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Abstract

The political business cycle theory explains different economic situation and growth in different time periods taking into account factors that have political origin. The theory is based on the opinion that before elections politicians become more generous but after elections they fail to fulfil previous promises. So the result is that before elections economics prosper more, but after – situation worsens as restrictive politics is implemented.

This paper tests political business cycle theory for the case of municipalities of Latvia. By using different panel data models and taking into account factors like elections, budget income and expenditure as well as fixed effects of municipalities. This paper is aimed to estimate whether economic cycles in Latvia at regional level have been influenced by these political factors.

The research is based on calculations from budgetary data for the period from 2001 till 2008. It proposes a simple methodology how to evaluate political business cycles in municipalities using data about budgets, elections and political parties winning elections. As administrative territorial reform took place in Latvia in 2009, situation before and after this reform is compared, though for a more in-depth analysis of the results of the reform, further research is needed.

The results show that municipalities' expenditure for social sphere (social security and social insurance, education, culture and free time) increase in years when municipality elections are held, but after elections these expenditures decrease. This confirms the hypothesis that political factors have influence on regional development in Latvia.

Keywords: Political business cycles, Elections, Panel data analysis

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Introduction

Political business cycle theory is based on simple business cycle theory trying to describe the cyclical development of economics. Economics experience growth followed by time of boom and later – recession and crisis. Different authors have suggested various lengths for business cycles – short (3-5 years, usually called Kitchin cycles), medium (7-11 years, Juglar cycles) and long cycles (25-30 years, Kondratiev cycles). Also the reasons for this cyclical development are thought to be different. For example, the most popular ideas were presented by Keynes who assumed that cycles are connected with investments; Shumpeter mentioned that the cycles were created by inventions in manufacturing and another idea is that they are based on scientific and technological progress.

Political factors in the classic business cycle theory can be included in several ways. First of all, investment strategies in many cases are connected with political decisions. Investments made by government are the most obvious. It could mean that cycles described by Keynes work in that way and politicians have to vote if they want to make particular investment and in that case start the investment business cycle. Another aspect of political influence on investment is through the legislative process as laws enforced can support entrepreneurs, they can either motivate people to make some investment or discourage them.

Secondly, another aspect of political factor influence on business cycles is elections. When short term business cycles are analysed, they usually are evaluated to be 3-5 year long. It is a similar period to the time between elections and could arise interest to make a deeper analysis if there are some connections between these short term cycles and elections in the country.

Political business cycle influence on economic development – theoretical review

Usually connection between politics and business cycles are analysed as a response, a reaction. For example, in order to stabilize economic situation in the country, fiscal and monetary policy should respond to economic indicators. So, if the economics is overheated, restrictive politics could favour its stabilization and movement back to optimal level. In this case depending on the situation of the country and its specifics that restrictive politics can be made through both fiscal and monetary policy or by one of them. In this article we will not discuss monetary politics as usually it is independent and is not related to decisions made by the government. If we look at fiscal policy, restrictive politics can be made through decreasing government spending or increasing taxes.

The theory of political business cycles (PBC, sometimes also called electoral cycles) origins in 1940ies. Kalecki (1943) expressed an idea that full employment can't be permanent, there are some cycles triggered by political decisions. Downs (1957) made an assumption that politicians try to maximize number of votes received in elections and they can do so by trying to maximize the utility of society to get their support. Nordhaus (1975) indicates that actions and motivation of politicians can differ depending on the stage of voting cycle choosing to fight either with inflation or unemployment. This initial theory of PBC was questioned (Hibbs, 1977; McCallum, 1978) by expressing the idea that the political affiliation also influence decisions before elections as left wing and centrists are more likely to fight unemployment, but right wing – to pay attention to decreasing inflation.

Political business cycle theory assumes that the connection that politics influence economics is stronger, than the one that economics are the base for political decisions. It says that government is not so much trying to stabilize economics, but in opposite – decisions are making some cycles and leading the economic situation away from equilibrium. Political decision can be like a push and in some cases it brings economic situation in the country above the equilibrium, but in some other situations – political decisions force economics to decrease activity by tightening the situation.

One important point in the context of politics is elections. It is considered that before elections politicians become more generous and not only promise more but actually also try to finish some works that could have some tangible results. Usually before elections hardly any unpopular decisions are made, but as opposite – political decisions that could gain support from voters are made. That includes both political decisions in different areas (like for example, changes in legislation), as well as changes in the structure of budgetary spending which are necessary to make some "good work" to favour voters.

