Conditional Political Budget Cycles:
A Reconsideration of the Role of Economic Development

Andreas P. Kyriacou
(Departament d'Economia, Universitat de Girona)
Tomohito Okabe
(Institute of Economic Research, Hitotsubashi University)
and
Oriol Roca-Sagalés
(Departament d'Economia Aplicada,
Universitat Autònoma de Barcelona)

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Andreas P. Kyriacou[1], Tomohito Okabe[2], Oriol Roca-Sagalés[3]

[1]Corresponding author: Departament d'Economia, Universitat de Girona, Campus de Montilivi, 17071, Girona, Spain (e-mail: andreas.kyriacou@udg.edu), ORCiD: 0000-0001-9571-2833

[2]Institute of Economic Research, Hitotsubashi University, 2-1, Naka, Kunitachi, Tokyo, Japan (e-mail: t-okabe@ier.hit-u.ac.jp)

[3]Departament d'Economia Aplicada, Universitat Autònoma de Barcelona, Edifici B, Bellaterra 08193, Barcelona, Spain (e-mail: oriol.roca@uab.cat), ORCiD: 0000-0002-5401-442X

Abstract

We revisit work that has indicated that the presence and strength of Political Budget Cycles depends on a range of conditioning factors. We focus on the mediating effect of economic development. Our results, based on a sample of up to 67 developing and developed countries over the period 1995 to 2016, indicate that budget cycles emerge in countries with a GDP per capita below a threshold ranging from 21,000 to 25,000 U.S. dollars. To explain this we suggest that GDP per capita may be capturing for the effect of time preference. Specifically, in relatively poorer countries, high discount rates will lead voters to value immediate consumption over the future costs from fiscally irresponsible policies. This goes beyond previous explanations of budget cycles based on voters with short memories who underestimate the costs of expansionary policies, voters with little experience with democracy or voters who are poorly informed about the competence or policy preferences of political candidates.

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Key words

Political budget cycles, conditional effect, economic development, time preference

JEL codes

D72, H62, O10

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Introduction

Political budget cycles (PBCs) refer to the adoption by incumbent politicians of expansionary fiscal policies prior to elections to improve their re-election prospects (Brender and Drazen, 2005). They can manifest themselves in the form of worsening budgetary balances, increased public spending and reduced government revenues during electoral periods. Early work has explained the emergence of PBCs by assuming that voters with short memories, value expansionary fiscal policies and consistently underestimate their cost in terms of inflation and future tax burdens (Eslava, 2011). This 'fiscal illusion' implies "not only that voters cannot fully understand the government budget, but also that they are repeatedly fooled by politicians." (ibid, page 647). To reconcile PBCs with rational, forward-looking voters, later work has made several assumptions (Drazen, 2008). First, incumbent politicians value reelection but they also pursue social welfare through the provision of public goods. Second, voters have imperfect information about either the competence of incumbent politicians (defined as the ability to provide more public goods with available fiscal resources) or about their preferences over different voter groups. Unlike high competence incumbents, low competence ones cannot provide more public goods without significantly reducing future spending or raising taxes, to the deteriment of social welfare. Thus, high competence incumbents can, uniquely, signal their ability by undertaking – especially more visible – spending before elections. Insofar as different preferences for voter groups, incumbents can signal their preferences by targeting spending towards specific groups at the expense of others. In either case, this can lead to a PBC in the presence of rational fiscally conservative voters who otherwise would punish fiscal manipulation, although the cycle should be weaker than that which would occur when voters suffer fiscal illusion (Alesina et al., 1997).[1]

A growing body of work has proposed that the existence and strength of PBCs may depend on a range of conditioning or mediating variables (for reviews and empirical evidence see, de Haan and Klomp, 2013 and Klomp and de Haan, 2013). These include the level of democracy or electoral competitivess (Gonzalez, 2002; Block, 2002; Vergne 2009), electoral rules and government types (Persson and Tabellini, 2003; Chang, 2008), democratic experience (Brender and Drazen, 2005); the quality of governance and the share of informed voters in the electorate (Shi and Svensson 2006; Alt and Rose, 2009; Vergne, 2009); fiscal transparency and political polarization (Alt and Lassen, 2006), checks and balances (Chang, 2008; Alt and Rose, 2009; Streb et al., 2009; Streb and Torrens, 2013; Garmann, 2018) and party age (Hanusch and Keefer, 2014). Taken together, this body of work has found that PBCs are stronger in the presence of greater electoral competition, proportional electoral rules and presidential systems, less experience with democracy, poorer quality of governance, fewer informed voters, less fiscal transparency and greater political polarization, fewer checks and balances and younger political parties.

In this paper, we will focus on the mediating effect of economic development. While previous work has considered how PBCs vary across different levels of economic development, it has done so in an unsatisfactory manner. Thus, to examine the differential effect in developed and developing countries, Brender and Drazen (2005) split the sample between OECD countries and the rest. Similarly, Shi and Svensson (2006) differentiate between developing and developed countries by relying on an arbitrary income level to split the sample. Klomp and de Haan (2013) divide countries into industrialized and developing following an IMF criterion. The only paper that does not split the sample in some arbitrary manner is Hanusch and Keefer (2014) who interact

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[1] There is some debate in the literature about which public spending is more visible or easier to target. Some authors argue that current expenditures are more visible than capital expenditures (e.g. Rogoff, 1990) while others argue that capital expenditures are more visible (Kneebone and McKenzie, 2001) and easier to target (Vergne, 2009; Drazen and Eslava, 2010). From a different perspective, Schuknecht (2000) suggests that the relatively disretionary nature of public investment makes it attractive to incumbent politicians during elections.

an election variable with a continuous measure of income per capita. However, they do so to check the robustness of their key mediating variable, party age, and so their focus is not on the conditional effect of economic development.

We will reconsider the mediating effect of economic development by way of an interaction term between GDP per capita (in logs) and a range of election variables. Our results, based on an updated sample of up to 67 countries over the period 1995 to 2016, indicate that PBCs emerge in countries with a GDP per capita below a threshold ranging from 21,000 to 25,000 constant 2010 U.S. dollars. Our results are generally maintained when controlling for the alternative conditional effects identified by previous work. Based on these findings, we tentatively advance a new explanation for the heterogeneous effect of electoral cycles in rich and poor countries namely, voter time preference. We argue that voters in poor countries have relatively high discount rates and, as such, value the short-term benefits of expansionary fiscal policy more than the medium to long-term benefits of fiscal sustainability.

The paper is structured as follows. In the next section, we review the literature that has considered the influence of conditioning variables on the relationship between elections and fiscal outcomes. We will then present the data and empirical methodology employed in the paper. After this, we report our main empirical findings as well as a range of robustness checks before discussing the possible role of voter time-preference as an explanation of our empirical results. We then conclude the article.

Conditional PBCs: Previous work

Gonzalez (2002) considers how the level of democracy interacts with elections to affect a range of fiscal variables in Mexico over the period 1957 to 1997 during which regular elections where held but the level of democracy varied widely. She finds that democracy exacerbated spending in current transfers and, especially in infrastructures during elections. She interprets this in the context of rational voter versions of the PBC and the net result of two counterveiling forces. On the one hand, more democracy implies stronger electoral competition thereby sharpening the incentives of competent incumbents to spend more during elections to signal their competence. On the other hand, democracy potentially increases the information available to voters thereby potentially dampening incentives to over-spend. She argues that the information effect did not emerge fast enough "to reduce the incumbent's temptation to engage in opportunistic policy making." (page 221). Evidence of competitive elections contributing towards PBCs has also been reported by Block (2002) based on a panel of 69 developing countries over the period 1975 to 1990. His results indicate that in the presence of more electoral competition, elections increase public consumption to the detriment of public investment. Similar results are found by Vergne (2009) based on a sample of 42 developing countries and extending from 1975 to 2001.

