HOW EFFECTIVE ARE POLITICAL CYCLES IN THE UK IN THE MICRO-LEVEL?

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December 2020

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This version - January 2021

Abstract

The role of political budget cycles and their relative electoral ineffectiveness of fiscal instruments for re-election purposes, is long recognised empirical puzzle in political economy. Recent evidence suggest that by shifting the analysis from the macro to the micro level which accounts for individual-level heterogeneity in electoral responses, one can gain better insights of this puzzling relationship. In this paper, I use data from the Understanding Society survey (2009-2019) to explore whether political budget cycles in the UK work in the micro-level particularly in the era of austerity. Results show that using parliamentary data on different categories of spending in education, environmental regulations and education, pre-electoral spending does not significantly increases the probability of voting incumbents in this microeconomic investigation in the UK context.

Keywords: Political Cycles, United kingdom, Voting, Elections, Austerity

1 Introduction

Democracy and economic policy have long been connected through feedback mechanisms, especially within the context of the influence of observed

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economic outcomes on the voting behavior (and consequently political outcomes) of the people. This offers a departure from the ideology that the government is a so-called "social planner" seeking to maximize a social welfare function. Much research has found that the vote of individuals depends certainly on the state of economic affairs experienced (and most likely influenced by fiscal policy). In other words, individuals need not develop an economic understanding of economic policy; they simply need to (at least implicitly) care about such variables as inflation and unemployment (Kiewiet, 1981).

While it is widely accepted that fiscal policy ought to be countercyclical, it is not uncommon for governments to adopt sub-optimal macroeconomic stabilization policies through procyclical fiscal policies, especially in developing countries (Alesina et al., 2008) . With a reelection constraint for the government, a question over the behavior of fiscal policy in shaping and influencing political outcomes and votes arises. This idea gave rise to the theory of political budget cycles (PBC) , which was first popularized by (Nordhaus, 1975) and later on studied in the literature from both micro- and macroeconomic perspectives within the scope of political economy. The idea of (Nordhaus, 1975) was that the sole objective of the government is to maximize the chance of re-elections, and so it will choose policy that seeks to yield inflation and unemployment outcomes which maximize its chances of staying in office. While a significant proportion of the already existing literature confirmed this to be the case, critique has also been widespread. These included the introduction of rational expectation behavior and disagreement over whether tools or outcomes are to be used to test the theory as well as issues pertaining to the electoral calendar, the differential effects depending on the system and regime of the government, and the effects of the existence of monetary and fiscal policy constraints. A limited range of papers have also tested the PBC theory. One of those concluded that for several reasons – including those suggested by Nordhaus – many countries are likely to observe well-executed political cycles (Alesina, 1989). While most of the literature has been dedicated to understanding this politico-economic connection from a macroeconomic perspective, (Bojar, 2017) argued that individual level data may better permit to examine this relationship.

With the end of the Great Recession in 2009, the United Kingdom sought to adopt an austerity programme with the purpose of diminishing a portion of the accumulated public debt. This plan consisted mainly of increasing tax revenues and cutting public spending in all but the health and education

sectors. These measures have not been widely accepted by many, some criticizing the severity and timing of the measures (Gamble, 2015) others accusing them of accomplishing a political rather than economic agenda (Mac Flynn, 2015), while other economists praised the programme. In the light of this programme, it is worthy to make note of fiscal illusion – the idea that individuals may fail to conceive how much the government raises in revenues – which is an attribute common to PBCs as well as austerity/debt crisis situations. When it is likely to prevail, the entire effects of macroeconomic policy enforced in the present will be visible with delay. Consequently in these cases, contrary to expansionary fiscal policy, austerity is likely to be sub-optimal for current office-holders, which hope to be reelected (Alesina and Perotti, 1995).

The scope of this paper is to examine empirically whether political cycles work in the micro-level in the United kingdom. Using data for public spending and from the Understanding Society Survey, I examine the relationship between budget cycles and individuals' voting patterns. This paper makes use of the United Kingdom Household Longitudinal Survey (UKHLS), which is a micro-level panel dataset that taps into the social, political, educational, cultural, economic, health and demographic aspects of living for households in the UK. Using the Lower Layer Super Output Area, which is a geographic identifier for the different households, the study connects this dataset to government budget information available at similar levels of geographical precision. This fiscal information is extracted from the ONS and from the Centre of Cities data tool. It includes data on government revenues and expenditures finely disaggregated across sectors. Results show that using parliamentary data on different categories of spending in education, environmental regulations and education, pre-electoral spending does not significantly increases the probability of voting incumbents in this microeconomic investigation in the UK context.

This paper attempts to bring together both analytical and empirical considerations about the effectiveness of budget cycles for re-election purposes. In the next section, a review the relevant literature about political cycles and elections will be provided upon which the basis for the analysis will be formed. This is followed by the data and methodology sections. Section 5 describes the empirical analysis and conclusions follow on the last section.

2 Political Cycles

2.1 Introduction

In order to proceed with whether political budget cycles and fiscal adjustments matter electorally, it is necessary to provide a brief but comprehensive review of the gradual metamorphosis of political business cycles to political budget cycles. The start of the analysis should be Nordhau's seminal work (Nordhaus, 1975). Prio to that economic research has mostly considered the government to being a *"benevolent dictator"* with one objective: maximizing social welfare.

