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Fiscal Manipulation: a Latin American and Caribbean Phenomenon

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Quiero agradecer a mi mamá por creer siempre en mí, por dejar sus sueños de lado por verme alcanzar los míos, por ser ese motor y luz en momentos de poca claridad, por ser mi mejor amiga y guía. Gracias por su sacrificio y esfuerzo para darme una buena educación. Gracias mamá por tu amor y paciencia. Gracias por que todo lo que yo soy te lo debo a ti. A mi Tita, por ser mi fiel compañera durante largos días de trabajo, escritura y estudio. Gracias a todos mis amigos y familiares, que fueron indispensables para poder sobrellevar los estudios y una pandemia. Gracias a mis maestros y mentores Santiago y Carlos, por su guía, paciencia y amor a la economía. Por último, gracias a Dios por la vida, la salud y mi familia.

RESUMEN

¿Cómo afecta el periodo electoral a los presupuestos de los gobiernos de América Latina y el Caribe? A través de una metodología de estudio de eventos, muestro los efectos dinámicos del periodo electoral sobre las variables fiscales en una ventana de tiempo. Utilizando datos trimestrales de 52 países, encuentro evidencia de que los Ciclos de Presupuesto Político (CPP) son un fenómeno de América Latina y el Caribe, en donde el aumento del déficit fiscal es impulsado por un aumento progresivo de los gastos en el periodo electoral. Encuentro que el déficit fiscal aumenta entre 0.31% y 0.88%, mientras que los gastos aumentan entre 0.11% y 1.03% debido a las elecciones.

Palabras clave: Ciclos de Presupuesto Político, América Latina y el Caribe, déficit fiscal, efectos dinámicos, estudio de eventos.

ABSTRACT

How the electoral period affects the government budgets of Latin American and Caribbean countries? Through an event study methodology, I show the dynamic effects of the electoral period on the fiscal outcomes in a time window. Using quarterly data for 52 countries, I find evidence that Political Budget Cycles (PBC) are a Latin American and Caribbean phenomenon, where the increase of the fiscal deficit is driven by a progressive increase of expenditure in the electoral period. I find that the fiscal deficit increase between 0.31% and 0.88%, and the expenses increase between 0.11% and 1.03% due to elections.

Keywords:Political Budget Cycles, Latin American and the Caribbean, fiscal deficit, dynamic effects, event study.

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1. Introduction

The literature in political economy argues that incumbents may use expansionary fiscal economic policies during the electoral period to distribute benefits to their electors, this effect is termed Political Budget Cycle (PBC). According to OECD, Latin American and Caribbean electoral periods are considered risky due to the lack of credibility in government's decision-making. The reason behind this is because electoral processes in this region are characterized by parties that increase the expenses and tend to use a populist fiscal rhetoric to secure their political support (2008). With this context in mind, this paper seeks to answer how the electoral period affects the government budgets of Latin American and Caribbean countries. Thus I use an event study to show the effects of the electoral period on fiscal accounts. This identification strategy shows the dynamic changes of the fiscal variables over a sequence of time.

To use an event study methodology, I create a time window of 11 quarters before the election date for every election and country. In the sample these windows are composed of six quarters that constitute the electoral period (in which the quarter where the election takes place is included), and five quarters that constitute the time in which the elections have no effects (non-electoral period). Then, these windows are used to implement the event study for the three fiscal accounts: Revenues, Expenses, and Fiscal Balance (Revenues - Expenses), the principal objective of this design is to show the before and after of the fiscal variables under possible fiscal manipulation due to elections.

Using quarterly data for 52 countries from 1991 to 2020, I find that political budget cycles are a Latin American and Caribbean (LAC) phenomenon. The theory argues that incumbents tend to increase expenses more than decrease tax revenues because it is easy for governments to enact a combination of expenditure programs and financing schemes that will secure the support of the electorate (Buchanan et al., 2000). According to this, I find that the PBC in LAC countries is driven by an increase in expenses, while revenues seem to not experience significant changes.

The dynamics effects show a progressive behavior in the increase of the deficit and expenditure. Thereby, in the last electoral quarter, the fiscal balance and the expenses reach their most critical point.

In addition, I use a placebo as a robustness check of the findings for LAC economies. In this case, a placebo refers to analyzing with the same methodology the existence of possible political budget cycles in other regions and under political and economic conditions like government systems and income levels. I find that in the other regions of the sample, there are no patterns that show the presence of a political budget cycle. I find the same result for government systems and the income levels.

2.   Literature Review

Empirical studies on Political Budget Cycles have found interesting static effects of the fiscal variables in the election year. Several researches show that PBC is a phenomenon of developed and developing countries, where Shi and Svensson find that effects are larger for less developed countries (2006). Other studies, highlight the difference between established versus new democracies. Where Brender and Drazen find that the PBC phenomenon is driven by countries with new democracies (2004). While in contrast Alt and Dreyer Lassen show that this feature happens in old or established democracies (2006). Countries of a same region may share similar characteristics, political trends, and governments that could be determinants for the existence of a political budget cycle. This study reconciles prior literature in which the PBC is found in developing countries and new democracies since these two characteristics are a common denominator in LAC economies.

The panel model used for these studies, such as GMM and fixed effects estimators could be inconsistent and biased because of the heterogeneity of the sample that does not allow pool-

ing of the data. To avoid this problem, other empirical studies use semi-pooled and pooling mean group estimators to look for the existence of political budget cycles. In these terms, Klomp and De Hand found that PBC is conditional on the level of development, democracy, and government system (2013).

Despite the results found in previous studies, all of the methodologies that I am aware of estimate a static effect of elections on the fiscal accounts for a specific time. My contribution in this paper is to use an event study methodology , which allows me to test if a determined event affects any outcome across a window of time (Wooldridge, 2009). This methodology differs from the others since it displays the dynamic effects of a policy or event on the variables if interest in a sequence of periods. In this case, it shows the difference between the periods when the electoral period takes place and when it does not, it shows the nature of these effects and how their behavior changes over time.

Event study methodology has been used in a broad area of economic literature. In financial economics, this has been an important tool to examine the behavior of a firm's stock prices around corporate events (Eck, 2007). In labor economics, it has been used to analyze the level of the minimum wage on the employment rate of some groups (Freyaldenhoven et al., 2021). Empirical macroeconomics uses event study designs for treatment effects estimations, in which all units in the panel receive treatment at random times(Borusyak & Jaravel, 2016). In this paper, I introduce a design that contributes to the political economy literature to examine the government's fiscal manipulation around the electoral event.

3. Methodology

The main objective of this study is to show the existence of a political budget cycle in Latin America and the Caribbean. Therefore this section states the use of event studies as the methodology that exhibits the dynamic effect of the elections on the fiscal outcomes.

3.1. Event Study

An event study's aim is to examine if a specific policy or event influences the behavior of an outcome, this methodology is informative because it exhibits the dynamic effects before and after a policy or event takes place. The foremost advantage of using this methodology is to make events comparable; the events in question do not have to occur within the same period. For the observation of the PBC, it is of interest to show the dynamic impact of elections on different fiscal results between the i countries where $i \in \{1,...,52\}$. Therefore, the basic specification is

$$y_{it} = \sum_{j=-M}^{P} \beta_j Policy_{i,t-j} + \mathbf{q_{it}}\chi + \alpha_i + \gamma_t + \varepsilon_{it}, \tag{1}$$

where y_{it} is the fiscal outcome in country i for time t, $Policy_{i,t-j}$ is the event dummy variable, and q_{it} denotes the vector of controls with χ coefficients. The controls used in this specification were the business cycle of GDP, the logarithm of real GDP, the share of trade, an institutional variable that counts the number of years since the most recent regime change, the fraction of population that are between 15 to 64 years, and the fraction that are above 65 years. Furthermore, α_i represents country fixed effects, while γ_t are time fixed effects, and ε_{it} are the unobserved errors.

Consequently, $\sum_{j=-M}^{P} \beta_j Policy_{i,t-j}$ shows the dynamics effects of the policy. In this study, it implies that the fiscal outcome at period t can be influenced at most P periods be-

fore t, and at most M periods after t. The choice of P and M will constitute the event window for this study, which will be of five quarters $M = P = 5$ (Further explanation of window setting is available in section 3.1). This symmetric election window is suggested since it allows me to test the pre-trends effects during the same horizon that the policy is supposed to affect the fiscal outcome. The purpose is to observe if there is any anticipatory behavior in y_{it} five quarters before the electoral period starts.

Equation 1 represents the panel event study specification that is calculated through the OLS estimator with multiple levels of fixed effects. This empirical specification is just an extension of a difference-in-difference method. However, the difference is that the event study allows me to test parallel trends in the time when the policy has no effect and also this allows me to analyze the nature of the policy effects, for example, if there is a transitory effect or if the effect growths or decreases over the time. (Clarke & Tapia Schythe, 2020).

Since the policy variable is assigned by country units and the results are observed over time within these units, here is the potential for serial correlation. This concern arises because there could exist a high serial correlation between the fiscal outcomes variables and a relatively small change in the policy variable that could affect the statistic inference (Clarke & Tapia Schythe, 2020). To avoid this problem, I use clustered-robust estimators to estimate standard errors and confidence intervals. However, it is important to determine the minimum number of clusters, because too few could generate biased static inference. Hence, I follow the rule of thumb proposed by Angrist and Pischke (2009), who established to use at least 42 clusters.

