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Fiscal Policy over the Election Cycle in Low-Income Countries

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Fiscal Policy over the Election Cycle in Low-Income Countries[1]

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Abstract

Focusing on Low-Income Countries, we investigate the behavior of fiscal variables during and after elections. The results indicate that during election years, government consumption significantly increases and leads to higher fiscal deficits. During the two years following elections, the fiscal adjustment takes the form of increased revenue mobilization in trade taxes and cuts to government investment, with no significant cuts in government consumption. Using a new dataset on national fiscal rules and IMF programs, we find that both the presence of fiscal rules and IMF programs help dampen the magnitude of the political budget cycle in LICs. We conclude that elections not only imply a macroeconomic cost when they take place but also trigger a painful fiscal adjustment in which public investment is largely sacrificed.

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I. INTRODUCTION

There is growing literature that assesses the detrimental effects of policy volatility on long term growth and aggregate welfare (Fatas and Mihov, 2003; 2012). One source of policy volatility might be related to national elections and the incumbent's incentive to use the economic policy instruments for re-election purposes. Re-election minded incumbents might have an incentive to use policy instruments (fiscal and/or monetary policy) in such a way that during election years, public spending and/or money aggregate increase to satisfy the median voter despite potential adverse effects on fiscal sustainability and aggregate macroeconomic stability.[2] These cycles appear because of asymmetric information where voters are assumed to lack full information about the incumbent's competencies.

Empirical studies on the political business cycle in the 1970s until the 1990s focused almost entirely on advanced economies and generally do not find a regular statistically significant evidence of cycles (Alesina et al., 1997; and Drazen, 2001, provide excellent reviews on the empirical results). However, more recent studies have shown the existence of politically driven economic cycles in developing countries on government current expenditures, indirect tax revenues, and budget deficits (Brender and Drazen, 2005; Shi and Svensson, 2006; Block, 2002; Schuknecht, 2000; Vergne, 2009; Drazen and Eslava, 2010; Ehrhart, 2012), and monetary aggregates (Fouda, 1997; Block, 2002).

However, several limitations and pending issues remain. First, most of these studies did not explicitly focus on Low Income Countries (LICs) but rather pooled together developing countries. Our analysis focuses on LICs because they are particularly vulnerable when conducting election-related cycles. With weaker institutional capacity and poor transparency in budgets, these countries face greater risks of conducting election-related fiscal policies. By depleting their fiscal buffers during election years, LICs further increase their macroeconomic vulnerability and limit their capabilities of guarding themselves against external shocks. Therefore, it is important to better understand the composition of the political budget cycles in this type of counties and consider ways to mitigate related fiscal policy volatility.

Second, although these papers give insight into what happens to specific variables during elections, they do not provide any analysis of the composition of the post-election adjustment. Block (2002) does analyze, in a sample restricted to Sub Saharan Africa, a number of fiscal and monetary variables during and after elections and conclude that government spending shifts toward more visible, current expenditures and away from public investment. However, there are several limitations of his analysis. The period of study is restricted to 1980 to 1995, although for many countries in Sub-Saharan Africa, elections were not competitive before 1990, and even during the first half of 1990s.[3] Moreover, the

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[2] See Brender and Drazen (2008) for an analysis of whether fiscal outcomes affect the re election prospects for incumbents. They find that fiscal deficits do not improve incumbents' re-election prospects in general. In developed countries, a deficit even punishes the incumbent.

[3] Our paper analyzes the whole period after 1990, takes into account both presidential and parliamentary elections, distinguishes between endogenously as well as exogenously timed elections, and performs the empirical analyses on various fiscal outcomes (expenditures, revenues, budget balance).

analysis is limited to presidential systems in order to address issues related to endogenously timed elections, yet it induces an important selection bias.[4] Our paper investigates the behavior of a comprehensive set of fiscal variables during and two years after national elections. It seeks to shed light on the main form of fiscal expansion during the election-year and the composition of the fiscal retrenchment (if any) in the subsequent years. We use a recent dataset, National Elections across Democracy and Autocracy (NELDA) (Hyde and Marinov, 2012) for the election variable and follow the convention in this literature (e.g. Shi and Svensson 2006; Brender and Drazen, 2008) by focusing on the highest level of national elections. Therefore, we only include legislative elections for countries with parliamentary political systems and executive elections for countries with presidential elections.

Third, the paper explores the efficiency of two main constraints on the ability of the incumbent to pursue a politically-motivated fiscal impulse in election years. We formally test whether active national fiscal rules and IMF programs in LICs help dampen the magnitude of the political budget cycle by limiting the incumbent's incentives to significantly modify fiscal policy for re-election purposes. To our best knowledge, there is no empirical work that examines the effects of fiscal rules and IMF programs on the likelihood, the size, and the composition of the political budget cycles in LICs. Inspired by the pioneer work by Rose (2006) in the case of US states, we test the extent to which national fiscal rules matter in LICs using the recently published IMF dataset on fiscal rules (Schaechter et al., 2012). This is an interesting question to investigate as experts always express doubts regarding the effectiveness of these rules in the LICs context.[5] The issue of the effect of IMF programs on the political budget cycle in LICs is also intellectually attractive. With several LICs having experienced various waves of IMF programs over the past decades, one important question could be to which extent IMF program conditionalities have constrained the incumbents' election-year extravagances. We follow the recent work by Hyde and O'Mahony (2010) but focus on the dampening role of IMF programs on the political budget cycle in LICs.

Fourth, taking advantage of the comprehensive dataset on elections (NELDA) compiled by Hyde and Marinov (2012), we are able to address the endogeneity of the election timing within countries. Moreover, we also factor in the self-selection bias in the decision to adopt fiscal rules or participate in IMF programs. The econometric models used control for several variables that ensure that the election effects are well identified so that any shift in fiscal variables associated with a national election must be interpreted as a discretionary fiscal policy by the incumbent. These control variables include external sources of financing

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[4] Block (2002) analyses elections that take place at regular times in presidential systems. However, presidential regimes have endogenously timed elections too, particularly in developing countries (Shi and Svensson, 2006). Also, countries with presidential regimes have characteristics that systematically distinguish them from parliamentary regimes (Persson and Tabellini, 2003).

