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Electoral effects on the composition of public spending and revenue: evidence from a large panel of countries

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Abstract:

This paper examines the effects of elections on central governments' fiscal policy conducts. We construct a unique database of disaggregated spending and revenue series at the central government level, for a panel of up to 107 countries over the 1975-2010 period. Using this data, we show that under some specific political environments, incumbents generate political budget cycles, predominantly by increasing current, rather than capital, spending and reducing taxes, most often income taxes. However, when democracies are matured, in election years, central governments reallocate their expenditure and revenue components, without changing their total levels. Specifically, they reallocate spending from capital spending to grants to other government units, while reducing income taxes and increasing consumption taxes instead.

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1. Introduction

How do incumbent parties attempt to enhance their re-election prospects through fiscal policies? Do they manipulate the overall levels of public spending and revenue or reallocate their components while not necessarily changing the total levels? And what political considerations might explain the occurrence and magnitude of such opportunistic fiscal manipulations?

To address these questions, we assemble a new and more comprehensive dataset on disaggregated expenditure and revenue series than any other prior study. This novel dataset, which covers around 100 countries over the period 1975-2010, enables us to shed new light on the electoral effects on governments' fiscal policy conducts at the national level. Importantly, to highlight circumstances under which fiscal manipulations may occur, we condition our analyses on various political considerations. They are categorized as follows: 1) those affecting the readiness and incentives of incumbent politicians to behave opportunistically, such as the degrees of fragmentation of governments and competitiveness of elections; 2) those affecting the efficacy of the opportunistic measures to yield additional votes, such as the maturity of democracy and the degree to which voters are informed; and 3) characteristics of political institutions, such as presidential versus parliamentary democracies, and proportional versus majoritarian electoral rules.

Our key findings are as follows. First, while a pre-electoral rise in the deficit is observed under different political conditions, such as when elections are close, voters are less informed, democracy is not matured, and electoral systems are proportional, this rise in deficits is predominantly driven by a rise in the *current*, not *capital*, component of spending, and a fall in taxes, often in the form of *income* taxes. Second, under established democracies in particular, elections cause reallocations within expenditure and revenue, without their total levels changed. Specifically, in these democracies, central governments tend to increase *grants to*

other government units (OGU), a particular subcomponent in current spending, while reducing *capital* spending. They also reduce *income* taxes, while increasing *consumption* taxes instead.

To further clarify this paper's contribution to the literature, we here highlight how it adds to three closely related works on the electoral effects on fiscal policy composition at the national level. First, while Brender and Drazen (2013) also disaggregate public spending in detail (albeit following functional, instead of economic, classifications) and also condition electoral effects on several political factors, their use of a composition index[1] does not allow one to identify what exact spending components change. We add to their analyses by clarifying between which spending components reallocations may take place and also by examining the electoral effects on public revenue composition as well. Second, although Ehrhart (2013) investigates the electoral effects on the composition of tax revenue, her focus is on the distinction between direct and indirect taxes, thus not examining the effects on different types of taxes separately.[2] Moreover, since her analyses focus on developing countries, the coverage is not suitable to highlight the roles of political factors in mature/established of democracies. Third, while Katsimi and Sarantides (2012) do consider electoral effects both on the expenditure and revenue composition at the central government level, they only study OECD countries, thus confining the analysis to developed, established democracies. Moreover, unlike our analyses, they do not examine the effects on subcomponents *within* current spending and direct taxation.[3] In short, we add to the current state of the literature by making use of a highly disaggregated spending and revenue dataset which covers a large number of countries with diverse political characteristics.

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[1] Specifically, using information on the breakdown of central government expenditure for a sample covering 71 democracies over the period 1972–2009, they construct an index of expenditure composition which measures the change in the functional expenditure composition in a given country between year *t* and year *t-n*, from any category to another, taking no stand on the direction of the change.

[2] Specifically, direct taxation, in her analysis, corresponds only to income taxes, while indirect taxation is a composite of international trade and consumption taxes.

[3] Their definition of direct (distortionary) taxation is a composite of various taxes such as income, property, and payroll taxes.

The paper is organized as follows. The next section presents a literature review of the studies of electoral effects on fiscal policy conduct, mainly at the central government level. Section 3 describes the dataset used in the empirical analyses. Section 4 explains the methodology implemented in the subsequent empirical work, and section 5 presents the results. Finally, section 6 concludes.

2. Elections and opportunistic fiscal policy conduct: a literature review

Rogoff and Sibert (1988) show that before elections, incumbent politicians may engage in opportunistic expansionary fiscal policies to increase their chances of re-election, by reducing taxes (immediately visible to the electorate) financed through seigniorage (observable with a lag) and thus generating budget cycles. Subsequently, Rogoff (1990) extends the analysis to pre-electoral manipulation of public spending composition, suggesting that opportunistic incumbents may attempt to signal their competence to the electorate, by shifting spending towards (immediately observed) consumption expenditure from investment expenditure (visible only after the election). Following these seminal contributions, several studies examined PBCs, although a smaller number of works directly highlighted the compositional changes (rather than changes in the overall levels) of expenditures and revenues at the central government level.[4] In what follows, we review the literature, focusing on factors affecting the existence and extent of politicians' opportunistic behavior, and identify possible gaps.[5]

2.1. Factors affecting the readiness and incentives of politicians to act opportunistically

For incumbents to manipulate fiscal policies, certain conditions often need to be satisfied. One crucial condition is the *predictability of the timing of elections*. Some studies, using panels of

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[4] Studies of electoral effects on the composition of fiscal policy tools at the subnational level are abundant. Examples include Khemani (2004) (for Indian states), Veiga and Veiga (2007) (for Portuguese municipalities), Drazen and Eslava (2010) (for Columbian municipalities), and Sjahrir et al. (2013) (for Indonesian districts).

[5] For a survey on conditional budget cycles see de Haan and Klomp (2013).

countries, suggest that PBCs are more prevalent in samples including only predetermined elections; that is, elections held in the last year of a constitutionally fixed term for the legislature or executive (e.g., Shi and Svensson (2006) and Efthyvoulou (2012)). The *fragmentation of the government* appears to be another key factor, affecting the ability of politicians to implement their most preferred policies. Regarding this point, Chang (2008) finds that in OECD countries, fiscal policy manipulation during elections is constrained when policymaking power is dispersed among multiple veto players.[6]

Turning to factors affecting the incumbents' incentives to generate PBCs, Efthyvoulou (2012), using data for EU member countries from 1997 to 2008, emphasizes the importance of *electoral competitiveness* on politicians' incentives to generate PBC.[7,8] Also, *changes in ideology* may affect politicians' incentive to engage in PBCs. Alesina and Tabbellini (1990) indicate that spending and deficits increase before elections when politicians expect to be replaced by an opponent with a different ideology, to limit the options of the newly elected candidate.[9] Finally, the *level of rents extracted in office* is also likely to influence the incentives to remain in power and, thus, the incentive for incumbents to engage in electoral fiscal manipulations. In this regard, Shi and Svensson (2006) argue that one of the reasons for PBCs to be larger in developing than in developed countries is that politicians in developing countries gain more private benefits when in power than incumbents in developed countries.

As for the electoral effects on expenditure composition, a few works focus on developing countries in particular, possibly because weaker institutions render fiscal

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[6] Veto players are actors whose agreement is necessary for changing an existing policy. They can be political parties in a coalition or political organs that have formal veto powers. The larger the number of veto players and the ideological differences among them, the more difficult it is to change the *status quo*.

[7] This factor was already a focus of the preceding `political business cycle' literature starting in the 1970s. For instance, Frey and Schneider (1978a, 1978b) argue that when the election is competitive and incumbents are in danger of losing, they have a larger incentive to adopt expansionary policies before elections to stimulate the economy.

[8] At the local government level in Portugal, Aidt, Veiga and Veiga (2011), taking into account the interaction between the magnitude of the opportunistic distortion and the margin of victory, show that incumbents behave more opportunistically when they expect elections to be more competitive.

[9] Partisan cycles were described by Hibbs (1997). For a survey of the impact of ideology on categories of public spending and revenues see Franzese (2002).

manipulation more practicable. However, results of these studies are not always consistent. For instance, Schuknecht (2000) argues public capital projects are more easily manipulated in developing countries than current expenditures are, which is frequently based on long term commitments,[10] whereas Block (2002) shows that the share of capital spending in total spending falls in election years, confirming the theoretical prediction that electoral incentives lead to an increase in more visible forms of public expenditure at the expense of less visible forms. Meanwhile, Ehrhart (2013) examines electoral effects on tax revenue composition, showing a fall in indirect taxes prior to elections in a sample of developing countries.

2.2. Factors affecting the efficacy of opportunistic behavior to generating additional votes

While certain conditions may render incumbents' fiscal manipulations possible, it also matters whether or not such an action is likely to yield additional votes. For instance, Shi and Svensson (2006) argued that PBCs might be larger in developing than in developed countries may be because in the latter countries there is a larger *share of informed voters*, making fiscal policy manipulations less effective. Further, Brender and Drazen (2005) emphasize the importance of the *maturity of democracy*, showing that PBCs are more important in new, rather than established, democracies. This is presumably because if voters are inexperienced with electoral manipulations or lack the information needed to evaluate them, opportunistic measures are expected to gain their support more effectively.[11] Following this argument Brender and Drazen (2013), using a panel of 71 democracies, present evidence for election-year effects on the composition, rather than on the level, of expenditure under established

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[10] Vergone (2009) also reports evidence of a shift from current expenditure to capital expenditure in pre-election periods.
[11] Although Alt and Lassen (2006) argue that fiscal electoral cycles are not confined to or driven by weaker and newer democracies, they also show that even among advanced democracies, opportunistic electoral cycles appear where budget institutions are less transparent, indicating the importance of information availability to voters for fiscal manipulations.

democracies.[12] In line with their result, Katsimi and Sarantides (2012), focusing on a panel of 19 OECD countries (thus, established democracies), show that particularly for predetermined electoral periods, current expenditure increases at the expense of capital expenditure, while there is no evidence for an increase in total expenditure or the deficit.[13]

2.3. Characteristics of political institutions

Finally, Persson and Tabellini (1999, 2000, 2003) emphasize the role of political institutions in shaping PBCs, focusing on *electoral rules* (single versus multiple-district elections) and the *system of government* (presidential versus parliamentary democracies). They argue that presidential democracies are less subject to political rent extraction than parliamentary democracies, and therefore, to smaller PBC. As for electoral rules, they also argue that proportional electoral systems are more susceptible to budgetary manipulation, because incumbents need to please one half of the voters there, while in majoritarian systems they only need to please roughly one fourth (half the voters in half the districts). Furthermore, in proportional systems, incentives for good individual performance by a politician may be diluted because citizens vote on a list and, consequently, elections are a less powerful tool to discipline them.

