The classical paradigm of political business cycles and econometric model for Baltic States

The article analyses the formation of the political business cycle paradigm, introduces the models of first-generation political (business) cycles, and provides a model for the econometric calculations in Baltic States. **Keywords:** political business cycles; economic policy; economic growth; unemployment; inflation; elections; political parties.

Straipsnyje nagrinėjamas politinių ekonominių ciklų paradigmos formavimasis, pristatomi pirmosios kartos politinių ekonominių ciklų modeliai, ir pateikiamas ekonometrinis modelis, skirtas politinių ekonominių ciklų galimam egzistavimui Baltijos šalyse ištirti.

**Raktiniai žodžiai:** politiniai ekonominiai ciklai; ekonominė politika; ekonomikos augimas; nedarbas; inflacija; rinkimai; politinės partijos.

**JEL Classifications:** E31/E32/E62/D72

**Introduction**

Political life plays an important role in the evolution of society. Elections that take place in a democratic regime very often engage both political parties and the electorate in political battles. Obviously, every party is determined to win the elections. Due to this reason, the ruling parties are taking advantage of their status and applying various economic policy instruments to achieve temporal improvement in the economic situation. The electorate is always particularly interested in rapid growth of the economy, low inflation and unemployment rate, social guarantees and security. This means that the political party who has managed to temporarily improve the macroeconomic indicators and the economic situation before the elections is best placed for the victory. In this case, the most important thing is not that the political parties are luring the electorate, but rather that recurrent political business cycles exercise substantial influence on the cyclic fluctuations of the economy. Such cyclic fluctuations decelerate the overall progress in the country, as growth rates are losing momentum. Besides, if politicians are using the state budgetary expenditure as an instrument to attain their goals, one may say that from the viewpoint of state governance, the financial resources of the electorate collected as taxes are used in an inefficient manner.

Fluctuations of prices, employment and
output resulting from competition driven by the utilitarian reasons of the ruling and opposition political parties constitute the main issue of this article, one that is addressed using political cycle models. The formation of the political cycle paradigm started in the 1970’s and has attracted immense attention from the scientific community. The article refers to scientists like D. Hibbs, W. Nordhaus, A. Lindbeck, G. Tabellini, T. Persson, M. Gärtner, A. Alesina, N. Roubini, F.E. Kydland, E.C. Prescott, etc., scrutinising most of the scientific publications on this subject and analysing the problems of studies based on the models of empirical political cycles.

The purpose of this article is to conceptualise the paradigm of political cycles and to provide an econometric model for testing the possibility of political cycles in Baltic States.

The authors demonstrate the origins of formation of the political cycle paradigm and the problems related to the empirical studies of political cycles. Also presents an analysis of the impact the revolution of rational expectations had on the development of the political cycle paradigm; first-generation models of political cycles are introduced.

Finally, the authors introduce econometric model that can be used for the testing of political business cycles in Baltic States, and describe model’s assumptions and methodology of econometric calculations.

Impact of economic policy on political business cycles

At different times, the state has played different roles in the economy. In the 19th century, the role of the state estimated as a ratio between the governmental spending and the gross domestic product was some 10 per cent, while in 1996, this ratio stood at nearly 45 per cent in the OECD countries (Tanzi, Schuknecht, 2000). Economists B. Snowdon and H. R. Vane (2005) claim that such rapid growth of the government’s influence on the economy in the 20th century was caused by several factors, of which the following can be identified: the impact of the two world wars, the Great Depression and the Keynesian revolution that followed, the military spending that increased during the cold war, the positive attitude towards income redistribution seeking a higher degree of equality, the reinforcement of the welfare state concept and the general approval by the economists of the period that as a system of resource redistribution and demand satisfaction, the market has a lot of flaws. Without going into details regarding the weight of each of the above elements, we may say that the governmental economic influence has increased significantly. The results of its the economic policy may have tremendous effect on the results of activities under private initiative, the market status of individual economic actors, i.e. the amount of income at their disposal as well as on the social status of individual classes of society.

