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## ELECTION CYCLE VERSUS PERSONAL INCOME TAX RELIEFS IN POLAND

### Summary

**Goal** – The main objective of the paper is to verify if the relation between the election cycles and the number of tax reliefs in Poland exists and – if it exists – what is its direction and strength.

**Hypothesis** – Election cycles affect the dynamics of introducing tax reliefs into the Polish Personal Income Tax.

**Research methodology** – The research hypothesis was verified by assessing the cyclical fluctuations of the trend function describing the number of reliefs in the Polish Personal Income Tax. The study covers the years 1991-2018. The authors' own calculations made on the basis of the legislative changes made in the studied period to the *Act on Personal Income Tax* of 26th July 1991 provide the source material for the research.

**Score** – The study confirms positive relation between the election cycles and the dynamics of introducing tax reliefs into the Polish Personal Income Tax. The number of tax reliefs in personal tax cyclically fluctuates and, moreover, the total number of introduced tax reliefs is significantly higher in the election years and lower in the other accordingly.

**Keywords:** election cycle, tax relief, personal income tax

**JEL classification:** E62, H20, K34

### 1. Introduction

Political incentives in modern economies are listed among the major determinants influencing the shape of fiscal policy. As emphasized in the literature concerning public choice economics and new political economics, fiscal policy is partic-

ularly sensitive to the impulses coming from the world of politics in parliamentary democracies where the election process and its cyclical character may determine the dimension and structure of the state budget [Alesina, Cohen, Roubini, 1992]. This dependence ought to be noticeable particularly in tax policy, which often becomes one of the most important elements of the programs of particular parties during election campaigns, which is noticeable in the promises to reduce tax rates or to introduce new tax reliefs.

The objective of the research analyzed in this paper is to study the existence, direction and strength of the relationship between the election cycle in Poland and the number of tax reliefs introduced in the personal income tax. The realization of this objective was possible thanks to the verification of the research hypothesis which implies that election cycle affects personal income taxes in Poland by shaping the dynamics of the degree to which tax reliefs are used in the personal income tax.

## 2. Election cycle in the economic analysis

It is difficult to undermine the thesis implying that the immanent characteristic of the mechanism of economy development is its cyclical character. It is conditioned not only by purely economic factors, but also by environmental, legislative, technological or demographic factors. From the economic point of view the most important group comprises the factors related to the monetary policy, investment processes and expectations, consumers' moods and expenditures and also to the dynamics of export and import. Additionally, one of the reasons that has been recently analyzed in the theory of economics is that connected with the characteristics of the political system and, to be precise, with the seasonal character of elections and their influence on the cyclical character of economic growth. According to K. Rogoff, before the elections begin, governments (at all the levels) frequently undertake activities aiming at *consumption binge*. Taxes are reduced, transfers are increased, whereas public spending is addressed at noticeable beneficiaries [Rogoff, Sibert, 1988]. In this aspect the basic question remains whether the fact related to the handover of power as regards certain selectable organs of public administration has impact on particular economic values (e.g. the value of expenditure, investments, unemployment, inflation and (in the context of the issue discussed in the paper) on the tax system and the multitude of tax reliefs being used). This question may be formulated in a slightly different manner: Do politicians "buy" political support by using certain political instruments in terms of economy or the legislative system (including the tax system)?

It is assumed that from the theoretical point of view the described issue has been analyzed for the first time by W. Nordhaus (who is considered as the inventor of the theory of political economic cycle – *Political Business Cycle* PBC) in 1975. W. Nordhaus created a certain model of political economic cycle [Nordhaus, 1975]. The theory of political economic cycle is devoted to the analysis of the interaction between political and economic systems. This interaction results from the obvious

fact: electors are particular about economy, while politicians are particular about power. It is worth emphasizing that the PBC model analyzes in what way economy is changing when political and economic factors interact. In the model the problematic issues concern [Alesina, 1989]:

