WIAS Discussion Paper No.2016-002

Political Business Cycles in Dictatorships

June 24, 2016

Masaaki HIGASHIJIMA
Waseda Institute for Advanced Study, Waseda University

WIAS 早稲田大学高等研究所 Waseda Institute for Advanced Study

1-6-1 Nishiwaseda, Shinjuku-ku, Tokyo 169-8050, Japan
Tel: 03-5286-2460 ; Fax: 03-5286-2470

Political Business Cycles in Dictatorships*

Masaaki Higashijima†
Waseda University
higashij@aoni.waseda.jp

Abstract

This paper explores the conditions under which authoritarian leaders engineer political business cycles. In addition to ballot stuffing and election violence, dictators hold manipulation of economic policy in their toolbox used to overwhelmingly win elections. I argue that dictators have a strong incentive to overspend before elections when they can credibly signal popularity via elections. In rigged elections where election results are almost predetermined, election results may not function well to demonstrate the dictators' *de facto* popularity. When elections are less fraudulent, however, whether dictators will "win big" is uncertain. In such circumstances, autocrats are more inclined to manipulate policy instruments before elections, which in turn enable them to convey a credible signal of their ability to mobilize popular support. Cross-national statistical analysis covering 131 countries (1970-2008) uncovers two main findings. First, fiscal deficits in electoral years exist in authoritarian regimes, and their magnitude is larger than those in democracies. Second, among authoritarian regimes, autocrats with semi-competitive, less fraudulent elections are most likely to adopt expansionary fiscal policy prior to elections. There is an inverted U-shaped relationship between election-year fiscal deficits and political regime types: In electoral authoritarianism, fiscal deficits tend to reach a peak; election-year fiscal imbalance tends to diminish as countries become either more democratic or more authoritarian.

* Earlier versions of this paper were presented at the 2015 annual meetings of Southern Political Science Association and European Political Science Association, the "Growth, Crisis, Democracy" workshop, and Kobe University. I would like to thank all the participants in those conferences for their comments and feedback. I also wish to thank Faisal Ahmed, Marisa Kellam, Mary Stegmeyer, and Hiroyasu Uemura for their helpful feedback and suggestions on previous versions of this paper. This research project has been funded by a Waseda University Grant for Special Research Projects (Project number: 2015S-177)

† Assistant Professor of Political Science in Institute for Advanced Study at Waseda University.

Introduction

Scholars have found ample evidence demonstrating that political leaders in democracies manipulate fiscal and monetary policies before competitive elections (Nordhous 1975, Tufte 1978). Recent literature on authoritarian politics shows that some dictators also adopt expansionary economic policy prior to elections (e.g. Magaloni 2006; Pepinsky 2008; Blaydes 2010). The similar findings of case studies from different regions suggest that autocrats generate political business cycles by utilizing a variety of policy instruments and raise the following questions: Do political business cycles generally exist in authoritarian regimes?[3] If so, why do authoritarian leaders create electoral business cycles, given that they rarely lose elections? Do some types of authoritarian regimes create greater incentives to manipulate policy instruments than other types?

In autocracies, where reliable political information is hard to obtain, potential opponents find it difficult to discern to what extent the dictator is popular. To signal his strength, the dictator uses elections in which he aims to score an overwhelming majority (Geddes 2006; Magaloni 2006; Simpser 2013). For this purpose, besides ballot stuffing and election violence, dictators use economic policy manipulation. Since semi-competitive, relatively fraud-free elections render more credible election results, I argue that dictators have a stronger incentive to

[3] Throughout the paper, I use terms autocracies, dictatorships, authoritarianism, and non-democracies interchangeably. By dictators and autocrats, I refer to top political leaders who hold *de jure* supreme authority in authoritarian regimes. I use the male pronoun to refer to authoritarian leaders, given the fact that, according to *Archigos* Version 2.9, 99.7 percent of political leaders in authoritarian regimes after World War II have been male.

adopt expansionary fiscal policy to overwhelmingly win in electoral authoritarian regimes than they do in closed authoritarian regimes.

The contribution of this paper is twofold. First, the paper explores empirically and theoretically the conditions under which governments overspend prior to elections. Building upon the signaling game framework in the study of political business cycles in democracies and recent discussion on the roles of elections in autocracies, I contend that political leaders in competitive authoritarian regimes are most inclined to manipulate economic policy before elections. Second, the paper also contributes to the burgeoning literatures of electoral fraud and authoritarian politics. It is well known that autocrats use various tools to win overwhelmingly at elections, yet we still know little about when they choose to rely more on one strategy over others from their "menu of manipulation" (Schedler 2002). Investigating how the magnitude of electoral business cycles changes depending on transparency of elections in authoritarian regimes, this paper explores the relationship between two primary tools available to dictators at the ballot box – electoral fraud and pre-electoral economic policy manipulation.

In order to test my theoretical expectations, I employ a global dataset of fiscal surplus/deficits that covers 131 countries around the world during the period of 1970-2008. Cross-national statistical analysis confirms that fiscal deficits tend to increase in election years also in authoritarian regimes, which is consistent with existing single-case studies evidence on PBCs in authoritarianism. Perhaps surprisingly, my analysis suggests that authoritarian PBCs are larger than those in democracies, which has been the conventional research focus in the study of PBCs. I also find that fiscal deficits in election years tends to be most serious in autocracies with relatively fraud-free elections: autocrats seem to engineer political business cycles when they (1) hold semi-competitive elections in which they permit opposition parties and multiple candidates

and (2) commit less electoral fraud. Using the Polity IV score as an indicator of competitiveness, it turns out that fiscal balance in elections years follows a U-shaped function of political competitiveness: the size of political business cycles reaches a peak in autocracies with high political competition, it then tends to shrink as countries become either more authoritarian or more democratic.

The paper proceeds as follows. In next section, I review literature on political business cycles. The third section provides theoretical considerations on how and why political business cycles emerge in authoritarian regimes and derive testable implications. In the forth section, I test the hypotheses by conducting a cross-national statistical analysis. Lastly, conclusions follow to derive some policy implications from my analysis.

Literature Review

Since the pioneering work by Nordhous (1975) and Tufte (1978), political scientists and economists have refined the theory of political business cycles (PBCs) and tested its implications by conducting a host of empirical analyses. The earliest model, assumed that voters decide whom to vote for based on the government's pre-electoral economic performance. Assuming such voters, governing parties were thought to implement expansionary fiscal and monetary policies before elections to garner political support, resulting in real economic growth and increases in incomes. A large body of empirical studies using cross-national data from advanced democracies, however, did not find compelling evidence that governments achieve pre-electoral improvements in economic performance in the form of incomes, growth, and a temporal drop in unemployment rates (Lewis-Beck 1988; Alesina, Cohen and Roubini 1992; Drazen 2000, 238-

239). Further, the assumption that voters myopically decide their voting behavior based on short-term, pre-electoral economic performance was too strong to be plausible.

Yet, another strand of empirical studies found that governments in advanced democracies manipulate economic policies before elections, leading to the exacerbation of election-year fiscal deficits and high inflation after elections (e.g. Nishizawa and Kohno 1989; Alesina, Cohen and Roubini 1992, Berger and Woitek 1997; Reid 1998). In other words, pre-electoral economic manipulation does not necessarily have a strong impact on real growth rates, but governments do tend to exercise expansionary fiscal policy during election years, resulting in fiscal imbalance and inflation. In providing a theoretical explanation to this puzzle, political economists introduced the idea of "information asymmetries" between voters and a government (Alesina 1987; Rogoff and Silbert 1988; Rogoff 1990). Since voters are unable to gather information on the government's *de facto* competence, they try to estimate it based on the government's policy performance in the past and then decide whether to vote for the governing party or not. Knowing this, the governing party attempts to send a signal of their competence by manipulating economic policies before elections, leading to fiscal deficits and high inflation around election time.

This progress in the study on PBCs was largely built on data analyses using samples of advanced democracies. Applying the signaling game framework, more recent studies tend to shift their empirical focus to developing countries as well as new democracies. And, scholars conclude that governments in these countries are more prone to engineer electoral budget cycles than those in advanced democracies (Schuknecht 1996; Block, Ferree, and Singh 2003; Shi and Svensson 2006; Brender and Drazen 2005). Brender and Drazen (2005) and Shi and Svensson (2006) argue that this is due to a lack of political information in new democracies. It is more

difficult for voters in new democracies to get access to reliable, low-cost information on governments since voters are not accustomed to democratic party politics and also media are still underdeveloped. Therefore, as an alternative source of political information, voters are more inclined to estimate government competency by observing how extensively the government is able to boost up the economy prior to elections. Since the government recognizes this, it has a stronger incentive to adopt expansionary fiscal and monetary policy before elections to garner political support.