A potential limitation of this methodology is that despite the robustness checks applied, in the worst case, the results and dynamics obtained from the event path, may not arise as an effect of the policy, but as a result of an unmeasured confound. This is an important feature to highlight, however, the analysis of the plausibility of a confound will be left for further investigations.

4. Data

For an event study design, the choice of data frequency is of prime importance. Because in a very small window around the event, nothing more than just the policy should affect the outcome. Hence, this objective is better achieved with the use of high-frequency data (Gürkaynak & Wright, 2013). This study uses quarterly fiscal data from the International Financial Statistics (IFS) published by the International Monetary Fund (IMF) and the Latin Macro Watch (LMW) published by the Inter-American Development Bank (IADB). The fiscal information used is the government fiscal balance, total revenues, and total expenditures presented as a percentage of GDP.

For elections, I use the Data Base of Political Institutions (DPI) of the World Bank Organization (WBO), which provides information on when the elections take place. The information of the elections is then used to determine the electoral period and the interest variable $Policy_{i,t-j}$. For certain countries where data was not available in DPI, I use IDEA Voter Turnout Data Base. Therefore, the basic data set consists of 226 elections between $1991Q1$ to $2020Q1$ (data for many countries cover shorter periods). For Latin American and Caribbean countries, the number of total elections is 64 (Further details of the basic data set are given in the Data Appendix Table 2).

In terms of control variables, I use quarterly real GDP, data from the Global Economic Monitor (GEM) of the World Bank. I use this data to compute the natural logarithm of GDP and to obtain the cycle of GDP I use a Hodrick Prescott filter. The share of the population between 25 and 64 years and above 65 years was retrieved from the World Development Indicators (WDI) of the WBO. [1] The share of trade was calculated using quarterly data from exports and imports available in the GEM database. Finally, the institutional variable was retrieved from

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[1]This data is in annual frequency, thus the same data was used for all the quarters of the same year by each country.

the Polity IV database, which exhibits the number of years since the most recent regime change from a score of democratic and autocratic institutions established in the same database.

4.1. Electoral Period

Literature on political budget cycles commonly defines that the electoral period starts one year before elections. However, since this study aims to observe the dynamic effect, I decide to use an electoral period that begins a year and a half before the election. The benefit of this larger window allows me to include the majority of data without overlapping last and upcoming elections of the same country. Hence, for the dummy $Policy_{i,t-j}$, this means that the event takes place during 6 quarters once the electoral period begins, where the quarter t is when the event starts and the last quarter of the electoral period is when the election takes place. This implies that:

$$Policy_{i,t-j} = \begin{cases} 1 & if \ [t-j \geq t] \\ 0 & if \ [t-j < t] \end{cases} \ where -5 \leq j \leq 5 \qquad (2)$$

To capture the changes of the fiscal outcomes before and after the electoral period begins. It is important to observe the pre-trends during the same horizon in which the event affects the outcome, for this situation the dummy $Policy_{i,t-j}$ is included 5 quarters before the event starts. The event window for this study consists of 11 quarters per event.

## 4.2. Predetermined Elections

Theory suggests that when the electoral date is previously known and determined, the governments have a huge opportunity to use fiscal policies to secure their reelections and acceptance

(Katsimi & Sarantides, 2012). An important concern about the timing of the elections is their endogeneity. In particular, because this could produce problems of inverse causality. However, how the windows are assembled helps to secure that the elections happen with a considerable periodicity since it is necessary 10 quarters before the election quarter for each window. This avoids early elections in our sample and keeps the elections that should be exogenously fixed.

4.3.   Descriptive Statistics

I decided to divide the sample into regions, where 31 countries are from Europe, 15 from Latin America and the Caribbean (LAC), and just 6 from other regions. On average all the regions of the sample have around four elections. (For further information of elections look for Table 2 from the Data Appendix).

Table 3 displays the average Fiscal Balance for each region in all periods of the window. The initial guess from this table suggests that in a full sample there is no evidence of a PBC. The same theme for Europe and other regions. However, for LAC there seems to be a pattern that shows an increase of the deficit in the electoral period. In addition, the fiscal deficit worsens in the exact quarter in which elections take place. This information is summarized in the following graph:
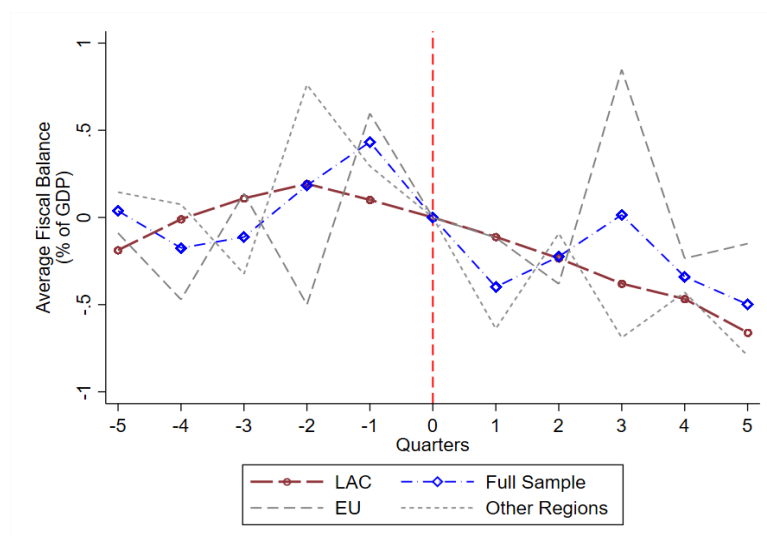
Figure 1: Average Fiscal Balance by Region. The plot shows the average fiscal deficit in an event window, in which from 0 to 5 is the electoral period and 5 is the quarter when the election takes place. In addition, this graph was normalized in reference to quarter 0 which is the quarter in which the electoral period starts. Here, we can see that LAC economies seem to experience a decrease of the fiscal outcome over the electoral period that could indicate the possible existence of a PBC.

The fiscal deficit existence happens because of three situations, an increase in expenditure, a decrease in revenues, or a combination of both. To observe which situation is driving the fiscal deficit in LAC economies, I observe revenues and expenses separately. The information of average revenues and expenses can be found in Table 4 and Table 5. This information suggests that the PBC is driven by higher expenses, while revenues tend to remain constant. In LAC countries the expenses increase during the electoral period, and revenues increase too but in lesser magnitude. The average fiscal accounts of Latin America and the Caribbean are presented in the following graph:
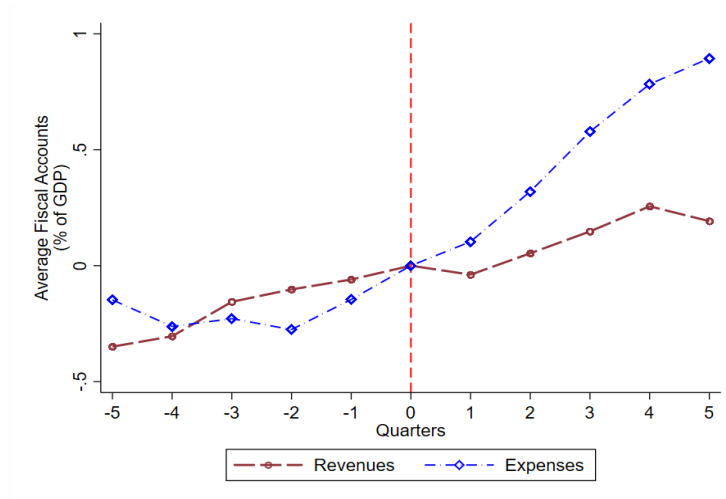
Figure 2: Average Revenues and Expenses for LAC. This plot shows the average expenses and revenues in an event window that was normalized in reference to quarter 0. This plot shows that the average expenses and revenues tend to increase over the electoral period. However, these dynamics are dominated by the growth of expenditures, which could suggest the existence of expansionary fiscal policies.

5.   Results

This section seeks to determine if a Political Budget Cycle is a Latin American and Caribbean phenomenon. Hence, I begin this section by showing the results and plots of the event study for the LAC economies on the fiscal outcomes: fiscal balance, revenues, and expenses. Then, I present a placebo analysis using the same methodology as a robustness check of the findings for LAC countries.

5.1.   Political Budget Cycles a LAC phenomenon

Table 1 shows the results of the fiscal outcomes in the event window for the variable of interest [2]. An event study displays the cumulative effect of the policy on the outcome. For this reason, the effect of the policy must be measured with respect to some baseline (this is called normalization) to capture the effects when the event occurs and also to avoid collinearity (Freyaldenhoven et al., 2021). The standard choice of normalization is $B_{-1} = 0$ or when the time period is $t-1$. Hence in Table 1 coefficients and results are omitted for this period.

