Political Budget Cycles Revisited, the Case for Social Capital

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Abstract

Recent literature on Political Budget Cycles has provided appealing evidence that their existence is conditional to country specific characteristics. In this paper we hypothesize that the level of social capital prevailing in a country might be an underlying fundamental reason that might be driving these results. We provide strong evidence that political budget cycles are only present in low social capital countries by utilizing a large panel data set for 63 democratic countries. We also show that the political budget cycles occur both in developing and developed countries under low social capital. Simultaneously, our results are robust under most other conditional effects considered by the literature. Finally, we also propose a theoretical model of conditional capital budget cycles by adapting a moral hazard model to account for different distributions of social capital.

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1. Introduction

It was during the 1992 Presidential election when James Carville, campaign strategist of Bill Clinton, first used the phrase "It's the economy, stupid". Clinton won the elections with a plurality in popular vote and a wide electoral margin, a result mainly attributed to the unfavorable economic condition prevailing at the time. The importance of economic performance for election outcomes was initially stressed in a series of empirical studies (Kerr 1944, Pearson and Mayers 1948, Tibbits 1931)[1] leading to the most influential work of

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Kramer (1971) and Fair (1978, 1982, 1988) that constituted a link between real economic activity and voting behavior. The empirical support for the influence of the pre-election economic performance on voter's decisions motivated the introduction of political business cycles literature, referring to the fluctuation of the economy induced by the political cycles.

The pioneering model of Nordhaus (1975) was the first attempt to theoretically formalize the connection between opportunistic politician behavior and pre-election economic outcomes. The pivotal role on Nordhaus model is played by monetary policy leading to a short-term Philips curve[2] manipulation. Hibbs (1977) presented a model where partisan policy makers, based on party views about macroeconomic policy, will cause distinct pre-election outcomes with respect to unemployment and inflation. However, as the literature was evolving, it became apparent that the general Political Business Cycles theory embodied several shortcomings with respect to empirical and anecdotal evidence. Firstly the existence of evidence with respect to the effect on the real economy due to manipulation during the pre-election year is questionable. Several empirical studies indicate no significant increase in aggregate economic activity prior to election (McCallum 1978, Alesina, Roubini and Cohen, Political Cycles and the Macroeconomy 1997, Faust and Irons 1999, Paldam 1979)[3]. Lewis-Beck (1988) tries to rationalize the results by arguing that monetary and fiscal policy can only be used imprecisely, thus politicians are unable to perfectly time the manipulation. Secondly, with respect to monetary policy, Drazen (2001), summarizing the literature, argues that although both inflation and money growth demonstrated evidence of manipulation until 1980's, there is no observable evidence thereafter, concluding that models based on manipulation of the economy via monetary policy tend to be unconvincing both empirically and theoretically. Finally, with respect to partisan models, Shi and Svenson (2003) argue that they are inadequate to address evidence in developing countries where ideological differences are unclear. Hence, the focus of empirical and theoretical studies turned to Political Budget Cycles, which refer to the opportunistic politician's behavior aiming to increase their reelection probabilities through fiscal manipulation.

A variety of studies find supporting evidence for Political Budget Cycles, by shifting away from the effects on the real economy to the fiscal instruments politicians use, both in a single- and multi-country level. However, and although there is a widespread consensus for the existence of Political Budget Cycles, there is a disagreement with respect to whether they constitute a universal phenomenon. Furthermore, the cross country literature is very diverse and inconclusive with respect to the conditionality of Political Budget Cycles. Some influential studies are focusing on conditionality based on seemingly institutional features of countries such as New versus Established democracies (Brender and Drazen 2005) and Developing versus Developed countries (Shi and Svensson 2006), however this approach has several deficiencies. Firstly it doesn't try to uncover the underlying fundamental determinant that causes the conditional effect[4]. As Brender and Drazen argue, although there is clear evidence that new democracies are more susceptible than established to election-year economics, its beyond their current scope to uncover the underlying reason. The same holds for the separation between developing and developed economies. Secondly there is an

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[1] The first two employed longitudinal data and the last one cross-sectional. Both streams were followed by several studies. For a comprehensive review of early studies see Kramer (1971).
[2] Representing the negative relationship between unemployment and inflation (Phillips 1958).
[3] Drazen (2001) summarizes the empirical studies with respect to political cycle in economic activity.
[4] There are exceptions in the literature (Shi and Svensson 2002, Klomp and De Haan 2013) for which we will elaborate in the literature review section (section 2.2).

arbitrarity of the definitions and distinctions[5], reinforced by the fact that only discrete dummy variables are used for separation. Addressing these deficiencies, in this paper we are aiming to propose one of the fundamental, underlying reasons by focusing on the country specific quality of informal institutions, and more specifically social capital. Social capital refers to the notion of informal institutions proxied by the level of generalized trust[6]. We find that strong fiscal cycles are only present in low social capital democracies and the effect of the election year becomes insignificant for high social capital countries. Additionally we offer a theoretical moral hazard model[7] that constitutes the analytical background.

To conclude the remainder of the paper will be structured as follows. Firstly we will review both the theoretical and the empirical literature with respect to political budget cycles in section 2 of the paper. Secondly we will analyze the interconnection between the functioning of democracies and the concept of social capital by simultaneously stressing the importance for the occurrence of political budget cycles. Additionally, in section 4, we will present a theoretical model of political budget cycles conditional on social capital. In section 5 we will introduce the empirical analysis, followed by the results and a robustness analysis. Finally in sections 7 and 8 will include a discussion of the results and a conclusion.

2. From Political Business Cycles to Budget Cycles: A Literature Review

The literature on Political Budget Cycles constitutes a derivative of the general literature of Political Business Cycles. In light of this close interrelation we will also briefly cover the early literature on Political Business Cycles, both in the theoretical and the empirical review part. However the focus will be mostly on the later literature on Political Budget Cycles. At this point it is essential to make the differences between the two literature streams as explicit as possible. Political business cycles refer to the possibility of a macroeconomic cycle being induced by the election cycle, and as such cover all possible instruments[8] used by policy makers to effect the economy. On the other hand Political Budget Cycles are restricted to manipulation undertaken only through fiscal policy[9]. Thus the literature is naturally divided into models that are based on monetary or on fiscal manipulation. Furthermore, the theoretical literature is characterized by two main streams of models: partisan versus opportunistic. We will follow these natural separations throughout this section.

2.1. The Theoretical Literature

Since the early 1970's endogenous treatment of policy makers became increasing popular in the macroeconomic literature. With his seminal paper, Nordhaus (1975) first introduced a formal model of opportunistic politicians focusing on monetary manipulation, aiming to time a decrease in unemployment in the pre-election period and thus causing an increase their re-election possibilities. In a parallel vein Lindbeck (1976) and McRae (1977) presented very

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[5] A new democracy is defined as one that changes a sign in polity index during the sample years, however one can argue that this is arbitrary and can lead to several biases. Brender and Drazen (2005) try to address this issue by including discrete cases of time evolution, however this is susceptible to a type -two error as the sample size is also decreasing on the same time.

[6] We will refrain from further analysis at this point of the concept of social capital, as we include a detailed literature review section focusing on the interlinkages between social capital and the functioning of democracies.

[7] Based on the model of Shi and Svensson (2002).

[8] Both monetary and fiscal.

[9] An additional distinction, especially in the empirical literature is that is focused on the effect on the instrument of manipulation, for example the budget balance and not the general effect on the real economy.

similar approaches, by providing reasons why governments will try to destabilize the economy for selfish reasons. The rationale is simple and intuitive, given the correlation between election results and favorable economic conditions, policy makers will try to artificially cause an economic boom in the pre-election period to maximize their election possibilities. Thus policy makers try to exploit adaptive expectations and sticky nominal contracts by surprisingly increasing the money supply in the pre-election period. Although for all early models monetary policy was the main instrument of manipulation, distinctions existed with respect to objectives and the heterogeneity of policy makers. Hence, soon after the initial models, Hibbs (1977) introduced a model based on partisan policy makers. The main distinction between early models was whether governments use the policy instrument to achieve partisan or opportunistic goals. Partisan goals are driven by ideological differences between parties, for example right-wing versus left-wing, aiming for different points along the Phillips curve. Following Hibbs, Alesina (1987, 1988) introduced rational expectations into the political business cycles, as in Hibbs the motives were purely partisan. Consistent with rational expectations was also the models of Cukierman and Meltzer (1986) as well as Persson and Tabellini (1990) that assumed information asymmetries[10] to rationalize the existence of cycles. Finally Lohmann (1998) introduces a moral hazard model based on monetary pre-election expansions. To sum up, early models of Political Business Cycles focused on monetary manipulation and were divided based on manipulation incentives, partisan or opportunistic[11].

2.1.1.   The Political Budget Cycle Models

Several empirical inconsistences[12] of the early models led to the introduction of the Political Budget Cycles literature. Hence, now the instrument of manipulation is shifted towards fiscal policy. In the case of fiscal induced cycles the first model was introduced by Rogoff and Sibert (1988). Similarly to the model of Alesina (1987), they assumed rational expectations but this time the cycle is set in motion by information asymmetries. The competence level of the incumbent is initially unknown and the fiscal expansion is used for signaling. Thus the more competent the incumbent the more able he will be to signal by manipulating the fiscal policy in the pre-election period. However this is at odds with anecdotal evidence where we expect the less competent politician to be the one that is more susceptive to manipulating the economy. In a follow up model, consistent with information asymmetries, Rogoff (1990) argues that there will be a shift towards more easily observable public goods and away from investment. Although again the most competent one is able to accommodate the shift, the model gives an interesting insight, as voters are either not able to observe some categories of expenditure or they discount it in a larger than socially optimal discount rate[13]. The early models focusing on fiscal expansion can be categorized as adverse selection models, where information asymmetries are an essential prerequisite and the incumbent signals its competence. Shi and Svensson (2003) argue that these models have a pivotal role in the literature of Political Business Cycles for three main reasons. Firstly, they assume rationality and strategic behavior. Secondly they focus on the instrument of

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[10] The model is similar to the model of Rogoff (1990) which is based on fiscal manipulation, which we introduce in the next paragraph following the logical separation between monetary and fiscal manipulatons.

[11] The early models were further divided based on expectation formation with rational expectations being the successor of adaptive expectations, reframing from myopic into rational voters.

[12] We will elaborate more in the empirical review section.

[13] This insight will be later used by Person and Tabelinni (2000) and Shi Svensson (2002).

manipulation and thus allow for empirical testing. Finally they are supported by the empirical literature.

The most recent models on Political Budget Cycles evolved from adverse selection into moral hazard models[14]. Examples of moral hazard models focusing on budget cycles are the models of Persson and Tabellini (2000) and Shi and Svensson (2002). The critical difference to previous models is that neither the voter nor the incumbent know its' competence level. In essence the policy maker is unsure of his performance before actualizing it. Thus, all policy makers have an incentive to shift to unobservable, at the current instance, financing through debt to increase the public goods provision. The main instrument of manipulation is the pre-election budget balance through issuing debt. Any type of incumbent has an incentive to increase the debt and the provision of public goods and the level will depend on the percentage of voters able to observe the real debt. A critical implication of these models is that they shift the interest from the incumbent to the voter and based on the information the voter has, or is able to assess, the level of the pre-election manipulation is derived.

To sum up, the theoretical literature on Political Business Cycles is divided based on the instruments and the motives of manipulation. Although initial models focused on monetary policy their recent counterparts, termed as Budget Cycles models are focusing on fiscal policy providing a framework that is more easily testable and consistent with anecdotal evidence. Within the Political Budget Cycles literature the division is centered around either the level of competence of the incumbent or the level voters are able to observe pre-election debt issuance.

2.2. The Empirical Literature

Analogous to the theoretical literature review we will initially focus on the evidence with respect to the use of monetary policy as the incumbent's instrument. Sequentially we will turn our focus to the empirical evidence with respect to Political Budget Cycles and the conditionality with respect to the cross country evidence. Finally we will briefly review the evolution of the empirical methods used in the literature, stressing the implications and possible disadvantages with respect to the consistency of the estimators.

The theoretical model of Nordhaus (1975) sparked a series of empirical studies testing the hypothesized appearance of Political Business Cycles. The approaches of identification are diverse and focus either on real economic fluctuations, post-election inflation or pre-election monetary growth. Firstly with respect to economic activity most attempts fail to find significant evidence in support of the hypothesized unemployment differences during pre- and post-election periods. Early empirical studies focusing on data from the United States, fail to conclude in favor of the existence of politically induced cycles as assumed by the Nordhaus model (Golden and Poterba 1980, Alesina and Sachs 1988, Alesina 1988). Additionally Alesina and Roubini (1990) verify the absence of evidence by focusing on OECD countries. In line with the previous conclusions Chrystal and Alt (1979) test the model of McRae (1977) and fail to find supporting evidence. A more sophisticated approach, utilizing a standard vector autoregression framework, is presented by Faust and Irons (1999) finding almost no support in accordance with the previous studies. Thus the literature provides no consistent evidence in support of economic fluctuations induced by the political cycle. Secondly with respect to post election inflation there exists clear evidence across OECD countries (Alesina, Roubini and Cohen 1997), however when focusing in the United States evidence is only present evidence until 1979; a fact attributed to the change of the policy rules

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[14] Following Lohmann's (1998) model but focusing on fiscal signaling.

of Federal Reserve (Clarida, Cali and Gertler 1999). Finally, with respect to money growth, Alesina and Roubini (1990) find consistent evidence in support of a pre-election increase for OECD countries. Similarly Beck (1987) and Grier (1989) both find evidence in support of pre-election increase in money growth for the United States. Testing the monetary partisan model both Alesina (1988) and Faust and Irons (1999) as well as Alesina and Roudini (1990) confirm the hypothesis for the United States and for a sample of OECD countries. However it is unclear how we can generalize the conclusions when it comes to developing countries, where ideological differences between parties are unobservable. Thus we conclude that the evidence for models based on monetary manipulation is mixed and often inconclusive, providing a rationalization for the evolution of the literature towards fiscally induced cycles.

2.2.1.   Political Budget Cycles: Evidence and Methods

There exists an abundance of studies that aim to constitute a link between elections and fiscal budget cycles. One can classify these studies into three main categories: **a)** early, single country studies, **b)** studies within groups of similar countries and **c)** recent studies that investigate the conditionality of the budget cycles. The earliest and highly influential study of Tufte (1978), who by investigating pre-election fiscal policy in the United States was the first to confirm the existence of Political Budget Cycles empirically. In a parallel vein, Frey and Sneider reaffirm the budget cycles hypothesis in two independent papers for the UK (1978) and the US (1978). Alesina (1988) focusing on data from the United States with a time span from 1961-1985, verifies and reinforces the results of earlier studies. Utilizing a similar framework Krueger and Turan (1993) also provide supporting evidence for the existence of a pre-election fiscal manipulation for Turkey during the years 1950-1980.