An important part of the implementation of the economic policy is its goals. The most wide-spread state economic policy goal that is subject to official approval is the so-called magic square, i.e. four interrelated goals that are the responsibility of the state, usually through the government. These are the growth of output, /.../ a high employment rate, the stability of prices, the growth of net exports (Samuelson, Nordhaus, 1989). The ranking of such goals tends to shift with elections approaching. Such changes are accounted for by the opportunistic model of the political cycle
theory, which says that “the incumbent party stimulates the economy prior to an election /…/ in order to be re-elected” (Tuinstra, 2000). Such party behaviour is becoming a norm in today’s capitalist system, which, according to J. Schumpeter (1998), is dominated by an individualistic utilitarian attitude, when every scheme of behaviour is judged on the basis of its utility to self. Speaking about governments, J. M. Buchanan also approves of the individualistic utilitarian attitude, saying that “governments are not efficient, purely altruistic entities that effortlessly correct market imperfections. Instead, governments are aggregates of individuals pursuing private rather than the public interest through regulations and /…/ laws. These private interests create wasteful lobbying efforts known as rent seeking” (Formaini). The opportunistic behaviour of the parties becomes justified if seen from the utilitarian approach, whereas the statement by F. A. Hayek (1999) that “a controlled process cannot yield more than is foreseen by the agent that controls it. He is the only one to benefit from his experience” gains a new meaning in this context.

Just as its has already been mentioned above, fluctuations of prices, employment and output resulting from the competition driven by the utilitarian reasons of the incumbent and opposition political parties constitute the main issue of this article, one that is addressed using political cycle models. The following part of the analysis deals with the formation and development of the political cycle paradigm.

**Formation of political cycle paradigm**

Most authors (Persson, Tabellini, 1997; Alesina, Roubini, Cohen, 1999; Blomberg, 2000; Akhmedov, Zhuravskaya, 2004; Leertouwer, Maier, 2001; etc.) dealing with the problem of political cycles are unanimous on the fact that the beginning of the formation of the political cycle paradigm ought to be pinned down to the articles by W. Nordhaus (1975) and A. Lindbeck (1976). In introducing his opportunistic model of political cycles, W. Nordhaus then said that the incumbent party “chooses economic policies during its incumbency which maximize its plurality at the next election” (Nordhaus, 1975). So, politicians are prone to manipulate the economic policy in a way as to make its results – macroeconomic indicators – favourable during the elections period for the incumbent party to win in the elections. W. Nordhaus's opportunistic model of political cycles means that elections are likely to be preceded by faster the growth of economy, a lower-than-natural unemployment rate and a slight increase in prices. After the elections, an opportunist-minded government pursues a restrictive fiscal policy that drives the economy into a recession after the pre-electoral upsurge, thus leading to short-run cyclical fluctuations in the economy.

Soon after than D. Hibbs (1977) introduced a partisan model of political cycles, which was based on the idea, that political parties were acting on their ideology rather than in an opportunistic manner. Left- and right-wing political parties possess varying combinations of the growth of economy, unemployment and inflation rate, i.e. “left-wing parties more willingly bear the costs of inflation to fight unemployment” (Alesina, Roubini, Cohen, 1999). The introduction of this model has resulted in two key directions in which the political cycle models evolved.

Normal science must always seek and does seek that theory should match the
hard facts as closely as possible, as this activity may be treated as a test or a search for confirmation or denial (Kuhn, 2003). To provide an empirical basis for his model, W. Nordhaus (1975) conducted a study and arrived at a conclusion that “given both casual and formal evidence of economic behaviour, and the historical record in the countries examined, it is clear that a political business cycle is a significant factor in the operation of some capitalist economies”.

Empirical studies by L. Schuknecht (1996, 1999) also confirm that W. Nordhaus’s model exists in practice. He established that the developing countries in question have cycles of fiscal policy, i.e. governments are pursuing an expansive fiscal policy before elections and a restrictive fiscal policy afterwards (Schuknecht, 1999). In the words of said author, W. Nordhaus’s opportunistic political cycle model has also support in the studies by R. Bates (1988), G. Calvo (1995). Using the square function of purpose, R. Neck (1991) also obtained results that favour W. Nordhaus’s model. Whereas S. Lohmann (1998) conducted a test of the opportunistic political business cycle hypothesis and was inclined to dismiss the hypothesis as her results demanded that the voter’s behaviour be rational rather than retrospective. A. Alesina and N. Roubini (1990) conducted their empirical studies and were even more categorical about dismissing the W. Nordhaus’s hypothesis of political business cycles, yet claimed that several countries provided evidence to support the hypothesis. M. Paldam (1979) has found very weak evidence of W. Nordhaus’s political business cycles, and A. Alesina, N. Roubini and G. D. Cohen (1993, 1999) have found no systematic opportunistic cycles of W. Nordhaus’s type.

