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Do Expected Downturns Kill Political Budget Cycles?

Frank Bohn[*†] **and Jan-Egbert Sturm**[‡§]

forthcoming in *The Review of International Organizations*[‡‡]

The political budget cycle (PBC) literature argues that governments expand deficits in election years. However, what happens when an economic downturn is *expected*? Will the government allow the deficit to expand even further, or will it resort to spending cuts and tax increases? When voters *expect* less than full automatic stabilization, our model shows that opportunistic government behavior leads to smaller deficits, thereby responding procyclically to *expected* downturns. Panel data evidence for 74 democracies covering the period 2000-2016 robustly supports the theoretical procyclicality prediction. Moreover, expected downturns remain significant when other context-conditional PBC effects are included in the empirical analysis.

JEL classification: D72; E32; E62.

Keywords: political budget cycles; elections; growth expectations; economic downturns; precautionary voters; automatic stabilization; fiscal deficits.

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I Introduction

In recent years, two main stylized facts have emerged from the empirical literature on political budget cycles (PBCs): (i) they are detected in a variety of fiscal policy variables;[1] and (ii) they are context-conditional (i.e. PBCs do not always occur under all circumstances).[2] What is missing, in our view, is research on a form of context-conditionality that has nothing to do with a country's type or institutions. How do opportunistic governments respond to the regular business cycle, more precisely, to *expected* changes in economic growth at the time of decision-making?[3]

We think this topic is important for two reasons. First, it is useful to understand under which circumstances opportunistic behavior creates distortions to fiscal policy and when not. That has probably also been the motivation for previous studies on context-conditionality. Second, we want to understand the underlying mechanism and develop a theoretical model for that. Even though expansionary fiscal policy is modeled to have a (more) beneficial multiplier effect in an economic downturn (which makes an increase in fiscal manipulation more advantageous), expected downturns may actually reduce the

[1] They occur, for instance, in debt, public expenditures, especially transfers, and expenditure shares. Evidence for cycles in debt is provided by Alesina, Cohen and Roubini (1992, 1993) and Alesina and Roubini (1990), and confirmed by Drazen (2001). The notion of cycles in public expenditures and particularly transfers is supported by, for instance, Schuknecht (1996, 2000), Block (2002), Drazen (2001), Vergne (2009) and Schneider (2010). Cycles in expenditure shares are suggested by Veiga and Veiga (2007), Drazen and Eslava (2010), Benito et al. (2013), Aidt and Mooney (2014), Castro and Martins (2016), Klomp and de Haan (2016) and Arifin and Purnomowati (2017).

[2] The term was coined by Franzese (2002) and picked up by e.g. Alt and Rose (2007) and Dubois (2016). PBCs can be found, for instance, in countries with limited checks and balances or access to free media (Alt and Lassen, 2006a,b; Akhmedov and Zhuravskaya, 2004; Klomp and de Haan, 2016; and Veiga, Veiga and Morozumi, 2017), in developing countries (Schuknecht, 1996 and 2000; Block, 2002; Shi and Svensson, 2006; and Vergne, 2009), or in new democracies (Brender and Drazen, 2005), and are affected by the political system (Chang, 2008, and Streb, Lema and Torrens, 2009) and/or the electoral system (Aidt and Mooney, 2014). Bojar (2017) discusses how individual characteristics favor the occurrence of PBCs. A literature survey is provided by de Haan and Klomp (2013).

[3] There are many articles that focus on the relationship between economic fluctuations and electoral support for re-election chances. See, for instance, Lewis-Beck and Stegmaier (2000), Brender and Drazen (2008), Chang and Lee (2010) and Goulas, Kallandranis and Zervoyianni (2015). However, we are only aware of two papers that look into the effects of recession expectations on fiscal outcomes: Bohn and Veiga (2019a, 2019b). These papers concentrate on decision-making at the municipality level and produce results that are quite opposite, both theoretically and empirically, from ours.

PBC effect. Our aim is to first theoretically show conditions under which such a reduction of political manipulation is feasible. We then proceed empirically and show that the PBC effect is virtually eliminated when downturns are expected.

However, this does not happen because political opportunism has suddenly vanished. In an election year, as in an off-election year, any government that expects a worsening of economic conditions must choose between conducting additional expansionary policies (to augment the countercyclical effect of automatic stabilisers[4] that are already in the system), or instituting precautionary spending cuts or tax increases (to cope with the deteriorating fiscal budget caused by automatic stabilisers). However, in an election year, opportunistic considerations might distort such considerations. The political budget cycle literature suggests an already elevated level of the deficit in normal election years. So, why not, in order to make up for the expected loss in tax revenues (and/or increase in benefit payments), expand the deficit even further when an economic downturn is expected to hit in an election year? Would this not preserve the incumbent government's fiscal latitude and with it its chance of winning the elections? The answer is that a government does not necessarily have to increase its fiscal latitude to increase its re-election chances; it merely needs to be more expansionary than what voters expect. If voters believe the government will not allow full automatic stabilization (through decreased tax revenues and/or increased benefit payments) in case of an expected economic downturn, but expect some spending cuts (or tax increases), it is sufficient for the government to make more moderate spending cuts (or tax hikes) than expected by voters.[5]

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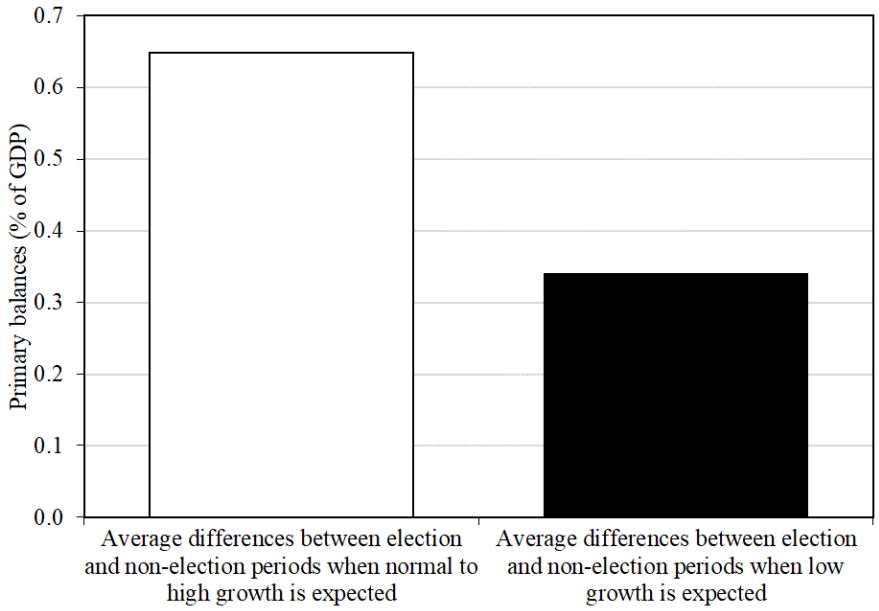
[4] Note the use of terminology here. Automatic stabilisers are said to typically have a countercyclical effect. Keynesian discretionary policy is also countercyclical. Precautionary discretionary policy (in a recession or expected recession) is procyclical. In as far as automatic stabilisers are associated with countercyclicality we follow the usage as, for instance, in Seidman (2015) while acknowledging that other definitions are also possible.

[5] Theoretically, another, more indirect, explanation would also be feasible. It would be related to Peltzman's (1992) idea of fiscal conservatism. Alesina, Perotti and Tavares (1998), Brender (2003) and Brender and Drazen (2008) show that voters may actually punish incumbents for increasing fiscal deficits. (Some) voters dislike deficits and, therefore, dislike even more a spurt of the deficit associated with a downturn. There might be a trade-off between a PBC effect and a fiscal conservatism effect. Under normal economic conditions, the PBC effect might dominate, while the deficit dislike effect would dominate under strained economic conditions that require higher deficits. In contrast, the theoretical analysis here argues that the PBC effect is affected (actually annulled) *by the expected downturn itself*,

FIGURE I: PRIMARY BALANCE, BY GROWTH EXPECTATIONS AND ELECTION YEARS



Based on panel data for 74 democracies covering the years 2000 until 2016, we study the impact of country-specific forecasts (our proxy for expectations) on government primary budget balances. To get a first idea, the effect of an expected downturn on the political budget cycle is visualized in a naive way in Figure I. We split our sample into data points with normal and high expected growth on the one hand and expected downturns on the other hand.[6] For each sub-sample, we subtract the mean of the primary balances in election years from the mean of the primary balances in non-election years. We interpret this as a measure of the PBC effect for each sub-sample. As we can see in Figure I, the PBC effect is much larger when no downturn is expected. Admittedly, this is a very crude representation (deprived of econometric rigor), but it captures our idea that expected downturns do not make the government increase its manipulation effort. Instead, the PBC effect is actually reduced considerably.

not the level of the deficit.

[6] The definition of an expected downturn is when a country expects a growth rate that is more than one standard deviation below the average realized growth observed during the previous five years. See also Footnote 20.

In our empirical analysis in Sections V to VII, we show that this decline becomes even more pronounced than depicted in Figure I when we control for other factors. There we distinguish between effects of *realized* and *expected* economic conditions and use an empirical strategy analogous to difference-in-differences estimation. We find that *realized downturns* have a strong and highly significant *countercyclical* effect on the deficit due to automatic and/or discretionary stabilization policy (an effect that does not differ between election and off-election years).

For *expected downturns* (that do not necessarily materialize) the situation clearly differs between election and off-election years. In the latter case, deficits go up in almost all specifications, though mostly not significantly; governments may have a tendency to act countercyclically when an economic downturn is *expected*. Election years are different: when controlling for realized growth, election years have a procyclical expected downturn effect that is significant in all specifications as suggested by our theoretical model. The effect is so strong that, on average, it eliminates the traditional PBC effect. Moreover, taking account of other conditionalities for political budget cycles does not destroy this election year procyclicality effect of expected downturns.

The rest of the paper is structured as follows: Section II lays out and solves a political budget cycle model that incorporates automatic stabilization as well as downturn expectations while carefully distinguishing realized growth from expected growth and realized deficit from expected deficit. In Section III, we allow voters to underestimate automatic stabilization and derive a proposition that explains the elimination of the traditonal PBC effect. Section IV describes the data and the empirical model, while Section V presents and discusses the core empirical findings. Sections VI and VII offer an array of robustness checks. Section VIII concludes.

II The General Model

The general model captures opportunistic policy making by an incumbent who faces electoral competition from a single challenger. Election and off-election periods alternate. Agents have growth expectations which may or may not be rational and may or may not differ between voters and politicians. Without limiting the general validity of the analysis, we focus on economic downturns and expectations thereof. In the theoretical model, a downturn means growth below trend.

Agents

Voters i and Politicians j maximize utility from the perspective of current period t (U_t^i and V_t^j, respectively), which is the expected net present value of an economic and a political component in each period; β^i and β^j are the respective discount factors; and E is the expectation operator. Voters' period utility comprizes of additively-separable utility from consumption, c_s, and from their personal sympathy for the politician in power, $\theta^i z_s$ (with weight α).

$$U_t^i = \sum_{s=t}^{\infty} (\beta^i)^{s-t} E_s^i[c_s + \alpha\theta^i z_s], \qquad i = 1, ..., n. \tag{1}$$

Utility derived from sympathy is constrained to $\theta^i z_s \in [-\frac{1}{2}, \frac{1}{2}]$ since z_t is either $-\frac{1}{2}$ (when politician a is elected) or $+\frac{1}{2}$ (when politician b is elected) and the personal sympathy (or ideological orientation) parameter θ^i is uniformly distributed over the interval $[-1, 1]$. Without limiting the general validity of the analysis, we assume that politician a is in power. Hence, voters favoring politician a gain positive utility, though less if their preferences are closer to the center of the spectrum. Moderate voters with a slight preference for politician b could be convinced by incumbent a to vote for her, if they expect her to provide enough additional economic utility to compensate for voting for the "wrong" politician. (See also Equation (6).)