Turning to multi-country studies, at first the studies had the tendency to focus on similar group of countries. The main prominent categories were groups of developing or developed nations. First, with respect to developing countries Ames (1987) finds a significant increase of pre-election government expenditures in a panel of 17 Latin American countries. Additionally Block (2002) investigates the existence of pre electoral fiscal expansions on a group of 44 sub-Saharan African countries concluding in favors of the existence of a strong fiscal cycle. Another example is the study of Schuknecht (1996) that focuses on a group of 35 less developed countries and finds that policy makers pursued expansionary policy before elections and austerity afterwards. Similarly for developed countries Alesina and Roubini (1990) also find supporting evidence in a study of 18 OECD countries. In a more recent study focusing on the European Union Mink and de Haan (2011) find strong evidence that since the introduction of the stability and growth pact (SGP) and thus the restriction of monetary freedom of country policy makes, expansionary policies have been pursued before elections.

Despite the existence of compelling evidence for the case of Political Budget Cycles, multi-country studies seem to be subject to some conditionality based on institutional characteristics of countries. The source of this conditionally has been in the center of lively debate between scholars in the recent years. First, Shi and Svensson (2002, 2006) made the case for the presence of fiscal cycles being more prominent in developing compared to developed countries. Simultaneously, they tried to identify the underlying reason by arguing that the conditionality is due the abundant existence of informed voters and the size of rents that can be extracted from the politicians, finding significant evidence for both. However the proxies[15] that they use are somewhat questionable with respect to what they are capturing. It

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[15] They use as proxies for the informed voter the amount of radios per capita and the freedom of broadcasting. For the rents they use as proxies the quality of institutions, like the rule of law.

is important here to state that the prior intuition seems rational. Nevertheless, in the section 4 we will argue that the seemingly two factors can be confined into a single, more fundamental one: the quality of institutions, both formal and informal[16].

Another influential study is that of Persson and Tabellini (2002), tracing the conditionality to different sets of constitutional rules. They provide evidence that democracies based on proportional systems are more prone to experiencing fiscal cycles compared to the ones based on majoritarian voting systems. In an effort to rationalize their findings they argue that they are in agreement with a general notion among political scientists that majoritarian rules are geared towards keeping politicians accountable, whereas proportional rules are geared towards keeping voters represented. Additionally, they make a distinction between presidential and parliamentary systems; however with respect to pre-election tax cuts they argue that it is a universal phenomenon.

Several characteristics of democracy have also been examined as potential conditional variables. Gonzalez (2002) shows that changes in the degree of democracy have an incremental effect on the appearance of budget cycles. Alt and Lassen (2006), using a sample of 19 OECD countries, provide evidence that political budget cycles are conditional on the degree of fiscal transparency and polarization. Furthermore, Klomp and de Haan (2013) apply a pooled mean group estimator on a large panel of 70 democratic countries and find that political budget cycles are affected by the level of democracy, government transparency the country's political system and political polarization.

In an influential paper Brender and Drazen (2005) argue that political budget cycles are only conditional on new democracies. They define new democracies as those that have changed from autocracy to democracy during their sample years, a definition somewhat non-general as it is conditional to their sample. Nevertheless they compared their result to several conditional variables that have been proposed and they show that the existence of political budget cycles is driven by new democracies. In detail, they provide evidence that both developed and developing countries, experience budget cycles only if they are new democracies.

Having discussed the findings of the empirical literature with respect to politically induced cycles, we will now turn to the evolution of the econometric models used to test for the election effect. Since early studies focus on single countries, they utilize a simple OLS model[17] that includes a lag of the dependent variable, several economic control variables and an election dummy. This model is a single-country counterpart of the models used later in the literature. When multi-country studies became more popular, panel versions of the original model were utilized. However, due to possible country heterogeneity[18] the simple pooled OLS estimator tends to be biased. As a solution to this problem panel fixed effects were introduced[19], albeit that comes at a cost; since the model includes a lag dependent variable a new bias is introduced (Nickell 1981)[20] which is more severe in short panels. As a result most modern versions of the model tried to tackle this problem by the use of initially Arellano's and Bond's (1991) and later Arellano's and Bover's (1995) and Blundell's and Bond's (1998) methodologies. As such most recent studies are based either on a fixed effects version of the

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[16] We the focus on the informal ones and more specifically social capital as especially in developing countries there exists an evident lack of formal institutions, but as we show in the empirical part, high social capital tends to compensate for that.

[17] Firstly introduced by Alesina (1988).

[18] That is not captured by the explanatory variables.

[19] For examples see Alesina et al. (1990, 1997).

[20] For a more elaborate discution please refer to section 5.1.

original model (e.g. Brender and Drazen 2005) or on GMM (e.g. Shi and Svensson 2006), dependent on the length of the time dimension.

To sum up, the empirical literature with respect to Political Budget Cycles is conclusive with respect to their occurrence; however tends to be inconclusive with respect to budget cycles as a universal phenomenon. Hence, several conditional variables have been proposed to explain the differences between countries such as: developing versus developed countries, new versus established democracies, constitutional rules and other societal characteristic, albeit the results are not unambiguous. Finally, the econometric methods used have come a long way since the early models, leading to the use of more efficient and consistent estimators.

3.   The Concept of Social Capital and the Functioning of Democracies

During the past decades there has been an ongoing turn of attention from the traditional forms of capital, human and physical, to the notion of social capital as an important determinant of economic development. The notion of social capital was introduced initially by Coleman (1988) and is now commonly defined as generalized trust (Beugelsdijk and Maseland 2011). In a detailed definition, social capital is described as the willingness to trust others, often strangers, without expectation of immediate reciprocity (Whiteley 2000).

In essence social capital is presented as a form of informal institution, having an impact on the trajectory of the economy. Social capital acts as a complement to the presence of formal institution and as a substitute where formal institutions are at an early stage of development. As such we hypothesize that a high level of prevailing social capital will discourage politicians to act opportunistically, and hence we expect the absence of Political Budget Cycles in countries where the level of social capital is high.

3.1 Social Capital, Trust and Economic Literature

The operationalization of the concept of social capital is somehow more complicated than it initially seems. Sapienza et al. (2006) have argued that the opening through which culture entered the economic literature was the measure of trust. As such several scholars have proposed trust as one of the most important dimensions of social capital (Fukuyama 1995, Knack and Zak 2002, Francois 2002)[21]. In light of this interconnection, it has been accustomed in the economic literature to proxy the level of social capital using the level of generalized trust. The indicator commonly used derives from the question on trust of the World Value Survey (WVS)[22].

Trust and social capital, have been mostly employed to explain divergent long run growth paths. Several studies have examined the relationship between growth and trust suggesting a favorable effect of social capital on economic growth (Putnam 1993, Fukuyama 1995, Knack and Keefer 1997, La Porta, et al. 1997, Glaeser, et al. 2000, Knack and Zak 2002, Francois 2002, Beugelsdijk and van Schaik 2005). The literature on social capital and trust, however, is not unambiguous and has been criticized for endogeneity issues as, in the long run, economic outcomes may as well affect the level of trust. In the short run, however, trust is a significantly slow adjusting variable, as it is rooted in culture, an argument supported both by the literature (Greif and Tabelini 2010, Algan and Cahuc 2010) and the available data on

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[21] For summarization of the literature on trust refer to Beugelsdijk and Maseland (2011)
[22] For a detailed explanation please refer to the Appendix section 8.1.2.

trust[23]. As such it cannot be influenced by short-term fluctuations. Therefore we assume trust it to be strictly exogenous in the short-run[24].

To sum up, trust has been argued to be one of the most important dimensions of social capital and the only one that has been operationalized. As a consequence the literature, with respect to trust, has been in the center of intense interest providing a way to incorporate cultural and societal characteristic as determinant of economic outcomes.

3.2 The Effects of Social Capital on Governance and the Occurrence of Political Cycles

In the economic literature, the interrelationship between political regimes, social capital and economic performance has not been thoroughly examined. Thus, most of the literature concerning this puzzling relationship is derived from the political science literature. In essence, the link is constituted through the effects of social capital on the efficiency of governance.

Boix and Posner (1998) argue that along with the between-agent cooperation, social capital enhances the performance of governments and formal institutions. A series of concepts can be utilized to rationalize this argument. Firstly, they argue that high level of social capital leads to rational voters that punish underperforming governments. The presence of rational voters has been a core assumption in recent formal models which is at stark contrast with the political science literature. However, as Boix and Posner argue, a rational electorate will have preferences that will enforce civic virtue, which is described as a shift from particularized interest to common interest. This is a crucial point that allows us to use the concept of social capital consistently with the economic rationality concept[25] and extrapolate the irrationality to differences of preferences. In detail, based on Boix and Posner's arguments, there are distinctly different interests between low and high social capital agents, as low social capital agents have an increased particularized interest leading to more short term and personal focus. In the context of a more formal economic model low social capital agents will be interested in direct benefits, like the public goods that they enjoy, or direct costs, like the taxes that they pay, but at the same time will highly discount generalized costs as amount of debt issued in order to provide the public goods at question. On the other hand high social capital agents will equally weight both personal and generalized costs. Thus, the concept of irrationality of voters from political literature can be transferred into the economic literature, by translating it into distinct preferences.

In the context of Political Budget Cycles, low social capital citizens will be more prone to accommodate a manipulation in the pre-election period in the presence of information asymmetries. More precisely, both types of voters, low and high social capital ones, are rational in the sense that they want to elect the most competent politician. The competence is judged, in line with the literature, based on the amount of public goods the policy maker is able to provide but they penalize him for the cost as depicted on the level of taxes and the debt issued. However, voters have different competence assessment functions as low social capital voters highly discount the debt and pay more attention to direct benefits and cost. Thus depending if the ratio of low to high social capital voters is sufficiently high the incumbent will have an incentive to undertake a pre-election fiscal expansion, either by reducing taxes or increasing public goods financed by issuing new debt. Alternatively if the prevailing level of social capital is high, there will be no incentive for the incumbent to undertake new debt

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[23] The correlation between the different waves of the WVS is around 90 per cent.

[24] A more detailed explanation of how we are trying to tackle the issue of endogeneity is described in the appendix

[25] As we will demonstrate in the theoretical model which is presented in the next section, based on Shi and Svenssen's model.

and manipulate the economy, since it will not yield him a higher probability of re-election. These assumptions are more in line with anecdotal evidence in comparison to the previous literature that assumes that voters were uninformed of the new debt because of the absence and the freedom of press. In contrast, looking especially on developed countries where the presence of free press is a given, we still encounter voters that will tend to ignore the provided information. To conclude we expect a conditional appearance of political budget cycles only in countries with a low prevailing level of social capital[26].

4. A Formal Model of Political Budget Cycles Conditional on Social Capital

The model that we will describe is based on Shi and Svensson (2002, 2006). We will slightly adapt it to accommodate for two different kinds of voters based on the level of social capital. Its origins can be traced back to Rogoff (1990), however, it is a moral hazard model. We will follow the notation of Shi and Svensson and where changes are made will be explicitly stated.

4.1. The Model

As in the model of Shi and Svensson the economy is composed by a large number of voters and two parties denoted with the subscripts α and β. The voter's derive utility from the consumptions of a private goods (*c*) and a public good (*g*). Explicitly the utility function for person *i* in period *t* can be stated as:

$$U_t^{i,SC} = \sum_{n=t}^{T} \rho_{sc}^{n-t} \left[g_n + u(c_n) + b^i z_s \right] \tag{1}$$

where ρ is a discount factor, *b* is a specific voters bias towards candidate α or candidate β and *z* is binary variable that takes the value -1/2 if candidate α is elected and 1/2 if candidate β is elected. Thus we also assume that each voter derives utility if the candidate that he likes is elected. Additionally, we assume that the voters are uniformly distributed on [- ½ , ½] and there is not a general bias towards any of the candidates. However, unlike Shi and Svensson, we do not assume a uniform discount factor across voters. There is a discrete difference in the discount factor of low and high social capital citizens. A low social capital citizen will tend to have a higher discount rate for future consumption. Conversely the discount factor of the high social capital citizens for simplicity will be closer to 1^{27}. The private consumption function of the voters consists of an exogenous income component (*y*) minus a lump sum tax (*τ*) that is used for the provision of the public good:

$$c_t = y - \tau_t \tag{2}$$

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[26] That does not mean that in all low social capital countries we expect to find a significant present of Political Budget Cycles, but rather that we expect not to find evidence in high social capital ones. Having said that as we will demonstrate in the empirical part there is both evidence for the absence of PBC in high social capital countries and the presence in low ones.

[27] This explicit difference will reflect voters debt preference and lead to an initial equilibrium condition different than the one in Shi and Svenssons model as debt will be issued even in the non-election years.

On the contrary politicians derive additional utility from "ego rents" as has been assumed by Rogoff (1990). Unlike Shi and Svenssen we assume that this can be rationalized from non-monetary benefits and not so much the ability to misuse the office for private gains. The candidate's utility function is equal to:

$$V_t^j = \sum_{n=t}^{T} \rho^{n-t} [g_n + u(c_n) + X_n] \tag{3}$$

where the j is either candidate α or β.

There are two distinct periods, an election year t and a pre-election year. According to Shi and Svenssen's assumptions candidates produce the amount of the public good they provide, based on the amount of taxes (τ_t) they receive and the debt (d_t) they issue. Additionally they have a level of competence (η_t^j) which allows them to provide more efficiently leading to a higher amount of public goods. The higher the level of competence, the higher the amount of public good they will produce, given the level of taxes and debt. The level of competence is not stable through time and changes, based on a first order moving average process:

$$\eta_t^j = \mu_t^j - \mu_{t-1}^j \tag{4}$$

where μ is independent and identically distributed random variable with a mean of zero and finite variance[28]. Another assumption made by Shi and Svenssen is that all past competence shocks are known to all voters and parties, however, as in older versions of the model, the incumbents is unsure about the his competence (η_t) at the time he decides for the level of taxes (τ_t) and the debt (d_t). Furthermore, borrowing is costly and there exists a continuous cost function of borrowing $R(d)$ with $R(0)=0$. In our model, and given the fact that we assumed a discount rate unequal to zero, we also assume that $R'(0)$ is a finite number equal to the weighted average discount rate prevailing it the country[29]. Putting all pieces together the production of the public good in year t is defined as:

$$g_t = \tau_t + d_t - R(d_{t-1}) + \eta_t^j \tag{5}$$

On the contrary to Shi and Svenssen's model we do not assume that voters have access to different information and all voters can observe the same variables. This is a rational assumption especially with respect to developed countries as information is publicly available, although we still observe the tendency of some part of the voter to ignore this information. We assume that this is based on their level of social capital and thus preferences. Additionally the argument that is used by Shi Svenssen, that the government is using accounting techniques to hide the deficit, does explain how debt can be unobservable but at the same time creates a contradiction, because in their model it is stated that a considerable part of the society observes these governmental strategy, thus assuming that they can, on a personal level, uncover this accounting techniques fallacy. Thus, we argue that information is there for whoever needs to observe it, however in the case of low social capital voters require more cost, than the relative weight they assign to the importance, due to short term biased preferences. Accordingly we assume that a percentage (*SC*) of the voters with high level of social capital on the one hand will take into account, both the level of the public good (g_t) and

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[28] the distribution function $F(\mu)$ and a $f(0)>0$
[29] $R''(d)>0$ for all d thus we have increasing costs as the level of debt grows.

of taxes (τ_t) they pay and the debt (d_t) they issued, in order to estimate the competence of the incumbent since their discount rate is equal to 1. On the other hand the low social capital voters (1-*SC*) will pay attention only to direct benefits to them and estimate the competence of the incumbent based on the level of the public good (g_t) and of taxes (τ_t) they pay and discount the level of debt (d_t).