However, a recent study by A. Akhmedov and E. Zhuravskaya (2004) provides plausible evidence supporting the existence of opportunistic political cycles. In addition, these authors say that previous studies may not detect opportunistic political cycles as they used quarterly rather than monthly statistical data. In the opinion of the authors of the present article, the varying and ambiguous results of empirical studies might have also been caused by the different institutional structure of countries, which determines the legitimacy of the assumptions within the model. The differences of econometric models may also have had their effect on the outcome of the empirical studies.

The evolution of the results of empirical studies of the partisan political cycle model is similar to that of the opportunistic model. Having analysed the economic policies of post-war capitalist countries, D. Hibbs (1977) claimed that empirical data confirmed his statements that left-wing governments tend to prefer lower unemployment rates and tolerate higher level of inflation than right-wing governments. L. M. Bartels and H. E. Brady (2003) performed a study and also maintained that the partisan differences in economic policies as identified by D. Hibbs remain stable even after two decades (Snowdon, Vane, 2005). A. Alesina and N. Roubini (1990) and A. Alesina, N. Roubini and G. D. Cohen (1999), however, have found no evidence of any permanent partisan impact on the growth of economy and unemployment. Although the empirical studies to confirm or deny D. Hibbs’s model are ambiguous and controversial, in the author’s shared opinion, the results of the studies by A. Alesina and co-authors could have been affected by the rational partisan political cycle model.
as proposed by A. Alesina in 1987, which model integrated rational expectations into the traditional partisan model.

The 1970’s saw criticism of the partisan and the opportunistic models claiming that these two models were incompatible and ought to be integrated under a new model (Snowdon, Vane, 2005). B. S. Frey and F. Schneider (1978a, 1978b) suggested an alternative hypothesis, which said that political parties were acting in an opportunistic manner when their chances of winning elections were thin. Governments may use independent surveys to see their position on the popularity scale (Snowdon, Vane, 2005).

Moreover, the revolution of Lucas’s rational expectations theory in macroeconomics inflicted a blow on the traditional (Nordhaus, 1975; Hibbs, 1977) models of political cycles, as the rational expectations hypothesis means that voters look into the future and cannot be fooled on a systematic basis (Snowdon, Vane, 2005). As a result of such criticism of rational expectations, in A. Alesina’s (1988) words, there was no progress in theoretical literature on political business cycles (G. Sieg (2001), having carried out a simulation of a macroeconomic model established that rationality is not a precondition for political business cycles). The situation of the political cycle models was aggravated by the arrival of the article by F. E. Kydland and E. C. Prescott (1977) that raised the issue of time inconsistency of the economic policy. The authors of the article said that “economic planning is not a game against nature but, rather, a game against rational economic agents” and concluded that “there is no way control theory can be made applicable to economic planning when expectations are rational”.

Studies of political cycles resumed in the mid-1980’s. However, due to the influence from neo-classics, the new models of political cycles contained an assumption that economic agents and voters act rationally (Snowdon, Vane, 2005). A. Cukierman and A. H. Meltzer (1986), K. S. Rogoff and A. Sibert (1988), K. S. Rogoff (1990), as well as T. Persson and G. Tabellini (1990) suggested rational opportunistic-type models (Alesina, Roubini, Cohen, 1999); A. Alesina (1987) developed the rational partisan approach (Alesina, Roubini, 1990). According to M. Gärtner (1994a), these models have earned the merits for reviving the interest in the field that went in a coma ten years ago.