The previous studies on PBCs in democracies have assumed that party competition is so strong that elections may bring about government alternation. Brender and Drazen (2005, 6) contend that "if the political budget cycle reflects the manipulation of fiscal policy to improve *an incumbents' re-election chances*, then it only makes sense in countries in which elections are competitive. If elections are not competitive, then the basic argument underlying the existence of a political business cycle loses much of its validity" (*italics* in original).

Much research on authoritarian regimes, however, documents case study and region-specific evidence that autocrats also overspend prior to elections. Ames (1987) analyses 17 Latin American countries under military rule, finding election-year surges in government expenditures. Block (2002) demonstrates that governments manipulate fiscal and monetary policies at the eve of elections by using cross-national data from 44 countries in sub-Saharan Africa. Krueger and Kuran (1993) find that the Turkish government tended to have created budget cycles under authoritarian rule (1950-1980). Grier and Grier (2000), Gonzalez (2000) and Magaloni (2006) all provide evidence that, under the rule of the Institutional Revolutionary Party, the authoritarian government had loosened fiscal policy and devalued the currency to prepare for elections. In Russia, one of the typical competitive authoritarian regimes in the post-Cold War period,

Akhmedov and Zhuravskaya (2004) find that local politicians are more likely to create opportunistic PBCs in regions where media is not well institutionalized and civil liberty is underdeveloped. According to Blaydes (2011), the Mubarak regime tended to suffer high inflation rates and devalue the currency after elections. Pepinsky (2008), utilizing a quarterly time-series data from authoritarian Malaysia, shows that the authoritarian government tended to exacerbate fiscal discipline before elections. Conducting a time-series analysis by using monthly data from Kazakhstan, Higashijima (2010) shows that post-election inflation rates are more likely to surge when government revenues increase.

A panoply of evidence from authoritarian countries suggests that PBCs come about even in non-democratic settings where electoral competition is far from strong enough to bring electoral turnover. However, except for several works I will mention below, most previous studies focus on a single country or a specific region. This leads the extant literature to several shortcomings from a methodological point of view. Given that many case studies tend to focus on competitive authoritarian regimes (Egypt, Kazakhstan, Malaysia, and Russia) or dominant party systems (Mexico and Egypt) where governments allow limited electoral competition, their empirical findings may not extend to other authoritarian countries where electoral competition is more severely circumscribed. Further, although case studies enable us to derive useful insights, it is generally very difficult to control for country- or region-specific confounding factors, which may lead to serious omitted variables bias on their estimation results.

There are a few studies investigating electoral business cycles cross-nationally with a global sample. Including 81 developed and developing countries (1975-1995), Shi and Svensson (2006) find that governments in developing countries tend to suffer budget deficits in election years. Because politician's rents of remaining in power is high and the share of informed voters in the

electorate is low in the developing world, these authors argue that governments in developing countries are more inclined to manipulate fiscal policy before elections to signal their competence. Wright (2011) provides a first systematic analysis of PBCs in dictatorships. He argues that dictators with dominant parties tend to engage in overspending only around election time, whereas overspending does not diminish even in the long run if dictators are not armed with such party institutions because non-dominant party regimes cannot credibly promise policy concessions and future rents through an institutionalized party organization.

Although these cross-national analyses are far more extensive in terms of data coverage, there are still a few issues to be addressed. Emphasizing differences between developed and developing countries and writing prior to the recent rapid development of the authoritarian politics literature, Shi and Svensson (2006), on the one hand, do not answer important questions about authoritarian elections and economic policies, such as: Do autocratic governments tend to manipulate the economy before elections more or less than democratic governments? Under what types of authoritarian regimes are political leaders more likely to create PBCs? Building on the recent authoritarian politics literature, on the other hand, Wright (2011) finds that there are PBCs also in dictatorships and that the long-term effect of elections on fiscal deficits may change depending on the existence of dominant parties. While resonating with his argument that dictators in general also overspend before elections, I posit another theoretical framework focusing more on differences in autocratic elections leading dictators to different incentive structures for the pre-electoral use of economic policy instruments. Further, his empirical analysis does not compare PBCs in autocracies with those in democracies and thus does not assess to what extent authoritarian PBCs are sizable and meaningful, relative to both nascent and matured democracies.

In what follows, I seek to reconcile the gaps in the literature and provide an answer to these research questions. I make a first systematic attempt to compare democratic and authoritarian electoral business cycles by using a global dataset of elections and fiscal balance around the globe, while controlling for country, region and time-specific unobserved heterogeneities through employing appropriate econometric methods. Furthermore, I provide a theoretical consideration to specify the conditions of authoritarian elections, under which political leaders are more likely to engage in pre-electoral economic manipulation. To explain significant differences in the size of PBCs among different autocracies, my theory focuses on the relative transparency of elections in authoritarian regimes, instead of the party institutions that are featured in Wright's account. I argue that more transparent, competitive elections encourage dictators to overspend around election time because such elections provide dictators with a chance to credibly show their strength through sizable economic distribution and thus a big election victory. This would be the opposite prediction of Shi and Svensson (2006), who argue that political transparency generally encourages the governments to refrain from election-time overspending.

Theory and Hypotheses

Previous literature on authoritarian politics suggests that autocrats face a dilemma between coercion and transparency (Wintrobe 1998). Repression forces people to obey the dictator and decreases the likelihood that citizens voice their dissidence against the regime. Violence, however, discourages people from publicly expressing their true preferences. This makes it very difficult for the dictator to accurately know to what extent he is actually supported by citizens, undermining the efficiency of governance. Moreover, the more repressive authoritarian rule is,

the more susceptible bureaucrats and middlemen are to corruption, since these ruling elites do not need to be afraid of the media and other free flows of information that, if they were allowed to exist, would monitor and detect their corrupt behavior. Fearing the deprivation of properties, citizens have much less incentive to engage in economic activities, leading to inefficient economies (Wright 2008; Egorov et al. 2009). Some researchers also think that repression is a risky strategy to maintain authoritarian rule because it often sparks popular protests and encourages insurgency (Bratton and van de Walle 1997; Wood 2000; Goodwin 2001).

Scholars contend that, in order to deal with this dilemma between tyrannical rule and efficiency of governance, authoritarian leaders utilize "democratic" political institutions such as parties, parliament, and elections. By founding a dominant party, dictators can institutionalize ruling elites' career promotion, thereby enabling long-lasting power sharing between dictators and ruling elites (Magaloni 2008; Svolik 2012). Dominant party organizations also allow dictators to mobilize mass support by constructing well-developed patronage networks, which contribute to the efficiency of economic distribution (Geddes 2006; Brownlee 2007; Higashijima 2015a). Allowing moderate opposition to gain some seats and excluding radical opposition, authoritarian leaders use the legislature to divide and conquer the opposition camp (Lust-Okar 2005). The legislature also becomes a useful access point for political elites to enjoy privileges, various spoils and policy concessions made by the regimes (Gandhi and Przeworski 2007; Lust-Okar 2008; Blaydes 2011) and for citizens to receive political accommodations and material benefits via lawmakers in exchange for their support (Lust-Okar 2008).

By holding elections and winning elections with large margins, dictators can convey a signal of regime strength (Magaloni 2006; Geddes 2006; Simpser 2013). Scoring an overwhelming electoral victory, dictators can demonstrate that the regimes are invincible. By doing so, dictators

can prevent ruling elites from defecting from the regimes and opposition figures from mobilizing their supporters.

In producing an overwhelming electoral victory, dictators can use various techniques of electoral fraud. Electoral fraud is defined as a series of undemocratic measures that bias election results in favor of the political leader (Schedler 2002). In light of this broad definition, electoral fraud consists of following three subcomponents: (1) election violence, (2) election cheating, and (3) undemocratic restrictions on electoral law. Election violence is physical intimidation during elections exercised largely by incumbent parties (Straus and Taylor 2012; Hafner-Burton et al. 2012). Governments intend to use electoral violence to make violent threats against opposition candidates and citizens, thereby undermining oppositions' effective campaigns and decreasing turnout of opposition supporters. Electoral cheating allows dictators to affect the number of votes during campaign periods and election days with nonviolent but still illegal measures such as undermining of oppositions' freedom to campaigns, media bias, ballot stuffing, vote-buying, nonviolent intimidation, and so on (Kelley 2012). Restrictions on electoral law refers to a series of regulations that prevent citizens and electoral candidates from influencing politics, including limits on voting rights by certain social characteristics like gender and ethnicity, flaws in the complaints procedures, high thresholds for new parties to get registered and gain seats, constraints on the right to run for office such as language and educational requirements and so on (Kelley 2012).