In his paper, Nordhaus instead considered the government's sole objective is to pursue self-interest, especially in terms of reelections. Consequently, all macroeconomic variables are immensely influenced by politics. For instance, the Phillips curve, which states that there is an inverse relationship between inflation and unemployment, is dependent on the timing of elections: before the elections, the unemployment rate goes down (so that individuals re-elect), and after elections happen, the high inflation rate observed (due to low unemployment rate) results in austerity measures, which increase unemployment rates. The dependency of this cycle on the timing of elections thus allows us to call these business cycles *"Political Business Cycles (PBCs)"*.

Although prior to Nordhaus no papers have explicitly stated this idea, much research in the literature has at least hinted at (parts of) it in a way or another. The first of these is that of Akerman who showed empirically and indirectly that the short run US economic fluctuations were associated with the cycles of electing presidents (Åkerman, 1947). Additionally, Downs assumed that politicians are at large driven by income, status, and power; they will manipulate the utility values of the voters in ways that will maximize the number of votes, and consequently their duration in office. He also elaborates by stating that they create policies to get elected, not get elected to create policies. The author however does not specify that it is the macroeconomic variables that politicians will try manipulate (Downs, 1957a,b). Two papers produced by Frey and Lau coincide with the results from Downs, although they focus on the pressure for popularity and do not shed the light on the concept of the political cycle as previously defined (Frey and Lau, 1968; Lau and Frey, 1971). Another suggesting the possibility of having PBCs indirectly prior to Nordhaus' paper was a speech given by Milton Friedman in which he asserted that if the government did not have specific rules dictating fiscal and monetary policies, then a 4 year-cycle pattern would be visible in

which unemployment rates would be the lowest on every year of presidential elections and inflation rates would be the highest the year after (Friedman, 1972). Finally, two separate studies, one conducted by Kramer and another by Fair have shown that economic conditions have the ability to affect election votes (Kramer, 1971; Fair et al., 1975). In a way, this complements Downs' work by showing that people who want to be re-elected might resort to changing economic conditions.

Empirical evidence that identify PBCs coming from inflation and/or unemployment has been mixed. Evidence confirming Nordhaus' PBC include (McGavin, 1987) and (Haynes and Stone, 1988, 1989, 1990). Evidence in opposition of this theory include those of (Golden and Poterba, 1980), (Alesina, 1988, 1989), and (Davidson et al., 1990). This mixed literature has raised concerns over the validity of the study of (Nordhaus, 1975). Consequently, several papers presented critiques addressed to the model. The first critique is that (Nordhaus, 1975) failed to take into account political ideologies of the parties. Studies that have highlighted the importance of this issue include (Kirschen, 1964) which concluded that while socialist parties prefer full employment, conservative parties favor stability in prices. Other studies discuss and study the fact that in addition to the re-election objective a pressure of satisfying political ideologies creates a government trade-off in the function that is to be maximized (Frey and Lau, 1968; Lau and Frey, 1971; Frey and Schneider, 1978a,b).

The second critique rose with the rational expectations theory developed by (Sargent and Wallace, 1975). With this theory, PBCs would no longer occur as minimizing the loss function would mean that the government is to set inflation rates before and after the elections to a null value, thus refraining from implementing any policies. Attempting to reconcile both theories, (Rogoff, 1987; Rogoff and Sibert, 1988) substitute the idea of irrational voters with information asymmetry between them and the government: Since voters cannot observe the government performance immediately, the government implements expansive policies that are heavy on the budget, but hides the harmful effects of doing so on the short run. Models including moral hazard problems have also shown that even if there is no information asymmetry, the government can still appear to be more effective than it actually is by using policy instruments under the radar (Lohmann, 1998). Thus, Nordhaus' conclusions remain valid when these reconciliations and different assumptions are considered.

Another critique was highlighted by (Tufte, 1978). The critique is that

while policy outcomes, including unemployment and inflation, are not in the direct control of the government and are not directly observable and tangible to the voters, policy instruments, including income, taxes, and transfers, are better controlled by the government and are easily observable to the voters. The study argues that using instruments instead of outcomes might empirically prove the existence of PBCs more explicitly. Many studies have empirically tested for these, including (Remmer, 1993; Mink and De Haan, 2006; Schuknecht, 1996, 1999, 2000).

2.2 Conditional PBCs

(Nordhaus, 1975) argued that if the length of the term of government in office is reduced, the government would no longer be able to generate a PBC. Others have argued that extending the period of the terms would decrease the PBC costs (Amacher and Boyes, 1978; MacRae, 1977). Others have also suggested the use of a random assignment of re-election dates, although this is not possible in democratic institutions.

Additionally, (Nordhaus, 1975) referred to the electoral calendar as exogenous; set by law. This is not the cause for some countries like Japan and the UK, in which the date of re-elections is endogenous; the government has some freedom in choosing the re-election date. This means that the governments in this case do not have to generate a PBC and would instead call for elections in moments of economic boom (Inoguchi, 1979; Lächler, 1982; Heckelman and Berument, 1998). This however does not eliminate the possibility of the government generating an expansion and then calling for elections.

On the difference between democratic and authoritarian regimes, some studies have found that authoritarian regime countries do not experience PBCs and there are no chances of losing power (Block et al., 2003). Other studies have found evidence that these exist as leaders want to avoid contestation (Blaydes, 2010; Guo, 2009). Some studies have also shown that new democracies have greater PBCs because of the lack of election experiences and/or information asymmetry (Brender and Drazen, 2007). Others have shown that democratic systems have less intense PBCs as democracy goes hand in hand with government transparency (Akhmedov and Zhuravskaya, 2004). A portion of the literature has also concluded that majoritarian elections would more likely experience PBCs as compared to proportional elections as the former have stronger accountability at the individual (rather than collective) level (Persson and Tabellini, 2003).