Persson and Tabellini (2003) consider the mediating effect of electoral rules (majoritarian versus proportional) and government types (parliamentary versus presidential) on the relationship between elections and fiscal policy variables and based on a sample of 60 developed and developing countries over the period 1960 to 1998. While they find that all countries cut taxes in election years, countries with majoritarian electoral rules cut taxes by more, countries with presidential regimes postpone fiscal policy adjustment until after elections and countries that employ proportional rules raise welfare spending before elections. They interpret these results as consistent with the hypothesis whereby majoritarian elections or presidential systems are associated with stronger individual accountability than proportional elections or parliamentary systems, in which politicians are more collectively accountable. To explain the finding linking proportional electoral rules with higher welfare spending before elections they argue that these rules create stronger incentives to win votes through broad policy programs. Using a sample of

21 OECD countries from 1973 to 1990, Chang (2008) confirms the effect of proportional electoral rules on welfare spending before elections.

Brender and Drazen (2005) consider PBCs in a sample of 68 economically developed and developing democracies from 1960 to 2001. They focus on democracies because, they argue, PBC theory depends on competitive elections. They find that PBCs are a phenomenon that occurs in new democracies and that manifests itself in the guise of greater deficits and public expenditure during electoral periods. Because they do not find evidence of cycles on the revenue side, they suggest that greater expenditure not lower revenues may drive the larger deficits. They explain their findings by arguing that in new democracies, voters lack experience with the electoral process and the media do not have sufficient experience in disseminating the relevant information. Thus, "[i]n the absence of this experience, it is more likely that fiscal manipulation would be rewarded rather than punished." (page 1276). Moreover, they say that their finding is consistent with the view of rational voters as fiscal conservatives who punish rather than reward fiscal manipulation. But, politicians can get away with such manipulation in new democracies where both voters and the media are inexperienced. Rather than focus on experience with democracy, Hanusch and Keefer (2014) focus on the mediating effect of political party age arguing that older parties can mitigate information asymmetries that contribute towards PBCs because they are better able to screen candidates for competence and policy preferences and thus provide a clearer signal to voters about these matters. Moreover, established parties can make commitments that are more credible to voters thus reducing the need to buy their support at election time. Their results, based on 65 democracies over the period 1975 to 2001, indicate that PBCs in public spending are smaller in countries with older political parties.

Shi and Svensson (2006) turn their attention towards the mediating effect of the quality of governance and voter information on PBCs. They employ data on 85 developed and developing countries over the period 1975-1995 and include both democracies and non-democracies because, they argue, even in non-democracies mock elections can act as a focal point around which frustrated citizens can mobilize thus generating an incentive for the regime to engage in fiscal expansions to appease disgruntled voters. The authors argue that the more private benefits politicians gain when in power, ranging from non-monetary benefits like status or honor from being elected to appropriation of public resources for private gains (corruption), the stronger the incentives to influence voter's perceptions prior to elections. Moreover, the more voters fail (ex-ante) to distinguish pre-electoral manipulations from incumbent competence, the higher the return from boosting spending prior to election. Their empirical evidence – employing proxies of the quality of governance and the share of informed voters in the electorate and measuring PBCs based on the budget balance– is broadly consistent with these arguments. Alt and Rose (2009) similarly report evidence based on panel data from 45 U.S. states between 1974 and 1999 supporting the idea that PBCs, measured by way of public spending, tend to be more pronounced when media penetration is low. Vergne (2009) confirms the conditioning effect of the share of informed voters in her sample of developing countries while Veiga et al. (2016) points to the mediating role of press freedom in a sample of 70 developed and developing democracies over 1970 to 2010. Finally, Janků and Libich (2019) provide evidence, from a sample of 43 OECD countries over the period 1995 to 2014, that the strength of the PBC, measured in terms of the budget balance and public spending, depends on how well informed voters are.

The mediating effect of voter information has also been tackled by focusing on fiscal or budgetary transparency. Alt and Lassen (2006) argue that if the budget were fully transparent, then voters would be able to discern the competence of incumbents and, specifically, associate higher competence to lower deficits. Running deficits would thus be electorally costly since it signals low ability and as a result, incumbents would avoid them thereby dampening PBCs. They further argue that in highly polarized polities, incumbents fear losing elections since this could mean

policies that they strongly disagree with. They therefore have a strong incentive to adopt expansionary fiscal policies to increase their chances of reelection. Political polarization should amplify PBCs. Their empirical evidence, based on a sample of 19 OECD countries from 1989 to 1998, indicates that PBCs in the budget balance fall with the degree of fiscal transparency and, independently of transparency, rise with the degree of political polarization with the strongest cycles emerging when transparency is low and polarization is high.

A range of articles has considered how checks and balances can reduce the scope for fiscal manipulation during elections. Chang (2008) looks at the role of checks and balances in his sample of 21 OECD countries. He argues that veto-player theory would suggest that fiscal manipulation would be more difficult in an environment with multiple partisan or ideologically distant veto-players. To consider the conditioning effect of veto-players, he creates a dummy variable that differentiates between single veto-player systems and multiple veto-players ones. He finds that, the magnitude of public spending cycles is reduced under the multiple partisan veto-players structure. Streb et al. (2009) confirm the mediating effect of checks and balances by employing Brender and Drazen's (2005) panel data of developed and developing democracies. They show that partisan veto players together with compliance with the law have a moderating influence on PBCs measured by way of the budget balance, public expenditures and revenues. The dampening effect of partisan veto-players on PBCs – measured via higher spending or lower revenues – is also confirmed by Garmann (2018) in a municipality-level setting in the German state of Hesse where voters elect the head of the local public administration (executive) and the municipal council (legislative) in separate elections. Streb and Torrens (2013) argue that partisan checks and balances moreover make fiscal rules limiting public borrowing credible thus potentially limiting PBCs while Alt and Rose (2009) provide empirical evidence from U.S. states that fiscal rules in the guise of balanced budget laws do in fact moderate PBCs in public spending. Ademmer and Dreher (2016) turn to a sample of 25 European Union states over 1996 to 2012 and show that fiscal rules limit the exent of PBCs in the budget balance.[2]

To the extent that previous work has considered how PBCs vary across different levels of economic development, it has done so in a less than satisfactory manner. Brender and Drazen (2005) split the sample between OECD countries and the rest. Initially they find some evidence of PBCs in both country groupings and that cycles are stronger in developing countries (the rest). However, on further investigation, they find that these results are driven by new democracies. Shi and Svensson (2006) differentiate between developing and developed countries by way of a dummy variable that takes the value of 1 when GNP per capita is more than $9556 in 1997 and 0 otherwise. Splitting the sample into the two groups, 27 developed and 58 developing countries, they find that budget cycles are large in developing countries and non-existent in developed ones (the estimated coefficient is smaller and not statistically significant). Regressions including the conditional effect of, on the one hand, their key explanatory variables – the quality of governance and share of informed voters – and, on the other, economic development (as proxied by the dummy variable), indicate that the latter is not statistically significant while the former is. Klomp and de Haan (2013) divide countries into industrialized and developing following the 2008 IMF World Economic Outlook Report and find that PBCs exist in both groups but that they are stronger in developing countries. Hanusch and Keefer (2014) check the robustness of their empirical findings to the inclusion of an interaction term between GDP per capita and elections. They find that the party age-elections interaction continues to be negative and statistically significant (party age dampens public spending cycles) while the GDP per capita-elections interaction is not

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[2] Klomp and de Haan (2013) exploit a sample of 70 democratic countries for the period 1970–2007 and, focusing on the fiscal balance and public spending, confirm the mediating effect of democratic experience, electoral rules, transparency, political polarization and fiscal rules.

significant. In the remainder of the article, we will reconsider the mediating effect of GDP per capita on the relationship between elections and fiscal outcomes.