Persson and Tabellini (2003) also shed light on how electoral rules may affect expenditure composition. Specifically, they show that only under proportional elections, is there a significant pre-election spending increase, particularly in welfare spending (which targets a broad population group). Likewise, Chang (2008), focusing on OECD countries, also shows that before elections, incumbents increase social welfare spending under proportional

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[12] They also consider the post-election development in expenditure composition. In particular, using an index of changes in the composition of central government expenditures, they conclude that leadership changes do not influence the composition of expenditures in the first two years of the term, but they result in greater compositional changes over a four-year period, particularly in developed countries.

[13] However, they suggest that total revenue may decrease, driven by a fall in direct taxation.

representation, while they raise district-specific spending (including infrastructure investments such as construction and transport spending) under plurality (majoritarian) rules.

2.4. Identifying gaps in the literature

While various features of the political environment have been shown to be relevant to the occurrence of PBCs, it is not always clear which exact expenditure/revenue components are manipulated under those conditions. Further, while there is evidence that reallocations of spending and/or revenue occur under some circumstances, including established democracies, there is still room to explore the nature of reallocations more carefully, for example, by elaborating on which spending/revenue components those reallocations may occur. The present paper attempts to fill these gaps, using a newly-assembled dataset explained below.

3. The dataset

In what follows, we explain how we assemble a panel dataset covering central governments' expenditure and revenue series, elections and other political variables, and other control variables (including macroeconomic series), for more than 100 countries, over the period 1975-2010.[14]

3.1. Public finances

We assemble a public finance dataset at the central government level, based on the IMF's Government Finance Statistics (GFS) yearbook. A key innovation of this dataset is to bridge major methodological changes in the GFS manual (GFSM). These changes were implemented from the mid-1990s to the early-2000s, with the introduction of GFSM2001, which replaced the older GFSM1986. In essence, we retrieve all historical spending and revenue data available for all countries that have reported data to the GFS yearbook for the 1975-2010 period, and

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[14] The descriptive statistics of all variables used in the estimations are reported in Table A.1, in the Appendix.

then assemble comparable data series of expenditure and revenue at the level of disaggregation we pursue, referring to Wickens (2002), who details the methodological differences between the two manuals.[15]

We here describe some of the key differences across the two methodologies and how we have attempted to deal with them. First, the way total expenditure and revenue are classified is different, particularly for the expenditure. For example, while we disaggregate expenditure following economic classifications, the exact definition of `current' and `capital' concepts are different between the manuals. Specifically, the capital expenditure concept under GFSM2001, denoted as `net acquisition of non-financial assets' deducts the sales of fixed capital assets from the acquisition of such assets, while the concept under GFSM1986 does not. Further, while capital transfers are part of capital expenditure under GFSM1986, they are included as a current expenditure, denoted as `expense', under GFSM2001. Acknowledging such differences in classifications (as clarified in Wickens (2002)), we have converted all of the available items under GFSM1986 into the concepts defined by GFSM2001, for not only the expenditure, but for revenue series as well.

Second, the two methodologies differ in terms of the way statistics are reported. In particular, while under GFSM1986, reporting is on a cash basis, under GFSM2001, it is, in principle, on an accrual basis.[16] This also presents some challenges. For example, the accrual concept of `consumption of fixed capital', a subcomponent in `expense' under GFSM2001, representing a decline in the value of government's fixed assets due to physical deterioration, obsolescence, or accidental damages, does not exist in the GFSM1986 cash system. This implies that capital spending concepts under GFSM1986 and GFSM2001 are still not consistent, with the former not deducting `depreciation' of capital. To deal with this, for the

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[15] Disaggregated public spending and revenue datasets were assembled along the same lines by, respectively, Acosta-Ormaechea and Morozumi (2013) and Acosta-Ormaechea and Yoo (2012). The former focuses on the effects of the composition of spending on economic growth, while the latter studies the effects of tax composition. Our dataset combines spending and revenue components, including also budget deficits and a wide set of political, economic and institutional variables.

[16] This is `in principle', because under GFSM2001, some reporting is still done following a cash basis.

data originally retrieved from GFSM2001, we move (i.e., add) consumption of fixed capital to the capital spending component, so that the modified capital spending component becomes comparable to the one from GFSM1986, i.e., without depreciation subtracted. However, in general, fundamental differences between the cash and accrual systems prevail, including the fact that the timing of reporting also differs.[17] Thus, it is important to acknowledge that the unification of the data series is not exact, but approximate.

Last, a few comments on the institutional coverage of the government are in order. While this paper's focus is fiscal policy conducts at the central government (CG) level, it is possible to create subsectors at this level of government, based on how the units are financed, i.e., by the legislative budgets or by extrabudgetary sources. In an attempt to maximize our sample size, we supplement consolidated CG data with budgetary CG (i.e., the CG unit based only on the legislative budget) data.[18]

3.2. Democracy

The variable *POLITY2* from the 2012 version of the *Polity IV* database (see Marshall and Jaggers, 2009) is used to identify democracies. This polity scale ranges from +10 (strongly democratic) to -10 (strongly autocratic). As in Brender and Drazen (2013), we only consider democracies in our dataset, that is, values of *POLITY2* from zero to 10. In the case of new/recent democracies, the year of the switch from negative to zero or positive values of *POLITY2* is used as the reference for the beginning of democracy in the respective country. [19]

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[17] In the accrual system, flows are recorded at the time economic value is created, transferred, or extinguished, while with the cash basis, flows are recorded when cash is received or paid.

[18] Specifically, while we primarily use data at the consolidated CG level, we use budgetary CG data only when no single observation for the budget deficit is available for a country at the consolidated level for the entire 1975-2010 period. Importantly, being aware that differences between consolidated and budgetary CG data can be not trivial, we never mix these data over time.

[19] Despite its widespread use, the *POLITY2* variable has received some criticism, as similar scores may be attributed to different situations. Cheibub, Gandhi and Vreeland (2010) argue that using a specific score of *POLITY2* to identify democracies may not be the best choice, and propose an alternative measure. The fixed effects results for all democracies and all elections, when using their democracy dummy variable, are shown in Table A.2 (in the Appendix). They are very similar to those reported in Table 1a. The same applies to the system-GMM estimations of Table 1b and to the estimations of the remaining

The number of elections/years from then on determines when a new democracy becomes an established democracy (as in Brender and Drazen, 2005).[20]

3.3. Election data

Data on the elections, since 1975, for the chief executive are from the 2012 version of the *Database of Political Institutions* – DPI (see Beck et al., 2001). Presidential elections are considered for presidential systems (*SYSTEM*=0), while legislative elections are used for parliamentary systems and when the president is not elected by universal suffrage. We construct two election-year variables commonly used in the literature, based on information on the year and month of the elections:[21]

- *Election_year*: dummy variable which takes the value of one in the election year, and equals zero otherwise.

- *Election_year2*: equals m/12 in the election year, (1-m/12) in the year before, and zero in the remaining years, where *m* is the month of the election (January=1 to December=12).

3.4. Other political variables

Data from the DPI is also used to distinguish proportional representation electoral systems from majoritarian ones and presidential systems from parliamentary ones. Several other variables, related to ideology, shares of votes/seats, fractionalization, polarization, checks and balances, etc. are also obtained from the DPI. Other political variables used include the Heinisz

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tables (results not shown here, but available upon request). Thus, the main conclusions of the paper hold if the democracy variable of Cheibub et al. (2010) is used instead of *POLITY2*.

[20] The identification of established and new democracies using *POLITY2* and the democracy dummy of Cheibub et al. (2010) leads to similar results. In fact, the correlation between the dummy variables constructed for established and new democracies are, respectively, 0.92 and 0.97.

[21] The variables *EXELEC* and *LEGELEC* from DPI were used to determine the year in which each election occurred, while the variables *DATEEXE,* and *DATELEG,* also from DPI, were used to identify the month.

(2000) index of political constraints and an institutional index built along the lines of that of Shi and Svensson (2006), using data from the International Country Risk Guide (ICRG).

3.5. Main control variables

We include in all our estimations a set of control variables (those used in Brender and Drazen, 2005) which may affect the behavior and composition of public finances:

- *Log of GDP per capita at 2005 constant US dollars*: obtained from the *World Development Indicators* – WDI (World Bank). This variable controls for the income level of the countries.

- *Trade (% GDP):* sum of exports and imports as a percentage of GDP (also from the WDI). This variable controls for the effects of trade openness on public finances.

- *Output gap*: logarithmic difference between real GDP and its trend (obtained using the Hodrick-Prescott filter). Data for the real GDP is from the *World Economic Outlook* (IMF). The output gap controls for the effects of business cycles on public finances.

- *Percentages of the population below 15 and above 65 years old:* These demographic variables were obtained from the WDI and control for the effects of demography on public finances.

- *Trend and Trend squared*: To control for the passage of time.[22]

4. Empirical methodology

The empirical model can be summarized as follows:

$$f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it} \quad i = 1, \dots, N \quad t = 1, \dots, T_i \quad (1)$$

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[22] Although we also considered the option of using year dummy variables, the problem is that, with 36 years of observations, their inclusion greatly increases the number of instruments in system-GMM estimations. In fact, for those estimations where a lower number of countries is available, the number of instruments is sometimes higher than the number of countries, which is likely to make the instrument matrix invalid. Thus, although the results are very similar in general, we preferred to take time effects into consideration through the inclusion of a quadratic time trend. We report in Table A.3 (in the Appendix) the results obtained when using year dummies in Fixed Effects estimations. These are practically equal to those obtained when using a quadratic time trend (see Table 1a).

where f_{it} is a fiscal variable in country i in year t and p is its number of lags included in the model, $ELECT_{it}$ is an electoral variable,[23] X_{it} is a vector of control variables (including a quadratic time trend), μ_i is the effect of country i, ε_{it} is the error term, and α, β and δ are parameters or vectors of parameters to be estimated.

The estimation of this linear dynamic panel data model using OLS would be biased, since the lagged dependent variable is endogenous to the country effects. OLS estimation will be inconsistent, even assuming fixed or random effects, because the lagged dependent variable is correlated with the error term, even if the latter is not serially correlated (see Arellano and Bond, 1991). This bias becomes smaller as the number of periods increases, but Judson and Owen (1999) found that the bias of the least squares dummy variable (LSDV) approach can be notable, even when the time dimension of the panel is as large as 30. However, using an RMSE criterion, the LSDV performs just as well or better than many alternatives when T=30. Given that our dataset covers a 36-year period, it could be safe to simply estimate a fixed effects model. However, when we do that, our panel is unbalanced, and that the average number of observations per country in most regressions is around 20. Thus, the fixed effects model may still suffer from dynamic panel bias.