[5] Debt rules are the predominant national rules for LICs, possibly reflecting institutional weaknesses that would complicate, for example the implementation of expenditure rules or cyclically-adjusted budget balance rules. However, only 4 LICs use national fiscal rules. Other LICs operate under supra-national rules. However, the enforcement and compliance with supranational fiscal rules has been, at best, mixed, in most EU member states, WAEMU countries, and in the CEMAC region (Cabezon and Prakash, 2008; Schaechter et al., 2012).

(grants and loans), the current year business cycle captured by the real GDP growth rate, the inflation rate and other covariates.

Our results indicate that during election years, government consumption increases leading to higher fiscal deficits by about 1 percentage point. During the two years following elections, the fiscal retrenchment takes the form of increased revenue effort in trade taxes and cuts to government investment. However, this post-election partial fiscal adjustment is not translated into reduced envelopes associated with current spending, or enough revenue mobilization efforts to fully offset the deviation allowed during the election-year. The paper also finds that national fiscal rules help to mitigate the cycles in government consumption. Results also uncover that LICs with an active IMF program during a national election experienced a much lower political budget cycle compared to non-IMF program years.

The remainder of the paper is organized as follows. In Section 2, we set up the main empirical framework and present the baseline results. In Section 3, we test the robustness of our baseline results by factoring in the endogeneity of the election timing. Section 4 investigates the role of fiscal rules and IMF programs as mitigating factors. Section 5 concludes.

II. HOW IS FISCAL POLICY CONDUCTED OVER THE ELECTION CYCLE? PRELIMINARY EVIDENCE

This section presents the general framework and the data used to assess the dynamic of fiscal variables during and after the occurrence of a national election in LICs. Several fiscal outcomes (government consumption, public investment, breakdown of tax revenues, and budget balance as percentage of GDP) are used to assess the magnitude of the shocks on the budget during and after elections. The section also discusses the baseline econometric results.

A. Baseline specification and data

This paper estimates several dynamic panel equations linking a given fiscal outcome with the election dummy while controlling for standard determinants of the given fiscal variable. As it has now become standard in the literature on fiscal policy, dynamic equations are specified to control for the inertia characterizing fiscal variables over time. We use a panel dataset that covers 68 LICs over 21 years, 1990-2010. Around 51 of these LICs have had at least one election.[6] A country is classified as Low-Income if it benefits from the IMF Poverty Reduction and Growth Trust (PRGT) as of 2010. The choice of time period is based on available data after the democratic reforms that many countries, particularly in Sub-Saharan Africa, implemented in 1990 with the consequence of making elections more competitive.

The baseline specification is as follow:

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[6] See Appendix Table A1 for the list of countries. The panel data is unbalanced since some countries have missing values.

$$Y_{i,t} = \alpha_i + \sum_{p=0}^{2} \theta_{p+1} ELE_{i,t-p} + \rho Y_{i,t-1} + \mathbf{X}'_{i,t}\mathbf{\Gamma} + \varepsilon_{i,t} \qquad [1],$$

where $Y_{i,t}$ is the fiscal outcome in each country i at year t. $\mathbf{X}_{i,t}$ is the vector of country-level covariates which follow and slightly augment the empirical literature on the determinants of government consumption, tax revenues and budget deficits in developing countries (Rodrik, 1998; Keen and Lockwood, 2010; Combes and Saadi-Sedik, 2006). More specifically, models control for variables such as: real GDP growth rate, inflation rate, trade openness, foreign aid, external debt, natural resource rents, agriculture value added, and fiscal rules. All the fiscal variables, inflation rate, external debt, and foreign aid are drawn from the IMF WEO database whereas real per capita GDP growth series have been downloaded from Penn World Table 7.1 dataset. Natural resource rents and total population data have been drawn from the World Development Indicators database.[7]

The main variables of interest are the three election dummies $ELE_{i,t}$, $ELE_{i,t-1}$, and $ELE_{i,t-2}$, which take the value 1 in case of a national election and 0, otherwise. From equation [1], the three coefficients θ_1, θ_2, and θ_3, measure the percentage point change in the fiscal variable during, one year after, and two years after a national election, respectively.[8] We use the NELDA dataset (Hyde and Marinov, 2012) for the election variables and follow the convention in this literature (e.g. Shi and Svensson, 2006; Brender and Drazen, 2008) by focusing on the highest level of national elections. Therefore, we only include legislative elections for countries with parliamentary political systems and executive elections for countries with presidential elections. The binary election indicator, *ELE*, takes the value 1 depending on the year in the election cycle, and 0 otherwise, as described above. There were 191 national elections during the sample period. Table A1 in the Appendix shows the distribution of national elections across LICs over the period of analysis.

One important contribution of this paper is to provide a comprehensive view of the existence of the political budget cycle on various fiscal variables, from expenditures, to revenues, and to budget balance. We take advantage of the information on fiscal variables available in the IMF datasets on both expenditure and revenues composition within countries. This effort is necessary as many LICs have usually been neglected in previous papers due to lack of data. The IMF dataset we use is a comprehensive source of information on budget composition based on data collected by economist desks in the field and officially approved by countries. Regarding government spending, this paper differentiates between current expenditures

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[7] Descriptive statistics of all the dependent variables are provided in Table A2 in the Appendix.

[8] When investigating how elections affect government spending, one critique may be that the political budget cycles observed are due to the extra cost of running elections, and not necessarily a strategic allocation that is driven by re-election incentives. This is a fair point, though not a real concern in the case for low- income countries. These countries are very poor and highly dependent on aid. Most of the expenses related to elections are also born through aid. Therefore, we investigate the effect of elections on government spending while controlling for aid as a share of GDP. The fact that political budget cycles are observed even when keeping aid constant shows that there is a political incentive even if elections were costly to run.

(proxied by government final consumption) and public investment to assess the effects of elections on the composition of spending.