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[2]Table 1 report the results for the interest variable, since in this study I am not interested in the coefficients of controls and constant variables

	Latin America and the Caribbean		
Variables	Fiscal Balance	Revenues	Expenses
t-5	-0.480*	0.249	0.630
	(0.241)	(0.383)	(0.432)
t-4	-0.176	0.329	0.418
	(0.199)	(0.305)	(0.364)
t-3	-0.022	0.475*	0.443*
	(0.176)	(0.268)	(0.262)
t-2	0.011	0.106	0.068
	(0.119)	(0.184)	(0.200)
t	-0.310**	-0.213	0.116
	(0.128)	(0.143)	(0.119)
t+1	-0.234	-0.113	0.203
	(0.156)	(0.307)	(0.258)
t+2	-0.400*	-0.052	0.469
	(0.237)	(0.490)	(0.409)
t+3	-0.600**	0.187	0.898*
	(0.241)	(0.471)	(0.447)
t+4	-0.720**	0.178	0.923*
	(0.306)	(0.432)	(0.470)
t+5	-0.879***	0.207	1.032**
	(0.303)	(0.428)	(0.470)
Observations	565	521	521
N. of countries	15	15	15
Adj. R - squared	0.644	0.895	0.889
N. Clusters	52	48	48

Clusters Standard Errors in parentheses

***p<0.01, **p<0.05, *p<0.01

Table 1: Event Study Results for LAC

In Table 1 it is of greater interest to observe the effects of the policy from t to $t + 5$, since this is the period that absorbs the effects of the elections. From an overall view, I find that the elections have a negative effect on the fiscal balance relative to the quarter before the electoral

period. In t when the policy starts, the cumulative effect on the fiscal balance is -0.31% relative to event time $t-1$. In other words, once the electoral period starts the fiscal deficit increase by 0.31% relative to $t-1$. Then in $t+5$ period when the election takes place, the fiscal deficit increase by 0.88%, which is the lower point that the fiscal outcome reaches relative to $t-1$. Hence, the dynamics of the electoral effect show a pattern that exhibits a progressive increase of the fiscal deficit in an electoral context. Figure 3 shows the event plot and the results for the LAC Fiscal Balance.
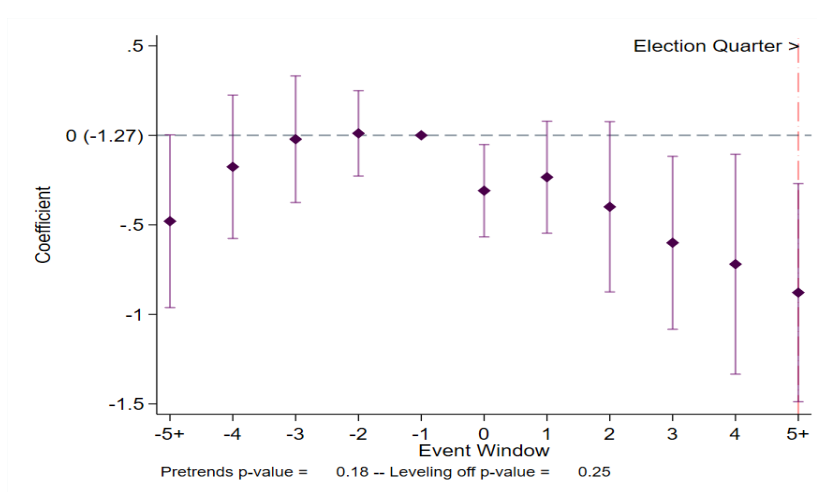

Figure 3: Event Plot for LAC Fiscal Balance. This plot shows the results for LAC Fiscal Balance, in which from 0 to 5 is the electoral period and 5 is the quarter when the election takes place. In addition, the graph was normalized in reference to quarter -1 which is the quarter before to electoral period. This plot shows that the increase in the deficit occurs progressively over the electoral period. The dynamic effects show that the fiscal deficit increase once the electoral period begins, at 0, and reaches its higher point on the quarter of the election.

In the event plot, I also present two $p-values$ that come from a Wald test. Leveling off $p-value$ seeks to test that changes in $Policy_{i,t-j}$ variable more than 5 periods before, do not affect the outcome. If this hypothesis is not fulfilled, there might be dynamic effects of the policy that have to be added. In the same way, Pretrends $p-value$ aims to test whether changes in the interest variable more than 5 periods in the future, do not affect the results. If this hypothesis is not fulfilled, it might indicate anticipatory behavior or the presence of a confound (Freyaldenhoven et al., 2021). For Figure 3, both hypotheses are rejected, thus the window that has been chosen for this event study is the adequate.

Figure 3 also provides information about the sample mean of the fiscal balance one period in advance of a policy change. Hence in $t-1$ the average fiscal balance for LAC countries was $-1.27\,\%$ of GDP. Moreover, vertical bands are 95% confidence intervals that show the statistical significance for each period.

In theory, fiscal manipulation driven by revenues will imply that incumbents decrease the government's revenues by decreasing taxes, to have more popularity and acceptance (Shi & Svensson, 2003). Figure 4 exhibits the event plot and the results for LAC revenues. Here, I show that there is no clear pattern over the behavior of revenue. For periods t, $t+1$ and $t+2$, coefficients are negative, which means that revenues are lower relative to $t-1$. But for periods $t+3$, $t+4$ and $t+5$, revenues are higher than the period without the electoral effects $t-1$. However, no result is significantly different from zero.
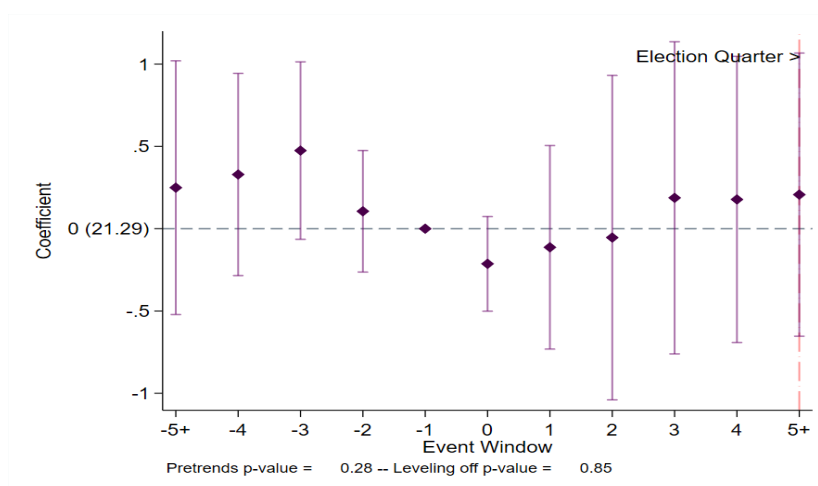
Figure 4: Event Plot for LAC Revenues. This plot exhibits that revenues seem to not be affected by the electoral period. From period 0 to period 5, I do not observe statistically significant changes or patterns suggesting expansionary fiscal policies.

On the other hand, the incumbent's fiscal manipulation through expenses is easier for the government, since it can select what and how much to invest and whether to get into debt or not (Shi & Svensson, 2003). In the Figure 5, we can clearly see that expenses are higher over the electoral period. In t, $t+1$ and $t+2$ the expenses are higher in contrast to $t-1$ respectively; however, these results are not statistical significant. But for period $t+3$, $t+4$ and $t+5$ statistical

significant results are found for an increase in expenses. Consistent with what has been found for the fiscal balance, this shows that expenses increase progressively in the electoral period, and during the quarter of the election is when the expenditures became greater.
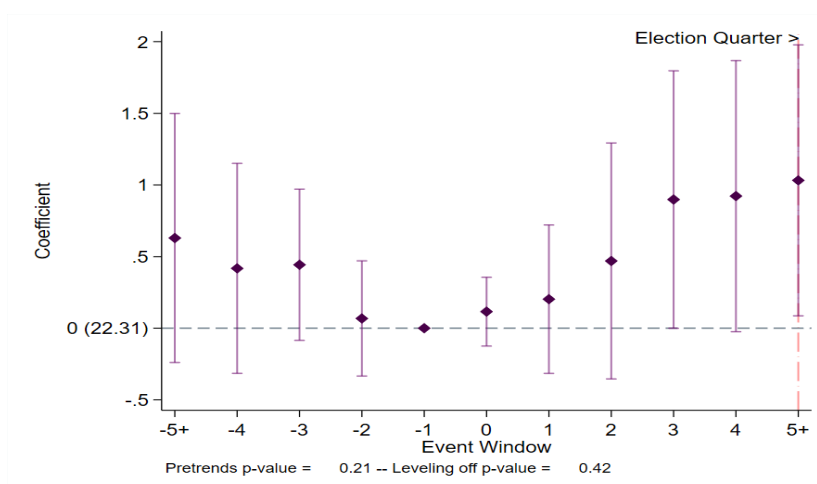
Figure 5: Event Plot for LAC Expenses. This plot shows that the political budget cycle found in Figure 3, is driven by the increase in expenses. These effects are larger for the electoral quarter and tend to increase over the electoral period. At the beginning of the electoral period, the expenditure increase by 0.11%, and in the election quarter the expenses are higher by 1.03%, these results are in reference to the first quarter with no electoral effects.

To summarize, Political Budget Cycle seems to be a Latin American and Caribbean phenomenon. The dynamics of these effects occur progressively in the electoral period, and are driven by the increase of expenditures. In addition, it is relevant that the deficit and the increase of expenses gets worse during the quarter when the election takes place.

5.2. Placebo

The construction of a placebo arises as a robustness test of what I have found for the Latin American and Caribbean countries. This implies that if I make the same analysis for the same object of investigation in a window without electoral effects, there will be no result that indicates the presence of a cycle. For this analysis, it is necessary to have enough periods to construct new windows that do not overlap with the windows that include the electoral effects.