Empirical tests of rational political cycle models also produced ambiguous results. Studies by Ch. J. Ellis and M. A. Thoma (1993), M. Berlemann and G. Markwardt (2005) support the rational partisan model. In their work, A. Alesina and N. Roubini (1990) established that empirical data can be used to prove that both the rational opportunistic model of K. S. Rogoff and A. Sibert, and the rational partisan model of A. Alesina are legitimate. A. Alesina, N. Roubini and G. D. Cohen (1999) once again prove, by empirical studies, the viability of the above models, although the authors indicate, as an exception, countries where the outcome of the statistical data analysis is insignificant. On top of that, A. Alesina concludes that empirical results are much more favourable for rational versions of political cycle models than the original models of W. Nordhaus and D. Hibbs. A. Alesina accentuates that the impact of the partisan-type on the economy is much stronger, and the extent of the impact of the opportunistic-type is very limited and is more concerned with certain instruments of fiscal policy (Snowdon, Vane, 2005).
However, A. Alesina and co-authors have been criticised for their empirical studies of political cycles. M. Gärtner (1994b) has said that the studies by A. Alesina and N. Roubini (1990, 1992) do not lead to the following conclusions that were produced by them:

1) “we find evidence of temporary partisan differences in output and unemployment and of long-run partisan differences in inflation”;

2) “we find virtually no evidence of permanent partisan differences in output and unemployment”;

3) “the political business cycle hypothesis /…/ is generally rejected by the data”;

4) “The most interesting result of this paper is that the more recent models of political cycles significantly outperform their predecessors.”

After conducting a series of new econometric calculations and evaluations of political cycle models, M. Gärtner said that the results obtained by A. Alesina and N. Roubini (1992) “are reminiscent of a positively sloped aggregate supply curve and a long-run Phillips trade-off. This puzzling implication may be shrugged off as spurious or as an artifact generated by lumping together one and a half dozen economies with greatly differing institutions and structures” (Gärtner, 1994b). Such criticism coincides with the position that the authors of this article voiced previously regarding the differences in the impact of the institutional structure of different countries on the empirical results of political cycle models. M. Gärtner also found that the established permanent partisan-type effects on the economy are the same as proposed by D. Hibbs’s traditional partisan model. The same results may be obtained using the rational partisan model provided it is based on additional (even though not quite plausible) assumptions that offer efficient protection for the rational partisan model against tests of the main hypothesis (regarding the cycles of elections caused by the element of surprise) of the model (Gärtner, 1994b). In his analysis of inflation and money growth in different countries, M. Gärtner also made a conclusion that opportunistic cycles are accounted for by the traditional rather than the rational model of opportunistic cycles. The final verdict of M. Gärtner’s criticism – “all this means that while traditional partisan theory and W. Nordhaus political business cycle model do not fare well, rational partisan theory and particularly rational political business cycle model fare worse” (Gärtner, 1994b) – impacts a grievous blow on the rational models.

So, the formation of the political cycle paradigm was a bumpy one. Following the criticism of rational expectations in the 1970’s, the paradigm plunged into a coma that lasted up until the mid-1980’s, when the rational versions of political cycle models were produced. However, the empirical tests of the latter models did not yield explicit and reliable results either. Besides, the results of political cycle models would depend on specific countries: a model may apply to one country and be dismissed in another. Considering M. Gärtner’s criticism, we may say that the traditional models of political cycles are just as good as, if not better than the next-generation rational models – just as the results of A. Akhmedov’s and E. Zhuravskaya’s (2004) test show.

First-generation political cycle models

Most people, with one possible exception of politicians themselves, would agree that political figures seek to remain in power
and to keep their positions. Following most of the models of formal politics, in spite of the fact that voters do care about policies, politicians only care about winning elections and therefore choose policies to please the voters. Such behaviour is called “opportunistic” (Alesina, Roubini, Cohen; 1999).

The traditional opportunistic model. This Nordhaus-Lindbeck model is based on the following assumptions (Nordhaus, 1975; Lindbeck, 1976):

1. Economy is described by the expectations-driven Phillips curve:

\[ y_t = y_n + \gamma (\pi_t - \pi^e_t); \quad \gamma > 0 \]  

(1.2.1)

where \( y_t \) is the value of the gross national product (GNP) growth, \( \pi_t \) is the inflation rate, \( \pi^e_t \) – the expected inflation rate, \( y_n \) – the natural value of the GNP growth, and \( \gamma \) is a positive parameter. The Phillips curve can also be defined using the unemployment rate:

\[ u_t = u_n - \gamma' (\pi_t - \pi^e_t); \quad \gamma' > 0 \]  

(1.2.2)

where \( u_t \) is the unemployment rate, and \( u_n \) is the natural unemployment rate. Assuming that \( \gamma = \gamma' = 1 \), the equation can be cancelled out as follows:

\[ y_t = y_n + \pi_t - \pi^e_t. \]  

(1.2.3)

So, if the inflation rate goes beyond expectations, the decrease in actual wages (due to employment contracts) drives the demand for labour upwards, reduces unemployment and stimulates the growth of economy.