On tax revenues, we also allow for a certain granularity.[9] Instead of using only overall tax revenue as many other papers in this literature do, we decompose tax revenue into three categories; direct, indirect and trade taxes.[10] We see the merit in distinguishing between these types of taxes since it would make our analysis richer in terms of understanding which taxes the government will put a particular effort on collecting during the different years of the election cycle. Ehrhart (2012) bases her analysis on direct and indirect taxes but we believe that there might be a political economy story behind trade taxes as well. Since trade involves crossing borders, it is potentially easier for the government to vary tax effort on these specific locations on the borders (Stotsky and WoldeMariam, 1997).[11] By looking at tax revenue ratios at a more disaggregated level, our paper provides additional insights regarding the shift in the composition of tax revenue efforts among various types of tax revenues over the whole eletion cycle. The focus on LICs also constitutes one important difference from existing papers.

Equation [1] is a dynamic specification and is used given the strong inertia characterizing the fiscal variables of interest. Government administrations are constrained by budgets, and the current budget largely determines the next period's appropriations. Although such inertia has been argued to provide some stability and predetermines fiscal spending (Schuknecht, 2000), the presence of lagged dependent variables and the country-specific effects renders the OLS estimator biased since the lagged dependent variable is correlated with the error term (Nickell, 1981). In order to deal with this issue, there are two commonly used estimators; the difference-GMM estimator (Arellano and Bond, 1991) and the System-GMM estimator (Arellano and Bover, 1995; Blundell and Bond, 1998). In the difference-GMM estimator, equation [1] is taken in first differences (to remove country fixed effects), and the first differentiated variables are instrumented by their lagged values in level. However, Arellano and Bover (1995) and Blundell and Bond (1998) have shown that when the explanatory variables are persistent over time, the lagged values of variables in level risk to be poor instruments for variables in first-differences. In order to improve the efficiency, they propose the System-GMM estimator, which increases the moment conditions. The equation in levels

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[9] Non-resource tax revenue mobilization is a major challenge in many LICs. While overall tax revenues correspond to more than 50 percent of GDP in some countries in the sample, others barely manage to collect 1 percent of GDP. The mean overall tax revenue in the sample is 14.8 percent. The largest contribution to revenues comes from indirect taxes (mean in the sample is 5.6 percent of GDP), followed by direct taxes (4.4 percent of GDP), and trade taxes (3.8 percent of GDP).

[10] Indirect taxes, which are broad-based taxes on goods and services, are paid by most citizens and correspond to 5.6 percent of GDP in our sample. Direct taxes represent taxes on income, profits and capital gains, correspond to 4.4 per cent of GDP and are mostly paid by corporations since personal income taxes are almost non-existent. Finally, trade taxes, which correspond to 3.8 percent of GDP, are taxes on trade and international transactions paid by corporations.

[11] For the Indian states, Khemani (2004) provides an analysis with subcategories of commodity taxes; sales, excise and trade. Data is not available on this level for the 68 low-income countries that we study in this paper.

and the equation in differences are combined in a system, and then are estimated with an extended GMM system which allows for the use of lagged differences and lagged levels of the explanatory variables as instruments. Hence, the System-GMM estimator controls for unobserved country-specific effects as well as potential endogeneity of the explanatory variables. The paper uses the Windmeijer's (2005) correction of standard errors for finite sample bias. Two specification tests check the validity of the instruments. The first is the standard Sargan/Hansen test of over-identifying restrictions. The second test examines the hypothesis that there is no second-order serial correlation in the first-differenced residuals. The number of lags of the explanatory variables used as instruments is usually limited to reduce the 'over-fitting' bias (Roodman, 2009).

B. Baseline estimates

We first report the baseline findings for the expenditure side, thereafter for the revenue side, and finally for the fiscal balance.

Composition of expenditures

Table 1 presents the results for the System-GMM estimator for the various fiscal outcomes. Column 1 reports that government consumption increases during election year, with no significant decrease the two years after elections. The coefficient on ELE_t is significant and shows that on average, consumption as a share of GDP increases by 0.8 percentage point during the election year. The results for government investment is reported in column 2, which shows that government investment as a share of GDP decreases by almost 0.4 percentage point the year following the election. This result is statistically significant. Although the sign of the coefficients for ELE_{t-2} is also negative, it is not significant.

These results indicate that political budget cycles on government expenditures are present in LICs. More specifically, the governments in LICs tend to increase consumption expenditures during election years while investments are unchanged. The post-election adjustment takes the form of decreased government investment. These results confirm previous claims (Vergne, 2009) that government spending shifts towards more visible consumption during election years. In addition, we show that the negative effect on government investment appears with a lag and implies that publicly financed projects, for example in infrastructures, stagnate the year after elections. From the politicians' point of view, this is strategic, since a stagnation of investments during election years would probably have a negative impact on re-election prospects. Although we do not study it explicitly in this paper, this post-election stagnation in investments may have serious consequences for economic growth.

[Table 1 about here]

Composition of tax revenues

Column 3 shows that the effort put by the government in collecting overall taxes improves significantly in the years following an election. A look at the composition of tax revenues reveals a more detailed picture of the governments' effort in resource mobilization over the election cycle. In column 4, where indirect taxes (taxes on goods and services) are reported, the results do not suggest the existence of an election related cycle. Although the coefficient

on the ELE_t variable is negative, it is not statistically significant. The coefficients on ELE_{t-1} and ELE_{t-2} are not significantly different from zero either. These results contrast with recent findings by Ehrhart (2012) who finds a significant and negative impact of elections on indirect taxes using a broader sample of all developing countries. Our results suggest the opposite, implying that LICs' tax policy differs from other developing countries over the election cycle. The differences of results compared with existing studies can be explained by at least two factors. First, we have decomposed total tax revenues into various components to get a better granularity and found that at least for LICs, the impact of national elections is observed in the case of trade tax revenues during the run to rebuild eroded fiscal buffers. Second, our results provide a more detailed assessment of the impact of elections on government indirect tax revenues since it does not pool together taxes on goods and services with trade taxes, an approach which is different from previous papers. Our results show that within the broad definition of indirect taxes, it is the trade tax revenue ratio which matters and not the taxes on goods and services.