Unfortunately in the database, the frequency of elections is every 4 or 5 years depending on the country and its rules. In the PBC analysis, it was necessary to include 11 quarters for each window, and for the countries in which elections happen every 4 years there are just 16 quarters available between elections. Thus, there are not enough quarters to construct a placebo window since it is necessary to have at least 22 periods between each election. Another option to this situation could be to decrease the window size. Nevertheless, this affects the main study, because it generates problems with the test of pre-trends and makes parallel trends disappear.

However, another alternative is to make the same analysis for the rest of the sample and under different conditions. More specifically, the objective is to evaluate the event study for regions other than LAC, for different government systems, and different income classifications. Therefore, this section aims to show the results and event plots for the placebos.

5.2.1.   Europe and Other Regions

Table 6 from the Results Appendix exhibits the placebo results of the event study for Europe and other regions. Regarding Europe in terms of the fiscal balance, no significant deficit increase is observed once the electoral period begins. For periods $t + 1$ and $t + 5$, it is easy to see a statistically significant deficit increase in 1.34% and 1.55% relative to the baseline period. Nevertheless, I do not observe a drastic change for the results affected by the electoral period in contrast to the results without the electoral effects. In terms of revenues and expenses, despite there being some significant results, we cant observe a difference between the period before and after electoral time suggesting an increase in expenses or a decrease in revenues (Further information and plots are presented in the Results Appendix). Figure 6 shows the event plot and the results for Europe Fiscal Balance.
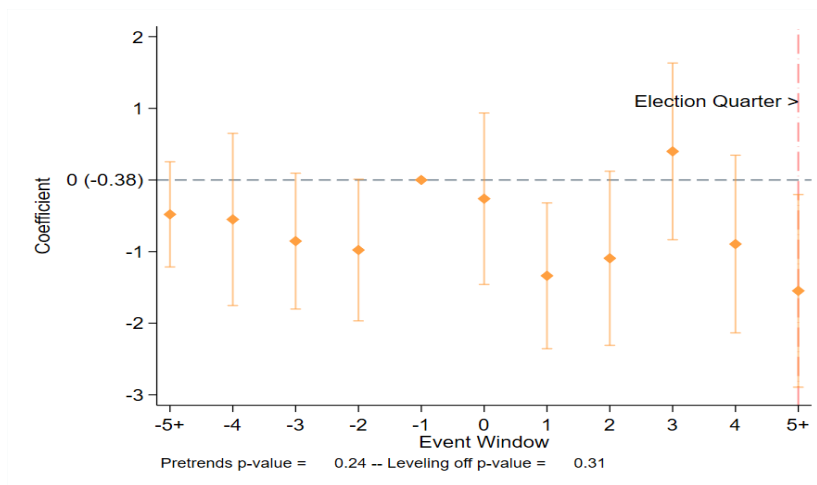
Figure 6: Event Plot for Europe Fiscal Balance. This plot shows that the PBC is not a phenomenon of this region. No changes are observed once the electoral period begins at 0. However, the fiscal deficit increases by 1.54% in the election quarter. This result is statistically significant at 95%.

Therefore, I demonstrate that Political Budget Cycles seem to not be a phenomenon seen in Europe. One of the possible reasons for these results could be that a significant group of these countries are a member of the European Union. Thus they have to abide by the macro-fiscal rules imposed by this organism. Hence, it is more complicated for the incumbent to use fiscal manipulation.

In the same way, Figure 7 exhibits the results for other regions fiscal balance. This plot shows that there is no significant change for all the quarters where the electoral period takes place. Relative to $t-1$ it has been found that the fiscal balance does not change significantly even for the quarter when the election takes place. Regarding revenues and expenses, I found no significant results, no patterns that display a fiscal manipulation, and no clear differences in the periods affected by the policy.
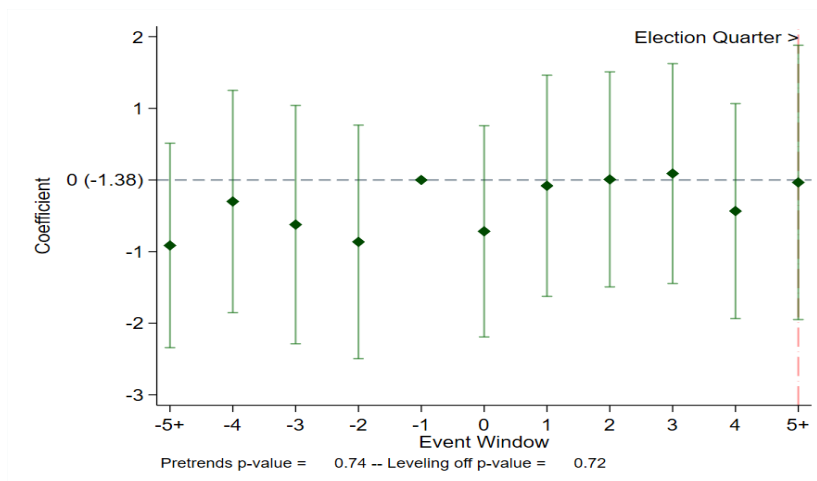
Figure 7: Event Plot for Other Regions Fiscal Balance. This plot shows that the PBC is not a phenomenon for the other regions of the sample. I find no effects in the fiscal balance that suggest a before and after of the electoral period.

Therefore, for other regions, since there are not enough observations and countries to disagregate this group into Asia, Africa, and others, the possibility of a PBC cannot be rejected. However, the results obtained can suggest that fiscal manipulation is not present in these countries of the sample.

5.2.2. Government Systems

The empirical literature argues that the strength and existence of Political Budget Cycles depend on the nature of the government systems (Brender & Drazen, 2004). because of this, I look for evidence if a PBC between presidential and parliamentary systems. This study has 20 countries with presidential systems and 32 with parliamentary systems.

Table 7 displays the results of the event study for presidential and parliamentary systems. For both cases, there is no pattern evidence of the presence of a PBC. The Fiscal balance doesn't seem to decrease because of elections. The empirical results for the fiscal balance show, that before and after the electoral time there is no drastic change that could suggest fiscal manipu-

lation. In addition, for Revenues and Expenses, I find, that there are no signs of a change due to the effects of the electoral period (Event plots for revenues and expenses are in the Results Appendix). Figure 8 and Figure 9 shows the results for Presidential and Parliamentary fiscal balance.
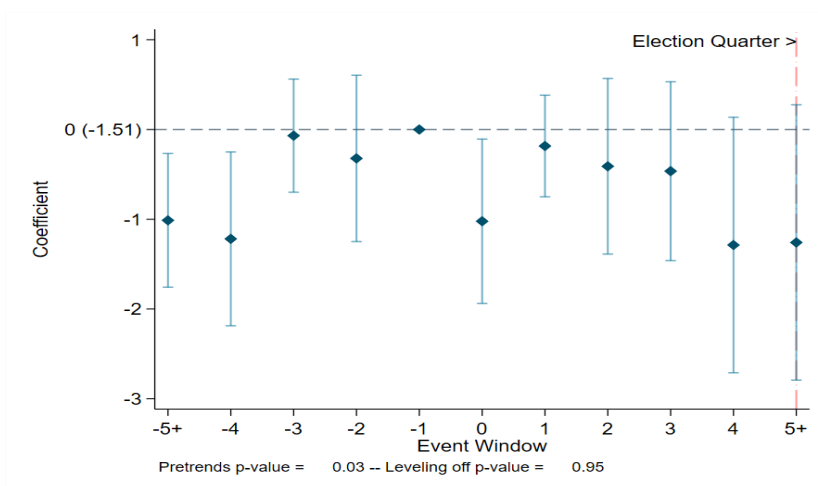
Figure 8: Event Plot for Presidential Systems Fiscal Balance. This plot shows that at the beginning of the electoral period, the fiscal deficit increases significantly by 1.02%. However, for the rest of the periods, I find results that are not statistically significant and that may not indicate a PBC.
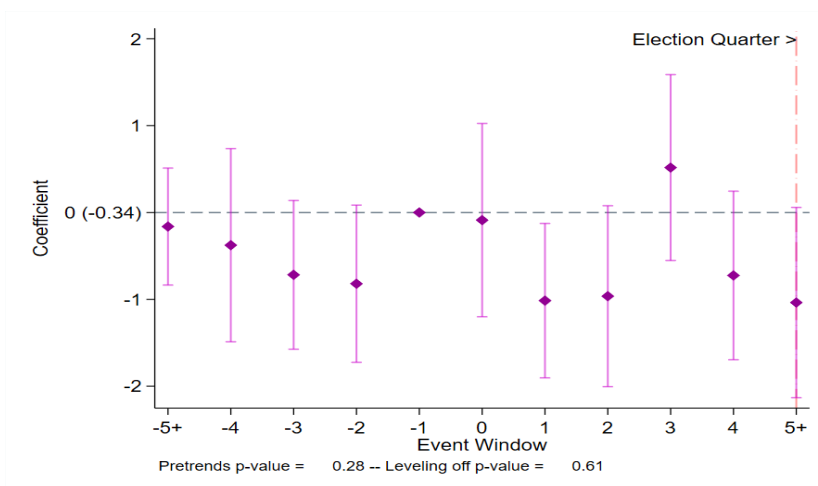
Figure 9: Event Plot for Parliamentary Systems Fiscal Balance. This plot shows that at period 1 the results are statically significant and show an increase of the deficit by 1.06% relative to period −1. However, the effects of the elections are unclear. The dynamics of these effects do not suggest any pattern that would exhibit a PBC for this fiscal outcome.