Data and empirical approach

We exploit a sample of up to 67 developed and developing countries over the period 1995 to 2016. To capture the PBC we follow previous work and generate a dummy variable *Elections* that takes the value of 1 in either years of presidential elections in presidential political systems or years of legislative elections for the lower house in parliamentary systems or systems with assembly elected presidents (see, for example, Persson and Tabellini, 2003; Brender and Drazen, 2005; Shi and Svensson, 2006). This information is drawn from the Database of Political Institutions (Cruz et al., 2016). We include both democracies and non-democracies in our sample because we agree with Shi and Svensson (2006) that PBCs can also emerge in non-democracies when the ruling elite expand fiscal policy to reduce discontent during mock elections. Indeed, Dubois (2016) cites work uncovering evidence of PBCs in several non-democracies: Egypt, Mexico, China, Malaysia and in the Republic of Korea. Based on the Polity2 variable published by the Polity IV project (Marshall et al. 2010), and following Brender and Drazen (2005) who clasify non-democracies as those countries that have negative Polity2 values, 9 countries in our sample can be classified as non-democracies namely, Afghanistan, Belarus, Egypt, Iran, Jordan, Kazahstan, Morocco, Singapore and Thailand. Three more have, at times, had negative values: Armenia (2 years), Croatia (3 years), Indonesia (4 years).[3]

The elections variable potentially suffers from endogeneity bias since, on the one hand, governments in a favorable fiscal situation may call elections to increase the likelihood of getting elected (reverse causality) and, on the other, both the election date and the fiscal variables may be influenced by unobserved and/or difficult to control for factors (omitted variable bias). To account for this endogeneity, we follow Brender and Drazen (2005) and separate out those elections whose timing is predetermined in that they are held at the constitutionally determined election interval. Because in some cases the natural year does not coincide with the fiscal year we, moreover, adjust the predetermined election variable for the fiscal year (this is the case for 15 countries in our sample). This variable is labeled *Predetermined Elections*. As a robustness check, we consider an alternative election variable that takes the value of 1 the year of elections, -1 the year after, and 0 otherwise (Schuknecht, 1996; Streb et al., 2009). We generate two versions of this variable, one based on *Elections* and called *Schuknecht Elections*, and another that is based on *Predetermined Elections* and labeled *Schuknecht Predetermined Elections*.

To measure fiscal outcomes, we turn to the International Monetary Fund's Government Finance Statistics (GFS). From there we extract two variables namely the gross operating balance of the central government (including Social Security funds) which we label *Fiscal Balance* and total expenditure by the general government (both as a share of GDP). The first variable represents our key fiscal outcome variable. We focus on the central government rather than the general government since, in the case of the latter, fiscal outcomes are likely to be the result of national but also sub-national electoral contests. Linking national (presidential or legislative) elections to central government fiscal policy reduces the noise that would come from employing instead general government fiscal outcomes (see also, Vergne, 2009). On the other hand, we do employ general government spending as a share of GDP as a control variable to account for the large differences in the size of the public sectors across the countries in our sample – ranging from 2.210 per cent in Bolivia in the year 2000 to 65 per cent in Ireland in 2010. We initially aimed to moreover, employ public spending or revenue by the central government to consider which side of the budget, if any, experiences a PBC. Unfortunately, this strategy is not viable because data

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[3] See Appendix A1 for the definitions and sources of all the variables employed in the paper, Appendix A2 for the corresponding summary statistics and Appendix A3 for the full sample of countries.

limitations mean that our sample drops from a maximum of 67 countries to just 40. A similar thing happens when instead we try to zero-in on public investment (gross fixed capital formation) as an outcome variable. Our sample, drops down to 46 countries and most of the countries lost are developing ones.

We follow previous work by estimating the following empirical model:

$$F_{i,t} = \beta_0 + \beta_1 F_{i,t-1} + \beta_2 \text{Elections}_{i,t} + \beta_3 \log\text{GDPpc}_{i,t} + \beta_4 \text{Elections}_{it}*\log\text{GDPpc}_{i,t} + \beta_5 X_{it} + \mu_i + \theta_t + \varepsilon_{it} \qquad (1)$$

where F is the fiscal outcome variable (*Fiscal Balance*), Elections is a dummy variable that takes the value of 1 during election years as described, GDPpc is GDP per capita (measured in constant 2010 U.S. dollars), X is a vector of control variables employed over the years, μ and θ are country and period fixed effects and ε is the error term.

Our control variables are in line with those employed by previous work and aim to reduce omitted variable bias. Specifically, apart for controlling for public spending by the general government, we control for the level of democracy, proportional or majoritarian electoral rules, parliamentary or presidential political systems, the age of democracy, the prevalence of corruption, political polarization, checks and party age. The need to control for these variables is obvious given the discussion of their possible influence on the PBC in the previous section and the fact that they may be related with the level of economic development. Note we at first consider the direct effect of these variables but then consider the mediating effect. We do not control for the degree of fiscal transparency because we have not been able to find variables that can account for this in our panel. Beyond these variables we also follow previous work and control for the growth rate of GDP to capture the influence of the business cycle on either fiscal policy or the timing of elections, the unemployment rate since this may affect the fiscal balance, membership of the euro since the Stability and Growth pact may increase fiscal discipline, a variable capturing the political ideology of the government since this may affect the colour of fiscal policy, the share of population above 65 years of age since pensioners may be especially concerned with fiscal sustainability and, finally, human capital in an attempt to capture the capacity of voters to understand fiscal policy and outcomes.

The inclusion of a lagged dependent variable is standard in the literature and aims to account for intertia in the fiscal variables since policy outcomes in the current period depend on those in the past (Persson and Tabellini 2003). However, adding the country fixed effects potentially introduces dynamic panel bias of the order of 1/T, where T is the length of the panel (Nickell, 1981). As indicated by Brender and Drazen (2005), this bias is likely to be more severe in micro data with very small T values and less so in panels such as the one we employ (T=22). This said we pursue the robustness of our results by also using the one-step System-GMM estimator for dynamic panel data (see also, Hanusch and Keefer, 2014). This estimator, developed by Arellano and Bover (1995) and Blundell and Bond (1998), combines a differenced regression (that eliminates the fixed effects) using lagged levels as instruments (Arellano and Bond, 1991), with a regression in levels that employs lagged differences as instruments. It improves on the difference estimator when the explanatory variables are persistent because lagged levels of these variables are weak instruments. It is also preferable to the first difference GMM estimator because unlike it, it exploits the cross-country variation in the data. This is particularly important in our case since the between variation of GDP per capita is almost 8 times greater than the within variation (see, Table A3 in the appendix). As suggested by Roodman (2009), we also collapse the instrument set to avoid misleading results caused by instrument proliferation.

Results

Table 1 presents our first set of results. The estimation method is Least Squares (LS) with country and period fixed effects. We report panel corrected standard errors (PCSE) that are robust to

heteroscedasticity and serial correlation between the residuals of a given cross-section (Period SUR). The control variables reported are those that are generally statistically significant or whose exclusion significantly alters the results. This is the case for the central government fiscal balance lagged one period, GDP growth, general government public expenditure and the level and age of democracy. In line with previous work, public expenditure and democracy are negatively associated with the fiscal balance while the relationship of the remaining variables is positive. On the other hand, we do not find any direct relationship between the fiscal balance and the other variables that the work reviewed in section 2 has identified as potentially important namely, electoral rules, political systems, corruption, political polarization, checks and party age. Of course, previous work has suggested that the effect of these variables could be conditional and we will examine this possibility later. Finally, we find no evidence that the unemployment rate, membership of the euro, the political ideology of the government, the share of population above 65 years of age or human capital are associated with the dependent variable.

Table 1 about here

Turning now to the key variables of interest, the elections variable is always negative indicating the existence of a PBC in the guise of a worsening budget balance during election years. By way of illustration, column 1 shows that during an election year, the fiscal balance as a share of GDP is 0.209 per cent lower. However, the elections variable it is not always statistically significant when not interacted with GDP per capita. Thus, it is statistically significant when employing the *Elections* and *Predetermined Elections* (columns 1 and 3 respectively). It is not statistically significant when employing the versions of the variable from Schuknecht (1996) (columns 5 and 6). On the other hand, both the different election variables and the interactions between them and GDP per capita are always statistically significant (columns 2, 4, 6 and 8). The interaction term is, moreover, always positive. The consistently positive and statistically significant effect of the interaction term suggests that the strength of the PBC tends to fall with economic development.

Table 2 about here

In table 2, we report the results that emerge when employing the one-step System-GMM estimator. Again, while the two elections variables are not always statistically significant in the absence of the interaction term, they are always significant in its presence. More importantly, the interaction term is again always positive and statistically significant reaffirming the finding that the impact of elections on the budget balance depends on the level of economic development. The results also show that the point estimate on the lagged dependent variable is always larger than that which emerges when applying LS with country fixed-effects. This is consistent with the expectation that System-GMM corrects for the downward bias that may emerge when applying LS. Moreover, both the Hansen test for over-identifying restrictions and the first and second order serial correlation tests support the validity of the instruments. The former does not reject the null hypothesis that the instruments are not correlated with the error term while the latter indicates the presence of negative first order serial correlation in the first-difference residuals and the absence of second order correlations. Accordingly, the System-GMM specification is appropriate (see also Hanusch and Keefer, 2014). Moreover, we preferer System-GMM to LS with period and country fixed effects because it exploits both the within and between variation in the level of economic development.