In addition, the effort put on collecting direct taxes (on income, profits, and capital gains) does not either vary along the election cycle, as shown in column 5. Column 6 shows the results for tax revenues on international trade. Econometric estimates indicate that the government changes its effort in collecting trade taxes during election years. There is a slight (barely statistically significant) increase in trade taxes-to-GDP of about 0.11 percentage point of GDP during the election year, an effort which is maintained and strengthened during during the two post-election years. This explains why total tax revenues increase one and two years after elections. Our results clearly suggest that LICs tend to partially rebuild the eroded policy buffers on the revenue side through increased discretionary tax revenue mobilization on international trade. This may be due to the fact that trade taxes tend to be relatively easier to collect in LICs, as these countries tend to be more challenged than advanced and emerging economies in terms of revenue mobilization, particularly in terms of domestic tax revenues.

Overall fiscal balance

The dynamic of the overall fiscal balance throughout the election cycle mirrors the behavior of the expenditure and revenue variables (column 7). The overall fiscal deficit ratio increases by about 1 percentage point of GDP during the election year, and this is mainly driven by the observed increase in government current spending.[12] In the post-election years, there is certainly an attempt to rebuild the eroded fiscal buffers, but it does not appear large and balanced enough to generate any significant statistical impact. The decline in public investment and the observed tax revenue increases in the post-election years constitute the main adjustment package in LICs, but fall short of fully rebuilding the eroded fiscal buffers. The irreversibility of government current expenditures represents the main factor behind the protracted pressure exerted by elections on the overall fiscal performace throughout the years.

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[12] The magnitude of the deviation in the fiscal balance attributed to elections is similar to previous results by Shi and Svensson (2006).

III.   DEALING WITH THE ENDOGENEITY OF ELECTION TIMING

One potential critique of the baseline results above is that we treated the election variables as exogenous relative to fiscal policy, which may not be the case. Both timing of elections and fiscal policies could, for example, be influenced by a number of (unobserved) variables which are not included in the regressions. There may be a bias if, for example, the timing of the election is strategically chosen by the incumbent politician to coincide with favorable economic conditions. One way to address this potential bias is to distinguish between elections whose timing is predetermined relative to current fiscal policies (Shi and Svensson, 2006). Using information provided in the NELDA dataset, we classify an election as predetermined if the election took place on the date fixed by an established constitution or procedure. Conversely, the election timing is considered endogenous if the election was early or late relative to the date it was supposed to be held per established procedure.[13]

We create new election indicators, $ELEPRE_{i,t}$ and $ELEENDO_{i,t}$ to replace $ELE_{i,t}$. The variable $ELEPRE_{i,t}$ equals 1 in country i and year t when there was a predetermined election, and 0, otherwise. The variable $ELEENDO_{i,t}$ equals 1 in country i and year t if an election that was not predetermined took place, and 0 otherwise. The indicators for the post-election were coded accordingly. Among the 191 elections in our sample, 56.5 percent are classified as predetermined.[14] We re-estimate the baseline regressions with the new election indicators. If the baseline results are robust, they should also hold for predetermined elections. The revised model takes the following form:

$$Y_{i,t} = \alpha_i + \sum_{p=0}^{2} \phi_p \, ELEPRE_{i,t-p} + \sum_{p=0}^{2} \kappa_p \, ELEENDO_{i,t-p} + \rho Y_{i,t-1} + \mathbf{X}'_{i,t}\mathbf{\Gamma} + \varepsilon_{i,t} \qquad [2],$$

The coefficients of interest are ϕ_p which capture the impact of elections after ruling out the effects of elections that occurred in an unpredicted schedule compared to the constitutional calendar.

Table 2 presents the econometric results. They are very similar to the previous ones in terms of magnitude and impacted fiscal outcomes. Government current expenditures significantly deviate from their normal level during election years, leading to an increase in the overall fiscal deficit of about 1.3 percentage point of GDP. The post-election years are characterized by an effort to partially rebuild fiscal buffers but this comes with a price. Public investment is reduced by about 0.4 percentage point of GDP. The result that governments increase their effort in the mobilization of trade tax revenues still holds. Two years after the election, our estimates indicate a reduction of the fiscal deficit by about 0.5 percentage of GDP.

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[13] This coding is done using the variable *NELDA6* in the NELDA dataset. An established procedure is interpreted as according to the constitution.

[14] Out of the 191 elections, 108 are classified predetermined and 38 endogenous. We were unable to classify 45 elections.

[Table 2 about here]

IV. DOMESTIC AND INTERNATIONAL SCRUTINY

There is an ongoing literature which has tried to identify the role played by various macroeconomic factors on the magnitude of political budget cycles in developing countries. O'Mahony (2010) examined the role played by openness (globalization). Vergne (2009) and Faye and Niehaus (2011) considered the role of media and financing variables such as natural resource rents and official development assistance as potential factors. Recently, Combes, Ebeke and Maurel (2013) examined the role of migrant remittance inflows on the magbitude of the political budget cycles in developing countries. This section examines two main factors not fully analyzed in the LICs context, as means to dampen the electoral fiscal manipulation. We distinguish between a domestic institutional constraint on fiscal policy and the participation into a program with the International Monetary Fund (IMF).

A. Do fiscal rules matter?

The political budget cycle may be reduced in presence of national fiscal rules if the rules prevent the incumbent from fiscal extravagances in the time of national elections. We focus on national fiscal rules as they are more effective and enforced than supranational rules in the LICs context. However, the enforcement and compliance with supranational fiscal rules has been, at best, mixed, in most EU member states, WAEMU countries, and in the CEMAC region (Cabezon and Prakash, 2008; Schaechter et al., 2012).

One main challenge to isolate the impact of fiscal rules is to address the obvious endogeneity (self-selection) of the adoption and the stability of these rules. This issue will be addressed in the empirical specifications. The literature on the role of fiscal rules on the reduction of political budget cycles is not large. Based on a study on the US states, Rose (2006) shows that balanced budget rules help dampen politically driven cycles in overall spending, taxes and deficits. Not surprisingly, Rose (2006) finds that the stricter the rules are, the weaker are the cycles. Inspired by this study, we test whether national fiscal rules act as a domestic scrutiny factor which helps dampen political budget cycles in LICs. We have not come across any article testing the dampening ability of fiscal rules in LICs context. However, it is important to be prudent when interpreting the results as only few LICs use national fiscal rules with limited enforcement or compliance.