5.2.3. Income Level Classification

The same as government systems, the level of economic development could explain a PBC. For this reason, I divide the sample into three income-level classifications: lower-middle income (LMI), upper-middle income (UMI), and high income (HI). This information and classification are obtained from WDI, where lower middle income are countries with a GNI per capita between $1.036 to $4.046, upper middle income economies are those with GNI per capita between $4.046 to $12,535 and high income economies are those with GNI per capita of $12.535 or more [3]. In this research 12 countries are LMI economies, 23 are UMI economies and 34 are HI economies (Notice that the same country could be classified in two or more categories, because the classification change over time).

Table 8 exhibits the results of the different fiscal variables for LMI, UMI, and HI economies. In terms of Lower-Middle Income economies, Figure 11 illustrates that the results for the fiscal balance are not statistically significant. Coefficients show that during the electoral period, there does not exist a change that could reflect the increase of the fiscal deficit in contrast to the periods where the policy has no effect. Similar findings are reported for revenues and expenses, where no significant changes are exhibited.

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[3]For each event, I use the income classification of the election year for all the window. For example, if country A has an election that takes place in 1999 and income classification during this year were high income for this country, then this classification was used in all periods of the window.
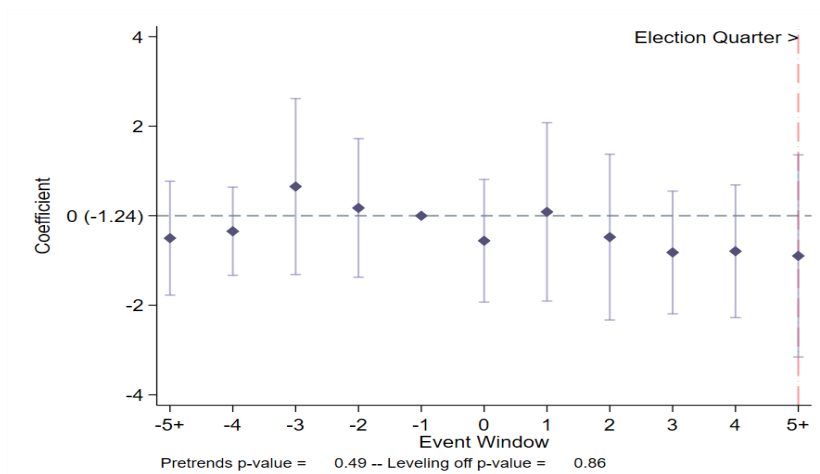
Figure 10: Event Plot for LMI Economies Fiscal Balance. This plot exhibits that all the coefficients for the effects of the elections in the fiscal deficit are not statistically significant. I find no evidence of a change between the periods with the electoral effects and the periods without these effects.

Figure 11 exhibits the results for Upper-Middle Income economies. Here, I show that the fiscal deficit dynamics could suggest the presence of a PBC because once the electoral period begins the fiscal deficit decreases. However, these results are not statistically different from zero. For Revenues and Expenses, the findings differ from the dynamics of the fiscal balance results, because they do not exhibit an increase in expenses or a decrease in revenues as a response to a policy change.
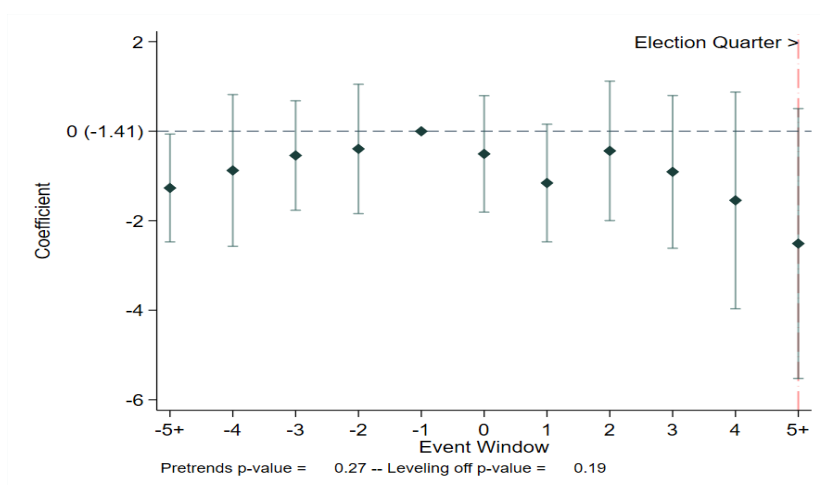
Figure 11: Event Plot for UMI Economies Fiscal Balance. This plot shows that the fiscal deficit increases progressively from period 0 by 0.5% to period 5 by 2.5%. This pattern may suggest the existence of a PBC; however, these results are not statistically different from zero.

On the other hand, the results for high income economies exhibit that the PBC is not a phenomenon for these countries. Figure 12 displays the dynamics of the effects, which seem to not change in the electoral time. The patterns are odd since just for $t+3$ there is a decrease of the fiscal deficit relative to $t-1$. Regarding revenues and expenses, the results do not display a behavior that could suggest a PBC. Nevertheless, just for the quarter when the election takes place, revenues seem to exhibit a change in response to the electoral effects (The event plots for revenues and expenses are presented in the Results Appendix).
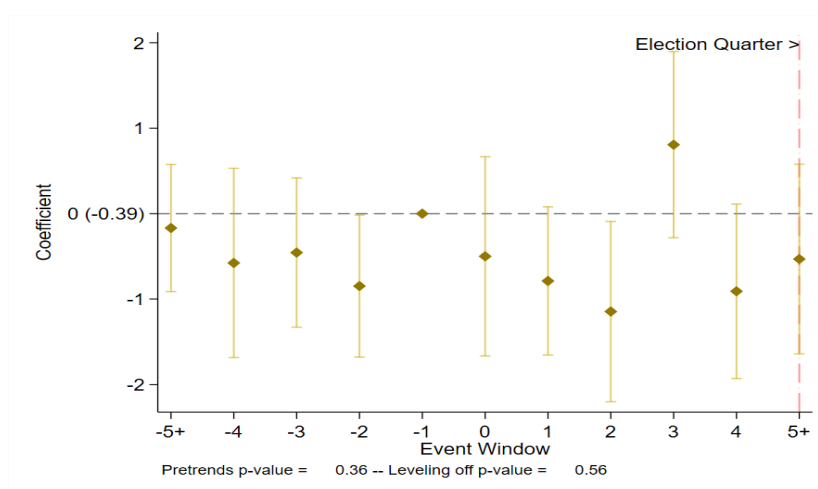
Figure 12: Event Plot for HI Economies Fiscal Balance. This plot shows that there is no clear pattern that suggests a before and after of the electoral effects.

In this section, I demonstrate that the political budget cycle is not a phenomenon in other regions and under political and economic conditions. The essential finding is that in the quarters when the electoral period takes place, there is no evidence of a change on the fiscal outcomes due to fiscal manipulation.

6.   Conclusions

The empirical results indicate that the political budget cycle is a Latin American and Caribbean phenomenon. I find that the fiscal deficit tends to increase between 0.31% and 0.88% in the electoral period. These findings are characterized by expansionary fiscal policies that show a progressive increase of expenses over the electoral period. Expenditures tend to increase between 0.11% and 1.03% in the electoral period. The stronger effect takes place in the exact quarter of the election, where we see the worst fiscal deficit and the highest expenditures. Furthermore, the statistical inference shows a significant change during the last three quarters of the electoral time.

In the placebo, I don't find evidence that the PBC happens in Europe and the other regions of the sample. The results show that there are no changes in the fiscal outcomes during the electoral period that suggest a pattern that could prove the existence of a a PBC. For revenues and expenses, I do not find fiscal expansionary policies that could suggest fiscal manipulation due to the elections. This same result was found for the analysis conditional on government systems, and income classification.

It is important to highlight that one of the main limitations in this paper is the analysis of a possible confound for the event study methodology. In particular, this could be determinant to know if the results were an effect of the government's manipulation or a result of a confound. Finally, it would be interesting to expand the database for the countries that were not contemplated in this study. Mainly, to analyze the dynamic effects for emerging regions like Asia and Africa.

