in suffrage (taxpayer suffrage *versus* universal suffrage) to study how it affects the PBC. If the PBC is present under both rules, all fiscal variables are not affected in the same way. They observe a reduction in tax under taxpayer suffrage (as the right to vote is linked to the obligation to pay local taxes) and an increase in capital spending under universal suffrage (as all adult residents can vote, which creates a larger demand for public goods).

### **4.3. Constraints on economic policy**

In Nordhaus's (1975) model, the action variable of the government is the inflation rate. If one adopts a monetarist view of inflation, separating the monetary authority from the political power (for example, through an independent central bank<sup>21</sup>) should be a means of eliminating PBCs.<sup>22</sup> Most of the empirical literature draws this conclusion (Clark and Reichert 1998; Hadri *et al.* 1998; Gärtner 1999; Clark and Hallerberg 2000; Leertouwer and Maier 2001; Hallerberg *et al.* 2002; Hiroi 2009; Alpanda and Honig 2009, 2010).

However, some case studies cast doubt on this general conclusion as in countries such as Germany or the United States, PBCs seem to survive even when the monetary policy is

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<sup>21</sup> In fact, through all of the settings that reduce inflationary bias: implementation of a rule (Barro and Gordon 1983), contract between the government and the central bank (Walsh 1995; see al-Nowaihi and Levine 1998, for the impact of such a contract on PBCs) or the appointment of a conservative central banker (Rogoff 1985).

<sup>22</sup> One might ask why the government could choose to give up the monetary instrument which could be so important in generating PBCs and therefore helpful in reelection. First, monetary policy would be less useful because it is less adapted to targeted interventions toward groups of voters. Fiscal instruments are more easily manipulated and have more immediate and clear impacts. Political gains from inflation are relatively blurred. Second, the adoption of an independent central bank could be a sign of good will towards the financial market to obtain more credibility and a better reputation. Credibility and reputation are crucial to obtain the confidence of the financial market and this confidence should help finance the public debt, which is also a tool for generating PBCs. Third, adopting an independent central bank could reduce volatility; volatility generates uncertainty and penalizes investment and therefore economic growth, which is the key indicator in the voters' eyes.



conducted by an “independent” central bank. Numerous studies have shown the presence of monetary PBCs in the United States (Grier 1987, 1989; Williams 1990; Carlsen 1997; Abrams and Iossifov 2006) and in Germany (Johnson and Siklos 1994; Vaubel 1997; Lohmann 1998b). How can the Federal Reserve Bank and the Bundesbank, reputed to be the two most independent central banks in the world generate a PBC? An answer lies in the distinction between “*de jure*” or “legal” independence, i.e., that warranted by the central bank status, and “*de facto*” or “actual” independence, i.e., that which can be derived from observation of the central bank behavior (see, in particular Cukierman 1992, on this distinction). The difference observed between these two types of independence could be the result of pressures directly exerted by the government (Abrams 2006; Abrams and Butkiewicz 2012), or indirectly through interventions in the media presenting the government’s side (Havrilesky 1988; Froyen *et al.* 1997; Maier *et al.* 2002). Government can also control the independent central bank through appointments to the board: see Havrilesky and Schweitzer (1990), Gildea (1990) and Havrilesky and Gildea (1992) for the United States, and Sieg (1997) and Lohmann (1998b) for Germany. Other scholars argue that PBCs detected in monetary instruments are the results of PBCs in fiscal instruments accommodated by the monetary authority (Laney and Willett 1983; Allen 1986; Beck 1987; Allen and McCrickard 1991).

Besides an independent central bank, other monetary institutions may have an impact on the magnitude of the PBC. Among these, the foreign exchange regime is one the most studied (Clark and Reichert 1998; Schuknecht 1999; Clark and Hallerberg 2000; Leertouwer and Maier 2001; Hallerberg *et al.* 2002; Hiroi 2009; Alpanda and Honig 2010; Shelton 2014). The argument is that a fixed exchange rate regime limits the autonomy of domestic monetary policy and therefore prevents monetary manipulations for electoral purposes. Indeed, in a fixed exchange rate regime, attention is focused on maintaining exchange rates, which may imply the use of monetary tools in a way that the government considers undesirable for its reelection prospects (e.g., monetary contraction, upward adjustment of interest rates). A complementary implication is that in this case, government focuses on fiscal policy, so that a PBC in fiscal policy is more likely to happen in a fixed exchange rate regime.

Up to now, I have considered constraints on monetary instruments. Clearly, several constraints also limit the use of fiscal instruments. Various fiscal rules can reduce PBCs: balanced budget requirements or budget targets (Hallerberg and von Hagen 1998; Clark and Hallerberg 2000; Rose 2006; Alt and Rose 2007; Donahue and Warin 2007; Schneider 2010; Garcia-Sanchez *et al.* 2011; Benito *et al.* 2013a; Klomp and de Haan 2013c), delegation to a

strong finance minister (Hallerberg and von Hagen 1998; Clark and Hallerberg 2000), checks and balances<sup>23</sup> (Chang 2008; Streb *et al.* 2009, 2012, 2013; Ho and Huang 2013; Shelton 2014) and transparency<sup>24</sup> (Alt and Lassen 2006; Alt and Rose 2007; Vicente *et al.* 2013; Shelton 2014).

