Fiscal performance and elections in the context of a transition economy

Endrit Lami[1], Drini Imami[2], Geoffrey Pugh[3], Iraj Hashi[3]

[1] Ministry of Finance and Economy of Albania,

[2] Agricultural University of Tirana and CERGE EI

[3] Staffordshire University

ABSTRACT

It is widely accepted that, in democratic societies, incumbent governments may use various means such as discretionary spending to increase their chances of re-election. In the context of potential budget constraints (e.g. large debt), the incumbent may consider alternative means. Tax revenue performance could be one such means prone to incumbents' electoral manipulations, particularly in the case of transition countries with a weak institutional framework. Investigating Albania, we show that fiscal performance, measured by monthly tax revenues, is poor before elections, especially in the case of elections that result in political rotation. Prior to "all elections" we observe a reduction in tax revenue growth ranging from 3.2 percentage points during the twelve months before elections to 4.0 percentage points during the six months before elections. This implies more than a halving of fiscal performance as compared to its long-term "natural" or average rate. Moreover, the deterioration in performance is considerably larger, double to triple, before "rotation elections". After elections, improved fiscal performance is observed. The key to reducing fiscal performance deterioration associated with elections is to establish rules and institutional supervision (independent or bipartisan) that reduce the discretion of tax authorities.

Key words: political budget cycles; fiscal performance; transition economies

JEL codes: D72; E62; P16; H26

1. INTRODUCTION

There is a large body of research investigating the use of fiscal and monetary instruments by incumbent governments to ameliorate macroeconomic outcomes before elections. In the political economy literature, this perspective is commonly referred to as the "political business cycle" (PBC), following the seminal paper of Nordhaus (1975). Governments may behave opportunistically and potentially inefficiently prior to elections, engaging in expansionary economic policies to increase output and decrease unemployment in order to please voters.

Tufte (1978) was the first to address the question of the instrument available to the government to generate economic expansion before the elections. If a cycle actually exists, it can be sought in the instruments of economic policy, which are by definition more directly controllable when compared to economic policy outcomes. Empirical tests of the PBC in instruments are much more convincing so that, nowadays, tests in relation to outcomes are scarce (Dubois, 2016). Government may use fiscal policies/instruments (which are within its domain) or monetary ones (conditioned by a number of factors, most notably the independence of the central bank). In this paper, we focus on fiscal policies – more specifically, on fiscal performance in conjunction with elections.

There are many studies empirically showing electorally-driven manipulation of the main fiscal policy instruments (i.e. public expenditure, budget balance). The occurrence and strength of manipulation of fiscal policy for electoral purposes is conditioned by the level of development, institutional quality, age and level of democracy, electoral rules and form of government, transparency of the political process, the presence of checks and balances, and fiscal rules (De Haan and Klomp, 2013). Stronger cycles are observed in the case of developing or transition countries with immature democracies.[1] Shi and Svensson (2006) suggest that institutional indicators (i.e. government corruption, rent-seeking activities and access to free media) can explain a large part of the differences in the size of policy cycles between developed and developing countries. While Alt and Lassen (2006) show the relevance of transparency, Brender and Drazen (2005) also emphasize the voters' lack of knowledge of the existence of political fiscal cycles in developing or transition countries, and the lack of institutional mechanisms to constrain discretionary expenditure policies and strengthen fiscal control, which can result in opportunistic policy making around elections (Schuknecht, 2000).

In the context of potential budget constraints (e.g. high debt), the incumbent may consider alternative strategies. Tax revenue performance could be one such area prone to incumbents' electoral manipulations, particularly in the case of transition countries (such as Albania) with weak institutional frameworks. Shifting toward a more relaxed attitude than is usually the case regarding tax effectiveness (i.e. tax collection and control) before elections could be both an effective way of creating economic stimulus and pleasing businesses with less interference and more tolerance from a benevolent government while, at the same time, remaining relatively beyond the scrutiny of the typical voter. Other factors, such as potentially higher corruption before elections, could also contribute to higher fiscal evasion before elections. In a context of high corruption and lack of punishment, and because of lack of effective oversight, corruption in government offices could increase before elections (Libman *et al*., 2012; Sidorkin and Vorobyev, 2018). After the election, we may expect tighter fiscal control by the incumbent, thereby a halt to further fiscal evasion, or an improvement in fiscal performance.

The question that naturally arises is: what is the mechanism at play that explains election related fiscal performance cycles? Tax evasion can be associated with or caused by reduced audits by tax authorities. Young *et al*. (2001) find that Internal Revenue Service audits adjust in conjunction to elections, being less intense in electorally sensitive districts in the USA. Firms can respond to looser monitoring by immediately underreporting actual sales, as suggested by Skouras and Christodoulakis (2014) in the case of Greece. Libman *et al*. (2012) show that, in the case of Russia, regional governors use tax audit control to extract private rents rather than

[1] Pre-election cycles in public expenditure have been documented also for the largest transition economies such as Russia (Akhmedov and Zhuravskaya, 2004) and even China (Tsai, 2016).

revenues for the regional budget used for public goods provision. Whereas Lami and Imami (2019) show significant deterioration of VAT revenue performance before elections in OECD countries - the magnitude of deterioration is higher in the younger democracies.

In the light of the above arguments, we analyze fiscal performance in conjunction with elections in Albania. Albania is a country prone to political budget cycles. Previous research on Albania found evidence of election-related influences on several fiscal policy instruments incurring significant expansions (Imami and Lami, 2006) as well as a significant increase in privatization income before elections (Lami *et al.*, 2016). In this paper, we cannot conclude to what extent the incumbent fiscal performance/enforcement behavior is driven by classical PBC motivation (e.g. stimulating the economy to please voters directly) or by corruption, which can increase before elections. Indeed, both motivations could co-exist in creating an electorally-induced cycle.

However, we can elaborate on the election cycle effects of the governing party's and/or the government officials' expectations of the results of elections. On the one hand, if the incumbent party anticipates losing office, it may engage in PBC behavior by relaxing its discretionary tax collection efforts (lowering tax collection has a similar effect to lowering tax rates in stimulating economic activity). On the other hand, if government officials anticipate a change in political control, and a consequent oversight vacuum, they might be engaged more easily in corrupt practices resulting in tax avoidance and embracing a more aggressive expansionary policy. These alternatives, of course, are not mutually exclusive. Therefore, in this paper, we distinguish between the election cycle effects associated with rotating – i.e. change of the party in office – and non-rotating elections. The paper makes an additional contribution to the PBC literature by investigating the election-related influences on fiscal performance (i.e. tax revenue collection before and after elections) in a transition economy.

We analyze monthly fiscal data on the main tax revenues (a time series with 246 observations covering five regular parliamentary elections). Using monthly data is in line with the best practices in this field of research, allowing for the inclusion of any inter-annual election effects. Empirical analysis based on annual data has been one of the serious drawbacks of many studies analyzing PBCs. The analysis of annual data often cannot capture the dynamics, especially when elections fall in the middle of the (fiscal) year (as in the case of Albania). Streb *et al.* (2012) argue that the failure of many studies to show econometrically significant opportunistic PBCs is due to their reliance on annual data. Streb *et al.* (2012) conclude that estimates from annual data strongly underestimate the presence of political budgetary cycles. Akhmedov and Zhuravskaya (2004) report a similar finding for Russia. Indeed, our findings clearly show a strong difference in fiscal performance during pre- and post-election quarters, robust to an alternative statistical setting, but which could not be clearly captured when the econometric analysis was replicated on annually collapsed data.

In the next section, we elaborate the background of the research by providing insight into the fiscal system in Albania and elections. Section three explains the data and methods used in the study. Section four provides the findings followed by the conclusions.

2. CONTEXT: THE ALBANIAN FISCAL SYSTEM AND ELECTIONS

After World War II, Albania emerged as a communist country, embracing a planned economy. Since the early 1990s Albania has experienced substantial political, institutional and socioeconomic changes, including drastic implementation of a free market economy entailing liberalization of trade policies, prices and internal markets. The first years of the transition were challenging. Output declined by almost 50 per cent from the end of 1990 to 1992, while inflation was at the 3-digit level (IMF, 1994). From 1993, the Albanian economy grew rapidly until 1997 when, due to the political and social instability initiated by the collapse of the pyramid financial schemes, it suffered a strong setback.

During the early phase of transition, Albanian politics was dominated by two large parties, the leftist Socialist Party (SP) and, on the right, the Democratic Party (DP). The DP governed the country during 1992 – 1997. Following the 1997 social unrest (and during the timespan of our analysis), the SP governed Albania for two mandates until 2005. The break-up of the SP just one year before 2005, giving birth to the Socialist

Movement for Integration (Lëvizja Socialiste për Integrim – LSI), caused an anticipated rotation, bringing into power the DP.[2] The DP governed the country for 2 mandates, until 2013. The 2013 elections resulted in a landslide win for the SP-led socialist coalition, which was already predicted by pre-election polls (Gazeta Shqip, 2013).

In Albania, taxes are levied by both central and local governments. By far the most important revenue sources are those levied by the central government. The main taxes levied at the central level include the value added tax at a standard rate of 20 percent applied to almost all goods and services with a few exceptions having a reduced rate (e.g. medicinal products – 10 percent), income tax which is progressive with three brackets[3], and corporate tax at a flat rate of 15 percent. Excise tax and national taxes (i.e. royalties on natural resources) are also other significant sources of tax revenues levied by the central government, with the main products subject to excise tax being fuel, tobacco, alcohol and coffee.

The institution in charge of tax control/inspection is the General Directorate of Taxation. Its director is appointed by the government. Typically, when there are governmental changes, the General Directorate of Taxation director and other senior staff and, to some extent, even lower level officials have been replaced in the past. The following illustrates the level of politicization of the tax authorities in Albania. The Minister of Finance (who was a technocrat at that time, appointed by an ad-hoc political agreement between the incumbent and the opposition), during June 2017 (the month when the last parliamentary elections took place) publicly declared: "… that (some) tax inspectors were exerting pressure through fines on taxpayers (private companies) by maintaining selective attitudes towards them based on their party affiliation" (Balkanweb, 2017). This highlights the political partisanship among tax authority staff and is consistent with previous research in other countries (see e.g. Libman *et al*., 2012).

A low-middle-income economy, Albania is still faced with high levels of political corruption and weak institutions. It has been characterized as a democracy without the rule of law, while the personalization of politics and institutions have been seen as an enduring feature of Albania's transition to a market economy and democracy (UNDP, 2016).

In this environment, the incumbent government's discretion over policy instruments may be particularly high, which has strong implications also for elections. Opportunistic PBC strategy and corrupt/clientelistic motives can explain expansionary policies before elections. Indeed, corruption, clientelism and informality are perceived to be linked to election cycles. Findings from a previous study on Albania confirm that most entrepreneurs perceive that there is a higher level of informality before elections, while almost one-third perceive that there is higher corruption before elections. More than 25 per cent foresee higher fiscal enforcement after a new government is formed, only 10 per cent before elections, and very few (two percent) during the post-election transition period while the new government is formed. Fewer than 25 per cent perceive that fiscal performance is not related to elections (Imami, 2015).

We assume that incumbent governments tend to "discipline" tax payers mainly through fines. Accordingly, income from fines is an indicator of the incumbent's fiscal performance enforcement. The data show that income from fines collected through fiscal authorities' inspections, which are mostly at the discretion of the respective authorities, significantly reduce during pre-election periods, most notably during the six and three months prior to elections. Conversely, fines from the electronic tax system, which are broadly generated on an automatic basis, do not seem to follow the election-related cyclical pattern of inspection-generated fines, which are at the discretion of tax inspectors/police.