Following Holtz-Eakin et al. (1988), Arellano and Bond (1991) developed a Generalized Method of Moments (difference-GMM) estimator that solves the problems mentioned above by taking first differences of equation (1) and instrumenting predetermined and endogenous variables with their available lags in levels. But, when taking first differences, the cross-sectional relationship between the dependent and explanatory variables is lost. Furthermore, as shown by Blundell and Bond (1998), lagged levels may be weak instruments for first-differences if the series are persistent. According to Arellano and Bover (1995), efficiency can

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[23] In estimations for the first electoral variable, we also tried the inclusion of its lagged value, in order to capture opportunistic effects that may happen in the year before elections. In general, when the electoral variable and its lag are included at the same time, only the contemporaneous value is statistically significant. Thus, the electoral manipulation of fiscal variables tends to occur closer to elections. These results are not shown here but are available from the authors upon request.

be improved by adding the original equation in levels to the system, that is, by using the system-GMM estimator which combines the first-differenced and levels equations.

When estimating system-GMM models, we take into account the possibility that fiscal variables affect macroeconomic performance. Thus, we treat GDP per capita, trade and the output gap as endogenous variables. When there are several endogenous variables in a model, the number of instruments can easily become very large, leading to over-fitting of the data which can bias t-statistics upwards. In order to avoid this problem, and having in mind the fact that more distant lags are usually weak instruments, we limit the lag length to that strictly necessary to have a valid instrument matrix.[24] Since Hansen tests never reject the validity of the instrument matrix and second order autocorrelation is always rejected, supporting the validity of our results. Furthermore, Difference-in-Hansen tests do not reject the validity of the subsets of instruments.

5. Empirical results

5.1. Unconditional electoral effects on fiscal policies

We start by estimating the model described in the previous section for all democracies, without conditioning on the political considerations listed above. Tables 1a and 1b, using the fixed effects (FE)[25] and the system-GMM method, respectively, summarize the estimation results for all revenue and expenditure components (as percentages of GDP), and for the budget deficit.[26] Those for system-GMM are the two-step results, using robust standard errors

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[24] The baseline specification uses lags 2 and 3 of the fiscal variables and of the other endogenous variables as instruments in the first-differenced equations (the collapse option of the *xtabond2* Stata command is used to avoid an excessive number of instruments) and their once-lagged first-differences are used in the levels equation. The exogenous variables are used as their own instruments. The lag structure was adjusted when the baseline specification mentioned above did not pass all Hansen and difference-in-Hansen tests.

[25] In order to avoid endogeneity/simultaneity problem in FE estimations, all control variables were lagged one period.

[26] As listed in Table A.1 (in the Appendix), we analyzed the central government total revenue series, and its components: taxes, social contributions, grants and other revenues. The subcomponents of revenue taxes (income taxes, taxes on payroll, property taxes, consumption taxes, and international taxes) were also investigated. Regarding expenditures, we looked at the total, current and capital expenditure

corrected for finite samples. T-statistics are presented in parentheses and the degree of statistical significance is signaled with asterisks. The number of instruments and the results of AR(1), AR(2), Hansen and difference-in-Hansen tests for system-GMM and the adjusted R-squared for FE are reported at the foot of the table, as well as the number of observations and countries.

[Insert Tables 1a and 1b around here]

As Tables 1a and 1b show, the first lag of the dependent variable is always statistically significant, demonstrating that there is persistence in all fiscal series. For Total Revenue and Taxes, there is clear evidence of electoral manipulation of central governments' revenues, regardless of the estimation method used (FE or system-GMM). Specifically, during election years, total revenue is estimated to fall from 0.28 to 0.31 percentage points of GDP. Among the components of taxes, income taxes exhibit a similar behavior. There is also marginal evidence of a rise in total expenditure during electoral periods, albeit only with FE. In terms of its components, current expenditure, and within it grants to OGU, appear to increase; however, capital expenditure may actually fall.[27] Results also suggest the occurrence of an opportunistic budget cycle, as the budget deficit increases in election years.

Turning to the control variables, the log of GDP per capita at 2005 constant US dollars, used to control for the income level of the countries, is statistically significant in only two system-GMM regressions (for total and current expenditure), while trade as a percentage of GDP is never statistically significant. Regarding the demographic variables, the percentage of population below 15 years old seems to exert a negative impact on total taxes and income

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series, as well as their components. Current expenditure includes six components: compensation of employees, use of goods and services, interest, subsidies, social benefits, and grants. The latter is divided into grants abroad and grants to OGU.

[27] It is worth noting that, working with local government fiscal data, Veiga and Veiga (2007) and Drazen and Eslava (2010) found clearer evidence of electoral increases in capital expenditure in Portugal and Colombia, respectively, than in current expenditure. It is possible that these different results are due to specific characteristics of the countries analyzed or of fiscal policy at the local government level. Regarding the latter, local governments' investments are generally of smaller magnitude than central government ones, which implies that they can be executed faster and are thus easier to use opportunistically than large central government capital expenditure.

taxes (FE results) and positive effects on current and total expenditure (system GMM), while the percentage of population above 65 years has a similar impact on total taxes and income taxes (FE results) and a positive impact on total revenue (system GMM). Current and total expenditure are the most sensitive to the output gap. In FE estimations, there is also evidence of a positive trend in taxes and of a U-shaped trend in expenditure items and the budget deficit, while there is no evidence of time effects in system-GMM regressions.

5.2. Conditional electoral effects on fiscal policies

We now examine electoral effects on central governments' fiscal behavior by conditioning their occurrence and magnitude on various political institutions. Importantly, these analyses help us identify critical conditions which may prompt politicians to take opportunistic fiscal measures, thus shedding further light on the results from Tables 1a and 1b. As in the literature review, we organize the possible conditions under the headings of (1) factors that influence the readiness and incentives of incumbents to act opportunistically, (2) factors that affect the efficacy of opportunistic policies to generate additional votes, and (3) characteristics of political institutions. Specifically, we interact the two electoral variables described above with dummy variables that proxy those political considerations, for both system-GMM and fixed effects estimations. Although we have examined the roles of all the factors reviewed above, we describe below only the results where the impacts are robust across estimation techniques, particularly regarding the electoral effects on the expenditure/revenue composition.

All the following regressions are estimated over samples in which election dates were predetermined, rather than for the entire sample including all elections (in Tables 1a and 1b). The purpose is to avoid the potential problem of endogeneity of the election dates, as well as to focus on the cases in which incumbents can predict the timing of the next election, ensuring their readiness to implement opportunistic measures. According to Sjahrir et al. (2013), the

exogeneity of the election dates and the different timing of elections across countries provide a clear identification of the political budget cycles.[28]

Electoral competitiveness

First, to consider the electoral role of the degree of competitiveness of the elections, which is expected to affect the incentive of incumbents to act opportunistically, we interact the electoral variables with dummy variables for close and less-close elections. Specifically, elections are defined as close if the difference in vote shares between the major government and opposition parties (or candidates, in presidential elections) is smaller than 10 percentage points.[29]

[Insert Table 2 around here]

The results reported in Table 2 (where only the coefficients for the interactions are shown for brevity) indicate that the election year tends to be associated with a rise in budget deficits, particularly when elections are close, primarily driven by a fall in total revenue, rather than by a rise in total expenditure. However, when examining the components of expenditure, notice that close elections are associated with a rise in current spending, while capital spending appears to fall. Further, when investigating the subcomponents of current spending, system-GMM results give some indication that it may be driven by a rise in grants, particularly ones to OGU. Turning to revenue components, overall taxes fall, which is apparently caused by a reduction in income taxes.[30] We obtain similar results when performing estimations on a sample including only close/competitive elections (see Table A.4 in the Appendix).

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[28] The identification is clearer than when all elections take place at the same time, as happens with subnational elections in many countries. In those cases, the PBC may coincide with other time effects. In this paper, time effects, common to all countries, are accounted for by including a quadratic time trend. As indicated above, using year dummies instead does not significantly change the results.

[29] Using a margin of 5 points yields similar results.

[30] Bracco, Porcelli and Redoano (2013) argue that, when electoral competition is high, incumbent policy makers replace more salient taxes with the less salient ones. Using data for Italian local elections, they present evidence that in more competitive elections, mayors reduce (more salient) property taxes and instead increase (less salient) fees for services such as parking permits and planning permissions.

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Informed voters

Next, we turn to the extent to which voters are informed, as a factor affecting the efficacy of politicians' opportunistic behavior generating additional votes. Following Shi and Svenson (2006), we create an index of media diffusion (IMD), which combines information on the freedom of broadcast (using the Freedom House data on the freedom of the press) with the number of radios per capita (taken from the Cross National Time Series database – CNTS).[31] Then, we interact the electoral variables with dummy variables for high and low IMD (above and below the 75th percentile).

[Insert Table 3 around here]

Table 3 shows that as expected, there is evidence of budget cycles, particularly when voters are not well informed, i.e., when the index of media diffusion takes low values. Moreover, notice that, while total expenditure itself appears to rise, this is critically driven by a rise in current spending, while capital spending falls. Disaggregating current spending further, FE results suggest that an increase in grants to OGU, in particular, may contribute to a rise in this spending. As for the electoral effects on revenue when voters are not well informed, a pattern similar to that of close elections (see Table 2) is observed. That is, a fall in total revenue appears to be driven by a fall in taxes, in particular, income taxes.[32]

Maturity of democracy

We now take into account the maturity of democracy, another factor thought to affect the efficacy of incumbents' opportunistic behavior. We do so by interacting the electoral variables with dummy variables for established and new democracies. As in Brender and Drazen (2005),

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[31] Using the Freedom House data on the freedom of broadcast, we assign the classifications of Free, Partially Free and Not Free broadcast the numerical values of 2, 1 and 0, respectively. Then, the index of media diffusion (IMD) is obtained by multiplying this series by that of the number of radios per capita. Finally, we defined as high IMD the values above or equal to the 75th percentile.

[32] The results obtained for a sample restricted to the observations in which the IMD is low are reported in Table A.5, in the Appendix. As seen there, the results are consistent with the ones based on the interaction approach.

democracies are classified as established if they were democratic during the entire sample period and the ten years preceding the start of the sample period,[33] and the remaining countries are classified as new democracies during their first four democratic elections.[34]

[Insert Table 4 around here]

In accordance with the Brender-Drazen results, Table 4 reveals no evidence of opportunistic behavior in total expenditure or total revenue in established democracies, while in new democracies there is evidence of lower total revenue and higher total expenditures and, thus, of budget deficits. Turning to the components of expenditure and revenue, the results suggest that a rise in total expenditure in new democracies is due to a rise in current expenditure, while a fall in taxes is a reason behind a fall in total revenue.