2. Expectations for inflation become adapted:

\[ \pi^e_t = \pi_{t-1} + \lambda (\pi^e_{t-1} - \pi_{t-1}); \quad 0 < \lambda < 1 \]  

(1.2.4)

This equation means that the expected inflation rate equals past inflation rate, if past expectations have come true. Otherwise, current expectations become adapted against the errors of the past. Parameter \( \lambda \) shows the extent of the current reaction to the errors in previous forecasts. This means that a low value of parameter \( \lambda \) indicates that regardless of any errors in previous forecasts, current expectations for inflation are almost identical to the inflation rate of the previous period. It has to be stressed that in this case, the expectations depend only on the observations of the past inflation rate and do not embrace all of the available information. At the same time, in this case the expectations have nothing to do with the public’s expectations regarding future economic policies set by the politicians and therefore they are irrational. After making some adjustments to the equation, we get the following:

\[ \pi^e_t = (1 - \lambda)\sum_{j=0}^{\infty} \lambda^j [\pi_{t-j-1}]. \]  

(1.2.5)

The latter equation shows that, aware of past inflation, politicians can attain the desired rate of the growth of economy at the existing inflation rate.

3. Politicians are identical. They prioritise power and positions and are therefore more inclined to keep them rather than to lose them.

4. There are only two candidates (parties) in each election – an incumbent and the opposition.

5. Voters prioritise the growth of economy and do not care for inflation and unemployment. They are retrospective
(empirical studies (Nannestad, Paldam, 1994) show that voters are retrospective), voting for those in power if the economy works well (the rate of inflation and unemployment is low, the growth is good) under the ruling party. The voters place a strong discount on the past. Therefore, a sharp increase in the economic situation before the elections affects the voters’ decisions much more than the economic situation in the past more distant (note: this assumption could be supported by J. A. Schumpeter saying that “the masses only care about the short-run perspective” (Schumpeter, 1998)).

The last three assumptions mean that the ruling governments behave alike as they are maximising the same function of the purpose (the feasibility of being re-elected) and are facing voters with predictable voting behaviour patterns. The most realistic view is that the incumbent government is maximising the feasibility of being re-elected, which, as a function has the indicators of the economic situation during the government’s rule as some of the key variables. Therefore, the function of the chances for the incumbent government to be re-elected in the elections at the end of period $t$ is as follows:

$$Q_t = Q(\pi_t, u_t, y_t, \pi_{t-1}, u_{t-1}, y_{t-1}, ..., Z);$$

$$i = 1, ..., n$$

(1.2.6)

where $n$ is the duration of the term of the elected government, and $Z$ is the vector of non-economic variables that may affect the elections and is not related to the economic situation. As it has been already mentioned above, the voters place a strong discount on the past, i.e. for the purpose of the voters’ decision, past economic performance has less weight than the recent economic achievements. The latter equation emphasises the uncertainty about the outcome of elections that politicians are facing under certain economic conditions. If the ruling parties knew the amount of votes they would earn for a specific policy, they would always adopt the mix of policies that would certainly guarantee victory in the elections. However, there is a degree of uncertainty regarding economic instruments and the results they produce and between the latter and the voters’ response.

6. The policymaker controls policy instruments that have a determinative link with the aggregate demand.

Politicians have monetary or fiscal instruments of the economic policy at their disposal (Alesina, Roubini, Cohen; 1999).

7. The elections period is exogenously constant.

This assumption does not apply to every country. Elections often are held following different procedures premeditated in the legislation of each particular country.