Concerning monetary policy, (Nordhaus, 1975) argues that the main tool to control PBCs is the inflation rate. However, if this is made unfeasible by having an independent central bank, then PBCs should cease to exist (Clark et al., 1998; Alpanda and Honig, 2009, 2010). Nevertheless, monetary PBCs are present (Grier, 1987, 1989; Vaubel, 1997). The justification behind this phenomenon could arise because of direct government pressures (Abrams and Butkiewicz, 2012), media intermediations (Maier et al., 2002), central bank board assignments (Havrilesky and Gildea, 1992; Sieg, 1997), or fiscal tools adapted by the central bank (Beck, 1987).

Another constraint on monetary policy is the adoption of a fixed exchange rate, which limits the sovereignty of monetary policy and reduces the possibilities of monetary manipulations. In this case, the only possibilities would be to implement policies not deemed appropriate by the government, such as contractionary policy. In these cases, nations are more likely to experience fiscal PBCs (Shelton, 2014; Alpanda and Honig, 2010).

Concerning fiscal PBCs, these can be constrained by requirements of having balanced budgets or targeted budgets (GARCIA-SANCHEZ et al., 2011; Benito et al., 2013), the presence of a qualified ministry of finance (Clark and Hallerberg, 2000), or transparency (Vicente et al., 2013; Shelton, 2014). For these reasons, the government can resort to changing where and how the money is being spent instead of how much. This is especially desirable as targeted spending usually is more visible to the public eye. Spending could be targeted to employment (Remmer, 2007), wages (Gamez and Ibarra-yunez, 2007), Defence (Mintz and Ward, 1988), culture (Dalle Nogare and Galizzi, 2011), and infrastructure (Goeminne and Smolders, 2014).

3 Political Business Cycles & Trust

Individual-level vote decisions are usually not taken into consideration within the political budget cycle literature. However, they appear to play an important role in the aggregate electoral outcomes as well as in fiscal policy choices. In particular, "Fiscal policy choices have inherent redistributive consequences pitting various voting groups' interest against each other in the electoral arena"(Bojar, 2017). That is, if a negative electoral response is strong enough to overwrite or mitigate the positive response of the elections, then policies are likely to be ineffective for the electoral process, since the aggregate outcome will not be of significant importance. It is, however, difficult to examine how fiscal policy and different methods can affect voting

choices within a macro-setting. That is, due to differences in the lectorate's composition, tax changes and expenditure may have different outcomes in the elections(Bojar, 2017). Therefore, (Bojar, 2017) argues that individual level data would be more effective in analysis voting choices. Within the literature, individual and macro level heterogeneity are said to be caused by individuals' self-interest as well as the "ideology and partisan identity in shaping voters' reaction to budget decisions" (Bojar, 2017).

A large body of literature has examined the role of self-interest on individuals' political choices and preferences on the one hand, and the role of self-interest on economic choices and outcomes on the other hand. For instance, using data from Great Britain, (Gemmell et al., 2004) examined the effect of socioeconomic characteristics such as income and family formation on voters' attitudes towards government spending. In addition to this, using data from Germany, (Hayo and Neumeier, 2016) found that income plays a significant role in the electorates' voting preferences. In particular, they found that voters with a higher income are more likely to favor Germany's debt-brake rule compared to low income electorates. Furthermore, (Van de Walle and Jilke, 2014) studied fiscal preferences of voters taking into consideration potential heterogeneity that may arise from individuals' differences in socioeconomic characteristics. Using data from EU countries, their results reveal that individuals' tax and spending preferences are strongly affected by financial constraints and welfare entitlements.

Similar results were found for voters in Iceland where voters' attitudes are strongly linked with credit constraints (Curtis et al., 2014). In addition to this, (Hammar et al., 2008) examined voters' attitudes in Sweden and found that attitudes are, to a large extend, shaped by individuals' self-interest regarding tax matters.Another strand of literature focused specifically on welfare state attitudes. In particular, using cross country data from the European Social Survey (ESS), (Wren and Rehm, 2014) examined the effect of a number of socioeconomic characteristics and found that sectoral globalization and skill levels are significantly and positively affecting welfare state attitudes.

Besides individuals' attitudes, the importance of self-interest in economic voting should not be neglected. A number of studies have focused on the impact of economic recessions on voters according to their economic and occupational status. For instance, (Weatherford, 1978, 1982) made major contributions in examining the importance of economic voting. Using data from the US, the results showed that economic recessions were more likely to

negatively affect working class voters. In addition to this, (Hibbs Jr et al., 1982) classified individuals according to their occupational status and found that electoral choices of those employed in lower status occupations were more affected by economic fluctuations. Similar results were also observed by (Dorussen and Taylor, 2003). Another strand of literature focused on the economic voting related to asset ownership and inheritance. That is, voters who are asset owners are more concerned about macroeconomic volatility as asset prices are likely to be affected (Lewis-Beck and Nadeau, 2011). Hence, increased attention has been paid in the literature in studying the relationship between electoral attitudes and fiscal policy outcomes (Bojar, 2017).