Focusing on established democracies, although there is no indication of changes in total expenditure and revenue (and thus no budget cycles), central governments appear to reallocate those components. Specifically, there is clear evidence that they increase one particular current component, namely grants to OGU, offset by a fall in capital spending. Importantly, this result is in line with Katsimi and Sarantides (2012) and Brender and Drazen (2013). The former, focusing on 19 high-income OECD (thus established) democracies, show that elections shift spending from capital to current spending, whereas the latter present the evidence of election year spending reallocations in established democracies (although they do not identity the spending components that have been reallocated). Regarding revenue components in established democracies, Table 4 again suggests possible reallocation effects of elections. In particular, while income taxes fall, this appears to be (at least partially) compensated for by an increase in consumption taxes.

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[33] To be precise, we only classify a country as an established democracy if it was democratic for at least 10 years before the start of the sample period. That is, it must have been democratic from 1965 to 2010.
[34] As in Brender and Drazen (2005), these countries' following elections are not included in the estimations. As a robustness test, we used a different strategy, according to which a democracy would be new during the first four elections, and would become established thereafter. Although most results (not shown here) are similar, the distinction between the results for established and new democracies is not as sharp as when using Brender and Drazen's (2005) definition.

To emphasize, in new democracies, this type of reallocation effects are absent, with an evidence of the rise in total expenditure and the fall in total revenue instead. Therefore, it appears that these expenditure/revenue reallocations are a phenomenon strictly in established democracies. Lastly, it is worth noting that all the key results from the interaction regressions are still observed when we run separate regressions for established and new democracies (see Tables A.6a and A.6b in the Appendix).

Electoral rule

Finally, when we consider the electoral rule as one important characteristic of political institutions which may affect politicians' opportunistic behavior in election years, the results reported in Table 5 clearly confirm those obtained by Persson and Tabellini (2003). That is, only under proportional regimes are elections associated with an increase in the budget deficit. Additionally, our disaggregated data reveals further distinct patterns regarding components, particularly in terms of spending. Specifically, while the budget cycle appears to be mainly driven by total expenditure, this is predominantly due to a rise in current spending, particularly grants to OGU. Meanwhile, capital spending appears to fall (according to system GMM results).[35]

[Insert Table 5 around here]

5.3. Other political considerations

Several additional tests, whose results are not reported here for brevity, were also performed.[36] First, we investigated if government fragmentation influences its ability to engender fiscal electoral cycles. In some specifications, there is evidence of a larger distortion of total revenue and total taxes in electoral periods by single party governments than by

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[35] The Tables A.7a and A.7b in the Appendix report, respectively, the results obtained when using separate samples for proportional and majoritarian electoral rules.
[36] All of these results are available from the authors upon request.

coalition governments, leading to larger deficits. Second, we used the Heinisz (2000) index of political constraints as an indicator of the government's ability to generate PBC. Overall results for high/low indices are not clear-cut, except for the fact that total revenue tends to decrease in election years when constraints are lower. Third, following Shi and Svenson (2006), we proxied the level of rents extracted while in power, using an institutional index constructed with indicators provided by the International Country Risk Guide (ICRG).[37] Two dummy variables were created for observations where the level of rents is high/low. Although there are no robust results regarding the budget deficit, there seems to be larger manipulation of overall taxes and of total and current expenditure when the rents are considered to be high. Fourth, we analysed whether electoral effects differ among developed/developing countries, and among strong/weak[38] democracies. Although no consistent robust results were found regarding the degree of prevalence of PBC, the reallocation of expenditures towards grants to OGU in electoral years seems to be present in developed countries and in strong democracies (as shown above for established democracies). Fifth, following Alesina and Tabellini (1990), we examined whether changes in the ideology of the government influence the magnitude of opportunistic fiscal measures. No clear-cut results were obtained. Finally, the role of political institutions (Persson and Tabellini, 1999, 2003a, 2003b) in shaping PBC was also examined. There is some evidence of a reduction in total revenue and overall taxes in presidential regimes, while in parliamentary democracies increases in grants to OGU seem to be compensated by decreases in capital expenditure.

6. Conclusions

To the best of our knowledge, we have assembled the largest and most comprehensive database on fiscal policy variables ever used in panel-country studies focusing on budgetary opportunistic effects. This detailed database allowed us to investigate the electoral effects on

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[37] The indicators used are: law and order, corruption, bureaucratic quality, and investment profile.
[38] Democracies were defined as strong when the variable POLITY2 was greater or equal to 8.

the composition of central governments' expenditure and revenue series under various political arrangements.

The main results are summarized as follows:

(1) There is evidence for political budget cycles (PBC) at the central government level when using a sample comprising all democracies and elections. While PBC are driven by an increase in current spending and a reduction in taxes, when these spending and revenue components are further disaggregated, a rise in grants to other government units (OGU)[39] and a fall in income taxes stand out.

(2) Budget cycles are not universal. They are more likely to occur when the timing of elections is predetermined and under specific political circumstances. The latter include close (disputed) elections, a high proportion of relatively uninformed voters, new democracies, and proportional electoral rules. Importantly, under these circumstances, a rise in current spending and a fall in taxes are predominant drivers of PBC, while grants to OGU and income taxes are often particularly relevant subcomponents.

(3) In established democracies, there is no evidence of election year deficits. Rather, central governments appear to reallocate both expenditure and revenue components in election years, while not changing their total levels. In particular, they reallocate spending from capital spending to grants to OGU and they reduce income taxes and increase consumption taxes instead.

While the previous literature indicated those conditions relevant for the occurrence of PBC, we here added to it by examining the specific drivers of PBC in terms of both expenditure and revenue components. Critically, we found that central governments raise current, rather than capital, spending in election years. To interpret, this is somewhat consistent with Rogoff (1990), who argues that capital expenditure, which often takes long to materialize, may not be

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[39] Although new in the cross-country context, this finding is consistent with the results obtained by previous research focusing on specific countries and using regional/local data (i.e. Veiga and Pinho, 2007; Solé-Ollé and Sorribas-Navarro, 2008; Veiga and Veiga, 2013).

as suitable to signal the incumbent policymaker's competence as immediately-observed current spending. Regarding the particular use of grants to OGU as a manipulative tool in election years, we may interpret it as central governments' pork-barrel spending policies in an attempt to win votes by benefitting specific localities. These interpretations, when combined, explain the particular reallocation pattern observed under established democracies.

Turning to the revenue, particularly tax components, it may be useful to acknowledge that a number of studies argue that some taxes are more salient than others. For instance, while Chetty, Looney and Kroft (2009) show that taxpayers underreact to taxes that are not salient, Blumkin, Ruffle and Ganun (2012) argue that individuals underestimate the tax burden associated with an indirect consumption tax, relative to the tax burden resulting from an equivalent, but immediately visible, direct wage tax. Following this line of thinking, central governments may deliberately reduce more directly-felt (by voters) income taxes when generating PBC. Further, it is possible to interpret the tax reallocation behavior under established democracies similarly, because consumption taxes appear to be less salient than income taxes.

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Table 1a. Electoral effects for all democracies (Fixed Effects)

	Total Revenue (1)	Taxes Total (2)	Income Taxes (3)	Total Expenditure (4)	Current Expenditure (5)	Grants to OGU (6)	Capital Expenditure (7)	Budget Deficit (8)
L.CG_gdp	0.756***	0.726***	0.764***	0.810***	0.834***	0.832***	0.505***	0.699***
	(28.202)	(21.186)	(18.011)	(21.573)	(25.268)	(28.339)	(7.049)	(11.085)
Election year	-0.285***	-0.235***	-0.120**	0.245*	0.343***	0.140***	-0.063	0.412***
	(-2.976)	(-3.264)	(-2.642)	(1.911)	(2.947)	(2.746)	(-1.629)	(2.703)
Log(GDPpc 2005)	-0.015	-0.051	0.399	0.179	0.195	-0.216	-0.058	-0.790
	(-0.025)	(-0.128)	(1.217)	(0.226)	(0.268)	(-0.535)	(-0.148)	(-1.298)
Trade (%GDP)	-0.004	-0.001	-0.003	-0.008	-0.008	-0.002	0.001	-0.001
	(-0.864)	(-0.297)	(-0.916)	(-1.369)	(-1.536)	(-0.970)	(0.302)	(-0.181)
% Pop below 15	-0.058	-0.062**	-0.041**	-0.015	-0.023	-0.025	-0.002	0.005
	(-1.138)	(-2.373)	(-2.163)	(-0.419)	(-0.694)	(-0.797)	(-0.103)	(0.105)
% Pop over 65	0.115	-0.120**	-0.085**	-0.033	-0.075	-0.022	0.010	-0.051
	(1.094)	(-2.606)	(-2.356)	(-0.243)	(-0.659)	(-0.397)	(0.326)	(-0.294)
Output gap	0.913	-1.384	-1.330	14.136***	15.817***	3.008**	-1.418	12.152***
	(0.389)	(-0.733)	(-0.885)	(3.373)	(4.594)	(2.509)	(-0.846)	(2.692)
Trend	0.023	0.037*	0.008	-0.118***	-0.120***	-0.017	-0.034**	-0.113***
	(0.805)	(1.962)	(0.674)	(-2.741)	(-3.043)	(-1.054)	(-2.307)	(-3.345)
Trend squared	-0.000	-0.000	-0.000	0.004***	0.004***	0.001**	0.001**	0.003***
	(-0.736)	(-0.946)	(-0.560)	(3.590)	(3.997)	(2.126)	(2.179)	(2.667)
Constant	7.413	7.538**	0.075	6.346	5.757	3.623	1.733	8.807
	(1.276)	(1.988)	(0.027)	(0.977)	(0.922)	(0.862)	(0.476)	(1.466)
# Observations	1,766	1,839	1,435	1,068	1,200	1,095	1,222	1,028
# Countries	106	107	71	73	74	66	77	70
Adjusted R^2	0.687	0.646	0.669	0.701	0.736	0.722	0.289	0.467

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

Notes:

- All elections in democracies (Polity2≥0). Sample period: 1975-2010.

- Estimated model: $f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$

- Fixed Effects estimations.

- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Table 1b. Electoral effects for all democracies (System-GMM)

	Total Revenue (1)	Taxes Total (2)	Income Taxes (3)	Total Expenditure (4)	Current Expenditure (5)	Grants to OGU (6)	Capital Expenditure (7)	Budget Deficit (8)
L.CG_gdp	0.651***	0.766***	0.586***	0.659***	0.702***	0.927***	0.826***	0.852***
	(5.338)	(8.878)	(3.585)	(3.677)	(6.320)	(12.021)	(4.748)	(4.050)
Election year	-0.311***	-0.230***	-0.129***	0.145	0.253*	0.091*	-0.119**	0.458***
	(-3.236)	(-3.099)	(-2.716)	(0.919)	(1.891)	(1.834)	(-2.241)	(2.723)
Log(GDPpc 2005)	0.745	0.498	1.884	6.467**	6.205***	-0.110	0.758	2.825
	(1.053)	(0.751)	(1.627)	(2.287)	(2.739)	(-0.579)	(0.661)	(0.491)
Trade (%GDP)	0.004	0.002	0.002	0.034	0.027	0.003	0.012	0.076
	(0.208)	(0.138)	(0.287)	(1.115)	(0.972)	(0.263)	(0.983)	(0.660)
% Pop below 15	0.076	0.037	0.131	0.721***	0.671***	-0.005	0.100	0.391
	(0.756)	(0.445)	(1.312)	(2.887)	(3.346)	(-0.103)	(0.943)	(0.668)
% Pop over 65	0.382**	0.057	-0.059	0.140	0.113	0.019	-0.022	-0.010
	(2.179)	(0.560)	(-0.542)	(0.515)	(0.392)	(0.453)	(-0.322)	(-0.024)
Output gap	8.293	7.294*	2.704	-35.424**	-27.004**	1.682	-1.090	-17.203
	(1.549)	(1.652)	(1.148)	(-2.277)	(-2.464)	(0.633)	(-0.241)	(-0.649)
Trend	-0.014	0.011	0.046	0.169	0.197	-0.027	0.039	0.016
	(-0.286)	(0.349)	(0.888)	(1.290)	(1.588)	(-1.338)	(0.665)	(0.066)
Trend squared	0.001	-0.000	-0.001	-0.003	-0.004	0.001	-0.001	-0.001
	(0.457)	(-0.094)	(-0.539)	(-1.211)	(-1.409)	(1.032)	(-0.688)	(-0.111)
Constant	-3.143	-2.110	-17.711	-72.379**	-70.418***	1.207	-10.126	-40.898
	(-0.360)	(-0.265)	(-1.469)	(-2.457)	(-2.862)	(0.342)	(-0.727)	(-0.560)
# Observations	1,769	1,843	1,440	1,072	1,205	1,098	1,227	1,031
# Countries	106	107	71	73	74	66	77	70
# Instruments	18	18	17	18	18	18	18	14
AR(1), p-value	0.00	0.00	0.00	0.02	0.00	0.00	0.01	0.00
AR(2), p-value	0.43	0.22	0.23	0.62	0.89	0.96	0.26	0.99
Hansen, p-value	0.50	0.28	0.50	0.43	0.84	0.08	0.33	0.66
Diff Hansen1, p-value	0.21	0.12	0.28	0.19	0.50	0.05	0.24	0.66
Diff Hansen2, p-value	0.42	0.41	0.24	0.28	0.66	0.09	0.66	0.31

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

Notes: - All elections in democracies (Polity2≥0). Sample period: 1975-2010.

- System-GMM estimations for dynamic panel-data models. Sample period: 1975-2010.

- Estimated model: $f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments.

- Two-step results using robust standard errors corrected for finite samples.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Table 2. Close versus not close elections

	Total Revenue (1)	Taxes (2)	Income Taxes (3)	Total Expenditure (4)	Current Expenditure (5)	Grants to OGU (6)	Capital Expenditure (7)	Budget Deficit (8)
Fixed Effects								
CloseE*Election_year	-0.242	-0.336***	-0.191**	0.457*	0.604***	0.112	-0.116***	0.647***
	(-1.603)	(-3.062)	(-2.421)	(1.890)	(2.755)	(1.305)	(-2.884)	(2.804)
NotClose*Election_year	-0.330*	-0.118	-0.0958	0.198	0.262	0.219**	-0.0372	0.389
	(-1.855)	(-1.009)	(-1.302)	(0.969)	(1.362)	(2.090)	(-0.660)	(1.514)
Number of Observations	1,223	1,283	1,011	775	874	788	878	743
Number of Countries	91	91	64	64	65	61	67	63
System-GMM								
CloseE*Election_year	-0.224	-0.329***	-0.167**	0.576*	0.642**	0.166*	-0.147**	0.815***
	(-1.520)	(-2.623)	(-2.038)	(1.663)	(2.318)	(1.785)	(-2.418)	(3.023)
NotClose*Election_year	-0.276	-0.126	-0.140**	-0.346	0.121	-0.002	-0.095	0.164
	(-1.334)	(-0.907)	(-2.167)	(-1.105)	(0.419)	(-0.025)	(-1.312)	(0.537)
Number of Observations	1,224	1,285	1,013	777	877	790	880	744
Number of Countries	91	91	64	64	65	61	67	63
Fixed Effects								
CloseE*Election_year2	-0.493*	-0.555***	-0.212**	0.242	0.506*	0.119	-0.103	0.638
	(-1.924)	(-2.708)	(-2.169)	(0.718)	(1.767)	(1.139)	(-1.576)	(1.546)
NotClose*Election_year2	-0.402*	-0.200	-0.0737	0.115	0.270	0.246*	-0.0517	0.219
	(-1.685)	(-1.194)	(-0.665)	(0.365)	(0.942)	(1.821)	(-0.849)	(0.543)
Number of Observations	1,223	1,283	1,011	775	874	788	878	743
Number of Countries	91	91	64	64	65	61	67	63
System-GMM								
CloseE*Election_year2	-0.388*	-0.640***	-0.232**	0.492	0.803	0.187*	-0.127	1.321**
	(-1.837)	(-2.904)	(-2.143)	(0.574)	(0.928)	(1.773)	(-1.315)	(2.087)
NotClose*Election_year2	-0.561*	-0.376	-0.261**	-0.781*	-0.337	0.026	-0.257**	-0.140
	(-1.769)	(-1.385)	(-2.087)	(-1.926)	(-0.508)	(0.286)	(-2.123)	(-0.285)
Number of Observations	1,224	1,285	1,013	777	877	790	880	744
Number of Countries	91	91	64	64	65	61	67	63

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

General notes: - Predetermined elections in democracies (Polity2≥0). Sample period: 1975-2010. Estimated model:

$$f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta_1 (ELECT_{it} * CloseE_{it}) + \beta_2 (ELECT_{it} * NotClose_{it}) + \emptyset Close_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$$

- All the control variables (**X**) were included in all models. For each estimation, only the results for the coefficients (β_1 and β_2) of the interactions of the election-year variable with the dummies for close and not close elections are shown. Full estimation results are available from the authors upon request.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Notes for the Fixed Effects estimations:

- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

Notes for the System-GMM estimations:

- Two-step results using robust standard errors corrected for finite samples.

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments.

Table 3. High (75th percentile) versus low index of media diffusion

	Total Revenue (1)	Taxes (2)	Income Taxes (3)	Total Expenditure (4)	Current Expenditure (5)	Grants to OGU (6)	Capital Expenditure (7)	Budget Deficit (8)
Fixed Effects								
ImdH*Election_year	-0.110	-0.155*	-0.131*	0.191	0.280***	0.151*	-0.0265	0.301*
	(-0.921)	(-1.673)	(-1.814)	(1.632)	(2.671)	(1.876)	(-0.689)	(1.813)
ImdL*Election_year	-0.489**	-0.339***	-0.183***	0.572*	0.779**	0.173*	-0.167**	0.956**
	(-2.606)	(-2.674)	(-2.815)	(1.698)	(2.440)	(1.682)	(-2.278)	(2.294)
Number of Observations	1,223	1,283	1,011	775	874	788	878	743
Number of Countries	91	91	64	64	65	61	67	63
System-GMM								
ImdH*Election_year	0.016	-0.176	-0.161*	0.188	0.158	0.099	-0.045	0.276
	(0.092)	(-1.344)	(-1.926)	(0.931)	(1.014)	(1.453)	(-1.166)	(1.446)
ImdL*Election_year	-0.443**	-0.232*	-0.195***	0.515	0.875***	0.037	-0.293**	1.096***
	(-2.112)	(-1.734)	(-3.432)	(1.391)	(2.717)	(0.409)	(-2.565)	(2.931)
Number of Observations	1,224	1,285	1,013	777	877	790	880	744
Number of Countries	91	91	64	64	65	61	67	63
Fixed Effects								
ImdH*Election_year2	-0.259	-0.228	-0.109	0.0360	0.247	0.151	-0.0433	0.200
	(-1.236)	(-1.615)	(-1.171)	(0.199)	(1.603)	(1.427)	(-0.940)	(0.758)
ImdL*Election_year2	-0.716**	-0.620**	-0.222**	0.438	0.741**	0.229**	-0.151	0.998
	(-2.425)	(-2.414)	(-2.257)	(1.145)	(2.010)	(2.075)	(-1.425)	(1.539)
Number of Observations	1,223	1,283	1,011	775	874	788	878	743
Number of Countries	91	91	64	64	65	61	67	63
System-GMM								
ImdH*Election_year2	-0.336	-0.389*	-0.255**	-0.396	-0.122	0.074	-0.076	0.238
	(-1.411)	(-1.665)	(-2.103)	(-0.954)	(-0.416)	(0.839)	(-1.043)	(0.618)
ImdL*Election_year2	-0.718**	-0.460*	-0.245***	0.686	1.018*	0.009	-0.457**	1.694***
	(-2.354)	(-1.906)	(-2.875)	(1.410)	(1.932)	(0.076)	(-2.413)	(2.580)
Number of Observations	1,224	1,285	1,013	777	877	790	880	744
Number of Countries	91	91	64	64	65	61	67	63

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

General notes: - Predetermined elections in democracies (Polity2≥0). Sample period: 1975-2010. Estimated model:

$$f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta_1(ELECT_{it} * IndH_{it}) + \beta_2(ELECT_{it} * IndL_{it}) + \emptyset IndH_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$$

- All the control variables (**X**) were included in all models. For each estimation, only the results for the coefficients (β_1 and β_2) of the interactions of the election-year variable with the dummies for high and low index of media diffusion are shown. Full estimation results are available from the authors upon request.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Notes for the Fixed Effects estimations:

- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

Notes for the System-GMM estimations:

- Two-step results using robust standard errors corrected for finite samples.

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments.