- electors – namely, what has impact on their behavior, whether the election takes into consideration major economic events, whether electors are rational and well informed or perhaps they are irrational and insufficiently informed?
- parties – what motivates political leaders or parties, whether they strive for maximizing the number of obtained votes and if they are opportunist or (in ideological terms) they aim at the realization of the suggested economic and social objectives?
- economic structure – what is the structure of economy, whether both sides may have impact on economic results, what are the important political instruments (for example fiscal policy, transfer payments and monetary policy) and who controls them (the President, Congress, the Central Bank)?
- disturbances – what are the disturbances for politics and economy; Are they external or internal in the political process?
- competences – Do parties realize their objectives in a competent way (to be precise: efficiently) or do they “deceive” their electors (and thus they neither satisfy them nor they achieve their ideological objectives)?

The second issue should be mentioned here. The analysis of the activities undertaken by political parties may include the division of parties into two basic groups: opportunistic parties (discussed by Nordhaus or Rogoff) and the ideological ones (analyzed by Hibbs [Hibbs, 1977]).

Owing to various motives of party activity one may find in literature two basic models of political economic cycles (opportunist and ideological) as well as three models taking into consideration the profile of electors, parties and external conditionings.

Political instruments of control affect economy by means of changing certain economic values. Fiscal policy is a special instrument used by politicians to “buy” electors’ votes in order to achieve success in the elections. Policy is so significant in activities undertaken by parties that Rogoff proposed a new name for political business cycle. According to Rogoff, the cycle ought to be associated directly with the *political budget cycle*.

Therefore, the activities within the political budget cycle include those undertaken within the system of incomes and public expenditure. In general, one may assume that the activities targeted at gaining political support (the aforementioned votes’ buying) within the budget system may be realized by providing certain social groups with public funds. This aim may be realized by means of:

- increasing public expenditures on certain purposes in the subjective and objective perspective,
- imposing taxes on certain branches of economy or on the groups of taxpayers,

- using preferential taxation principles, including: the diversification of tax rates, definitions of particular elements of the legal structure of tax, the usage of various types of tax preferences (reliefs, exemptions, deferments, allowances, remissions, etc.).

The last among the aforementioned activity spheres of public authorities has been adopted by Authors within PBC.

Naturally, there still remains the debatable issue whether the application of tax preferences in general ought to be an instrument of PBC. One may formulate the thesis implying that certain tax exemptions and, to be precise, *tax expenditures* (More information on the issue related to definitions and the essence of *tax expenditures* may be found in: [Wyszowski, 2010]) are the instruments thanks to which a legislator intends to reduce the occurrence of a certain phenomenon that appears to be negative. Therefore, the only cyclical element that is supposed to accompany this group of tax instruments ought to result from the changeability of events that the legislator intends to reduce. However, the impact of this element on the cyclical occurrence of tax reliefs was not taken into consideration in the calculations presented in the further part of the paper.

### 3. Research methods

The research was composed of three stages:

- first stage – the identification of tax reliefs in the personal income tax in Poland and the specification of their number,
- second stage – the identification of election cycles having potential influence on the shaping of personal income taxes in Poland,
- third stage – the assessment of the occurrence of dependencies between the identified election cycles and the number of reliefs in the personal income tax.

The research comprised the following years: 1991-2018. At that time the modifications in the act on the income personal tax were analyzed in order to identify the number of tax reliefs. On the one hand, the selection of the time horizon was dictated by the will to analyze the maximum interval of time, which undoubtedly ought to have positive impact on the quality of the conclusions being drawn. On the other hand however, it was dictated by the fact that fully democratic parliamentary elections in Poland took place for the first time in 1991. Additionally, the present bill on the personal income tax [Act of 26 July 1991] was passed in 1991.