So, elections are like a breaking point – before them there is a stronger economic development but after that, economics develops slower or there is even experienced recession. If other factors are stronger than those political factors mentioned, short term business cycle phases can be different from election cycles, but if political factors have significant role, short term business cycle can be viewed as political business cycle.

Lately there have been several attempts to empirically evaluate these electoral cycles for different countries, both at country and in smaller region level. Useful methods are suggested by Akhmedov et al. (2002) from the research that looked at the data from Russia. They concluded that cycles are the most pronounced in social programs, healthcare, education and industrial subsidies as well as budgetary positions related to wages, but they are weaker in more urban places and places where voters have better access to information (for example, with higher level of computerization).

Research about Portugal (Coelho et al., 2006) showed that there was increase of employment shortly before elections and this effect was more pronounced in municipalities where the leading party had majority. Another research (Coelho & Veiga, 2004) confirms that political business cycles exist as before elections total expenditure increases and its structure in favour of the sectors that are close to voters changes. Spending increase for areas where more expenditure could increase the probability that the politicians will be re-elected.

In the analysis about the countries of EU (Andrikopoulos et al., 2004) there is a discussion if EU countries use instruments of fiscal policy to create business cycles. Authors conclude that these countries work against cycles and try to stabilize economics. Recent economic development and the urge for the fiscal discipline in EU also suggest that political business cycles will be less typical during the next years.

Dombrovsky (2008) analysed firm level data in Latvia and concluded that if politicians get involved in firm's activity, it is usually followed by weak financial results on the first year, but strong enhancement after. The question arises: how important are political factor influence not only at firm's level but also at regional and country level.

Specific framework for the analysis of the situation in Latvia

We will analyse the situation at the regional level in Latvia – in cities and municipalities. The budgets of municipalities will be analysed as they have an impact on regional development of the country as they show how the finance of municipalities are spent and which sectors gain more finance and are able to develop more rapidly.

Part of the budgets of municipalities in Latvia are given for specific aims (such as earmarked subsidies) and deputies at the municipality level can't change the way how they are spent. There are also parts of expenditure that are compulsory, for example, for some municipalities in Latvia those are payments in Municipal Finance Equalization Fund. Of course, if we look at this question from another perspective, we could analyse who are those that make such decisions and even if the local politicians can't influence them directly, these people also belong to some political parties or interest groups and their aims can be connected to and support local political players as well as this part of finance can influence political business cycles.

Part of the municipality budgets can still be freely governed by local politicians. So, these decisions can influence how the local and regional economics will develop in social and other areas. We can look at the influence that the political decisions would have on regional development and budgets of municipalities are a good and comprehensive source for gaining information to be further analysed.

Before elections government expenses tend to increase (as larger sums of money are needed to finance all needs to fulfil promises made to voters and to implement some other decisions in order to get additional votes during the upcoming elections). When the government expenses (in this case – spending by municipal governments) are increasing, it also increases aggregate demand and through this channel total GDP is increased respectively.

Similar flows, just in opposite direction, can be observed after elections. Theory suggests that excessive expenditure before elections could lead to budget deficit, therefore after elections politicians should deal with that situation and pay the debts made in the previous period. Budget expenses are cut, aggregate demand decreases and the growth of economics is restricted.

Political influence on economics can be analysed in short and long term perspective. Short term influence of politics on economics is the one that comes from fiscal policy actions during one business year if the budget is made for one year. Long term influence (could be also called as mid-term influence) lasts several years – for example, in Latvia, it is four years period between elections. Cycles longer than that are not analysed as they are strongly influenced by other factors (such as technological progress, changes in external environment, e.g. joining the European Union etc.).

Therefore the first way how politics influence economics, discussed in the previous paragraphs, was the amount of budget expenditure. Another channel that could be used for spreading political influence on regional economics is the structure (not just the amount) of these expenditures. Some decisions made by politicians could be more popular than other and usually before elections least popular decisions are postponed. Similarly when looking at budgets of municipalities, additional financing could be given to sectors that could help to rise support from voters. It is assumed that the spheres such as culture, education and social expenditure are those which are closer to people and they better notice if more money is spend for these sectors and appreciate that.