Table 4. Established *versus* new democracies

	Total Revenue (1)	Taxes (2)	Income Taxes (3)	Consumption Taxes (4)	Total Expend. (5)	Current Expend. (6)	Grants to OGU (7)	Capital Expend. (8)	Budget Deficit (9)
Fixed Effects									
Est_dem*Election_year	-0.105	-0.168*	-0.176***	0.117**	0.147	0.235*	0.185**	-0.0747**	0.211
	(-0.898)	(-1.973)	(-2.933)	(2.302)	(0.959)	(1.808)	(2.274)	(-2.269)	(1.298)
New_dem*Election_year	-0.338	-0.264*	0.00422	-0.143	0.789*	0.989***	0.0995	-0.120	0.941*
	(-1.542)	(-1.668)	(0.0440)	(-1.121)	(1.987)	(2.695)	(0.673)	(-1.436)	(1.947)
Number of Observations	1,223	1,283	1,011	1,009	775	874	788	878	743
Number of Countries	91	91	64	63	64	65	61	67	63
System-GMM									
Est_dem*Election_year	0.078	-0.232**	-0.211**	0.182***	-0.203	-0.000	0.203**	-0.084*	0.0278
	(0.363)	(-2.027)	(-2.106)	(2.581)	(-0.672)	(-0.001)	(2.449)	(-1.798)	(0.0895)
New_dem*Election_year	-0.409*	-0.233*	-0.0621	-0.157	1.084**	0.986**	-0.169	-0.224*	0.961**
	(-1.693)	(-1.905)	(-0.642)	(-1.115)	(2.312)	(2.536)	(-1.350)	(-1.679)	(2.475)
Number of Observations	1,224	1,285	1,013	1,010	777	877	790	880	744
Number of Countries	91	91	64	63	64	65	61	67	63
Fixed Effects									
Est_dem*Election_year2	-0.226	-0.250*	-0.245***	0.164**	-0.0678	0.159	0.160**	-0.0989**	0.00625
	(-1.064)	(-1.858)	(-3.073)	(2.284)	(-0.383)	(1.174)	(2.654)	(-2.201)	(0.0270)
New_dem*Election_year2	-0.478*	-0.509**	0.0489	-0.226	0.669	0.940**	0.105	-0.0869	0.812
	(-1.687)	(-2.038)	(0.383)	(-1.596)	(1.633)	(2.327)	(0.457)	(-0.895)	(1.341)
Number of Observations	1,223	1,283	1,011	1,009	775	874	788	878	743
Number of Countries	91	91	64	63	64	65	61	67	63
System-GMM									
Est_dem*Election_year2	-0.168	-0.316	-0.355***	0.233**	-0.640	-0.547	0.222***	-0.143**	0.0290
	(-0.475)	(-1.206)	(-2.851)	(2.328)	(-1.016)	(-1.355)	(2.778)	(-2.015)	(0.0480)
New_dem*Election_year2	-0.582*	-0.502**	-0.0649	-0.175	0.825*	0.909**	-0.236	-0.186	1.025*
	(-1.874)	(-2.190)	(-0.587)	(-1.023)	(1.672)	(2.181)	(-1.264)	(-1.018)	(1.715)
Number of Observations	1,224	1,285	1,013	1,010	777	877	790	880	744
Number of Countries	91	91	64	63	64	65	61	67	63

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

General notes: - Predetermined elections in democracies (Polity2≥0). Sample period: 1975-2010. Estimated model:

$$f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta_1 (ELECT_{it} * Est\_dem_{it}) + \beta_2 (ELECT_{it} * New\_dem_{it}) + \emptyset New\_dem_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$$

- All the control variables (**X**) were included in all models. For each estimation, only the results for the coefficients (β_1 and β_2) of the interactions of the election-year variable with the dummies for established and new democracies are shown. Full estimation results are available from the authors upon request.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Notes for the Fixed Effects estimations:

- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

Notes for the System-GMM estimations:

- Two-step results using robust standard errors corrected for finite samples.

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments.

Table 5. Proportional *versus* plurality electoral rule

	Total Revenue (1)	Taxes (2)	Total Expenditure (3)	Current Expenditure (4)	Grants to OGU (5)	Capital Expenditure (6)	Budget Deficit (7)
Fixed Effects							
Proportional*Election_year	-0.212	-0.248**	0.595***	0.655***	0.214**	-0.0431	0.658***
	(-1.340)	(-2.290)	(3.013)	(3.502)	(2.165)	(-0.932)	(2.703)
Plurality *Election_year	-0.083	-0.0280	-0.157	-0.050	-0.0844	-0.0867	0.0642
	(-0.482)	(-0.218)	(-0.758)	(-0.293)	(-1.060)	(-1.283)	(0.212)
Number of Observations	1,213	1,276	766	865	785	869	736
Number of Countries	90	90	63	64	60	66	62
System-GMM							
Proportional*Election_year	0.031	-0.140	0.660***	0.693***	0.191**	-0.179**	0.614**
	(0.165)	(-1.212)	(2.646)	(3.186)	(2.234)	(-2.468)	(2.060)
Plurality*Election_year	-0.538**	-0.286*	-0.807	-0.449	-0.167*	0.108	0.149
	(-1.981)	(-1.815)	(-1.129)	(-0.738)	(-1.928)	(0.942)	(0.207)
Number of Observations	1,224	1,285	768	868	787	871	744
Number of Countries	91	91	63	64	60	66	63
Fixed Effects							
Proportional*Election_year2	-0.368	-0.341*	0.455*	0.607***	0.235*	-0.0325	0.584
	(-1.462)	(-1.738)	(1.903)	(2.797)	(1.874)	(-0.576)	(1.665)
Plurality*Election_year2	-0.0911	-0.116	-0.0967	0.0359	-0.0409	-0.0998	0.206
	(-0.333)	(-0.581)	(-0.333)	(0.168)	(-0.461)	(-1.186)	(0.376)
Number of Observations	1,213	1,276	766	865	785	869	736
Number of Countries	90	90	63	64	60	66	62
System-GMM							
Proportional*Election_year2	-0.171	-0.230	0.783*	0.855**	0.192*	-0.166*	1.055**
	(-0.610)	(-1.382)	(1.877)	(2.090)	(1.723)	(-1.924)	(1.960)
Plurality*Election_year2	-0.537	-0.488**	-0.631	-0.556	-0.174	0.007	-0.122
	(-1.097)	(-2.031)	(-0.640)	(-0.695)	(-1.583)	(0.049)	(-0.191)
Number of Observations	1,224	1,285	768	868	787	871	744
Number of Countries	91	91	63	64	60	66	63

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

General notes: - Predetermined elections in democracies (Polity2≥0). Sample period: 1975-2010. Estimated model:

$$f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta_1(ELECT_{it} * Prop_{it}) + \beta_2(ELECT_{it} * Plurality_{it}) + \emptyset Prop_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$$

- All the control variables (**X**) were included in all models. For each estimation, only the results for the coefficients (β_1 and β_2) of the interactions of the election-year variable with the dummies for proportional and plurality electoral systems are shown. Full estimation results are available from the authors upon request.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Notes for the Fixed Effects estimations:

- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

Notes for the System-GMM estimations:

- Two-step results using robust standard errors corrected for finite samples.

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments;

Appendix

Table A.1. Descriptive statistics

Variable	Obs.	Mean	Std. Dev.	Min.	Max.	Description and Source
Central Government Revenues (source: GFS – IMF)						
CG1_gdp	1956	26.91	9.60	8.90	50.97	Total revenue (%GDP)
CG11_gdp	2011	17.18	5.91	6.04	34.56	Taxes (%GDP)
CG111_gdp	1557	6.95	3.98	1.10	15.48	Income taxes (%GDP)
CG112_gdp	520	0.62	0.64	0.01	2.51	Taxes on payroll (%GDP)
CG113_gdp	1259	0.50	0.42	0.01	1.84	Property taxes (%GDP)
CG114_gdp	1552	8.31	3.29	1.30	15.24	Consumption taxes (%GDP)
CG115_gdp	1261	1.64	1.80	0.01	10.57	International trade taxes (%GDP)
CG12_gdp	1539	6.21	4.88	0.01	15.85	Social contributions (%GDP)
CG13_gdp	1567	1.01	1.55	0.01	9.54	Grants (%GDP)
CG14_gdp	1759	3.21	2.42	0.58	21.71	Other revenues (%GDP)
Central Government Expenditures (source: GFS – IMF)						
CGexpenditure_gdp	1224	31.16	9.92	10.94	63.84	Total expenditure (%GDP)
CG2_gdp	1336	29.09	10.19	10.30	62.52	Expense (%GDP) (without consumption of fixed capital. CG23)
CG21_gdp	1814	5.73	2.67	1.71	14.23	Compensation of employees (%GDP)
CG22_gdp	1812	3.91	2.11	0.94	13.10	Use of goods and services (%GDP)
CG24_gdp	1897	2.55	1.78	0.20	9.02	Interest (%GDP)
CG25_gdp	1256	1.26	1.02	0.06	4.77	Subsidies (%GDP)
CG26_gdp	1461	4.03	2.80	0.16	13.50	Grants (%GDP)
CG261_gdp	1059	0.41	0.41	0.01	1.70	Grants abroad(%GDP)
CG263_gdp	1185	4.05	2.64	0.31	12.06	Grants to other govt units(%GDP)
CG27_gdp	1302	8.59	5.98	0.12	20.46	Social benefits (%GDP)
CG31_gdp	1366	1.97	1.84	0.32	22.83	Net acquisition of nonfinancial assets (%GDP) (with consumption of fixed capital)
CGdeficit_gdp	1186	2.17	4.27	-19.85	31.33	Budget deficit (%GDP)
Democracy (sources: Polity IV and Cheibub, et al. 2010)						
Polity2	2975	7.44	2.83	0.00	10.00	Combined Polity Score (autocracy-democracy scale from -10 to 10) (Polity IV)
Democracy	2975	1.00	0.00	1.00	1.00	Democracy dummy (=1 if polity2>0) (Polity IV)
New democracy	2955	0.54	0.50	0.00	1.00	New democracy - first 4 elections (Polity IV)
Established democ.	2975	0.35	0.48	0.00	1.00	Established democracy (since 1965) (polity IV)
Democracy_CGV	2957	0.80	0.40	0.00	1.00	Democracy dummy (Cheibub et al. 2010)
New democ_CGV	2351	0.50	0.50	0.00	1.00	New democracy (Cheibub et al. 2010)
Estab. Democ._CGV	2364	0.39	0.49	0.00	1.00	Established democracy (Cheibub et al. 2010)
Institutions (sources: Freedom House, CNTS, ICRG, and Heinisz, 2000))						
IMD	2756	0.80	0.84	0.00	4.21	Index of media diffusion (Freedom House, CNTS)
Institutional Index	2975	7.44	2.83	0.00	10.00	Institutional index similar to Shi and Svensson's (2006). Data from ICRG.
Political constraints	2931	0.37	0.17	0.00	0.72	Index of political constraints (Heinisz, 2000).