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8. Appendix

8.1. Data Appendix

8.1.1. Data Bases and Number of Elections

No.	Country Name	Fiscal Data Base	Elections Data Base	Number of Elections
1	Argentina	LMW	DPI	5
2	Australia	IFS	DPI	5
3	Austria	IFS	DPI	5
4	Belgium	IFS	DPI	5
5	Belize	LMW	DPI	5
6	Bolivia	LMW	DPI	3
7	Bosnia and Herzegovina	IFS	DPI	3
8	Brazil	IFS	DPI	4
9	Bulgaria	IFS	DPI	4
10	Canada	IFS	DPI	9
11	Chile	LMW	DPI	6
12	Colombia	LMW	DPI	4
13	Costa Rica	LMW	DPI	7
14	Croatia	IFS	DPI	5
15	Cyprus	IFS	DPI	4
16	Czech Republic	IFS	DPI	5
17	Denmark	IFS	DPI	6
18	Ecuador	LMW	DPI	5
19	Finland	IFS	DPI	5
20	France	IFS	DPI	4
21	Germany	IFS	IDEA	4
22	Greece	IFS	DPI	5
23	Guatemala	LMW	DPI	4

No.	Country Name	Fiscal Data Base	Elections Data Base	Number of Elections
24	Honduras	LMW	DPI	4
25	Hungary	IFS	DPI	5
26	Iceland	IFS	DPI	5
27	Indonesia	IFS	DPI	1
28	Ireland	IFS	DPI	4
29	Israel	IFS	DPI	5
30	Italy	IFS	DPI	4
31	Latvia	IFS	DPI	6
32	Lithuania	IFS	DPI	4
33	Luxembourg	IFS	DPI	3
34	Malta	IFS	DPI	4
35	Mexico	LMW	DPI	6
36	Morocco	IFS	DPI	2
37	Netherlands	IFS	DPI	6
38	Nicaragua	LMW	DPI	2
39	Norway	IFS	DPI	4
40	Paraguay	LMW	IDEA	4
41	Peru	LMW	DPI	2
42	Poland	IFS	DPI	3
43	Romania	IFS	DPI	3
44	Slovak Republic	IFS	DPI	6
45	Republic of Slovenia	IFS	DPI	5
46	Spain	IFS	DPI	5
47	Sweden	IFS	DPI	5
48	Switzerland	IFS	DPI	3
49	Turkey	IFS	DPI	2
50	United Kingdom	IFS	DPI	5
51	United States	IFS	DPI	4
52	Uruguay	LMW	DPI	3

Table 2: Data Bases and Number of Elections by Country

8.1.2. Average Fiscal Balance, Revenues and Expenses by Region

Window	Full Sample	LAC	Europe	Other
t-5	-1.20	-1.78	-0.86	-1.41
t-4	-1.41	-1.61	-1.15	-2.27
t-3	-1.35	-1.49	-1.20	-1.73
t-2	-1.05	-1.40	-0.68	-2.08
t-1	-0.80	-1.50	-0.28	-1.74
t	-1.23	-1.60	-0.80	-2.57
t+1	-1.63	-1.71	-1.61	-1.55
t+2	-1.46	-1.83	-1.14	-2.15
t+3	-1.22	-1.98	-0.77	-1.59
t+4	-1.57	-2.06	-1.20	-2.24
t+5	-1.73	-2.26	-1.45	-1.83
No. Countries	52	15	31	6

Table 3: Average Fiscal Balance by Region

Window	Full Sample	LAC	Europe	Other
t-5	36.98	21.61	44.69	34.78
t-4	36.32	21.65	43.72	33.97
t-3	36.10	21.80	43.30	33.81
t-2	36.36	21.85	43.65	34.21
t-1	37.17	21.90	44.95	34.32
t	36.40	21.96	43.77	33.59
t+1	36.11	21.92	43.23	34.02
t+2	36.23	22.01	43.32	34.35
t+3	37.16	22.10	44.95	33.70
t+4	36.45	22.21	43.79	33.29
t+5	36.25	22.15	43.40	33.76
No. Countries	52	15	31	6

Table 4: Average Revenues by Region

Window	Full Sample	LAC	Europe	Other
t-5	38.11	23.19	45.55	36.20
t-4	37.67	23.08	44.86	36.25
t-3	37.39	23.11	44.51	35.54
t-2	37.35	23.06	44.33	36.28
t-1	37.90	23.19	45.23	36.06
t	37.56	23.34	44.57	36.16
t+1	37.68	23.44	44.84	35.57
t+2	37.63	23.66	44.47	36.50
t+3	38.32	23.92	45.71	35.29
t+4	37.97	24.12	44.99	35.53
t+5	37.92	24.23	44.85	35.59
No. Countries	52	15	31	6

Table 5: Average Expenses by Region

8.2. Results Appendix

8.2.1. Placebo: Europe and Other Regions

	Europe			Other Regions		
Variables	Fiscal Balance	Revenues	Expenses	Fiscal Balance	Revenues	Expenses
t-5	-0.480	-0.731*	-0.251	-0.914	-0.050	0.865
	(0.371)	(0.417)	(0.502)	(0.720)	(0.645)	(0.661)
t-4	-0.551	-1.401**	-0.850	-0.300	0.827	1.127
	(0.607)	(0.608)	(0.723)	(0.783)	(0.701)	(0.719)
t-3	-0.854*	-1.947***	-1.094*	-0.623	-0.858	-0.235
	(0.478)	(0.497)	(0.558)	(0.839)	(0.752)	(0.771)
t-2	-0.978*	-1.971***	-0.993	-0.864	-0.485	0.379
	(0.499)	(0.514)	(0.605)	(0.822)	(0.737)	(0.755)
t	-0.262	-1.202**	-0.941	-0.717	-0.169	0.548
	(0.604)	(0.564)	(0.694)	(0.744)	(0.666)	(0.683)
t+1	-1.338**	-2.074***	-0.735	-0.081	-0.155	-0.073
	(0.514)	(0.536)	(0.648)	(0.779)	(0.698)	(0.715)
t+2	-1.094*	-1.779***	-0.686	0.008	0.448	0.440
	(0.613)	(0.535)	(0.687)	(0.757)	(0.678)	(0.695)
t+3	0.399	-0.226	-0.625	0.090	-0.668	-0.758
	(0.622)	(0.437)	(0.748)	(0.774)	(0.694)	(0.711)
t+4	-0.895	-1.235*	-0.340	-0.434	0.029	0.463
	(0.625)	(0.648)	(0.743)	(0.757)	(0.678)	(0.695)
t+5	-1.548**	-2.164***	-0.616	-0.034	-0.254	-0.220
	(0.678)	(0.704)	(0.636)	(0.966)	(0.865)	(0.887)
Observations	1141	1141	1141	186	186	186
N. of countries	31	31	31	6	6	6
Adj. R - squared	0.488	0.700	0.697	0.616	0.894	0.890
N. Clusters	107	107	107	No [4]	No	No

Clusters Standard Errors in parentheses

***p<0.01, **p<0.05, *p<0.01

Table 6: Placebo - Europe and Other Regions

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[4]For other regions analysis, there is not enough observations to present Clusters Standard Errors. However, the results are presented with Robust Standard Errors.
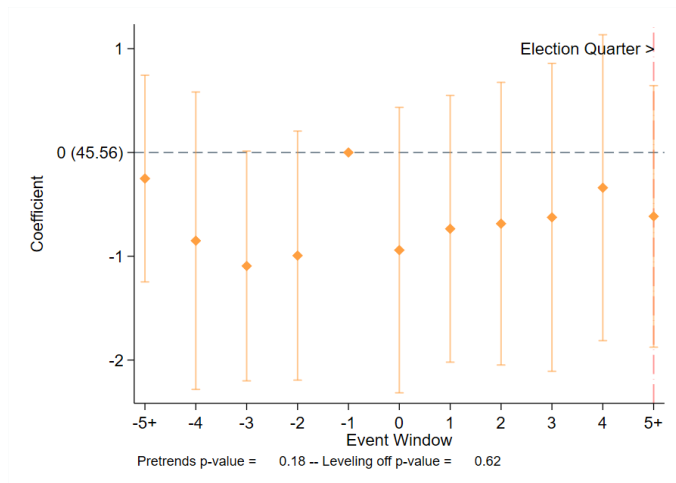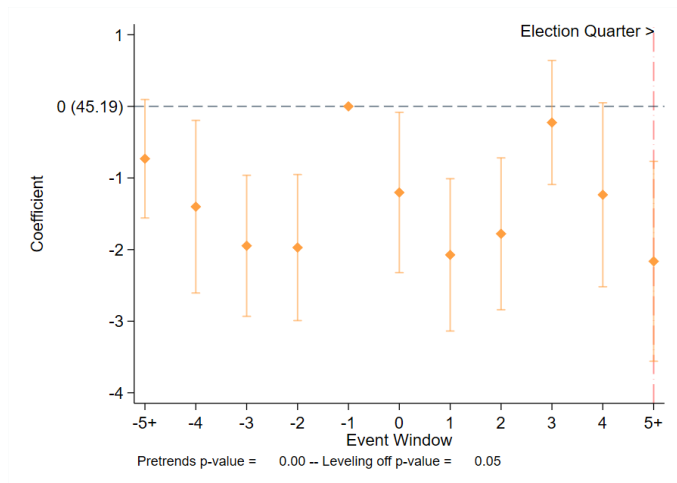
Figure 13: Event Plots for Europe Revenues and Expenses.
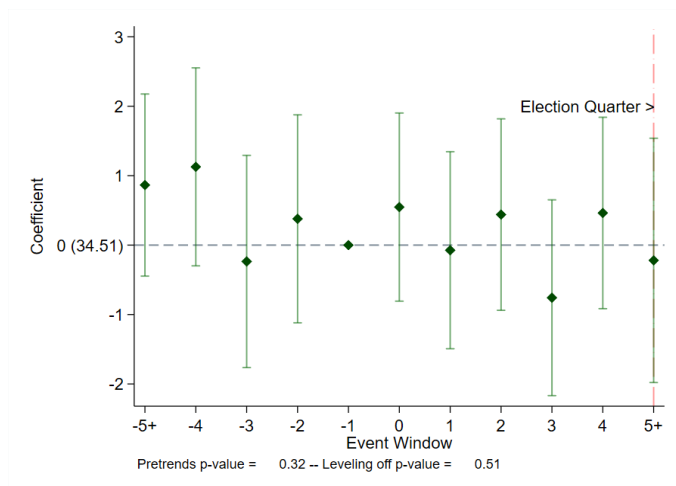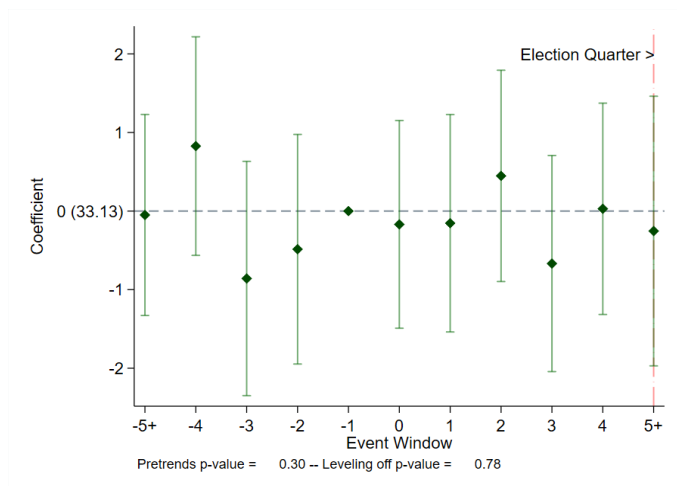
**Figure 14:** Event Plots for Other Regions Revenues and Expenses.