Although facilitating an overwhelming victory, electoral fraud brings serious problems to dictators. Excessive violence and fraud sometimes fuel people's discontent and provides opposition elites with chances to mobilize their supporters to take to the streets, which may threaten the regimes (Tucker 2007; Bunce and Wolchik 2010; Higashijima 2015b). In addition,

electoral fraud undermines the information-gathering function of authoritarian elections and thus election results can no longer provide reliable information to know the distribution of popular support (Donno 2013).

In order to reduce these costs of electoral manipulation yet still maintain their overwhelming majorities in parliament, authoritarian leaders may have incentives to strengthening economic distribution before elections, thereby trying to "win big" at elections through citizens' voluntary support (Higashijima 2015a). As an election approaches, authoritarian leaders take advantage of state resources to conduct intensive electoral campaigns for the ruling party, mobilize citizens of various social classes and ethnic groups, and distribute economic favors and adopt expansionary fiscal policy by implementing tax exemption, strengthening public goods provision, increasing pensions and salaries among public servants, and giving bonuses (Mubarak's Egypt in Blaydes 2010; Nazarbaev's Kazakhstan in Higashijima 2015a). As a result, governments increase public expenditures, decrease revenues, and thus exacerbate fiscal balance in election years.

Among authoritarian regimes, I argue that autocrats with semi-competitive, relatively fraud-free elections are most likely to manipulate the economy before elections. Authoritarian regimes are diverse and can be classified by various subtypes (O'Donnell 1973; Linz 1975; Geddes 1999; Gandhi 2008; Schedler et al. 2006; Levitsky and Way 2010). Considering "varieties of dictatorship" in light of types of authoritarian elections, most modern dictatorships hold national elections periodically, except for several outliers such as China, Saudi Arabia and Eritrea (Hyde 2011). Yet, there is wide variation in the degree to which elections are competitive and fraudulent (Hyde and Marinov 2012). While some countries hold uncompetitive elections in which governments do not allow either opposition parties or multiple candidates ("closed authoritarianism"), others call semi-competitive elections to the extent that opposition parties

are legal and able to put their candidates in electoral districts and indeed enjoy some seats in parliament ("electoral authoritarianism").

These differences in the transparency of authoritarian elections influence to what extent autocrats manipulate economic policy instruments prior to elections. The key here is whether the ruling party's overwhelming electoral victory will credibly demonstrate *de facto* regime strength or popularity among citizens. In closed authoritarian regimes, people know that they do not have relevant options at the ballot box other than the ruling party and thus elections are not competitive at all. Where it is obvious that the dictator can win big, elections do not convey a credible signal of regime popularity because election results are not an accurate reflection of the dictator's ability to derive political support from people, even if he "wins" 100% of the vote. In other words, the signaling effect of elections should become smaller in the elections where there is no electoral competition guaranteed. Knowing this façade character of elections, authoritarian leaders may refrain from adopting expansionary fiscal policy. Consequently, we should observe smaller PBCs in closed authoritarian regimes.

In contrast, when elections are semi-competitive and/or relatively fraud-free like those under electoral authoritarianism, election results become informative, to the point that citizens can estimate whether dictators can score an *overwhelming* majority, not a slim victory, via elections. People should know that elections in electoral authoritarian regimes are not truly competitive and transparent. They recognize that authoritarian leaders resort to a variety of fraudulent measures to prevent opposition parties from winning elections and bias election results in favor of ruling parties, which make it almost impossible for elections to bring about government alternation. Yet, they may also recognize that the outcomes is still uncertain with regard to whether dictators can win big, scoring 80% or 90% of the vote in many electoral authoritarian

regimes. They know that opposition parties are allowed to join electoral processes and obtain some portion of seats in parliament. Authoritarian leaders, if they know citizens think this way, should believe that pre-electoral economic distribution and a subsequent large victory at elections will play a powerful signaling function to demonstrate the dictators' mobilization power. Owning to the semi-competitive character of elections, election results in electoral authoritarian regimes may become credible in the sense that they inform people of whether dictators are strong enough to maintain supermajorities at elections. Thus, authoritarian rulers find it useful to manipulate fiscal policy prior to semi-transparent elections, leading to a larger scale of PBCs, compared to those in closed authoritarianism.

If the competitiveness of elections influences the size of PBCs surrounding authoritarian elections, then one might expect the size of PBCs to increase as a country becomes more democratic. However, once a country democratizes and consolidates democracy by institutionalizing effective checks and balances and developing viable media, political leaders tend to refrain from engineering electoral business cycles. Previous studies on PBCs in democracies offer two reasons for the absence of PBCs in matured democracies. First, in consolidated democracies, citizens can more accurately estimate the governments' competence through various alternative channels of political information (Alt and Lassen 2006; Brender and Drazen 2006; Shi and Svensson 2006). The more matured a democracy is, the better its media are at informing citizens of the government's policy performance. Also, democratic governments themselves, which are always pressured to increase political transparency, may legislate access to information and establish independent auditing authorities, which enable citizens to acquire relevant information on government performance. Second, in matured democracy, severe political competition and a real possibility of government alternation may urge the government

to delegate some economic policy initiatives to "third parties," such as central bankers, which makes it difficult for the governments to manipulate the economy prior to elections freely for their own sake (Grzymala-Busse 2007; Keefer and Stasavage 2002; Bodea 2011; Bodea and Higashijima 2015). For these reasons, once reaching a peak in autocracies with semi-competitive elections, the size of PBCs may shrink as the country democratizes.

Evidence

Data and Methods

I test theoretical expectations by conducting cross-national statistical analysis using a global dataset of fiscal balance. My dataset covers 131 countries around the world from 1970 to 2008, including about 3,300 country-years. Appendix A shows a list of countries included in the analysis and Appendix B shows descriptive statistics.

The dependent variable is fiscal deficits relative to GDP. Brender and Drazen (2005) and Hyde and O'Mahony (2011) publish their datasets of fiscal balance online, yet they cover only democratic countries or developing countries. Based on their datasets, I construct a more comprehensive dataset on fiscal surplus/deficits[4] to cover as many authoritarian countries as possible by referring to various data sources such as *International Financial Statistics, Government Financial Statistics, IMF Annual Country Report, OECD Statistics, EBRD Transitional Reports* etc.

[4] My dataset measures the central government's fiscal revenues and expenditures. Fiscal balance is calculated by taking (fiscal revenue + grants) – fiscal expenditure.

The main independent variable is the occurrence of national elections. To identify election years, I use Hein Goeman's *Election Dates Dataset*, Hyde and Marinov's (2012) *National Elections in Democracies and Autocracies* (NELDA) and the author's corrections. The election variable is coded 1 if either a legislative or presidential election is held in the observation year, and otherwise 0.

First of all, in order to investigate whether authoritarian governments manipulate the economy before elections, I divide the full sample into two --- democratic and authoritarian countries --- by using Cheibub, Gandhi and Vreeland's (2009) dichotomous measure of political regimes (CGV data, thereafter). A country is regarded as democratic if it satisfies all the following four conditions and otherwise authoritarian: (1) the executive is elected, (2) the legislature is elected, (3) there is more than one political party, and (4) an incumbent regime has lost power through elections. Their definition of democracy and autocracy is reasonable for my purpose of identifying authoritarian elections in which opposition parties rarely win elections. I examine whether the coefficient of the election variable has a negative impact on fiscal balance in the authoritarian regime sample while comparing the result with that of the democracy sample.

My theory also predicts that the size of PBCs is largest in autocracies with less-manipulated elections. In order to test this hypothesis, I measure electoral transparency in authoritarian regimes in the following two ways. First, Hyde and Marinov (2012) see elections as minimally competitive if there is *ex ante* uncertainty over election results. According to them, elections are competitive if (1) multiple parties are legal, (2) more than two candidates are allowed to stand in electoral districts, and (3) the opposition is allowed to participate in the election. If all the three conditions are satisfied, the election is regarded as competitive, otherwise noncompetitive. I make two election dummies – (i) competitive elections and (ii) non-competitive elections –

comparing the occurrence of each type of election, respectively, to non-election years. I regress fiscal balance on these election dummies and other controls in the autocracy sample, expecting that only competitive elections have a negative impact on fiscal balance. This operationalization corresponds to the conventional distinction between "electoral" and "closed" authoritarianism in cross-national studies (Brownlee 2009; Kinne and Marinov 2013; Donno 2014)

Second, Kelley's (2012) *Quality of Elections Dataset (QoE)* measures to what extent each election is manipulated with an ordinal scale. It relies on "the State Department's assessment of whether the election represents the will of the voters, is free and fair, or in other ways frankly endorses the outcome, based on the entire content of the State Department report." (Kelley 2012, 188) The variable assesses elections by three scales -- 0: unacceptable, 0.5: ambiguous, 1: acceptable. Using this measure, I create three dummy variables -- 1. clean elections, 2. mediocre elections, and 3. dirty elections, setting non-election years as the reference category.