The politicians' period utility depends on the same utility from consumption, but the political component captures the perks from being in power, i.e. the so-called ego rent X

which is assumed to be constant over time:

$$V^j = \sum_{s=t}^{\infty} (\beta^j)^{s-t} E_s^j [c_s + \mathbf{I}_s X]; \qquad j = a, b; \qquad \mathbf{I}_s = \begin{cases} 1 & \text{if in power in period } s; \\ 0 & \text{otherwise.} \end{cases} \tag{2}$$

Period consumption c_t is modeled to depend on period income Y (which depends on the growth factor of the economy γ_t) minus tax revenues T (which also depend on γ_t). For simplicity, we call $\gamma_t = \bar{\gamma}$ trend or average growth, $\gamma_t < \bar{\gamma}$ a downturn, and $\gamma_t > \bar{\gamma}$ a boom. In addition, discretionary public spending G_t^a, for instance infrastructure investment, may have a net impact on output and hence on consumption depending on fiscal multiplier m (see, for instance, Ilzetzki, Mendoza and Vegh, 2013) which, again, depends on γ_t:

$$c_t = Y(\gamma_t) - T(\gamma_t) + m(\gamma_t) G_t^a. \tag{3}$$

This simple structure allows us to distinguish between automatic stabilization and discretionary policies. T captures automatic stabilization (with discretionary changes to taxation being ruled out) and G represents discretionary government spending (whereas automatic stabilization effects on government spending are ignored). Assumptions on the three functions with argument γ can be very general. Obviously, $Y'(\gamma) > 0$. $T'(\gamma) > 0$ ensures that there is automatic stabilization. What the government can influence is G_t^a. The net effect discretionary fiscal policy has on the economy could be left open ($m'(\gamma) \lesseqgtr 0$). However, Auerbach and Gorodnichenko (2012) find that during recessions the effect rises above 1 after four quarters, but drops below zero during expansions. For our purposes it suffices to assume that the multiplier is larger in downturns than in booms, $m'(\gamma) < 0$.[7]

Discretionary fiscal policy and the timing of events

Through discretionary fiscal spending G_t^a incumbent a has the possibility to influence consumption and thereby reelection chances. In the model, the incumbent uses her (only)

[7] The larger multiplier effect in recessions implies that it should be even more attractive for the government to boost spending during expected downturns. This biases our model against our results. In other words, it is harder to obtain the result that government manipulation leads to spending cuts and thereby to a reduction or elimination of the political budget cycle when a downturn is expected.

policy instrument, planned deficit $\breve{D}_t^a$, to finance G_t^a while taking account of expected tax revenues $T(\breve{\gamma}_t)$.[8] The government budget constraint at the stage of planning is:

$$G_t^a = \breve{D}_t^a + T(\breve{\gamma}_t) - R(D_{t-1}) + \eta_t^a. \tag{4}$$

$T(\breve{\gamma}_t)$ (with $\breve{\gamma}_t$ being the government's growth perception) captures expected automatic stabilization effects. The level of fiscal spending G_t^a is also influenced by deficit repayment costs $R(D_{t-1})$ (which is a continuous function of public borrowing with $R(0) = 0$, $R'(0) = 1$, as well as $R''(D) > 0$ for all $D > 0$). Furthermore, we follow Rogoff (1990) by assuming that fiscal spending G_t^a is also affected by government competence η_t^a which comprizes a stochastic MA(1) process made up of an i.i.d. skills shock for the previous period, ν_{t-1}^a, and another one for the current period, ν_t^a:

$$\eta_t^a = \nu_t^a + \nu_{t-1}^a. \tag{5}$$

Shocks ν_t^a are random variables with mean 0 and distribution function $F[\nu_t^a] = F[\bullet]$. For simplicity, density function $f[\nu_t^a] = f[\bullet] = F'[\bullet]$ is assumed to be bell-shaped. Current period skills shock ν_t^a cannot be observed by the incumbent (or voters) at the government policy planning stage. Hence, the government cannot observe the level of government spending that will be provided in the end.

The timing of events is summarized in Table I. In election period t, voters and incumbent a recall the deficit and the skills of the incumbent in the previous period and form expectations – the incumbent on growth and voters on growth and the deficit. The incumbent maximizes her utility by choosing the planned deficit and, thereby, providing discretionary fiscal policy G_t^a. Based on their expectations of growth and the deficit and their observation of the level of discretionary policy voters form expectations of the incumbent's current period skills. If they are above average, they expect the incumbent to provide higher economic utility in the next period than the challenger (whose skills are

[8] Note that $T(\breve{\gamma}_t)$ are the tax revenues to be obtained for expected growth factor $\breve{\gamma}_t$. Note also that G_t^a is actual spending (not just a plan) because actual resources must correspond to planned resources, $D_t + T(\gamma_t) = \breve{D}_t^a + T(\breve{\gamma}_t)$, according to Equation (A.1) in Appendix A.

TABLE I: The Timing of Events

Time	**Who does what?**
Period t	**1) Voters i and incumbent a observe:** - last period deficit, D_{t-1}; - the incumbent's last period skills, ν^a_{t-1}. **2) Expectations are formed by:** - voters i on growth factor $\widehat{\gamma}_t$; - voters i on the deficit, $\widehat{D}_t$; - incumbent a on growth factor, $\breve{\gamma}_t$. **3) Incumbent a:** - chooses planned deficit, $\breve{D}^a_t$; - thereby setting discretionary fiscal policy, G^a_t. **4) Voters i:** - observe discretionary policy, G^a_t; - form expectations of the incumbent's current period skills, $\widehat{\nu}^a_t$ (based on expected growth factor, $\widehat{\gamma}_t$, and expected deficit, $\widehat{D}_t$); - and vote.
Period $t+1$	The winner of the period t elections takes office and receives an ego rent. Eventually, the winner repays the deficit of the previous period.

expected to be average). Some moderate voters with a slight preference for politician b can thus be swayed to vote for incumbent a. What happens in off-election period $(t+1)$ is stated in Table I. Explanations on this and why the model can be split into cycles consisting of election periods t and off-election periods $(t+1)$ are given in Appendix A.

Model solution

In period t, prospective voters compare their period $(t+1)$ utility from incumbent a being in power to their utility from challenger b being in office. We show in Appendix B that any voter i will vote for incumbent a, if her perception of government skills, $E^i_t[\nu^a_t]$, makes more than up for the "wrong" ideological orientation of the incumbent ($\theta^i > 0$):

$$E^i_t[\nu^a_t] \quad \geq \quad \alpha\theta^i. \tag{6}$$

Voters use government budget constraint (4) to extract competence (for details see Appendix C). Since they cannot directly observe the actual deficit and the growth factor, their expectation of government competence and hence the winning chances of the in-

cumbent depend on the voters' misperception of the available revenues from taxation and deficit:

$$\text{Prob}^{win} = 1 \quad - \quad F\left[(T(\widehat{\gamma}_t) + \widehat{D}_t) - (T(\gamma_t) + D_t)\right]. \tag{7}$$

Let us first consider a situation without actual and expected downturns $\gamma_t = \widehat{\gamma}_t = \bar{\gamma}$, which implies that the T terms in the bracket cancel each other out (which would, of course, also be the case when growth expectations simply corresponded to realized growth). Given the zero mean property of the skills shock (Equation (5), see also Figure C.1 in Appendix C) the winning probability can only be increased, if the realized deficit D_t is expanded beyond what voters expect ($\widehat{D}_t$). This is the moral hazard motivation for politico-economic manipulations by the incumbent suggested by Shi and Svensson (2006). In case of an actual downturn ($\gamma_t < \bar{\gamma}$) or an expected one ($\widehat{\gamma}_t < \bar{\gamma}$), it depends on the voters' overestimation of resources ($T(\widehat{\gamma}_t) + \widehat{D}_t$) relative to the actually available resources ($T(\gamma_t) + D_t$). If voters expect a higher level of discretionary fiscal policy than what the government provides (i.e. overestimate resources), they think the government is incompetent and will vote it out of office. Equation (7) also shows that government manipulations beyond what voters believe can increase the winning probability.

The first-order condition (FOC) of incumbent a's decision problem can be simplified as follows (for the maximisation problem itself and further details see Appendix D):

$$m(\bar{\gamma})\; R'(\breve{D}_t^a) \;-\; m(\breve{\gamma}_t) \;=\; F'[(T(\widehat{\gamma}_t) + \widehat{D}_t) - (T(\breve{\gamma}_t) + \breve{D}_t^a)]\, X. \tag{8}$$

With the second-order condition for a maximum verified, the FOC fully characterizes the government's optimally planned deficit choice $\breve{D}_t^a = (\breve{D}_t^a)^*$. It says that the net marginal repayment cost from expanding the planned deficit (the foregone multiplier effect in $(t+1)$, $m(\bar{\gamma})\; R'(\breve{D}_t^a)$, minus the expected multiplier effect in t, $m(\breve{\gamma}_t)$) must equal the electoral manipulation effect (the marginal increase in the chance of winning, $F'[\bullet]$, times the ego rent X). Raising the planned deficit is advantageous because the incumbent can appear more competent and thus increase its chance of winning and staying

in office. This is the standard (moral hazard) electoral manipulation motive suggested by Shi and Svensson (2006) (even if this does not increase re-election chances under rational expectations – as discussed in Appendix E). Note, however, that our model delivers an additional (Keynesian) motive. With the multiplier effect being larger in a downturn ($m(\gamma < \bar{\gamma}) > m(\bar{\gamma})$), it is optimal for the incumbent to shift costly resources to a downturn period.[9]

III Underestimated Automatic stabilization

In this section, we present and discuss the results when deviating from the rational expectations assumption with respect to the voters' response to a downturn. In Appendix E we consider rational expectations and show what happens when there is no downturn and how expected downturns affect the rational expectations outcome.

Deviations from Rational Expectations (RE)

The raw data averages presented in the Introduction suggest that the deficit expansion in an election year is much lower when a downturn is expected. As shown in Appendix E, the RE assumption allows us to produce a PBC in normal (non-downturn) times, but not that it is reduced (or even eliminated) when a downturn is expected. We continue to postulate that voters foresee the recurrent political manipulations in election times – as already suggested by Shi and Svensson (2006). However, we allow them to underestimate the consequences of the expected automatic stabilization.[10] This can be justified in at least two ways. First, it may be due to rational inattention (Sims, 2003). Voters may rationally shy away from obtaining costly information that would allow them to foresee the upcoming downturn to the same extent as the government, or to fully understand

[9] This also applies in the absence of an electoral manipulation motive (as it would be in a downturn in *non-election* times). It does, however, not apply to off-election period $(t+1)$ in our model, because the incumbent does not know about the growth prospects for the off-election period (and hence assumes $\gamma_{t+1} = \bar{\gamma}$) when she takes a decision about electoral manipulation in period t.

[10] This is a different approach to the ones taken in Bohn (2018 and 2019). In the former, voters are unsophisticated and cannot rationally expect the government manipulation. In the latter, the government can use its incumbency advantage to use propaganda in order to influence voters' beliefs.

the effects of automatic stabilization. Second, voters may think the government should or will not allow (full) automatic stabilization to take effect.[11] If either holds, it would amount to voters "underestimating" the consequences of automatic stabilization.

Irrespective of its cause, we would like to explore the implications of underestimated automatic stabilization. Let us distinguish between *nor*mal election years and *down*turn election years by splitting the deficit variables: the realized deficit becomes $D_t = {D_t}^{nor} + {D_t}^{down}$; the planned deficit becomes $\breve{D}_t^a = \left(\breve{D}_t^a\right)^{nor} + \left(\breve{D}_t^a\right)^{down}$; and the deficit expected by voters becomes $\widehat{D}_t = \left(\widehat{D}_t\right)^{nor} + \left(\widehat{D}_t\right)^{down}$. (The "down" component of realized, planned and expected deficit always refers to the *additional* deficit compared to the "normal" component, i.e. it comprises the deficit produced by automatic stabilization and the correction by discretionary behavior, realized, planned or expected.) The government budget constraint (4) becomes (when also replacing deficit repayment $R(D_t)$ by $(1+r)D_t$ with r being an exogenous interest rate):

$$G_t^a = T(\breve{\gamma}) + \left(\breve{D}_t^a\right)^{nor} + \left(\breve{D}_t^a\right)^{down} - (1+r)D_{t-1} + \eta_t^a. \tag{9}$$

The realized deficit (ex post), Equation (A.1) of Appendix A, becomes

$${D_t}^{nor} + {D_t}^{down} \equiv \left(\breve{D}_t^a\right)^{nor} + \left(\breve{D}_t^a\right)^{down} + T(\breve{\gamma}_t) - T(\gamma_t). \tag{10}$$

Since the incumbent makes no mistake in estimating government revenue in normal times by construction (see also Footnote 1 of Appendix E), ${D_t}^{nor} = \left(\breve{D}_t^a\right)^{nor}$ and

$${D_t}^{down} \equiv \left(\breve{D}_t^a\right)^{down} + T(\breve{\gamma}_t) - T(\gamma_t). \tag{11}$$

[11] According to the Rasmussen Reports (2010) 75% of American voters are sceptical towards automatic stabilization; "... only 11% of American adults agree and think the nation needs to increase its deficit spending [in tough economic times]. ... 70% disagree and say it would be better to cut the deficit [in such cases]." It is not inconceivable that there is scepticism in other countries, too, which might translate into voter expectations of precautionary government behavior.

As a result, the FOC is now

$$m(\bar{\gamma})(1+r) = m(\breve{\gamma}_t) +$$

$$F'[(T(\widehat{\gamma}_t) + (\widehat{D}_t)^{nor} + (\widehat{D}_t)^{down}) - (T(\gamma_t) + (D_t)^{nor} + (D_t)^{down})]\, X. \quad (12)$$

At this point, we have to specify the different assumptions for $(\widehat{D}_t)^{nor}$ and $(\widehat{D}_t)^{down}$. Voters' rational expectations for the deficit in normal times means $(\widehat{D}_t)^{nor} = (\breve{D}_t^a)^{nor} = (D_t)^{nor}$. However, voters may underestimate the tax revenue effect of automatic stabilization of an expected downturn on the deficit:

$$(\widehat{D}_t)^{down} = e(T(\bar{\gamma}) - T(\widehat{\gamma}_t)), \qquad 0 \leq e \leq 1. \quad (13)$$

$T(\bar{\gamma}) - T(\widehat{\gamma}_t)$ is underestimated by factor $e < 1$ ($e = 1$ would be the correct prediction).