Within the political economics literature, researchers argue that several determinants of pre-electoral budgeting and fiscal attitudes are likely to depend on individuals' ideology of the electorate beyond voters' individual self-interest. That is, besides individuals' self-interest, debt attitudes are directly shaped and determined by individuals' ideology which is not necessarily linked with self-interest (Heinemann and Hennighausen, 2012). Using data from Austria, similar results were observed by (Pitlik et al., 2011) arguing that self-interest and ideology are both strong determinants of fiscal attitudes. In addition to this, fairness perceptions and political trust are also considered to be strong determinants of fiscal attitudes (Van de Walle and Jilke, 2014).

Another strand of literature views ideology as "a proxy for partisan attachment that allow voters to form stable preferences on salient domains of everyday politics, such as public budgeting" (Bojar, 2017). In fact, fiscal preferences are strongly affected by partisanship according to economic changes (see e.g. (Hibbs Jr et al., 1982)). According to the partisan theory in macroeconomic management, fiscal attitudes are in fact directly influenced by partisanship (Hibbs Jr, 1977; Korpi, 2018; Carlsen, 1997; Cusack, 1997). As stated by (Bojar, 2017), right-wing voters are more likely to support tight fiscal policies, allowing price stability and inflation control, but are against tax hikes. Left-wing voters on the other hand are against fiscal policies and spending cuts.

4 Data Methodology

4.1 Data

The scope of this paper is to examine empirically whether political cycles work in the micro-level in the United kingdom. Using data from fiscal . . . and

from the Understanding Society Survey, I examine the relationship between budget cycles and individuals' voting patterns.

For this paper the main estimation results are derived using data from Understanding Society, also known as the United Kingdom Household Longitudinal Survey (UKHLS). This main purpose behind this dataset is to collect information of individuals living in the UK in order to better comprehend the causes and consequences behind different social, economic, political, and cultural changes across all 4 countries in the UK. The dataset combines information on the individual as well as on the household level and households can be identified at different regional disaggregations. One of the novelties of this empirical exercise is that I can observe individuals' location at the lowest possible disaggregation, that of Lower Layer Super Output Area (LSOA).

The data used covers the years 2009 to 2018 inclusive, and consists of 9 waves. The total number of observations is between 410.000-430.000 depending on specification. In this dataset, the mean age is approximately 48 years old. Households are almost made up of 3 individuals on average. 54% of the respondents are women. A little over one half of the observations are married, one third are single, and a little under one tenth are divorced. The mean total household net income per year is £.

The other substantial part of the data is the set of fiscal variables collected. This set of explanatory variables has been collected from multiple sources and at different levels of geographic precision: regional and parliamentary. At the regional level, data on fiscal taxes is collected from the ONS dataset *"country and regional public sector finances"*. At the parliamentary level, data on revenue expenditure and financing was collected from the government's official national statistics, whereas taxation data has been extracted from the Centre of Cities data tool. The fiscal dataset hence includes information on government expenditure and revenues which are decomposed by sectors at an extensive level of precision. At the parliamentary level, the LSOA-weighted mean government expenditure across parliaments and over the years is: 308 for education services, 1,149 for environmental and regulatory services, and 205 for public health services.

In terms of these mean fiscal expenditures over time, Figures 2 and 1 show that there is a strong association between the amount incumbents spend and the dates of recent elections. For instance, with regards to public health and education services, figure 1 in the appendix shows that expenditure was trending upwards in the periods of the elections of 2015 and 2019. Additionally, it declined right after the 2010 and 2015 elections.In contrast, the

data on expenditure on environmental regulatory services in figure 3 shows that spending declined before all 4 elections in the studied time frame and increased right after 2010 and 2017. These trends could be associated with the fact that incumbents want to appeal to voters from the business and energy sectors.Overall, these stylized facts allude to the fact of the possible existence of PBCs.

Control variables are chosen based on factors found to be important determinants of voting outcomes according to the literature including different individual level characteristics that are considered important in determining the levels of trust such as education, employment, marriage, political ideology and household composition *(see Appendix for a complete account of variables, summary statistics & sources).*

4.2 Methodology

In such a setting of a public opinion panel data, ordinary regressions become problematic due to shared dependency of individuals belonging to the same group Barrels (1996). To overcome dependency among them, a multilevel analysis of the data is deployed since they are in an hierarchical form .[2]

Control variables are chosen based on the assumptions of the model specification presented above, supplemented by additional variables found to be important determinants of electoral outcomes based on the literature. The main quest of this research is to examine empirically whether political cycles work in the micro-level in the United kingdom.

Given that the outcome variables on voting in Understanding Society are binary, I run a multilevel logit model that assumes there is a latent variable $Y^* \in (-\infty, \infty)$ that captures the true electoral choice of individuals and that it is represented (with incomplete information) through an observed variable Y.

[2]Besides statistical reasoning there are also theoretical reasons behind the justification of using multilevel analysis in hierarchical datasets. The simplest to conceive and most crucial theoretical aspect is that since multilevel analysis' objective is to examine the relationships between individuals and their surroundings, one can assume that individuals that share the same surroundings will most probably be affected by them and therefore partly share the same characteristics. Therefore observations that are close in space or time are more likely to be similar in some ways than observations apart Mehmetoglu and Jakobsen (2016).