The econometric model exploits the interaction term between the national election dummy and a dummy for the presence of a fiscal rule to quantify the dampening impact (if any) of the presence of a national fiscal rule during election times. Because the adoption and the presence of a fiscal rule are likely to be non random, we address this issue by using a dummy variable capturing whether a national fiscal rule has been in place for at least 5 years. Basically, the strategy consists in interacting the election dummy with the 5-year lag of the fiscal rule dummy (*FR*).[15] More formally, the specification is the following:[16]

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[15] The reader may wonder whether the proposed identification strategy to assess the impact of fiscal rule is the best available. For example, it could be interesting to proceed with an instrumental variable strategy to tackle

$$Y_{i,t} = \alpha_i + \left(\theta_1 + \sigma_1 FR_{i,t-5}\right)ELE_{i,t} + \sigma_2 FR_{i,t-5} + \rho Y_{i,t-1} + \mathbf{X}'_{i,t}\mathbf{\Gamma} + \varepsilon_{i,t} \quad [3],$$

The magnitude of the political budget cycle on public consumption in absence of a national fiscal rule is measured by θ_1. In presence of a rule, the size of the electoral fiscal manipulation is captured by $\theta_1 + \sigma_1$. The main hypothesis is that: $\theta_1 > 0$; $\sigma_1 < 0$. This suggests that the political budget cycle is higher when the country lacks a fiscal rule compared to the case where the country has one.

Estimation results are presented in Table 3. Results indicate that for LICs without national fiscal rules (the vast majority of countries), the size of the political budget cycle on government consumption is around 1 percent of GDP. This result is not that different from the previous estimations performed early in the paper. However, once the election dummy is interacted with the national fiscal rule dummy, the coefficient turns negative and statistically significant. However, the significance of the coefficient of the interaction term is low, suggesting that the strength of the dampening role of national fiscal rules is still low in LICs possibly due to the lack of enforcement, compliance and limited numbers of LICs using national numerical fiscal rules . When focusing on the marginal effect of elections in LICs having adopted national fiscal rules, our coefficient estimates in Table 3 suggest that the size of the fiscal deviation during an election year is close to 0.13 percentage point of GDP (1-0.87 = 0.13).

B. IMF program engagement

The paper further tests whether countries engaged in programs with the IMF are less likely to experience a political budget cycle. In other words, we assess whether IMF programs act as an international scrutiny mechanism which constraints incumbents to use fiscal policy for electoral motives. There are several reasons why IMF programs may contribute to reduce the magnitude of the political budget cycle in LICs. LICs that enter into IMF agreements are subject to conditionality. One key component of programs' conditionality is the adoption of sustainable macroeconomic policies. As a result, if implemented, conditionality constrains government finances, making it more difficult for governments to engage in expansionary fiscal policies during elections. This issue has been discussed and tested by Hyde and O'Mahony (2010) in the context of a large panel of developing countries (94 countries) mixing LICs with other developing nations. The authors find that IMF scrutiny of the economy and pressure on governments to maintain a sustainable fiscal policy make pre-

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the potential endogeneity of fiscal rules. However, finding such instrumental variable, which needs to be fully exogenous to fiscal outcomes, is very challenging. Another strategy may also be to pursue a two-step approach where a selection equation explaining the decision to have a fiscal rule is estimated and used to control for the self-selection bias in the fiscal equation. However, with such a small number of LICs having national fiscal rules, it does not seem suitable to perform the two-step approach.

[16] Also, we will disregard the post-election dummies used before and concentrate the analysis on the election year only since the cycles in government consumption has been observed during election year and cycles on revenues are less robust. Moreover, we do not need to break down the fiscal rule dummy into subcomponents as national fiscal rules in LICs are primarily dominated by debt rules.

electoral manipulation of government balance less likely. This result appears robust to the treatment of the selection bias characterizing the decision to request a program with the Fund. Our paper will follow the pioneer work by Hyde and O'Mahony (2010) in the case of a large sample of countries but will depart from it in several ways which will be outlined below.

One important issue in this literature is the potential endogeneity of IMF programs with respect to both elections and macroeconomic outcomes. Scholars have argued that governments prefer not to be under IMF agreements during elections (Dreher, 2004), and research has shown that governments are more likely to enter into IMF agreements after elections (Przeworski and Vreeland 2000). We will explore this issue in details in the first-stage selection equation estimated to purge the endogeneity of IMF programs with respect to both election timing and macroeconomic developments.[17] Our paper therefore tries to robustly investigate the effect of IMF programs on the size of the political budget cycle by focusing only on LICs.[18] We also depart from the previous literature as the main dependent variable is government consumption, the budget item which was found to be strongly correlated with elections throughout the paper. As we will explain further below, the selection bias associated with Fund programs has been carefully accounted for using an improved version of the standard first-stage *probit* model identifying the correlates of Fund programs which take into account LICs specifiities.

To assess the effect of IMF programs (*IMF*), the following model is specified:

$$Y_{i,t} = \alpha_i + \left(\theta + \gamma_1 \, IMF_{i,t}\right) ELE_{i,t} + \gamma_2 \, IMF_{i,t} + \gamma_3 \, \widehat{\lambda}_{i,t} + \rho Y_{i,t-1} + \mathbf{X}'_{i,t}\mathbf{\Gamma} + \varepsilon_{i,t} \qquad [4],$$

where $\widehat{\lambda}_{i,t}$ is the selection-correction factor associated with the IMF program dummy. More specifically, the model includes the selection factor besides the IMF dummy so that γ_1 can be interpreted with limited risks of selection bias. The magnitude of the political budget cycle on public consumption in absence of an IMF program is measured by θ. In presence of an IMF arrangement, the size of the electoral fiscal manipulation is captured by $\theta + \gamma_1$. The main hypothesis is that: $\theta > 0$; $\gamma_1 < 0$. This suggests that the political budget cycle is higher when the country is not currently under an arrangement with the IMF compared to the case where the country is engaged with the IMF.