Figure 1 derives from a monthly time series of fines in nominal values levied from January 2010 to December 2019, i.e., a period including two parliamentary (general) elections, June 2013 and June 2017. It shows the monthly average value of fines collected at different time intervals before and after elections. Specifically, on the horizontal axis, we have graphically defined three consecutive semi-annual (six monthly) time intervals before and after elections. These are respectively labelled as *6M(-3)* for the third, most-distant

[2] "Rotation" characterises an election in which at least the main party of the incumbent coalition lost office and the political opposition formed the new government; and "non-rotation" refers to an election in which at least the main party of the incumbent coalition was re-elected.
[3] For monthly income 0 to 30,000 Lek the rate is 0 percent; from 30,000 to 150,000 Lek is 13 percent; and above 150,000 Lek is 23 percent.

semi-annual time interval before elections; *6M(-2)* for the second most distant semi-annual time interval before elections; and *6M(-1)* for the least distant semi-annual time interval before elections. In other words, the semi-annual time intervals represent, respectively, the 18^{th} –13^{th} months, the 12^{th} – 7^{th} months and the 6^{th} – 1^{st} months before elections. Conversely, *6M(+1)*, *6M(+2)* and *6M(+3)* symmetrically point to the consecutive semi-annual time intervals after elections. In addition, on the horizontal axis we have also graphically defined quarterly (three months) time intervals just immediately before and after elections, respectively labelled *Q(-1)* and *Q(+1)* around the grey line representing election days.

It is evident from Figure 1 that fines collected from authorities' inspections drop considerably before elections, from a monthly average of Albanian Lek (ALL) 13.1 million during the third semi-annual time interval before elections *6M(-3)* to ALL 6.7 million in *6M(-1)*; and even more to 5.8 million during the immediate pre-election quarter *Q(-1)*.[4] In contrast, Figure 1 indicates a reversing trend in the aftermath of elections. Such an evident pattern of fiscal fines suggests that the authorities do exploit their discretion to inspect tax compliance in conjunction to elections. This observation is highlighted by contrast with the other type of fines presented in Figure 1, i.e. those from the electronic tax system, which have less scope for discretionary manoeuvre by the incumbent authorities and, therefore, appear to be somewhat flatter around elections. We replicated this descriptive analysis on seasonally adjusted data to rule out any influence of seasonal factors and we got practically the same results.[5] We carry out only descriptive statistical analysis for the collected fines time series as it is short (in depth econometric analysis would best be carried out using a longer time series with at least double the number of observations and elections included). However, the election pattern in the fines data emerges sufficiently clearly from the data available to reveal a plausible indication of an election-related effect. Of course, although the conclusions of this paper are consistent with indications from Figure 1, they do not depend on this descriptive analysis.

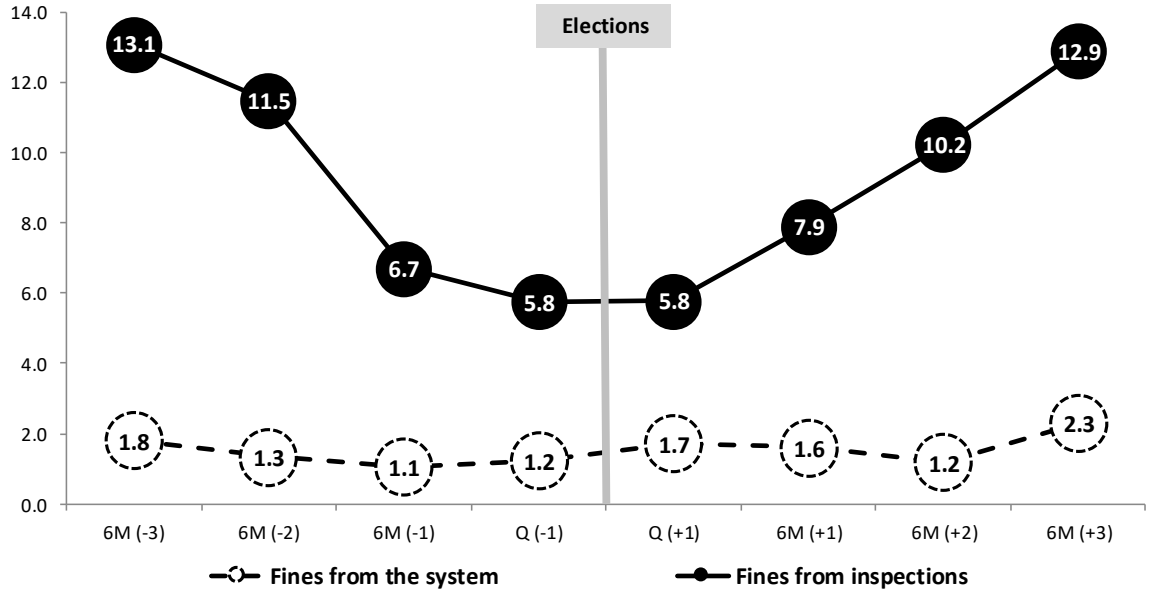


Figure 1. Monthly average collected fines before and after all elections by type of fines (ALL millions)
Source: Ministry of Finance and Economy (data provided upon request)

Since fines collected from inspections seem to go through an electoral cycle, in Figure 2 we take another look at the outcomes, now distinguishing by type of elections. We observe that fine receipts from inspections decrease before both types of elections (rotating and non-rotating); however, compared to the mean receipts, the

[4] The approximate exchange rate is $1=ALL 110.
[5] The X-12-Census seasonal adjustment method incorporated in *EViews-7* statistical software is used for the seasonal adjustment.

contraction is obviously stronger in the case of elections resulting in a political rotation as contrasted to those elections not yielding rotation. In the case of "no-rotation" elections, one quarter before elections, the level remains not far from the long-term average (fine receipts drop to ALL 7.5 million while the sample mean is 10.2 million). In contrast, the drop is sharper in the case of "rotation" elections. Improvement is observed after both types of elections.

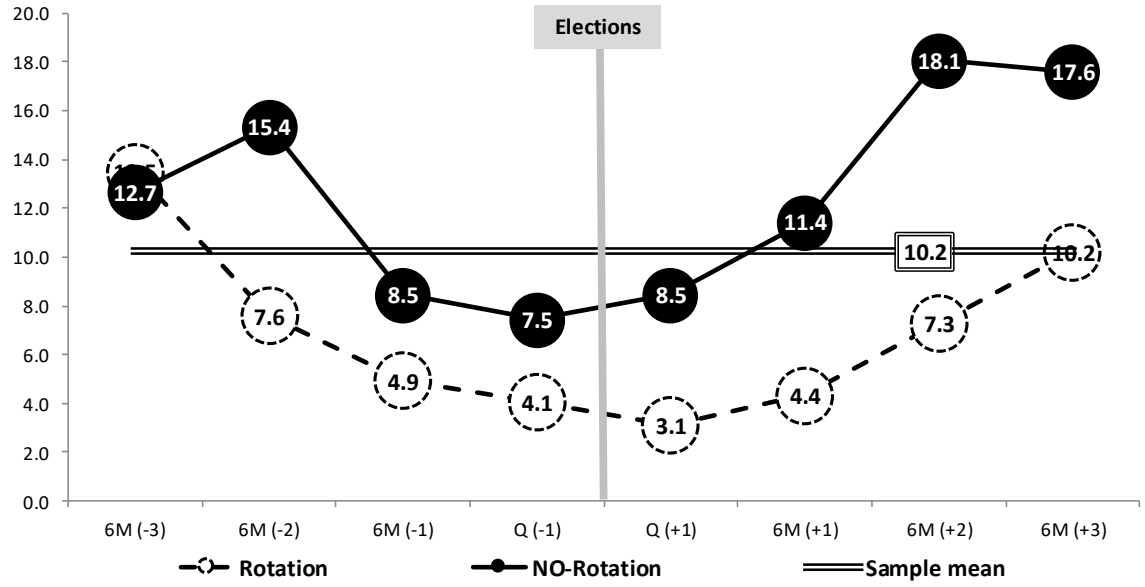


Figure 2: Monthly average inspection collected fines by type of elections (ALL millions)
Source: Ministry of Finance and Economy (data provided upon request)

The above descriptive analysis indicates election related cycles in the enforcement of fiscal performance (reflected in the collection of fines), which naturally is expected to impact directly on fiscal performance, namely tax revenues. We continue our investigation by means of an econometric analysis of fiscal performance (i.e. tax revenues) in the following sections. While the monthly fines time series was subject only to descriptive analysis, we carry out econometric analysis of the tax revenues, as it is the main focus of this research and a sufficiently long time series is available for this variable, as shown below).

3. DATA AND METHOD

We statistically test the hypothesis that tax revenues decrease significantly before general (parliamentary) elections in Albania.[6] The main sources of tax revenues are VAT, Corporate Income tax, Personal Income tax and Excise tax, the collection of which is highly affected by fiscal enforcement. Monthly time series data on tax revenues obtained from the central government fiscal statistics were employed to test this hypothesis.[7] Monthly data, in addition to providing more robust statistical results, due to a higher number of observations (compared to annual data), most importantly allows for the inclusion of any inter-annual election effects. As highlighted in the Introduction, empirical analysis based on annual data has been a serious drawback of many empirical studies analyzing several aspects of PBC. We show this to be also the case in this article, by comparing the results obtained from analysis of monthly data with those from the analysis of the annually collapsed data. On the other

[6] Albania is a parliamentary republic (parliament appoints both the executive/government and the president). Consequently, parliamentary elections are by far the most important elections.
[7] Data on total tax revenue are sourced from the Ministry of Finance and Economy of Albania and include revenues from VAT, Corporate Income/Profit tax, Personal Income tax, Excise tax, National taxes and Custom Duties.

hand, one of the potential problems associated with monthly time series (or, generally, with any inter-annual frequency data) is the possible existence of seasonality patterns, which if not addressed could distort the results. We address this potential drawback, as explained below.

The available time series of tax revenues includes 246 observations, from January 1999 to June 2019. The data are denominated in millions of Albanian Lek (ALL). Five parliamentary (general) elections were held during this period, whose expected effect on tax revenues is statistically captured by several dummy variables, constructed as explained below. Parliamentary elections were held on: *24th of June 2001; 3rd of July 2005; 8th of June 2009; 23rd of June 2013; and 25th of June 2017* – all of them were regular elections (no early/snap elections have taken place during this period in Albania).

We test the hypothesis of this paper by utilizing Intervention Analysis as the main econometric tool, which is based on the Box and Tiao (1975) methodology. This econometric approach has been applied in several similar works on political business cycles or other fields with the same statistical inquiry objective of analysing the impact of a known event on a social or a natural time process.[8] There are not many appropriate controlling variables available in monthly frequency time series for this analysis. Hence, another main reason we opt to employ Intervention Analysis as our primary statistical framework is due to its advantage of enabling reliable econometric modelling even in the absence of such explanatory variables, as the time process could be modelled by its own autoregressive and moving average components *(ARMA)*. However, as explained below, we conduct thorough robustness checking for our findings by replicating all the analysis using linear regression modelling, including modelling with the data collapsed to quarterly frequency to utilise additional and more appropriate control variables available at quarterly frequency.

Basically, the test in the Intervention Analysis proceeds by modelling the variable of interest (i.e. the real growth of tax revenues) by an appropriate autoregressive moving-average model (*ARMA*) and an intervention term. The intervention term models the time distance to each election day and captures any potential effect of elections on the variable of interest. The intervention term that models "the event" – the approaching elections in this case – could be considered as an explanatory variable capturing the dynamics of the dependent variable in addition to its "natural" pattern, which is modelled by the appropriate *ARMA (p,q)* specification (where *p* refers to the order – number of lags – of the autoregressive component, and *q* to the order of the moving-average component). Intervention terms employed in this analysis consist of several dummy variables modelling different periods prior to and after elections. We call these variables "Electoral dummies" (*ED*s). Therefore, if the estimated parameter of a particular *ED* variable were to both prove statistically significant and have the anticipated sign, that would be empirical evidence in support of the hypothesis of this paper.