Finally, my theory also expects that the size of PBCs reaches a peak in autocracies with semi-competitive elections and then becomes smaller in closed autocracies and matured democracies. To test this expectation, I use Polity IV scores – the most prevalent measure of political competitiveness and other authority characteristics. According to the previous literature on PBCs in democracies, the magnitude of PBCs tends to become smaller in more mature democracies where information is rich and political transparency is well guaranteed (Shi and Svensson 2006; Brender and Drazen 2006; Alt and Lassen 2006). On the other hand, as I have hypothesized, political leaders may be also less willing to manipulate the economy prior to elections if their authoritarian regimes are highly illiberal and repressive, whereas semi-competitive elections encourage authoritarian leaders to overspend. Therefore, in order to consider such non-linearity, I introduce a three-way interaction model between the Polity IV

score, its square, and the election variable. The three-way interaction model enables me to test whether the negative impact of elections on fiscal balance is largest in authoritarian countries with semi-competitive elections and whether it shrinks where elections are either more authoritarian or more democratic. Polity IV mainly focuses on (1) competitiveness and openness of executive recruitment, (2) strength of institutional constraints on the chief executive, and (3) competitiveness of political participation. It assesses political regimes in the world on a 21-point scale (-10 [most authoritarian] to 10 [most democratic]). Using the measure, I test whether fiscal balance in election years is a U-shaped function of the authority characteristics and competitiveness of political regimes.

Based on findings in previous studies, I introduce GDP per capita (one year lagged),[5] GDP growth (one year lagged),[6] trade openness (one year lagged),[7] capital openness (one year lagged),[8] oil-gas value per capita,[9] population over 65,[10] de facto exchange rate regimes,[11] civil

[5] GDP per capita comes from World Development Indicators (WDI).

[6] The growth data is taken from WDI.

[7] Trade openness is measured as the sum of imports and exports relative to GDP, taken from WDI.

[8] I use Chinn and Ito's (2005) measure of capital openness.

[9] The oil-gas variable comes from Ross (2011).

[10] WDI.

[11] The adoption of fixed exchange rate regimes makes it difficult for governments to loosen monetary policy, which in turn influences fiscal deficits. To control for substantive impacts of various exchange rate regimes, I introduce dummies of de fact exchange rate regimes. Using Reinhart and Rogoff (2004) and Ilzetzki, Reinhart and Rogoff (2008), there are five dummy

war, international war,[12] and the number of strikes (one year lagged)[13] as control variables. I also include five regional dummies (Western Europe and North America, Eastern Europe, Latin America, Sub-Saharan Africa, and Asia[14]) and half-decade dummies[15] to take into account regional and time-specific unobserved heterogeneities that do not change over time.

I use Cross-Sectional Time-Series (CSTS) data and the unit of analysis is country-year. When using CSTS data, researchers typically estimate a model in which they combine a lagged dependent variable with fixed effects estimations. But, it is well known that this estimation method tends to bias estimators when the number of cross-sections (countries) is larger than that of time-series (Wooldridge 2002; Beck and Katz 2004). Further, when introducing interaction terms between elections and Polity IV, normal fixed effects models tend to lose efficiency of the estimators (Plumper and Troeger 2007). To cope with these problems and maintain the robustness of the results, I use the following two statistical models: (1) Country-fixed effects model with Panel-Corrected Standard Errors (PCSEs) and Prais-Winsten (PW) regressions and (2) System Generalized Method of Moments (GMM) estimators.

---

variables included in models setting pegged the exchange rate regime as the reference category: (1) Crawling peg, (2) managed floating, (3) free floating, (4) falling exchange rate regimes, and (5) dual exchange rate regimes.

[12] Both civil and international war variables code 1 if a country is under conflict, and 0 otherwise.

[13] This is taken from Cross-National Time-Series Data Archive.

[14] The reference category is the Middle East and North Africa.

[15] I include dummy variables for 1975-1979, 1980-1984, 1985-1989, 1990-1994, 1995-1999, 2000-2004, and 2005-2009. 1970-1974 is the reference category.

Fixed effects models control for country-specific unobservable heterogeneities, which do not change over time. As there should be many country-specific idiosyncratic factors affecting fiscal balance in a country, employing country-fixed effects is crucial to avoid omitted variables bias. The PCSEs allow me to consider special correlations and heteroskedasticity, whereas Prais-Winsten regressions are adopted to deal with autocorrelation without using a lagged dependent variable. In the second estimation method, the system GMM models deal with several shortcomings of the data, including the short time span for many countries in the sample, fixed individual effects, and potential heteroscedasticity and auto-correlation within countries (Roodman 2007). In the GMM regressions, I use only up to the second lag of the variables for the regression in levels, to reduce the number of instruments and the risk of over-fitting the data. Also, I report two standard specification tests: The Hansen test of over-identifying restrictions tests the overall validity of the instruments and failure to reject the null hypothesis gives support for the model, including the choice of endogenous variables. The Arellano–Bond test for AR (2) in first differences tests whether the residuals from the regression in differences is second order serially correlated and failure to reject the null hypothesis supports the model specification.

Results

[Table 1 about here]

Table 1 shows the results. In Models 1 and 2, I test whether fiscal deficits in election years are more serious than those in non-election years under authoritarian regimes in general, employing a fixed effects with PCSEs-PW model and a System GMM estimator, respectively. In both models,

the coefficient of the election variable is negative with 1% to 5% statistical significance levels. The results indicate that authoritarian elections tend to worsen fiscal balance by 0.55% (Model 1, fixed effects model with PCSEs and PW regression) to 0.58% (Model 2, system GMM model). It suggests that authoritarian rulers also strengthen economic distribution in election years to signal their strength.

Models 3 and 4 then test PBCs in democracies by limiting the sample to only democratic countries. The election variable is negative and statistically significant, indicating that PBCs are working also in democracies. Substantively, in election years, governments tend to spend more by 0.35% (Model 4, system GMM model) to 0.31% (Model 3, fixed effects model) in democratic countries. Importantly, both models indicate that fiscal deficits in election years are larger in the authoritarian regime sample than those in the democratic regime sample. Although we cannot directly compare those results from different samples, they also suggest that the magnitude of PBCs in authoritarian regimes may not be minor, but indeed more extensive than that in democratic countries on which researchers have focused.

[Table 2 about here]

From Models 5 through 10, I estimate a handful of different models to examine what types of elections encourage governments to overspend. Models 5 and 6 introduce the competitive and façade election dummies to the authoritarian regime sample. The competitive elections dummy is negative and statistically significant in both models, suggesting that autocracies with competitive elections tend to exacerbate fiscal balance in election years by 0.682% (Model 5) to 0.751% (Model 6) of GDP, as compared to non-election years. Façade elections, on the other

hand, do not have a statistically significant impact on fiscal deficits: the coefficient is negative but is not distinguishable from zero. The results suggest that elections, only in which there are multiple parties including opposition parties, encourage autocrats to overspend in election years.

Models 7 and 8 also look at transparency of elections, yet from a different angle. These models consider the extent to which authoritarian elections are relatively "free and fair" in terms of electoral fraud. I introduce the three election-quality dummies (clean elections, mediocre elections, and dirty elections) to the authoritarian regime sample. Consistent with the results above, clean elections tend to have a negative impact on fiscal balance in statistically significant ways in both models. Specifically, if elections are free from fraud, authoritarian governments tend to worsen fiscal balance by -0.9% to -1.15% of GDP in election years. Neither mediocre nor dirty elections, on the other hand, have a statistically significant impact on fiscal balance. These estimation results again suggest that, the more transparent and competitive elections are in authoritarian regimes, the more inclined autocrats are to manipulate fiscal policy before elections to win big.