8.2.2. Placebo: Government Systems

|	Presidential			Parliamentary		
Variables	Fiscal Balance	Revenues	Expenses	Fiscal Balance	Revenues	Expenses
t-5	-1.013***	-0.299	0.738	-0.162	-0.278	-0.116
	(0.373)	(0.626)	(0.569)	(0.340)	(0.234)	(0.342)
t-4	-1.219**	-1.755	-0.556	-0.377	-0.814*	-0.437
	(0.485)	(1.173)	(1.143)	(0.561)	(0.429)	(0.461)
t-3	-0.068	-1.117	-1.011	-0.718	-1.567***	-0.849**
	(0.316)	(0.692)	(0.700)	(0.432)	(0.360)	(0.406)
t-2	-0.321	-1.436**	-1.053	-0.821*	-1.310***	-0.490
	(0.464)	(0.716)	(0.845)	(0.457)	(0.398)	(0.372)
t	-1.023**	-2.033*	-1.035	-0.088	-0.694*	-0.606
	(0.459)	(1.127)	(1.038)	(0.561)	(0.376)	(0.504)
t+1	-0.184	-1.410*	-1.215*	-1.015**	-1.635***	-0.620
	(0.283)	(0.719)	(0.682)	(0.449)	(0.365)	(0.470)
t+2	-0.410	-1.658	-1.252	-0.964*	-1.092***	-0.128
	(0.490)	(0.936)	(1.100)	(0.525)	(0.360)	(0.511)
t+3	-0.464	-0.494	-0.629	0.517	-0.020	-0.537
	(0.499)	(0.772)	(0.878)	(0.540)	(0.222)	(0.545)
t+4	-1.287*	-1.976	-0.201	-0.725	-0.687*	0.038
	(0.713)	(1.390)	(1.310)	(0.490)	(0.398)	(0.510)
t+5	-1.259	-1.527	-0.616	-1.037*	-1.542***	-0.505
	(0.769)	(1.073)	(1.084)	(0.552)	(0.520)	(0.474)
Observations	710	666	666	1154	1154	1154
N. of countries	20	20	20	32	32	32
Adj. R - squared	0.384	0.802	0.802	0.507	0.894	0.846
N. Clusters	66	62	62	109	109	109

Clusters Standard Errors in parentheses

***p<0.01, **p<0.05, *p<0.01

Table 7: Placebo - Government Systems
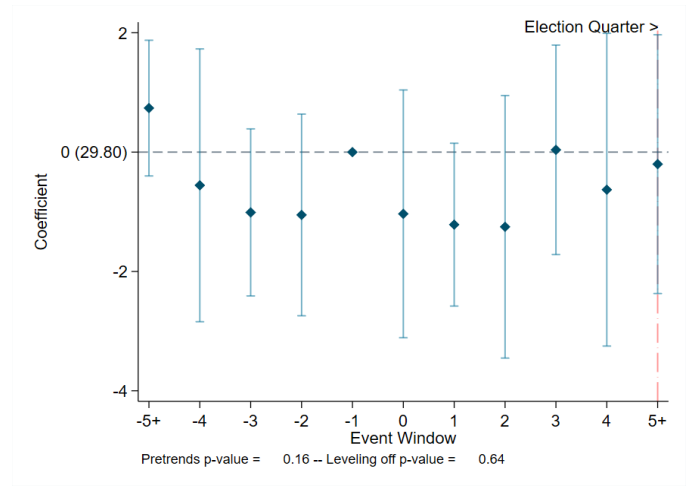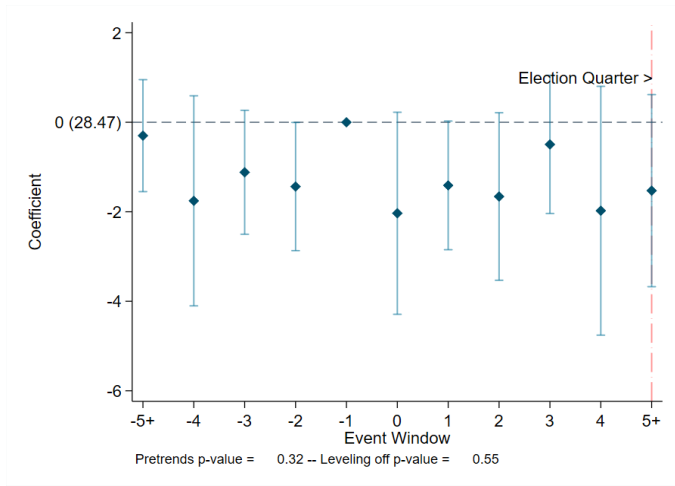
Figure 15: Event Plots for Presidential Systems Revenues and Expenses.
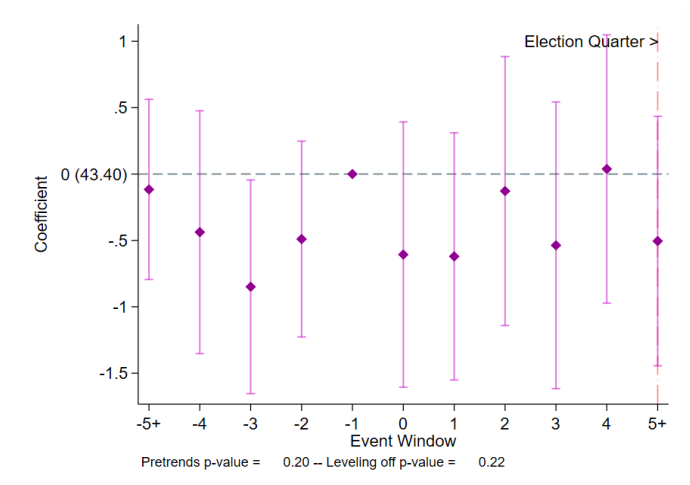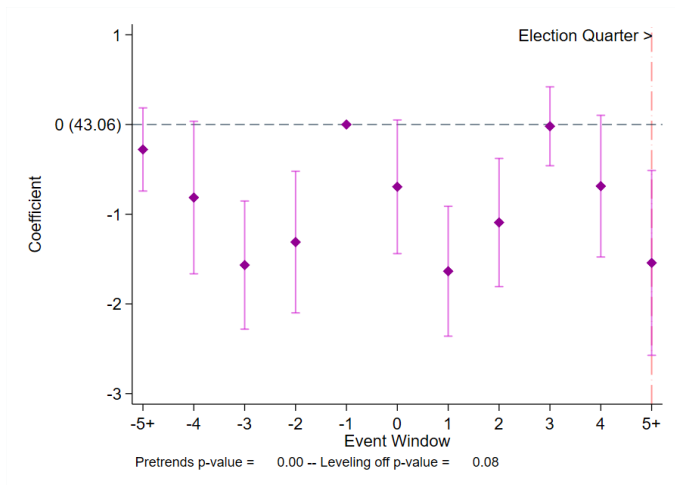
Figure 16: Event Plots for Parliamentary Systems Revenues and Expenses.