We define four Electoral Dummy (*ED*) variables for different time intervals preceding elections and four others for symmetrical time intervals after elections. *ED*s employed in the analysis are formally defined as follows:

$$ED_{(\pm j,t)} = \begin{cases} 1: \ for\, all\ months\ up\ to\ and\ including\, the\ \pm j^{th}\ month \\ \quad before(-j)\ or\ after(+j)\ elections \\ \\ 0: \ otherwise \end{cases} \quad , \quad j \in [3; 6; 9; 12]$$

The methodology allows also for augmentation of the statistical model with other explanatory variables, which, referring to theory, could be considered relevant to explain any degree of variation in the dependent variable. These augmented models are known as *ARMAX (p,q,m)*, where "*X*" denotes the presence of (*m*) other explanatory variables. We employ this type of model for the main statistical setting of our analysis, including as additional explanatory variables: the Retail Trade Index (*RTI*), in constant prices; exports of oil and minerals, in

[8] See, for example, McCallum (1978), Hibbs (1977), Alesina and Sachs (1988), Mills and Mills (1991), Alesina and Roubini (1992), Yoo (1998), Gilmour *et al*. (2006), and Sarfo *et al*. (2016). For a comprehensive and practical explanation of Intervention Analysis, see Enders (2015).

constant prices; and the Lek/Euro real effective exchange rate *(REER)*.[9] Based on theoretical and intuitive reasoning, the explanatory variables are included either with a time lag of one period (when monthly data were employed) or as time contemporary variables (when quarterly or annually collapsed data were employed). (Detailed descriptions for all variables employed in all estimated models are to be found in Table 8A of Appendix). [10]

In the absence of appropriate monthly time series data on more direct variables to control for economic activity, such as *GDP* or final consumption, the *RTI* makes a reasonable proxy variable.[11]

Exports of crude oil and minerals constitute a considerable share of Albania's total exports (on average about 20% per year during the sample period) and, therefore, a significant base of tax revenues through royalties, (national) tax, profit tax and personal income tax. Accordingly, we control for the typically volatile prices of these commodities in international markets and, therefore, their direct and swift impact on tax revenues whenever such volatilities take place.

About half of total tax revenues are collected at the customs from taxes levied on imports (VAT, Excise, Custom duties and other national taxes). The final taxed value of imports denominated in the national currency (Lek) depends on the original price denominated in the foreign currency – Euro is the dominant foreign trade currency in Albania – and on the nominal exchange rate (Lek/Euro). Therefore, given that Albania has a free-floating exchange rate regime, which fluctuates from time to time, we include the Lek/Euro real effective exchange rate as an explanatory variable in our statistical model specification.

In the Box-Jenkins methodology of ARMA modelling (Box and Jenkins, 1970), one key prerequisite is the stationarity of the time process being modelled (i.e. the dependent variable), as well as all explanatory variables in the model, if any. The original level time series of tax revenues, at constant prices, is non-stationary according to all the statistical tests employed and also clearly visible from the right-hand graph of Figure 3, having an upward trend as well as the presence of seasonality patterns. The same is evident for the time series of the explanatory variables employed. Therefore, we algebraically transformed the original series of monthly tax revenues at constant prices by taking its 12^{th} lag difference in natural logarithms, which approximately equals the year-on-year real growth of monthly tax revenues. We made the same transformations for the other monthly explanatory variables (see Table 7A in the Appendix for the transformations made to each variable). Then we checked again for the stationarity of each transformed time series, utilizing several unit root tests, and also checked for the presence of any seasonality. The variable of interest (i.e. the real growth of tax revenues) as well as the explanatory variables (i.e. the real growth rates of RTI, exports of oil and minerals, and the effective exchange rate) were all stationary processes and without any pattern of seasonality, which is usual for series of year-on-year growth rates.[12]

The left-hand graph in Figure 3 presents the time series of our variable of interest, namely year-on-year real growth rates of monthly tax revenues (i.e. the twelve-lag difference of the natural log of tax revenues in constant prices). While the right-hand graph shows the level of tax revenues in constant prices measured in ALL billions. The election dates are depicted by the dashed vertical lines. Already, from an eyeballing of the left-hand graph in Figure 3, it is possible to distinguish decreasing patterns during certain time periods anticipating elections and a pick up afterwards.

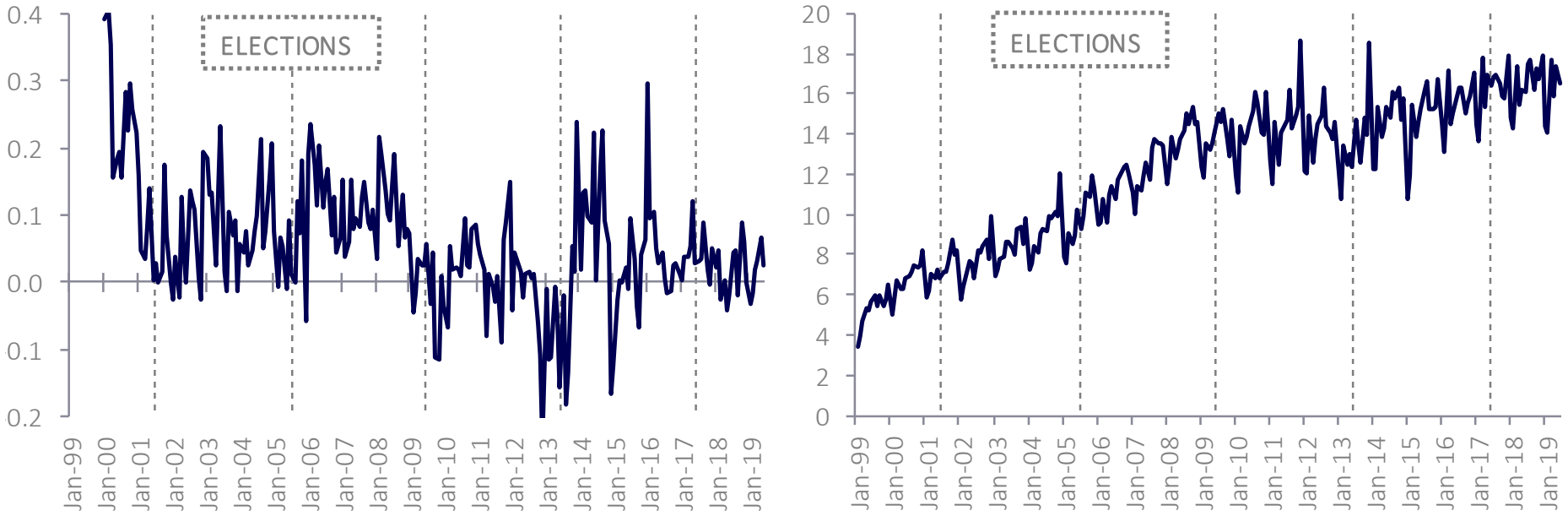
[9] Monthly time series starting from January 1999 on RTI and exports of oil and minerals are sourced from the Institute of Statistics of Albania; the REER is sourced from the Bank of Albania.

[10] The short forms of the variables match the dataset, which is available on request. All of the transformations and estimates reported in this paper can thus be easily checked and/or extended.

[11] There are no monthly time series available for GDP or final consumption.

[12] We tested the null of a unit root for all transformed variables by two statistical tests, the Augmented Dickey-Fuller test and the Philips-Perron test, for each of the series. The unit-root null was rejected at conventional levels of significance in all cases. We also tested the null of stationarity by the Kwiatkowski-Phillips-Schmidt-Shin test, which was not rejected even at the 10% level of significance (e.g., for the dependent variable the asymptotic critical value for the 10% level of significance is 0.119, while the test value was 0.093). In addition, all tests employed for the presence of seasonality (i.e. F-tests, the nonparametric Kruskal-Wallis test, and the Moving seasonality test) rejected the seasonal null at the 1% level.

Figure 3: Monthly real tax revenues (left: 12th lag difference of the inflation adjusted log-level, i.e. approximate percentage changes; right: ALL billion, inflation adjusted)



An additional aspect we thought worthy of further investigation is to distinguish between those elections that led to a political rotation of power, and those that did not ("rotation" and "non-rotation" are defined in Footnote 2, above). In line with the discussion in the Introduction, our hypothesis is that fiscal performance is poorer before elections resulting in political rotation.

From five parliamentary elections during the investigated period, two produced a rotation in power (i.e. the elections of June 2005 and July 2013), which for simplicity we refer to as "rotation elections". Conversely, in the other three elections the incumbent, or at least the main party of the incumbent coalition, was re-elected. One should note that the main party in a government coalition always controlled both tax and customs administrations. These are formally defined as follows:

$$ED\_Rot_{(\pm j,t)} = \begin{cases} 1: \text{ for all months up to and including the } j^{th} \text{ month} \\ \quad \text{before}(-j) \text{ or after}(+j) \text{ those elections which} \\ \quad \text{led to political rotation} \qquad , j \in [3;6;9;12] \\ 0: \text{ otherwise} \end{cases}$$

$$ED\_No\_Rot_{(\pm j,t)} = \begin{cases} 1: \text{ for all months up to and including the } j^{th} \text{ month} \\ \quad \text{before}(-j) \text{ or after}(+j) \text{ those elections in which} \\ \quad \text{the incumbent was re-elected} \qquad , j \in [3;6;9;12] \\ 0: \text{ otherwise} \end{cases}$$

The formal representation of the intervention analysis in this study is:

$$y_t = a_0 + \sum_{i=0}^{p} a_i y_{t-i} + \sum_{i=0}^{q} \beta_i \varepsilon_{t-i} + \omega_{(\pm j)} ED_{(\pm j,t)} + \sum_{k=1}^{m} \sum_{i=0}^{n} \phi_k x_{k,t-i} \ , \quad j \in [3;6;9;12]$$

where y_t denotes the year on year growth in each month of real tax revenues and *t* indexes months; a_0 is the constant term; a_i and β_i are, respectively, the *i* autoregressive *(AR)* and moving average *(MA)* parameters of the *p* AR lags and *q* MA (ε) terms in the *ARMAX (p,q,m)* model, which model the "natural" dynamics of tax revenue growth; ω_j are the parameters that capture any opportunistic effects of approaching elections (i.e. "events") on the variable of interest, namely real tax revenues growth; and the parameters ϕ_k model the effect of x_k, where *k* is the number *(m)* of additional explanatory variables. The latter could be either contemporaneous variables *(i = 0)* or variables with a time lag *(i =1,…, n)*. In this case; with monthly data, *k* = 3: i.e. $RTI_{(t-1)}$; $oil\_min\_export_{(t-1)}$; and $exch\_rate_{(t-1)}$. Therefore, the parameters ω_j measure the effects of the interventions (events) and are estimated along with the parameters of the *ARMAX* components. The estimation procedure provides estimates of ω_j as well the corresponding confidence intervals. The probabilistic distribution of each estimator (ω_j) is a *t-distribution* allowing for straightforward testing of our hypothesis.

We follow the Box-Jenkins methodology (Box and Jenkins, 1970) to identify and estimate the most appropriate *ARMAX(p,q,m)* model for the time process of interest, namely, the year on year growth of real monthly tax revenues. The most appropriate *ARMA (p,q)* components of the ARMAX model tentatively found for the variable of interest was an *ARMA(12,1)* specification; i.e. a first lag moving average term (*MA1*) and an auto regression term of lag twelve (*AR12*), the latter modelling any potential "base effect" typically present in year-on-year monthly growth time series. We reached this econometric conclusion following the Box-Jenkins methodology, which consists of an iterative three-stage process of: (i) model identification; (ii) parameter estimation; and (iii) assessing the model's

diagnostics. Several conventional criteria and diagnostic tests were employed throughout this iterative procedure.[13]

Each pair of symmetrical *pre-* and *post*-elections dummy variables as defined earlier (*EDs*) were introduced one at a time in the "best" *ARMA(12,1)* model.[14] Including also the year-on-year growth rates of *RTI, Exports of crude oil and minerals*, and *Exchange rate* (all lagged by one month) as additional controlling variables, all parameters of each final comprehensive *ARMAX* model were estimated simultaneously. If the respective *ED* estimates have the expected sign (in line with our hypothesis), then the statistical significance of the electoral dummy variables, tested through a *t*-test, reveals whether there is indeed any supposed impact of the elections on the performance of tax revenues collection.