[Figure 1 about here]

Models 9 and 10 then introduce triple interaction terms including Polity IV, its square, and the election dummy. In both models, relevant interaction terms and the election variable are all statistically significant with expected signs. For the purpose of facilitating interpretation of the three-way interaction models, Figure 1 graphically illustrates changes in the coefficient of the election variable with 90% confidence intervals. The vertical axis represents fiscal balance relative to GDP, while the horizontal axis indicates the Polity IV scores. A vertical line is drawn at

the point where the Polity IV score is equal to 6, which is a conventional threshold adopted in previous work to distinguish democracies from autocracies. The figure shows that fiscal deficits in election years become the largest when the Polity IV score is around 2. From that point, the larger the Polity IV score is, the smaller the size of election-year fiscal deficits. When a country is a matured democracy (the Polity IV score is more than 7.8), the effect of elections is no longer distinguishable from 0 at the 10% statistical significance level. This part of the result is consistent with the findings in previous work showing that in matured democracies PBCs disappear (Brender and Drazen 2006; Shi and Svensson 2006). On the flip side, if the Polity IV score is less than 2, indicating a country that is more authoritarian, the magnitude of PBCs tends to shrink. Once the Polity IV score is less than around -4, we can no longer reject the null hypothesis with regards to the election year variable. The overall results support my theoretical expectations that the size of PBCs is the largest in autocracies with some level of political competitiveness, and then it becomes smaller in either more closed autocracies or more democratic countries.

Lastly, let us briefly look at the results of the control variables. Oil-gas value per capita is the only control variable that consistently has a positive, significant impact on fiscal balance. Controls such as GDP per capita, GDP growth, trade openness, capital openness, civil war and international war have the expected direction of coefficients but they are not statistically significant in a consistent way. On the other hand, the coefficients of population over 65, de facto exchange rate regimes, number of strikes are unstable across the models and statistically insignificant.

Conclusion

This paper has explored the conditions under which PBCs come about under authoritarian regimes. Using a global dataset of fiscal balance, The statistical analysis has demonstrated that PBCs do exist in authoritarian regimes and its magnitude is larger than those in democratic countries. Moreover, my analysis also demonstrates that the magnitude of PBCs tends to change depending on electoral transparency. More specifically, it turns out that fiscal deficits in election years are large when dictators hold semi-competitive, relatively free and fair elections. I also found that the magnitude of PBCs reaches a peak under the so-called electoral authoritarian regimes then shrinks as countries become either more authoritarian or more democratic. I interpret this series of results by emphasizing the signaling effect of authoritarian elections. In autocracies with relatively transparent elections, election results become sufficiently informative, such that the opposition and citizens more generally gauge regime strength by observing whether the governing party scores an overwhelming majority. The need to win big in a credible way incentivizes authoritarian governments to adopt expansionary fiscal policy to attract political support from citizens.

My analysis has shed light on one aspect of distributive politics under dictatorship, yet it also leads to some important implications for regime change in authoritarian countries. In electoral authoritarian regimes, dictators have to create strong electoral business cycles to sustain high levels of political support. This means, on one hand, that when authoritarian rulers are able to successfully distribute extensive economic favors to citizens, then authoritarian elections contribute to consolidating authoritarian rule. This signaling role of semi-competitive elections may mean, on the other hand, that if authoritarian leaders fail to create business cycles around election time, election results then may in turn credibly reveal *the weakness* of their current

regimes, thereby possibly leading to popular protests and leadership turnover. In fact, semi-competitive elections in some countries have triggered leadership turnover and popular uprisings (Tucker 2007; Kuntz and Thompson 2009; Bunce and Wolchik 2010; Higashijima 2015b).

If we consider this "double-edged sword" nature of semi-competitive elections and economic distribution in authoritarian regimes, we may better understand when international assistance for democratization will become more effective. First, international society may be able to more effectively urge electoral autocracies to democratize by limiting the economic resources that dictators can use through coercive diplomacy and international economic policy. For example, by reducing the amount of international remittances and foreign aid, we can put limits on financial resources available to dictators (cf. Ahmed 2012).

Second, international organizations may also promote democratization by forcing electoral autocrats not to rely on electoral fraud by strengthening international monitoring, thereby increasing the need for economic distribution. For instance, if the international community deploys election monitoring, dictators cannot rely much on electoral manipulation. Therefore, in order to garner more votes, they have to strengthen patronage distribution prior to elections (Hyde and O'Mahony 2011). As dictators in electoral authoritarianism have to create large electoral business cycles, such election monitoring will be more meaningful in electoral authoritarianism than closed authoritarianism to encourage regime change by putting serious pressures on dictators' state coffers.

References

Ahmed, Faisal. 2012. "The Perils of Unearned Foreign Income: Aid, Remittances, and Government Survival," *American Political Science Review* 106-1: 146-165.

Akhmedov, Akhmed, and Ekaterina Zhuravskaya. 2004. "Opportunistic Political Cycles: Test in a Young Democracy Setting," *Quarterly Journal of Economics* 119-4: 1301-1338.

Arellano, Manuel, and Olympia Bover. 1995. "Another Look at the Instrumental Variables Estimation of Error Components Models," *Journal of Econometrics* 68: 29–51.

Alesina, Alberto. 1987. "Macroeconomic Policy in a Two-Party System as a Repeated Game," *Quarterly Journal of Economics* 102: 651-678.

Alesina, Alberto, G. Cohen and N. Roubini. 1992. "Macroeconomic Policy and Elections in OECD Democracies," *Economics and Politics* 4: 1-30.

Alt, James, and David Dreyer Lassen. 2006. "Transparency, Political Polarization, and Political Budget Cycles in OECD Countries." *American Journal of Political Science* 50-3: 530-550.

Ames, Barry. 1970. "Bases of Support for Mexico's Dominant Party," *American Political Science Review* 64-1: 153-167.

Ames, Barry. 1987. *Political Survival: Politicians and Public Policy in Latin America*, University of California Press.

Beck, Nathan, and Jonathan Katz. 2004. Time-Series-Cross-Section Issues: Dynamics. Political Methodology WP. Available at: http://polmeth.wustl.edu/mediaDetail.php?docId=36, Accessed April 4th, 2012.

Bernhard, William. 1998. ``A Political Explanation of Variation in Central Bank Independence,'' *American Political Science Review* 92-2: 311-327

Birney M. 2007. *Can Local Elections Contribute to Democratic Progress in Authoritarian Regime? Exploring the Political Ramification of China's Village Elections*, Ph.D Dissertation submitted to Department of Political Science, Yale University.

Blaydes, Lisa. 2011. *Elections and Distributive Politics in Mubarak's Egypt*, Cambridge University Press.

Block, Steven A. 2002. "Political Business Cycles, Democratization, and Economic Reform: The Case of Africa," *Journal of Development Economics* 67-1: 205-228.

Block, Steven, Karen Ferree, and Smita Singh. 2003. "Multi-Party Competition, Founding

Elections, and Political Business Cycles in Africa." *Journal of African Economies* 12-3: 444-468.

Blundell, Richard, and Steve Bond. 1998. "Initial Conditions and Moment Restrictions in Dynamic Panel Data Models," *Journal of Econometrics 87*: 115–143.

Bodea, Cristina. 2011. "Independent Central Banks, Regime Type, and Fiscal Performance: The Case of Post-Communist Countries," Forthcoming in *Public Choice*.

Bodea, Cristina and Masaaki Higashijima. 2015. "Central Bank Independence and Fiscal Policy: Incentives to Spend and Constraints on the Executive." Forthcoming in the British Journal of Political Science.

Bratton, Michael and Nicholas van de Walle. 1997. *Democratic Experiments in Africa: Regime Transitions in Comparative Perspective*, Cambridge University Press.

Brender, Adi and Allan Drazen. 2005. "Political Budget Cycles in New versus Established Democracies," *Journal of Monetary Economics* 52-7: 1271-1295.

Brownlee, Jason. 2006. *Authoritarianism in an Age of Democratization*, Cambridge University Press.

Brownlee, Jason. 2009. "Portents of Pluralism: How Hybrid Regimes Affect Democratic Transitions," *American Journal of Political Science*, Vol. 53-3: 515-532.

Bunce, Valerie and Sharon Wolchik. 2010. *Defeating Authoritarian Leaders in Post-Communist Countries*, Cambridge University Press.

Cheibub, Antonio, Jeniffer Gandhi and James Vreeland. 2009. "Democracy and Dictatorship Revisited," *Public Choice* 143 2-1: 67-101

Collier, Paul and Pedro Vincente. 2010. "Votes and Violence: Experimental Evidence from a Nigerian Election," Working Paper.

Donno, Daniela. 2013. "Elections and Democratization in Authoritarian Regimes." Forthcoming in *American Journal of Political Science*.