In fact, since the regulations regarding personal income tax came into force, in Poland there have been numerous structural elements, the so-called tax reliefs that were targeted at lowering the value of the tribute paid by taxpayers in relation to the value resulting from the nominal rules regarding the calculation of it. So far both as regards the subject literature and the doctrine of tax law there has not been consensus on the uniform exhaustive list of all the tax reliefs functioning in PIT. For example, in the reports published since 2010 entitled *Tax preferences in Poland (Preferencje podatkowe w Polsce)* the Ministry of Finance identifies only those tax reliefs that do not

constitute an element of the so-called tax standard and at the same time are not targeted at the indefinite number of taxpayers. On the other hand, R. Dziemianowicz in the conducted research<sup>1</sup> concerning Polish personal income tax identified the so-called *tax expenditures*, i.e. public expenditures realized by the system of tax reliefs included in the tax structure [Dziemianowicz, 2015]. The number and scope of tax reliefs identified in the quoted research owing to the purpose of the conducted analysis is considerably different. While taking the purpose of the research being the subject of this paper as the starting point one needs to formulate the following question: which tax reliefs among the identified ones will be essential from the perspective of the political budget cycle?

While adopting the viewpoint represented by R. Dziemianowicz [Dziemianowicz, 2015] the Authors assumed that all the reliefs being present in the structure of Polish personal income tax, in general, may be divided into three groups when the purpose of a certain relief is considered as the criterion of a specific relief. The first group, the so-called basic tax structure, includes those tax reliefs that may be used by a taxpayer irrespective of the source, the form and the value of the achieved income (directed at all taxpayers) and reliefs used in order to prevent the double taxation of incomes. Administrative simplifications are the group comprising those tax reliefs:

- that enable the realization of the rights acquired by taxpayers and resulting from the regulations of the national law;
- that enable the realization of the rights acquired by taxpayers and resulting from the regulations of international law and international agreements;
- by means of which the state resigns from the taxation of benefits from public funds that are theretofore given to taxpayers (in the form of direct public expenditures);
- by means of which the state resigns from the taxation of incomes (revenues), the collection cost of which is higher than the tax burden connected with it.

*Tax expenditures* denote those tax reliefs that may be used by a taxpayer when the conditions resulting solely from the provisions of law have been met (the objectives realized by the expenditures of this type have non-fiscal character and in most cases they may be replaced by direct public expenditures).

At the same time the Authors imply that the objective realized by a certain type of reliefs, i.e. the reliefs qualified as the basic structure of tax, administrative simplifications and *tax expenditures*, does not have any impact on the behavior of taxpayers. On the other hand however, the type of a relief is important from the point of view of fiscal consequences of introducing it and the actual losses of the tax being paid, therefore it enables the verification of the significance and degree to which the objectives set by politicians during the election cycle are realized.

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<sup>1</sup> The research was conducted within the grant finance by the National Science Centre offered on the basis of the decision no. DEC-2011/01/B/HS4/02878.

The assessment of the occurrence of the political election cycle was preceded by the identification of an adequate election cycle. Its proper isolation appears to be indispensable from the perspective of achieving the main research objective.

**TABLE 1**

**Election cycle in parliamentary elections in Poland in the years 1991-2018**

| Years | Elections | Cycle phase | Years | Elections | Cycle phase |
|-------|-----------|-------------|-------|-----------|-------------|
| 1991  | +         | w+2*        | 2005  | +         | w           |
| 1992  |           | w+1         | 2006  |           | w+1         |
| 1993  | +         | w+2*        | 2007  | +         | w+2*        |
| 1994  |           | w+1         | 2008  |           | w+1         |
| 1995  |           | w+2         | 2009  |           | w+2         |
| 1996  |           | w-1         | 2010  |           | w-1         |
| 1997  | +         | w           | 2011  | +         | w           |
| 1998  |           | w+1         | 2012  |           | w+1         |
| 1999  |           | w+2         | 2013  |           | w+2         |
| 2000  |           | w-1         | 2014  |           | w-1         |
| 2001  | +         | w           | 2015  | +         | w           |
| 2002  |           | w+1         | 2016  |           | w+1         |
| 2003  |           | w+2         | 2017  |           | w+2         |
| 2004  |           | w-1         | 2018  |           | w-1         |

where: w-1 – pre-election year, w – election year, w+1 – the year after the election year, w+2 – the year that is two years after the election year.