Table 3 about here

In table 3, we explore how the level of economic development conditions the impact of elections on the budget balance. In the first column of the table, we sort the GDP per capita thresholds that emerge from the interaction terms in tables 1 and 2 from lowest to highest. In column 2 we report the election variable used while in column 3 we indicate the estimation technique. In columns 4

and 5 we split the sample into those below the indicated threshold (labelled developing) and those above (labelled developed). The results show a series of thresholds below which elections have a negative impact on the fiscal balance or, conversely, above which elections have no impact. These range between 21,000 to 25,000 constant 2010 US dollars when employing System-GMM and between 28,000 and 44,000 US dollars when using LS. While we report both LS and System-GMM results, we tend to favour the latter given the possibility that the LS estimates may suffer from dynamic panel bias and the evidence that our System-GMM specification is correctly specified. Based on the System GMM estimates, in figures 1 and 2 respectively, we plot the marginal effect of *Elections* and *Predetermined Elections* on the fiscal balance as one varies (log) GDP per capita (with 95 per cent confidence intervals). They confirm that elections will tend to worsen the budget balance below the indicated thresholds, while they do not have a statistically significant impact above them.

Figures 1 and 2 about here

In table 4 we further pursue the robustness of the mediating effect of economic development by additionally controlling for the range of mediating effects suggested by previous work. Specifically, we control for the conditioning effect on elections of democracy, electoral rules, political systems, democratic experience, corruption, press freedom, political polarization, checks and balances and party age. We use *Predetermined Elections* as the election variable. The overall results support the relevance of economic development as a mediating variable. The Elections*GDP per capita interaction is positive and statistically significant in 7 out of 10 of the estimated models. Only one alternative interaction survives namely, that between Elections and Polarization (column 8) which, moreover, has the expected negative sign.

Table 4 about here

Discussion: A role for time preference?

What explains the mediating effect of economic development? Although we control for country and period fixed effects, alternative mediating effects and a range of control variables, the conditional effect of GDP per capita on the PBC may be driven by a range of observable and unobservable variables that vary with development. In this section, we propose a role for time preference, although data limitations mean that we cannot test for it directly. Previous work has assumed that time preferences or discount rates are constant across voters (see, for example, Rogoff, 1990 and Shi and Svensson, 2006). But this is not likely to be the case. Indeed, several studies have furnished evidence linking income to time preference. Lawrance (1991) exploits a panel of US households and reports that the discount rates of poorer households are three to five percentage points higher. Tanaka et al. (2010) work with data from Vietnam and find that in villages with higher mean income, people are more patient. More recently, Falk et al. (2018) exploit survey evidence from 80,000 people in 76 developing and developed countries and detect cross-country differences in a range of economic preferences namely, time preference, risk preference, reciprocity, altruism and generalized trust. They find that of all the economic preferences studied, time preference or patience has the strongest and most robust correlation with GDP per capita (the correlation is positive).

Thus, we would argue that the strength of PBCs in less developed countries might be due to higher discount rates among voters in these countries. Simply, in countries with lower incomes, individuals value greater consumption today due to expansionary fiscal policies over the costs of fiscal contraction and higher inflation in the future. We do not deny that voters in poorer countries may have short memories, underestimate the costs of expansionary policies, lack experience with democracy and be poorly informed. Indeed, in our sample, the simple correlations between GDP per capita (in logs) and, respectively, human capital, age of democracy and press freedom are,

0.635, 0.665 and 0.687 (p-value always 0). The level of economic development also correlates with factors describing the institutional environment within which incumbents operate notably, the level of democracy, the prevalence of corruption and party age: correlations are, respectively, 0.576, 0.875 and 0.525 (p-value is 0). But we would add that voters in less developed countries may assign a greater value to the immediate benefits of expansionary fiscal policies than they do to the future benefits (or costs) that emerge from fiscally responsible (or irresponsible) policies. From this perspective, impatient voters lead opportunistic incumbents to expand the economy during elections.

Focusing on the countries in our sample, in figure 3, we plot Falk et al's (2018) time preference data that is from the year 2012, against GDP per capita in the same year. This yields a group of 45 countries, but still includes both developing and developed ones. The strong correlation is striking (simple correlation is 0.704). If we take the threshold levels of income resulting from the System-GMM regressions (ranging from 21,000 to 25,000 dollars), the figure clearly splits the sample into two groups of countries: one ranging from Georgia to Greece with generally lower patience (higher discount rates) and another ranging from Spain to Switzerland with higher patience (lower discount rates). Given this evidence, we would argue that it is reasonable to suggest that GDP per capita may be capturing the effect of time preference on the PBC (see Charron and Lapuente, 2010 for a similar approach but focusing on how time preference may mediate the impact of democracy on the quality of governance).

Figure 3 about here

Voter impatience may thereby contribute towards PBCs. But does this mean that voters are irrational? The answer is not straightforward. Consider Irving Fisher (1930) on the subject:

> "Poverty bears down heavily on all portions of a man's expected life. But it increases the want for immediate income *even more* than it increases the want for future income … This influence of poverty is partly rational, because of the importance, by supplying present needs, of keeping up the continuity of life and thus maintaining the ability to cope with the future; and partly irrational, because the pressure of present needs blinds a person to the needs of the future." (page 72, italics in the original).

Becker and Mueller (1997) go further and state that impatience may be fully rational if one assumes that thinking about the future is costly in terms of "resources spent to make future consumption seem less remote and therefore to receive greater weight in current period decisions" (page 733). They argue that it is rational for wealthier individuals to think about the future both because they can afford to do so and because they can expect higher returns from investing in patience. Conversely, poorer individuals cannot afford to think about the future nor do they obtain large returns from doing so.

Conclusion

Early work saw PBCs as the result of incumbent politicians seeking reelection, continuously fooling voters with short memories who consistently underestimate the cost of expansionary fiscal policies in terms of inflation and future tax burdens. Later work views voters as rational forward-looking but imperfectly informed regarding the competence of political candidates or concerning their preferences over different voter groups. PBCs can emerge in the presence of fiscally conservative voters when incumbent politicians spend more to signal their ability or preference for specific voter groups. Based on this latter perspective, scholars have proposed that the presence and strength of PBCs is conditional on a range of variables including the level and age of democracy, electoral rules and government types, the quality of governance, the information available to voters, political polarization, checks and balances and party age.

While previous work has considered how PBCs may vary with the level of economic development, it has either employed arbitrary criteria to split the sample into developing or developed countries, or, when it has used a continuous measure of GDP per capita, it has only done so in passing to pursue the robustness of an alternative conditional variable. In this article, we considered the mediating effect of economic development on PBCs in the budget balance more rigorously, based on a sample of 67 countries over the period 1995 to 2016. Our results suggest that PBCs emerge in countries with a GDP per capita below a threshold ranging from 21,000 to 25,000 constant 2010 US dollars.

To explain this result we suggest a role for voter time preference. Specifically, we argue that higher discount rates in poorer countries mean that voters there may value the immediate benefits of expansionary fiscal policy more than the medium to long-term benefits of fiscal sustainability. Thus, it could be the case that voters suffer fiscal illusion or that they are imperfectly informed regarding political candidate characteristics. But it could also be the case that voters generate PBCs because they have relatively short time horizons. To be fair, because of data limitations we cannot directly test for this. And despite employing country and period fixed effects and controlling for confounding variables, it may be that GDP per capita is proxying for other uncontrolled for or unobservable variables. On the other hand, previous work has indicated a strong link between the level of economic development and time preference and it is at least theoretically plausible that PBCs could also be driven by time preferences. We leave it to future work to explore this possibility further, conditional on data availability.

References

Ademmer, E., Dreher, F. (2016). Constraining political budget cycles: Media strength and fiscal institutions in the enlarged EU. *Journal of Common Market Studies* 54, 508-524.

Alesina, A., Roubini, N., & Cohen, G. (1997). Political cycles and the macroeconomy. Cambridge, MA: MIT Press.