Drazen, Allan. 2000. *Political Economy in Macroeconomics*, Princeton University Press.

Egorov, Gregory, Sergei Guriev, and Konstantin Sonin. 2009. "Why Resource Poor Countries Allow Free Media: A Theory and Evidence from Panel Data," *American Political Science Review*, Vol. 103-4: 645-668.

Gandhi, Jennifer and Adam Przeworski. 2006. "Cooperation, Cooptation and Rebellion under Dictatorships," *Economics and Politics* 18: 1-26.

Gandhi, Jennifer and Adam Przeworski. 2007. "Authoritarian Institutions and the Survival of Autocrats," *Comparative Political Studies* 40-11: 1279-1301.

Gandhi, Jennifer. 2008. *Political Institutions under Dictatorship*, Cambridge University Press.

Geddes, Barbara. 1999. "What Do We Know About Democratization After Twenty Years," *Annual Review of Political Science*, Vol. 2: 115-144.

Geddes, Barbara. 2006. "Why Parties and Elections in Authoritarian Regimes," Working Paper.

Geddes, Barbara. 2008. "Party Creation as an Survival Strategy," Working Paper.

Goodwin, Jeff. 2001. *No Others Way Out: States and Revolutionary Movements*, 1945-1991, Cambridge University Press.

Grzymale-Busse, Anna. 2007. *Rebuilding Leviathan: Party Competition and State Exploitation in Post-Communist Democracies*, Cambridge University Press.

Haber, Stephen. 2006. "Authoritarian Government." In Barry Weingast and Donald Wittman eds., *The Oxford Handbook of Political Economy*, Oxford University Press, pp. 693-707.

Hermet, Guy, Richard Rose, and Alain Rouquie eds. 1978. *Elections without Choice*, John Wiley & Sons.

Hibbs, Douglas. 1977. "Political Parties and Macroeconomic Policy," *American Political Science Review*, Vol. 71, pp. 1467-87.

Hibbs, Douglas. 1987. *The American Political Economy*, Harvard University Press.

Higashijima, Masaaki. 2010. "Electoral Cycles, Party Competition and State Resources under Authoritarianism: Evidence from Kazakhstan, 1995-2008," Paper Presented at Midwest Political Science Association, April 2010, Chicago, the United States.

Higashijima, Masaaki. 2015a. *The Dictator's Dilemma at the Ballot Box: Electoral Manipulation, Economic Distribution, and Political Order in Authoritarian Regimes*. Ph.D. Dissertation submitted to Political Science Department at Michigan State University.

Higashijima, Masaaki. 2015b. "Protests and Leadership Turnover after Authoritarian Elections." In *Contentious Elections: From Ballots to Barricades* edited by Pippa Norris, Richard Frank and Ferran Martinetz i Coma. New York: Routledge.

Hyde, Susan and Angela O'Mahoney. 2011. "International Scrutiny and Pre-Electoral Fiscal Manipulation," *Journal of Politics*, Vol. 72-3: 1-14.

Hyde, Susan. 2011. *The Pseudo Democrats Dilemma: Why Election Monitoring Became an*

International Norm? Cambridge University Press.

Hyde, Susan and Nichorai Marinov. 2012. "Which Elections Can be Lost?" *Political Analysis* 20-2: 191-210.

Ilzetzki, Ethan, Carmen Reinhart, and Kenneth Rogoff. 2008. "Exchange Rates Agreements Entering the 21st Century: Which Anchor Will Hold?" Working Paper.

Keefer, Philip, and David Stasavage. 2002. "Checks and Balances, Private Information, and the Credibility of Monetary Commitments," *International Organization* 56, 751–774.

Kinne, Brandon, and Nikolay Marinov. 2013. "Electoral Authoritarianism and Credible Signaling in International Crises," *Journal of Conflict Resolution*, 57-3: 359-386.

Kruger, Anne and I. Kuran. 1993. "The Politics of Turkish Policy Reform in the 1980s," in Robert Bates eds., *Political and Economic Interactions in Economic Policy Reform*, Blackwell.

Kuntz, P. and M. Thompson. 2009. "More Than Just the Final Straw: Stolen Elections as Revolutionary Triggers," *Comparative Politics* 41-3: 253-273.

LeBas, Adrienne. 2006. "Polarization as Craft: Party Formation and State Violence in Zimbabwe," *Comparative Politics*, 38-4: 419-438.

Levitsky, Steven, and Lucan Way. 2010. *Competitive Authoritarianism: Hybrid Regimes after the Cold War*, Cambridge University Press.

Lewis-Beck, Michael. 1988. *Economics and Elections*, University of Michigan Press.

Linz, Juan. 1975 [2000]. *Totalitarian and Authoritarian Regimes*, Rienner.

Lust-Okar, Ellen. 2005. *Structuring Conflict in the Arab World: Incumbents, Opponents, and Institutions*, Cambridge: Cambridge University Press.

Lust-Okar, Ellen. 2008. "Competitive Clientelism in Jordanian Elections," In Ellen Lust-Okar & Saboua Zehouni eds., *Political Participation in the Middle Eats*, Lynne Rienner Publishers, pp.75-94.

Magaloni, Beatriz. 2006. *Voting for Autocracy: Hegemonic Party Survival and Its Demise in Mexico*, Cambridge University Press.

Magaloni, Beatritz. 2008. "Credible Power-Sharing and the Longevity of Authoritarian Rule," *Comparative Political Studies* 41: 715-41.

Malesky, Edmund and Paul Schuler. 2010. "Nodding or Needling: Analyzing Delegate Responsiveness in a Authoritarian Parliament," *American Political Science Review*, Vol. 103-3:

482-502.

Nishizawa, Yoshitaka and Masaru Kohno. 1989. "A Study of the Electoral Business Cycle in Japan: Elections and Government Spending on Public Construction," *Comparative Politics* 22-2: 151-166.

Nordhous, William. 1975. "The Political Business Cycle," *Review of Economic Studies* 42-2: 169-190.

O'Donnell, Guillermo. 1973. *Modernization and Bureaucratic Authoritarianism: Studies in South American Politics*, University of California Press.

Pepinsky, Thomas. 2008. "Autocracy, Elections, and Fiscal Policy: Evidence from Malaysia," *Studies of Comparative International Development* 42: 136-163.

Plümper, Thomas, and Vera Troeger. 2007. Efficient Estimation of Time-Invariant and Rarely Changing Variables in Finite Sample Panel Analysis with Unit Fixed Effects. *Political Analysis* 15: 124–139.

Przeworski, Adam, Michael Alvarez, Antonio Cheibub, and Fernando Limongi. 2000. *Democracy and Development*, Cambridge University Press.

Reid, Bradford. 1998. "Endogenious Elections, Electoral Budget Cycles, and Canadian Provincial Governments," *Public Choice* 97: 35-48.

Reinhart, Carmen and Kenneth Rogoff. 2004. "The Modern History of Exchange Rate Arrangements: A Reinterpretation," *Quarterly Journal of Economics* 119-1: 1-48.

Reuter, Ora John and Graeme Robertson. 2011. "Sub-National Appointments in Authoritarian Regimes: Evidence from Russian Gubernatorial Appointment," Forthcoming in *Journal of Politics*.

Roodman, David. 2007. "How to Do xtabond2: an Introduction to "Difference" and "System" GMM in Stata," Center for Global Development WP 103. Available at: http://www.cgdev.org/content/publications/detail/11619, accessed on 2012, April 4th.

Rogoff, Kenneth and A. Silbert. 1988. "Elections and Macroeconomic Policy Cycles," *Review of Economic Studies*, Vol. 55: 1-16.

Rogoff, Kenneth. 1990. "Equilibrium Political Budget Cycles," *American Economic Review* 80: 21-36.

Rozenas, Arturas. 2012. "Forcing Consent: Information and Power in Non-Democratic Elections," Working Paper.

Schedler, Andreas, ed. 2006. *Electoral Authoritarianism: The Dynamics of Unfree Competition*, Boulder: Lynne Rienner.

Schuknecht, Ludger. 1996. ``Political Business Cycles in Developing Countries,'' *Kyklos* 49: 155-70.

Scott, James. 1987. *The Weapon of the Weak*, Yale University Press.

Shi, Tianjian. 1999. "Voting and Nonvoting in China: Voting Behavior in Plebiscitary and Limited-Choice Elections," *Journal of Politics* 61-4: 1115-1139.

Shi, M., and J. Svensson. 2002. "Political Business Cycles in Developed and Developing Countries," Unpublished Manuscript.