Municipality elections in Latvia were held in 2001, 2005 and 2009. Before 2009 in Latvia there were 548 municipalities (including different levels such as regional cities, districts, rural municipalities and some other). After the administrative territorial reform which took place on June 2009, there are 118 municipalities (109 districts and 9 republic cities; after some later adjustment these numbers changed slightly).

This article aims to focus on period before administrative territorial reform as after it there have not passed time long enough to evaluate cycles of economics. As there were many small municipalities, politicians there are closer to people. As shown in DNB Barometer (April 2012) government work in Latvia was positively evaluated by 18% of respondents. Another research - data from European Value study show that in 2008 fully or quite a lot confidnence in government had 20% of respondents. Support to local governments traditionally is higher than support to national government. That results also in smaller change in leading parties in municipalieties. Those are suitable preconditions that could lead to political business cycles. Knowing that people will evaluate deads of politicians that are closer to them and were visible in short past before elections (Hibbs, 1977), local politicians will try to do those “good” work before elections and spend more money in this period, but, as a consequence, in other periods there will be necessity to save more and search for other sources to finance deficit and public debt.

Methodology for analysing political business cycles

For analysing political effects on economics different methods can be used – such as panel data analysis, difference in difference analysis, propensity score matching methodology etc. Combination of different methods could give wider understanding on this topic as different aspects of this problem could be better understood by the results produced from different models. In this article we will focus on panel data models described by Greene (2008) and Wooldridge (2010).

Results and discussion

Calculations were made for the period before administrative territorial reform which took place in Latvia on June 2009, and based on data for the period from 2001 to 2008. As the structure (count and territorial division) of municipalities after this reform has changed, additional period of time is needed to analyse political business cycles in Latvia after this reform.

Research was based on budgetary data (available from the Treasury of Latvia). Majority of municipalities (93%) had information about budgets for all years. Residual 5% missed information about budgets just for 1 year, and 2% - had it for five or six years; municipalities missing information about budgets for more than three years were excluded from analysis. It can be considered that data quality is good and they can be used for further calculations.

As the income and expenditure of municipalities are positive but the amounts can significantly differ, logarithms were used. Data are expressed in local currency (Latvian lats), but real value (in the prices of one year) was used to avoid the influence of price changes over time.

In general form model that analyses political business cycles can be described in following way:

$$\ln(y_{it}) = \alpha + d_i + \beta_2 \ln(y_{it-1}) + \beta_3 \ln(z_{it}) + \beta_4 P + \beta_5 G + \beta_t Y_t + \varepsilon_{it} \qquad (1)$$

where i – region (municipality, city),

t – year,

d_i – municipality fixed effect,

y_{it} - instrument of regional policy (total budget expenditure or expenditure for some specific budgetary position),

z_{it} - budget income,

P – dummy variable representing if the leading party of the municipality is represented in parliament (Saeima),

G – dummy variable representing if the leading party of the municipality is represented in government,

Y_t – year.

Fixed effect parameter α shows the average of municipalities' individual parameters. It is possible to also estimate parameters for each municipality (d_i)

that show not the average of all municipalities but specific parameter for each of them. Model includes fixed time effect Y_t which allows to evaluate how the expenditure is changing over time and if in election years they are higher. This variable could be changed also to a dummy variable M which would represent if in particular year there were municipality elections.

To estimate if the political connections and belonging to some specific party influence changes in expenditure, there are added also variables G and P which show if the party that won the elections in municipality is represented in government and parliament.

Panel data methodology uses different approaches. They can be split in three groups: (1) random effect models, (2) fixed effect models and (3) mixed effect models that include both random and fixed effect variables.

Random effect models can include variables that don't change over time – for example, if the municipality is a city or rural area. It uses not only variation over time within one municipality, but also among different municipalities, but in this case there is assumption that residuals don't correlate with influencing variables. Another possible method to use is the population average model where all random effects are integrated. This structure of the model has an advantage that it gives possibility to estimate correlations withing one municipality over several years. Next, results for some estimated models will be shown.

Model with expenditure for education

Firstly, simple model with the expenditure for education will be presented. Expenditure for education is a part of the expenditure that could be viewed as "good" from the voter's point of view. This category is selected to simply present the idea of political business cycles. Later we will include some other explanatory variables and analyse tendencies more deeply.

Expenditure for education includes expenditure for primary school, elementary education, interest and professional education and other expenses for education. Following results are gained using this model:

$$\ln(education_{it}) = -8.287 + 0.692M_t + 1.6001\ln(income_{it})$$

(2) (0.12) (0.01) (0.01)

where 'education' labels the expenditure for education, 'income' means total income of municipality, but M is a dummy variable for the years of municipality elections. Numbers below the equation show the standard errors for these coefficients.