It is uninformative to solve for the model without election, as Shi and Svenssen do, since the random candidate that is assigned at the office will determine the optimal amount of taxes based on his discount rate[30] and consumption ignoring the public. As such the equilibrium tax and deficit will be different of the one where the discount factor of the public plays a role. Thus we will first solve the model for the case the policy make was maximizing non-election years first and sequential for the election years.

4.1.1.   Political budget cycles

In an effort to solve the model the problem can be broken down into two single period maximizations. The structure is as follows: every second year there is an election, in the post-election year ($t + 1$) given that the process for competence and past competence is observable in combination with the assumption that debt is increasingly costly, the policy maker will have no incentive to depart from the optimal deficit (d_0) and tax (τ_0) level[31]. This is driven by the fact that the politician can signal his competence only in the election year to manipulate the vote, because as we explained, past competence is observable by the voters. Furthermore, we assume like Shi and Svenssen that the competence shocks are uncorrelated with each other. Finally given the fact that debt is costly, the incumbent will try to run a quasi-surplus to pay any deficit excessing the optimal level and thus the production of the public good in the post-election year is:

$$g_{t+1} = \tau_0 - (R(d_t) - d_0) + \eta_{t+1} \tag{6}$$

In a parallel vein we have the same behavior for the period $t - 1$. On the contrary the budget constrain for the election year t is:

$$g_t = \tau_0 + d_0 + d_t + \eta_t \tag{7}$$

It is important here to note that in contrast with the model of Shi and Svenssen we have d_0 appearing as we assume that there will be an optimal level of deficit in equilibrium, even without the manipulation incentive, given the assumption of the discounting of a portion of the population, the low social capital citizens. That does not mean that the deficit will explode, as the fact that debt is costly and the presence of the high social capital citizen ensure the existence of an optimal point.

The election outcome will be determined based on the expectation of the candidate with the highest competence. In other words voters will estimate competence based on the best expected outcome for the post-election year. Thus they form expectations, given their preferences, and vote rationally. By assuming that candidate α is in office in period t we also

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[30] In their model the two discount rate coincide which in not the case in our version as the low social capital voters have a high discount rate and thus a preference for more debt.

[31] The optimal deficit and tax levels are the ones that arise if we solve the maximization problem of the politician based for the equilibrium debt given the incumbent was maximizing over infinity without the presence of elections and his discount rate equal to the average of the society.

denote by d^* the excess deficit he will issue to be determined in equilibrium. Thus the expected outcome if the incumbent is re-elected is:

$$\tau_{t+1} = \tau_0 \tag{8}$$

$$d_{t+1} = d_0 - R(d_t^*) \tag{9}$$

$$E_t[g_{t+1}^a] = \tau_0 - E[R(d_t^*)] + d_0 + E[\mu_t^a] \tag{10}$$

since $E[\mu_{t+1}] = 0$ and thus drops out form equation (10). Simultaneously the expected outcome if the candidate β is elected is:

$$\tau_{t+1} = \tau_0 \tag{11}$$

$$d_{t+1} = d_0 - R(d_t^*) \tag{12}$$

$$E_t[g_{t+1}^a] = \tau_0 - E[R(d_t^*)] + d_0 \tag{13}$$

Note that the expectation for the competence drops out, as both components are equal to zero because **a)** there is no past observation and **b)** the future one has a mean expected value of zero. Looking at equations (10) and (13) we can infer that in order the incumbent to win the election the following in equality has to hold:

$$E_t[\mu_t^\alpha] - b^i \geq 0 \tag{14}$$

This result is rational as the voters will vote the candidate that is not of their liking if, and only if, the expected benefit exceeds the party bias. As we made explicit before all voters have the same information[32] but different abilities or preferences during the assessment. In detail the high social capital voters (SC) will take into account both direct and indirect benefits, thus they will care both for the observable public good (g_t) and the taxes (τ_t) they paid and the general new debt (d_t) issued by the incumbent. Thus a high social capital voter based on equation (4) and (7) will find the true competence of the incumbent:

$$\mu_t^\alpha = g_t - \tau_0 - d_0 - d_t - \mu_{t-1} \tag{15}$$

On the contrary low social capital voters (1-SC) will care mostly for the direct benefits they observe or paid the election year and discount the indirect ones. In essence we are just imposing a high discount rate on the new deficit to solve for the solution. However, to be consistent, also in the past they used to underestimate the debt issued so their actual estimate of competence will be in essence incremental and as such they will subtract implicitly the equilibrium deficit, and he will estimate the competence as follows:

$$\mu_{t,low}^\alpha = g_t - \tau_0 - d_0 - \mu_{t-1} - d_{t,low} = \mu_t^\alpha + d_t - d_{t,low} \tag{16}$$

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[32] In contradiction with Shi and Svenssen where a part of voters has information about the debt and another part does not.

Now that we derived the competence assessment functions we can first use equation (13) in combination with the assumption about b^i to derive the votes share of candidate α to derive his expected share of votes as:

$$\Pr\left(E_t[\mu_t^\alpha] - b^i \geq 0\right) = E_t[\mu_t^\alpha] + \frac{1}{2} \tag{17}$$

Thus using the competence assessment functions of the two types of voters we can find the probability that candidate α has a majority in popular vote as:

$$P_t = \Pr\left(\sigma\left[\mu_t^\alpha + \frac{1}{2}\right] + (1-SC)\left[\mu_t^\alpha + d_t - d_{t,low} + \frac{1}{2}\right] \geq \frac{1}{2}\right)$$
$$= \Pr(\mu_t^\alpha \geq (1-SC)(d_{t,low} - d_t)) = 1 - F\left((1-SC)(d_{t,low} - d_t)\right) \tag{18}$$

Finally, as Shi and Svenssen state, the incumbent will maximize his expected utility over the two periods with respect to the amount of new debt he is willing to undertake. Given the optimal solution for deficit and taxes we have:

$$\max_{d_t} E_t[\tau_0 + d_0 + d_t + \eta_t^\alpha + u(y - \tau_0) + X]$$
$$+ E_t\left[1 - F\left((1-SC)(d_{t,low} - d_t)\right)\right][\tau_0 + d_0 + d_t + \eta_t^\alpha + u(y - \tau_0) + X]$$
$$+ E_t\left[F\left((1-SC)(d_{t,low} - d_t)\right)\right][\tau_0 + d_0 + d_t + \eta_t^\alpha + u(y - \tau_0)] \tag{19}$$

And the first-order condition is:

$$1 + (1-SC)F'\left((1-SC)(d_{t,low} - d_t)\right)X - R'(d_t) \leq 0 \tag{20}$$

In equilibrium though the incumbents optimal choice must be consistent with the expectations of the voters and as such $d_t^* = d_t = d_{t,low}$. Thus as in the model of Shi and Svenssen the equilibrium condition holds as an equality. One notable difference is that in our case d_t^* refers to the incremental debt issued at the election year above the equilibrium deficit d_0. Hence we have:

$$1 + (1-SC)f(0)X - R'(d_t^*) = 0 \tag{21}$$

where the $d_t^* > 0$[33]. By the means of comparative statics we can derive that:

$$\frac{\partial d_t^*}{\partial SC} < 0, \qquad \frac{\partial d_t^*}{\partial X} > 0 \tag{22}$$

At this point we will summarize the general conclusions we can derive from the model we just presented. First and foremost, the higher the percentage of high social capital voters the lower the incentive to increase the deficit in the election year. Furthermore, the incentives of the manipulation will depend positively on the amount of "ego rents" (X), that the incumbent derives from being in office. Another conclusion that we can derive is that due to the higher

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[33] Note that $f(0) > 0$

discount factor of the low social capital voter there will be an equilibrium deficit that is, on average, higher in countries with high percentage of low social capital voters.

5. Empirical Analysis

5.1. The Econometric Model

Based on the theoretical interrelation of social capital and governance we expect the presence of Political Budget Cycles to be conditional on the level of social capital. To test this hypothesis we will utilize an econometric specification very familiar form the recent literature of Political Budget Cycles. First we will use a panel fixed effect model with one lag of the dependent variable similar to the model used by Brender and Drazen (2005):

$$y_{i,t} = \sum_1^n \alpha_n y_{i,t-n} + \gamma' \mathbf{x}_{i,t} + \beta_1 ELECT_{i,t} + \xi_i + \varepsilon_{i,t} \tag{23}$$

where $y_{i,t}$ is a fiscal indicator, in our case we will use the budget balance defined as the difference between total revenue and grants minus total expenditure, for the country i the and year t, $\mathbf{x}_{i,t}$ are the economic control variables used by the literature (Persson and Tabellini 2002, Brender and Drazen 2005). $ELECT_{i,t}$ is an election dummy taking the value of one during election year t for the country i and zero otherwise. Finally ξ_i is the country's fixed effect included. The economic controls included are the log of GDP per capita, the output gap as proxied with the use of a Hodrick and Prescott (1997) filter, the population share above the age of 65, the population share between 15-64 and the trade share as percentage of the GDP[34]. Furthermore n in this case is equal to 1, as only one lag of the balance will be included in the fixed effects model. This baseline model will be estimated in separate regressions for high and low social capital countries, proxied by the level of trust and using the median value of the sample countries to create the separation. Additionally we will define a model that includes an interaction term with social capital and the elections dummy:

$$y_{i,t} = \sum_1^n \alpha_n y_{i,t-n} + \gamma' \mathbf{x}_{i,t} + \beta_1 ELECT_{i,t} + \beta_2 (SC_{i,t} * ELECT_{i,t}) + \xi_i + \varepsilon_{i,t} \tag{24}$$

$SC_{i,t}$ is the level of social capital prevailing in the country. Social capital will not be included as a separate term due to perfect multi-colinearity, as we keep it constant through time and as such it is a linear multiple of the country constants. The model will be estimated using both a dummy of social capital and the level. In the dummy specification the election dummy captures the election effect on balance in low social capital countries, which we expect to be negative and significant. The interaction term captures the difference of the effects on fiscal balance during election years between low and high social capital countries, and as such we expect it to be positive and significant. Additionally we expect the two effects to sum to zero as we assumed that in high social capital countries no Political Budget Cycle will be observable. To test this hypothesis more explicitly we will initially run separate regressions for low and high social capital group of the countries[35]. Additionally, in the level specification,

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[34] For information about the variables and the data please refer to section 8.1 in the Appendix
[35] Using model (23).

the effect of the election on the budget balance is conditional on the level of social capital and the interaction coefficient alone provides little information, thus we will graph the marginal effects following the methodology of Brambor et al. (2006). In any case we expect the effect of social capital to be positive as social capital increases and t in effect makes the presence of Political Budget Cycle statistically insignificant for high value of social capital. In section 5.3 we will perform tests to ensure that our results are robust against other conditional variables in the literature. We will therefore introduce two dummies capturing election years in low and high social capital countries and drop the non-interacted election dummy in order to make our model more easily comparable in conditional regressions, however level specification will remain the same.

Our econometric model utilizes a dynamic panel specification, in which the inclusion of a lagged dependent variable introduces a potential bias in the OLS estimator. The bias arises from the fact that initial condition of the dependent variable is by definition correlated with country fixed effect and thus the lagged dependent is correlated with the error term, even if there is no serial correlation of the error term (Nickell 1981). The bias is thought to be of the order 1/T where T is the time dimension of the panel. Hence, the larger the panel, the more negligible the size of the bias. In our case we are utilizing a panel of 63 countries over a period of 41 years, from 1960 to 2001[36]. As the number of years is considerably large we can assume that the bias will be rather small. Furthermore in the presence of possible serial correlation of the error term the strict erogeneity assumption will be violated and the results might be biased. For the aforementioned reasons we will additionally estimate our model using the Two-Stage System GMM estimator that was developed by Arellano and Bover (1995) and Blundell and Bond (1998)[37]. The method is based on the method of Arellano and Bond, where higher order lags are used to instrument the lag dependent variable. Simultaneously it assumes that the panel-level effect is unrelated to the first observable first-difference of the dependent variable and as such using additional moment conditions in which the lagged differences of the dependent variable are orthogonal to the level of the errors. In the case of the GMM estimation we will use two lags of the dependent variable. In the GMM estimates we will provide the Arrellano and Bonds ar(1) and ar(2) tests as well as the Hansen test. For both, the fixed effects and GMM model, we will use robust standard errors because of the presence of heteroskedasticity[38]. Especially in the case of the System GMM the normal standard error tends to be severely downward biased and thus we will use the Windmeijer (2005) corrected standard error. Finally, we also tested for the presence of a unit root, which was proven to be the case, however there exists co-integration which allows us to proceed with the estimation[39].

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[36] The data are the same used by Bremder and Drazen (2005).
[37] Based on the initial GMM estimator of Arellano and Bond (1991)
[38] Please refer to the appendix section 8.3 for further analysis.
[39] For all the relevant tests please refer to the appendix.

Table 1 Electoral Effects on Budget Balance in Democracies Separated by the Level of Social Capital

Dependent variable Balance as percent of GDP

	Panel Fixed Effects[a] – Separate Regressions based on Dummies					
	[1] All Countries		[2] Low Social Capital		[3] High Social Capital	
	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$
Election[b]	-0.3369***	(0.1364)	-0.8064***	(0.2911)	-0.0648	(0.1120)
Lagged Balance[c]	0.6088***	(0.0609)	-0.4877***	(0.0865)	0.7891***	(0.0189)
Log(rGDPpc)[d]	0.3477	(0.2884)	0.8362*	(0.4918)	0.1674	(0.2677)
Output Gap[e]	0.2164***	(0.0480)	0.2013***	(0.0661)	0.2625***	(0.0649)
Population above 65	-0.1975**	(0.0960)	-0.2912	(0.1926)	-0.0335	(0.0759)
Population 15-64	0.0507	(0.0480)	-0.0048	(0.0821)	0.0455	(0.0390)
Trade[f]	-0.0015	(0.0061)	-0.0014	(0.0109)	0.0031	(0.0059)
Constant	-5.8605***	(2.0312)	-7.0660*	(3.8475)	-5.4691***	(1.7246)
Countries	63		32		31	
Observations	1762		779		983	
R^2	0.58		0.43		0.80	

[a] Notes: The model is estimated using a fixed effects panel regression with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. β's are the coefficients and σ_β are the cluster robust standard errors.

[b] Dummy variable taking the value of 1 at election years and 0 otherwise.

[c] The first lag of the dependent variable, due to possible Nickell (1981) bias issues we repeat the regression using Arellano and Bover (1995) and Blundell and Bond (1998) methodology in the robustness section.

[d] Log of real Gross Domestic Product per Capital

[e] Calculated using Hodrick- Prescott filter (1997) for each individual country based on the trend.

[f] Trade as percentage of GDP

5.2. Estimation and Results

The models, as specified in the previous section, are estimated sequentially. In this section we will estimate the model based on the fixed effects specification and in the section 5.4 we will estimate them using GMM. Furthermore, we will firstly divide our sample and perform separate regressions in order to show that the significance of the Political Budget Balance is driven by the low social capital democracies. In a next step we will estimate the model including the interaction term, between elections and high social capital, both using a dummy and a level for social capital. As we already mentioned for the level specification we will graph the marginal effects using the methodology of Brambor et al. (2006) .