Robustness checks

To check the robustness of the main estimated parameters of interest, firstly we run the whole analysis on the "second best" *ARMA(12,2)* alternative competing model, as well as on specifications without any control variables but with the *ARMA* components. We also run specifications including separately each *pre*-elections and *post*-elections EDs (i.e. in contrast to the simultaneous inclusion of symmetrical couples of EDs *before* and *after* elections in the primary specification). The parameters of the *EDs* estimated through all these alternative specifications led to similar estimates as those yielded by the primary model reported below.[15]

Secondly, we apply the intervention analysis in the framework of OLS linear regression analysis on the same transformed variables as in the ARMAX setting, given that time series stationarity is also a prerequisite for OLS regression. Appropriate dependent variable lags, as determined by standard statistical tests (i.e. the Durbin-Watson test, the Breusch-Godfrey LM test, etc.), are introduced as additional regressors to model the inherent autocorrelation in the real growth rate of tax revenues. In all estimated regressions we employ robust standard errors (i.e. the White S.E.) to address the potential presence of heteroscedasticity. The results and findings obtained from this approach are essentially the same as those obtained from ARMAX modelling.

Thirdly, we collapsed the monthly data to quarterly and annual frequencies and conducted the analysis in both econometric settings, i.e. ARMAX and OLS linear regression. In each case we introduced in the estimated models other relevant controlling variables available at either quarterly or annual frequency. In the case of quarterly frequency modelling, we substitute the Retail Trade Index with quarterly Gross Domestic Production (GDP) in constant prices as a better variable to control for economic activity, and we introduced also quarterly inflation adjusted remittances inflows, in addition to the explanatory variables already introduced in the monthly frequency modelling explained earlier.[16] Remittances have been an important source of financing for the Albanian economy since the 1990s at an annual average of about 10 per cent of GDP during the observation period, and therefore could reasonably be considered as a relevant control variable. In the case of annual frequency, we added also

[13] The selection between competing ARMA models fitting each time series was based on three formal criteria: the Akaike Information Criterion (AIC); the Bayesian Information Criterion (BIC); and the Hannan-Quinn Information Criterion (HQC). We did not encounter any case of conflicting selection guidance among these criteria. Several formal diagnostic tests and means of judgment were used throughout the Box-Jenkins iterative procedure to determine the "best" ARMA model and diagnose its residual properties: the Durbin-Watson test; the Jarque-Bera test; the Q-test; the Breusch-Godfrey test; the Breusch-Pagan-Godfrey test; and the Harvey test. In addition, we took into account the pattern of autocorrelation functions (ACF), the partial autocorrelation functions (PACF) and residual plots. Although the null of homoscedastic SEs was not rejected by any of the tests employed, we ran the regressions with robust SEs and obtained similar results.

[14] It is intuitive to introduce separately (one at a time) each symmetrical *EDs* couple as, by definition, the time interval that each of these pre- or post-elections *EDs* models cumulatively encompasses the time interval modelled by the preceding one.

[15] For reasons of space, here we discuss and report only the results obtained by the "first best" ARMA model. The results for "second best" and other alternative ARMA models are available upon request.

[16] Quarterly GDP data are sourced from the Albanian Institute of Statistics from Q1-2008 to Q2-2019 and from the Bank of Albania backward estimations for earlier periods (Q1-1998 to Q4-2007). The Quarterly time series of remittances is sourced from the Bank of Albania.

other theoretically relevant controlling variables available annually, namely the Control of Corruption Index *(CCI)* and Government Effectiveness Index *(GEI)*.[17]

Lastly, we also estimated all the aforementioned specifications employing the nominal variables (data not adjusted for price conjectures) and obtained practically the same results as with the respective constant price (real) variables. The following section explains the obtained empirical results from all primary and alternative specifications aforementioned.

4. EMPIRICAL RESULTS

Table 1 of this section presents the econometric results for each set of elections separately: i.e. "all elections"; "rotation elections"; and "non-rotation elections". In each case, estimates are reported from each econometric approach (i.e. ARMAX and OLS linear regression modelling) and for each data frequency (i.e. monthly, quarterly and annual). The table is trimmed to present only the main variable of interest, namely the estimated parameters of the Electoral Dummy variables, while in the Appendix (Tables 1A to 6A) we provide the full econometric results for each estimated model.

Most of the estimated coefficients of *EDs* before "all elections" together, estimated through ARMAX modelling on monthly data, are significantly negative at either the five or the 10 per cent level of significance. More specifically, prior to elections, when "all elections" are considered, we see a reduction in the real growth of tax revenues ranging from 3.2 percentage points (ED_{-12} – in the twelve months before elections) to four percentage points (ED_{-6} – in the six months before elections), as shown in the first "monthly" column of the first "all elections" block, estimated through ARMAX modelling. These are considerable magnitudes of deterioration in revenue performance. Taking into account that the overall sample mean of the real growth rate is 5.9 per cent, the performance deterioration in terms of its long-term "natural" average is by more than half.

Such deterioration in performance is considerably larger, double to triple, when only "rotation elections" are considered compared to the case when "all elections" are considered. As shown in the second "rotation elections" block of Table 1, the deterioration in terms of percentage growth of tax revenues estimated through ARMAX modelling on monthly data ranges from 6.3 percentage points in the year before "rotation elections" (ED_Rot_{-12}) to 9.1 percentage points in the three months before those elections (ED_Rot_{-3}), with ED_Rot_{-12}, ED_Rot_{-9}, and ED_Rot_{-6} significant at the one per cent level and ED_Rot_{-3} significant at the five per cent level. Interestingly, when only "rotation elections" are considered, there seems to take place also a kind of intensifying monotonic trend of deterioration in tax revenues performance as elections come closer (i.e. $ED_{-12} < ED_{-9} < ED_{-6} < ED_{-3}$).

In contrast, when only "no-rotation elections" are considered, all respective electoral estimated dummies modelling different pre-electoral periods ($ED\_No\_Rot_{-j}$) are far from conventional levels of statistical significance (see the third "no-rotation elections" block in Table 1). Therefore, based on these empirical results, one can take the view that all of the significant deterioration in tax revenue performance takes place only in those elections which yield a political rotation. This view is a novel one in the relevant political business cycle literature, at least to the best of our knowledge, where generally there is no such distinction among elections.

All the aforementioned empirical findings, and more particularly the distinction between *rotation* and *non-rotation* elections, remain robust when the econometric analysis is replicated with the quarterly collapsed time series or when OLS linear modelling is employed. OLS yields estimated coefficients with somewhat stronger statistical significance when applied to quarterly collapsed data than at the

[17] These two indices are sourced from "The Worldwide Governance Indicators" project of the World Bank (2019 update). The Control of Corruption Index reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. The Government Effectiveness Index reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

monthly frequency. This can probably be attributed to the better small sample properties that OLS regression reveals in general, thereby, in the case of the smaller quarterly sample, allowing a theoretically "good" specification with more adequate control variables. Conversely, ARMAX modelling generates statistically stronger estimates with the larger monthly sample (see the respective columns of each block in Table 1). The respective statistically significant ED coefficients estimated by each estimating method are also broadly close in magnitude.

In the case where annually collapsed time series are employed, none of the estimated *before* ED coefficients are significant at conventional levels and supporting the theory (see the "annually" columns in each block of elections in Table 1). These weakest empirical results, obtained from the annually collapsed data, could be attributed to the radically reduced number of observations, although typically OLS regression has good small sample properties. Most likely, this can be attributed to the inherent drawback of the annual data when employed for political business cycle research, in that often the intra-annual (monthly or quarterly) election-related dynamics of the social processes being analysed – the tax revenue performance in our case – offset each other within the year and become, therefore, either "unobservable" for the year as a whole or appear to be contrary to theory. For instance, in our estimates from annually collapsed data, none of the estimated coefficients for the EDs *before* either "All elections" or "Rotation elections" are statistically significant at conventional levels in line with the political business (budget) cycle theory. Moreover, we also obtained some "odd" empirical results, showing an increase of tax revenue collection growth before "no-rotation elections", statistically significant at the 10 and five per cent levels respectively with ARMAX and OLS regression modelling, and a reduction afterwards significant at the 10 per cent level with ARMAX modelling. Such "odd" empirical results contrast with our previous empirical findings obtained from the monthly and quarterly time series, and contradict common sense and political business cycle theory alike. Hence, this could be considered as another piece of evidence corroborating the claim made previously in the political business cycle literature as to the inherent drawback of empirical studies based only on annual time series.

Table 1: The impact of elections on tax revenue collection

Dependent variable: Difference on lags (12) or (4) or (1) of price constant tax revenue collection
≈ year on year (monthly) or (quarterly) or (annual) real growth of tax revenue collection

$ED_{(\pm j)}$	ARMAX			OLS linear regression		
	Monthly	Quarterly	Annually	Monthly	Quarterly	Annually
			All elections			
$ED_{(-3)}$	-0.034	-0.037 *		-0.019	-0.034	
	(0.025)	(0.022)		(0.020)	(0.024)	
$ED_{(+3)}$	-0.020	-0.036 *		-0.002	-0.012	
	(0.024)	(0.021)		(0.021)	(0.016)	
$ED_{(-6)}$	-0.040 **	-0.037 *		-0.017	-0.041 **	
	(0.021)	(0.021)		(0.015)	(0.017)	
$ED_{(+6)}$	0.003	-0.009		0.010	-0.005	
	(0.020)	(0.021)		(0.019)	(0.018)	
$ED_{(-9)}$	-0.040 **	-0.035 **		-0.022 *	-0.034 **	
	(0.018)	(0.018)		(0.013)	(0.016)	
$ED_{(+9)}$	-0.013	-0.027		-0.002	-0.000	
	(0.017)	(0.017)		(0.015)	(0.014)	
$ED_{(-12)}$	-0.032 *	-0.013	-0.012	-0.018	-0.024 *	0.012
	(0.017)	(0.019)	(0.026)	(0.012)	(0.014)	(0.021)
$ED_{(+12)}$	0.008	0.010	-0.027	0.003	0.008	-0.007
	(0.017)	(0.019)	(0.024)	(0.013)	(0.014)	(0.019)
			Only elections with political rotation			
$ED_{(-3)}$	-0.091 **	-0.045		-0.080 ***	-0.083 ***	
	(0.037)	(0.033)		(0.027)	(0.014)	
$ED_{(+3)}$	-0.065 *	-0.037		-0.026	-0.028	
	(0.036)	(0.033)		(0.043)	(0.019)	
$ED_{(-6)}$	-0.080 ***	-0.044		-0.064 ***	-0.071 ***	
	(0.028)	(0.031)		(0.022)	(0.012)	
$ED_{(+6)}$	0.008	-0.004		0.016	0.012	
	(0.028)	(0.031)		(0.036)	(0.028)	
$ED_{(-9)}$	-0.069 ***	-0.024		-0.059 ***	-0.052 **	
	(0.023)	(0.023)		(0.021)	(0.023)	
$ED_{(+9)}$	0.018	0.008		0.013	0.027	
	(0.023)	(0.024)		(0.026)	(0.022)	
$ED_{(-12)}$	-0.063 ***	-0.028	-0.026	-0.045 **	-0.037 *	-0.012
	(0.021)	(0.023)	(0.032)	(0.018)	(0.019)	(0.026)
$ED_{(+12)}$	0.057 ***	0.064 ***	0.009	0.027	0.040 **	0.006
	(0.021)	(0.023)	(0.039)	(0.023)	(0.020)	(0.035)
			Only elections with no political rotation			
$ED_{(-3)}$	0.011	-0.033		0.024	0.007	
	(0.031)	(0.029)		(0.019)	(0.020)	
$ED_{(+3)}$	0.017	-0.038		0.016	0.025	
	(0.031)	(0.028)		(0.015)	(0.021)	
$ED_{(-6)}$	0.000	-0.018		0.018	-0.014	
	(0.025)	(0.028)		(0.015)	(0.022)	
$ED_{(+6)}$	0.008	0.000		0.007	0.005	
	(0.025)	(0.027)		(0.018)	(0.017)	
$ED_{(-9)}$	-0.001	-0.030		0.013	-0.013	
	(0.022)	(0.022)		(0.012)	(0.016)	
$ED_{(+9)}$	-0.019	-0.037 *		-0.006	-0.011	
	(0.021)	(0.019)		(0.015)	(0.014)	
$ED_{(-12)}$	0.002	-0.004	0.048 *	0.008	-0.009	0.038 **
	(0.021)	(0.023)	(0.026)	(0.012)	(0.014)	(0.013)
$ED_{(+12)}$	-0.022	-0.023	-0.039 *	-0.009	-0.010	-0.020
	(0.020)	(0.021)	(0.018)	(0.013)	(0.013)	(0.016)
Controls included	YES [(1)]	YES [(2)]	YES [(3)]	YES [(4)]	YES [(5)]	YES [(6)]
No. of obs.	234	78	19	234	78	19