Fixed effect evaluation method was used and all coefficients in this model are significant at the 99% confidence level. According to this model, on average when the municipality income increases by 1%, expenditure for education increases for 1.6%. It shows that expenditure for education is closely connected to income of municipality, though in long term such a rapid increase would not be sustainable.

When analysing political business cycles, it is more important to look at the coefficient β_1 which in this case is 0.692. It means that on the years when municipality elections are held, expenditure for education are larger than in other years without elections. This coefficient is positive and statistically significant.

Models with fixed time and municipality effect

In order to see the tendencies over time, model with fixed time effect will be shown. It reflects what connection exists between income and expenditure and how they change over time, also showing whether on municipality election years there have been larger expenditure for some specific sphere. In this model we will use “social expenditure” meaning money that are spent on such spheres as social insurance and social security, free time, sports, religion and culture.

$$\ln(social_{it}) = \alpha + \beta_t Y_t + \gamma \ln(income_{it}) + \varepsilon_{it} \tag{3}$$

where ‘social’ represents expenditure of municipality for social aims and 'income' is total income of municipality. This model includes fixed time effect Y_t which represents the year. Model tests if the expenditure for social aims can be explained by changes on specific years, if they have some tendencies to increase or decrease.

Results for the estimated model are as follows:

$$\begin{aligned} \ln(social_{it}) &= \underset{(0.579)}{5.338} + \underset{(0.011)}{0.081}Y_2 + \underset{(0.014)}{0.139}Y_3 + \underset{(0.019)}{0.225}Y_4 + \\ &+ \underset{(0.023)}{0.296}Y_5 + \underset{(0.030)}{0.382}Y_6 - \underset{(0.179)}{1.92}Y_7 - \underset{(0.174)}{1.819}Y_8 + \underset{(0.047)}{0.519}\ln(income_{it}) \end{aligned} \tag{4}$$

Standard errors are presented below the estimated parameters. Index by 'Y's shows the year Y_2=2002, Y_3=2003 etc. 'Income' are total income of municipality, but 'social' means expenditure for social aims. Coeffiecients are statistically significant. Model shows that when the income increases by 1%, social expenditure increases by 0.52%. In this model β_t coefficients shows what is the connection between income and social expenditure in particular year. Impact of inflation is excluded as data are used in the prices of base year. In this case β_t coefficients grow, though the growth is not rapid. There has been decrease in social expenditure in 2007 and 2008.

Three periods can be pointed out: (1) till Latvia joined EU, (2) first years in the EU and (3) period shortly before the crisis and start of economic slowdown.

This model for the period of 2000 to 2008 gives results approving for business cycle theory for the case of Latvia – during the election years' expenditure for social sphere increases, but after elections - decreases. These cyclical developments are the same as election cycles. There are rapid changes in 2007 and 2008, when the expenditure for social sphere decreases sharply.

If simple average fixed effect α is susbstituted by municipality fixed effect d_i, following model can be formed:

$$\ln(social_{it}) = d_i + \beta_t Y_t + \beta_2 \ln(income_{it}) + \varepsilon_{it} \qquad (5)$$

This is slightly changed model so for each region (municipality) the parameter will be different. This model includes all observed factors that are constant over time and impacts social expenditure. In this case residual includes residual changing over time as it includes unobservable factors that change over time and impacts expenditure.

In this model municipality fixed effects are statistically significant (not showed here as they are different for each 500+ municipalities).Other parameters do not differ from those shown in Formula 4. That is because in this case model is similar, all that changes is how the municipality fixed effect is estimated.

As additional factors in models can be included variables that describe the influence of political parties. Previous research (Brauksa, 2010) shows that if the most deputies in municipality are from the party represented in government, political business cycle effect is more visible than in other municipalities with similar income level.

To sum up, this paper tried to show the possibilities to evaluate the effect of political business cycles in Latvia. As we can see from the models estimated, during the election years spending on education and other social expenditure are increasing. Further research is needed to better understand the strength and reasons of these changes, but already now it can be concluded that political business cycles is an important factor influencing regional development, though external shocks like global economic crisis or joining the EU also have had strong effect on the development of local economic and, in case those changes are procyclical relatively to political business cycles, effect of politics can be diminished.

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