5.2.1. Separate regressions for high and low social capital democracies

The results of the estimation are reported in table 1. In the first column we report the estimation of the model for the full sample of countries. During the whole analysis we will refrain from commenting on the results for the control variables and we will focus only on the variables of interest in our model. From the estimation of the whole sample we can easily observe that the election dummy proves to be significant at 1% significance level, a result similar to the rest of the literature. The sign of the coefficient estimate is negative and
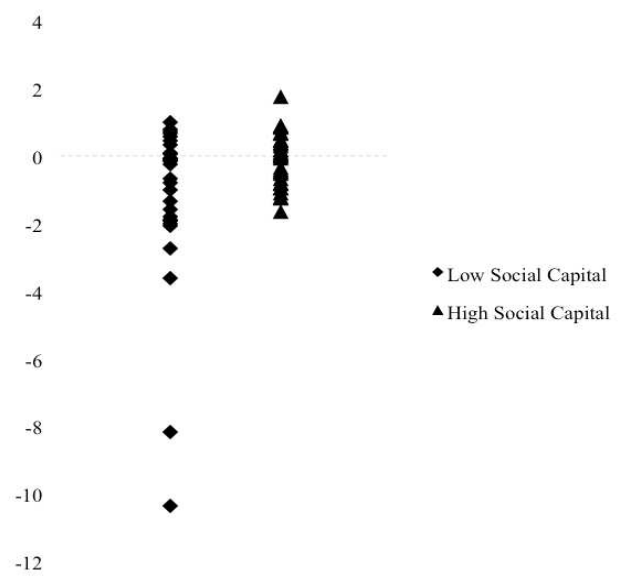
Figure 1 Coefficient estimates of elections dummy on separate country-by-country OLS regressions separated by high and low social capital

since it estimates the change in the balance during elections years it shows that there is a tendency to reduce the fiscal budget balance in election years.

In the second and third columns we report the results from two separate regressions for the low and high social capital countries. Comparing the estimates for the election dummy across the three columns we see that the observable effect seems to be driven by the low social capital countries or to put it another way we find no significant effect of elections on balance in high social capital countries. The results are fully in line with our hypothesis given the absence of evidence for the existence of electoral effects on balance in high social capital countries. The coefficient estimate reported for the election dummy, in the case for high social capital, is very close to zero and insignificant. Moreover we observe a large difference[40] in comparison to the coefficient for low social capital countries which is negative and significant at the 1% significance level.

Furthermore, in order to visualize the difference we estimated the election effect on balance for all the countries in the sample with country-by-country OLS regression, gathered and graphed the coefficient estimates in figure 1. We can observe that the coefficient estimates for countries with high social capital look more as randomly distributed around zero. On the contrary, for the low social capital countries we see that the distribution is more skewed towards negative values. Even if we remove the extreme cases of Bulgaria and Nicaragua we can still observe a negative bias. At this point we have to note again that the separation of the countries into low and high social capital countries has been done using the median value, thus the separation is imperfect and there are probably some countries in the middle misclassified. In any case the results based on the separate regressions point towards a significant difference and further more show that all the significance in the full sample is driven by countries that belong to the low social capital group.

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[40] We will test explicitly for the significance of the difference in the interaction model, however looking at the standard error reported a significant difference seems to exist with respect to the impact of elections in the two categories of countries.

Table 2 Electoral Effects on Budget Balance

Dependent variable Balance as percent of GDP

	Panel Fixed Effects[a] – Full Sample				
	[1] Dummy Specification			[2] Level Specification	
	$\hat{\beta}_i$	$\hat{\sigma}_\beta$		$\hat{\gamma}_i$	$\hat{\sigma}_\gamma$
Election[b]	-0.7924***	(0.2922)		-0.8723***	(0.3213)
Election*Social Capital Dummy	0.7052**	(0.3084)			
Election*Social Capital Level				1.5978**	(0.7440)
Lagged Balance[c]	0.6094***	(0.0607)		0.6085***	(0.0609)
Log(rGDPpc)[d]	0.3472	(0.2898)		0.3510	(0.2881)
Output Gap[e]	0.2150***	(0.0479)		0.2161***	(0.0481)
Population above 65	-0.1991**	(0.0963)		-0.1988**	(0.0960)
Population 15-64	0.0526	(0.0483)		0.0517	(0.0479)
Trade[f]	0.0001	(0.0062)		-0.0000	(0.0061)
Constant	-5.9710***	(2.0352)		-5.9511***	(2.0312)
Countries	63			63	
Observations	1762			1762	
R^2	0.59			0.59	

[a] Notes: The model is estimated using a fixed effects panel regression with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. β's are the coefficients and σ_β are the cluster robust standard errors.

[b] Dummy variable taking the value of 1 at election years and 0 otherwise.

[c] The first lag of the dependent variable, due to possible Nickell (1981) bias issues we repeat the regression using Arellano and Bover (1995) and Blundell and Bond (1998) methodology in the robustness section.

[d] Log of real Gross Domestic Product per Capital

[e] Calculated using Hodrick- Prescott (1997) filter for each individual country based on the trend.

[f] Trade as percentage of GDP

5.2.2.   Interaction model with social capital

In this section we will provide the estimations for the second model, eq. 24. The results are reported in table 2. The first column reports the result with the social capital as a dummy that takes the value of 1 for high social capital countries and zero otherwise. This approach is very similar to the previous section, expect that this time it allows us to see if the difference between low and high social capital countries is significant. Furthermore the second column reports the estimates when we include the social capital as a level in the interaction term. First, with respect to the dummy specification, the election dummy captures the effect of elections on balance for the low social capital countries[41]. As expected

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[41] The estimate is very close to the first regression the small difference is due to the fact that we restrict the model to have a common constant for all countries.
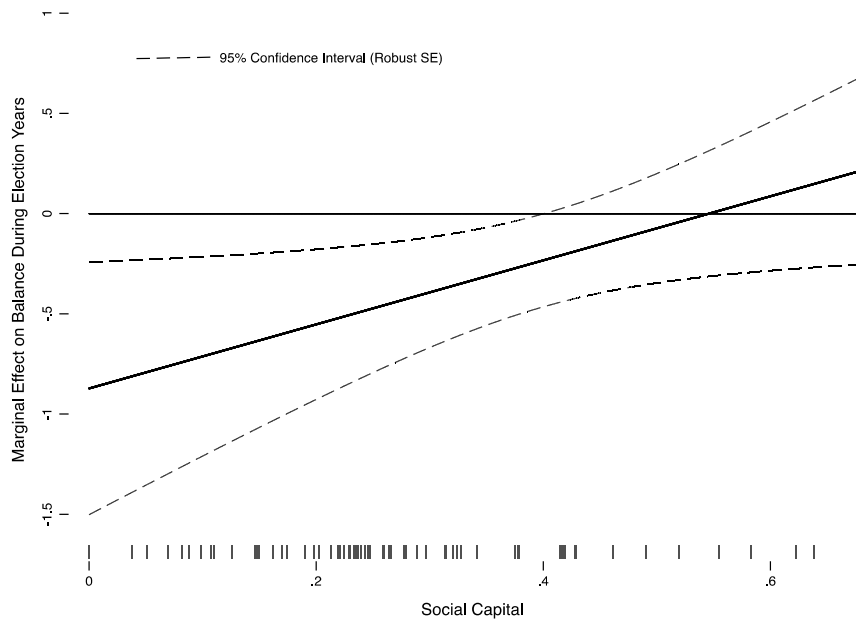
Figure 2 Marginal effect of election dummy on budget balance as the level of social capital increases for all countries in the sample.

the effect of elections in the low social capital countries' balance is negative and significant. Furthermore the interaction term[42] captures the difference, between low and high social capital countries, of the election year impact on balance. The estimate is in line with our hypothesis, positive and significant at the 5% significance level. Additionally we observe that the size of the coefficient is very similar (but opposite sign) to the low social capital coefficient, which points to the conclusion that we derived from the separate regressions: that there is no significant appearance of budget cycles in high social capital countries. Thus we observe that a high social capital level in a country tends to reduce the possibility of an election budget effect.

Turning to the level specification, we observe a similar pattern. Furthermore using the level of social capital per country is less restrictive than the dummy separation. However, even if we observe that the interaction term is significant to be precise we need to graph the marginal effect. The graph of the marginal effect of elections on budget balance as the level of social capital increases is depicted in figure 2. The dotted line represents 95% confidence interval. We can easily observe that for low social capital countries the effect is negative and significant. Additionally as the level of social capital increases the impact of the election year on balance decreases and at values of social capital around 0.38 it becomes insignificant. It is noteworthy that the highest value of social capital in our sample is around 0.64 and the lowest is 0.04. At the bottom of figure 2 we also present a rug plot that shows for which values of social capital we have observations of elections taking place during our sample. Arguably there are enough observations above the level of 0.38, especially between 0.4 and 0.5, that we can safely conclude that the marginal effect is not becoming insignificant due to the lack of observations. This is also demonstrated from the fact that the

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[42] Note again that the level of social capital is not included as we already mentioned due to perfect multi-colinearity.

Table 3 Developed and Developing Countries Grouped Using Social Capital

Level of Social Capital

	Countries and Observations per Category			
	Developing Countries		Developed Countries	
	Countries	Observations	Countries	Observations
High Social Capital	11	248	20	735
Low Social Capital	28	663	4	116

confidence interval is very close to the marginal effect line when the whole effect becomes insignificant[43].

To conclude, we observe that both the dummy and the level specification suggest that the election effect of balance is confined mostly to low social capital countries. Furthermore we observe that, as the level of social capital increases the electoral effect, on balance, decreases. Thus, in this and the previous section we have provided some evidence for the case of the conditional appearance of Political Budget Cycles based on the level of social capital. However, and given the previous literature on conditional effects, in the next section we will try to test the robustness of our conclusions by comparing the sources of conditionality.

5.3. Conditionality of Budget Cycles

Since there are already several variables that have been proposed to have a conditional effect on the appearance of budget cycles, it would be faulty to ignore them. Thus in this section we will try to test the explanatory ability of social capital on the budget cycles, conditional on several other variables. Along these lines we will estimate again the models for developing and developed countries to check for Shi and Svenssens' (2002) hypothesis, that Political Budget Cycles tend to appear mostly in developing countries. Sequentially we will focus on Brender and Drazens' (2005) new and established democracies and finally we will repeat the estimations checking for Persson and Tabellinis' (2000) constitutional rules.

5.3.1. Social capital for developing and developed countries

Shi and Svenssen (2002) argued that in a cross country setting the appearance of the Political Budget Cycles is mainly driven by less developed countries. We will test for this hypothesis with two separate methods. First we will use two dummies, one for elections in low social capital countries and one for election in high social capital countries, and estimate separate regressions for developing and developed countries. Secondly we will use the levels regression to graph the marginal effect as in the previous section for separately developing and developed countries.

The rationale behind creating two dummies is that we want show that the election effect for low social capital countries is significant for both developed and developing countries. The downside of this procedure, also used by Brender and Drazen (2005), is that because in essence it splits the sample into subsamples, it is prone to type II error. At the same time though, when a coefficient turns out to be significant the conclusion is stronger due to the reduced sample. In light of that it is important to report the observations per category given

Table 4 Electoral Effects on Budget Balance: Developing versus Developed Countries and Social Capital

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[43] However we should note that this is also due to the less variability of outcomes as demonstrated in figure 1.

Dependent variable Balance as percent of GDP

	Panel Fixed Effects[a] – Separate Regressions based on Dummies					
	[1] All Countries		[2] Developing		[3] Developed	
	c	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$
Election*Low Social Cap.[b]	-0.7925***	(0.2922)	-0.6925**	(0.3385)	-1.2928***	(0.2923)
Election*High Social Cap.[b]	-0.0872	(0.1043)	-0.1083	(0.2001)	-0.0755	(0.1296)
Lagged Balance[c]	0.6094***	(0.0607)	0.4883***	(0.0845)	0.7741***	(0.0203)
Log(rGDPpc)[d]	0.3472	(0.2898)	0.2055	(0.4897)	0.4428	(0.3206)
Output Gap[e]	0.2148***	(0.0479)	0.1263**	(0.0508)	0.4384***	(0.0873)
Population above 65	-0.1991**	(0.0963)	-0.1993	(0.2647)	0.0338	(0.0985)
Population 15-64	0.0526	(0.0483)	0.0790	(0.0769)	0.0054	(0.0474)
Trade[f]	0.0001	(0.0062)	0.0056	(0.0093)	-0.0024	(0.0070)
Constant	-5.9710***	(2.0352)	-6.8799**	(2.7437)	-6.5560**	(2.4069)
Countries	63		39		24	
Observations	1762		911		851	
R^2	0.59		0.46		0.82	

  [a] Notes: The model is estimated using a fixed effects panel regression with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. β's are the coefficients and σ_β are the cluster robust standard errors.
  [b] Dummy variable taking the value of 1 at election years and 0 otherwise.
  [c] The first lag of the dependent variable, due to possible Nickell (1981) bias issues we repeat the regression using Arellano and Bover (1995) and Blundell and Bond (1998) methodology in the A9 table of the Appendix, discussed in the robustness analysis section.
  [d] Log of real Gross Domestic Product per Capital
  [e] Calculated using Hodrick- Prescott (1997) filter for each individual country based on the trend.
  [f] Trade as percentage of GDP

the level of social capital and the degree of development. In table 3 we report the amount of countries and observations per category. We can observe that most low social capital countries are concentrated in the developing countries and thus if our hypothesis is correct the effect observed by Shi and Svenssen (2006) was driven mainly by this concentration. The results of the separate regressions, under the two-dummy configurations, are reported in table 4. In the first column we report the results for the full sample and in the second and third column for developing and developed countries respectively. First, with respect to the full sample we can observe that only the low social capital election dummy is significant, a result in line with the conclusions of the previous section. Comparing column two and three with the results for the full sample we notice that the same pattern continues. In both cases only the low social capital election dummy is significant and negative. Furthermore, by looking at the size of the coefficients we can indeed argue that, in the case of developing countries, it is the low social capital countries that drive the pattern that was noticed by Shi and Svenssen. On the contrary the high social capital developing countries[44] do not seem to