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

Alt, J. E., & Rose, S. S. (2009). Context-conditional political budget cycles. In C. Boix & S. C. Stokes (Eds.), *The Oxford handbook of comparative politics*. Oxford: Oxford University Press

Arellano, M. Bond, S. 1991. Some tests of specifications for panel data: Monte Carlo evidence and an application to employment equations. Rev. Econ. Stud. 58. (277-197).

Arellano, M., Bover, O., 1995. Another look at the instrumental variable estimation of error-components models. J. Econ. 68, 29–51.

Becker, G. Mulligan, C. (1997). The Endogenous Determination of Time Preference, *The Quarterly Journal of Economics*, Volume 112, Issue 3, Pages 729–758,

Block, S. A. (2002). Political business cycles, democratization, and economic reform: The case of Africa. Journal of Development Economics, 67(1), 205–228.

Blundell, R. Bond, S. 1998. Initial conditions and moment restrictions in dynamic panel data models. J.Econ.87,11–143.

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

Chang, E. (2008). Electoral incentives and budgetary spending: rethinking the role of political institutions. *The Journal of Politics*, *70*, 1086–1097.

Charron, N. & Lapuente, V. (2010). Does democracy produce quality of government? European Journal of Political Research 49: 443–470.

Cruz, C., Keefer, P., Scartascini, C., 2016. The database of political institutions. The World Bank.

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

Drazen A. (2008) Political Budget Cycles. In: Palgrave Macmillan (eds) The New Palgrave Dictionary of Economics. Palgrave Macmillan, London

Drazen, A., & Eslava, M. (2010). Electoral manipulation via voter-friendly spending: theory and evidence. *Journal of Development Economics*, *92*, 39–52.

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

Eslava, M. (2011). The political economy of fiscal deficits. *Journal of Economic Surveys*, *25*, 645–673.

Falk, A. Becker, A., Dohmen, T., Enke, B., Huffman, D., Sunde, U. (2018). Global Evidence on Economic Preferences, *The Quarterly Journal of Economics*, Volume 133, Issue 4, Pages 1645–1692.

Fisher, I. (1930). The Theory of Interest (New York: Macmillan, 1930).

Garmann, S. (2018) Political budget cycles and divided government, Regional Studies, 52:3, 444-456

Gonzales, M. (2002). Do changes in democracy affect the political budget cycle? Evidence from Mexico. *Review of Developmental Economics*, *6*, 204–224.

Hanusch, M. &Keefer, K (2014). Younger parties, bigger spenders? Party age and political budget cycles, European Economic Review, Volume 72,Pages 1-18.

Henisz, W. (2000). The Institutional Environment for Economic Growth. Economics and Politics 12(1): 1–31.

Henisz, W. (2002). The Institutional Environment for Infrastructure Investment. Industrial and Corporate Change 11(2): 355–389.

Janků, J., Libich, J. (2019). Ignorance isn't bliss: Uninformed voters drive budget cicles *Journal of Public Economics* 173, 21–43.

Klomp, J., & de Haan, J. (2013). Do political budget cycles really exist? Applied Economics, 45(3), 329–341.

Kneebone, R., & McKenzie, K. (2001). Electoral and partisan cycles in fiscal policy: an examination of Canadian provinces. *International Tax and Public Finance*, *8*, 753–774.

Lawrance, Emily. (1991). Poverty and the rate of time preference: Evidence from panel data. Journal of Political Economy 99(1): 54–77.

Marshall, M., Gurr T. & Jaggers, K. (2010). *Polity IV project: Political regime characteristics and transitions, 1800–2010 – User's manual*. Vienna, VA: Center for Systemic Peace.

Nickell, S.J., 1981. Biases in dynamic models with fixed effects. Econometrica 49, 1417–1426.

Persson, T., & Tabellini, G. (2003). *The economic effect of constitutions*. Cambridge: MIT Press.

Rogoff, K. (1990). Equilibrium political budget cycles. *The American Economic Review*, *80*, 21–36.

Roodman, D., 2009. A note on the theme of too many instruments. Oxf. Bull. Econ. Stat. 71, 135–158.

Schuknecht, L. (1996). Political Business Cycles in Developing Countries, Kyklos. 49: 155–70.

Schuknecht, L. (2000). Fiscal policy cycles and public expenditure in developing countries. *Public Choice*, *102*, 115–130.

Shi, M., & Svensson, J. (2006). Political budget cycles: do they differ across countries and why? *Journal of Public Economics*, *90*, 1367–1389.

Streb, J. M., Lema, D., & Torrens, G. (2009). Checks and balances on political budget cycles: cross-country evidence. *Kyklos*, *62*, 425–446.

Streb, J.M., Torrens, G. (2013). Making rules credible: Divided government and political budget cycles. *Public Choice* 156, 703–722.

Tanaka, T., C. F. Camerer, and Q. Nguyen (2010). Risk and time preferences: Linking experimental and household survey data from vietnam. *American Economic Review 100*(1), 557–571.

Veiga, F.J., Gonçalves Veiga, L., Morozumi, A. (2017). Political budget cycles and media freedom. *Electoral Studies* 45, 88-99.

Vergne, C. (2009). Democracy, elections and allocation of public expenditures in developing countries. European Journal of Political Economy, 25(1), 63–77.

Appendix

Appendix A1: Data sources and definitions

Variable	Definition	Source
Fiscal balance	Gross operating balance of the central government (including Social Security funds) as a share of GDP.	Government Finance Statistics, IMF
Elections	Dummy variable that takes the value of 1 the year that the country has national elections.	Database of Political Institutions, World Bank
Predetermined Eections	Elections held at the constitutionally determined election interval and adjusted for the fiscal year.	Own elaboration
Schuknecht Elections	Based on Elections, takes the value of 1 the year of elections, -1 the year after, and 0 otherwise.	Schuknecht (1996)
Schuknecht Predetermined Elections	Based on Predetermined elections, takes the value of 1 the year of elections, -1 the year after, and 0 otherwise.	Own elaboration
GDP per capita	Real GDP per capita in constant 2010 U.S. dollars.	World Development Indicators
GDP growth	Real GDP growth.	World Development Indicators
Total expenditure	Expenditure of general government as a share of GDP.	Government Finance Statistics, IMF
Democracy	Civil rights and political liberties index (inverted scale so that higher values of the indicator imply more democracy).	Freedom House
Age of democracy	2016 - first year of a string of positive yearly values of the variable POLITY for that country that continues uninterrupted until the end of the sample, given that the country was also an independent nation during the entire time period.	Persson and Tabellini (2003)
Euro zone member	Dummy variable taking the value of 1 if the country is a member of the Euro zone.	Eursotat
Corruption - WGI	Assessment of corruption within the political system. Lower values imply a higher level of corruption.	World Governance Indicators (WGI) as developed by the World Bank
Unemployment	Unemployment, total (per cent of total labor force).	World Development Indicators of World Bank (WDI)
Share of population over 65 years old	Percentage of population of 65 years and more over total population.	World Development Indicators of World Bank (WDI)
Human capital	Index based on years of schooling and returns to education.	Penn World Tables
Proportional	Dummy variable taking the value of 1 if candidates are elected based on the percent of votes received by their party and/or if our sources specifically call the system "proportional representation". "0" otherwise.	Database of Political Institutions, World Bank
System	Parliamentary (2), Assembly-elected President (1), Presidential (0).	Database of Political Institutions, World Bank

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Checks	*The number of independent branches of government with veto power over policy change, the extent of party alignment across branches of government and the degree of preference heterogeneity within each legislative branch.*	*Polcon3 from Henisz (2000; 2002)*
Plurality	*Dummy variable that takes the value of 1 In "plurality" systems where legislators are elected using a winner-take-all / first past the post rule. "0" otherwise.*	*Database of Political Institutions, World Bank*
Party age	*Average of the ages of the 1st government party, 2nd government party, and 1st opposition party, or the subset of these for which age of party is known.*	*Database of Political Institutions, World Bank*
Polarization	*Maximum polarization between the executive party and the four principle parties of the legislature, and is "0" if elections are not competitive) and if the chief executive's party has an absolute majority in the legislature.*	*Database of Political Institutions, World Bank*
Press freedom	*Numerical indicator evaluating the legal environment for the media, political pressures that influence reporting, and economic factors that affect access to news and information.*	*Freedom House*
Patience	*Intertemporal choice sequence using staircase method.*	*Falk et al. (2018)*