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[17] However, the strength of the bias due to the potential link between IMF arrangement and election is attenuated by one stylized fact. As discussed by Hyde and O'Mahony (2010), the majority of elections in the developing world are held while countries are already under an IMF agreement. LICs are more likely to have intensive program engagement due to their prolonged balance of payments needs.

[18] This literature has typically used country samples that mix LICs and middle-income economies, which tends to overlook the distinct characteristics of LICs as well as the distinct nature and objectives of Fund engagement in these countries. LICs face a number of challenges that differentiate them from other economies such as the nature of shocks, access to financing, and long term challenges (poverty reduction, infrastructure needs, institutional and capacity building, …) which typically imply that the type of Fund facilities and their goals are quite different than other Fund's financial instruments to emerging or advanced countries.

The correction of the self-selection associated with the decision to participate in an IMF program proceeds as follow. A pooled probit model on the determinants of IMF programs in LICs over the period 1990-2010 is estimated. Standard determinants of IMF programs include previous levels of: external reserves, fiscal balance, trade openness, inflation rate. We also add to this list the size of natural resource rents, and a dummy variable indicating whether a national election is scheduled in the next year, and the election variable crossed with an indicator of electoral competitiveness. These two variables are added to the selection model to capture to what extent LICs are less likely to request IMF programs in the year prior to national elections, conditional on the degree of competitiveness in the considered election.[19] This is an improvement to the literature having dealt with the selection bias associated with the decision of requesting a Fund program. Controlling for resource rents, for the electoral calendar, and for the degree of electoral competitiveness before the year of Fund programs help factor in some specificities in the LICs context.

Once the probit is estimated on the group of control variables $\mathbf{Z}_{i,t}$, the selection correction factor is computed as follows (see Maddala, 1983; Vella and Verbeek, 1999; Keen and Lockwood, 2010):[20]

$$
\widehat{\lambda}_{i,t} =
\begin{cases}
\dfrac{\phi\left(\mathbf{Z}'_{i,t}\widehat{\varphi}\right)}{\Phi\left(\mathbf{Z}'_{i,t}\widehat{\varphi}\right)}, & IMF_{i,t} = 1, \\[2ex]
-\dfrac{\phi\left(\mathbf{Z}'_{i,t}\widehat{\varphi}\right)}{1-\Phi\left(\mathbf{Z}'_{i,t}\widehat{\varphi}\right)}, & IMF_{i,t} = 0,
\end{cases}
$$

where $\phi(\cdot)$ and $\Phi(\cdot)$ represent the probability density and cumulative density functions of the standard normal distribution, respectively.

Estimation results are presented in Table 3. Results point to a negative effect of IMF programs on the magnitude of the political budget cycle on consumption in LICs. In absence of an IMF program, government consumption deviates by about 1 percentage point of GDP during national elections whereas the size of the deviation drops to 0.34 percentage point of GDP in presence of an active IMF program. Results also indicate a positive and significant effect of the selection factor $\left(\widehat{\lambda}_{i,t}\right)$, which suggests that it was crucial and legitimate to account for the selection bias in the estimates. Our results have indicated that both fiscal rules

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[19] The selection equation also helps deal with the potential bias which could arise if IMF lending were significantly higher during months prior to elections. Dreher and Vaubel (2004) found that it is indeed the case. We rule out this effect by always controlling for official development assistance in the regressions and by explictly controlling for the electoral calendar and timing in the selection equation. There are thefore limited risks that our results are fully driven by IMF lending dynamics before and after elections. Moreover, the direction of this bias would work in lowering the estimated effect of the IMF programs leading to underestimnated effects instead of inflated effects.

[20] Results of the *probit* selection model identifying the determinants of LICs' participation into IMF programs are available in Appendix A3.

and IMF programs play an important role in LICs in limiting the propensity of incumbents to allow large deviations in government consumption during election years as means to maximize their chance of re-election. Although the results seem appealing, they should be interpreted with caution. Indeed, the coefficients associated with the interaction terms of elections crossed with fiscal rules and IMF programs exhibit a low significance, which suggests that the dampening role is at play but it is not strong enough to generate more precise estimates. There are several reasons which can be evoked to explain these results. First, only few LICs (4 LICs to be precise) have adopted active national fiscal rules, an issue which certainly contributes to reduce the explanatory power of the fiscal dummy in the model. It could also be that these rules are not sufficiently enforced, exacerbating the credibility problems faced by these institutional arrangements in many LICs. Second, despite the fact the selection equation associated with IMF programs explicitly controls for several covariates, the self-selection bias is always only partially controlled for. In addition, as the majority of elections in LICs are held while countries are already under an IMF agreement, this limits the statistical power of the IMF program dummy in dampening the political cycle.

V. CONCLUDING REMARKS

This paper investigates political budget cycles in LICs by analyzing the behavior of the following variables throughout the election cycle: government consumption, government investment, composition of tax revenue, and fiscal balance. We find that during election years, government consumption increases and leads to higher fiscal deficits. During the two years following elections, fiscal adjustment takes the form of increased revenue effort in trade taxes and cuts to government investment. We showed that the size of the political budget cycle is much lower in countries having adopted national fiscal rules or those participating in IMF programs during the election period.

We analyzed the behavior of these variables throughout the election cycle because the way the governments decide to manipulate fiscal policy may have implications for future economic growth. The results in this paper show that elections not only imply a macroeconomic cost when they take place, but also trigger a painful fiscal adjustment in which public investment is largely sacrificed and trade put at risk. Although economic growth was not explicitly studied in this paper, the different policy tools that low-income countries seem to be using during the political budget cycle indicate a negative effect on economic growth. One reason is due to the overall volatility in fiscal policy that elections trigger. The other reason is because trade may be hampered by the post election increased effort in mobilizing trade taxes. Similarly, the decrease in investment may directly hamper growth.

This paper used a novel dataset on fiscal rules to highlight that such rules may help to dampen election-driven cycles in the budget. Although the mere existence of fiscal rules does not mean that they will be enforced, it may be a first step toward tying the hands of a politician or government incentivized to conduct political budget cycles. The paper also showed that IMF programs in LICs have contributed to lowering the magnitude of the political budget cycle.