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[44] In the separate country-by-country regression almost none of the countries classified as high social capital developing countries had a negative and significant coefficient. Furthermore there were countries where elections had a positive and significant effect like Guatemala. Overall, the effects where all very close to zero. With the only
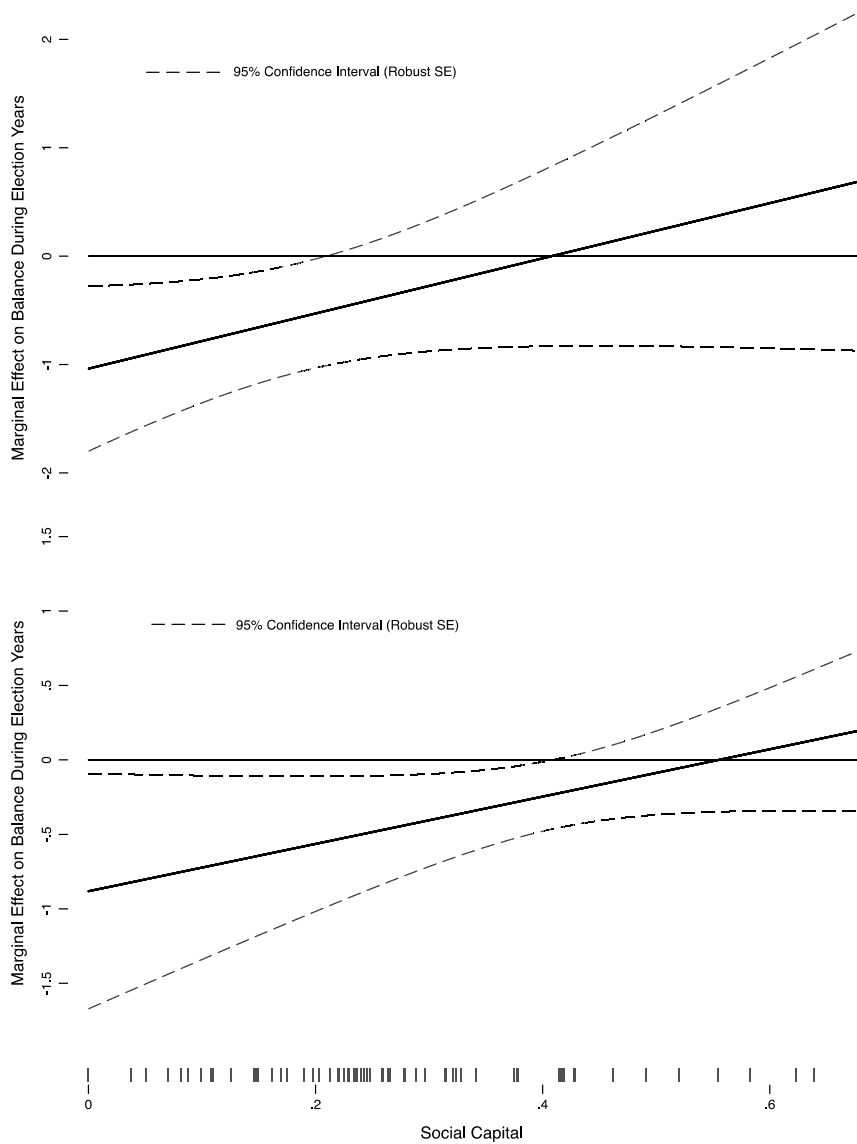
Figure 3 Marginal effects of election dummy on budget balance as the level of social capital increases for **a)**developing countries and **b)**developed countries.

experience a significant Political Budget Cycles effect. Even more interestingly, when we look at the case of developed countries, the coefficient for low social capital countries[45] is still negative and significant at 1% level. As such we can conclude that the appearance of

Table 5 New and Established Democracies and Social Capital

noticeable exception of Pakistan, which is probably misclassified due to the use of the median value of social capital as a classifier. Pakistan has a value of social capital of 0.25 with the median at 0.249.

[45] There are only four low social capital and developed countries namely Greece, Turkey, Portugal and France. Note that used the same classification as developing and developed countries as in Brender and Drazen (2005), thus although debatable we kept Turkey into developed countries. Even without Turkey though the results are still significant.

New and Old Democracies Based on Drazen (2004)

	Countries and Observations per Category			
	New Democracies		Old Democracies	
	Countries	Observations	Countries	Observations
High Social Capital	11	254	20	729
Low Social Capital	23	492	9	287

Political Budget Cycles is not confined only to developing countries. Additionally, we can observe that the election dummy for high social capital countries remains insignificant for all three separate regressions. The GMM estimates of table 4 using Arellano and Bover (1995) and Blundell and Bond (1998) are reported in table A9 in the appendix. The results are fairly robust, even after the Windmeijer (2005) error correction.

Up until now, the analysis was based on the separation between low and high social capital countries, based on the dummies we have created. However, it would be interesting to test the robustness of the results using the level of social capital in the interaction term. The information of the levels regression can be summarized in the graphs of the two marginal effects of elections on balance for the cases of developing and developed countries conditional on the level of social capital[46]. The two graphs are depicted in figure 3. On the upper panel of the figure we provide the marginal effect for developing countries and on the lower panel for developed. We observe that in both cases the graph looks similar to figure 1, since the effect starts as negative and significant and it becomes insignificant for higher values of social capital. In any case, we see that there is significant marginal effect even for developed countries as long as the value of social capital is low. It is even more interesting to focus on the developing countries where we see that the effect quickly become insignificant since it is only the countries with very low social capital that account for the effect. This is an indication that higher values of social capital are more important in developing countries. This effect can be rationalized by thinking of social capital as an informal institution of which the function is more important where the formal ones are not present.

To sum up, for the conditional analysis on developed and developing countries we can conclude that there is suggestive evidence that Political Budget Cycles are only present in low social capital countries irrespective if they are developed or developing. In the next two sections we will proceed in the same way controlling for new and old democracies and constitutional rules.

5.3.2.   Social Capital for New and Established Democracies

In their study Brender and Drazen (2005) assume that the significant effect of Political Budget Cycles in the multi-country empirical literature is due to a learning effect that occurs in new democracies. In essence they argue that as long as a democracy is new, voters tend to be inexperienced and thus budget cycles occur. This assumption is not in contradiction with our own, since we argue that indeed there is a voters' effect that drives the conditionality of budget cycles, based on the level of social capital. However, we observe in table 5 that the separation of the sample has some distinct differences since we find that almost 1/3 of new

Table 6 Electoral Effects on Budget Balance: New versus Established Democracies and Social Capital

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[46] The coefficient estimates for the levels regression are reported in the Appendix in section 8.4 table A6.

Dependent variable Balance as percent of GDP

	Panel Fixed Effects[a] – Separate Regressions based on Dummies					
	[1] All Democracies		[2] New Democracies		[3] Old Democracies	
	c	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$
Election*Low Social Cap.[b]	-0.7925***	(0.2922)	-1.2751***	(0.4254)	-0.0506	(0.2402)
Election*High Social Cap.[b]	-0.0872	(0.1043)	-0.2359	(0.1898)	-0.0644	(0.1247)
Lagged Balance[c]	0.6094***	(0.0607)	0.3921***	(0.1141)	0.7310***	(0.0034)
Log(rGDPpc)[d]	0.3472	(0.2898)	-0.2681	(0.5775)	0.4575	(0.2743)
Output Gap[e]	0.2148***	(0.0479)	0.2062***	(0.0671)	0.2819***	(0.0738)
Population above 65	-0.1991**	(0.0963)	-0.3002	(0.1978)	-0.0941	(0.0881)
Population 15-64	0.0526	(0.0483)	0.2417**	(0.1047)	0.0016	(0.0424)
Trade[f]	0.0001	(0.0062)	-0.0170	(0.0138)	0.0050	(0.0043)
Constant	-5.9710***	(2.0352)	-11.115***	(3.9659)	-5.0864**	(2.2912)
Countries	63		34		29	
Observations	1762		746		1016	
R^2	0.59		0.35		0.72	

[a] Notes: The model is estimated using a fixed effects panel regression with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. β's are the coefficients and σ_β are the cluster robust standard errors.

[b] Dummy variable taking the value of 1 at election years and 0 otherwise.

[c] The first lag of the dependent variable, due to possible Nickell (1981) bias issues we repeat the regression using Arellano and Bover (1995) and Blundell and Bond (1998) methodology A9 table of the Appendix, discussed in the robustness analysis section.

[d] Log of real Gross Domestic Product per Capital

[e] Calculated using Hodrick- Prescott (1997) filter for each individual country based on the trend.

[f] Trade as percentage of GDP

democracies have a high social capital. Thus, it would be interesting to test for two hypotheses: firstly, if the effect found in new democracies is robust for high social capital ones and secondly, if we can trace a budget cycle effect in low-social capital old-democracies. The analysis will be structured as in the previous section.

The results of the separate two-dummy regressions are reported in Table 6. As previously, in the first column are the results for the full sample, and in the second and third for new and old democracies respectively. We can easily observe that with respect to our two hypotheses the results are mixed. In the second column we observe that the coefficient for low social capital new democracies is negative and significant, however for high social capital it is insignificant. This result is in favor of our first hypothesis that in the case of new democracies the significance is driven by only the low social capital countries. Furthermore we can observe that the difference between the two coefficients is fairly large and, looking at the standard errors, seems significant. This is fully in line with our theoretical priors that, as the level of social capital increases, there will be a decreased possibility of a political budget cycles to occur. As we argued in our theoretical model this is due to the fact that the incentives of the incumbent to manipulate the economy become smaller. This hypothesis would have been falsified if we had observed the occurrence of
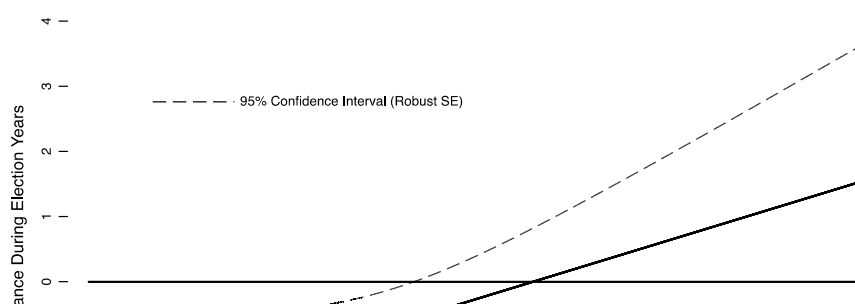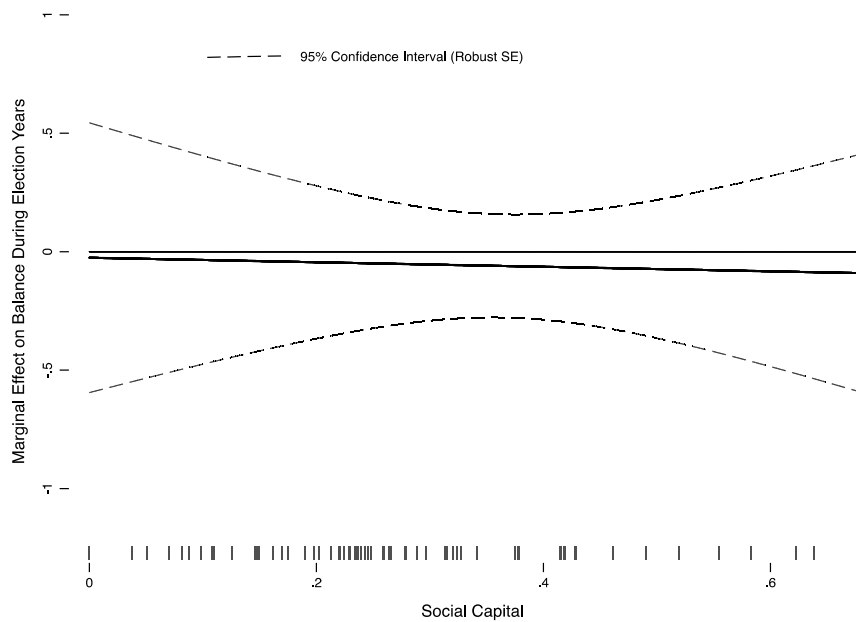
Figure 4 Marginal effect of election dummy on budget balance as the level of social capital increases for only **a)**new democracies or **b)**old decmocracies.

budget cycles in the high social capital new democracies. Hence, in essence the new democracies separation fails to falsify our hypothesis. Conversely, by observing column 3 of the table, we see that both coefficients for the election dummies are insignificant. On a parallel way we can infer that we fail to falsify the old democracies hypothesis. More specifically we can say that, in contradiction to what Brender and Drazen (2005) argue there is no new democracies effect but mostly a lack of evidence in old democracies. Thus, we can conclude that there is no evidence for political budget cycles neither in high social capital countries nor in old democracies. To check the robustness of this conclusion we additionally regressed new and old democracies election dummies for only high social capital countries and we find that both are insignificant [47] .The regressions of table 6 are reproduced again using GMM

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[47] The results are reported in table A7 in the Appendix.

estimation in table A9 of the Appendix. Nevertheless the results are almost identical to the fixed effects panel regression.

For the levels specification we find results that are in line with the results of the two-dummy analysis. The estimates for all the regression are reported in table A8 in the Appendix. Figure 4 depicts the graphs of the marginal effects of the election dummies on budget balance. In the upper panel of the figure we graph the effects for new democracies as the level of social capital increases. As it is readily observable a similar, familiar, pattern arises. The effect is only significant for lower values of social capital and it gradually decreases until it becomes insignificant. Hence we can see that the significance in the group of new democracies is indeed driven by the low social capital countries. On the contrary in the lower panel of the figure, we can observe that the effect is in general insignificantly different from zero. Thus we see one more time that there is indeed absence of evidence for the existence of budget cycles in old democracies. However, when we graph the effect of new democracies in high social capital countries it looks the same. At this point it is highly
important to draw the attention to the fact that there are only 9 low social capital old democracies and the failure to provide evidence might be due to a type II error as the size of the sample is insufficient.

To conclude with respect to new and old democracies we find evidence that in the case of new democracies the significant effect is driven by the low social capital countries, however we fail to provide evidence that there is a significant election cycle in old democracies. Thus it seems that the effect described in the literature as the new democracies effect is more like the old democracies effect.

5.3.2. *Social Capital and Constitutional Rules*

Arguably constitutional rules are at the heart of the notion of democracy and thus set the stage for a functioning political system. Since different rules can affect both voters motives and politicians incentives in divergent ways, their impact on economic activity is a central question. Along these lines, Persson and Tabellini (2002) focus on different political systems and their pre- and post-electoral effects on fiscal policy. They categorize the countries according to the form of government as Presidential or Parliamentary as well as according to the election voting rules as Proportional or Majoritarian. Given this categorization we will try to test the robustness of our effect based on social capital under different forms of government and election voting rules.

Persson and Tabellini argue that parliamentary systems tend to have more checks and balances and as such they expect to be less susceptive to fiscal manipulation. On the contrary in a presidential system the executive is only directly accountable to voters. Given this hypothesis we need to check with respect to presidential systems if political budget cycles are only present in low social capital countries and not in high social capital ones. Furthermore, we need to test if we can trace the presence of budget cycles in low social capital parliamentary systems. Hence, in order to estimate these effects we have created a dummy for the election years in countries belonging to each of the pre-specified categories. As such we expect to find a significant effect of the election years only in the low social capital Presidential and Parliamentary democracies.