When the latent variable crosses a cut-point, the observed category changes and the following specification is used to estimate empirical results:

$$L = lnP(Y \leq m) = \tau_m + \beta_n \times X_{ijk} + e_{ijk} + v_{0jk} + v_{00k} \quad (1)$$

Where:

- L is the total logit
- X_{ijk} are the explanatory variables in all 3 levels- (i & j can be 0)
- e_{ijk} is the error term in Level 1 (individuals)
- u_{0jk} is the error term in Level 2 (survey years)
- v_{00k} the error term in Level 3 (LSOAs) [3]

At first, as shown in Table 1 the above model is estimated using a baseline specification including only socio-economic characteristics without fiscal variables. Columns 2-5 refers to different estimation techniques, namely logit, linear panel, panel logit and multilevel panel logit. Based on the reported variance decomposition, variance in the individuals level mainly explains heterogeneity ($\sim 91\%$) and LSOA heterogeneity explains 8%. Additionally, time effects contribute less than 1% of heterogeneity.

In Tables 2 , 3 & 4 the main estimations follow including as determinants of electoral outcomes data on spending in different streams, on political cycles and other characteristics. Columns 2 & 3 show estimation results including spending with a simple logit with clustered errors and a panel liner regression respectively. In the fourth column and fifth column the same specifications are explored with a panel logit and multilevel panel logit.

Looking at the main estimation tables, one can observe that all fiscal spending variables, across all the different specifications, seem to have no effect of the probability of voting for incumbents. This is readily apparent as the coefficients of these variables are either statistically significant, or economically negligible. The only exception to these conclusions is that public spending seems to be positively associated with this probability under

[3] Typically the residuals in hierarchical models are assumed to be normally distributed: $v_{00k} \sim N(0, \sigma^2_{v(T)}), u_{0jk} \sim N(0, \sigma^2_{u(T)})$ and $e_{ijk} \sim N(0, \sigma^2_{e(T)})$.

Table 1: Basic Specification without spending variables

	(1) Logit	(2) Panel reg.	(3) Panel logit	(4) Panel ML logit
Income	0.351***	-0.013***	-0.089***	0.158***
	[0.007]	[0.002]	[0.012]	[0.008]
Age	0.015***	0.001***	0.010***	0.015***
	[0.000]	[0.000]	[0.001]	[0.000]
Marital st.	-0.014***	0.005***	0.038***	-0.008**
	[0.003]	[0.001]	[0.007]	[0.004]
Unemployed	-0.241***	0.019***	0.173***	-0.135***
	[0.021]	[0.004]	[0.032]	[0.023]
Student	0.034**	0.049***	0.402***	0.023
	[0.017]	[0.005]	[0.036]	[0.019]
Household	-0.121***	0.009***	0.071***	-0.056***
	[0.003]	[0.001]	[0.010]	[0.005]
Country FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Macroeconomic charact.	Yes	Yes	Yes	Yes
N	393.979	393.979	237.313	393.979

Standard errors in brackets

* p¡0.10, ** p¡0.05, *** p¡0.01

Table 2: Specification with Spending in Environment

	(1) Logit	(2) Panel reg.	(3) Panel logit	(4) Panel ML logit
Income	0.352***	-0.012***	-0.082***	0.162***
	[0.007]	[0.002]	[0.012]	[0.009]
Age	0.015***	0.001***	0.010***	0.015***
	[0.000]	[0.000]	[0.001]	[0.000]
Marital st.	-0.015***	0.004***	0.037***	-0.008**
	[0.003]	[0.001]	[0.007]	[0.004]
Unemployed	-0.224***	0.021***	0.187***	-0.122***
	[0.021]	[0.004]	[0.033]	[0.024]
Student	0.037**	0.050***	0.416***	0.026
	[0.017]	[0.005]	[0.037]	[0.020]
Household	-0.122***	0.009***	0.067***	-0.056***
	[0.003]	[0.001]	[0.010]	[0.005]
Envir. Spending	0.000***	-0.000	-0.000	0.000***
	[0.000]	[0.000]	[0.000]	[0.000]
Country FE	Yes	Yes	Yes	Yes
Region FE	Yes	Yes	Yes	Yes
Macroeconomic charact.	Yes	Yes	Yes	Yes
N	367.915	367.915	221.710	367.915

Standard errors in brackets

* p¡0.10, ** p¡0.05, *** p¡0.01

Table 3: Specification with Spending in Health

	(1) Logit	(2) Panel reg.	(3) Panel logit	(4) Panel ML logit
Income	0.361***	-0.013***	0.361***	0.161***
	[0.008]	[0.002]	[0.008]	[0.011]
Age	0.015***	0.001***	0.015***	0.015***
	[0.000]	[0.000]	[0.000]	[0.000]
Marital st.	-0.015***	0.005***	-0.015***	-0.004
	[0.004]	[0.001]	[0.004]	[0.005]
Unemployed	-0.233***	0.017***	-0.233***	-0.119***
	[0.027]	[0.005]	[0.027]	[0.030]
Student	0.026	0.045***	0.026	0.023
	[0.021]	[0.006]	[0.021]	[0.025]
Household	-0.137***	0.009***	-0.137***	-0.066***
	[0.004]	[0.002]	[0.004]	[0.006]
Public Health	0.000***	-0.000	0.000***	0.001***
	[0.000]	[0.000]	[0.000]	[0.000]
Country FE	YES	YES	YES	YES
Region FE	YES	YES	YES	YES
Macroeconomic charact.	YES	YES	YES	YES
N	250.061	250.061	250.061	250.061