\*Although parliamentary elections were held 1991, 1993 and 2007, these years were not classified as the election years. It was caused by the fact that the elections were not planned in those years and they took place as the result of the shortened parliamentary term of Sejm [Sejm resolution of 21 September 1990; The Resolution of the President of the Republic of Poland of 29 May 1993; The Resolution of the President of 7 September 2007]. According to the Authors, owing to this fact the authorities had no possibility to plan the fiscal policy for the year as the “policy of the election year”. Therefore, these years may not be considered as the election years in the light of the political theories of budget cycles.

Source: own elaboration.

In Poland there are presently conducted four types of elections: parliamentary elections and local elections on the four-year cycle, whereas both presidential elections and elections to the European Parliament are held on the five-year cycle. However, one needs to observe that the results of not all elections have influence on the personal income taxation in Poland. Art. 217 of the Constitution of the Republic of Poland “the imposition of taxes, other public ones, the specification of the entities and subjects of taxation as well as the tax rates and the principles of granting reliefs and write-offs and the categories of entities exempted from payment of taxes takes place by law” [The Constitution ..., 1997]. According to the Authors, such state of

affairs indicates that self-government institutions, the President of the Republic of Poland and the European Parliament do not have real impact on the taxation of personal incomes in Poland. Owing to this, the assessment of the occurrence of political budget cycle on the basis of local elections, presidential elections and the elections to the European Parliament does not appear to be justified substantially. Therefore, those three types of elections were excluded from analysis in the stage of identifying the election cycle.

The election cycle was divided into 4 one-year phases (table 1): pre-election year ( $w-1$ ), election year ( $w$ ), a year that occurs one year after the election year ( $w+1$ ), a year that occurs two years after the election year ( $w+2$ ).

The assessment of the occurrence of dependencies between the identified election cycles and the state of public finance was made on the basis of the linear econometric model of the trend function (1) representing changes over time as regards the number of reliefs in the personal income tax in Poland overlapping with cyclical fluctuations having the duration of one election cycle while using the quotient indicators of seasonality.

$$y_{t_{l_j}} = (\beta + \alpha t_{l_j}) w_j + \varepsilon_{t_{l_j}} \quad (1)$$

where:  $y_{t_{l_j}}$  – the value of selected statistics illustrating the state of public finance in Poland in year  $t_{l_j}$  ( $j$  phase of  $l$  cycle);  $w_j$  – the indicator of seasonality for  $j$  phase of each cycle,  $\beta, \alpha$  – regression coefficients,  $\varepsilon_{t_{l_j}}$  – random element.

The occurrence of cyclicity has been verified by comparing the average percentile error in the estimate (2) between the model with cyclical fluctuations and the model of trend that does not take into account. In the situation where the model taking into account cyclical fluctuations was characterized by larger precision of the estimate than the model that does not take them into account, the occurrence of cyclicity was observed. Otherwise, there was noticed the lack of cyclicity.

$$MAPE = \frac{1}{n} \sum_{t=1}^n \left| \frac{y_{t_{l_j}} - \hat{y}_{t_{l_j}}}{y_{t_{l_j}}} \right| * 100\% \quad (2)$$