*Standard errors in parenthesis. Significance at 1%, 5% and 10% is denoted respectively by *** / ** / **

[(1)] $MA(1);\ AR(12);\ \Delta_{12}[\ln(RTI_{t-1})];\ \Delta_{12}[\ln(oil\&min\_exp_{t-1})];\ \Delta_{12}[\ln(REER_{t-1})]$

[(2)] $MA(1);\ AR(4);\ \Delta_{4}[\ln(GDP_{t})];\ \Delta_{4}[\ln(Remittances_{t})];\ \Delta_{4}[\ln(oil\&min\_exp_{t})];\ \Delta_{4}[\ln(REER_{t})]$

[(3)] $AR(1);\ \Delta_{1}[\ln(GDP_{t})];\ \Delta_{1}[\ln(Remittances_{t})];\ \Delta_{1}[\ln(oil\&min\_exp_{t})];\ \Delta_{1}[\ln(REER_{t})];\ \Delta_{1}[\ln(CCI_{t})];\ \Delta_{1}[\ln(GEI_{t})]$

[(4)] $\Delta_{12}[\ln(tax\_rev_{t-1})];\ \Delta_{12}[\ln(tax\_rev_{t-12})];\ \Delta_{12}[\ln(RTI_{t-1})];\ \Delta_{12}[\ln(oil\&min\_exp_{t-1})];\ \Delta_{12}[\ln(REER_{t-1})]$

[(5)] $\Delta_{4}[\ln(tax\_rev_{t-1})];\ \Delta_{4}[\ln(tax\_rev_{t-4})];\ \Delta_{4}[\ln(GDP_{t})];\ \Delta_{4}[\ln(Remittances_{t})];\ \Delta_{4}[\ln(oil\&min\_exp_{t})];\ \Delta_{4}[\ln(REER_{t})]$

[(6)] $\Delta_{1}[\ln(tax\_rev_{t-1})];\ \Delta_{1}[\ln(GDP_{t})];\ \Delta_{1}[\ln(Remittances_{t})];\ \Delta_{1}[\ln(oil\&min\_exp_{t})];\ \Delta_{1}[\ln(REER_{t})];\ \Delta_{1}[\ln(CCI_{t})];\ \Delta_{1}[\ln(GEI_{t})]$

The empirical analysis reveals clear evidence of election-related cycles in the collection of tax revenues. The estimated parameters of most of the electoral dummy variables employed in the analyses strongly indicate that there is a statistically significant reduction in the performance of tax revenues collection, measured by the real growth rate of tax revenue, at various time-intervals before elections followed by normalizations afterwards, thus supporting the hypothesis of this article. More interestingly and a novelty – to the best of our knowledge – in the literature, the election-related effect on tax revenue performance was essentially driven only by those elections leading to political rotation. In these elections, both the deterioration in tax revenues performance before elections and the improvement thereafter was much more pronounced in both magnitude and statistical significance than when all elections were considered together. In contrast, in the case of elections resulting in incumbent re-election (i.e. no political rotation), no estimates with statistical significance were observed either before or after elections.

These findings are robust to alternative econometric approaches, namely ARMAX or OLS linear regression modelling. The findings are also robust to alternative frequencies of the time-series observations, namely the monthly original observation frequency and the respective collapsed data at a quarterly frequency, which allows for some additional and more adequate explanatory variables, as explained in the previous section.

One interesting but methodological finding, corroborating our claim on the importance of using intra-annual rather than annual frequency time series data in political business cycle research – in line with similar findings in previous research conducted on other quite different countries (e.g. see Akhmedov and Zhuravskaya, 2004; Streb *et al.,* 2012) – is related to substantially weaker and even "odd" results when annually collapsed time series data were employed, as compared to the respective results obtained from monthly or quarterly (intra-annual) data analysis.

Table 1 also presents the empirical results for post-election periods, therefore completing our investigation of elections-driven cyclicality. These results are also broadly in line with the theory of political business (budgetary) cycles and supportive of our hypothesis. When "All elections" are simultaneously considered, the estimated parameters of all electoral dummies for defined periods *after* elections (ED_{+j}) are – with one exception – not statistically significant at conventional levels. When contrasted to the more systematic and statistically significant evidence of deterioration taking place *before* elections, these empirical results suggest that "normalization" of revenue performance is restored after elections.

However, consistently following the earlier finding on the distinction between "rotation" and "no-rotation" elections, one could take a subtler view also on what seems to happen after elections. Indeed, even in the aftermath of elections almost everything statistically significant regarding tax revenues performance seems to happen only in "rotation elections". First, it seems that the deterioration of performance measured by the real growth rate of tax revenue collection continues also in the immediate three months *after* "rotation elections" by 6.5 percentage points significant at the 10 per cent level, as indicated by the negative coefficient on ED_Rot_{+3} estimated by ARMAX modelling of the monthly data. An intuitive explanation for this could be due to the corresponding transition period for passing executive power from one political force to the other. Thereafter, the performance improves rather quickly, at least as contrasted to the deterioration taking place until then, becoming statistically significant at conventional levels within one year after "rotation elections", as indicated respectively by the positive coefficient on ED_Rot_{+12} from ARMAX modelling, which shows respective improvements of about 5.7 percentage points (monthly data) or 6.4 p.p. (quarterly data), both significant at the one per cent level. This pattern is broadly corroborated also by OLS estimates from the quarterly data.

Lastly, we run also a separate test for another potential effect on the intensity of tax performance electoral cycles due to the constitutional changes that took place in 2008. In December 2008, an electoral reform took place in Albania, with smaller parties becoming less influential after the reform. As larger parties are – presumably – more likely to systematically use administrative resources to influence tax revenue collection, one could think that the hypothesis and the mechanism described here

might have intensified after 2008. We tested for this by constructing a direct dummy variable taking the value "1" for the 2009 election period and all subsequent periods and "0" for all the preceding periods. We then included in all the estimated models this direct dummy variable as well as the respective interaction dummy variables of interest, which model the possible compound (interactive) influences from elections and constitutional (electoral) changes on the intensity of election-driven tax performance cycles. However, none of the interaction dummies were even close to conventional levels of statistical significance, ruling out this potential influence.

5. CONCLUSIONS

Over the past two decades there have been many empirical studies showing electorally-driven manipulation of the main fiscal policy instruments (i.e. public expenditures). Stronger cycles are observed in the case of developing or transition countries with immature democracies, reflecting the lack of experience of voters in new democracies regarding the existence of political fiscal cycles as well as the lack of institutional mechanisms to constrain discretionary expenditure policies or corrupt behaviour and to strengthen fiscal control, all of which can result in opportunistic policy making around elections. PBC studies tend to focus on public expenditure in conjunction with elections, while there is limited research on fiscal performance (i.e. tax collection), especially in transition countries, which is the focus of our paper. However, while previous studies suggest that the government may engage in increased expenditure financed through increased taxation and/or deficits before elections (see Akhmedov and Zhuravskaya, 2004 for the case of Russia; and Tsai, 2016 for the case of China), our paper suggests that lower taxation (e.g. lower tax collection rather than lower tax rates) can be another pre-election phenomenon.

The results show clear evidence of poorer fiscal performance before elections in Albania. In addition, we may distinguish the pattern of fiscal performance associated with elections that result in a change in the governing party (rotation) and those that do not (no-rotation). While fiscal performance is poorer before elections in general, poor pre-election performance is more pronounced in the case of elections yielding rotation. This may be due to either political business cycle effects in the interest of the incumbent party and/or the corrupt behaviour of officials enabled by a power vacuum.

We also observe different post-election patterns, depending on the type of elections. In the case of rotation, there may emerge a power vacuum after elections up until the new parliament and government is sworn in, which can last for a few months. When the new government is in place, it might need some time to take (full) control of the public administration machine, which tends to be highly politicized. Our findings show that fiscal performance remains poor in the first quarter after rotating elections but not in successive quarters, in which fiscal performance tends to improve much faster. One possible explanation for this strong but delayed improvement in fiscal performance after rotation elections, could be the necessity for the new government to confront a higher deficit resulting from poor pre-election performance in the case of rotation elections. This evidence is consistent with the view that the election cycle uncovered in this study could be more the result of corruption than of political opportunism; but we do not regard this as decisive with respect to distinguishing between the competing views. In the case of non-rotation, there is no evidence of an electoral cycle. In sum, we cannot conclude to what extent the electoral cycle identified by this study is driven by classical PBC motivation (i.e. stimulating the economy to please voters) or by corruption. Indeed, both causes could co-exist.

This paper contributes to the PBC literature by providing, in a unique way, insight into fiscal performance in conjunction with elections in a typical transition economy. By analysing fiscal performance both on a monthly and on a quarterly basis, the paper also highlights the election-related fluctuations in fiscal performance. In addition, while other studies on the political economy of elections

tend to rely on yearly data, thus not capturing the dynamics within the election year (which are very important, especially when elections fall in the middle of the fiscal year), this study shows the importance of monthly or quarterly dynamics.

This study sheds light not only on the mechanisms and rationale behind poorer fiscal performance before elections, but also on fiscal performance after elections, making a clear distinction between elections that are followed by political rotation and elections that are not. One of the limitations of this paper is the limited number of elections covered by the analysis, which could affect our findings; nonetheless, the distinction between the two types of election is fruitful.

Based on the results, it can be concluded that poor fiscal performance (or low tax collection performance) may be contributing to higher deficits during election years, in addition to increased expenditure. While studies on political budget cycles tend to limit their scope to the identification of possible election cycles in deficits and/or expenditure, in future research it will be important to distinguish the potential contribution of poor fiscal performance to election-related deficits. This finding is particularly relevant for future research on other transition or developing countries.

Although we cannot come to a definitive conclusion about the competing causes of the electoral cycle, i.e. political opportunism or corruption, both explanations require similar policy responses. Poor fiscal performance is clearly associated with weaker sanctioning mechanisms in the run up to elections. Income from fines collected from fiscal authorities' inspections (which are mostly at the discretion of the respective authorities) is substantially reduced during pre-elections periods, most notably during the six and three month periods prior to elections. In contrast, fines from the electronic tax system (which are broadly generated on an automatic base) do not to the same extent follow the election-related cyclical pattern of inspections fines, which are at the discretion of tax inspectors/police. Thus, the key to reducing fiscal performance deterioration in conjunction with elections is to establish rules and institutional supervision (independent or bipartisan) that reduce the discretion of tax authorities to engage electorally and/or act corruptly.