Standard errors in brackets

* p¡0.10, ** p¡0.05, *** p¡0.01

Table 4: Specification with Spending in Education

	(1) Logit	(2) Panel reg.	(3) Panel logit	(4) Panel ML logit
Income	0.358***	-0.012***	-0.082***	0.164***
	[0.007]	[0.002]	[0.012]	[0.009]
Age	0.016***	0.001***	0.010***	0.016***
	[0.000]	[0.000]	[0.001]	[0.000]
Marital St.	-0.016***	0.004***	0.037***	-0.008**
	[0.003]	[0.001]	[0.007]	[0.004]
Unemployed	-0.236***	0.021***	0.187***	-0.126***
	[0.021]	[0.004]	[0.033]	[0.024]
Student	0.032*	0.050***	0.416***	0.024
	[0.017]	[0.005]	[0.037]	[0.020]
Household	-0.123***	0.009***	0.067***	-0.057***
	[0.003]	[0.001]	[0.010]	[0.005]
Educ. Services	0.000	-0.000	-0.000	0.000***
	[0.000]	[0.000]	[0.000]	[0.000]
Country FE	YES	YES	YES	YES
Region FE	YES	YES	YES	YES
Macroeconomic charact.	YES	YES	YES	YES
N	367.915	367.915	221.710	367.915

Standard errors in brackets

* p¡0.10, ** p¡0.05, *** p¡0.01

the panel ML logit specification, shown in column 4 of Table 3. This effect is nevertheless small and inconsistent with the other specifications, and thus does not change the conclusions generally.Thus, from a microeconomic perspective, fluctuations in fiscal spending during pre-electoral periods bear little to no impact on the probability that individuals would vote for incumbents. These results confirm the hypothesis of (Bojar, 2017) on pre-electoral budgeting and its electoral consequences and how these apply in the UK.

A surprising result comes from Table 2 where spending in environmental regulation appears insignificant. One might expect that pre-electoral cuts in spending in environmental regulations would signal interested parties, businesses and individuals that profit from them positively and increase their probability of voting for incumbents. For that reason, I explored a subsample of individuals that have reported working in an energy sector related activity but results appeared still economically insignificant. That is interesting finding that does not go in hand with the existing literature on elites and environmental policies. However due to the small size of the sample (less than 20.000 observations) results might be driven by that factor and thus should be carefully considered before reported.

Looking at other control variables, as evidenced by previous literature education, age, family and employment are associated with higher probabilities of stability preferences and voting for incumbents. The level of overall unemployment rate of the economy (reported under macroeconomic characteristics) appears to have negative impacts on the probability of voting for the government as it is considered an indication of instability in the economy and insecurity about the future. In regards to factors related to political cycles and electoral events, they appear to have insignificant results when considering random time effects (reported under Country FE).

5 Reverse causality

One of the main econometric problems that needs to be addressed in regards with the relationship of political budget cycles and electoral outcomes is the possibility of reverse causality as past electoral outcomes directly affect incumbents' power to increase/decrease public spending and redistribute (Uslaner, 2008). For voting preferences in the micro level to have such an effect on public spending one must examine their role in determining overall electoral outcomes. In that case, each individual's probability to vote for incumbents is important, but the most crucial role lies with the aggregation of

such individual preferences. Therefore, one could claim that the past mean level of probability to vote for incumbents matters more. To explore that, the variable for incumbents is aggregated for each year, and their lagged values for 3 years are computed. These lagged variables are then regressed in a panel data setting on the levels of public spending accounting for country fixed effects. The residuals of this regression account for the levels of public spending at each time point, that is not correlated to public support for incumbents. Results when regressing the newly created variables for public spending, shown in Table 5, suggest that the effect are similar to the main estimation.

Table 5: Specification with lags

	(1)	(2)	(3)
	Arellano Bond	Arellano Bond	Arellano Bond
Lag 1	-0.039***	-0.039***	-0.040***
	[0.004]	[0.004]	[0.005]
Lag 2	-0.039***	-0.039***	-0.036***
	[0.003]	[0.003]	[0.003]
Income	-0.009**	-0.009**	-0.006
	[0.003]	[0.003]	[0.004]
Age	0.001***	0.001***	0.001***
	[0.000]	[0.000]	[0.000]
Marital St.	0.003*	0.003*	0.004
	[0.002]	[0.002]	[0.002]
Unemployed	0.013	0.013	0.013
	[0.008]	[0.008]	[0.010]
Student	0.036***	0.036***	0.018
	[0.013]	[0.013]	[0.016]
Household	0.013***	0.013***	0.016***
	[0.003]	[0.003]	[0.004]
Educ. Services	-0.000		
	[0.000]		
Envir. Spending r		0.000	
		[0.000]	
Public Health			0.000
			[0.000]
Country FE	YES	YES	YES
Region FE	YES	YES	YES
Macroeconomic charact.	YES	YES	YES
N	101883	101883	67980

Standard errors in brackets

* p¡0.10, ** p¡0.05, *** p¡0.01

6 Conclusions

The scope of this paper is to examine empirically whether political cycles work in the micro-level in the United kingdom. Motivated by the often inconsistent and contradictory findings in regards on the microlevel consequences of fiscal policy as presented by (Bojar, 2017), I examine the relationship between political budget cycles and voting outcomes in the UK between 2009-2019.

The main contributions provided by this study are two-fold. Using data for public spending and from the Understanding Society Survey, I examine the relationship between budget cycles and individuals' voting patterns. First, I add to the literature by arguing why individual and granular geographical decomposition of heterogeneous effects is crucial to understand this relationship. In addition to that, using special access data for the LSOAs in the UK, this is the first study in my knowledge that looks at voting outcomes and public spending at this level of aggregation. Using the Lower Layer Super Output Area, which is a geographic identifier for the different households, the study connects this dataset to government budget information available at similar levels of geographical precision.