To determine how the incumbent responds to the additional deficit expectations by voters in a downturn, we have to start from the FOC, Equation (12), which becomes:

$$m(\bar{\gamma})\,(1+r) \;=\; m(\breve{\gamma}_t) \;+\; F'[(T(\widehat{\gamma}_t) + e(T(\bar{\gamma}) - T(\widehat{\gamma}_t)) - (T(\gamma_t) + (D_t)^{down})]\, X. \quad (14)$$

The FOC has to hold, even though the components of $\breve{D}_t^a$, the government's instrument, are now replaced by the components of actual deficit D_t. The government's downturn expectations play no role, except for the magnitude of the multiplier effect. What matters are the voters' downturn expectations, which will be exploited in Proposition 1.

Proposition 1. - *Effect of Worsening Growth Expectations.*
Consider the incumbent government's optimal response, at the equilibrium, to marginally worsening growth expectations in an election year:
(i) If the growth expectations of voters worsen (but not those of the incumbent), the actual deficit goes down procyclically, if automatic stabilization is at least marginally underestimated by factor $e < 1$:

$$\frac{dD_t}{d\widehat{\gamma}} \;>\; 0 \quad \text{if and only if } e < 1.$$

(ii) If the growth expectations of voters and incumbent alike worsen, the actual deficit goes down procyclically, if automatic stabilization is clearly underestimated:

$$\frac{dD_t}{d\widehat{\gamma}} > 0 \quad \text{if and only if } e < 1 - w, \text{ where } w = -\frac{m'(\tilde{\gamma}_t)}{F''XT'(\tilde{\gamma}_t)} > 0.$$

Proof: Appendix F.

What matters is that the incumbent understands that there are (worsening) growth expectations by voters. If there is some underestimation of the degree of automatic stabilization by voters,[12] they will underestimate the government's willingness to run higher deficits. This allows the incumbent to cut spending (i.e. reduce automatic stabilisation in a discretionary way) in order to limit deficit repayment costs, while still increasing the deficit by more than what voters expect. Voters will be surprised by the, from their perspective, high level of government spending, attribute it to competence and vote for the incumbent.

The threshold for the underestimation factor e differs depending on whether the government shares the voters' beliefs. If the incumbent also believes in the (worsening) downturn, the multiplier is expected to increase as well. This makes discretionary spending more attractive for the incumbent (see Footnote 7). Hence, the incumbent tends to produce a higher deficit. For the procyclicality result to hold, nonetheless, the voters' underestimation of the degree of automatic stabilization must be larger, i.e. $e < 1 - w$. In either case, the procyclicality result can be obtained with a sufficient degree of underestimation of the degree of automatic stabilization.

[12] Here is an alternative interpretation suggested by one of the reviewers. In principle, Equation (13) could be rewritten in terms of tax revenue elasticity times the expected change in output. Voters might underestimate the short-term elasticity of tax revenue with respect to the cycle which is typically above 1. They might, for instance, confuse it with the long-term unit elasticity. Such an underestimation would also produce the procyclicality result obtained in Proposition 1. This interpretation would actually give us some empirical substantiation of our theoretical condition.

IV Empirical Set-up and the Data

The main prediction of the theoretical model is that the political budget cycle effect could differ depending on expected economic conditions. In case the government expects an economic downturn while preparing for upcoming elections, it will budget a higher public deficit, but with a smaller increase than implied by (i) automatic stabilization as expected in non-election years *and* (ii) the political budget cycle effect (as we know it from election years in economically normal times) taken together. Translated into an empirical framework this implies that *conditional on actual growth*, expecting a downturn when elections are upcoming leads to an actually improved fiscal situation. This is what we are testing in this part of the paper. The equation we estimate is the following:

$$\begin{aligned} FiscalBalance_{it} &= \beta_1 RealizedGrowth_{it} + \beta_2 Election_{it} + \beta_3 ExpectedEconomy_{it} \\ &\quad + \beta_4 (Election * ExpectedEconomy)_{it} \\ &\quad + \gamma Controls_{it} + \alpha_i + \tau_t + \varepsilon_{it}. \end{aligned} \tag{15}$$

By including both country- (α_i) and year-fixed (τ_t) effects, this resembles a difference-in-differences estimation strategy. In order to have enough variation and degrees of freedom, we focus on a large set of democratic countries and as many years as possible while still being able to distinguish between realized and expected economic conditions. In defining democracies, we only use countries that are classified as 'free' by Freedom House. This definition is more restrictive than, for instance, the classification by Cheibub et al. (2010), which we use as a robustness check.[13] Forecasts are taken from the IMF World Economic Outlook publications. The first issue available to us that contains the data necessary for our analysis was published in April 1999. This allows us to use a slightly unbalanced panel of 74 countries covering the period 2000-2016.

[13] They code a regime as democratic in case i) the executive and legislative branches are elected and ii) multiple parties are allowed and exist. The qualitative results are not affected by this (see Table III).

Our dependent variable, $FiscalBalance$, is the general government primary fiscal balance taken from the IMF World Economic Outlook published in April 2019 (IMF WEO).[14] To allow comparisons across countries while at the same time assuring that economic developments during the year are not directly included in our dependent variable, we divide the primary balance by *lagged* GDP.[15] As interest payments are hardly under government control over a time horizon that is relevant to us, we focus on the primary balance.[16]

Upcoming elections ($Election$) is one of our key explanatory variables. This information is taken from the Database of Political Institutions (DPI) as described in Cruz et al. (2018) which is an updated version of Beck et al. (2001).[17] Following, for instance, Shi and Svensson (2006), Vergne (2009), Gupta et al. (2015) and Hayo and Neumeier (2016), we include legislative elections for countries with parliamentary (or assembly-elected) political systems, while for countries with presidential systems, we consider executive elections.[18]

Turning to the economic conditions, we measure realized real GDP growth ($RealizedGrowth_{it}$) using the latest information as contained in the April 2019 IMF World Economic Outlook.[19] Expected economic conditions ($ExpectedEconomy_{it}$) are measured in two differ-

[14] Unfortunately, we do not have access to sufficient data that focus on the central government only. Hence, we assume that the central government does have some influence on lower layers of the government. To the extent that this does not hold, it should make it more difficult for us to find significant effects.

[15] The qualitative results do not depend on whether we divide the primary deficit by lagged GDP or contemporaneous GDP.

[16] As a robustness check, we also carry out the same analysis using the fiscal balance instead of the primary fiscal balance. As shown in Table G.II of Appendix G, the conclusions do not change.

[17] In general, we use the variables EXELEG and LEGELEC that indicate whether there was an executive or legislative election in a particular year. In column (5) of Table III and column (2) of Table G.III in Appendix G, we use the variable YRCURNT (years left in current term) to determine election years. When using YRCURNT, we incorporate the corrections proposed by Christopher Gandrud. See https://thepoliticalmethodologist.com/2015/03/03/corrections-and-refinements-to-the-database-of-political-institutions-yrcurnt-election-timing-variable/. Our qualitative results do not dependent on these corrections.

[18] In parliamentary democracies, elections of the legislature coincide with those of the executive. In presidential democracies, the executive is elected separately, but the legislature is almost always elected in the same year.

[19] If we use instead the June publication of the IMF WEO in the following year $(t+1)$, i.e. the first

ent ways, both based on real GDP growth forecasts as published in the November issue of the IMF WEO the year before $(t-1)$. These or slightly earlier published forecasts form the basis for the budgeting process of the fiscal authorities. To stick as closely as possible to our theoretical model, we create an expected downturn dummy to capture expected below trend growth. The dummy indicates whether a country expects a growth rate that is more than one standard deviation below the average realized growth observed during the previous five years.[20] As a second measure, we use the growth forecasts directly.[21] Instead of assuming a step function, we then imply that the effect of an upcoming election depends linearly on growth expectations. To check whether this linearity assumption makes sense, we follow Hainmueller et al. (2019) and apply flexible binning and kernel estimations. The results suggest that the interaction is indeed linear.[22] To facilitate the interpretation of the coefficient estimate of β_3 in Equation (15), we de-mean expected growth rates at the country level. This means that a positive value represents an above average expected growth rate for the respective country. A negative value captures below average expected growth.

To correct for any non-time-varying country-specific and non-country-varying time-specific characteristics, we include country- and time-fixed effects in our specifications. By including further control variables, we both intend to reduce potential endogeneity problems and the size of the estimated standard errors. Based on previous literature (like Roubini

release of the realised growth rate, the conclusions are not affected (see column (3) of Table G.III in Appendix G).

[20] We thank an anonymous reviewer for this suggestion. If instead we use the lower quartile of the country-specific distribution of growth forecasts, the qualitative results do not change (see column (4) of Table G.III in Appendix G). Initially, we also intended to use an expected recession dummy to indicate expected negative growth. However, recessions are quite rare events; they occur in less than 4% of the country-year observations in our sample. Combining this with elections that occur roughly every fourth year would have meant that we base the coefficient estimates of the interaction effect (β_4) on only a limited number of (extreme) cases.

[21] The correlation coefficient between elections and the expected downturns equals 0.01 and is not significantly different from zero. The correlation of the election variable with the expected growth rate is -0.03 (and again not significantly different from zero). It is, therefore, empirically safe to say that elections and our expected economy variables are orthogonal to one another.

[22] As stressed by Hainmueller et al. (2019), this should and does in our case especially hold around those growth expectations for which both election and non-election periods are observed, i.e. when there is sufficient common support.

and Sachs (1989), De Haan et al. (1999)), we select inflation, general government gross debt (as percentage of GDP), population growth (all three from the IMF WEO), and the age dependency ratio (from the World Bank, World Development Indicators (WB WDI)) as potential control variables. On top of that, we also include a measure for globalization: the KOF Globalisation Index (see Gygli et al. (2019) and Dreher (2006)). All of these are lagged by one period to reduce reverse causality problems. Revenues received out of selling natural resources like oil and gas potentially drive the fiscal budgets of some countries. To control for that, we include national resource rents (as percentage of lagged GDP) as published in the WB WDI in our regressions. Finally, countries that have an arrangement with the IMF might be in a different situation regarding their fiscal position. Aldenhoff (2007), Dreher et al. (2008) and Atoyan and Conway (2011), for instance, argue that IMF forecasts might be biased, if a country is under an IMF program. We, therefore, also include a dummy variable for being under an IMF program, which is taken from the IMF MONA database. All of these variables are summarized in Table G.I in Appendix G.[23]

V Baseline Estimation Results

Table II presents the main regression results. Before turning our attention to the estimation results of Equation (15), we first consider traditional Political Budget Cycles (PBCs) as well as countercyclical policy effects. Column (1) shows the results when estimating a standard PBC model with the inclusion of growth, but without expectations. The results clearly indicate a countercyclical response to realized growth and confirm the existence of a PBC effect. In election years the fiscal stance deteriorates (the deficit increases) by about 0.4 percentage points. Albeit mostly not significant, the control variables have the expected signs.

[23] It shows that, in our sample, the primary budget is on average more or less balanced and the expected growth rate is on average about half a percentage point higher than what is realized. As shown by both the standard deviations and the minimum and maximum values, expected growth is much more stable than realized growth.

TABLE II: Towards a baseline model

Primary fiscal balance	(1) Only PBC	(2) Downturn exp. Countercyclical	(3) Downturn exp. No interaction	(4) Downturn exp. Baseline	(5) Growth exp. Baseline
Realized growth	0.237***	0.225***	0.227***	0.229***	0.220***
	(5.170)	(4.902)	(4.989)	(5.026)	(4.832)
Election dummy	-0.388***		-0.371**	-0.597***	-0.384***
	(-2.805)		(-2.618)	(-3.716)	(-2.753)
Expected Economy		-0.507	-0.481	-0.625	0.174
		(-1.361)	(-1.284)	(-1.601)	(0.894)
Election x Expected Economy				0.591**	-0.315*
				(2.096)	(-1.911)
Lagged inflation rate	0.0556	0.0520	0.0516	0.0512	0.0529
	(1.033)	(1.000)	(0.993)	(0.985)	(1.012)
Total natural resources rents	0.156	0.159	0.159	0.159	0.147
(% of lagged GDP)	(1.454)	(1.511)	(1.510)	(1.538)	(1.398)
Under IMF program	-0.368	-0.258	-0.281	-0.269	-0.350
	(-0.632)	(-0.458)	(-0.503)	(-0.480)	(-0.640)
Lagged age dependency ratio	-0.0196	-0.00928	-0.0121	-0.0110	-0.0150
	(-0.444)	(-0.215)	(-0.280)	(-0.254)	(-0.343)
Lagged public debt (% of GDP)	0.0411***	0.0420***	0.0419***	0.0418***	0.0432***
	(4.125)	(4.337)	(4.310)	(4.321)	(4.426)
Lagged population growth	-0.0797	-0.102	-0.0912	-0.0912	-0.0843
	(-0.288)	(-0.374)	(-0.332)	(-0.329)	(-0.301)
Lagged KOF globalisation index	0.125	0.117	0.116	0.115	0.127
	(1.491)	(1.416)	(1.394)	(1.394)	(1.508)
Adjusted R-squared	0.317	0.316	0.318	0.319	0.320
Number of observations	1064	1064	1064	1064	1064
Number of countries	74	74	74	74	74
Number of years	17	17	17	17	17
Hausman test	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan LM test	0.000	0.000	0.000	0.000	0.000
F-test time fixed effects	0.000	0.000	0.000	0.000	0.000
F-test Election				0.002	0.009
F-test Expected economy				0.074	0.168

Notes: Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1. t-statistics are shown inside brackets. p-values are shown for test statistics. Country- and year-fixed effects are not shown.