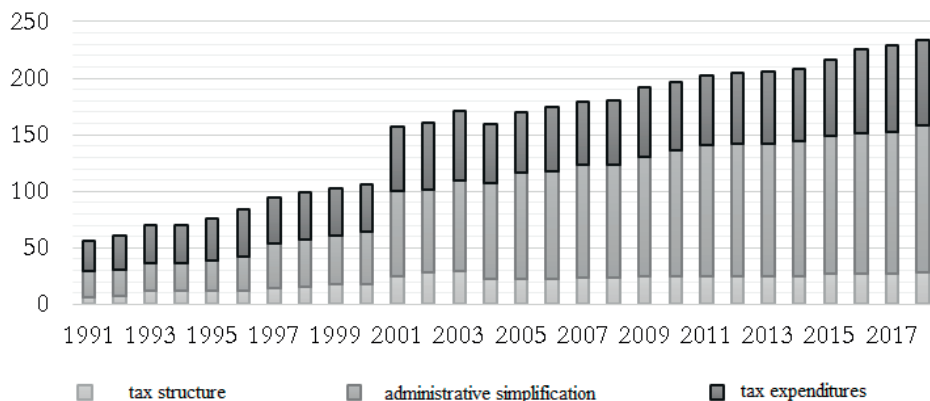
where:  $MAPE$  – the average percentile error in the estimate;  $y_{t_{l_j}}$  – the value of selected statistics illustrating the state of public finance in Poland in year  $t_{l_j}$ ;  $\hat{y}_{t_{l_j}}$  – value  $y_{t_{l_j}}$  estimated in the model.

#### 4. Results

The number of tax reliefs in the personal income tax increased in the years 1991-2018 (chart 1). The total number of reliefs increased from 56 in 1991 to 234 in 2018, i.e. more than four times. The largest increase could be observed at the turn of 1996 and 1997, when the number of reliefs in PIT increased by 51. The only decrease was observed at the turn of 2003 and 2004. The number of reliefs decreased by 11.

CHART 1

## The number of tax reliefs in PIT in Poland in the years 1991-2018



Source: own elaboration.

The structure of reliefs in PIT from the point of view of the realization of public expenditures has also been changed in the analyzed period. In 1991 the largest groups of reliefs included 26 preferences of *tax expenditures* type (which constituted 46.4% of all the reliefs) and 24 administrative simplifications that constitute 42.9% of all the reliefs. The smallest group included reliefs in the tax structure (there were only 6 of them, which constituted 10.7% of all the reliefs). In 2018 the largest group comprised administrative simplifications – there were 130 of them, i.e. 55.6% of all the reliefs. This group of reliefs increased almost five times in the analyzed period. The number of *tax expenditures* increased almost three times and in 2018 the number of them was 76, which constituted 32.5% of all the reliefs. The share of reliefs in the tax structure has not changed considerably in the analyzed period and in 2018 it amounted to 12% in the situation of having 26 reliefs.<sup>2</sup>

The results of the estimate made on the basis of the constructed models indicate clearly the increasing tendency of the number of reliefs in PIT, with insignificant cyclical fluctuations that are not higher than 10% in case of any category of reliefs (chart 2, table 2). The total number of reliefs in the personal income tax increased in the years 1991-2018 at the average rate of 6.9 new reliefs each year. At the same time in the pre-election year the upward trend slowed down by 3.6%. Adversely, in the election year the upward trend clearly accelerated and remained at the level of 4.9% above the trend line and either one year or two years after the elections it slowed down and evolved in an ordinary way. A similar situation could be observed also in case of all the categories of reliefs. The number of reliefs in the structure of tax increased at the average rate of 0.7 of the relief annually and in the pre-election