Results show that using parliamentary data on different categories of spending in education, environmental regulations and education, pre-electoral spending does not significantly increases the probability of voting incumbents in this microeconomic investigation in the UK context. These results, despite their endogeneity issues and econometric bias, make nonetheless an important step forward uncovering the electoral effects of fiscal policy that remain latent in the macro-level. Multilevel decomposition suggests that these latent results are in fact accounting for the largest part of heterogeneity in outcomes. Therefore a further decomposition of them is needed as well as a deeper investigation of the interrelated factors between the micro and the meso-level determinants of electoral outcomes that remain latent in the macro spectrum.

Appendix

Data Description

Tables 7 & 6 include data description and sources as well as summary statistics for the variables used in this paper.

Table 6: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Age	398398	47.812	18.369	16	104
Gender	398463	1.541	0.498	1	2
Marital St.	397658	2.258	1.454	1	9
Student	398467	0.07	0.255	0	1
Unemployed	398467	0.051	0.219	0	1
Income	396052	3170.032	4384.691	-52371.719	724469.875
Household	396057	2.953	1.536	1	16
Incumbent	398466	0.238	0.426	0	1
Public Health	252922	204.76	240.311	1	738
Environment	372177	1149.247	789.773	1	2681
Education	372177	307.574	372.362	1	1120

Table 7: Variables, data description and sources

Variable name	Values	Description	Source
Incumbent	Dummy	Expressed interesting in voting current government	Author coded
Income	Count	Net household annual income	Understanding Society
Trust Parliament	0,1	0=Tend not to Trust, 1=Tend to Trust	Eurobarometer
Education	0-10	Up to 14 years, 15-21, 22+ years	Understanding Society (recoded)
Gender	0.1	0=Female, 1=Male	Understanding Society (recoded)
Age	15-99	In years	Understanding Society (recoded)
Occupation	Categorical	Different jobs used for Employed and Skills	Understanding Society (recoded)
Household	Count	Members in a household	Understanding Society (recoded)
Employed	Dummy	0=Unemployed, 1=Employed	Author coded
GDP	Continuous	Per capita GDP on constant 2010 $	World Bank
Unemployment	%	Total % of unemployment	Eurostat
Educ. Spending	Count	Spending in Education Services	British Parliament
Env. Spending	Count	Spending in Environmental Regulation Services	British Parliament
Health Spending	Count	Spending in Public Health Services	British Parliament