Column (2) tests whether governments in our sample follow countercyclical policies in the budgeting phase and allow the deficit to increase (and, therefore, the balance to deteriorate) when a downturn is forecast. Although the coefficient is sizable, implying that an expected downturn on average leads to an 0.5 percentage points reduction in the fiscal balance, it is imprecisely estimated and therefore not significantly different from

zero using standard criteria.[24]

In column (3), the PBC and the "countercyclicality" variables enter both. Taking the two strings of thought into one specification hardly changes the coefficient estimates. First, we still find a strong PBC effect. Second, any countercyclical reaction in the fiscal policy stance as measured by the fiscal balance appears to be driven by realized growth; no significant effect appears to stem from forward-looking politicians that foresee a downturn.

Our theory does, however, suggest that these two channels are not independent, i.e. the policy response to a forecasted downturn may be modified when there is an election expected at the same time. To test our theory, we include the interaction of the election and expected downturn dummy in column (4). This interaction effect is clearly significant and highlights that there is indeed a difference in government behaviour depending on whether a downturn is expected to occur in an election or a non-election year.[25] If we look into the PBC effect, the fiscal balance is reduced by on average 0.6 percentage points of GDP in an election year for which no downturn is expected. However, this effect is nullified in case a downturn is expected: the interaction term is close to 0.6 percentage points. Note that the expected downturn effect in an election year is opposite to what some might have expected: the government stimulates less, not more, when voters face a more dire situation. Note also that the reduction in the PBC effect is actually stronger than suggested by Figure I in the Introduction.

When replacing our expected downturn dummy by the forecasted growth rate, the interpretation of the individual coefficients turns slightly more complicated. Not only do the signs of the *ExpectedEconomy* coefficient and the interaction term switch, also the *Election* coefficient presented in column (5) can only be easily interpreted when the

[24] This might potentially be caused by multicollinearity: in case of excellent forecasts, there is a high correlation between expected and realized growth. When the realized growth variable is taken out of the specification, the effect becomes marginally significant. See column (1) of Table G.III in Appendix G.

[25] We do not find any evidence that the impact of *realized* growth depends on being in an election year or not. When we include such an interaction term, it is never significant and our estimated β_1 is hardly affected (see column (2) of Table G.V in Appendix G).

ExpectedEconomy is held constant at a value of 0. To allow comparison with the other columns, we, therefore, normalize this variable around zero at the country level. In case of average growth expectations ($ExpectedEconomy = Election * ExpectedEconomy = 0$), there appears to be a significant PBC effect: the deficit is increased by almost 0.4 percentage points in election years. If, however, the expected growth rate is one percentage point below average, this effect basically nullifies ($-0.384 + (-1 * -0.315) = -0.069$).

In columns (4) and (5), the F-test on the joint significance of the two coefficients involving the election variable reflects, with p-values of 0.2% and 0.9%, respectively, that the context-conditional PBC we postulate is statistically significant.[26]

To analyse the effect of growth expectations on the PBC effect more systematically, we follow the suggestions of Brambor et al. (2006) and Hainmueller et al. (2019) and present a marginal effects plot in Figure II together with a histogram of at the country level de-meaned expected growth rates. It does, therefore, show the size of the PBC effect at different expected (de-meaned) growth levels. The traditional PBC effect disappears as soon as growth forecasts fall below the average. Average or above-average growth expectations are associated with a significant PBC effect.

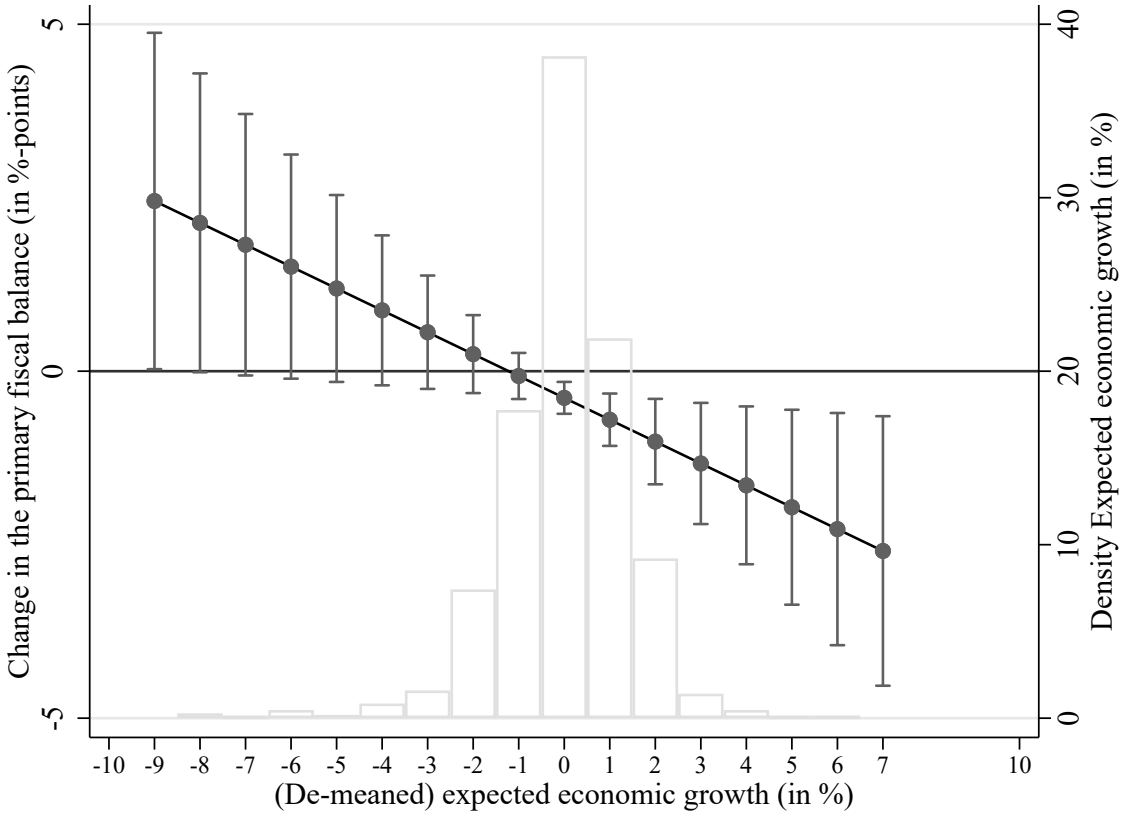
VI Robustness Checks

For the robustness checks in this and the following section, we use the expected growth specification in column (5) of table II as our baseline specification. It has a slightly better fit than the expected downturn specification of column (4) as measured by the adjusted R-squared in Table II.[27] For ease of comparison, Table III first reproduces our

[26] To double-check this, we carry out a Monte-Carlo simulation. Based upon the observed country-specific occurance of elections, we randomly assign elections to years, re-run the regression shown in Column (5) of Table II and repeat this F-test on the joint significance of the election coefficients. This is repeated 10,000 times. In only 0.01% of these cases, we find an F-statistic that is larger than the one reported in Table II. Figure G.I in Appendix G shows the distribution of the estimated F-statistics based upon these Monte-Carlo simulations.

[27] The robustness checks when using the expected downturn dummy are reported in Table G.IV of Appendix G. The qualitative conclusions are, in general, not affected by this.

Figure II: Marginal effects of elections on the primary fiscal balance depending on expected growth



Notes: Whiskers show 90% confidence bands. This plot is based on column (5) of Table II.

expected growth baseline specification. Next, we show that the selection of our control variables is inconsequential. In column (2), we follow a general-to-specific approach and stepwise remove those control variables that are insignificant. Besides slightly reducing the adjusted R-squared (despite fewer variables being used), this hardly influences the estimated results.[28]

The robustness checks presented in columns (3) to (5) of Table III relate to the definition of our election variable. First, we distinguish between presidential and parliamentary elections in column (3). As described in the previous section, our election variable does not distinguish between presidential and parliamentary systems. In Column (3) of Table III,

[28] Also removing all controls, or moving to a country random effects model, hardly affects coefficients (or the significance) of our variables of interest (see column (5) of Table G.III in Appendix G).

TABLE III: Some robustness checks

Primary fiscal balance	(1) Growth exp. Baseline	(2) Growth exp. Gen-to-spec.	(3) Growth exp. Pres.-parl.	(4) Growth exp. No early elections	(5) Growth exp. Regular elections	(6) Growth exp. No extremes	(7) Growth exp. More democracies
Realized growth	0.220***	0.226***	0.219***	0.217***	0.213***	0.245***	0.171***
	(4.832)	(5.018)	(4.785)	(4.672)	(4.526)	(4.814)	(4.174)
Election dummy	-0.384***	-0.383***		-0.352**	-0.390**	-0.323**	-0.419**
	(-2.753)	(-2.748)		(-2.193)	(-2.479)	(-2.260)	(-2.496)
Election in presidential system			-0.581**				
			(-2.321)				
Election in parliamentary system			-0.321*				
			(-1.759)				
Expected Economy	0.174	0.217	0.172	0.189	0.193	0.284	0.0982
	(0.894)	(1.060)	(0.882)	(0.965)	(0.970)	(1.211)	(0.750)
Election x Expected Economy	-0.315*	-0.333*		-0.314*	-0.398*	-0.509**	-0.285**
	(-1.911)	(-1.942)		(-1.768)	(-1.922)	(-2.485)	(-2.152)
Presidential Election x Exp.Ec.			-0.122				
			(-0.500)				
Parliamentary Election x Exp.Ec.			-0.374*				
			(-1.959)				
Lagged inflation rate	0.0529		0.0563	0.0524	0.0640	0.0397	0.0582*
	(1.012)		(1.064)	(1.028)	(1.279)	(0.766)	(1.904)
Total natural resources rents	0.147		0.148	0.136	0.136	0.163	0.144***
(% of lagged GDP)	(1.398)		(1.398)	(1.297)	(1.312)	(1.458)	(2.623)
Under IMF program	-0.350		-0.347	-0.298	-0.335	-0.487	0.129
	(-0.640)		(-0.622)	(-0.574)	(-0.646)	(-0.853)	(0.330)
Lagged age dependency ratio	-0.0150		-0.0177	-0.0213	-0.0222	-0.0112	-0.0214
	(-0.343)		(-0.402)	(-0.462)	(-0.491)	(-0.258)	(-0.441)
Lagged public debt (% of GDP)	0.0432***	0.0398***	0.0429***	0.0438***	0.0471***	0.0434***	0.0270***
	(4.426)	(3.934)	(4.453)	(4.521)	(4.790)	(4.340)	(2.928)
Lagged population growth	-0.0843		-0.0837	-0.120	-0.0615	-0.0120	0.142
	(-0.301)		(-0.298)	(-0.425)	(-0.237)	(-0.0430)	(0.432)
Lagged KOF globalisation index	0.127		0.127	0.124	0.150*	0.126	0.110
	(1.508)		(1.510)	(1.452)	(1.824)	(1.569)	(1.406)
Adjusted R-squared	0.320	0.308	0.319	0.319	0.329	0.311	0.249
Number of observations	1064	1064	1064	1034	994	1034	1502
Number of countries	74	74	74	74	74	74	110
Number of years	17	17	17	17	17	17	17
Hausman test	0.000	0.000	0.000	0.000	0.000	0.000	0.002
Breusch-Pagan LM test	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-test time-fixed effects	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-test Election	0.009	0.009	0.029	0.033	0.002	0.005	0.000
F-test Expected Economy	0.168	0.159	0.280	0.216	0.145	0.050	0.000
F-test pres.el=parl.el			0.358				

Notes: Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1. t-statistics are shown inside brackets. p-values are shown for test statistics. Country- and year-fixed effects are not shown.

we test to what extent results differ between these systems. Whereas the traditional PBC effect is larger (in absolute terms) for presidential systems versus parliamentary systems (-0.6 vs. -0.3), the opposite holds for the interaction factors (-0.1 vs. -0.4). The estimated interaction coefficient is only significant for parliamentary systems. As the F-test reported in the last row of this table shows, these differences are by no means statistically significant.

Second, it is important for our theoretical argument that, when a downturn is expected to occur, the incumbent is able to affect the fiscal balance before the actual election

takes place. This is more difficult in case elections are scheduled to take place early in the year. In Column (4) of Table III, we, therefore, remove elections scheduled for the first two months of a year from our election variable. As shown, the results are hardly affected by this.[29] Third, the Database of Political Institutions (DPI) allows us to construct an alternative election dummy variable. In line with the literature, we have, so far, used the information on legislative and executive elections in all of our specifications to construct an overall election dummy. Instead we can also use the variable YRCURNT that measures the years left in the current term. Following, e.g. Brender and Drazen (2005) and Katimi and Sarandites (2012), this allows us to distinguish between regular and irregular elections. Even though the traditional PBC argument continues to hold, if irregular elections are set by the incumbent, we would like to rule out that these irregular elections are, perhaps for very different reasons driving our results.[30] In column (5) of Table III we remove those election years that are not coded as regular. Once again, the qualitative results do not change.[31]

The previous robustness checks were motivated by the concern that some (types of) elections might drive the results. The same might hold for some (expected) economic developments. To check how robust our results are along that dimension, we remove realized or expected growth observations that are potential outliers, i.e. are relatively extreme. Following Iglewicz and Hoaglin (1993), we use so-called modified Z-scores that only rely on outlier-robust metrics to identify relatively extreme (expected) growth observations.[32] This takes 30 observations out of our sample. Column (6) in Table III shows

[29] Whether, in case of these early elections, we remove the observations altogether or set the election variable equal to zero does not matter for the results in any meaningful way.