Simpser, Alberto. 2005. *Making Votes Not Count: Strategic Incentives for Electoral Corruption,* Dissertation submitted to Department of Political Science, Stanford University.

Svolik, Milan. 2012. *The Politics of Authoritarian Rule*, Cambridge University Press.

Tucker, Joshua A. 2007. "Enough! Electoral Fraud, Collective Action Problems, and Post-Communist Colored Revolutions," *Perspective on Politics* 5-3: 535-551.

Tufte, Edward. 1978. *Political Control of the Economy*, Princeton University Press.

Tullock, Gordon. 1987. *Autocracy,* Kluwer Academic Publishers.

Wintrobe, Ronald. 1998. *The Political Economy of Dictatorship*, Cambridge University Press.

Wright, Joseph. 2008. "Do Authoritarian Institutions Constrain? How legislatures Affect Economic Growth and Investment," *American Journal of Political Science* 52-2: 322-343.

Wright, Joseph. 2011. "Electoral Spending Cycles in Dictatorships," Working Paper.

Wooldridge, Jeffrey. 2002. *Econometric Analysis of Cross Section and Panel Data*, Cambridge: MIT Press.

Wood, Elizabeth. 2000. *Forging Democracy from Below: Insurgent Transitions in South Africa and El Salvador*, Cambridge University Press.

Data Sources

Banks, Arthur, *The Cross-National Time-Series Data Archive*.

Freedom House, *Freedom House Index and Freedom of Press index*.

Hein Goeman, *Election Dates dataset*, available at

http://www.rochester.edu/college/faculty/hgoemans/data.htm accessed on April 4th, 2012.

International Monetary Fund, *International Financial Statistics*.

International Monetary Fund, *Government Financial Statistics*.

International Monetary Fund, *IMF Annual Reports*.

Organization for Economic Co-Operation and Development, *OECD Statistics*.

Marshall, Monty and Keith Jagger, *Polity IV Project*.

Ross, Michael (2011) "Replication data for: Oil and Gas Production and Value, 1932-2009." Available at http://dvn.iq.harvard.edu/dvn/dv/mlross, accesses on April 4th.

The European Bank for Reconstruction and Development, *Transitional Report*.

Tables and Figures

Table 1: Political Business Cycles in Autocracies and Democracies

	Model 1	Model 2	Model 3	Model 4
Sample	Autocracies	Autocracies	Democracies	Democracies
Statistical Model	PCSEs + PW with country dummies	System GMM	PCSEs + PW with country dummies	System GMM
Dependent Variable	Fiscal balance	Fiscal balance	Fiscal balance	Fiscal balance
Fiscal Balance (t-1)		0.0275		0.336***
		(0.11)		(0.12)
Elections	-0.552**	-0.588***	-0.313***	-0.350***
	(0.23)	(0.18)	(0.10)	(0.12)
Logged GDP per capita (t-1)	1.671	1.681*	-0.047	0.725**
	(1.31)	(0.99)	(1.41)	(0.29)
GDP Growth (t-1)	0.0147	0.0485**	0.0596**	0.0431
	(0.02)	(0.02)	-0.0291	(0.03)
Trade Openness (t-1)	0.0134	0.00719	0.01	0.00301
	(0.01)	(0.02)	-0.0117	(0.01)
Capital Controls (t-1)	-0.0166	-0.146	0.07	0.141
	(0.24)	(0.34)	(0.14)	(0.11)
Oil-gas rent per capita	0.00134**	0.00101***	0.000767***	0.000681***
	(0.00)	(0.00)	(0.00)	(0.00)
Population aged over 65	-0.122	-0.0297	-0.0538	-0.0826
	(0.62)	(0.27)	(0.13)	(0.08)
Crawling Peg	0.144	0.612	-0.283	-0.0619
	(0.64)	(1.02)	(0.34)	(0.31)
Managed Floating	0.116	0.886	-0.606*	0.341
	(0.55)	(0.75)	(0.34)	(0.32)
Floating	0.658	-0.185	-2.770**	-0.388
	(0.82)	(0.83)	(1.39)	(0.58)
Falling	-0.793	-0.601	-2.496***	-1.186
	(0.72)	(0.85)	(0.51)	(0.78)
Dual Market	-1.853**	-1.735*	-0.571	0.873
	(0.79)	(1.05)	(0.81)	(0.53)
Civil War Duration	-0.840**	-0.442	-0.435	-0.796
	(0.41)	(0.59)	(0.31)	(0.56)
War Duration	-1.265*	-0.821	0.1	0.229
	(0.70)	(1.14)	(0.32)	(0.31)
Number of Strikes (t-1)	0.358*	0.273	0.116	0.0916
	(0.20)	(0.19)	(0.09)	(0.14)
Constant	-18.13	-16.54***	-0.163	-9.063***
	(14.43)	(5.67)	(14.30)	(2.85)
Observations	1,452	1,408	1,810	1,798
R-squared	0.354		0.265	
Number of Countries	84	84	86	86
ρ	0.465		0.588	
Arellano-Bond test for AR(2)		0.184		0.512
Hansen test		0.96		0.815

Note: *** p<0.01, **p<0.05. Robust standard errors in parentheses.
(a) F-value is reported. (b) regional dummies, country dummies (Models 1 and 3), and half decade dummies are included.

Table 2: Electoral Competitiveness and Political Business Cycles

	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10
Sample	Autocracies	Autocracies	Autocracies	Autocracies	All	All
Statistical Method	PCSEs + FE	System GMM	PCSEs with FE	System GMM	PCSEs + FE	System GMM
Dependent Variable						
Fiscal Balance (t-1)		0.0346		0.0816		0.158
		(0.11)		(0.12)		(0.12)
Competitive Elections	-0.682**	-0.751***				
	(0.27)	(0.22)				
Non-Competitive Elections	-0.144	-0.071				
	(0.39)	(0.29)				
Clean Elections			-1.159**	-0.949*		
			(0.51)	(0.55)		
Mixed Elections			0.12	-0.14		
			(0.61)	(0.48)		
Dirty Elections			-0.22	-0.39		
			(0.34)	(0.27)		
Elections					-0.742***	-0.781***
					(0.23)	(0.24)
Elections*squared Polity IV					0.00752*	0.00897**
					(0.00)	-0.00405
Elections*Polity IV					-0.0292	-0.0427*
					(0.02)	(0.02)
Squared Polity IV					-0.00316	0.00185
					(0.01)	(0.01)
Polity IV					0.0159	0.000247
					(0.04)	(0.05)
Logged GDP per capita (t-1)	1.644	1.680*	0.116	1.703*	1.086	1.223**
	(1.31)	(0.98)	(1.47)	(0.95)	(0.86)	(0.60)
GDP Growth (t-1)	0.0155	0.0488**	0.0285	0.0676**	0.0320*	0.0490***
	(0.02)	(0.02)	(0.03)	(0.03)	(0.02)	(0.02)
Trade Openness (t-1)	0.013	0.00706	0.0236	0.00745	0.00878	0.00536
	(0.01)	(0.02)	(0.02)	(0.02)	(0.01)	(0.01)
Capital Controls (t-1)	-0.0193	-0.141	-0.0331	-0.188	0.0312	-0.0203
	(0.24)	(0.33)	(0.26)	(0.34)	(0.14)	(0.14)
Oil-gas rent per capita	0.00134**	0.000996***	0.00139**	0.00105***	0.000625**	0.000831***
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Population aged over 65	-0.123	-0.027	0.257	0.038	-0.209	-0.179
	(0.62)	(0.27)	(0.67)	(0.25)	(0.17)	(0.13)
Crawling Peg	0.14	0.62	0.31	0.64	0.02	0.19
	(0.64)	(1.01)	(0.75)	(1.05)	(0.33)	(0.45)
Managed Floating	0.0976	0.855	0.342	1.04	-0.177	0.529
	(0.55)	(0.75)	(0.63)	(0.83)	(0.31)	(0.39)
Floating	0.643	-0.171	0.515	-0.108	-0.259	-0.471
	(0.82)	(0.83)	(0.92)	(0.88)	(0.81)	(0.72)
Falling	-0.795	-0.578	-0.709	-0.63	-1.397***	-0.984*
	(0.72)	(0.84)	(0.85)	(0.86)	(0.42)	(0.59)
Dual Market	-1.882**	-1.740*	-2.410**	-2.509*	-1.948***	-1.208
	(0.79)	(1.04)	(1.11)	(1.44)	(0.64)	(0.89)
Civil War Duration	-0.854**	-0.44	-0.871*	-0.65	-0.433	-0.68
	(0.41)	(0.59)	(0.47)	(0.65)	(0.28)	(0.44)
War Duration	-1.304*	-0.855	-0.366	-0.248	-0.292	-0.0778
	(0.70)	(1.13)	(1.01)	(1.80)	(0.35)	(0.48)
Number of Strikes (t-1)	0.365*	0.282	0.611**	0.511**	0.183**	0.117
	(0.20)	(0.19)	(0.26)	(0.25)	(0.09)	(0.13)
Constant	-18.00	-15.17**	-7.12	-16.23**	-8.73	-15.43***
	(14.45)	(6.45)	(16.21)	(6.40)	(8.10)	(4.01)
Number of Observations	1,452	1,408	1,233	1,205	3,313	3,257
R-squared	0.35		0.41		0.24	
Number of Countries	84	84	81	81	131	131
Wald test	14148.86***	1682.19***	1444.17***	1936.37***	39980.99***	1360.51***
Arellano-Bond test for AR(2)		0.205		0.651		0.837
Hansen test		0.97		0.69		0.06

Note: *** p<0.01, **p<0.05. Robust standard errors in parentheses.