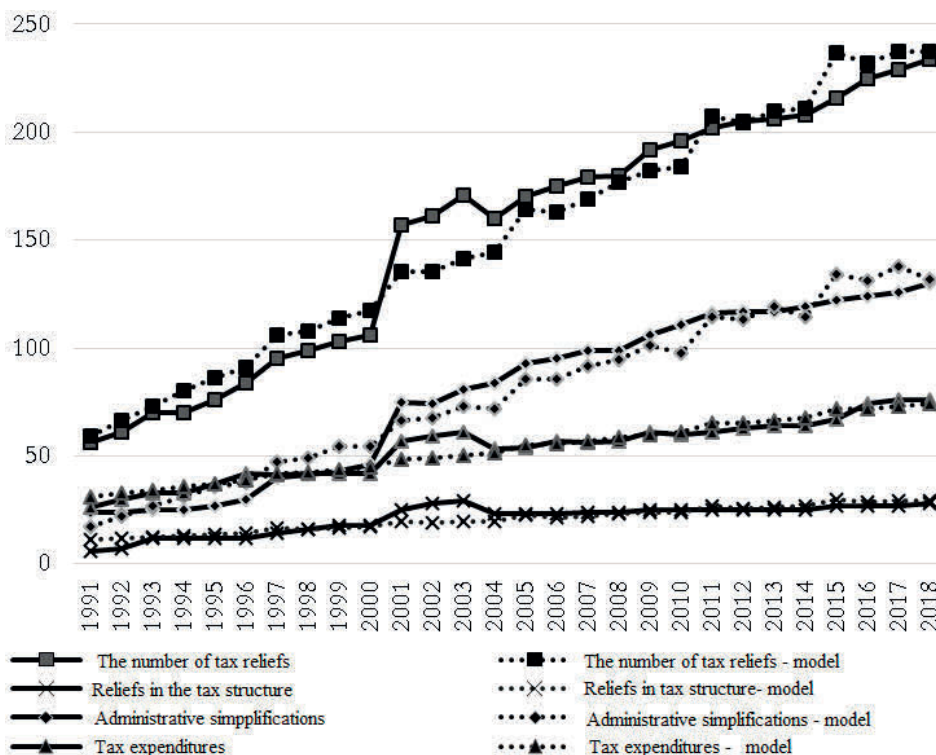
<sup>2</sup> The calculations were based on the research conducted within the grant financed by the National Science Centre and given on the basis of the decision No DEC-2011/01/B/HS4/02878.



year there was also observed decrease in the rate at which the number of reliefs increased by 3.2% below the value resulting from the trend line, whereas in the election year its increase by 6% above the development trend. The number of administrative simplifications increased at average rate (4.6 of the relief annually), whereas the rate of growth also slowed down in the pre-election year (-6,5%) and increased in the election year (+5.4%). Additionally, in case of such reliefs as *tax expenditures* there could be observed a similar tendency, but owing to the value of the estimation error was higher than in case of the linear model. Therefore, the occurrence of cyclicity in the number of *tax expenditures* ought to be questioned and this fact does not enable the interpretation of results for this category of reliefs.

**CHART 2**

**The number of tax reliefs in PIT in Poland in the years 1991-2018**  
– the results of the estimate on the basis of the trend model  
with cyclical fluctuations



Source: own elaboration.

TABLE 2

**The occurrence of cyclicity with regards to the number of tax reliefs  
in PIT in Poland in the years 1991-2018**

| Relief type | MAPE                    |                            | The occurrence of cyclicity | Cyclicity indicators |        |        |        |
|-------------|-------------------------|----------------------------|-----------------------------|----------------------|--------|--------|--------|
|             | Model with fluctuations | Model without fluctuations |                             | w-1                  | w      | w+1    | w+2    |
| <b>NTR</b>  | 7.40%                   | 7.76%                      | YES                         | 0.9635               | 1.0487 | 0.9971 | 0.9906 |
| <b>RTS</b>  | 15.02%                  | 15.06%                     | YES                         | 0.9681               | 1.0604 | 0.9907 | 0.9808 |
| <b>AS</b>   | 12.04%                  | 12.41%                     | YES                         | 0.9346               | 1.0545 | 0.9975 | 1.0134 |
| <b>TES</b>  | 5.92%                   | 5.80%                      | NO                          |                      |        |        |        |

where: NTR – the total number of tax reliefs, RTS – reliefs in the tax structure, AS – administrative simplifications, TES – *tax expenditures*.

Source: own elaboration.