[30] More generally, one might worry about the orthogonality of elections and expected growth. However, neither our expected downturn dummy, nor expected growth is significantly correlated with our election variable. See also Footnote 21.

[31] Replacing the election dummy by a variable that actually measures the years left in the current term (YRCURNT) does also not have a noteworthy effect on the results (not shown). Also replacing the election variable of the baseline model with an election dummy that includes only those elections that are coded as regular, turning irregular election years into non-election years, does not change any of the conclusions either.

[32] To be precise, the modified Z-score is defined as $0.6745(x_{it} - y)/MAD$ with MAD denoting the median absolute deviation, and y denoting the median of variable x. Observations with a modified

that these relatively extreme growth observations do not have a large impact on most of the coefficient estimates and are therefore not so-called bad leverage points. If anything, our estimate for β_4 becomes somewhat larger and statistically significant at a lower level.

Instead of reducing the sample, by removing potential outliers, we can increase it by using a loser definition of when a country is labeled a democracy. When we move to the definition of Cheibub et al. (2010) as updated by Bjørnskov and Rode (2019), the number of countries classified as a democracy increases to 110. As the last column of Table III and Figure III shows, this does not affect our conclusions. On the contrary, our results become slightly stronger when using this larger sample of democracies.

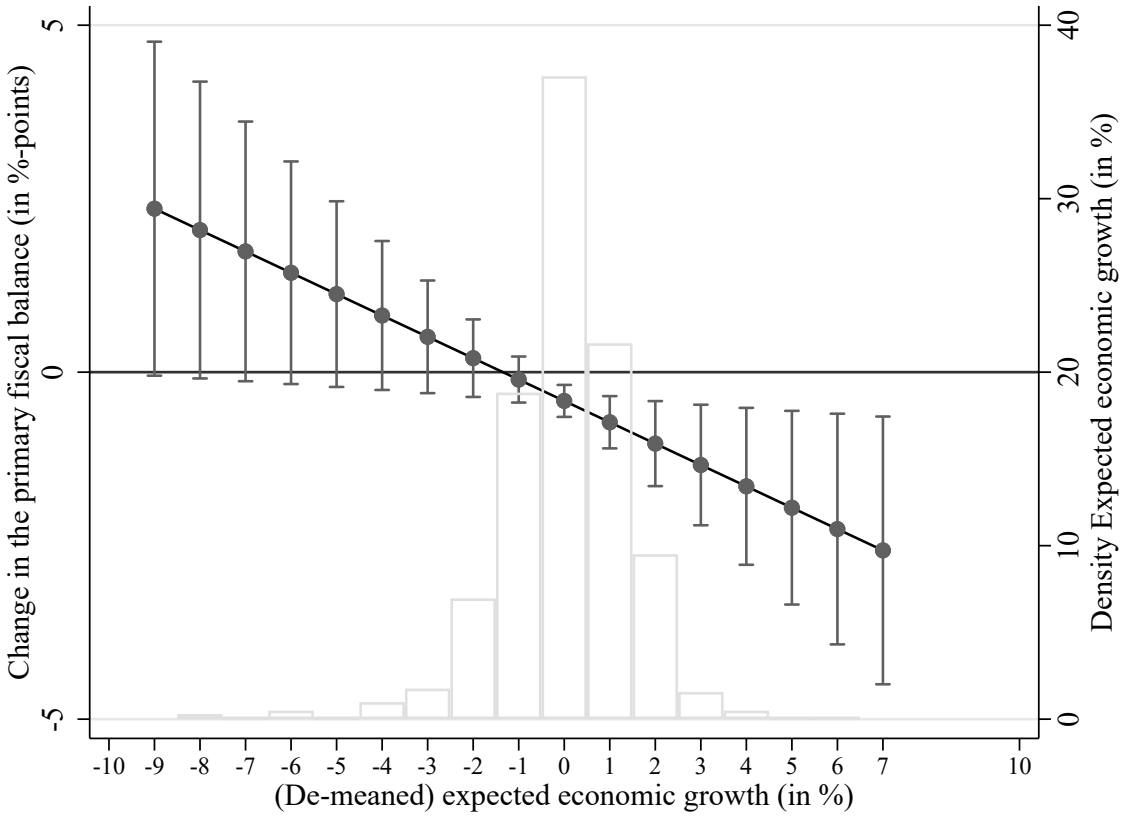
VII Robustness Checks on Context-conditionality

In a final set of robustness checks, we discuss the claim of e.g. Franzese (2002), Alt and Rose (2007) and Dubois (2016) that PBCs are context-conditional along other dimensions than expected growth, i.e. do not occur in all countries or situations at all times, for different reasons than introduced here. For this, we first check whether the interaction of other control variables taken up in our model with our election dummy affect the channel we discuss. Subsequently, we include proxies for alternative theories that have so far been used in the literature to explain in what kind of countries or situations a PBC effect is to be expected.

For three out of the eight controls that are included in our baseline equation, we find a significant effect when interacted with our election dummy. Columns (2) to (4) in Table IV refer to inflation, age dependency and globalization. Higher inflation or an increased age dependency ratio are associated with a worsening of the primary fiscal balance in election years. In contrast, a higher degree of globalization goes hand in hand with an improved primary fiscal balance during election years. Globalization thereby

Z-score larger than 3.5 (in absolute value) are removed from our sample.

Figure III: Marginal effects of elections on the primary fiscal balance depending on expected growth using a broader definition of democracies



Note: Whiskers show 90% confidence bands. This plot is based on column (7) of Table III and includes democracies as defined by Cheibub et al. (2010) and Bjørnskov and Rode (2019).

reduces the PBC effect considerably.[33] Although interesting in itself, what is relevant for this paper is the finding that this does not alter the impact growth expectations have on the fiscal balance when elections are coming up. Our main variable of interest is neither

[33] In a different robustness check, we reduced the sample by removing less-globalized countries. Countries that are highly globalized are more affected and driven by international business cycles, which implies that short-term growth dynamics are more likely to be exogenous. Even when concentrating on only that half of the sample representing high globalization levels, the qualitative results do not change. The interaction term remains significantly negative and the estimated marginal effects (not shown) still indicate that the PBC effect is only statistically significant in case we observe sufficiently high growth expectations (i.e. the de-meaned growth expectations are at or above zero). For low growth expectations, there is never a significantly negative impact of being in an election year on the fiscal balance, i.e. the PBC effect is killed in a downturn.

affected qualitative, nor is the change quantitatively noticeable.[34]

TABLE IV: Including variables representing alternative forms of conditionality

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Variable representing the alternative interaction variable					
Primary fiscal balance	Baseline	inflation	Age dependency	KOF globalisation	Bureaucratic quality	Freedom of press	core OECD
Realized growth	0.220***	0.221***	0.221***	0.223***	0.179***	0.223***	0.223***
	(4.832)	(4.944)	(4.842)	(4.940)	(3.480)	(4.917)	(4.928)
Election dummy	-0.384***	0.00201	1.251	-2.120**	-1.793***	0.183	-0.673***
	(-2.753)	(0.00950)	(1.515)	(-2.511)	(-3.165)	(0.502)	(-3.869)
Expected Economy	0.174	0.171	0.170	0.167	0.243	0.180	0.171
	(0.894)	(0.883)	(0.872)	(0.860)	(1.124)	(0.932)	(0.882)
Election x Expected Economy	-0.315*	-0.312*	-0.313*	-0.304*	-0.396**	-0.323*	-0.318*
	(-1.911)	(-1.916)	(-1.888)	(-1.838)	(-2.179)	(-1.959)	(-1.904)
Alternative interaction variable					-0.735	0.0780	
					(-0.467)	(1.428)	
Election x Alternative variable		-0.107**	-0.0311**	0.0241**	0.426**	-0.0234*	0.727**
		(-2.475)	(-2.022)	(2.151)	(2.552)	(-1.841)	(2.504)
Lagged inflation rate	0.0529	0.0751	0.0534	0.0521	0.107**	0.0541	0.0526
	(1.012)	(1.477)	(1.017)	(0.996)	(2.272)	(1.042)	(1.004)
Total natural resources rents	0.147	0.148	0.150	0.147	0.0726	0.133	0.146
(% of lagged GDP)	(1.398)	(1.409)	(1.417)	(1.392)	(0.803)	(1.293)	(1.393)
Under IMF program	-0.350	-0.338	-0.378	-0.370	-0.474	-0.390	-0.365
	(-0.640)	(-0.616)	(-0.688)	(-0.673)	(-0.799)	(-0.714)	(-0.662)
Lagged age dependency ratio	-0.0150	-0.0166	-0.00959	-0.0174	-0.0721	-0.0170	-0.0158
	(-0.343)	(-0.377)	(-0.223)	(-0.394)	(-0.961)	(-0.390)	(-0.362)
Lagged public debt (% of GDP)	0.0432***	0.0432***	0.0431***	0.0431***	0.0428***	0.0429***	0.0432***
	(4.426)	(4.455)	(4.449)	(4.438)	(3.818)	(4.581)	(4.456)
Lagged population growth	-0.0843	-0.0881	-0.101	-0.0876	0.107	-0.0772	-0.0837
	(-0.301)	(-0.309)	(-0.358)	(-0.313)	(0.285)	(-0.271)	(-0.297)
Lagged KOF globalisation index	0.127	0.128	0.125	0.119	0.148	0.128	0.126
	(1.508)	(1.533)	(1.480)	(1.412)	(1.596)	(1.523)	(1.495)
Adjusted R-squared	0.320	0.322	0.321	0.321	0.369	0.323	0.321
Number of observations	1064	1064	1064	1064	833	1064	1064
Number of countries	74	74	74	74	64	74	74
Number of years	17	17	17	17	15	17	17
Hausman test	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan LM test	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-test time fixed effects	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-test Election	0.009	0.167	0.045	0.005	0.004	0.129	0.001
F-test Expected growth	0.168	0.165	0.174	0.191	0.090	0.154	0.170
F-test Alternative theory		0.010	0.135	0.036	0.042	0.103	0.015

Notes: Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1. t-statistics are shown inside brackets. p-values are shown for test statistics. Country- and year-fixed effects are not shown. In columns (2)-(4), the alternative interaction variable is part of the regular list of explanatory variables. In column (7), the alternative interaction variable does not vary over time and its non-interacted effect is captured by country-fixed effects.

[34] This also holds for those additional interaction terms that are insignificant. See Table G.V in Appendix G for these additional results.

According to the work of Alt and Lassen, (2006a,b), Akhmedov and Zhuravskaya (2004), Klomp and De Haan (2016) and Veiga et al. (2017) PBCs occur, in particularly, in countries with a high degree of intransparency in fiscal or government policies or a lack of media freedom, respectively. To account for this, we use the measures of Bureaucratic Quality published by the International Country and Risk Guide (ICRG) and the Freedom of the Press Scores published by Freedom House. Often it is also argued that PBCs mainly occur in developing countries (Schuknecht, 1996 and 2000; Block, 2002; Shi and Svensson, 2006; and Vergne, 2009), or in new democracies (Brender and Drazen, 2005). For this, we interact our election variable with dummies for core OECD countries (defined as those OECD countries that have been long-standing members)[35] and new democracies (in particular those that turned democratic after the fall of the iron curtain).[36] Finally, the political system (Chang, 2008, and Streb et al. 2009) and/or the electoral system (Aidt and Mooney, 2014) might affect the occurrence of a PBC effect. In the first case, we distinguish between parliamentary and presidential systems, in the latter between systems in which most seats are based on plurality vs. proportional representation. Both variables are taken from the DPI.

We include proxies of these alternative theories and interact them with our election variable to check whether our main story is affected by the inclusion of variables representing any of these theories. In those cases in which we find these interaction effects to be significant, we report them in Table IV.[37] Even though, we do find evidence that bureaucratic quality and being part of the core OECD (and thereby having a higher level of development) are associated with a better fiscal position during election times, this does not

[35] These are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom, and United States. The full set of OECD countries also includes Chile, the Czech Republic, Estonia, Hungary, Israel, South Korea, Mexico, Poland, the Slovak Republic, Slovenia, and Turkey. The results do not change in any qualitatively meaningful way when using the full set of OECD countries instead.

[36] These are Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Croatia, the Czech Republic, Estonia, Georgia, Hungary, the Kyrgyz Republic, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Russia, the Slovak Republic, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.

[37] The other cases are shown in Table G.V of Appendix G.

affect the channel that is central to this paper. Contrary to expectations, press freedom is not associated with an improved fiscal situation during election years. In all cases, including those related to new democracies and the political system (parliamentary vs. presidential systems, or plurality vs. proportional representation), the coefficient for the expected growth variable interacted with elections remains significant and of a similar magnitude.

Summarizing these empirical results on the magnitude of government manipulation, we find significant differences when we combine two dimensions: (i) election versus off-election years; and (ii) the expected economic conditions (below average versus normal or above average). In election years, we find strong evidence in favor of a traditional PBC effect, if economically normal or buoyant times are expected; the incumbent reduces the fiscal balance to increase her re-election chances. However, this behavior changes, if bad times are expected. In such a situation the PBC effect is at least nullified, i.e. expected downturns kill the PBC. Our theoretical framework indicates that this is in line with a situation in which voters either underestimate the deteriorating fiscal balance (caused by automatic stabilisers) or expect precautionary government policies when economic expectations strongly deteriorate.