The results are reported in the first and second column of table 7. Column 1 reports the estimates using a panel fixed effects specification and column 2 reports the estimates using

Table 7 Electoral Effects on Budget Balance: Social Capital and Constitutional Rules

Dependent variable Balance as percent of GDP

	Dummies Specification							
	Presidential and Parliamentary				Majoritarian and Proportional			
	[1] Fixed Effects		[2] GMM		[3] Fixed Effects		[4] GMM	
	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$
Elect*Parl*Low[b]	-0.766**	(0.359)	-0.772***	(0.279)				
Elect*Parl*High[b]	-0.140	(0.114)	-0.178	(0.133)				
Elect*Pres*Low[b]	-0.806**	(0.376)	-0.885**	(0.377)				
Elect*Pres*High[b]	0.177	(0.217)	-0.108	(0.508)				
Elect*Prop*Low[b]					-0.780**	(0.377)	-1.040***	(0.379)
Elect*Prop*High[b]					-0.127	(0.108)	-0.199	(0.128)
Elect*Maj*Low[b]					-0.532**	(0.251)	-0.700	(0.824)
Elect*Maj*High[b]					-0.077	(0.033)	-0.305	(0.395)
Lagged Balance	0.610***	(0.061)			0.609***	(0.061)		
Lag_1 Balance[c]			0.279***	(0.078)			0.285***	(0.019)
Lag_2 Balance[c]			-0.029	(0.092)			-0.036	(0.080)
Log(rGDPpc)[d]	0.347	(0.290)	3.780***	(1.278)	0.355	(0.289)	0.358***	(1.381)
Output Gap[f]	0.215***	(0.048)	0.761***	(0.173)	0.214***	(0.048)	0.642***	(0.199)
Population 65	-0.199**	(0.096)	-0.318	(0.232)	-0.202**	(0.097)	-0.338	(0.238)
Population 15-64	0.053	(0.048)	-0.143	(0.184)	0.054	(0.048)	-0.106	(0.185)
Trade[g]	0.000	(0.006)	0.031**	(0.014)	0.000	(0.006)	0.031*	(0.005)
Constant	-5.968***	(2.037)	-27.26***	(10.37)	-6.071***	(2.054)	-27.11***	(10.89)
Countries	63		63		63		63	
Obs	1762		1682		1762		1682	
Num. Instruments	-		236		-		236	
Arellano-Bond Test for AR(1) (p-value)	-		0.0165		-		0.0112	
Arellano-Bond Test for AR(2) (p-value)	-		0.4292		-		0.4162	
Hansen Test (p-value)	-		1.0000		-		1.0000	

[a] Notes: The models are estimated using Panel Fixed Effects or GMM based on Arellano and Bover (1995) and Blundell and Bond (1998) methodology with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. β's are the coefficients and σ_β are the cluster robust or the Windmeijer (2005) corrected standard errors for the GMM.

[b] Dummy variables for elections in democracies with parliamentary, presidential, majoritarian or proportional constitutional rules separated by high and low social capital, taking the value of 1 at election years and 0 otherwise.

[c] Instrumented based on Arellano and Bover (1995) and Blundell and Bond (1998).

[d] Log of real Gross Domestic Product per Capital

[e] Calculated using Hodrick- Prescott filter (1997) for each individual country based on the trend.

[f] Trade as percentage of GDP.

the two-step GGM method of Arellano and Bover (1995) and Blundell and Bond (1998). As it easily observable in both cases only the estimates of low social capital countries are significant and negative. On the contrary the estimates for high social capital countries are insignificantly different from zero irrespective of the governance system. Additionally there seems to be almost no difference between the sizes of the coefficients estimated for low social

capital countries across governance systems. The results of the GMM estimates are almost identical to the fixed effects with respect to the variables of interest[48]. Furthermore the system GMM is consistent as long as at least the second auto correlation test is rejects the null, which proves to be the case. Finally, given the results of the Hansen test, reported in the bottom of table 7, our instruments indeed seem to be orthogonal to error term and thus exogenous and valid. Along these lines our results seem to be robust across different governance systems.

Another hypothesis of Persson and Tabellini, which is based on the political literature, is that majoritarian voting rules are mostly tailored to hold politicians accountable and proportional to keep the electorate better represented. Thus with respect to Political Budget Cycles majoritarian electoral rules will tend to be less prone to demonstrate election manipulation effects. On the contrary proportional ones are expected to show evidence of election year effects. In order to test these hypotheses, we use a similar strategy as with respect to governance systems. Moreover, in a similar manner as previously we expect only the election effects in the low social capital countries to turn out significant unconditional to election rules.

The estimates are reported in columns 3 and 4 of table 7. First, with respect to the panel fixed effects estimates, we indeed observe that in both cases only the low social capital countries to experience an election effect on budget balance. In both cases the coefficients are negative and significant. However at the same time we notice that indeed the coefficient of democracies using majoritarian rules is smaller than the one referring to countries using proportional election rules. Although the difference is statistically insignificant, given the standard errors, it might be an indication that indeed majoritarian voting rules might have an impact on the election year effect. Turning to the GMM estimation we notice that, although the effect for low social capital proportional democracies stays robust, the coefficients of majoritarian ones becomes insignificant. Nevertheless it is crucial to notice that the size of the coefficient does not change and the loss of significance is mostly due to the increased standard error. In any case we observe that the effect is confined to low social capital countries and there is no sign of pre-election manipulation for high social capital ones. Thus even if there might be hints that majoritarian rules might have an effect, our main hypothesis, that in high capital countries we should not observe pre-election effects on fiscal policy, stays robust.

5.4. Robustness Analysis

During the previous sections we have estimated the models using mostly panel fixed effects which, given the time span of the panel, is a reasonable method[49]. However, and in effort to check the robustness of our results in this section, we will estimate the models using the methodology for dynamic panels of Arellano and Bover (1995) and Blundell and Bond (1998). Therefore use of the Two-Step System GMM estimator is a fairly recent development in the literature of Political Budget Cycles. Earlier studies[50] either use only fixed effects or the One-Step Arrelano and Bond (1991) estimating method, which is not expected to solve the problem if serial correlation exist. Thus we observe that the results of this studies hardly ever change. Thus the use of Arellano and Bover's (1995) and Blundell and Bond's (1998) improved method is becoming increasingly popular. The implicit disadvantage is that the method is tailored mostly for large cross-section and short time span datasets. However, in our case, and especially when we split our sample, the time dimension tends to become as

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[48] We observe that several of the control variables become significant and there are also notable differences in the estimated coefficients.
[49] Since the bias that arises from including the lag variable is of the order 1/T.
[50] See for example Bender and Drazen (2005)

large if not larger than the cross section. Hence the estimates are becoming increasingly more conservative, which is also reinforced by the fact that we use Windmeijer (2005) corrected standard errors. In any case we believe that it is important to check the validity of our results especially given the fact that there might be a serial correlation of the error term. This section will be structured as follows. First we will estimate our based model using separate regressions for low and high social capital countries. Secondly we will estimate a full sample model including an interaction with the dummy or the level of social capital, and graph the corresponding marginal effect. Finally we will estimate the models for using separate dummies for election years: **i)** for developed or developing countries, **ii)** for new or established democracies.

Table 8 reports the estimates for the base model in separate regressions using the GMM estimator. In column 1 we report the estimates for low social capital countries and in column 2 for high social capital ones. As we can observe the estimated election dummy coefficient is again negative and significant at the 1% level as in the fixed effects model. Additionally it is very close to the estimate we attained in the previous section. Furthermore, the election dummy coefficient for the high social capital one is again insignificantly different than zero. For both regression the ar(2) test does not reject the null hypothesis and in combination with the value of χ^2 for the Hansen test terms our model valid.

In a similar manner we report the estimation results of the models including the interaction term in table 9. Column 1 refers to the dummy specification and column 2 refers to the level one. First with respect to the model with the interaction term based on the dummy for social capital, we observe that both the election dummy and the interaction term are significant and bare the correct sign. Moreover we notice that the sum of the two terms is very close to zero, showing that the there is a positive effect due to high social capital, or in other words: in high social capital countries there is no observable Political Budget Cycle. For the levels specification however we can observe that the results are hardly significant, however that is mostly due to the use of Windmeijer (2005) corrected standard errors. Furthermore, as we have previously noted for models including interaction terms with levels, it is important to graph the marginal effects. Thus in figure 5 we graph the marginal effect of the election dummy on budget balance as the level of social capital increases. The confidence interval depicted with the dotted line is based on the corrected robust standard errors. Once more we observe that the plot of the marginal effect starts negative for low values of social capital and increases along with the level social capital. However, for very low values of social capital the confidence interval is above zero and as such the effect is not statistically significant. Nonetheless it is readily observable that this is driven mostly by the lack of observations as the effect is strongly negative as opposed to the middle of the graph where the effect is very close to zero but still significant due to more available observations. The distribution of the observations is depicted in the rug plot at the bottom of the figure. In any case the graph of the election effect is very similar to the one based on the fixed effects estimation, however due to the lack of observations in the lower end of social capital in combination with the robust errors we cannot confidently conclude with respect to the election effect. To sum up, in the dummy specification we can conclude that indeed there is a positive and significant effect of social capital, reducing the possibility to observe an election induced budget cycle. On the contrary, with respect to the level specification, the

Table 8 Electoral Effects on Budget Balance in High and Low Social Capital Democracies

Dependent variable Balance as percent of GDP

	GMM[a] – Separate Regressions				
	[1] Low Social Capital			[2] High Social Capital	
	$\hat{\beta}_i$	$\hat{\sigma}_\beta$		$\hat{\gamma}_i$	$\hat{\sigma}_\gamma$
Election[b]	-0.8650***	(0.3406)		-0.0872	(0.1633)
Lag_1 Balance[c]	0.3878***	(0.1115)		0.8086***	(0.0816)
Lag_2 Balance[c]	0.0568	(0.1128)		-0.0626	(0.0909)
Log(rGDPpc)[d]	2.1201	(3.8302)		1.7277	(1.9649)
Output Gap[e]	0.5172	(0.5057)		0.7555	(0.6589)
Population 65	0.3262	(0.8163)		-0.3307	(0.8156)
Population 15-64	-0.6004	(0.8163)		0.0905	(0.6559)
Trade[f]	0.0351*	(0.0185)		0.0014	(0.0141)
Constant	10.439	(35.926)		-20.657	(33.761)
Countries	32			31	
Observations	736			946	
Number of Instruments	232			230	
Arellano-Bond Test for AR(1) (p-value)	0.0108			0.0009	
Arellano-Bond Test for AR(2) (p-value)	0.1600			0.8553	
Hansen Test (p-value)	1.0000			1.0000	

[a] Notes: The model is estimated using Arellano and Bover (1995) and Blundell and Bond (1998) methodology with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. β's are the coefficients and σ_β are the Windmeijer (2005) corrected standard errors.

[b] Dummy variable taking the value of 1 at election years and 0 otherwise.

[c] Instrumented based on Arellano and Bover (1995) and Blundell and Bond (1998).

[d] Log of real Gross Domestic Product per Capital

[e] Calculated using Hodrick- Prescott (1997) filter for each individual country based on the trend.

[f] Trade as percentage of GDP.

results are partially inconclusive since we observe the expected pattern, albeit it is statistically insignificant for low value of social capital.

Finally, we test our results with respect to the conditional regressions. In order to achieve that we avoided to estimate separate regressions as the sample would have a significantly shorter cross section than time dimension and as such the GMM estimation would not be an ideal method. Thus we create separate election dummies for each four categories for both cases. Table A9 reports the results. In the first column we test for the conditional effect of developed or developing countries and social capital. The results of our prior analysis seem to be robust as again we observe an election effect only for low social capital countries irrespective of whether the country belongs to the developed or developing group. Moreover in column 2 we perform the same analysis with respect to new or establish democracies.

Table 9 Electoral Effects on Budget Balance

Dependent variable Balance as percent of GDP

	GMM[a] – Full Sample			
	[1] Dummies Specification		[2] Levels Specification	
	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\gamma}_i$	$\hat{\sigma}_\gamma$
Election[b]	-0.9994***	(0.3157)	-1.3804*	(0.7995)
Election*Social Capital Dummy	0.8701**	(0.3579)		
Election*Social Capital Level			2.9157	(2.3008)
Lag_1 Balance[c]	0.5568***	(0.0676)	0.5510***	(0.0646)
Lag_2 Balance[c]	0.0927	(0.1032)	0.0891	(0.1026)
Log(rGDPpc)[d]	1.1581	(0.1277)	1.0056	(1.1218)
Output Gap[e]	0.3658**	(0.1466)	0.3616**	(0.1452)
Population above 65	-0.0198	(0.2316)	-0.0062	(0.1946)
Population 15-64	-0.1291	(0.2316)	-0.0850	(0.1475)
Trade[f]	0.0321**	(0.0127)	0.0336***	(0.0130)
Constant	-5.7505***	(10.092)	-7.4146	(8.4578)
Countries	63		63	
Observations	1682		1682	
Instruments	233		233	
Arellano-Bond Test for AR(1) (p-value)	0.0029		0.0029	
Arellano-Bond Test for AR(2) (p-value)	0.1277		0.1178	
Hansen Test (p-value)	1.0000		1.0000	

[a] Notes: The model is estimated using Arellano and Bover (1995) and Blundell and Bond (1998) methodology with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. β's are the coefficients and σ_β are the Windmeijer (2005) corrected standard errors.

[b] Dummy variable taking the value of 1 at election years and 0 otherwise.

[c] Instrumented based on Arellano and Bover (1995) and Blundell and Bond (1998) .

[d] Log of real Gross Domestic Product per Capital

[e] Calculated using Hodrick- Prescott (1997) filter for each individual country based on the trend.

[f] Trade as percentage of GDP.

Once more the results are identical to our initial analysis using the fixed effect estimation method. In both cases the ar(2) test and the Hansen test reject the null hypothesis.

To conclude the robustness analysis, the estimations using the fixed effects model tend to be almost identical to the ones using the GMM estimation methods with the notable exception of the level interaction model specification. However, it would be reasonable to argue that the results of the previous sections are robust and not driven by possible underlying biases. Thus, although we have undertaken a fairly conservative approach we
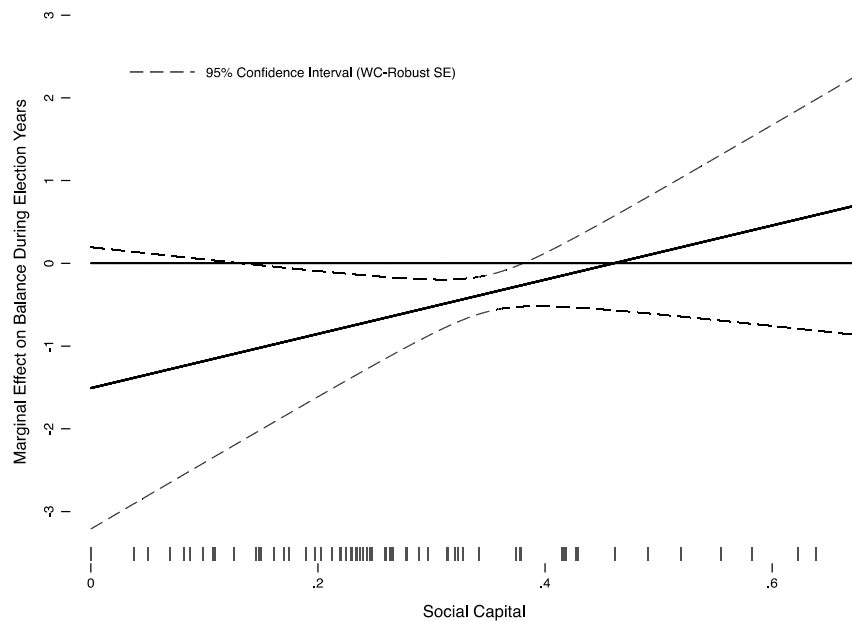
Figure 5 Marginal effect of election dummy on budget balance as the level of social capital increases for GMM estimation using Windmeijer (2005) corrected standard errors.

have managed to demonstrate that there is conditional effect of social capital regarding the appearance of Political Budget Cycles.