The slowdown of the rate at which the number of tax reliefs in the pre-election year increases and its acceleration in the election year enable drawing an essential conclusion. Such state of affairs may be caused by the intentional postponing of the moment of introducing tax reliefs from the pre-election year into the election year. Having the perspective of the subsequent years, the ruling parties may postpone the moment of introducing the previously planned tax reliefs into the period that is possibly close to the date of elections. In accordance with the theory of opportunist political budget cycle, the authorities are eager to guarantee being re-elected by gaining the votes of electors through slacking the fiscal discipline, which in this case is manifested in new tax reliefs.

The lack of cyclicity in case of the relief of *tax expenditures* type may also indicate the occurrence of the opportunist political budget cycle in Poland. Owing to the fact that such preferences as *tax expenditures* are most frequently directed at a certain group of taxpayers and have major impact on their tax burdens, the authorities may be more willing to introduce in election years reliefs in tax structure and also administrative simplifications that regard a large group of taxpayers and are connected with less burden for the state budget. Such state of affairs indicates the occurrence of two more features of the opportunist political budget cycle in Poland: competent and opportunist parties and irrational electors. Firstly, the ruling parties having the awareness of the budget burden in the form of various reliefs and in their aspiration to obtain the largest possible number of votes they attempt to introduce reliefs that comprise the largest number of electors but at the same time are possibly the least burdensome for the budget (reliefs in the tax structure and administration simplifications). Secondly, while deciding to take such action, the ruling parties predict low level of the electors' awareness of the impact that the introduced preferences may have on their real tax burdens and on their susceptibility to the procedures "gaining votes" in the form of new tax reliefs, i.e. irrationality of electors.

## 5. Conclusions

The conducted research enabled confirmation of the occurrence of cyclical character of the number of reliefs in personal income tax in Poland in relation to the parliamentary elections in the years 1991-2018. Such results enable positive verification of the research hypothesis made in the research.

In-depth analysis of tax reliefs enabled also the confirmation of cyclicity as regards two (out of three) tax reliefs mentioned in the research: administrative simplifications and reliefs in the tax structure. The cyclicity in relation to parliamentary elections has not been observed in case of reliefs referred to as being of *tax expenditures* type. According to the authors such results may indicate the occurrence of the opportunist political budget cycle within personal income taxation in Poland, which is characterized by the lack of ideological premises in the realization of fiscal policy that in the pre-election period is directed mainly towards the obtainment of the largest number of votes in the forthcoming parliamentary elections. This is conditioned by major differences between the first two categories of reliefs and the reliefs of *tax expenditures* type. Namely, administration simplifications and reliefs in the tax structure are characterized chiefly by lower burden for the budget and comprise more taxpayers. Such features contribute to the fact that politicians (even those unfamiliar with the classification) before the elections more eagerly decide to introduce the reliefs from the first two categories.

It is worth emphasizing that the occurrence of the political budget cycle in Poland is not a particularly odd phenomenon in the scale of the European Union or on the global scale. The subject literature presents research pointing at the occurrence of political budget cycle in the countries of the European Union [Ademmer, Dreher, 2016; Efthyvoulou, 2012], China [Tsai, 2016], India [Saez, 2016], or Turkey [Eryilmaz, Mercan, 2015].

However, one needs to remember that in all the aforementioned research authors focused on the analysis of the occurrence of the political budget cycle on the basis of the value of incomes and public expenditures. Thus, the undeniable advantage of this paper is the dynamic analysis of tax legislation, thanks to which it is possible to investigate the ways of determining the budget cycle through the election cycle, and not solely the symptoms of this dependence in the form of fluctuations of both incomes and expenditures of the state budget. Additionally, it needs emphasizing that the taxation of personal incomes is not the only sphere of public finance where one may observe the occurrence of the political budget cycle. Therefore, it is necessary to conduct further research on this subject that would comprise all the other methods of collecting and spending public funds in Poland.

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