Appendix A2: Summary statistics

		Mean	Standard deviation	Minimum	Maximum	Observations
Fiscal Balance	Overall	0.5187	4.3137	-30.5917	23.9161	N = 1078
	Between		3.7686	-6.0760	15.0978	n = 67
	Within		2.7817	-28.0353	15.7598	T-bar = 16.0896
Elections	Overall	0.2476	0.4318	0	1	N = 1078
	Between		0.0733	0	0.5	n = 67
	Within		0.4279	-0.2523	1.1643	T-bar = 16.0896
Predetermined Elections	Overall	0.2300	0.4210	0	1	N = 1078
	Between		0.0739	0	0.5	n = 42
	Within		0.4171	-0.2699	1.1467	T-bar = 16.0896
Log of GDP per capita	Overall	9.6317	1.1531	6.3954	11.6259	N = 1078
	Between		1.2243	6.4046	11.4964	n = 67
	Within		0.1547	9.0052	10.1527	T-bar = 16.0896
GDP growth	Overall	0.0301	0.0362	-0.1603	0.2333	N = 1078
	Between		0.0150	0.0032	0.0710	n = 67
	Within		0.0332	-0.1725	0.2098	T-bar = 16.0896
Total expenditure	Overall	37.0347	11.5075	2.2104	65.0000	N = 1078
	Between		10.9378	14.4287	54.5190	n = 67
	Within		3.1512	18.4008	64.5918	T-bar = 16.0896
Democracy	Overall	5.9457	1.4851	1.5000	7.0000	N = 1078
	Between		1.6323	1.5357	7.0000	n = 67
	Within		0.3334	4.2076	7.4457	T-bar = 16.0896
Age of democracy	Overall	54.4257	54.5639	0	216	N = 1078
	Between		52.9782	0	206	n = 67
	Within		5.1288	44.0757	64.4257	T-bar = 16.0896
Unemployment	Overall	8.3053	4.9128	0.492	37.583	N = 1078
	Between		4.9841	0.6608	29.4146	n = 67
	Within		2.3130	-3.0048	21.6817	T-bar = 16.0896
Share of population over 65 years old	Overall	12.9075	4.7546	2.4595	26.5645	N = 1078
	Between		5.0828	2.4763	23.5864	n = 67
	Within		1.0965	9.5607	16.9925	T-bar = 16.0896
Human capital	Overall	2.9766	0.4845	1.5067	3.7343	N = 928
	Between		0.5044	1.6623	3.6336	n = 63
	Within		0.1088	2.5910	3.6414	T-bar = 14.7302
Proportional	Overall	0.7928	0.4054	0	1	N = 1067
	Between		0.4105	0	1	n = 67
	Within		0.0940	0.1678	1.3718	T-bar = 15.9254
Control of corruption (WGI)	Overall	0.7401	1.0608	-1.3547	2.4699	N = 1078
	Between		1.0705	-1.3483	2.3501	n = 67
	Within		0.1526	-0.0581	1.4237	T-bar = 16.0896
System	Overall	1.2931	0.9368	0	2	N = 1078
	Between		0.9694	0	2	n = 67
	Within		0.1241	-0.3068	2.0074	T-bar = 16.0896
Checks	Overall	0.4127	0.1723	0	0.7255	N = 1078
	Between		0.1673	0	0.7074	n = 67
	Within		0.0884	0.0403	0.8192	T-bar = 16.0896
Plurality	Overall	0.5256	0.4995	0	1	N = 1073
	Between		0.4733	0	1	n = 67
	Within		0.1596	-0.3077	1.1726	T-bar = 16.0149
Party age	Overall	42.7789	35.3589	1	183	N = 1045
	Between		32.5579	5.0793	154.7619	n = 64
	Within		10.1664	-2.9902	120.1636	T-bar = 16.3281
Polarization	Overall	1.0045	0.9240	0	2	N = 877
	Between		0.7571	0	2	n = 66
	Within		0.5360	-0.6877	2.7188	T-bar = 13.9206
Press freedom	Overall	67.8237	20.7261	7	95	N = 1078
	Between		21.5396	10	91.3809	n = 67
	Within		4.6318	41.2047	89.2047	T-bar = 16.0896
Patience	Overall	0.0813	0.423	-0.485	1.071	N = 45
	Between					n = 45
	Within					

Appendix A3: Sample of countries

Afghanistan	Czech Republic	Italy	Poland
Albania	Denmark	Japan	Portugal
Armenia	Egypt	Jordan	Romania
Australia	El Salvador	Kazakhstan	Russia
Austria	Estonia	Latvia	Singapore
Belarus	Finland	Lesotho	Slovak Republic
Belgium	France	Lithuania	Slovenia
Bolivia	Georgia	Luxembourg	Spain
Bosnia Herzegovina	Germany	Maldives	Sweden
Brazil	Greece	Mauritius	Switzerland
Bulgaria	Honduras	Moldova	Thailand
Canada	Hungary	Mongolia	Tunisia
Chile	Iceland	Morocco	Turkey
Colombia	Indonesia	Netherlands	Ukraine
Costa Rica	Iran	New Zealand	United Kingdom
Croatia	Ireland	Norway	United States
Cyprus	Israel	Peru	

Figures and tables to be embedded in the text

Table 1. The Political Budget Cycle. LS

Dependent variable: *Fiscal Balance*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Elections variable=>	*Elections*		*Predetermined Elections*		*Schuknecht Elections*		*Schuknecht Predetermined Elections*	
Elections	-0.209* (0.121)	-2.472** (1.061)	-0.238** (0.126)	-2.536** (1.101)	-0.097 (0.076)	-1.812*** (0.694)	-0.099 (0.078)	-1.703** (0.700)
Elections* (log) GDP per capita		0.233** (0.108)		0.237** (0.112)		0.177** (0.071)		0.165** (0.071)
***Fiscal Balance* (-1)**	0.379*** (0.026)	0.380*** (0.026)	0.381*** (0.026)	0.379*** (0.026)	0.386*** (0.026)	0.388*** (0.026)	0.380*** (0.026)	0.381*** (0.026)
(log) GDP per capita	0.425 (0.793)	0.340 (0.793)	0.428 (0.794)	0.348 (0.794)	0.534 (0.783)	0.516 (0.780)	0.419 (0.794)	0.412 (0.792)
GDP growth	12.490*** (2.490)	12.524*** (2.482)	12.603*** (2.490)	12.635*** (2.485)	12.860*** (2.482)	13.035*** (2.477)	12.631*** (2.494)	12.785*** (2.489)
Public expenditure	-0.359*** (0.024)	-0.359*** (0.024)	-0.358*** (0.025)	-0.357*** (0.024)	-0.347*** (0.024)	-0.345*** (0.024)	-0.358*** (0.025)	-0.357*** (0.024)
Democracy	-0.787*** (0.212)	-0.780*** (0.213)	-0.780*** (0.212)	-0.775*** (0.213)	-0.808*** (0.210)	-0.805*** (0.209)	-0.785*** (0.212)	-0.784*** (0.212)
Age of democracy	0.149*** (0.049)	0.147*** (0.049)	0.146*** (0.049)	0.142*** (0.049)	0.151*** (0.048)	0.148*** (0.048)	0.149*** (0.049)	0.147*** (0.049)
Adjusted R^2	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Countries	67	67	67	67	67	67	67	67
Observations	1055	1055	1055	1055	1055	1055	1055	1055

Notes: All regressions report period SUR panel corrected standard errors in parentheses, and include cross section and period fixed effects and a constant (not shown). *, **, *** measures statistical significance at the 10, 5 and 1 per cent levels respectively.