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Appendix

Table A1: List of countries in the sample and number of national elections by country, 1990-2010

Country		Country		Country	
Afghanistan	2	Gambia	4	Nepal	3
Armenia	5	Georgia	5	Nicaragua	4
Bangladesh	3	Ghana	5	Niger	4
Benin	4	Guinea	4	Nigeria	4
Bolivia	6	Guinea-Bissau	5	Papua New Guinea	4
Burkina Faso	4	Haiti	6	Rwanda	2
Burundi	2	Honduras	5	Senegal	3
Cambodia	3	Kenya	4	Sierra Leone	3
Cameroon	3	Kyrgyz Rep.	5	Solomon Islands	1
Central African Rep.	4	Lesotho	3	Tajikistan	4
Chad	3	Liberia	2	Tanzania	5
Comoros	5	Madagascar	5	Timor-Leste	1
Congo, Dem. Rep.	1	Malawi	4	Togo	4
Congo, Republic	3	Mali	4	Uganda	3
Cote d'Ivoire	4	Mauritania	5	Uzbekistan	3
Djibouti	3	Moldova	8	Yemen	2
Ethiopia	3	Mozambique	4	Zambia	5

Notes: We only include legislative elections for countries with parliamentary political systems and executive elections for countries with presidential elections. Source: National Election Around the World (NELDA) dataset.

Table A2. Descriptive statistics. LICs sample, 1990–2010.

Variable	Obs	Mean	Std. Dev.	Min	Max
Election dummy	1330	0.13	0.34	0	1
Government consumption ratio	1145	15.20	7.52	1.53	62.17
Public investment ratio	1044	7.37	5.69	0.08	59.85
Total tax revenue ratio	832	14.68	6.51	1.27	58.11
Taxes on goods and services ratio	666	5.47	3.19	0.04	16.96
Direct taxes ratio	697	4.31	3.07	0.01	23.89
Trade taxes ratio	666	3.88	2.87	0.00	14.12
Overall fiscal balance ratio	1004	-2.48	6.74	-72.35	61.83
Real per capit GDP growth	1273	1.23	7.68	-71.24	64.20
Official Development Assistance ratio	1276	13.22	11.74	-2.56	146.89
External PPG debt ratio	1226	85.47	110.30	0.58	2394.86
Trade openness ratio	1179	76.28	37.18	0.19	213.22
ln (100+Inflation)	1279	5.40	0.65	4.61	10.35
National fiscal rule dummy	1330	0.02	0.14	0	1
ln (Total population)	1330	15.16	1.92	11.13	18.86
Total natural resource rents ratio	1330	4.85	12.29	0	105.73
Reserve coverage (in month of imports)	1204	3.50	2.58	0.00	19.75
Political globalization (from The KOF Institute)	1313	46.40	18.46	6.59	90.90
Change in real percapita GDP growth	1266	0.00	10.00	-60.55	132.33

Note: All variables expressed as "ratios" denote nominal values normalized by nominal GDP of each country.

Table A3: Correlates of the participation into Fund programs in LICs.

Dependent variable: Fund program dummy Period: 1990–2010.	LPM (1)	Probit (2)
International reserve coverage (in months of imports)$_{,t-1}$	0.00496	-0.0425**
	[0.0152]	[0.0178]
Fiscal balance-to-GDP$_{,t-1}$	0.00286	-0.00296
	[0.00349]	[0.00966]
ln(100+Inflation) $_{,t-1}$	-0.0494	0.00539
	[0.0867]	[0.0650]
Official development assistance-to-GDP$_{,t-1}$	0.00882***	0.0417***
	[0.00261]	[0.00547]
ln(Population) $_{,t-1}$	-0.0856	0.146***
	[0.313]	[0.0307]
(Election*Competition) $_{,t+1}$	0.0408**	0.163**
	[0.0198]	[0.0665]
Election dummy$_{,t+1}$	-0.244*	-0.790*
	[0.133]	[0.410]
Political globalization (KOF Institute index) $_{,t}$	-0.00115	0.0204***
	[0.00382]	[0.00325]
Change in real per capita GDP growth $_{,t}$	-0.00204**	-0.00654
	[0.000880]	[0.00499]
Intercept	2.085	-3.430***
	[4.483]	[0.532]
Country-fixed effects	Yes	No
Observations	916	916
R-squared	0.043	0.177
Number of countries	63	63

Note: Robust standard errors in brackets. *** $p<0.01$, ** $p<0.05$, * $p<0.1$. LPM: Linear probability model with country-fixed effects. The variable "Competition" is not included additively because of its mechanical perfect colinearity with the election dummy variable.

Regression results

Table 1. Estimates of the Political Budget Cycle across selected Fiscal Variables in LICs: 1990–2010.