Variable	Obs.	Mean	Std. Dev.	Min.	Max.	Description
Elections and type of system (source: DPI-World Bank)						
Election_year	2975	0.20	0.40	0.00	1.00	Election year for the government leader (President or Prime Minister)
Election_year2	2423	0.15	0.29	0.00	1.00	Election year for the government: equals election_month/12 in the election year, (1-election_month/12) in the year before, and zero otherwise
Pred_Election_year	2975	0.15	0.36	0.00	1.00	Election year for the government leader (President or Prime Minister). Only predetermined elections considered.
Pred_Election_year2	2975	0.09	0.24	0.00	1.00	Election year for the government: equals election_month/12 in the election year, (1-election_month/12) in the year before, and zero otherwise. Only predetermined elections considered.
System	2933	1.05	0.97	0.00	2.00	Political System (Parliamentary/Presidential)
PR	2722	0.71	0.45	0.00	1.00	Proportional Representation dummy
Close election	2933	0.51	0.50	0.00	1.00	Dummy for close elections (equals 1 if margin of victory smaller than 10 percentage points)
Single party	2975	0.44	0.50	0.00	1.00	Dummy variable for single party governments.
Two-party	2975	0.34	0.47	0.00	1.00	Dummy variable for two party systems (equals 1 when the effective number of parties is smaller than 3).
Macroeconomic and demographic variables (sources: WEO-IMF and WDI-World Bank)						
Log(GDPpc 2005)	2811	8.25	1.61	3.91	11.38	Log of GDP per capita (constant 2005 US$) – WDI
Trade (% GDP)	2837	76.14	40.63	9.10	333.53	Trade (% of GDP)
% Pop below 15	2953	30.50	10.62	13.27	49.83	Population ages 0-14 (% of total) – WDI
% Pop above 65	2953	8.20	5.04	1.98	22.96	Population ages 65 and above (% of total) – WDI
Output_gap	2906	0.00	0.03	-0.67	0.26	Log(NGDP_R)-log(HPtrend of NGDP_R) - WEO

Note: The sample covers all 2975 observations for which countries were democracies (variable POLITY2 from DPI greater or equal to zero).

Table A.2. Electoral effects for all democracies (Fixed Effects, with democracy defined according to Cheibub et al. 2010)

	Total Revenue (1)	Taxes Total (2)	Income Taxes (3)	Total Expenditure (4)	Current Expenditure (5)	Grants to OGU (6)	Capital Expenditure (7)	Budget Deficit (8)
L.CG_gdp	0.732***	0.722***	0.778***	0.827***	0.840***	0.838***	0.676***	0.717***
	(20.640)	(23.511)	(18.697)	(20.861)	(23.741)	(28.949)	(10.362)	(10.099)
Election year	-0.182*	-0.227***	-0.113**	0.263**	0.373***	0.121**	-0.077**	0.492***
	(-1.791)	(-3.130)	(-2.456)	(2.145)	(3.417)	(2.452)	(-2.180)	(3.409)
Log(GDPpc 2005)	-0.282	-0.426	0.272	-1.071	-0.945	0.199	-0.068	-1.165
	(-0.296)	(-0.936)	(0.781)	(-1.145)	(-1.068)	(0.614)	(-0.210)	(-1.424)
Trade (%GDP)	-0.004	-0.002	-0.003	-0.003	-0.004	-0.002	0.000	0.002
	(-0.957)	(-0.920)	(-1.089)	(-0.444)	(-0.706)	(-0.956)	(0.206)	(0.209)
% Pop below 15	-0.064	-0.085***	-0.044**	-0.080*	-0.077*	-0.005	-0.012	-0.027
	(-1.047)	(-3.037)	(-2.208)	(-1.833)	(-1.813)	(-0.164)	(-0.798)	(-0.550)
% Pop over 65	0.143	-0.122***	-0.082**	-0.068	-0.086	-0.006	-0.022	-0.102
	(1.305)	(-2.876)	(-2.381)	(-0.513)	(-0.786)	(-0.125)	(-1.102)	(-0.545)
Output gap	-0.134	-2.185	-0.763	23.854***	22.694***	2.458**	-0.033	17.946***
	(-0.051)	(-1.128)	(-0.461)	(4.813)	(5.732)	(2.038)	(-0.027)	(3.014)
Trend	0.028	0.035**	0.008	-0.124***	-0.123***	-0.023	-0.011	-0.110***
	(0.958)	(2.111)	(0.606)	(-2.846)	(-2.984)	(-1.455)	(-1.121)	(-3.770)
Trend squared	-0.001	-0.000	-0.000	0.004***	0.004***	0.001**	0.000	0.004***
	(-0.946)	(-0.796)	(-0.354)	(4.040)	(4.375)	(2.069)	(1.239)	(2.911)
Constant	10.223	11.814**	1.136	18.963**	17.341**	-0.727	1.809	13.499*
	(1.068)	(2.581)	(0.367)	(2.207)	(2.069)	(-0.224)	(0.587)	(1.676)
# Observations	1,741	1,818	1,375	999	1,139	1,073	1,154	971
# Countries	99	101	66	71	73	63	73	69
Adjusted R^2	0.650	0.648	0.693	0.709	0.737	0.729	0.477	0.463

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and Cheibub et al. (2010).
Notes:
- All elections in democracies (using the democracy dummy variable of Cheibub et al. 2010).
- Estimated model: $f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$
- Fixed Effects estimations. Sample period: 1975-2010.
- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.
- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Table A.3. Electoral effects for all democracies (Fixed Effects with year dummies)

	Total Revenue (1)	Taxes Total (2)	Income Taxes (3)	Total Expenditure (4)	Current Expenditure (5)	Grants to OGU (6)	Capital Expenditure (7)	Budget Deficit (8)
L.CG_gdp	0.761***	0.730***	0.773***	0.796***	0.822***	0.836***	0.499***	0.668***
	(28.335)	(21.398)	(19.792)	(21.665)	(25.874)	(29.047)	(7.129)	(11.807)
Election year	-0.264***	-0.228***	-0.090*	0.260**	0.345***	0.147***	-0.045	0.381**
	(-2.834)	(-3.165)	(-1.971)	(2.066)	(3.127)	(2.894)	(-1.079)	(2.506)
Log(GDPpc 2005)	0.015	-0.034	0.288	0.434	0.501	-0.221	0.073	-0.806
	(0.028)	(-0.083)	(1.087)	(0.550)	(0.669)	(-0.548)	(0.177)	(-1.000)
Trade (%GDP)	-0.001	0.001	-0.001	-0.015*	-0.015**	-0.002	0.000	-0.007
	(-0.179)	(0.290)	(-0.244)	(-1.936)	(-2.121)	(-0.844)	(0.009)	(-1.209)
% Pop below 15	-0.059	-0.070**	-0.047**	0.004	0.005	-0.026	-0.007	0.026
	(-1.102)	(-2.384)	(-2.377)	(0.088)	(0.113)	(-0.821)	(-0.300)	(0.484)
% Pop over 65	0.114	-0.124***	-0.074**	0.010	-0.049	-0.021	0.004	-0.046
	(1.065)	(-2.906)	(-2.291)	(0.070)	(-0.379)	(-0.370)	(0.136)	(-0.274)
Output gap	-0.316	2.555	1.252	-10.924**	-10.954***	0.531	0.264	-8.815**
	(-0.118)	(1.209)	(0.767)	(-2.307)	(-3.180)	(0.286)	(0.109)	(-2.419)
Constant	6.960	7.116*	1.089	4.041	2.876	3.854	1.091	8.530
	(1.216)	(1.776)	(0.467)	(0.627)	(0.458)	(0.911)	(0.287)	(1.083)
# Observations	1,769	1,843	1,440	1,072	1,205	1,098	1,227	1,031
# Countries	106	107	71	73	74	66	77	70
Adjusted R^2	0.696	0.668	0.689	0.726	0.760	0.730	0.305	0.546

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.
Notes:
- All elections in democracies (Polity2≥0). Sample period: 1975-2010.
- Estimated model: $f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$
- Fixed Effects estimations including year dummies (coefficients are not shown for brevity).
- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.
- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Table A.4. Close elections

	Total Revenue (1)	Taxes (2)	Income Taxes (3)	Total Expenditure (4)	Current Expenditure (5)	Grants to OGU (6)	Capital Expenditure (7)	Budget Deficit (8)
Fixed Effects								
Election_year	-0.241	-0.268***	-0.172**	0.407	0.540**	0.0840	-0.0881**	0.502**
	(-1.623)	(-2.908)	(-2.205)	(1.664)	(2.413)	(0.940)	(-2.332)	(2.115)
N. observations	702	735	605	445	504	451	504	432
N. countries	70	70	53	48	48	46	50	48
System-GMM								
Election_year	-0.247*	-0.235**	-0.145**	0.517	0.686***	0.273*	-0.084*	0.616**
	(-1.796)	(-2.003)	(-2.010)	(1.559)	(2.947)	(1.673)	(-1.886)	(2.212)
N. observations	702	735	605	445	504	451	504	744
N. countries	70	70	53	48	48	46	50	63
Fixed Effects								
Election_year2	-0.476*	-0.400***	-0.179*	0.168	0.055	0.0817	-0.0657	0.417
	(-1.977)	(-2.685)	(-1.746)	(0.492)	(0.470)	(0.736)	(-1.030)	(1.040)
N. observations	702	735	605	445	504	451	504	432
N. countries	70	70	53	48	48	46	50	48
System-GMM								
Election_year2	-0.450**	-0.395**	-0.240**	0.279	0.828*	0.460*	-0.135**	0.643*
	(-2.045)	(-1.992)	(-2.533)	(0.412)	(1.691)	(1.646)	(-2.012)	(1.694)
N. Observations	702	735	605	445	504	451	504	744
N. Countries	70	70	53	48	48	46	50	63

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

General notes: - Predetermined and close elections in democracies (Polity2≥0). Sample period: 1975-2010.

- Estimated model: $f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$

- All the control variables were included in all models. For each estimation, only the results for the coefficient (β) of the election-year variable is shown. Full estimation results are available from the authors upon request.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Notes for the Fixed Effects estimations:

- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

Notes for the System-GMM estimations:

- System-GMM estimations for dynamic panel-data models;

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments;

- Two-step results using robust standard errors corrected for finite samples.

Table A.5. Low index of media diffusion

	Total Revenue (1)	Taxes (2)	Income Taxes (3)	Total Expenditure (4)	Current Expenditure (5)	Grants to OGU (6)	Capital Expenditure (7)	Budget Deficit (8)
Fixed Effects								
Election_year	-0.443**	-0.346***	-0.199***	0.652**	0.774***	0.186*	-0.166**	0.982**
	(-2.431)	(-2.828)	(-3.123)	(2.243)	(2.793)	(1.900)	(-2.144)	(2.542)
N. Observations	559	592	405	297	311	258	362	285
N. Countries	64	63	37	38	39	33	41	37
System-GMM								
Election_year	-0.412**	-0.279***	-0.182*	0.486*	0.554*	0.149*	-0.283**	0.780**
	(-2.130)	(-2.731)	(-1.671)	(1.674)	(1.854)	(1.811)	(-2.458)	(1.965)
N. Observations	559	592	405	297	311	258	362	285
N. Countries	64	63	37	38	39	33	41	37
Fixed Effects								
Election_year2	-0.718**	-0.665***	-0.264**	0.532	0.699**	0.241**	-0.147	1.094*
	(-2.503)	(-3.017)	(-2.677)	(1.586)	(2.186)	(2.396)	(-1.242)	(1.852)
N. Observations	559	592	405	297	311	258	362	285
N. Countries	64	63	37	38	39	33	41	37
System-GMM								
Election_year2	-0.412**	-0.279***	-0.182*	1.282*	0.789*	0.061	-0.307*	1.515**
	(-2.130)	(-2.731)	(-1.671)	(1.814)	(1.696)	(0.665)	(-1.775)	(2.404)
N. Observations	559	592	405	297	311	258	362	285
N. Countries	64	63	37	38	39	33	41	37

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

General notes: - Predetermined elections in democracies (Polity2≥0) with low Index of Media Diffusion. Sample period: 1975-2010.