Table 2. The Political Budget Cycle. System-GMM

Dependent variable: *Fiscal Balance*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Elections variable=>	*Elections*		*Predetermined Elections*		*Schuknecht Elections*		*Schuknecht Predetermined Elections*	
Elections	-0.786	-12.936**	-0.991	-10.658**	-0.828**	-8.433**	-0.568**	-7.037*
	(0.773)	(6.030)	(0.666)	(5.363)	(0.399)	(3.397)	(0.402)	(3.747)
Elections*(log) GDP per capita		1.298**		1.053*		0.844**		0.702*
		(0.613)		(0.545)		(0.342)		(0.377)
Fiscal Balance (-1)	0.775***	0.793***	0.760***	0.787***	0.764***	0.795***	0.751***	0.793***
	(0.066)	(0.060)	(0.089)	(0.062)	(0.084)	(0.056)	(0.087)	(0.056)
(log) GDP per capita	0.215	-0.201	0.173	-0.082	0.199	0.206	0.192	0.205
	(0.144)	(0.246)	(0.170)	(0.223)	(0.160)	(0.138)	(0.170)	(0.136)
GDP growth	7.946	8.471	9.489	7.969	7.621	6.980	9.042	8.431
	(7.970	(7.291)	(8.394)	(7.187)	(7.843)	(7.111)	(7.953)	(7.198)
Public expenditure	-0.053	-0.113	-0.049	-0.106	-0.054	-0.181	-0.039	-0.165
	(0.172)	(0.166)	(0.180)	(0.166)	(0.174)	(0.166)	(0.175)	(0.164)
Democracy	0.138	-0.134	-0.168	-0.129	-0.162	-0.120	-0.183	-0.124
	(0.113)	(0.110	(0.134)	(0.108)	(0.126)	(0.096)	(0.130)	(0.095)
Age of democracy	0.063	0.166	0.101	-0.039	-0.284	0.080	-0.020	-0.073
	(0.172)	(0.176)	(0.184)	(0.167)	(0.171)	(0.162)	(0.186)	(0.162)
Hansen test[1]	33.25	38.53	34.39	40.20	34.29	43.06	37.72	35.15
	(0.948)	(0.834)	(0.915)	(0.781)	(0.917)	(0.992)	(0.831)	(1.000)
1st order test[2]	-3.78	-3.97	-3.77	-3.82	-3.82	-3.94	-3.80	-3.80
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
2nd order test[2]	0.37	0.26	0.24	0.32	0.74	1.11	0.34	1.04
	(0.710)	(0.793)	(0.809)	(0.750)	(0.460)	(0.268)	(0.737)	(0.298)
Countries	67	67	67	67	67	67	67	67
Observations	1004	1004	1004	1004	1004	1004	1004	1004

Notes: Robust standard errors in parentheses. Instruments collapsed as suggested by Roodman (2009). *, **, *** measures statistical significance at the 10, 5 and 1 per cent levels respectively. (1) Test of the over-identifying restrictions where the null is that the instruments are not correlated with the error term. P-values are shown in parentheses. (2) Test for first and second-order serial correlation in the first-difference residuals, asymptotically distributed as N(0,1) under the null of no serial correlation. P-values are shown in parentheses.

Table 3. Political Budget Cycle: Fiscal balance and elections in rich and poor countries. Least Squares and System-GMM

(1) Estimated threshold	(2) Elections variable	(3) Estimation method	(4) Less Developed		(5) Developed	
			Election variable point estimated	Number of observations	Election variable point estimated	Number of observations
21,292	**Elections**	System-GMM	-1.077* (0.569)	515	0.708 (0.924)	483
21,851	**Schuknecht Elections**	System-GMM	-0.999** (0.448)	522	0.181 (0.423)	477
22,566	**Schuknecht Predetermined Elections**	System-GMM	-0.897** (0.443)	534	-0.018 (0.366)	464
24,873	**Predetermined Elections**	System-GMM	-1.058** (0.579)	554	0.610 (0.891)	444
27,925	**Schuknecht Elections**	Least Squares	-0.236** (0.110)	615	0.101 (0.084)	450
30,370	**Schuknecht Predetermined Elections**	Least Squares	-0.225** (0.110)	626	0.070 (0.094)	429
40,515	**Elections**	Least Squares	-0.354** (0.153)	754	0.164 (0.159)	301
44,374	**Predetermined Elections**	Least Squares	-0.372** (0.146)	818	0.137 (0.203)	237

Table 4. Horse races. System-GMM.

Dependent variable: *Fiscal Balance*	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Elections*(log) GDP per capita	0.724 (0.599)	1.022** (0.508)	1.115** (0.529)	0.676 (0.627)	1.598** (0.694)	1.773* (1.025)	1.350* (0.703)	0.311 (0.591)	1.065* (0.544)	0.902* (0.472)
Elections*Democracy	0.494 (0.457)									
Elections*Proportional		1.506 (1.373)								
Elections*Plurality			-1.249 (1.499)							
Elections*System				0.769 (0.726)						
Elections*Age of democracy					-0.172 (0.150)					
Elections*Corruption						-0.796 (1.051)				
Elections*Press freedom							-0.019 (0.040)			
Elections*Polarization								-1.167** (0.502)		
Elections*Checks									0.592 (4.113)	
Elections*Party age										-0.023 (0.020)
Countries (observations)	67 (1004)	67 (995)	67 (1000)	67 (1004)	67 (1004)	67 (1004)	67 (1004)	63 (814)	66 (1004)	64 (975)
Hansen test[1]	41.15 (0.991)	40.46 (0.993)	41.01 (0.991)	39.51 (0.995)	38.07 (0.997)	37.10 (0.998)	42.02 (0.998)	26.41 (1.000)	36.88 (0.998)	32.79 (1.000)
1st order test[2]	-3.77 (0.000)	-3.76 (0.000)	-3.89 (0.000)	-3.83 (0.000)	-3.83 (0.000)	-3.77 (0.000)	-3.82 (0.000)	-3.64 (0.000)	-3.79 (0.000)	-3.59 (0.000)
2nd order test[2]	0.58 (0.560)	0.39 (0.694)	0.62 (0.536)	0.38 (0.701)	0.24 (0.807)	0.38 (0.708)	0.32 (0.752)	-0.22 (0.823)	0.45 (0.652)	0.22 (0.826)