APPENDIX

Table 1A: Estimated equations with Monthly data / ARMAX modelling

Dependent variable: $\Delta_{12}[\ln(tax\_rev_t)]$										Main diagnostic tests			
	j =	$ED_{(-j)}$	$ED_{(+j)}$	Intercept	MA(1)	AR(12)	$\Delta_{12}[\ln(RTI_{t-1})]$	$\Delta_{12}[\ln(oil\&min\_exp_{t-1})]$	$\Delta_{12}[\ln(REER_{t-1})]$	Adj. R^2	F-stat	AIC	DW stat.
All elections	= 3	-0.034	-0.020	0.049 ***	0.384 ***	-0.248 ***	0.094 *	0.004	-0.101	0.271	11.475	-2.305	1.768
		(0.025)	(0.024)	(0.007)	(0.064)	(0.063)	(0.054)	(0.003)	(0.140)				
	= 6	-0.040 **	0.003	0.049 ***	0.377 ***	-0.247 ***	0.103 **	0.005 *	-0.113	0.277	11.957	-2.320	1.771
		(0.021)	(0.020)	(0.007)	(0.065)	(0.063)	(0.054)	(0.003)	(0.139)				
	= 9	-0.040 **	-0.013	0.055 ***	0.372 ***	-0.236 ***	0.099 *	0.005 *	-0.122	0.279	11.823	-2.322	1.785
		(0.018)	(0.017)	(0.008)	(0.065)	(0.063)	(0.054)	(0.003)	(0.139)				
	= 12	-0.032 *	0.008	0.050 ***	0.371 ***	-0.247 ***	0.115 **	0.004 *	-0.129	0.278	11.716	-2.322	1.776
		(0.017)	(0.017)	(0.009)	(0.065)	(0.062)	(0.054)	(0.003)	(0.140)				
Rotation elections	= 3	-0.091 **	-0.065 *	0.049 ***	0.376 ***	-0.233 ***	0.092 *	0.004	-0.086	0.290	12.431	-2.336	1.785
		(0.037)	(0.036)	(0.006)	(0.065)	(0.063)	(0.052)	(0.003)	(0.138)				
	= 6	-0.080 ***	0.008	0.048 ***	0.363 ***	-0.248 ***	0.109 **	0.005 *	-0.108	0.292	12.573	-2.341	1.784
		(0.028)	(0.028)	(0.007)	(0.066)	(0.063)	(0.052)	(0.003)	(0.136)				
	= 9	-0.069 ***	0.018	0.049 ***	0.354 ***	-0.225 ***	0.112 **	0.004 *	-0.116	0.293	12.607	-2.342	1.798
		(0.023)	(0.023)	(0.006)	(0.065)	(0.063)	(0.051)	(0.003)	(0.136)				
	= 12	-0.063 ***	0.057 ***	0.046 ***	0.350 ***	-0.255 ***	0.103 **	0.004 *	-0.134	0.313	13.882	-2.336	1.795
		(0.021)	(0.021)	(0.006)	(0.065)	(0.063)	(0.051)	(0.003)	(0.133)				
No-rotation elections	= 3	0.011	0.017	0.043 ***	0.379 ***	-0.255 ***	0.112 **	0.004 *	-0.088	0.264	10.942	-2.295	1.757
		(0.031)	(0.031)	(0.006)	(0.065)	(0.063)	(0.054)	(0.003)	(0.140)				
	= 6	0.000	0.008	0.044 ***	0.383 ***	-0.257 ***	0.110 **	0.004	-0.093	0.263	10.894	-2.294	1.756
		(0.025)	(0.025)	(0.007)	(0.065)	(0.064)	(0.054)	(0.003)	(0.141)				
	= 9	-0.001	-0.019	0.047 ***	0.377 ***	-0.252 ***	0.098 *	0.004	-0.098	0.267	11.025	-2.298	1.762
		(0.022)	(0.021)	(0.007)	(0.065)	(0.063)	(0.054)	(0.003)	(0.140)				
	= 12	0.002	-0.022	0.049 ***	0.376 ***	-0.255 ***	0.088 *	0.004	-0.097	0.266	11.113	-2.299	1.762
		(0.021)	(0.020)	(0.008)	(0.065)	(0.064)	(0.055)	(0.003)	(0.139)				

*Standard errors in parenthesis. Significance at 1%, 5% and 10% is denoted respectively by *** / ** / **

Table 2A: Estimated equations with Monthly data / OLS linear regression modelling

Dependent variable: $\Delta_{12}[\ln(tax\_rev_t)]$										Main diagnostic tests			
	j =	$ED_{(-j)}$	$ED_{(+j)}$	Intercept	$\Delta_{12}[\ln(tax\_rev_{t-1})]$	$\Delta_{12}[\ln(tax\_rev_{t-12})]$	$\Delta_{12}[\ln(RTI_{t-1})]$	$\Delta_{12}[\ln(oil\&min\_exp_{t-1})]$	$\Delta_{12}[\ln(REER_{t-1})]$	Adj. R^2	F-stat	AIC	DW stat.
All elections	= 3	-0.019	-0.002	0.036 ***	0.482 ***	-0.200 ***	0.058	0.002	-0.025	0.321	14.489	-2.374	2.075
		(0.020)	(0.021)	(0.007)	(0.062)	(0.057)	(0.045)	(0.002)	(0.091)				
	= 6	-0.017	0.010	0.035 ***	0.481 ***	-0.195 ***	0.062	0.003 *	-0.029	0.325	14.713	-2.379	2.082
		(0.015)	(0.019)	(0.007)	(0.065)	(0.059)	(0.046)	(0.002)	(0.091)				
	= 9	-0.022 *	-0.002	0.038 ***	0.470 ***	-0.188 ***	0.058	0.003 *	-0.035	0.327	14.870	-2.382	2.084
		(0.013)	(0.015)	(0.007)	(0.062)	(0.058)	(0.045)	(0.002)	(0.091)				
	= 12	-0.018	0.003	0.037 ***	0.474 ***	-0.189 ***	0.065	0.003 *	-0.041	0.327	14.895	-2.383	2.091
		(0.012)	(0.013)	(0.008)	(0.061)	(0.057)	(0.046)	(0.002)	(0.092)				
Rotation elections	= 3	-0.080 ***	-0.026	0.039 ***	0.454 ***	-0.208 ***	0.048	0.002	-0.019	0.341	15.869	-2.404	2.044
		(0.027)	(0.043)	(0.007)	(0.062)	(0.056)	(0.042)	(0.002)	(0.090)				
	= 6	-0.064 ***	0.016	0.039 ***	0.449 ***	-0.210 ***	0.056	0.003 **	-0.034	0.374	16.296	-2.413	2.071
		(0.022)	(0.036)	(0.007)	(0.066)	(0.055)	(0.043)	(0.001)	(0.089)				
	= 9	-0.059 ***	0.013	0.040 ***	0.444 ***	-0.205 ***	0.057	0.003 **	-0.047	0.354	16.779	-2.423	2.084
		(0.021)	(0.026)	(0.007)	(0.063)	(0.056)	(0.042)	(0.001)	(0.091)				
	= 12	-0.045 **	0.027	0.037 ***	0.444 ***	-0.194 ***	0.056	0.003 **	-0.056	0.356	16.909	-2.426	2.089
		(0.018)	(0.023)	(0.007)	(0.064)	(0.054)	(0.042)	(0.001)	(0.093)				
No-rotation elections	= 3	0.024	0.016	0.033 ***	0.485 ***	-0.210 ***	0.068	0.002	-0.026	0.322	14.558	-2.376	2.083
		(0.019)	(0.015)	(0.007)	(0.061)	(0.058)	(0.045)	(0.002)	(0.092)				
	= 6	0.018	0.007	0.033 ***	0.488 ***	-0.220 ***	0.063	0.002	-0.026	0.322	14.500	-2.374	2.076
		(0.015)	(0.018)	(0.007)	(0.061)	(0.060)	(0.045)	(0.002)	(0.091)				
	= 9	0.013	-0.006	0.034 ***	0.485 ***	-0.211 ***	0.056	0.002	-0.030	0.315	14.488	-2.374	2.080
		(0.012)	(0.015)	(0.008)	(0.062)	(0.059)	(0.046)	(0.002)	(0.091)				
	= 12	0.008	-0.009	0.035 ***	0.483 ***	-0.208 ***	0.051	0.002	-0.029	0.321	14.471	-2.373	2.079
		(0.012)	(0.013)	(0.008)	(0.062)	(0.059)	(0.047)	(0.002)	(0.090)				

*Standard errors in parenthesis. Significance at 1%, 5% and 10% is denoted respectively by *** / ** / **

Table 3A: Estimated equations with Quarterly data / ARMAX modelling

Dependent variable: $\Delta_4[\ln(tax\_rev_t)]$											Main diagnostic tests			
	j =	$ED_{(-j)}$	$ED_{(+j)}$	Intercept	MA(1)	AR(4)	$\Delta_4[\ln(DGP_t)]$	$\Delta_4[\ln(Remittances_t)]$	$\Delta_4[\ln(oil\&min\_exp_t)]$	$\Delta_4[\ln(REER_t)]$	Adj. R^2	F-stat	AIC	DW-stat.
All elections	= 3	-0.037 *	-0.036 *	0.004	0.605 ***	-0.359 ***	1.313 ***	-0.005	-0.005	-0.009	0.605	12.454	-3.172	2.018
		(0.022)	(0.021)	(0.010)	(0.109)	(0.109)	(0.187)	(0.024)	(0.009)	(0.163)				
	= 6	-0.037 *	-0.009	0.005	0.503 ***	-0.352 ***	1.301 ***	-0.005	-0.002	-0.039	0.601	12.225	-3.161	1.955
		(0.021)	(0.021)	(0.010)	(0.117)	(0.108)	(0.183)	(0.026)	(0.009)	(0.158)				
	= 9	-0.035 **	-0.027	0.010	0.639 ***	-0.345 ***	1.315 ***	-0.006	-0.001	-0.046	0.612	12.799	-3.189	2.056
		(0.018)	(0.017)	(0.011)	(0.111)	(0.110)	(0.188)	(0.024)	(0.009)	(0.167)				
	= 12	-0.013	0.010	0.000	0.544 ***	-0.373 ***	1.295 ***	-0.001	-0.003	-0.019	0.589	11.664	-3.133	1.969
		(0.019)	(0.019)	(0.013)	(0.121)	(0.106)	(0.188)	(0.026)	(0.009)	(0.164)				
Rotation elections	= 3	-0.045	-0.037	0.003	0.588 ***	-0.330 ***	1.235 ***	-0.005	-0.001	-0.007	0.595	11.982	-3.149	1.984
		(0.033)	(0.033)	(0.010)	(0.109)	(0.107)	(0.191)	(0.025)	(0.009)	(0.166)				
	= 6	-0.044	-0.004	0.003	0.561 ***	-0.355 ***	1.265 ***	-0.003	-0.003	-0.019	0.597	12.058	-3.152	1.969
		(0.031)	(0.031)	(0.010)	(0.113)	(0.109)	(0.188)	(0.025)	(0.009)	(0.163)				
	= 9	-0.024	0.008	0.02	0.585 ***	-0.355 ***	1.273 ***	-0.009	-0.003	-0.017	0.593	11.883	-3.144	1.998
		(0.023)	(0.024)	(0.010)	(0.111)	(0.109)	(0.187)	(0.026)	(0.009)	(0.165)				
	= 12	-0.028	0.064 ***	-0.006	0.461 ***	-0.417 ***	1.334 ***	-0.003	-0.005	-0.037	0.627	13.681	-3.23	2.049
		(0.023)	(0.023)	(0.010)	(0.167)	(0.103)	(0.173)	(0.026)	(0.009)	(0.148)				
No-rotation elections	= 3	-0.033	-0.038	0.001	0.615 ***	-0.386 ***	1.350 ***	-0.006	-0.007	-0.008	0.596	11.967	-3.148	1.990
		(0.029)	(0.028)	(0.010)	(0.108)	(0.109)	(0.191)	(0.025)	(0.010)	(0.166)				
	= 6	-0.018	0.000	0.001	0.566 ***	-0.364 ***	1.297 ***	-0.001	-0.002	-0.011	0.587	11.554	-3.127	1.949
		(0.028)	(0.027)	(0.010)	(0.113)	(0.111)	(0.189)	(0.025)	(0.009)	(0.164)				
	= 9	-0.030	-0.037 *	0.005	0.627 ***	-0.378 ***	1.343 ***	-0.000	-0.003	-0.036	0.609	12.687	-3.183	2.052
		(0.022)	(0.019)	(0.010)	(0.111)	(0.109)	(0.188)	(0.024)	(0.009)	(0.164)				
	= 12	-0.004	-0.023	0.005	0.557 ***	-0.367 ***	1.268 ***	-0.000	-0.002	-0.007	0.592	11.813	-3.141	1.980
		(0.023)	(0.021)	(0.011)	(0.115)	(0.107)	(0.188)	(0.026)	(0.009)	(0.162)				