- Estimated model: $f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$

- All the control variables were included in all models. For each estimation, only the results for the coefficient (β) of the election-year variable is shown. Full estimation results are available from the authors upon request.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Notes for the Fixed Effects estimations:

- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

Notes for the System-GMM estimations:

- System-GMM estimations for dynamic panel-data models;

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments;

- Two-step results using robust standard errors corrected for finite samples.

Table A.6a. Established democracies

	Total Revenue (1)	Taxes (2)	Income Taxes (3)	Consumption Taxes (4)	Total Expend. (5)	Current Expend. (6)	Grants to OGU (7)	Capital Expendit. (8)	Budget Deficit (9)
Fixed Effects									
Election_year	-0.108	-0.165*	-0.181***	0.141**	0.172	0.278**	0.196**	-0.0775**	0.246
	(-0.886)	(-1.908)	(-2.992)	(2.698)	(1.135)	(2.241)	(2.348)	(-2.345)	(1.425)
N. Observations	568	601	563	560	419	497	451	465	401
N. Countries	28	28	27	26	25	26	26	25	25
System-GMM									
Election_year	-0.076	-0.234**	-0.194*	0.136*	0.056	0.182	0.161**	-0.087***	0.197
	(-0.457)	(-2.087)	(-1.891)	(1.765)	(0.299)	(1.326)	(2.096)	(-3.302)	(0.783)
N. Observations	570	603	565	561	420	499	453	466	402
N. Countries	28	28	27	26	25	26	26	25	25
Fixed Effects									
Election_year2	-0.245	-0.257*	-0.249***	0.192**	-0.0694	0.186	0.177**	-0.112**	0.0108
	(-1.070)	(-1.860)	(-3.126)	(2.763)	(-0.391)	(1.369)	(2.648)	(-2.522)	(0.0449)
N. Observations	568	601	563	560	419	497	451	465	401
N. Countries	28	28	27	26	25	26	26	25	25
System-GMM									
Election_year2	-0.346	-0.396**	-0.342**	0.185*	-0.210	0.056	0.165**	-0.121***	0.119
	(-1.285)	(-2.286)	(-2.021)	(1.669)	(-0.675)	(0.290)	(2.010)	(-2.966)	(0.350)
N. Observations	570	603	565	561	420	499	453	466	402
N. Countries	28	28	27	26	25	26	26	25	25

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

General notes: - Predetermined elections in established democracies. Sample period: 1975-2010.

- Estimated model: $f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$

- All the control variables were included in all models. For each estimation, only the results for the coefficient (β) of the election-year variable is shown. Full estimation results are available from the authors upon request.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Notes for the Fixed Effects estimations:

- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

Notes for the System-GMM estimations:

- System-GMM estimations for dynamic panel-data models;

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments;

- Two-step results using robust standard errors corrected for finite samples.

Table A.6b. New democracies

	Total Revenue (1)	Taxes (2)	Income Taxes (3)	Consumption Taxes (4)	Total Expend. (5)	Current Expend. (6)	Grants to OGU (7)	Capital Expendit. (8)	Budget Deficit (9)
Fixed Effects									
Election_year	-0.326	-0.268*	-0.00395	-0.121	0.905**	1.034***	0.116	-0.0903	1.014**
	(-1.627)	(-1.832)	(-0.0404)	(-1.068)	(2.386)	(3.036)	(0.828)	(-1.056)	(2.231)
N. Observations	508	525	353	355	276	295	259	322	266
N. Countries	60	60	36	36	37	37	31	40	35
System-GMM									
Election_year	-0.440*	-0.203*	-0.041	-0.092	1.143**	0.755**	-0.132	-0.177*	0.562*
	(-1.655)	(-1.837)	(-0.540)	(-0.685)	(1.995)	(2.133)	(-1.131)	(-1.872)	(1.743)
N. Observations	508	526	354	356	277	296	259	323	266
N. Countries	60	60	36	36	37	37	31	40	35
Fixed Effects									
Election_year2	-0.461*	-0.527**	0.0508	-0.189	0.921**	1.068***	0.135	-0.0428	1.021*
	(-1.779)	(-2.309)	(0.397)	(-1.432)	(2.282)	(2.865)	(0.606)	(-0.402)	(1.869)
N. Observations	508	525	353	355	276	295	259	322	266
N. Countries	60	60	36	36	37	37	31	40	35
System-GMM									
Election_year2	-0.465*	-0.336**	-0.028	-0.100	1.669*	0.612*	-0.223	-0.172	0.786*
	(-1.727)	(-2.131)	(-0.237)	(-0.623)	(1.797)	(1.669)	(-1.232)	(-1.238)	(1.737)
N. Observations	508	526	354	356	277	296	259	323	266
N. Countries	60	60	36	36	37	37	31	40	35

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

General notes: - Predetermined elections in new democracies. Sample period: 1975-2010.

- Estimated model: $f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$

- All the control variables were included in all models. For each estimation, only the results for the coefficient (β) of the election-year variable is shown. Full estimation results are available from the authors upon request.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Notes for the Fixed Effects estimations:

- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

Notes for the System-GMM estimations:

- System-GMM estimations for dynamic panel-data models;

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments;

- Two-step results using robust standard errors corrected for finite samples.

Table A.7a. Proportional electoral rule

	Total Revenue (1)	Taxes (2)	Income Taxes (3)	Total Expenditure (4)	Current Expenditure (5)	Grants to OGU (6)	Capital Expenditure (7)	Budget Deficit (8)
Fixed Effects								
Election_year	-0.282*	-0.296***	-0.126*	0.624***	0.714***	0.213**	-0.0981***	0.808***
	(-1.918)	(-2.860)	(-1.985)	(3.160)	(3.761)	(2.318)	(-2.868)	(3.349)
N. Observations	760	805	703	493	552	527	554	475
N. Countries	56	56	42	38	39	41	38	38
System-GMM								
Election_year	-0.215*	-0.280**	-0.168**	0.493**	0.634***	0.172**	-0.091**	0.738***
	(-1.646)	(-2.423)	(-2.421)	(2.570)	(3.930)	(2.083)	(-1.971)	(3.387)
N. Observations	761	806	705	494	554	529	555	476
N. Countries	56	56	42	38	39	41	38	38
Fixed Effects								
Election_year2	-0.496**	-0.480**	-0.0794	0.507*	0.677***	0.213*	-0.0980*	0.707*
	(-2.059)	(-2.473)	(-0.845)	(1.914)	(2.789)	(1.744)	(-1.894)	(1.925)
N. Observations	760	805	703	493	552	527	554	475
N. Countries	56	56	42	38	39	41	38	38
System-GMM								
Election_year2	-0.411*	-0.571***	-0.135	0.586*	0.719***	0.197*	-0.151**	1.180**
	(-1.795)	(-2.651)	(-0.941)	(1.724)	(2.663)	(1.851)	(-2.199)	(2.386)
N. Observations	761	806	705	494	554	529	555	476
N. Countries	56	56	42	38	39	41	38	38

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

General notes: - Predetermined elections in democracies with proportional electoral rules. Sample period: 1975-2010.

- Estimated model: $f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$

- All the control variables were included in all models. For each estimation, only the results for the coefficient (β) of the election-year variable is shown. Full estimation results are available from the authors upon request.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Notes for the Fixed Effects estimations:

- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

Notes for the System-GMM estimations:

- System-GMM estimations for dynamic panel-data models;

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments;

- Two-step results using robust standard errors corrected for finite samples.

Table A.7b. Majoritarian (plurality) electoral rule

	Total Revenue (1)	Taxes (2)	Income Taxes (3)	Total Expenditure (4)	Current Expenditure (5)	Grants to OGU (6)	Capital Expenditure (7)	Budget Deficit (8)
Fixed Effects								
Election_year	-0.207	-0.141	-0.189**	-0.155	-0.002	0.0759	-0.0500	0.148
	(-1.329)	(-1.099)	(-2.388)	(-0.790)	(-0.011)	(1.394)	(-0.765)	(0.447)
N. Observations	434	449	280	264	302	249	306	250
N. Countries	36	37	24	27	27	20	30	25
System-GMM								
Election_year	-0.124	-0.225*	-0.150*	-0.063	-0.086	0.094	-0.010	0.006
	(-0.895)	(-1.693)	(-1.804)	(-0.132)	(-0.575)	(0.972)	(-0.186)	(0.019)
N. Observations	434	450	280	265	303	249	307	250
N. Countries	36	37	24	27	27	20	30	25
Fixed Effects								
Election_year2	-0.241	-0.220	-0.251***	-0.218	0.0239	0.134**	-0.0340	0.0769
	(-0.972)	(-1.296)	(-3.053)	(-0.803)	(0.138)	(2.142)	(-0.383)	(0.132)
N. Observations	434	449	280	264	302	249	306	250
N. Countries	36	37	24	27	27	20	30	25
System-GMM								
Election_year2	-0.470	-0.429	-0.206**	-0.545	-0.015	0.093	-0.029	0.151
	(-1.461)	(-1.636)	(-2.122)	(-1.404)	(-0.062)	(0.573)	(-0.314)	(0.293)
N. Observations	434	450	280	265	303	249	307	250
N. Countries	36	37	24	27	27	20	30	25

Sources: IMF (GFS and WEO); World Bank (DPI and WDI), and PolityIV.

General notes: - Predetermined elections in democracies with majoritarian (plurality) electoral rules. Sample period: 1975-2010.

- Estimated model: $f_{it} = \sum_{j=1}^{p} \alpha_j f_{i,t-j} + \beta ELECT_{it} + X'_{it}\delta + \mu_i + \varepsilon_{it}$

- All the control variables were included in all models. For each estimation, only the results for the coefficient (β) of the election-year variable is shown. Full estimation results are available from the authors upon request.

- t-statistics are in parenthesis. Significance level at which the null hypothesis is rejected: ***, 1%; **, 5%, and *, 10%.

Notes for the Fixed Effects estimations:
- The control variables were lagged one period in order to avoid simultaneity/endogeneity problems.

Notes for the System-GMM estimations:
- System-GMM estimations for dynamic panel-data models;

- Log(GDPpc 2005), Trade (%GDP) and Output gap were treated as endogenous. Their lagged values two and three periods were used as instruments in the first-difference equations and their once lagged first-differences were used in the levels equation. The option collapse of the command xtabond2 for Stata was used in order to avoid a very high number of instruments;

- Two-step results using robust standard errors corrected for finite samples.