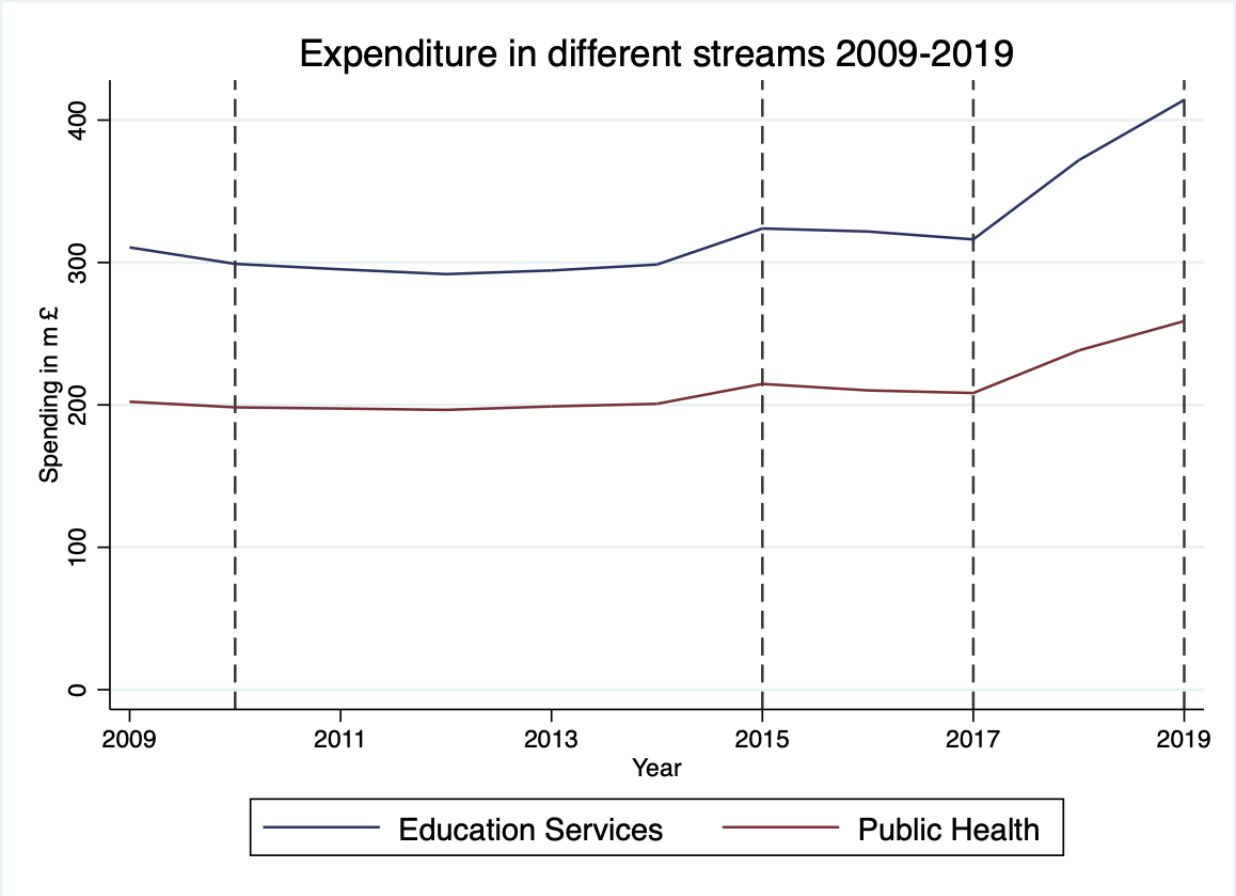

Figure 1: Evolution of spending on health and education 2009-2019

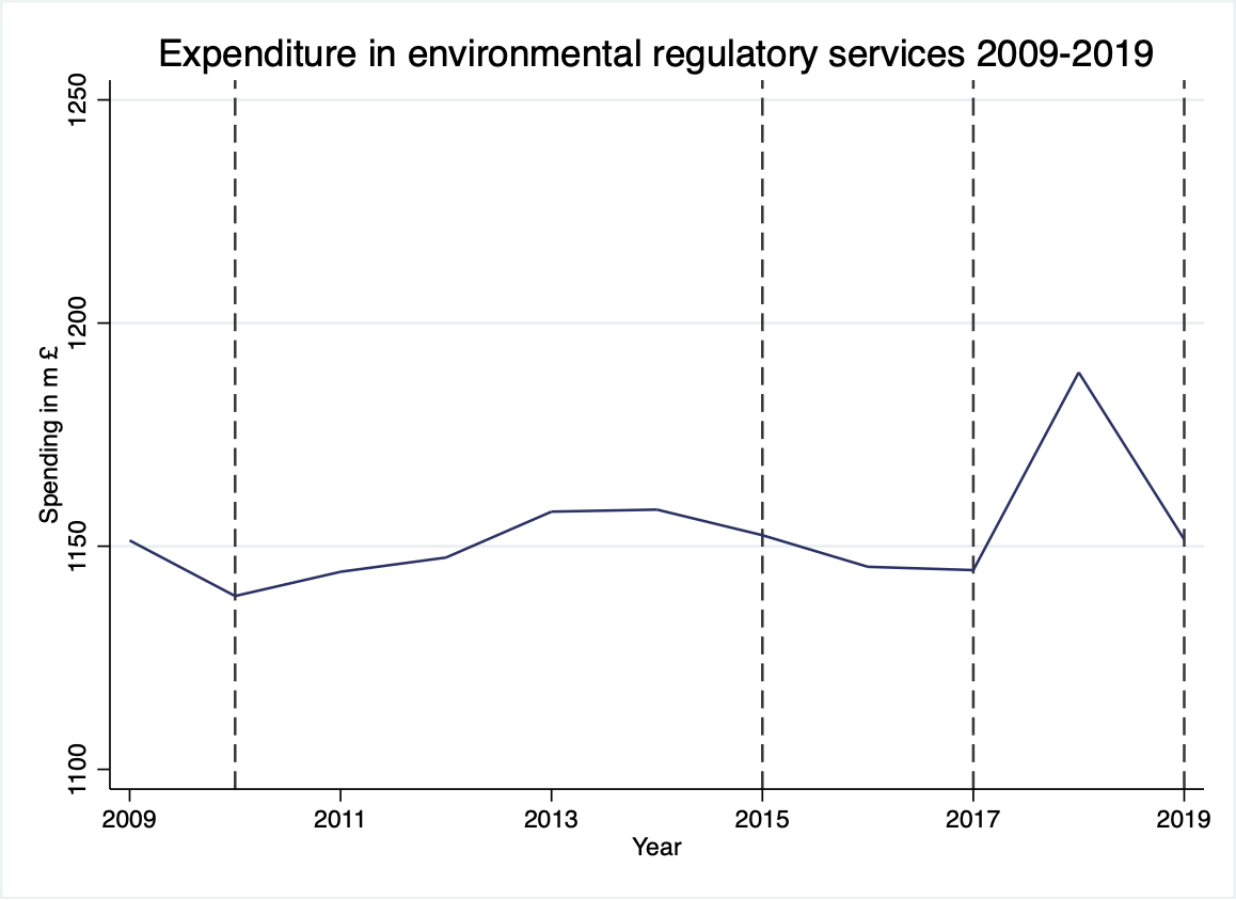

Figure 2: Evolution of spending on environmental regulations 2009-2019

Table 8: Correlation table of the main variables used in the empirical analysis

Variables	age	sex	marital	student	unemployed	income	hhsize	incumbent	Health	Environment	Education
age	1.000										
sex	0.005	1.000									
marital	0.497	0.086	1.000								
student	-0.216	-0.007	-0.102	1.000							
unemployed	-0.106	-0.042	-0.048	-0.063	1.000						
income	-0.079	-0.021	-0.087	0.018	-0.054	1.000					
hhsize	-0.450	-0.017	-0.296	0.202	0.056	0.186	1.000				
incumbent	0.129	-0.010	0.050	-0.031	-0.047	0.036	-0.082	1.000			
Health	-0.065	-0.006	-0.034	0.029	0.035	0.010	0.084	0.030	1.000		
Environment	0.017	-0.004	0.005	-0.010	-0.017	0.018	-0.004	0.089	0.117	1.000	
Education	-0.092	0.000	-0.046	0.047	0.054	-0.006	0.137	-0.022	0.709	-0.040	1.000

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ISBN: 978-1-913041-15-1