6. Discussion

Economics is predominantly a social science and thus arguably the nature of societal characteristics plays a pivotal role in expected economic outcomes. Despite a few notable exceptions there is a striking absence of underlying civil and cultural characteristics in the theoretical and empirical literature of Political Budget Cycles. The very word "democracy" derives its origin from the Greek words "demos", meaning people and "kratos", meaning power. However voter's characteristics tend to be ignored in the formalization of endogenous politics in economics. Along these lines, this paper contributes to the literature by including the notion of social capital in both the theoretical and the empirical literature of Political Budget Cycles, in an effort to identify the underlying reasons of their conditional appearance. In light of the analysis conducted in the previous sections we will now focus on discussing the main results and conclusions that can be derived with respect to social capital and pre-election fiscal manipulations. Hence, this section is aiming to derive and clarify possible conclusions. Additionally, we will devote a considerable part of the discussion on the limitations posed by the data and inference issues.

There is a widespread believe in the political literature that the level of voters social capital will act as constrain to politician misbehaving. One can consider social capital as the glue between the pieces of the societies jigsaw puzzle, that keeps all the pieces together constraining the advance of particularized interests in expense of common ones. In that respect, by adjusting a known moral hazard model, we have shown that when voters focus only on particularized benefits, such as public goods and personal taxes and ignore general

ones such as public debt they implicitly open the door for fiscal manipulations. We concluded that the incumbent will only have an incentive to manipulate the economy when the ratio of low social capital voters is sufficiently high.

In line with our theoretical priors the results from the empirical section show a clear interrelation between the level of social capital and observable budget cycles. We have shown that the existence of political budget cycles turns out to be statistically significant only in low social capital countries. At this point it is important to stress that the insights from the theoretical model point to a lack of fiscal manipulation in high social capital countries rather than the presence of manipulation in lows social capital ones. As such in our results section we indeed failed to find evidence of a political budget cycle in high social capital countries even in the group of new democracies that have been argued to be responsible for the significant results in the literature. Conversely, in most cases we found strong evidence for the appearance of budget cycles in low social capital democracies, with the notable exception of old democracies. The exception of old democracies hints to an important insight by pointing to institutional structures or the presence of other unobservable characteristics in old democracies that prevent the existence of Political Budget Cycles. That holds even for low social capital democracies in very much the same way we assumed high social capital prevents Political Budget Cycles to occur in new democracies. This might imply that high social capital is an important institutional characteristic, where formal institutions are not yet highly developed. In any case, both our theoretical and empirical contributions, point towards social capital as an important underlying mechanism regarding the existence of Political Budget Cycles and simultaneously lead to further questions open to future research.

6.1 Limitations

The concept of social capital on a theoretical level is easily interpretable. When it comes to measurement and inference methods, however, it is generally more complicated. Thus it is important to focus our attention on the possible limitations that are posed by the nature of social capital. Additionally we should refer to the limitation of the identification strategy undertaken throughout the paper and its shortcomings along with possible data limitations. Thus, we will devote the next few paragraphs on these possible limitations and their consequences with respect to our results.

6.1.1.   The nature of social capital and trust

The nature of social capital due to its interrelation with culture might lead to an implied endogeneity problem. Although, as we argued, social capital is a slow changing variable[51] and we also keep it constant along the sample years, it still might reflect past long-run institutional and governmental efficiency along with past economic outcomes. In essence, social capital might be a reflection of historical economic and social outcomes of a society and if we hypothesize a persistence of these outcomes in the future, then social capital might simply be a proxy for the assumption of continuity. Thus, although we argue that social capital changes slowly and there will be no endogeneity with present economic outcomes, this may be different with respect to the long-run, assuming there is certain persistence in economic outcomes. As such, this increases the difficulty of establishing a causal relationship.

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[51] For example the correlation coefficient between survey waves 25 years apart is approximately 0.93. For further evidence please refer to the Appendix, section 8.1.2.

Furthermore, following the literature we proxy social capital using generalized trust. The data for trust are taken from the World Value Survey. Like every proxy trust is an imperfect reflection of social capital and that arguably creates inference issues. Since, finding a perfect measure of social capital is not the purpose of this paper we refrain from elaborating on the advantages and disadvantages of trust as a proxy. We can only note that, with respect to future research, finding a measurement of the ratio of generalized to particularized interest would be probably more convincing. As such a ratio of generalized to particularized trust would be more relevant from a macroeconomic perspective. Having said that, we firmly believe that generalized trust is a fairly decent approximation of the true unobservable value of social capital.

6.1.2.   Balancing between Type I and Type II errors and data limitations

Similarly, to the literature, during our conditional analysis we contrasted social capital with several other proposed dichotomous variables. In order to show that the results were mainly driven by the level of social capital we estimated several separate regressions. However, there is always the possibility when reducing the sample and running separate regressions to commit a Type II error and thus not being able to identify an effect when it is actually present. Thus, we should be cautious with the interpretation of our results, especially in the case of separate conditional regressions. On the other hand aggregation might lead to finding significant effects that are actually driven by other underlying factor, as we have shown. We therefore argue that, especially in the cases that we are interested in identifying conditional effects we should always try to keep an optimal balance between falsely asserting a condition that does not exist or failing to identify a difference when one exists.

Finally with respect to the data used in the empirical section several limitations apply. First we opted for a time span closely matching that of Brender and Drazen (2005), including the years form 1960-2001, which we could easily expand, however we chose not to in order to keep our results readily comparable. Secondly we use the budget balance as a dependent variable, however several other measures have been proposed as alternative fiscal indicators[52]. Lastly, several other controls could be included or present control variables could be improved[53].

7.   Conclusions

As the literature of Political Budget Cycles matured, the underlying debate regarding their universal character became increasingly important. Recent evidence points to a conditional existence of election effects on fiscal policy, however the source of the conditionality is debatable. Several dichotomous variables have been proposed, such as developed and developing countries (Shi and Svensson 2002, 2006) or new and established democracies (Brender and Drazen 2005) assertions supported by empirical evidence, however theoretically less convincing. Thus this paper tries to fill this void by proposing the level of citizen's social capital as the driving force behind the conditionality of budget cycles.

As such we provide an adapted version of an existing moral hazard model to be used as theoretical framework in order to explain the interrelation of social capital and Political

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[52] For examples see Brender and Drazen (2005).

[53] For example the output gap could be replaced with the growth rate and several institutional controls could be added.

Budget Cycles formally. Along these lines we show that, as the ratio of low social capital voters increases, the incumbent has an incentive to manipulate the economy through increasing the deficit in the election year. This is attributed to the particularized interest of low social capital citizens, since they tend to highly discount indirect benefits such as public debt.

In the empirical analysis we find evidence in support of an underlying relationship based on the level of social capital. Firstly, we show that election effects on fiscal budget are only present in low social capital democracies. Additionally, as the level of social capital increases, the effect decreases and eventually becomes insignificant. Our results have proven to be fairly robust when confronted with other competing theories. Along these lines, we have shown that the both for developing and developed democracies only low social capital ones experience the presence of Political Budget Cycles. Moreover, governance systems and election rules do not seem to have an influence on the prescribed relationship. Finally, although we prove that the significance of budget cycles in new democracies is driven by the low social capital ones, we fail to do the same with old democracies.

To conclude, in this paper we provided a theoretical and empirical approach in an effort to investigate the relationship between the level of social capital and pre-election fiscal manipulation. Although there is strong evidence that a high level of social capital decreases the possibility of Political Budget Cycles, further research is needed to solidify this interconnection.

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Table A1 Summary Statistics of All Variables[a]

	Mean	Obs	Maximum	Minimum	Standard Deviation
Balance[b]	-2.013	1874	19.82	-28.57	3.741
Elect	0.193	2646	1	0	0.395
Social Capital	0.278	2646	0.639	0.038	0.138
Social Capital Dummy	0.492	2646	1	0	0.500
Log(rGDPpc)	8.431	2302	10.82	5.613	1.019
Output Gap[b]	3.637	2304	13.78	-5.188	2.285
Population above 65	8.319	2585	18.07	2.3	4.332
Population 15-64	60.80	2585	72.09	47.98	5.904
Trade[b]	58.58	2281	229.8	7.989	34.48
New Dem[c]	0.540	2646	1	0	0.499
Old Dem[c]	0.460	2646	1	0	0.499

[a] Notes: The sample years are 1960 until 2001.
[b] As percentage of GDP
[c] For specification see Drazen (2004)

8. Appendix

8.1 Data

The data used for the empirical analysis are almost identical to the data used by Brender and Drazer (2005). The data extend from 1960 to 2001 and include 63 democratic countries. The reason we used this specific time frame[54] was to have result that can be readily compared with that of Brender and Drazen. The controls that we utilized are again aligned with the empirical literature on budget cycles[55]. We will first describe all variables used at the regressions along with the sources for the data. Table A1 in the next page provides the summary statistics for all the main variables.

8.1.1 Budget balance

Our dependent variable is the budget balance which we calculate as the difference between Total revenue and Total grants minus Total expenditures as percentage of the GDP. All data were taken from the international financial statistics of the IMF.

8.1.2 Social capital

For the variable of social capital we use as proxy generalized trust. Although there has been an ongoing discussion in the literature for the appropriateness of the use of trust as a proxy for social capital we believe, along with many others in the literature, that is a reason-

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[54] Albeit data for year later than 2001 are available.
[55] Several improvements could be made as for example the use of growth instead of output gap based on Hodrick- Prescott (1997) filter due to the inconsistences that this filter can lead to.

Table A2 Correlation Matrix Different World Values Surveys

	WVS1	WVS2	WVS3	WVS4	WVS5
WVS1	1,000				
WVS2	0,903	1,000			
WVS3	0,941	0,923	1,000		
WVS4	0,765	0,867	0,850	1,000	
WVS5	0,914	0,913	0,930	0,875	1,000

[a] Notes: World Value Survey waves: in 1981,1990-1991, 1995-1996, 1999-2001 and 2005-2007

able approximation. The indicator of trust commonly used[56] is the measure of generalized trust from the World Value Survey (2009). Where data were missing, we used the regional barometer (e.g. the Latino Barometer, Asian Barometer) which includes the same question. The indicator is based on the well-known survey question: 'Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?' The two options offered as answers are: **1)** 'Most people can be trusted', **2)** 'You can never be too careful when dealing with people'[57]. The indicators value is the percentage that answer the question picking the first option. Thus refer as the percentage of trust per country. At this point it is apparent to see the link with social capital, since social capital refers to the ability to cooperate and focus on common interests as contradicted to particularized ones.

In the World Value Survey there are five separate waves: in 1981, 1990-1991, 1995-1996, 1999-2001 and 2005-2007. There exist differences on the number of observations per country and for that reason we use the average over the first four waves. We opt for taking the average over the first four waves to reduce the sampling error and use it only for cross country comparisons, not across time. For the dummy variable of social capital we use the median to separate the sample into two groups of low and high social capital. The dummy takes the value of 1 for high social capital and 0 for low[58]. Arguably, this separation is imperfect however provides model easier to interpret. Additionally we use the level to show that our result our robust.

With respect to endogeneity problems, the trust variable tends to be a very slowly changing variable, as can be observe from the correlation between the five waves reported in Table A2. Note that the correlation of wave 1 and 5 is around 91% and the two waves are 25 years apart. As such it is highly unlikely that at the short term the trust levels in a country can change dramatically since it tend to be emended in the culture. The issue of endogeneity of trust has been thoroughly discussed due to the fact that was used to explain long run growth, where indeed it is arguable that a high level of economic growth and development will, in the long run, create a high level of social capital, hence trust. However in the short run, as trust levels are barely changing across time, this is hardly an issue. Furthermore, the only way trust levels change dramatically are due to significant historical events, such as for example civil wars, which are arguably uncorrelated with the level of budget balance.

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[56] See for example Knack and Keefer (1997) , Dearmon and Grier (2011), Gorodnichenko and Roland (2011) and Bjørnskov (2012)

[57] However sometimes when we use the Latino Barometer there was small variance in the wording of the answers that would permit to reply that you agree with both or none, and for that reason we used the valid converted percentages that are supplied.

[58] In the general model we use the dummy as we define it here interacted with the election dummy. However in the models where we have to check for several conditionalities we use the social capital separation to define dummies for elections in low and high social capital countries.

8.1.3   Elections

The election dummy takes the value of 1 during election years and 0 otherwise. The data of election years are taken from the Institute of Democracy and Electoral Assistance. More specifically the database is called: 'Voter Turnout: A global survey'.

8.1.4   Developing and developed countries

The developed country dummy is taken from the World Fact Book: 'List of Developed countries' of CIA. The dummy takes the value of 1 when the country belongs to the developed countries and the value of 0 when it belongs to less developed or developing ones.

8.1.5   New and old democracies

New democracies are defined as countries that change from autocracy to democracy during the sample years. For democracy we use the POLITY IV score. The score takes values from -10 for full autocracy to 10 of full democracy. Thus a country changes from autocracy to democracy when it the POLITY score changes from autocracy to democracy[59].

8.1.6   Constitutional rules

There are two categories and four distinct types of constitutional rules we consider. Firstly, we consider electoral rules dependent to the form of the democracy, Presidential or Parliamentary. Second, we consider election rules that follow a majoritarian system or proportional system. Based on the previous divisions we create election dummies for all combinations or more specifically: **i)** Presidential Low Social Capital, 1 in every election year in presidential low social capital countries 0 otherwise. **ii)** Presidential High Social Capital, 1 in every election year in presidential high social capital countries 0 otherwise. **iii)** Parliamentary Low Social Capital, 1 in every election year in parliamentary low social capital countries 0 otherwise. **iv)** Parliamentary High Social Capital, 1 in every election year in parliamentary low social capital countries 0 otherwise. The same way we make the dummies for majoritarian and proportional: **i)** Proportional Low Social Capital, 1 in every election year in proportional low social capital countries 0 otherwise. **ii)** Proportional High Social Capital, 1 in every election year in proportional high social capital countries 0 otherwise. **iii)** Majoritarian Low Social Capital, 1 in every election year in parliamentary low social capital countries 0 otherwise. **iv)** Majoritarian High Social Capital, 1 in every election year in parliamentary low social capital countries 0 otherwise.

The data for the election rules are the same as in Persson and Tabellini (2002) and Brender and Drazen (2005) and the database where we acquire the data is the DPI – Database of Political Institutions.

8.1.7   Control variables

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[59] For a more elaborate definition see Brender and Drazen (2005)

The choice of control variable was done consistently with the literature. All data are derived form the World Development Indicators of the World Bank. First control variable we use is the natural logarithm of the real GDP per capital for constant US dollars 1995. We use Hodrick-Prescott Filter to calculate the trend and subtract it from the real GDP to get the output gap. Although the use of the Hodrick-Prescott filter is controversial and in some cases in the literature growth rates are used instead, we choose to follow the guidelines of Brender and Drazen (2005) to make our results readily comparable.