Because of all of these constraints, it is increasingly difficult for governments to pursue all-around and indiscriminate fiscal policies for electoral purposes. A solution is to play with the distribution rather than with the amount of spending. This need is reinforced by the fact that targeted spending also yields more visible results. Numerous studies have tried to detect a PBC in targeted spending.<sup>25</sup> The specific components most studied are public employment (Spafford 1981; Levitt 1997; Katsimi 1998; Ames *et al.* 2005; Coelho *et al.* 2006; Gamez and Ibarra-Yunez 2007; Remmer 2007), public wages (Borjas 1984; Klein 2004; Gamez and Ibarra-Yunez 2007), defense (Nincic and Cusack 1979; Cusack and Ward 1981; Griffin *et al.* 1982a,b; Mintz and Hicks 1984; Zuk and Woodburry 1986; Kamlet and Mowery 1987; Mintz and Ward 1987; Mintz 1988; Su *et al.* 1993), culture (Getzner 2002; 2004; Noonan 2007; Nogare and Galizzi 2011; Benito *et al.* 2013b) and infrastructure (Blais and Nadeau 1992; Chaudhuri and Dasgupta 2005; Goeminne and Smolders 2014). More global studies investigate PBCs in several spending components to discriminate those privileged by the incumbent: for example, van Dalen and Swank (1996), Kneebone and McKenzie (2001), Galli and Rossi (2002), Serritzlew (2005), Veiga and Veiga (2007a,b), Vergne (2009), Drazen and Eslava (2010), Katsimi and Sarantides (2012), Enkelmann and Leibrecht (2013), Brender and Drazen (2013). Most of these studies conclude in favor of PBCs in most visible components. However, one has to be cautious about what “visible” means here. For example, even if both imply an increase in education spending, building a school is visible whereas raising teachers’ wages is not (except to teachers). There could be also a problem of accountability depending on which elections and which aspects of spending are considered. For example, building a hospital may not favor the reelection of a local incumbent because voters hold the national government responsible for such spending.

## 5. Paths for future research

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<sup>23</sup> Usually measured by an index of the political constraints facing the executive when implementing policy.

<sup>24</sup> Usually measured by an index coding several aspects of the budget process (e.g., budget cycle frequency, the existence of multi-year expenditure forecasts, the requirement of published performance measures). In a somewhat related approach, Mourao (2008) shows that fiscal illusion, in hiding the real fiscal situation, aggravates the PBC. Finally, financial transparency should not be mistaken for transparency understood as the absence of corruption, which can also influence the PBC (Shi and Svensson 2006, Klomp and de Haan 2013c).

<sup>25</sup> Similarly, some scholars have studied PBCs in targeted taxes (e.g., Karran 1985; Ashworth and Heyndels 2002; Chaudhuri and Dasgupta 2005; Ehrhart 2013).

Can one derive some promising directions for future research on PBCs? Looking at past surveys, this exercise, even if traditional, appears to be quite perilous. Indeed, with the notable exception of Chortareas (1999), no scholar has been an accurate visionary in this respect. In his conclusion, Chortareas (1999, p.137) states “The institutional structure within which the PBC is typically studied is assumed given. Institutions change and how this change affects the PBC is not usually discussed. Such analysis may provide valuable insights”. Launching ourselves into the breach, I propose a research agenda for the next two decades. However, to be prudent, I limit myself to proposing a collection of slight improvements. First, although some (national) studies already exist (Lema and Streb 2013; Rumi 2014), more attention could be paid to partisan vertical affinities. Indeed, one might think that PBCs at the local level would be reinforced if the local government shared the same political options as the national government. Second, it could be interesting to examine if PBCs are stronger in the case of simultaneous elections (see Veiga and Veiga 2007a, for a first attempt in Portugal). It would be logical as the stakes are more important. The US case, with presidential and congressional elections held in the same year (compared to midterm elections), or the French case, with presidential and legislative elections held in the same year since 2002 (compared to past elections), could be good fields of investigation. Third, even after four decades, one still knows very little about the duration of electoral effects. How long does the influence of political manipulation last? One quarter? One year? There is essentially no answer to this question. There is also no reason to think that this duration is fixed and cannot change from one country to another, or within the same country from one election to another, and/or from one instrument to another. Scholars who believe in PBCs tend to “force” the tests and select the duration for which the electoral dummy is (the most) significant. For transparency purposes, I militate in favor of generalizing practice, possibly through a table in an annex, to show the significance of the electoral variable for different durations. Fourth, the personal characteristics of candidates can alter the shape of the PBC. The first insights are given by Brollo and Troiano (2013) and Alesina *et al.* (2015). Brollo and Troiano (2013) find that, when elections are approaching, even if there is no gender difference in transfers and health care services, male mayors hire relatively more temporary public employees than female mayors. Alesina *et al.* (2015) show that younger politicians are more likely to increase expenditures in pre-election years. We can note that these personal characteristics may also have an indirect impact on PBCs by influencing the probability of reelection and therefore the incentives to generate PBCs. Fifth, although most key economic variables have been studied,

one might note that no PBC has been sought in relation to income or wealth inequality. If one disregards the fact that it is an outcome, this variable is interesting for at least two reasons. First, there is no consensus as to whether inequalities are good for the economy. Second, in some countries (e.g., France), inequalities are a strong political marker, which leads us to think that different parties will not generate PBCs with the same pattern. Sixth and finally, changes in the definition of the population of registered voters could influence the PBCs. For example, switching from a system of suffrage based on a tax threshold to universal suffrage (as in Aidt and Mooney 2014), allowing women to vote, or lowering the voting age, are natural experiments through which modifications in the PBC could be studied. Indeed, one might consider that these changes could modify the structure of spending by shifting the target according to the new voters' characteristics.

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