Operation of the traditional opportunistic model. Fig. 1 shows the way the model operates (Alesina, Roubini, Cohen; 1999). Section A of the Figure demonstrates a long-run Phillips curve, when $\pi_t = \pi_t^c$; it also demonstrates a short-run Phillips curve, when $\pi_t \neq \pi_{t-1} = \pi_{t-1}^c$. Point A is the point of convergence of both curves and $\pi_t = \pi_{t-1} = \pi_{t-1}^c$. The position of the aggregate demand curve (AD) may be affected by the fiscal and the monetary policies.

Let us assume that the elections will take place at the end of period $t+1$, and the ruling parties, by manipulating the instruments under the fiscal and the monetary policies expand the aggregate demand to point $B$ during period $t+1$. At point $B$, the inflation rate is higher than expected: $\pi_{t+1} > \pi_t = \pi_t^c$, and the growth rate is...
above “normal”, i.e. \( y_{t+1} > y_n \). Therefore, with the elections taking place at the end of the period, the growth of economy is faster and there is a slight increase in the inflation rate.

When the ruling parties are re-elected, expectations at \( t+2 \) begin to catch up with the actual situation as shown in section B of Fig. 1, as there was an expectation error in period \( t+1 \), i.e. \( \pi_{t+1} > \pi_{t+1}^e \). If the ruling parties do nothing to further promote the aggregate demand, the economy moves along curve \( AD \) towards point \( C \). At this point, the growth once again reaches the natural rate \( (y_n) \), yet the inflation rate is higher than at point \( A \). In the event of winning the elections, the ruling parties may restore the previous rate of inflation by pursuing a restrictive fiscal and monetary policy so that the economy reaches point \( A \) and is placed to move towards point \( B \) before the next elections. However, according to W. Nordhaus (1975), politicians are unable to fully take back the economy to point \( A \), only to point \( A' \), which is above \( A \). This means that each cycle in the elections brings mid-term growth of the inflation rate.

Such economic cycles are not optimal as they lead to economic fluctuations and changes (as a result of varying inflation and the growth of economy) without increasing efficiency. Besides, a political cycle like that might increase the average inflation without improving the average growth of economy and unemployment.

The traditional partisan model. Most people would agree that different political parties have different goals. Dubbed as “partisans” are politicians that pursue specific ideological objectives, while being in power, in this case placing an emphasis on differences of the macroeconomic policy preferences. Obviously, “partisan” politicians seek to remain in power rather than in the opposition. While opportunistic politicians choose this path to be re-elected, “partisan” politicians want

![Fig. 1. Operation of the traditional opportunistic model](image_url)

to win in the elections to implement the policies they strive for. In the 1970’s, D. Hibbs proposed a partisan model that was a lot different from W. Nordhaus’s political business cycle. It was said that left- and right-wing parties were more inclined to accept the costs of inflation to combat the unemployment rate (Alesina, Roubini, Cohen; 1999). Therefore, “the partisan theory rests on the stylized empirical observations that downscale classes make up the core constituency of Left parties, they for the most part hold only human capital (their economic well-being depends almost entirely on earnings from labor), and they tend to occupy unsheltered, lower status jobs. Supporters of Left parties therefore have greater exposure to rising unemployment than supporters of Right parties” (Hibbs, 1992).

Back in 1970’s, D. Hibbs (1977, 1987) introduced his partisan macroeconomic policy model. The model is based on the following assumptions:

1. Economy is described as expectations-based Phillips curves:

\[ y_t = y_n + \pi_t - \pi^e_t. \]  

2. Expectations for inflation become adapted:

\[ \pi^e_t = \pi_{t-1} + \lambda(\pi^e_{t-1} - \pi_{t-1}); \quad 0 < \lambda < 1 \]  

3. There are no identical politicians. Members of left-wing parties place more emphasis on unemployment and the growth of economy and pay relatively less attention to inflation, while members of right-wing parties have opposite preferences.

This model views political parties as representatives of different supporters with varying preferences. To be more specific, the right wing represents the upper middle class and members of the business and financial community. The left wing embraces the lower middle class and various associations. Inflation and unemployment has re-distributive consequences that explain the different preferences. Drawing on the US experience, D. Hibbs (1987) has established that an increment in the unemployment rate reduces the portion of income for the two poorest quintiles and increases income for the two richest quintiles. However, the re-distributive effect of inflation is much harder to assess. Inflation has many channels through which to affect redistribution of income and assets: corporate balance sheets, denominated assets and liabilities, changes in relative prices, index-free tax intervals, etc.