There are also two demographic variables included as the percentage of population above the age of 65, and the percentage between 15-64. Finally the share of international trade as percentage of the GDP is included.

8.2 Stationarity and Cointegration

In order to test for the presence of non- stationarity we apply the unit root test of Im, Pesaran and Shin (2003). Their test is referred to in the literature as the IPS test and is a panel version of the augmented Dickey Fuller test. The IPS test controls for individual unit roots, allowing unit root processes to vary across cross-sections. By using separate regressions[60] for each cross-section (e.g. country) using the individual time-series, it tests the null hypothesis of H_0: $\rho_i=0$, for all countries against the alternative H_1: $\rho_i<0$ for some countries, and constructs a test statistic (Z-stat)[61] by averaging each individual t-statistic. The rejection of the null hypothesis of non- stationarity proves the stationarity of the variables. Most of the variables tend to reject the null hypothesis of a unit root, however if we use the Fischer panel unit root test we find that in most cases we fail to reject the null hypothesis. For this reason we need to test for cointegration. In order to check for the possibility of cointegration we performed the Pedroni test for panel cointegration and for the robustness of the results we also performed the Kao panel cointegration test. Both tests are an Engle-Granger based tests, checking if the residual of the $I_{(1)}$ variables are $I_{(0)}$. Pedroni (1999, 2004) and Kao (1999) extended the test for panel data. The auxiliary regression consider under the Pedroni test is:

$$e_{it} = \rho_\iota e_{i,t-1} + \sum_{j=1}^{P_i} \psi_{i,j}\Delta\left(e_{i,t-j}\right) + \upsilon_{i,t}$$

In his paper Pedroni (1999, 2004) describes various method of creating a test statistic of the null hypothesis of no-conintegration H_0: $\rho_\iota=1$. The resulting statistics are reported in Table A4. As we can observe in two out of three cases the null hypothesis is rejected. Thus we conclude that there is cointegration. Furthermore the Kao Test (1999) in its augmented version uses the following auxiliary regression:

$$e_{it} = \rho e_{i,t-1} + \sum_{j=1}^{P} \psi_i\Delta\left(e_{i,t-j}\right) + \upsilon_{i,t}$$

Table A3 Unit Root Tests[a]

	Unit Root Test

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[60] $\Delta y_{it} = \rho_i y_{it-1} + \sum_{j=1}^{P_i} \beta_{ij}\,\Delta y_{it-j} + X'_{it}\delta + e_{it}$

[61] $Z = \dfrac{\left(\sum_{i-1}^{N} t_{i\,T_i}(p_i)\right)}{N}$

H_0	Nonstationarity			
	Im, Pesaran and Shin		Fischer	
	Z-Statistic	P-value	χ^2-statitic	P-value
Balance	-3.04510	0.0012	226.9002	0.0000
Elect	$-1.2\ 10^{15}$	0.0000	2270.323	0.0000
Log(rGDPpc)	-2.72853	0.0032	56.1218	1.0000
Output Gap[b]	-37.8301	0.0000	1406.529	0.0000
Population above 65	5.07001	1.0000	84.9133	0.9981
Population 15-64	-1.81903	0.0345	127.8091	0.4383
Trade[b]	-1.87964	0.0301	105.9709	0.9020

[a] Notes: The sample years are 1960 until 2001.
[b] As percentage of GDP

Table A4 Cointegration Tests[a]

		Pedroni cointegration test[b]			
ρ-statistic		PP-statistic		ADF-statistic	
6.2699	(0.99998)	-17.54323	(0.0000)	-4.5920	(0.0000)
		Kao cointegration test[c]			
		ADF-statistic			
		-16.24738	(0.0000)		

[a] Notes: The probabilities are reported inside the brackets.
[b] The null hypothesis of the Perdoni test is of no-cointegration
[c] The null hypothesis of the Kao test is of no-cointegration

By using a constructed ADF statistic tests the null hypothesis of no cointegretion. In our case the results are consistent with the Pedroni results and do reject the null hypothesis of no cointegration. Thus both test point to the presence of cointegration.

8.3 Serial Correlation and Heteroskedasticity

Initially, with respect to heteroskedasticity, if we regress the square of predicted residuals on all the explanatory variables and their interactions we find that several variables prove to be significant even at 1% significance, which is a clear sign of rejecting the null of conditional homoscedasticity. The variance or the residual tends to depend on the lag of balance, the population above 65, the population between 15 and 64, and the share of trade. Thus in our regression we need to use clustered robust standard errors as we drop the assumption of conditional homoscedasticity.

Additionally, although in the fixed effects models we assume that the error term is not serially correlated, that does not need to be the case. As such the problem that might arise is that in the presence of serial correlation the lag of the dependent variable will be correlated with the error term. For that reason we repeat all the regressions with the use of GMM method of Arellano and Bover (1995) and Blundell and Bond (1998). However, it is proven that the standard GMM errors tend to be severally downward biased and to solve this problem we use the Windmeijer (2005) corrected standard errors.

Table A5 Determinants of Budget Balance

Correlation Matrix: Main Variables[a]

	Trade	Popul. 15-64	Population 65	Log (rGDPpc)	Output Gap	Elect	Social Capital	New Dem
Trade	1.00							
Popul. 15-64	0.26	1.00						
Population 65	0.28	0.83	1.00					
Log(rGDPpc)	0.31	0.80	0.76	1.00				
Output Gap	-0.03	-0.25	-0.30	-0.29	1.00			
Elect	0.04	0.09	0.10	0.12	-0.04	1.00		
Social Capital	0.02	0.45	0.58	0.39	-0.08	0.10	1.00	
New Dem	-0.23	-0.40	-0.45	-051	-0.05	-0.13	-0.45	1.00

[a] Notes: There are indications for the presence of multi-colinearity between: Population 65, Popul. 15-64, Log(rGDPpc)

8.4 Multi-collinearity

In table A5 we report the correlations between the main variables. As we can observe the two demographics variables, population percentage above 65 and population percentage between 15-64, are highly correlated with each other and are also correlated to the logarithm of real GDP per capita. Thus we have a case of multi-collinearity. However, all these variables are the control variables used by the literature and by not including them we risk an omitted variable bias. Furthermore, as we are not really interested in the significance of the controls and as such we do not worry for the case of increased standard errors that might be the result of the multi-collinearity. Thus after stating this cautionary note we conclude that we should include them even if there is a chance of multi-collinearity.

8.5 Supplemental tables

In this section we provide all tables that were not included in the main text. Table A6 is the separate regression result for developing and developed countries based on the level of social capital. Although the information that we are interested in is mostly summarized in the marginal effects graphs in the main text we include the table. Furthermore Table A8 is similar to A6 with the only difference that the separation is between New and Old democracies. Table A7 checks for the significance of the 'New democracies' Effect in high social capital countries where we observe that there is no election effect, neither for Old nor for New democracies in the case of high social capital countries. Finally in Table A9 we report the result of the robustness tests using the GMM method of Arellano and Bover (1995) and Blundell and Bond (1998) for developing and developed or New and Old democracies. We choose not to perform separate regression as in the cases of table 4 and 6 of the main article as this GMM method is tailored for panels with large cross section and short time span. Hence, if we divide the sample we end up with the year dimension being larger than the cross section. As such, we opt for a specification where we define election dummies for each category and use full sample regressions, similarly to constitutional rules election dummies. The results seem fairly robust and consistent with our earlier estimates.

Table A6 Electoral Effects on Budget Balance: Developing versus Developed Countries and Social Capital

Dependent variable Balance as percent of GDP

	Panel Fixed Effects[a] – Separate Regressions based on Levels					
	[1] All Countries		[2] Developing		[3] Developed	
	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$
Election [b]	-0.8723***	(0.3213)	-1.0376***	(0.3881)	-0.8819*	(0.5111)
Election*Social Cap.	1.5978**	(0.7440)	2.5458	(1.5420)	1.5891	(1.1370)
Lagged Balance	0.6085***	(0.0609)	0.4883***	(0.0850)	0.7732***	(0.0204)
Log(rGDPpc)[c]	0.3510	(0.2881)	0.2043	(0.4873)	0.4396	(0.3289)
Output Gap[d]	0.2161***	(0.0481)	0.1270**	(0.0510)	0.4418***	(0.0894)
Population above 65	-0.1988**	(0.0960)	-0.2001	(0.2646)	0.0378	(0.1013)
Population 15-64	0.0517	(0.0479)	0.0788	(0.0763)	0.0049	(0.0483)
Trade[e]	-0.0000	(0.0061)	0.0057	(0.0093)	-0.0026	(0.0071)
Constant	-5.9511***	(2.0312)	-6.8668**	(2.7331)	-6.537**	(2.4729)
Countries	63		39		24	
Observations	1762		911		851	
R^2	0.59		0.46		0.55	

[a] Notes: The model is estimated using a fixed effects panel regression with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. β's are the coefficients and σ_β are the cluster robust standard errors.

[b] Dummy variable taking the value of 1 at election years and 0 otherwise.

[c] Log of real Gross Domestic Product per Capital

[d] Calculated using Hodrick- Prescott (1997) filter for each individual country based on the trend.

[e] Trade as percentage of GDP

Table A7 Electoral Effects on Budget Balance

Dependent variable Balance as percent of GDP

	Panel Fixed Effects[a] – Full Sample				
	[1] All Countries			[2] High Social Capital	
	$\hat{\beta}_i$	$\hat{\sigma}_\beta$		$\hat{\gamma}_i$	$\hat{\sigma}_\gamma$
Election*New Democracies	-0.9277***	(0.3152)		-0.0578	(0.0188)
Election*Old Democracies	0.0670	(0.1085)		-0.0665	(0.1292)
Lagged Balance	0.6088***	(0.0608)		0.7891***	(0.0188)
Log(rGDPpc)[c]	0.3638	(0.2826)		0.1671	(0.2662)
Output Gap[d]	0.2154***	(0.0482)		0.2625***	(0.0649)
Population above 65	-0.1990**	(0.0946)		-0.0334	(0.0757)
Population 15-64	0.0522	(0.0479)		0.0455	(0.0391)
Trade[e]	0.0003	(0.0061)		0.0031	(0.0059)
Constant	-6.0666***	(2.0501)		-5.4672***	(1.7241)
Countries	63			31	
Observations	1762			983	
R^2	0.59			0.80	

[a] Notes: The model is estimated using a fixed effects panel regression with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. β's are the coefficients and σ_β are the cluster robust standard errors.

[b] Dummy variable taking the value of 1 at election years and 0 otherwise.

[c] Log of real Gross Domestic Product per Capital

[d] Calculated using Hodrick- Prescott (1997) filter for each individual country based on the trend.

[e] Trade as percentage of GDP

Table A8 Electoral Effects on Budget Balance: New versus Established Democracies and Social Capital

Dependent variable Balance as percent of GDP

	Panel Fixed Effects[a] – Separate Regressions based on Levels					
	[1] All Democracies		[2] New Democracies		[3] Old Democracies	
	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\beta}_i$	$\hat{\sigma}_\beta$
Election [b]	-0.8723***	(0.3213)	-2.0843***	(0.7166)	-0.0256	(0.2905)
Election*Social Cap.	1.5978**	(0.7440)	5.3117**	(2.4810)	-0.0957	(0.7348)
Lagged Balance	0.6085***	(0.0609)	0.3884***	(0.1148)	0.7310***	(0.0339)
Log(rGDPpc)[c]	0.3510	(0.2881)	-0.2600	(0.5714)	0.4574	(0.2750)
Output Gap[d]	0.2161***	(0.0481)	0.2087***	(0.0676)	0.2819***	(0.0739)
Population above 65	-0.1988**	(0.0960)	-0.3038	(0.1971)	-0.0941	(0.0882)
Population 15-64	0.0517	(0.0479)	0.2411**	(0.1042)	0.0016	(0.0424)
Trade[e]	-0.0000	(0.0061)	-0.0169	(0.0136)	0.0050	(0.0043)
Constant	-5.9511***	(2.0312)	-11.131***	(3.9328)	-5.0834**	(2.2905)
Countries	63		34		29	
Observations	1762		746		1016	
R^2	0.59		0.35		0.73	

[a] Notes: The model is estimated using a fixed effects panel regression with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. β's are the coefficients and σ_β are the cluster robust standard errors.

[b] Dummy variable taking the value of 1 at election years and 0 otherwise.

[c] Log of real Gross Domestic Product per Capital

[d] Calculated using Hodrick- Prescott (1997) filter for each individual country based on the trend.

[e] Trade as percentage of GDP

Table A9 Electoral Effects on Budget Balance

Dependent variable Balance as percent of GDP

	GMM[a] – Full Sample			
	[1] Developing and Developed		[2] New and Old Dem.	
	$\hat{\beta}_i$	$\hat{\sigma}_\beta$	$\hat{\gamma}_i$	$\hat{\sigma}_\gamma$
Elect*Developing*Low[b]	-0.6484**	(0.3087)		
Elect*Developing*High[b]	-0.4768	(0.9033)		
Elect*Developed*Low[b]	-2.2506**	(0.9148)		
Elect*Developed*High[b]	-0.1055	(0.1650)		
Elect*New*Low[c]			-1.5548***	(0.5386)
Elect*New*High[c]			-0.4606	(0.9626)
Elect*Old*Low[c]			-0.2213	(0.5501)
Elect*Old*High[c]			-0.1708	(0.1437)
Lag_1 Balance[d]	0.5523***	(0.0657)	0.5608***	(0.0602)
Lag_2 Balance	0.0488	(0.0937)	0.0725	(0.0959)
Log(rGDPpc)[e]	0.7583	(1.1793)	0.8847	(1.1899)
Output Gap[f]	0.3567**	(0.1459)	0.4104**	(0.1772)
Population above 65	0.1374	(0.2156)	-0.0468	(0.2222)
Population 15-64	-0.1519	(0.1899)	-0.0305	(0.1926)
Trade[g]	0.0220	(0.0164)	0.0267**	(0.0134)
Constant	-1.6908	(9.5016)	-9.0788	(9.9049)
Countries	63		63	
Observations	1682		1682	
Instruments	269		269	
Arellano-Bond Test for AR(1) (p-value)	0.0015		0.0020	
Arellano-Bond Test for AR(2) (p-value)	0.1628		0.1359	
Hansen Test[h] (p-value)	1.0000		1.0000	

[a] Notes: The model is estimated using Arellano and Bover (1995) and Blundell and Bond (1998) methodology with balance as a dependent variable. * denotes significance at the 10 percent level. ** at the 5 percent level. *** at the 1 percent level. *β's* are the coefficients and σ_β are the Windmeijer (2005) corrected standard errors.

[b] Dummies variable taking the value of 1 at election years for developing or developed countries with low or high social capital respectively and 0 otherwise.

[c] Dummies variable taking the value of 1 at election years for new or old democracies with low or high social capital respectively and 0 otherwise.

[d] Instrumented based on Arellano and Bover (1995) and Blundell and Bond (1998) .

[e] Log of real Gross Domestic Product per Capital

[f] Calculated using Hodrick- Prescott (1997) filter for each individual country based on the trend.

[h] Trade as percentage of GDP

[g] Statistical test for instrument over identification. Null Hypothesis: the error is uncorrelated with the instruments.