VIII Conclusion

As far as we are aware, we are the first to analyse how expected downturns can theoretically and do empirically affect the traditional political budget cycle (PBC) effect, whereby opportunistic behavior of the incumbent leads to a larger deficit. Using a sample of 74 democratic countries covering the 2000-2016 period and a difference-in-differences type of estimation strategy, the empirical evidence is clear-cut. In normal times and conditioning on realized growth, primary fiscal balances on average deteriorate by at least 0.6 percentage points of GDP in an election year. This clear evidence in favor of the traditional PBC effect during normal times disappears completely when focusing on those election years for which a downturn is expected. Only when normal or, in particular, high growth

is expected does the government use the opportunity to influence voters through higher spending, lower taxes, or both. However, expected downturns kill this PBC effect.

How can this empirical result be theoretically explained? Within a theoretical framework that is based on Shi and Svensson (2006) and extended to allowing for expected downturns and distinguishing between planned and realized deficit, we need a situation in which voters underestimate the negative impact a downturn has on the fiscal balance. This happens when voters believe that tax revenues will not fall much, i.e. automatic stabilization is underestimated. To improve its re-election chances, it suffices for the government to cut expenditures (or raise taxes), i.e. moderate automatic stabilization, as long as its overall fiscal policy stance remains more expansionary than what voters expected. If the expected downturn materializes, the overall change in fiscal policy is less countercyclical than what automatic stabilization would have produced. If the expected downturn does not materialize, fiscal policy turns procyclical.

As noted in the introduction, recent literature has stressed that PBCs are context-conditional. Both our theoretical model and the empirical results confirm this. However, whereas other papers find PBCs in countries with limited checks and balances or access to free media, in developing countries or new democracies and are affected by the political or electoral system, we find expansionary PBC effects to be relevant during expected normal or booming times, but not during expected downturns, even if these other conditionalities are taken into account.

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Appendices

The appendices present additional aspects of the theoretical model and its solution from Sections II and III, as well as additional empirical results. Appendix A mentions two model details that are not needed for understanding the intuition of the model, but required for the model solution. Appendix B derives the individual's voting probability, and Appendix C the aggregate winning probability of the incumbent. Appendix D presents the incumbent's maximisation problem. Appendix E discusses the model outcomes under rational expectations. In Appendix F, we derive Proposition 1. In Appendix G, we show summary statistics and robustness checks (regression tables and marginal effect figures) in addition to those presented in Sections V to VII.

A Additional model details

The (ex post) realized deficit, D_t, differs from the planned deficit, $\breve{D}_t^a$ when growth expectations do not materialize:

$$D_t \equiv \breve{D}_t^a + T(\breve{\gamma}_t) - T(\gamma_t). \tag{A.1}$$

If a certain level of discretionary fiscal policy G_t^a is provided by the government on the basis of believed growth factor $\breve{\gamma}_t$, but actual growth factor γ_t is lower, then there is a tax revenues shortfall and planned deficit $\breve{D}_t^a$ is insufficient. Actual deficit D_t goes up by the amount specified in Equation (A.1). This applies analogously to higher than expected growth, $\gamma_t > \breve{\gamma}_t$.

In the off-election period $(t+1)$, the winner takes office and enjoys ego rent X. Since there is no voting, there is no point in incurring a new deficit that would burden the government with repayment obligations in the next election period; instead, the new government repays the costly period t deficit by cutting discretionary spending G_{t+1}^a. Voters cannot do anything about this, because it is optimal, regardless of which politician comes to power. Note that election period $(t+2)$ does not matter for the decisions by voters or the incumbent taken in period t. Voters know nothing in period t about either politicians' skills, because competence is an MA(1) process. Politicians cannot affect their utility or re-election chances in $(t+2)$. Therefore, the model can be split into cycles consisting of two periods each, an election period, like period t, and an off-election period, like period $(t+1)$, as shown in Table I.

B Probability of an individual to vote for the incumbent

First, we consider an individual who votes prospectively, i.e. she would prefer the politician who can deliver the highest level of expected overall utility in $(t+1)$. It consists of utility from consumption and utility from personal sympathy for the politician in power. Voter i votes for incumbent a, if

$$\underbrace{E_t^i[c_{t+1}^a + \alpha\theta^i(-\frac{1}{2})]}_{\text{exp. utility when } a \text{ in power}} > \underbrace{E_t^i[c_{t+1}^b + \alpha\theta^i(+\frac{1}{2})]}_{\text{exp. utility when } b \text{ in power}} . \tag{B.1}$$

Obviously, voters differ in their preference for politicians a and b. As for consumption, remember that it is modeled to depend on disposable income and the effect of discretionary fiscal policy. The former is assumed to be identical for both politicians, whereas the latter is affected by the policymakers' competence and individuals' expectations thereof:

$$E_t^i[G_{t+1}^j] = E_t[T(\gamma_{t+1}) - R(D_t) + \eta_{t+1}^j], \qquad j = a, b. \tag{B.2}$$

Equation (B.2) states that voters base their expectation of the provision of discretionary fiscal policy in period $(t+1)$ on their beliefs of tax revenues in $(t+1)$, deficit repayments and government competence in $t+1$. The period t deficit is repaid in period $(t+1)$ because it is costly. As argued by Shi and Svensson (2006), the policymaker will try not to borrow in period $(t+1)$, i.e. plan a zero deficit (and voters can expect a zero deficit), because there is no election at the end of that period and a deficit carries a repayment cost; nonetheless, either policymaker will probably end up with a deficit or surplus in $(t+1)$, because actual growth in equation (A.1) is a random variable. Individuals have no idea about the skills shock of either potential policymaker in $(t+1)$. Nor do they know the skills shock of the challenger in period t, and, therefore, expect 0. However, they can use the incumbent's period t fiscal policy to draw conclusions about her skills shock in period t. The expected level of discretionary fiscal policy by the challenger differs from what is known of the incumbent:

$$E_t^i[G_{t+1}^a] = E_t[T(\gamma_{t+1}) - R(D_t) + \nu_t^a]; \tag{B.3}$$

$$E_t^i[G_{t+1}^b] = E_t[T(\gamma_{t+1}) - R(D_t)]; \tag{B.4}$$

where D_t denotes the inherited actual deficit (which depends, according to equation (A.1), on planned deficit $\breve{D}_t^a$ and the difference between expected tax revenues $\breve{T}_t$ and realized tax revenues T_t).

Combining equations (B.1), (B.3) and (B.4) we can obtain a condition for an individual to vote for incumbent a (which corresponds to equation (6) in the main text):

$$E_t[\nu_t^a] \quad \geq \quad \alpha\theta^i. \tag{B.5}$$

Using the uniform distribution of personal sympathy parameter θ^i, we can determine any voter's *individual probability* (Pr) to vote for incumbent a:

$$Pr[E_t[\nu_t^a] - \alpha\theta^i \geq 0] \quad = \quad \frac{E_t[\nu_t^a] - (-\alpha)}{\alpha - (-\alpha)} \quad = \quad \frac{E_t[\nu_t^a]}{2\alpha} + \frac{1}{2}. \tag{B.6}$$

C Probability of the incumbent to win

Now, we can determine the probability $Prob$ that incumbent a obtains 50% of the votes in period t elections. It is the probability that the mass 1 of voters, i.e. all voters, times their individual probability Pr to vote for incumbent a (as determined in equation B.6) is greater or equal to $\frac{1}{2}$:

$$\text{Prob} \left\{ \frac{E_t[\nu_t^a]}{2\alpha} + \frac{1}{2} \geq \frac{1}{2} \right\} \tag{C.1}$$

Competence extraction mechanism: Voters' expectation of government skills ν_t^a can be obtained by studying the voters' perception of government budget constraint (4) from the main text, which is repeated here, but with competence equation (5) inserted and solved for the true skills in period t:

$$\nu_t^a = G_t^a - \breve{D}_t^a - T(\breve{\gamma}_t) + R(D_{t-1}) - \nu_{t-1}^a. \tag{C.2}$$

Using equation (A.1), equation (C.2) can be expressed in terms of realized $T(\gamma_t)$ and D_t:

$$\nu_t^a = G_t^a - T(\gamma_t) - D_t + R(D_{t-1}) - \nu_{t-1}^a. \tag{C.3}$$

This is the basis for voters to extract information about the incumbent government's competence. Voters can observe the level of discretionary public spending G_t^a as decided and implemented by the government. They also know the government's past skills ν_{t-1}^a and the incurred past deficit and hence repayment costs $R(D_{t-1})$. Their perception of government competence is, however, also affected by expectations; first, their expectation of revenues $T(\breve{\gamma}_t)$, which depends on their growth expectations (which nobody knows for

sure); and second, the expectation of government deficit policy (which can be concealed by using special government funds and accounting tricks). Hence, we obtain:

$$\begin{aligned} E_t[\nu_t^a] = \widehat{\nu_t^a} &= G_t^a - \widehat{D}_t - T(\widehat{\gamma}_t) + R(D_{t-1}) - \nu_{t-1}^a \\ &= \underbrace{G_t^a - D_t - T(\gamma_t) + R(D_{t-1}) - \nu_{t-1}^a}_{\nu_t^a \text{ from (C.3)}} + [T(\gamma_t) - T(\widehat{\gamma}_t)] + [D_t - \widehat{D}_t]; \end{aligned}$$

$$E_t[\nu_t^a] = \widehat{\nu_t^a} = \nu_t^a + [T(\gamma_t) - T(\widehat{\gamma}_t)] + [D_t - \widehat{D}_t]. \tag{C.4}$$

Hence, the incumbent's probability of winning becomes:

$$\text{Prob} \left\{ [\frac{\nu_t^a + [T(\gamma_t) - T(\widehat{\gamma}_t)] + [D_t - \widehat{D}_t]}{2\alpha} + \frac{1}{2}] \geq \frac{1}{2} \right\} \tag{C.5}$$

$$\text{Prob}^{win} = \text{Prob}\left\{ \nu_t^a \geq [T(\widehat{\gamma}_t) - T(\gamma_t) + \widehat{D_t} - D_t] \right\} \tag{C.6}$$

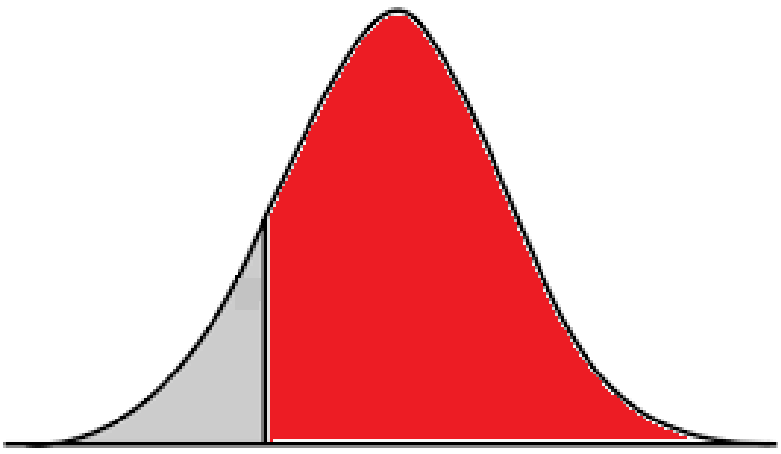
$$= 1 - F\left[T(\widehat{\gamma}_t) - T(\gamma_t) + \widehat{D_t} - D_t\right]. \tag{C.7}$$

Using equation (A.1) again, we get instrument D_t^a back, which is necessary, because we want to use the probability of winning in the incumbent's maximisation problem:

$$\text{Prob}^{win} = 1 - F\left[(T(\widehat{\gamma}_t) - T(\breve{\gamma}_t)) + (\widehat{D_t} - \breve{D}_t^a)\right], \tag{C.8}$$

where $F(\bullet)$ is the distribution function of the skills shock.

FIGURE C.I: BELL-SHAPED COMPETENCE DENSITY FUNCTION AS AN EXAMPLE



The marked area towards the right (dark or red [if in color]) under the density function depicted in the figure corresponds to the probability described by equation (C.6) and by the distribution function representations in equations (C.7) or (C.8). The expected competence overall is greater than the actual competence, if the government's planned deficit $\breve{D}_t^a$ makes up for the voters' *under*estimation in the *shortfall* in tax revenues relative to the government's beliefs (in case of a downturn), $T(\widehat{\gamma}_t) - T(\breve{\gamma}_t)$, plus the voters' expected deficit beliefs $\widehat{D}_t$. Then the probability (see equation (C.8) or the dark [or red] area under the density function) is always greater than $\frac{1}{2}$ and the government's chance to be re-elected is increased. Put differently, the competence perception of voters is increased, if voters believe in smaller revenues and a lower deficit, i.e. they think less resources are available to the government.