*Standard errors in parenthesis. Significance at 1%, 5% and 10% is denoted respectively by *** / ** / **

Table 4A: Estimated equations with Quarterly data / OLS linear regression modelling

Dependent variable: $\Delta_4[\ln(tax\_rev_t)]$											Main diagnostic tests			
	j =	$ED_{(-j)}$	$ED_{(+j)}$	Intercept	$\Delta_4[\ln(tax\_rev_{t-1})]$	$\Delta_4[\ln(tax\_rev_{t-4})]$	$\Delta_4[\ln(DGP_t)]$	$\Delta_4[\ln(Remittances_t)]$	$\Delta_4[\ln(oil\&min\_exp_t)]$	$\Delta_4[\ln(REER_t)]$	Adj. R^2	F-stat	AIC	DW stat.
All elections	= 3	-0.034	-0.012	0.007	0.328 ***	-0.360 ***	1.184 ***	0.016	0.012	-0.041	0.595	11.945	-3.147	1.668
		(0.024)	(0.016)	(0.009)	(0.093)	(0.095)	(0.208)	(0.024)	(0.008)	(0.089)				
	= 6	-0.041 **	-0.005	0.007	0.332 ***	-0.341 ***	1.209 ***	0.026	0.012 *	-0.046	0.619	13.221	-3.209	1.771
		(0.017)	(0.018)	(0.009)	(0.079)	(0.100)	(0.208)	(0.020)	(0.007)	(0.084)				
	= 9	-0.034 **	-0.000	0.009	-0.340 ***	-0.338 ***	1.164 ***	0.022	0.012 *	-0.053	0.615	12.982	-3.198	1.781
		(0.016)	(0.014)	(0.009)	(0.082)	(0.092)	(0.191)	(0.021)	(0.007)	(0.088)				
	= 12	-0.024 *	0.008	0.006	0.355 ***	-0.352 ***	1.163 ***	0.020	0.013 **	-0.057	0.609	12.641	-3.181	1.805
		(0.014)	(0.014)	(0.010)	(0.084)	(0.089)	(0.191)	(0.023)	(0.007)	(0.091)				
Rotation elections	= 3	-0.083 ***	-0.028	0.009	0.318 ***	-0.374 ***	1.138 ***	0.013	0.015 **	-0.040	0.619	13.221	-3.209	1.678
		(0.014)	(0.019)	(0.009)	(0.093)	(0.094)	(0.209)	(0.023)	(0.007)	(0.090)				
	= 6	-0.071 ***	0.012	0.009	0.326 ***	-0.378 ***	1.168 ***	0.016	0.011 *	-0.047	0.633	14.026	-3.246	1.777
		(0.012)	(0.028)	(0.008)	(0.084)	(0.092)	(0.209)	(0.021)	(0.007)	(0.089)				
	= 9	-0.052 **	0.027	0.007	-0.361 ***	-0.352 ***	1.092 ***	0.014	0.011 *	-0.053	0.635	14.151	-3.251	1.895
		(0.023)	(0.022)	(0.008)	(0.082)	(0.086)	(0.181)	(0.021)	(0.005)	(0.094)				
	= 12	-0.037 *	0.040 **	0.004	0.344 ***	-0.337 ***	1.116 ***	0.014	0.016 **	-0.059	0.645	14.779	-3.279	1.891
		(0.019)	(0.020)	(0.008)	(0.076)	(0.088)	(0.184)	(0.023)	(0.007)	(0.0977)				
No-rotation elections	= 3	0.007	0.025	0.004	0.369 ***	-0.374 ***	1.114 ***	0.016	0.015 **	-0.045	0.581	11.289	-3.114	1.654
		(0.020)	(0.021)	(0.009)	(0.088)	(0.097)	(0.205)	(0.024)	(0.007)	(0.090)				
	= 6	-0.014	0.005	0.003	0.363 ***	-0.363 ***	1.150 ***	0.019	0.014 **	-0.044	0.584	11.421	-3.12	1.696
		(0.022)	(0.017)	(0.009)	(0.085)	(0.102)	(0.204)	(0.024)	(0.007)	(0.087)				
	= 9	-0.013	-0.011	0.006	-0.358 ***	-0.350 ***	1.132 ***	0.017	0.013 *	-0.048	0.585	11.482	-3.124	1.658
		(0.016)	(0.014)	(0.010)	(0.086)	(0.096)	(0.204)	(0.024)	(0.007)	(0.086)				
	= 12	-0.009	-0.010	0.007	0.356 ***	-0.354 ***	1.122 ***	0.018	0.014 **	-0.048	0.584	11.432	-3.121	1.664
		(0.014)	(0.013)	(0.010)	(0.088)	(0.096)	(0.204)	(0.025)	(0.007)	(0.086)				

*Standard errors in parenthesis. Significance at 1%, 5% and 10% is denoted respectively by *** / ** / **

Table 5A: Estimated equations with Annual data / ARMAX modelling

Dependent variable: $\Delta_1[\ln(tax\_rev_t)]$												Main diagnostic tests			
	j =	$ED_{(-j)}$	$ED_{(+j)}$	Intercept	AR(1)	$\Delta_1[\ln(DGP_t)]$	$\Delta_1[\ln(Remittances_t)]$	$\Delta_1[\ln(oil\&min\_exp_t)]$	$\Delta_1[\ln(REER_t)]$	$\Delta_1[\ln(CCI_t)]$	$\Delta_1[\ln(GEI_t)]$	Adj. R^2	F-stat	AIC	DW stat.
All	= 12	-0.012	-0.027	0.008	-0.495	1.123 ***	0.128	0.011	-0.242	0.150	0.068	0.639	4.344	-3.757	2.039
		(0.026)	(0.024)	(0.016)	(0.348)	(0.306)	(0.139)	(0.023)	(0.195)	(0.122)	(0.129)				
Rot.	= 12	-0.026	0.009	0.003	-0.539	0.955 **	0.196	0.026	-0.189	0.164	0.098	0.622	4.117	-3.713	2.074
		(0.032)	(0.039)	(0.022)	(0.309)	(0.392)	(0.136)	(0.030)	(0.192)	(0.161)	(0.190)				
No-rot.	= 12	0.048 *	-0.039 *	0.002	-0.621	0.924 **	0.255	0.031	-0.152	0.078	0.158	0.780	7.712	-4.254	2.475
		(0.026)	(0.018)	(0.010)	(0.560)	(0.352)	(0.135)	(0.030)	(0.151)	(0.100)	(0.110)				

*Standard errors in parenthesis. Significance at 1%, 5% and 10% is denoted respectively by *** / ** / **

Table 6A: Estimated equations with Annual data / OLS linear regression modelling

Dependent variable: $\Delta_1[\ln(tax\_rev_t)]$												Main diagnostic tests			
	j =	$ED_{(-j)}$	$ED_{(+j)}$	Intercept	$\Delta_1[\ln(tax\_rev_{t-1})]$	$\Delta_1[\ln(DGP_t)]$	$\Delta_1[\ln(Remittances_t)]$	$\Delta_1[\ln(oil\&min\_exp_t)]$	$\Delta_1[\ln(REER_t)]$	$\Delta_1[\ln(CCI_t)]$	$\Delta_1[\ln(GEI_t)]$	Adj. R^2	F-stat	AIC	DW stat.
All	= 12	0.012	-0.007	-0.008	-0.385 **	1.780 ***	0.108	0.002	-0.160	0.030	0.207	0.762	7.063	-4.176	1.730
		(0.021)	(0.019)	(0.013)	(0.146)	(0.373)	(0.099)	(0.017)	(0.203)	(0.091)	(0.082)				
Rot.	= 12	-0.012	0.006	-0.006	-0.400 **	1.734 ***	0.130	0.009	-0.218	0.081	0.194	0.744	6.449	-4.102	1.787
		(0.026)	(0.035)	(0.020)	(0.138)	(0.444)	(0.112)	(0.020)	(0.232)	(0.118)	(0.144)				
No-rot.	= 12	0.038 **	-0.020	-0.008	-0.301 **	1.604 ***	0.158 *	0.010	-0.133	0.010	0.223	0.859	12.583	-4.703	1.920
		(0.013)	(0.016)	(0.006)	(0.110)	(0.238)	(0.079)	(0.012)	(0.138	(0.068)	(0.047)				

*Standard errors in parenthesis. Significance at 1%, 5% and 10% is denoted respectively by *** / ** / **

Table 7A: Variable transformations + Unit root tests (H_0: unit root)

Original variable ↓	Monthly	Tax rev. (mln Lek) *(p = 0.861)*	RTI (number) *(p = 0.975)*	Exp. oil&min. (mln Lek) *(p = 0.182)*	REER (Lek/Euro) *(p = 0.522)*				
	Quarterly	Tax rev. (mln Lek) *(p = 0.875)*		Exp. oil&min. (mln Lek) *(p = 0.612)*	REER (Lek/Euro) *(p = 0.390)*	GDP (mln Lek) *(p = 0.751)*	Remitt. (mln lek) *(p = 0.118)*		
	Annually	Tax rev. (mln Lek) *(p = 0.844)*		Exp. oil&min. (mln Lek) *(p = 0.976)*	REER (Lek/Euro) *(p = 0.121)*	GDP (mln Lek) *(p = 0.859)*	Remitt. (mln lek) *(p = 0.202)*	Cont. of corr. (number) *(p = 0.409)*	Gov. Effect. (number) *(p = 0.869)*
1st step trans. : Inflation adjustment ↓	Monthly	Deflated by CPI *(p = 0.369)*	Def. by CPI *(p = 0.867)*	Def. by CPI *(p = 0.287)*					
	Quarterly	Deflated by CPI *(p = 0.536)*		Def. by CPI *(p = 0.601)*		Def. by CPI *(p = 0.133)*	Def. by CPI *(p = 0.433)*		
	Annually	Deflated by CPI *(p = 0.322)*		Def. by CPI *(p = 0.378)*		Def. by CPI *(p = 0.614)*	Def. by CPI *(p = 0.568)*		
2nd step trans. : Logarithming ↓	Monthly	Natural logarithm *(p = 0.205)*	Natural log *(p = 0.692)*	Natural log *(p = 0.139)*	Natural log *(p = 0.551)*				
	Quarterly	Natural logarithm *(p = 0.162)*		Natural log *(p = 0.777)*	Natural log *(p = 0.408)*	Natural log *(p = 0.107)*	Natural log *(p = 0.358)*		
	Annually	Natural logarithm *(p = 0.116)*		Natural log *(p = 0.806)*	Natural log *(p = 0.149)*	Natural log *(p = 0.270)*	Natural log *(p = 0.522)*		
3rd step trans. : Differencing	Monthly	12th lag differencing *(p = 0.007)*	12th lag diff. *(p = 0.006)*	12th lag diff. *(p = 0.000)*	12th lag diff. *(p = 0.018)*				
	Quarterly	4th lag differencing *(p = 0.015)*		4th lag diff. *(p = 0.031)*	4th lag diff. *(p = 0.014)*	4th lag diff. *(p = 0.027)*	4th lag diff. *(p = 0.000)*		
	Annually	1st lag differencing *(p = 0.002)*		1st lag diff. *(p = 0.016)*	1st lag diff. *(p = 0.007)*	1st lag diff. *(p = 0.024)*	1st lag diff. *(p = 0.001)*	1st lag diff. *(p = 0.025)*	1st lag diff. *(p = 0.002)*