	(1) G	(2) I	(3) T	(4) TGS	(5) TD	(6) TT	(7) Bal
Election $_t$	0.841***	-0.194	0.209	-0.075	0.102	0.112*	-1.047*
	[0.258]	[0.210]	[0.152]	[0.061]	[0.083]	[0.066]	[0.542]
Election $_{t-1}$	-0.059	-0.371**	0.340*	0.134	0.023	0.173***	0.275
	[0.223]	[0.159]	[0.187]	[0.084]	[0.084]	[0.064]	[0.330]
Election $_{t-2}$	-0.049	-0.081	0.290*	0.026	-0.046	0.212*	-0.262
	[0.197]	[0.208]	[0.159]	[0.101]	[0.061]	[0.114]	[0.322]
Lagged dependent variable	0.730***	0.813***	0.893***	1.029***	0.831***	0.976***	0.260***
	[0.103]	[0.089]	[0.168]	[0.057]	[0.105]	[0.064]	[0.094]
Real per capita GDP growth	-0.032	0.027	0.041**	0.033***	-0.003	0.016***	0.084***
	[0.034]	[0.023]	[0.020]	[0.006]	[0.010]	[0.006]	[0.031]
Official development assistance-to-GDP	0.073**	0.038**	-0.001	-0.000	-0.002	0.005	-0.019
	[0.037]	[0.015]	[0.014]	[0.003]	[0.003]	[0.003]	[0.018]
External debt-to-GDP	-0.002	-0.001	-0.004	-0.000	-0.001	-0.001	-0.005
	[0.003]	[0.001]	[0.004]	[0.001]	[0.001]	[0.001]	[0.003]
Trade openness	0.028**	0.011**	0.013	0.000	0.008*	0.002	0.014
	[0.012]	[0.005]	[0.012]	[0.002]	[0.004]	[0.001]	[0.010]
ln (100+Inflation rate)	-0.149	0.419	-0.049	0.005	0.046	-0.164*	0.582
	[0.443]	[0.335]	[0.214]	[0.083]	[0.088]	[0.094]	[0.458]
Fiscal rule dummy $_{t-1}$	1.625***	0.345	0.179	-0.036	0.281	-0.232**	-0.400
	[0.470]	[0.327]	[0.541]	[0.170]	[0.206]	[0.093]	[1.603]
Natural resource rents-to-GDP			-0.003	-0.005	0.010	-0.003	
			[0.006]	[0.005]	[0.013]	[0.003]	
ln (Total population)			0.020	-0.010	0.035	0.004	
			[0.104]	[0.029]	[0.023]	[0.049]	
Intercept	1.999	-2.086	0.760	0.040	-0.556	0.711	-5.941**
	[2.348]	[1.785]	[2.320]	[0.590]	[0.653]	[1.225]	[2.385]
N	1234	1140	815	679	705	679	970
No of countries	60	57	56	52	53	52	61
m1:p-value	0.004	0.001	0.003	0.000	0.022	0.000	0.017
m2:p-value	0.516	0.416	0.530	0.350	0.294	0.104	0.260
Hansen OID: p-value:	0.829	0.060	0.031	0.839	0.249	0.540	0.114
No of instruments	17	17	21	21	21	25	23

Note: Standard errors in brackets. *G*: Government consumption ratio; *I*: Public investment ratio; *T*: Total tax revenue ratio; *TGS*: Tax revenues on goods and services ratio; TD: Tax revenues on income; *TT*: Trade tax revenues ratio; *Bal*: Overall fiscal balance ratio. All equations are estimated using the two-step System-GMM with Windmeijer (2005) correction of standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 2: Addressing the endogeneity of the election timing in LICs. 1990–2010.

	(1) G	(2) I	(3) T	(4) TGS	(5) TD	(6) TT	(7) Bal
Predetermined election $_t$	0.758**	-0.231	0.095	-0.074	0.147	0.098*	-1.278**
	[0.327]	[0.183]	[0.167]	[0.089]	[0.116]	[0.055]	[0.618]
Predetermined election $_{t-1}$	0.224	-0.398**	0.131	0.053	0.093	0.112*	0.253
	[0.305]	[0.188]	[0.255]	[0.108]	[0.086]	[0.058]	[0.438]
Predetermined election $_{t-2}$	-0.031	-0.159	0.076	-0.020	-0.057	0.171*	-0.466*
	[0.218]	[0.308]	[0.148]	[0.108]	[0.096]	[0.094]	[0.278]
N	1131	1043	758	633	657	631	900
No of countries	60	57	56	52	53	52	61
m1:p-value	0.007	0.002	0.004	0.000	0.009	0.001	0.019
m2:p-value	0.653	0.390	0.236	0.269	0.250	0.089	0.210
Hansen OID: p-value:	0.583	0.022	0.031	0.864	0.238	0.705	0.217
No of instruments	20	20	24	24	24	28	20

Note: Windmeijer (2005) corrected standard errors in brackets. *G*: Government consumption ratio; *I*: Public investment ratio; *T*: Total tax revenue ratio; *TGS*: Tax revenues on goods and services ratio; *TD*: Tax revenues on income; *TT*: Trade tax revenues ratio; *Bal*: Overall fiscal balance ratio. All specifications include the exact control variables as in Table 1. The models also control for the *endogeneous* election dummies (dated at year t, t-1, and t-2, respectively) which identify whether the election was early or late relative to the date it was supposed to be held per established constitution or procedure. The predetermined election dummies identify elections which took place on the date fixed by an established constitution or procedure. All equations are estimated using the two-step System-GMM with Windmeijer (2005) correction of standard errors. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

	(1)	(2)
	G	*G*
Election dummy	1.009[***]	0.963[***]
	[0.331]	[0.293]
Election*Lagged fiscal rule dummy	-0.870[*]	
	[0.511]	
Election*IMF program dummy		-0.623[*]
		[0.342]
Lagged fiscal rule dummy	1.986[***]	1.621[***]
	[0.662]	[0.376]
IMF program dummy		-0.712
		[0.444]
λ (Predicted selection correction factor)		0.621[**]
		[0.253]
Lagged dependent variable	0.695[***]	0.837[***]
	[0.089]	[0.041]
Real GDP growth	-0.017	0.004
	[0.041]	[0.014]
Official development assistance-to-GDP	0.073[*]	0.045[***]
	[0.037]	[0.017]
External debt-to-GDP	-0.003	-0.001
	[0.003]	[0.003]
Trade openness	0.032[***]	0.015[***]
	[0.011]	[0.005]
ln (100+Inflation)	-1.189	-0.442
	[0.976]	[0.344]
Intercept	7.809	3.488[*]
	[5.321]	[1.896]
N	1234	864
No of countries	60	59
Joint significance of election coefficients: *P*-value	0.007	0.002
m1:p-value	0.002	0.019
m2:p-value	0.341	0.114
Hansen OID: p-value:	0.808	0.132
No of instruments	17	18

Note: Windmeijer (2005) corrected standard errors in brackets. All equations are estimated using the two-step System-GMM with Windmeijer (2005) correction of standard errors. In column 2, the model controls for the self-selection bias associated with the participation into IMF programs through a two-step approach *a la* Maddala (1983), Vella and Verbeek (1999), and Keen and Lockwood (2010). [*] $p < 0.10$, [**] $p < 0.05$, [***] $p < 0.01$.