D The incumbent's maximisation problem

Prior to elections, incumbent a would like to maximize her utility over periods t and $(t+1)$ by choosing $\breve{D}_t^a$ (see the timing of events as depicted in Table 1 in the main text). Period $(t+1)$ utility is the sum of the utilities for winning and losing the election weighted by the probability determined in Equation (C.8). The incumbent's maximisation problem is:

$$
\begin{aligned}
max_{D_t^a}\ V = \ & max_{D_t^a} \quad V_t^a \ + \ V_{t+1}^a \\
= \ & max_{D_t^a} \quad E_t^a \ \{ \ Y(\gamma_t) - T(\gamma_t) + m(\gamma_t) G_t^a + X \ \} \\
& + \quad E_t^a \ \{ \ \text{Prob}^{win} \ [Y(\gamma_{t+1}) - T(\gamma_{t+1}) + m(\gamma_{t+1}) G_{t+1}^a + X] \ \} \\
& + \quad E_t^a \ \{ \ (1 - \text{Prob}^{win}) \ [Y(\gamma_{t+1}) - T(\gamma_{t+1}) + m(\gamma_{t+1}) G_{t+1}^b] \ \} \\
= \ & max_{D_t^a} \quad Y(\breve{\gamma}_t) - T(\breve{\gamma}_t) + m(\breve{\gamma}_t) E_t^a[G_t^a] + X \\
& + \quad Y(\bar{\gamma}_t) - T(\bar{\gamma}_t) + m(\bar{\gamma}_t) E_t^a[G_{t+1}^j] \quad + \quad \text{Prob}^{win} \ X,
\end{aligned}
$$

where $E_t^a[G_t^a] = T(\breve{\gamma}_t) + \breve{D}_t^a - R(D_{t-1}) + \nu_{t-1}^a$;

$E_t^a[G_{t+1}^j] = T(\bar{\gamma}) - R(\breve{D}_t^a)$

and $\bar{\gamma}$ is the no-downturn (trend) growth.

Recall from Equation (5) in the main text that the incumbent does not know its present or future skills so that the period $(t+1)$ level of discretionary fiscal policy, G_{t+1}^j, for

instance, is indistinguishable between the incumbent and the challenger. Equally, the government does not know the growth shock of the economy in period $(t+1)$. As for deficit repayment in period $(t+1)$, the incumbent expects that she, or the challenger, will have to repay the deficit it plans for period t. (Note also that the discount factor β is ignored, because it does not affect the qualitative properties of the model.)

E Rational Expectations

When there are rational expectations and no economic downturns, nobody will expect a downturn. So, $\widehat{\gamma}_t = \breve{\gamma}_t = \gamma = \bar{\gamma}$; growth expected by voters and the incumbent corresponds to realized growth, which is no-downturn (or trend) growth $\bar{\gamma}$. Also, $\breve{D}_t^a = D_t = (\breve{D}_t^a)^*$, because the incumbent also makes no mistake in estimating government revenues.[38] The FOC becomes:

$$m(\bar{\gamma})R'((\breve{D}_t^a)^*) = m(\bar{\gamma}) \; + \; F'[0]\,X. \tag{E.1}$$

This is the Shi and Svensson (2006) result. Hence, their model is a special case of ours. It is optimal for the incumbent to raise the deficit, but in equilibrium that deficit is expected by voters and the electoral manipulation effect is gone. What remains is PBCs based on deficit expansions in election years.

What is the difference when we allow for downturn expectations, but stick to rational expectations? Downturns would on average be expected correctly and $\breve{D}_t^a = E[D_t] = (\breve{D}_t^a)^*$. We therefore get almost the same FOC:

$$m(\bar{\gamma})R'((\breve{D}_t^a)^*) = m(\gamma) \; + \; F'[0]\,X. \tag{E.2}$$

As in the no-downturn case, the chances of re-election cannot be increased (the electoral manipulation motive is ineffective; i.e. we obtain $F'[0]$). The electoral manipulation motive makes it again optimal for the incumbent to increase deficit-financed spending $(\breve{D}_t^a > 0)$ in times of a downturn. There is now, however, another motive for increasing deficit spending. With a rationally expected downturn, we obtain $m(\breve{\gamma}_t) = m(\gamma_t) > m(\bar{\gamma})$. Hence, the incumbent increases the deficit even more, because she wants to conduct discretionary stabilization policies in addition to the attempted electoral manipulation. Overall, the deficit expansion in an election year (PBC) should, under rational expectations, be even stronger when a downturn is expected.

[38] Later on this will be called *nor*mal times where $(\breve{D}_t^a)^{nor} = {D_t}^{nor}$.

F Perturbation results for Proposition 1

Perturbation results in the Proposition of Section III are obtained by using the Implicit Function Theorem. Derivatives with respect to any exogenous variable x of the FOC around the optimal value $\breve{D}_t^{a^*}$ will be denoted $\frac{\mathrm{d}\frac{\mathrm{d}V}{\mathrm{d}\breve{D}_t^a}|_{\breve{D}_t^{a^*}}}{\mathrm{d}x} =: V_{\breve{D}_t^a x}$.

Proposition 1:

$$\begin{aligned}
\text{(i)}\ \frac{\mathrm{d}\breve{D}_t^{a^*}}{\mathrm{d}\widehat{\gamma}_t} &= \frac{\mathrm{d}(D_t)^{down}}{\mathrm{d}\widehat{\gamma}_t} \\
&= -\frac{V_{\breve{D}_t^a\widehat{\gamma}_t}}{V_{\breve{D}_t^a(D_t)^{down}}} \\
&= -\frac{(1-e)T'(\widehat{\gamma}_t)F''X}{-F''X} \\
&= (1-e)T'(\widehat{\gamma}_t) > 0;
\end{aligned}$$

$$\begin{aligned}
\text{(ii)}\ \frac{\mathrm{d}\breve{D}_t^{a^*}}{\mathrm{d}\widehat{\gamma}_t}|(\mathrm{d}\widehat{\gamma}_t = \mathrm{d}\breve{\gamma}_t) &= \frac{\mathrm{d}(D_t)^{down}}{\mathrm{d}\widehat{\gamma}_t}|(\mathrm{d}\widehat{\gamma}_t = \mathrm{d}\breve{\gamma}_t) \\
&= -\frac{V_{\breve{D}_t^a\widehat{\gamma}_t}}{V_{\breve{D}_t^a(D_t)^{down}}}|(\mathrm{d}\widehat{\gamma}_t = \mathrm{d}\breve{\gamma}_t) \\
&= -\frac{m'(\widehat{\gamma}_t) + (1-e)T'(\widehat{\gamma}_t)F''X}{-F''X} \\
&= \frac{m'(\widehat{\gamma}_t)}{F''X} + (1-e)T'(\widehat{\gamma}_t) > 0, \\
&\qquad \text{if and only if } (1-e) > -\frac{m'(\widehat{\gamma}_t)}{F''XT'(\widehat{\gamma}_t)} \\
&\qquad \Leftrightarrow e > 1 + \frac{m'(\widehat{\gamma}_t)}{F''XT'(\widehat{\gamma}_t)}.
\end{aligned}$$

The theoretical model does not account for the effect a downturn might have on voters' beliefs of the government competence. In our model, voters extract government competence from (unexpected) fiscal policy they observe. If worsening economic conditions were seen as an indication of incompetence, it would be more difficult for the government to convince voters of its competence. Hence the budget cuts would have to be reduced to sustain its winning chances. To preserve the procyclicality result we obtain, voters' underestimation of automatic stabilisation would have to be stronger.

G Additional empirical results

Table G.I presents summary statistics for all variables used in this paper.

TABLE G.I: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max	Source
Primary fiscal balance	1,064	-0.37	4.17	-29.29	30.90	IMF WEO
Realized real GDP growth	1,064	2.91	3.43	-15.10	25.01	IMF WEO
Election dummy	1,064	0.24	0.43	0.00	1.00	DPI
Expected real GDP growth	1,064	3.14	1.88	-4.50	10.10	IMF WEO
Expected downturn dummy	1,064	0.38	0.49	0.00	1.00	IMF WEO
Inflation rate (lagged)	1,064	3.74	3.86	-3.11	34.45	IMF WEO
Natural resources rents (% of lagged GDP)	1,064	2.85	5.12	0.00	43.18	WB WDI
Under IMF program	1,064	0.15	0.36	0.00	1.00	IMF MONA
Age dependency ratio (lagged)	1,064	53.43	10.89	36.32	100.89	WB WDI
Gross public debt (% of GDP) (lagged)	1,064	55.06	35.07	3.66	236.07	IMF WEO
Population growth (lagged)	1,064	0.79	0.98	-3.18	7.76	IMF WEO
KOF Globalisation index (lagged)	1,064	71.15	12.46	37.81	90.24	IMF WEO
Bureaucratic quality	833	3.02	0.92	0.00	4.00	ICRG
Freedom of press	1,064	24.97	10.87	5.00	60.00	Freedom House
core OECD	1,064	0.37	0.48	0.00	1.00	
New democracy	1,064	0.15	0.36	0.00	1.00	
Parliamentary	1,064	0.71	0.46	0.00	1.00	DPI
Plurality	1,050	0.38	0.49	0.00	1.00	DPI

Notes: Based on a panel of 74 democratic countries covering the years 2000-2016.

Table G.II reproduces Table II while using the fiscal balance instead of the primary fiscal balance as dependent variable and is referred to in Footnote 16. Although, as to be expected, the fit slightly deteriotates, the results are qualitatively very similar.

TABLE G.II: USING FISCAL BALANCE INSTEAD OF PRIMARY FISCAL BALANCE AS DEPENDENT VARIABLE

	(1)	(2)	(3)	(4)	(5)
		Downturn exp.	Downturn exp.	Downturn exp.	Growth exp.
Fiscal balance	Only PBC	Countercyclical	No interaction	Baseline	Baseline
Realized growth	0.269***	0.257***	0.259***	0.261***	0.242***
	(5.769)	(5.427)	(5.521)	(5.562)	(4.889)
Election dummy	-0.420***		-0.404***	-0.607***	-0.412***
	(-3.147)		(-2.966)	(-3.821)	(-3.030)
Expected Economy		-0.509	-0.482	-0.612	0.232
		(-1.342)	(-1.267)	(-1.520)	(1.149)
Election x Expected Economy				0.532*	-0.314*
				(1.775)	(-1.918)
Lagged inflation rate	0.0443	0.0410	0.0407	0.0404	0.0421
	(0.753)	(0.726)	(0.718)	(0.714)	(0.729)
Total natural resources rents	0.152	0.155	0.155	0.156	0.139
(% of lagged GDP)	(1.435)	(1.493)	(1.489)	(1.514)	(1.343)
Under IMF program	0.309	0.419	0.395	0.407	0.353
	(0.483)	(0.677)	(0.640)	(0.659)	(0.582)
Lagged age dependency ratio	0.00214	0.0127	0.00949	0.0106	0.00783
	(0.0425)	(0.255)	(0.189)	(0.211)	(0.158)
Lagged public debt (% of GDP)	0.00864	0.00947	0.00946	0.00931	0.0118
	(0.705)	(0.792)	(0.788)	(0.781)	(0.999)
Lagged population growth	-0.189	-0.213	-0.201	-0.201	-0.190
	(-0.672)	(-0.766)	(-0.724)	(-0.721)	(-0.665)
Lagged KOF globalisation index	0.134*	0.127*	0.125*	0.124*	0.138*
	(1.749)	(1.707)	(1.676)	(1.675)	(1.773)
Adjusted R-squared	0.280	0.279	0.281	0.282	0.284
Number of observations	1079	1079	1079	1079	1079
Number of countries	75	75	75	75	75
Number of years	17	17	17	17	17
Hausman test	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan LM test	0.000	0.000	0.000	0.000	0.000
F-test time fixed effects	0.000	0.000	0.000	0.000	0.000
F-test Election				0.001	0.005
F-test Expected economy				0.144	0.163

Notes: Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1. t-statistics are shown inside brackets. p-values are shown for test statistics. Country- and year-fixed effects are not shown.

Table G.III shows results that are discussed in Footnotes 17,19, 20, 24 and 28.

TABLE G.III: Some alternative specifications

Primary fiscal balance	(1) Growth exp. No realized growth	(2) Growth exp. use YRCURNT	(3) Growth exp. 1st growth release	(4) Low growth exp. lower quartile	(5) Growth exp. No controls
Realized growth		0.220***	0.270***	0.234***	0.251***
		(4.832)	(4.996)	(5.260)	(5.804)
Election dummy	-0.350**	-0.384***	-0.383***	-0.580***	-0.421***
	(-2.491)	(-2.753)	(-2.815)	(-3.267)	(-2.973)
Expected Economy	0.356*	0.174	0.126	-0.314	0.0755
	(1.876)	(0.894)	(0.736)	(-1.117)	(0.367)
Election x Expected Economy	-0.311*	-0.315*	-0.306*	0.657*	-0.315*
	(-1.780)	(-1.911)	(-1.817)	(1.678)	(-1.796)
Lagged inflation rate	0.0304	0.0529	0.0495	0.0551	
	(0.553)	(1.012)	(0.929)	(1.027)	
Total natural resources rents	0.173	0.147	0.152	0.150	
(% of lagged GDP)	(1.528)	(1.398)	(1.457)	(1.412)	
Under IMF program	-0.497	-0.350	-0.355	-0.354	
	(-0.877)	(-0.640)	(-0.634)	(-0.614)	
Lagged age dependency ratio	-0.00608	-0.0150	-0.00515	-0.0165	
	(-0.130)	(-0.343)	(-0.115)	(-0.374)	
Lagged public debt (% of GDP)	0.0488***	0.0432***	0.0432***	0.0421***	
	(5.010)	(4.426)	(4.458)	(4.284)	
Lagged population growth	-0.0397	-0.0843	-0.0688	-0.0706	
	(-0.144)	(-0.301)	(-0.252)	(-0.254)	
Lagged KOF globalisation index	0.117	0.127	0.124	0.127	
	(1.328)	(1.508)	(1.440)	(1.502)	
Adjusted R-squared	0.296	0.320	0.320	0.317	0.284
Number of observations	1064	1064	1063	1064	1064
Number of countries	74	74	74	74	74
Number of years	17	17	17	17	17
Hausman test	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan LM test	0.000	0.000	0.000	0.000	0.000
F-test time-fixed effects	0.000	0.000	0.000	0.000	0.000
F-test Election	0.019	0.009	0.009	0.006	0.006
F-test Expected economy	0.125	0.168	0.196	0.220	0.174

Notes: Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1. t-statistics are shown inside brackets. p-values are shown for test statistics. Country- and year-fixed effects are not shown.