Notes: Robust standard errors in parentheses. All regressions include the full set of control variables shown in tables 1 and 2 and, when necessary, add the corresponding conditional variable in levels (not shown). *, **, *** measures statistical significance at the 10, 5 and 1 per cent levels respectively. (1) Test of the over-identifying restrictions where the null is that the instruments are not correlated with the error term. P-values are shown in parentheses. (2) Test for first and second-order serial correlation in the first-difference residuals, asymptotically distributed as N(0,1) under the null of no serial correlation. P-values are shown in parentheses. Elections is *Predetermined Elections*.
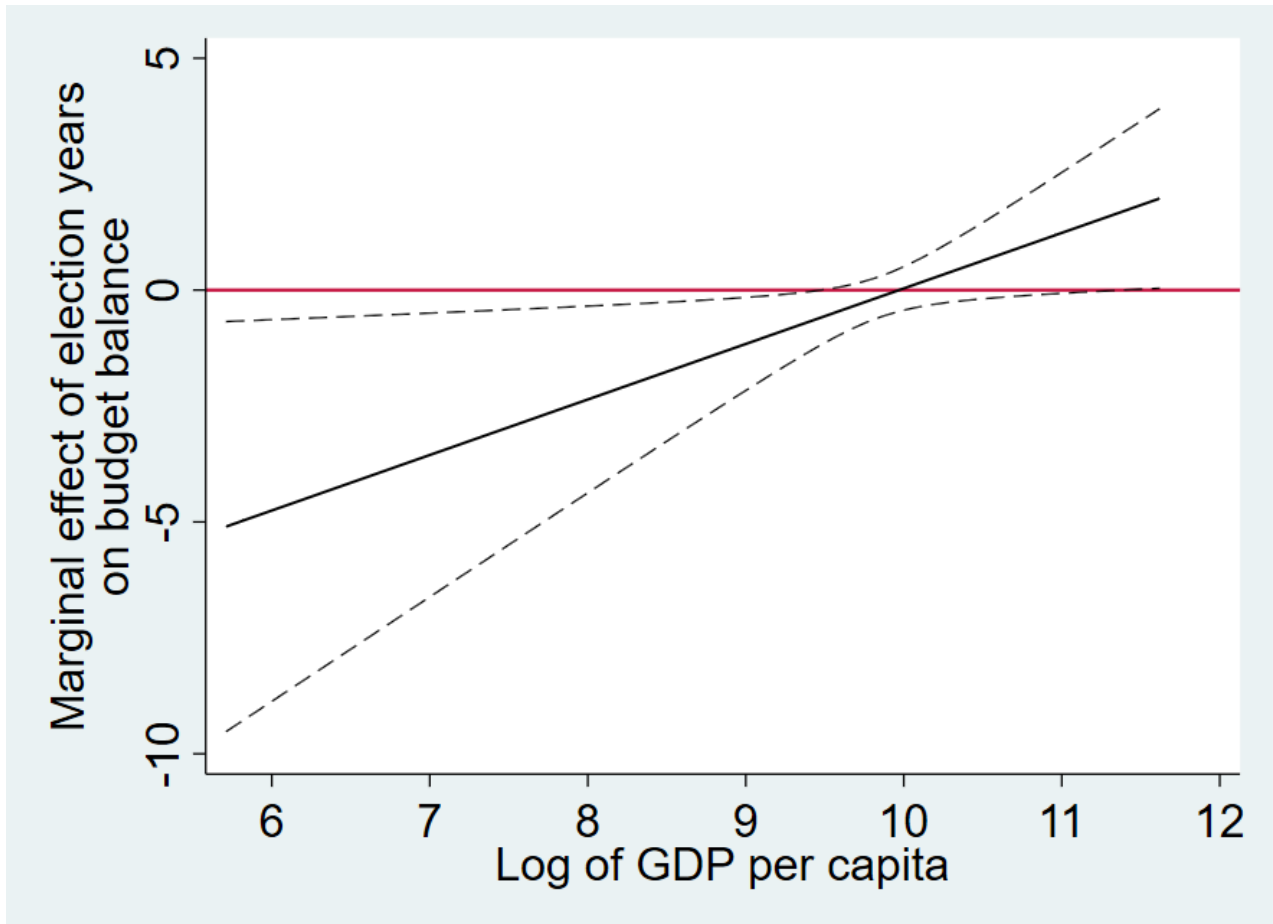
Figure 1. Marginal effect of *Elections* on the budget balance conditional on (log) GDP per capita (95 per cent confidence intervals).
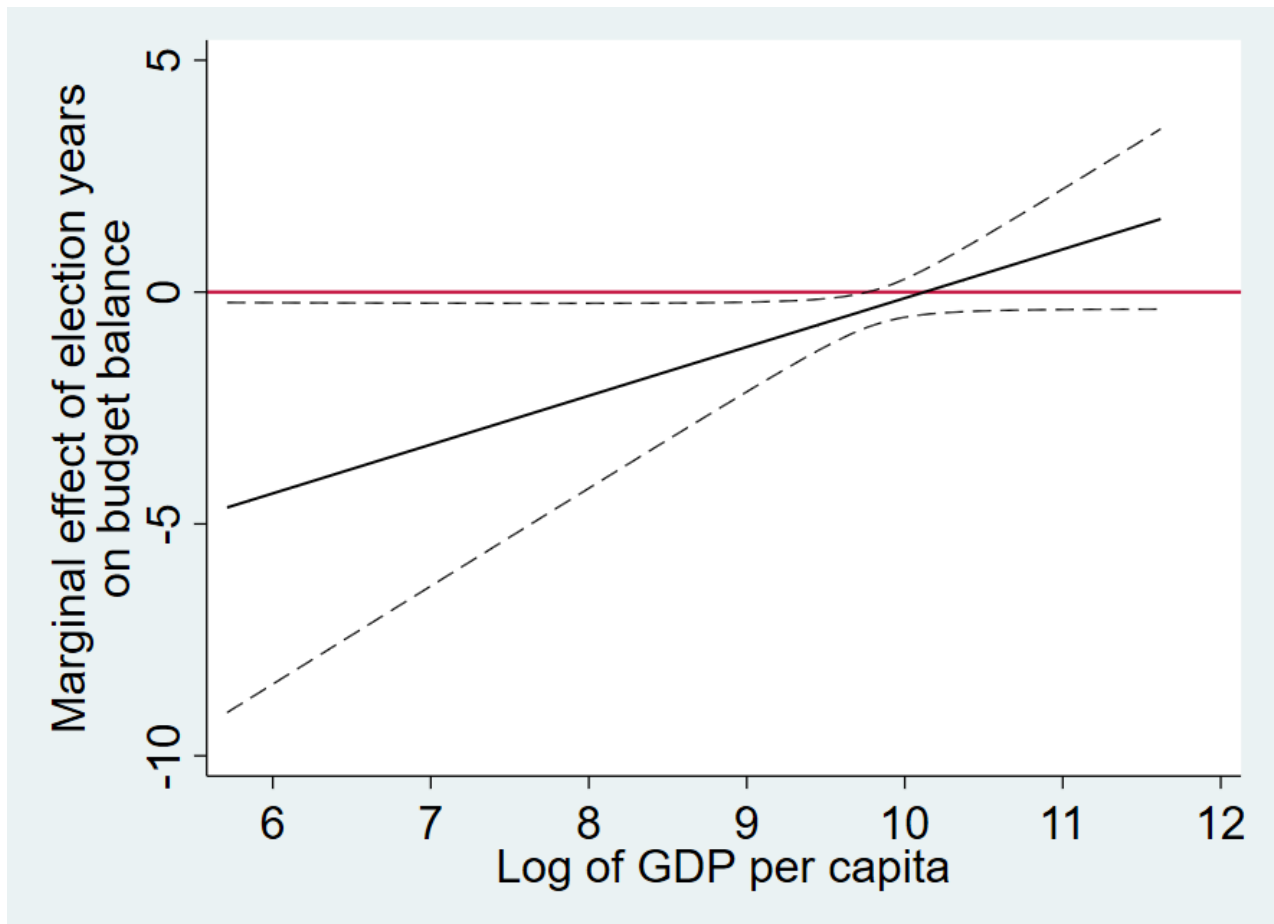
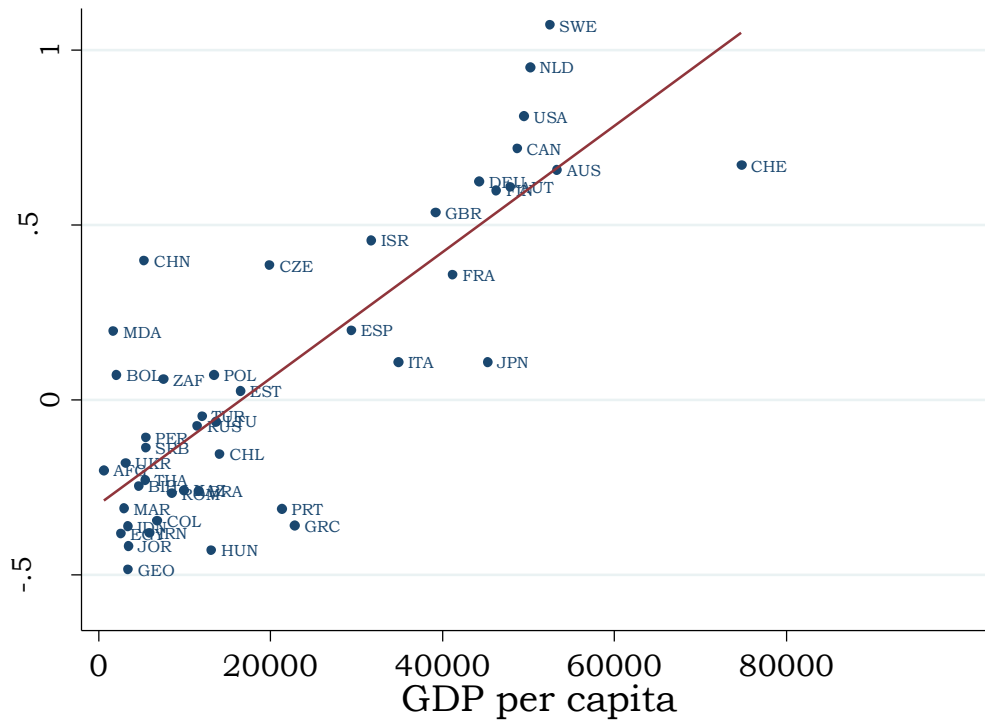Figure 2. Marginal effect of *Predetermined Elections* on the budget balance conditional on (log) GDP per capita (95 per cent confidence intervals).

Figure 3. Patience and GDP per capita (N= 45)