In italic parenthesis are MacKinnon one-sided p-values of rejecting the null of a unit root by the Augmented Dickey-Fuller test

Table 8A: Variable descriptions

Variable	Description	Syntax and transformations employed in estimations for each frequency		
		Monthy	Quarterly	Annual
Tot_tax	Total tax revenues, nominal			
Tot_tax_def	Total tax revenues with constant prices deflated by CPI	D12_LN_TOT_TAX_DEF = 12th lag difference of the natural log	D4_LN_TOT_TAX_DEF = 4th lag difference of the natural log	D1_LN_TOT_TAX_DEF = 1st lag difference of the natural log
Ret_Ind_val	Retail trade index in value			
Ret_Ind_val_def	Retail trade index deflated by CPI	D12_LN_RET_IND_DEF = 12th lag difference of the natural log		
CPI_index1	Consumer Price Index (base = January 1999)			
Lek_Euro	Exchange rate Lek/Euro, nominal			
REER	Real effective exchange rate Lek/Euro	D12_LN_REER = 12th lag difference of the natural log	D4_LN_REER = 4th lag difference of the natural log	D1_LN_REER = 1st lag difference of the natural log
eksp_djegse_lek	Exports of oil and minerals, nominal			
eksp_djegse_lek_def	Exports of oil and minerals deflated by CPI	D12_LN_EKS_DJEG_DEF = 12th lag difference of the natural log	D4_LN_EKS_DJEG_DEF = 4th lag difference of the natural log	D1_LN_EKS_DJEG_DEF = 1st lag difference of the natural log
Nominal_GDP	Nominal GDP			
Nominal_GDP_def	Real GDP , GDP deflated by CPI		D4_LN_NOMINAL_GDP_DEF = 4th lag difference of the natural log	D1_LN_NOMINAL_GDP_DEF = 1st lag difference of the natural log
Remitancat_Lek	Remittances, nominal			
Remitancat_Lek_def	Remittances, deflated by CPI		D4_LN_REMITANCAT_LEK_DEF = 4th lag difference of the natural log	D1_LN_REMITANCAT_LEK_DEF = 1st lag difference of the natural log
gov_effect	Government Effectiveness index			D1_GOV_EFFECT = 1st lag difference of the natural log
cont_corruption	Control of Corruption index			D1_CONT_CORRUPTION = 1st lag difference of the natural log
elect_sys_chng	Dummy variable for the change of the electoral code in 2008	ELECT_SYS_CHNG		
PDC_3	Cumulative electoral dummies before ALL elections. PDC_3 for 3 months before All elections; PDC_6 for 6 months before All elections; and so on for PDC_9 and PDC_12	PDC_3	PDC_3	
PDC_6		PDC_6	PDC_6	
PDC_9		PDC_9	PDC_9	
PDC_12		PDC_12	PDC_12	PDC_12
PDC3	Cumulative electoral dummies after ALL elections. PDC3 for 3 months after All elections; PDC6 for 6 months after All elections; and so on for PDC9 and PDC12	PDC3	PDC3	
PDC6		PDC6	PDC6	
PDC9		PDC9	PDC9	
PDC12		PDC12	PDC12	PDC12
PDCrot_3	Cumulative electoral dummies before ROTATION elections. PDCrot_3 for 3 months before ROTATION elections; PDCrot_6 for 6 months before ROT elections; and so on for PDCrot_9 and PDCrot_12	PDCROT_3	PDCROT_3	
PDCrot_6		PDCROT_6	PDCROT_6	
PDCrot_9		PDCROT_9	PDCROT_9	
PDCrot_12		PDCROT_12	PDCROT_12	PDCROT_12
PDCrot3	Cumulative electoral dummies after ROTATION elections. PDCrot3 for 3 months after ROTATION elections; PDCrot6 for 6 months after ROT elections; and so on for PDCrot9 and PDCrot12	PDCROT3	PDCROT3	
PDCrot6		PDCROT6	PDCROT6	
PDCrot9		PDCROT9	PDCROT9	
PDCrot12		PDCROT12	PDCROT12	PDCROT12
PDCnorot_3	Cumulative electoral dummies before NO-ROTATION elections. PDCnorot_3 for 3 months before NO-ROTATION elections; PDCnorot_6 for 6 months before NO-ROT elections; and so on for PDCrot_9 and PDCrot_12	PDCNOROT_3	PDCNOROT_3	
PDCnorot_6		PDCNOROT_6	PDCNOROT_6	
PDCnorot_9		PDCNOROT_9	PDCNOROT_9	
PDCnorot_12		PDCNOROT_12	PDCNOROT_12	PDCNOROT_12
PDCnorot3	Cumulative electoral dummies after NO-ROTATION elections. PDCnorot3 for 3 months after NO-ROTATION elections; PDCnorot6 for 6 months after NO-ROT elections; and so on for PDCnorot9 and PDnoCrot12	PDCNOROT3	PDCNOROT3	
PDCnorot6		PDCNOROT6	PDCNOROT6	
PDCnorot9		PDCNOROT9	PDCNOROT9	
PDCnorot12		PDCNOROT12	PDCNOROT12	PDCNOROT12

REFERENCES

Akhmedov, A., & Zhuravskaya, E. (2004). Opportunistic political cycles: test in a young democracy setting. *The quarterly journal of economics*, *119*(4), 1301-1338.

Alesina, A., & Roubini, N. (1992). Political cycles in OECD economies. *The Review of Economic Studies*, *59*(4), 663-688.

Alesina, A., & Sachs, J. (1986). *Political parties and the business cycle in the United States, 1948-1984* (No. w1940). National Bureau of Economic Research.

Alt, J. E., & Lassen, D. D. (2006). Transparency, political polarization, and political budget cycles in OECD countries. *American Journal of Political Science*, *50*(3), 530-550.

Balkanweb (2017). Ministry of Finance: Tax inspectors put pressure on businesses through fines, (News paper article), Available at: https://www.balkanweb.com/ministria-e-financave-inspektoret-tatimore-presion-me-gjoba-subjekteve-tatimpagues/, Last accessed on 27th May 2020.

Box, G. E., & Jenkins, G. M. (1970). Time Series Analysis, Forecasting and Control. *The Journal of Business* 44 (1974): 455-458.

Box, G. E., & Tiao, G. C. (1975). Intervention analysis with applications to economic and environmental problems. *Journal of the American Statistical association*, *70*(349), 70-79.

Brender, A., & Drazen, A. (2005). Political budget cycles in new versus established democracies. *Journal of monetary Economics*, *52*(7), 1271-1295.

De Haan, J., & Klomp, J. (2013). Conditional political budget cycles: a review of recent evidence. *Public Choice*, *157*(3-4), 387-410.

Dubois, E. (2016). Political business cycles 40 years after Nordhaus. *Public Choice*, *166*(1-2), 235-259.

Enders, W. (2015). *Applied econometric time series*. John Wiley & Sons. 4th Edition.

Gazeta Shqip (2013). Poll: The Left wins the election by 49%. The right gets 40% of the vote (News paper article), Available at: https://www.gazeta-shqip.com/2013/05/09/sondazhi-e-majta-fiton-zgjedhjet-me-49-e-djathta-merr-40-te-votave/, Last accessed on 3rd January 2020.

Gilmour, S., Degenhardt, L., Hall, W., & Day, C. (2006). Using intervention time series analyses to assess the effects of imperfectly identifiable natural events: a general method and example. *BMC medical research methodology*, *6*(1), 1-9.

Hibbs Jr, D. A. (1977). Political parties and macroeconomic policy. *The American political science review*, 1467-1487.

Imami, D., & Endrit, L. (2006). Searching for political business cycle in Albania. *Periodica Polytechnica Social and Management Sciences*, *14*(2), 53-69.

Imami, D. (2015). Survey on Clientelism and Elections: Albania and Kosovo. Project "Mapping Clientelism and its Causes: Rents, Rent-seeking and Democracy in Kosovo and Albania (1997-2013)", funded by Regional Research Promotion Programme, Swiss Agency for Development and Cooperation.

IMF (International Monetary Fund) (1994). Annual Report, Available at: http://www.imf.org/external/pubs/ft/ar/archive/pdf/ar1994.pdf

Lami, E., & Imami, D. (2019). Electoral cycles of tax performance in advanced democracies. *CESifo Economic Studies*, *65*(3), 275-295.

Lami, E., Imami, D., & Kächelein, H. (2016). Fuelling political fiscal cycles by opportunistic privatization in transition economies: The case of Albania. *Economic Systems*, *40*(2), 220-231.

Libman, A., Kozlov, V., & Schultz, A. (2012). Roving bandits in action: Outside option and governmental predation in autocracies. *Kyklos*, *65*(4), 526-562.

McCallum, B. T. (1978). The political business cycle: An empirical test. *Southern economic journal*, 504-515.

Mills, T. C., and T. C. Mills (1991). *Time series techniques for economists*, Cambridge University Press.

Nordhaus, W. D. (1975). The political business cycle, *The Review of Economic Studies*, 42(2), 169-190.

Sarfo, A. P., Cross, J., & Mueller, U. (2017). Intervention time series analysis of voluntary, counselling and testing on HIV infections in West African sub-region: the case of Ghana. *Journal of Applied Statistics*, *44*(4), 571-582.

Schuknecht, L. (2000). Fiscal policy cycles and public expenditure in developing countries. *Public Choice*, *102*(1-2), 113-128.

Shi, M., & Svensson, J. (2006). Political budget cycles: Do they differ across countries and why?. *Journal of public economics*, *90*(8-9), 1367-1389.

Sidorkin, O., & Vorobyev, D. (2018). Political cycles and corruption in Russian regions. *European Journal of Political Economy*, *52*, 55-74.

Skouras, S., & Christodoulakis, N. (2014). Electoral misgovernance cycles: evidence from wildfires and tax evasion in Greece. *Public Choice*, *159*(3-4), 533-559.

Streb, J. M., Lema, D., Garofalo, P., & Eslava, M. (2012). Temporal aggregation in political budget cycles [with comment]. *Economía*, *13*(1), 39-78.

Tsai, P. H. (2016). Fiscal incentives and political budget cycles in China. *International Tax and Public Finance*, 23(6), 1030-1073.

Tufte, E. (1978). Political control of the economy, Princeton: *Princeton University Press*.

Yoo, K. R. (1998). Intervention analysis of electoral tax cycle: the case of Japan. *Public Choice*, *96*(3-4), 241-258.

Young, M., Reksulak, M., & Shughart, W. F. (2001). The political economy of the IRS. *Economics & Politics*, *13*(2), 201-220.

UNDP (2016). Human Development Report Albania 2016: Functionality, Tirana: United Nations Development Programme.