4. Each election has only two candidates (parties): the ruler (incumbent) and the challenger (the opposition).

5. Different voters have different preferences for inflation and unemployment (or the growth of economy). Depending on their preferences, voters choose left- or right-wing parties.

D. Hibbs (1987) has claimed that voters’ views on inflation and unemployment are changing based on the current values of these two indicators. Voters are retrospective: they judge the economy and support one or another political party according to their preferences.

6. Election time is exogenously constant.

7. The policymaker controls policy instruments that have a determinative link with the aggregate demand.

**Operation of the traditional partisan model.** Fig. 2 shows the relationship between inflation and unemployment as emphasised by D. Hibbs. Let us assume that the economy is at point A and a left-wing government is elected. This govern-
ment has the aim of bringing the economy to point B, where the unemployment rate is lower and inflation is higher. There is no particular concern for the movements of the short-run Phillips curve (SRPC) due to the adaptation of the expectations, and therefore the SRPC remains relatively stable during one or two terms of the government.

D. Hibbs (1987) has drawn attention to the duration of the lag between the adoption of a policy and its effect on the actual economy. And so he maintains that it might take several years for the economy to move from point A to point B.

Let us assume that the economy is at point B and it is a right-wing party that wins in the elections. The goal of the party is to bring the economy to point C, where the inflation rate is lower. To do so, the new government pursues a policy of deflation while the economy gradually goes from point A to point C. Therefore, given a relatively stable inflation rate, the two parties may achieve and maintain two different rates of unemployment.

Following the discussion of the traditional political cycle models, the next section of the article will introduce the econometric model that can be used in testing the feasibility of political cycles in Baltic States.

Econometric model relevant for testing the political business cycles in Baltic States

Empirical studies aimed at proving that political business cycles exist employ a great variety of models. It was discussed in more detail in the previous sections of this article, as part of the study of the formation of the political cycle paradigm.

To assess the impact of the economic policy on political cycles in Estonia, Latvia and Lithuania the authors propose an econometric model having the following expression:

\[ Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \alpha_2 Y_{t-2} + \alpha_3 Y_{t-3} + \alpha_4 Y_{t-4} + \gamma_1 ELE(N) + \gamma_2 ELL(N) + \gamma_3 EUIT + \gamma_4 ARP + \varepsilon_t + \beta_1 \varepsilon_{t-1} + \beta_2 \varepsilon_{t-2} + \beta_3 \varepsilon_{t-3} + \beta_4 \varepsilon_{t-4}. \]  

(2.1)

That is an ARMAX (4.4) type econometric model, relevant for establishing Nordhaus type political business cycles (if such exist). For the purposes of this

![Fig. 2. Operation of the traditional partisan model](image-url)
model, the time parameter is capped at 4, as the data calculations frequently use quarterly data, and besides, the number of observations restricts the selection of the maximum rank of the ARMAX model (note: the Baltic States gained independence only fifteen years ago, thus, the times series of statistical data still are short). $Y_t$ in this model is the endogenous (dependent) variable. $ELE(N)_t$, $ELL(N)_t$, $EUI_t$, and $ARP_t$ are the exogenous (explanatory) variables, $N \in \{2, 4, 6, 8\}$.

For the purposes of this econometric model, (2.1) includes two political explanatory variables $ELE(N)_t$ and $ELL(N)_t$: this allows searching for linear ties, as the political cycle starts with a constant, which increases through $ELL(N)_t$ up to the elections. So, political cycles can be established using elections variables $ELE(N)_t$, which for the purposes of the model is assigned value 1 during elections and 0 in other instances, and $ELL(N)_t$, which has assigned values 1, 2, 3, etc., depending on the duration of pre-election manipulation of the economic policy. Conclusions regarding the nature of a political cycle are drawn considering the sign, value and significance of the cycle. The elections parameters can be interpreted in the following manner: parameter $ELE(N)_t$ defines the status of the domestic economy N quarters to the start of the elections quarter, and by pursuing an expansive the economic policy, the ruling party improves situation $ELL(N)_t$ by value of coefficient quarter-on-quarter. This means that during $N+1$ quarters, the overall result of such manipulation with the economic policy should offset the original situation.