Figure G.I shows the distribution of the estimated F-statistics in the Monte Carlo simulation in which elections have been randomly assigned to years. The country-specific observed frequency of elections has been kept constant in these simulations. The vertical line presents the estimated F-statistic (of 5.03) as reported in Column (5) of Table II in the main text. The F-statistics are supposed to follow an F-distribution with (2,73) degrees of freedom. Accordingly, F-statistics larger than 4.91 are significant at the 1% level. We indeed observe that in our simulations about 1% of the placebo election variables produce an F-statistic larger than 4.91. This is discussed in Footnote 26.

FIGURE G.I: MONTE-CARLO SIMULATIONS REGARDING THE ELECTION VARIABLE

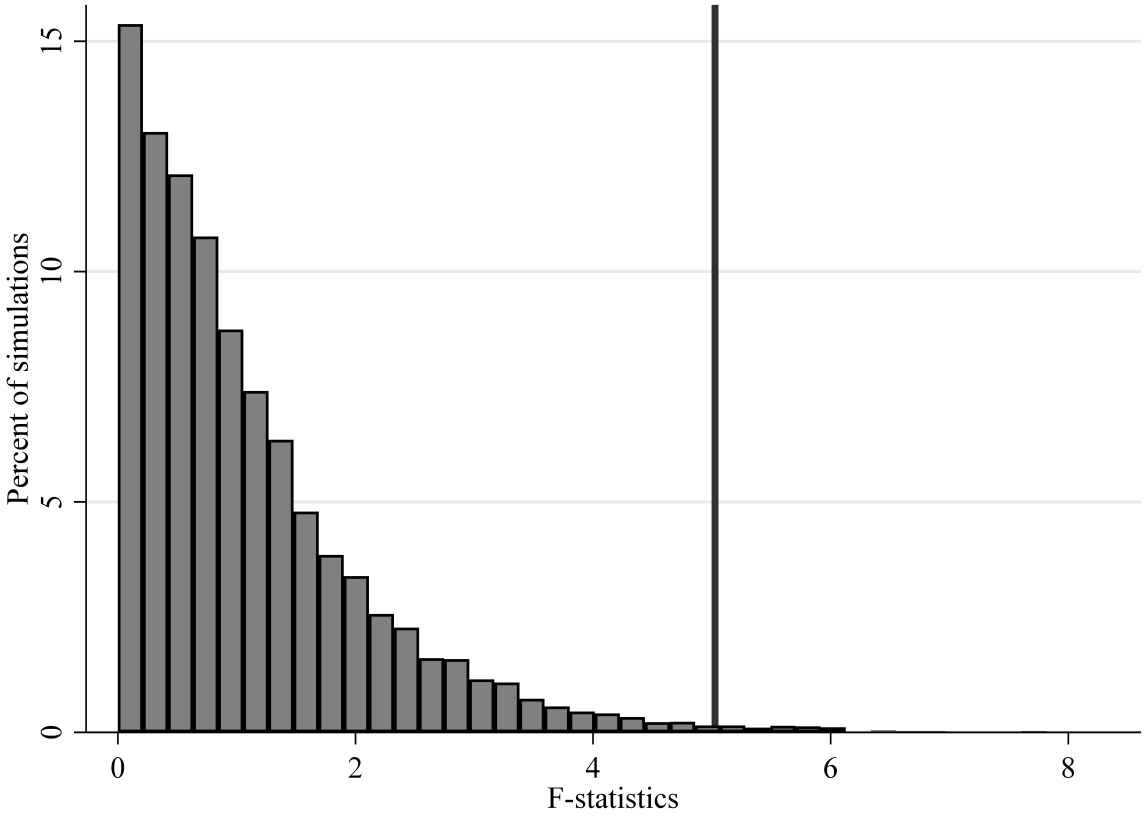


Table G.IV replicates Table III while replacing the expected growth rate with our expected downturn dummy variable. Except for the case in which we focus on regular elections, the interaction term remains significant. The magnitude of the interaction effect is always as such that an expected downturn roughly eliminates the traditional PBC effect. Footnote 27 refers to this table.

TABLE G.IV: SOME ROBUSTNESS CHECK WHEN USING THE EXPECTED DOWNTURN DUMMY

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Downturn exp.	Downturn exp.	Downturn exp.	Downturn exp.	Downturn exp.	Downturn exp.	Downturn exp.
Primary fiscal balance	Baseline	Gen-to-spec.	Pres.-parl.	No early elections	Regular elections	No extremes	More democracies
Realized growth	0.229***	0.240***	0.228***	0.229***	0.227***	0.264***	0.238***
	(5.026)	(4.996)	(4.992)	(4.947)	(5.214)	(5.040)	(5.240)
Election dummy	-0.597***	-0.599***		-0.593***	-0.574***	-0.602***	-0.592***
	(-3.716)	(-3.746)		(-3.432)	(-2.917)	(-3.669)	(-3.626)
Election in presidential system			-0.509*				
			(-1.773)				
Election in parliamentary system			-0.616***				
			(-3.069)				
Expected Economy	-0.625	-0.759*	-0.621	-0.621	-0.516	-0.575	-0.719*
	(-1.601)	(-1.778)	(-1.592)	(-1.635)	(-1.354)	(-1.477)	(-1.828)
Election x Expected Economy	0.591**	0.602**		0.663**	0.480	0.731**	0.509*
	(2.096)	(2.109)		(2.127)	(1.279)	(2.458)	(1.785)
Presidential Election x Exp.Ec.			-0.0571				
			(-0.111)				
Parliamentary Election x Exp.Ec.			0.863**				
			(2.497)				
Lagged inflation rate	0.0512		0.0530	0.0504	0.0623	0.0427	0.0759
	(0.985)		(1.012)	(0.990)	(1.244)	(0.804)	(1.504)
Total natural resources rents	0.159		0.159	0.149	0.148	0.179	0.154
(% of lagged GDP)	(1.538)		(1.532)	(1.449)	(1.446)	(1.629)	(1.338)
Under IMF program	-0.269		-0.264	-0.235	-0.274	-0.448	-0.0517
	(-0.480)		(-0.467)	(-0.435)	(-0.513)	(-0.755)	(-0.0941)
Lagged age dependency ratio	-0.0110		-0.0149	-0.0172	-0.0203	-0.0110	-0.0294
	(-0.254)		(-0.340)	(-0.378)	(-0.458)	(-0.254)	(-0.711)
Lagged public debt (% of GDP)	0.0418***	0.0388***	0.0415***	0.0420***	0.0448***	0.0405***	0.0416***
	(4.321)	(3.693)	(4.343)	(4.407)	(4.644)	(4.161)	(4.220)
Lagged population growth	-0.0912		-0.0895	-0.131	-0.0734	-0.0340	-0.00882
	(-0.329)		(-0.321)	(-0.463)	(-0.288)	(-0.123)	(-0.0310)
Lagged KOF globalisation index	0.115		0.114	0.111	0.139*	0.113	0.147*
	(1.394)		(1.373)	(1.314)	(1.718)	(1.433)	(1.779)
Adjusted R-squared	0.319	0.307	0.319	0.319	0.326	0.306	0.322
Number of observations	1064	1064	1064	1034	994	1034	1020
Number of countries	74	74	74	74	74	74	72
Number of years	17	17	17	17	17	17	17
Hausman test	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan LM test	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-test time-fixed effects	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-test Election	0.002	0.002	0.007	0.003	0.015	0.002	0.002
F-test Expected Economy	0.074	0.062		0.064	0.233	0.040	0.098
F-test pres.el=parl.el			0.072				

Notes: Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1. t-statistics are shown inside brackets. p-values are shown for test statistics. Country- and year-fixed effects are not shown.

Table G.V reports those cases in which other variables are interacted with our election variable that turn out to be insignificant. Footnotes 25, 34 and 37 refer to this table.

TABLE G.V: INCLUDING VARIABLES REPRESENTING ALTERNATIVE FORMS OF CONDITIONALITY THAT TURN OUT INSIGNIFICANT

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		Variable representing the alternative interaction variable							
Primary fiscal balance	Baseline	Realized growth	Natural resources	Under IMF program	Public debt	Population growth	New democracies	Parliamentary	Plurality
Realized growth	0.220***	0.203***	0.220***	0.220***	0.220***	0.220***	0.221***	0.220***	0.221***
	(4.832)	(4.593)	(4.819)	(4.814)	(4.800)	(4.854)	(4.826)	(4.782)	(4.730)
Election dummy	-0.384***	-0.642***	-0.397**	-0.307**	-0.236	-0.244	-0.372**	-0.562**	-0.312*
	(-2.753)	(-2.868)	(-2.297)	(-2.134)	(-1.040)	(-1.264)	(-2.491)	(-2.202)	(-1.680)
Expected Economy	0.174	0.191	0.174	0.180	0.177	0.171	0.174	0.174	0.169
	(0.894)	(0.966)	(0.895)	(0.915)	(0.905)	(0.878)	(0.893)	(0.894)	(0.835)
Election x Expected Economy	-0.315*	-0.399**	-0.315*	-0.343**	-0.322*	-0.315*	-0.316*	-0.313*	-0.344**
	(-1.911)	(-2.140)	(-1.913)	(-2.022)	(-1.937)	(-1.934)	(-1.901)	(-1.896)	(-2.053)
Alternative interaction variable								0.205	-0.799
								(0.380)	(-1.101)
Election x Alternative variable		0.0887	0.00477	-0.616	-0.00266	-0.181	-0.0763	0.242	-0.182
		(1.178)	(0.132)	(-1.597)	(-0.961)	(-1.095)	(-0.182)	(0.720)	(-0.634)
Lagged inflation rate	0.0529	0.0540	0.0531	0.0534	0.0529	0.0542	0.0526	0.0540	0.0435
	(1.012)	(1.037)	(1.016)	(1.018)	(1.011)	(1.036)	(1.000)	(1.021)	(0.780)
Total natural resources rents	0.147	0.149	0.146	0.148	0.147	0.147	0.147	0.148	0.148
(% of lagged GDP)	(1.398)	(1.410)	(1.378)	(1.401)	(1.397)	(1.398)	(1.396)	(1.400)	(1.394)
Under IMF program	-0.350	-0.342	-0.349	-0.225	-0.350	-0.351	-0.350	-0.356	-0.385
	(-0.640)	(-0.627)	(-0.639)	(-0.410)	(-0.640)	(-0.640)	(-0.641)	(-0.647)	(-0.699)
Lagged age dependency ratio	-0.0150	-0.0144	-0.0150	-0.0162	-0.0156	-0.0155	-0.0149	-0.0151	-0.0170
	(-0.343)	(-0.326)	(-0.341)	(-0.368)	(-0.356)	(-0.354)	(-0.339)	(-0.345)	(-0.387)
Lagged public debt (% of GDP)	0.0432***	0.0437***	0.0432***	0.0432***	0.0438***	0.0429***	0.0432***	0.0432***	0.0428***
	(4.426)	(4.399)	(4.438)	(4.417)	(4.460)	(4.434)	(4.424)	(4.436)	(4.287)
Lagged population growth	-0.0843	-0.0770	-0.0837	-0.0847	-0.0846	-0.0656	-0.0840	-0.0834	-0.0816
	(-0.301)	(-0.275)	(-0.298)	(-0.301)	(-0.302)	(-0.235)	(-0.300)	(-0.296)	(-0.290)
Lagged KOF globalisation index	0.127	0.129	0.127	0.127	0.127	0.126	0.127	0.126	0.131
	(1.508)	(1.561)	(1.506)	(1.514)	(1.503)	(1.500)	(1.513)	(1.500)	(1.477)
Adjusted R-squared	0.320	0.320	0.319	0.320	0.319	0.320	0.319	0.319	0.317
Number of observations	1064	1064	1064	1064	1064	1064	1064	1064	1050
Number of countries	74	74	74	74	74	74	74	74	73
Number of years	17	17	17	17	17	17	17	17	17
Hausman test	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Breusch-Pagan LM test	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-test time fixed effects	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
F-test Election	0.009	0.014	0.028	0.019	0.098	0.110	0.011	0.034	0.061
F-test Expected growth	0.168	0.104	0.167	0.134	0.159	0.160	0.171	0.173	0.126
F-test Alternative theory		0.000	0.361	0.244	0.000	0.551	0.856	0.431	0.390

Notes: Standard errors are clustered at the country level. *** p<0.01, ** p<0.05, * p<0.1. t-statistics are shown inside brackets. p-values are shown for test statistics. Country- and year-fixed effects are not shown. In columns (2)-(6), the alternative interaction variable is part of the regular list of explanatory variables. In column (7), the alternative interaction variable does not vary over time and its non-interacted effect is captured by country-fixed effects.