8.2.3. Placebo: Income Level Classification

	Lower Middle Income			Upper Middle Income			High Income		
Variables	Fiscal Balance	Revenues	Expenses	Fiscal Balance	Revenues	Expenses	Fiscal Balance	Revenues	Expenses
t-5	-0.500	-0.875	-0.370	-1.267**	0.110	1.383**	-0.168	-0.353	-0.185
	(0.613)	(0.531)	(0.536)	(0.599)	(0.376)	(0.614)	(0.375)	(0.230)	(0.369)
t-4	-0.346	-0.946*	-0.601	-0.875	-1.228	-0.370	-0.577	-0.632	-0.055
	(0.475)	(0.496)	(0.675)	(0.843)	(0.785)	(1.015)	(0.558)	(0.423)	(0.460)
t-3	0.654	-0.605	-1.264	-0.541	-0.568	0.170	-0.456	-1.591***	-1.135***
	(0.948)	(0.422)	(1.046)	(0.608)	(0.448)	(0.684)	(0.440)	(0.375)	(0.425)
t-2	0.176	-0.399	-0.579	-0.393	-1.237**	-0.682	-0.848**	-1.214***	-0.367
	(0.747)	(0.320)	(0.749)	(0.718)	(0.545)	(0.962)	(0.419)	(0.411)	(0.329)
t	-0.557	-0.679	-0.121	-0.505	-1.300	-0.754	-0.499	-0.555	-0.056
	(0.661)	(0.397)	(0.884)	(0.647)	(0.931)	(0.887)	(0.588)	(0.393)	(0.510)
t+1	0.088	-0.948*	-1.035	-1.156*	-1.691**	-0.264	-0.788*	-1.509***	-0.721
	(0.961)	(0.503)	(1.107)	(0.654)	(0.643)	(0.695)	(0.437)	(0.379)	(0.459)
t+2	-0.477	-0.542	-0.068	-0.438	-0.930*	-0.337	-1.145**	-1.284***	-0.138
	(0.893)	(0.751)	(0.732)	(0.775)	(0.529)	(0.919)	(0.532)	(0.389)	(0.513)
t+3	-0.820	-0.351	0.463	-0.907	-0.734*	0.257	0.807	0.173	-0.634
	(0.661)	(0.735)	(0.637)	(0.848)	(0.394)	(0.941)	(0.549)	(0.222)	(0.560)
t+4	-0.791	-0.582	0.204	-1.544	-1.670**	-0.046	-0.909*	-0.520	0.389
	(0.715)	(0.624)	(1.145)	(1.204)	(0.712)	(1.194)	(0.515)	(0.431)	(0.523)
t+5	-0.897	-0.995	-0.107	-2.509	-1.905**	0.924	-0.531	-1.512***	-0.980**
	(1.088)	(0.610)	(1.274)	(1.499)	(0.810)	(1.310)	(0.560)	(0.547)	(0.471)
Observations	247	247	247	534	490	490	1084	1084	1084
N. of countries	12	12	12	23	23	23	34	34	34
Adj. R - squared	0.226	0.952	0.945	0.473	0.982	0.964	0.518	0.903	0.869
N. Clusters	23 [5]	23	23	49	45	45	102	102	102

Clusters Standard Errors in parentheses

***p<0.01, **p<0.05, *p<0.01

Table 8: Placebo - Income Level Classification

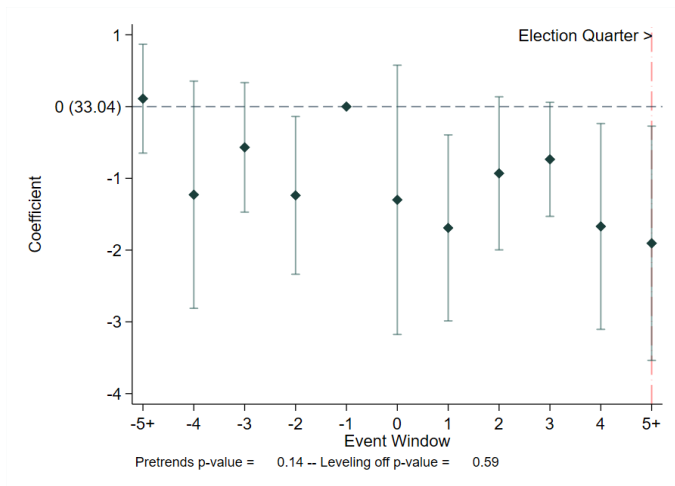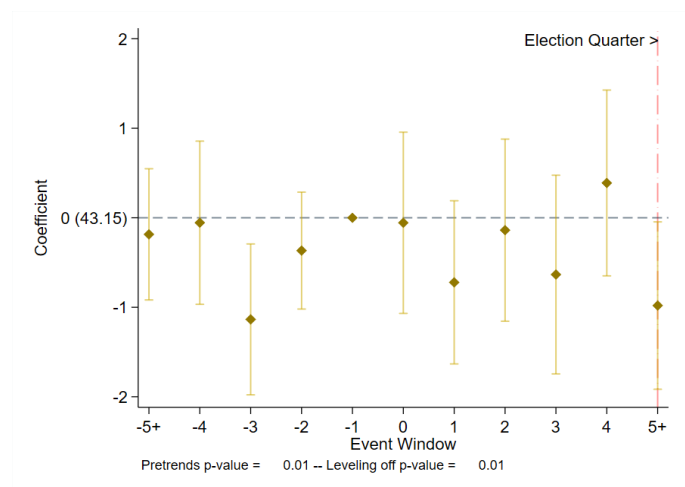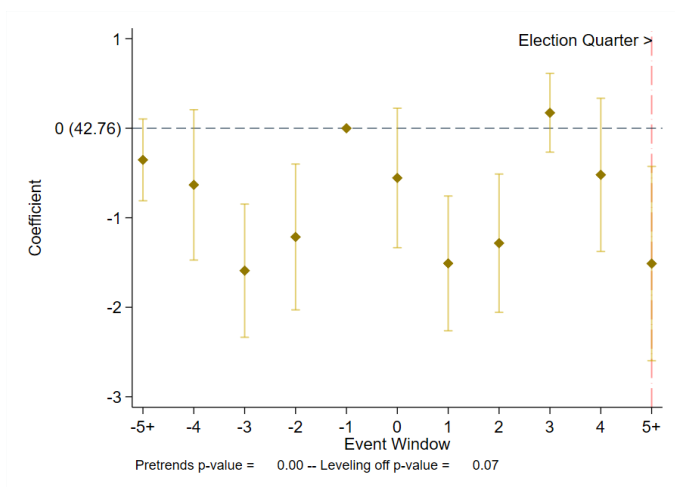[5]The number of cluster for Lower-Middle Income economies are few, so the results for these observations could be biased.
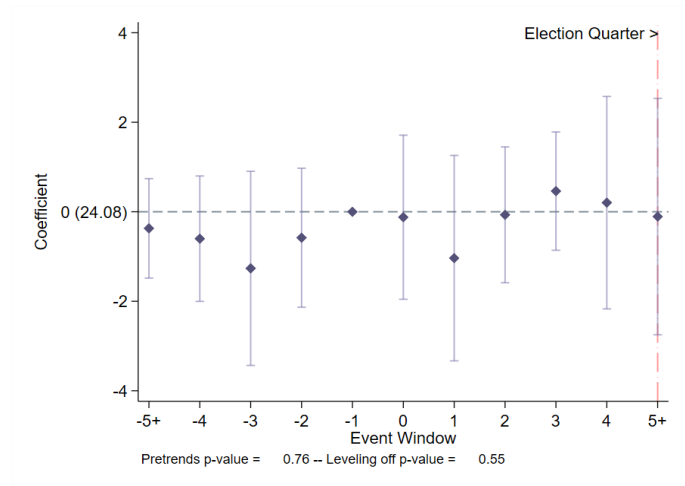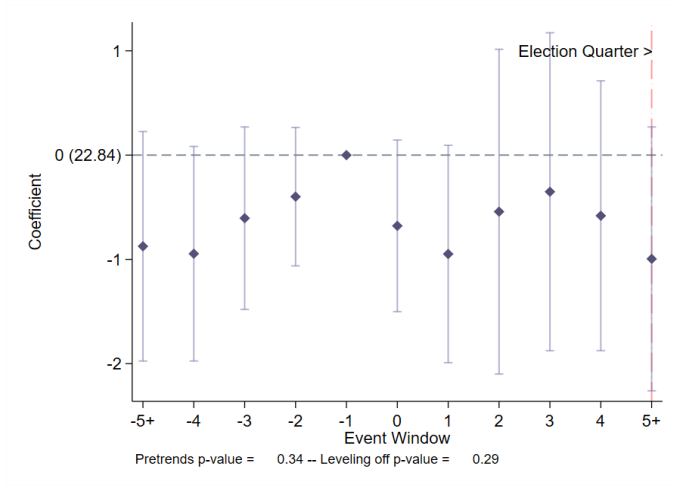
Figure 17: Event Plots for LMI Economies Revenues and Expenses.
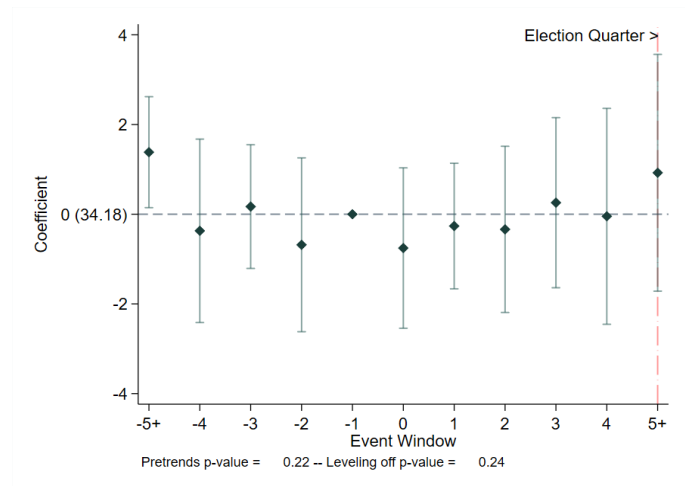
Figure 18: Event Plots for UMI Economies Revenues and Expenses.

Figure 19: Event Plots for HI Economies Revenues and Expenses.