Moreover, the search for political cycles should consider the impact of the accession to the European Union (EU) on the rate and cycles of GDP growth (third explanatory variable, $EUI_t$). Yet the key element of this model is the assumption that the cycles of gross domestic product, inflation and unemployment can be related by ties of regression. This assumption is made, because the process of autoregression (AR) can distort the results of political cycles, as AR may carry a political cycle in itself (fourth explanatory variable, $ARP_t$). Furthermore, it can allow eliminating the variations in the macro-environment’s impact (note: the Baltic States has experienced rapidly changing economic environment since 1991) on the calculation results.

To establish political cycles in Baltic States, the authors recommend analysing four pre-elections scenarios. Scenario one is based on the assumption that the ruling politicians start manipulating the economic policy and preparing for the elections eight quarters to the date of elections. The authors of this article would also recommend analysing three other scenarios based on the same assumption that the incumbents start manipulating the economic policy before elections. It is quite likely that politicians may start going for better macroeconomic indicators with six, four and two quarters to the elections, respectively.

For the purposes of the econometric model calculations, the time series of the main macroeconomic indicators – nominal gross domestic product, unemployment and inflation – should be used. Besides, a cyclical component of time series should also be used. Cyclical component of time series can be derived using the Hodrick-Prescott (1981, 1997) filter.

Conclusions

Following the analysis of the process of formation of the political cycle paradigm
and the presentation of the key models of political cycles, we can draw the following conclusions:

- The growing share of the gross domestic product that is subject to re-distribution by the government has strengthened the economic influence of the government, and so its economic policy may strongly impinge upon the results of private initiative.

- Although, for the purposes of implementing economic policy, its objectives are important, the ranking of such objectives may change with the approach of elections, as the ruling parties aim at improving macroeconomic indicators. Such party behaviour that is based on the individualistic utilitarian approach becomes a norm in the modern capitalist system, as this norm, according to Schumpeter, is a by-product of capitalist development.

- The different and ambiguous results of the empirical tests of first- and second-generation political cycle models might have been caused by the differences in econometric models, the varying institutional structure of countries, which determines the legitimacy of assumptions of a model. Besides, the subjective attitude of certain scientists favouring certain political cycle models might have had some influence on the evaluation of other models of political cycles.

- Published in the 1970’s, the article by F. E. Kydland and E. C. Prescott raised the problem of temporal incompatibility of economic policy, inflicting a grievous blow on the paradigm of political cycles, as the authors of the article said the economic planning was not a gamble against the nature but rather against rational economic actors and made a conclusion that there was no way nor possibility to adapt the theory of governance to economic planning when expectations are rational. The latter conclusion meant that politicians were unable to manipulate the economic policy.

- According to M. Gärtner, if the traditional partisan and opportunistic models are not doing well, the rational partisan model and the rational opportunistic model of political cycles in particular are doing even worse. The wording of this econometric calculation-based criticism strikes hard against the rational models, rehabilitating the first-generation political cycle models. All of this is further supported by the results of tests by A. Akhmedov and E. Zhuravskaya.

- Following Nordhaus's model, a conclusion can be made that the opportunistic political cycle can increase the average inflation rate without improving the average ratios of the growth of economy and unemployment rate.

- Following Hibbs's model, a conclusion can be made that given a relatively stable inflation rate two parties – a left-wing and a right-wing – can achieve and maintain two different unemployment rates.

- Similar institutional framework in Baltic States enabled the authors of the article to provide single econometric model for assessing the impact of the economic policy on political cycles and establishing political business cycles. The main strength of the proposed model – the assumption that the cycles of gross domestic product, inflation and unemployment can be related by ties of regression. This assumption can allow eliminating the variations in the macro-environment’s impact on the calculation results.
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KLASIKINĖ POLITINIŲ EKONOMINIŲ CIKĻŲ PARADIGMA IR EKONOMETRINIS MODELIS BALTIJOS ŠALIMS


Pirmojoje straipsnio dalyje autoriai nuosekliai apžvelgia politinių ekonominių ciklų paradigmos formavimą iki racionaliųju lūkesčių kritikos ir