(a) F-value is reported. (b) regional dummies and half decade dummies are included.

Figure 1: Competitive Elections and the Size of Political Business Cycles in Autocracies (Models 5 and 6)

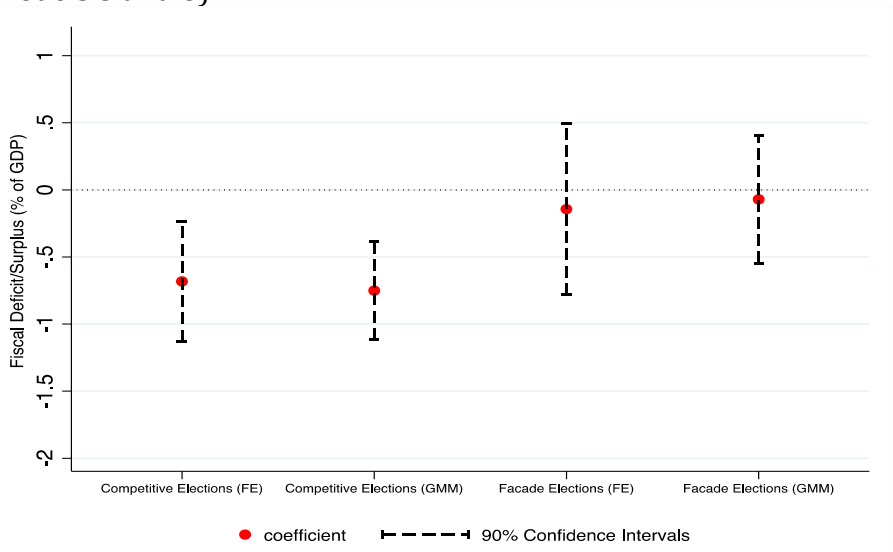


Figure 2: Electoral Fraud and the Size of PBCs in Autocracies (Models 7 and 8)

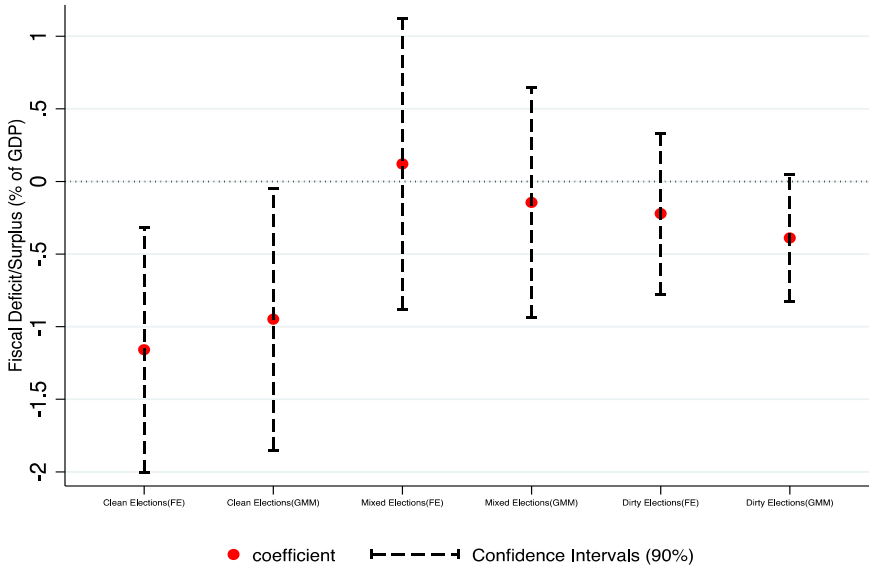
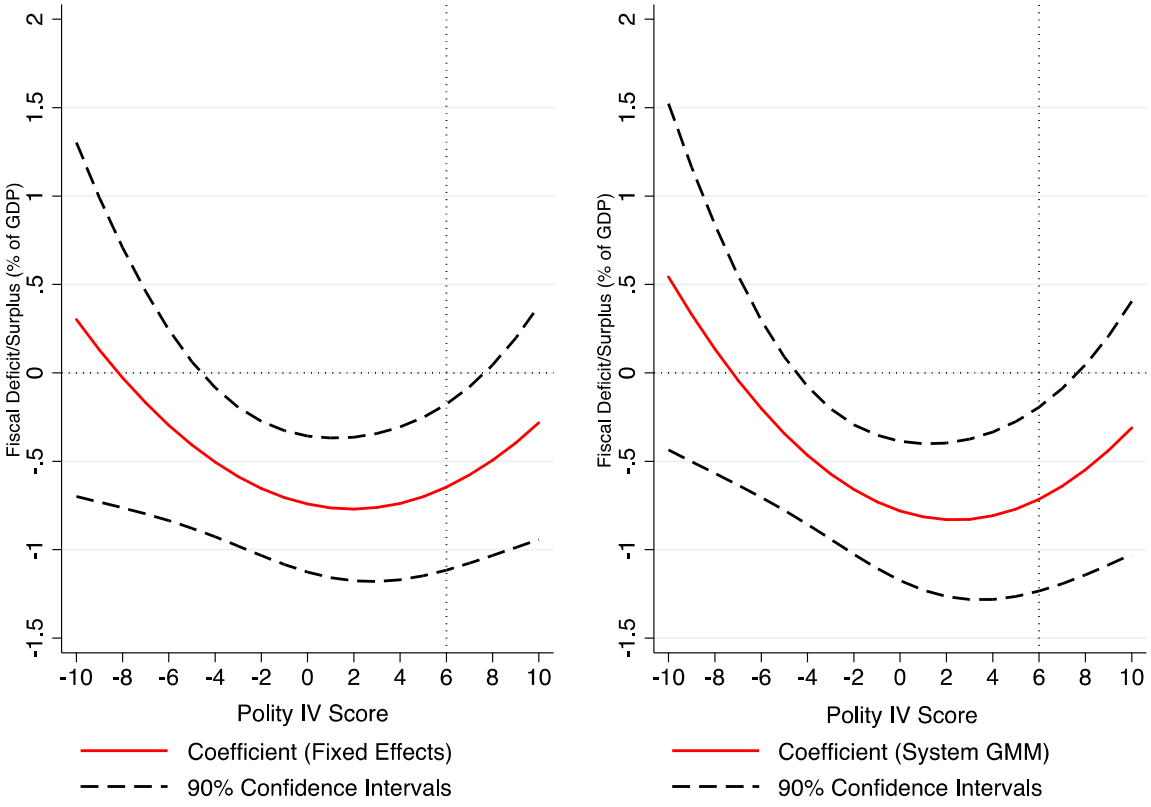


Figure 3: Political Competitiveness and the Size of PBCs (Model 7)



Note: dashed lines are 90% confidence intervals.

Appendix

Appendix A-1: List of Authoritarian Countries

Country	Period	Country	Period	Country	Period
Haiti	2000-2008	Niger	1976–1980, 1996–1999	Tunisia	1972–2008
Mexico	1972-1999	Ivory Coast	1979–2008	Sudan	1995-2008
Guatemala	1982-1985	Guinea	1989-2006	Iran	1971–2008
Hondulas	1972-1981	Burkina Faso	1989-2008	Turkey	1980-1981
El Salvador	1971-1983	Ghana	1972-1992	Egypt	1975-2007
Nicaragua	1971-1983	Togo	1977–2000	Sylia	1972-1981, 1986-2001
Panama	1981-1988	Cameroon	1975–2005	Lebanon	1993–2008
Guyana	1971–2006	Nigeria	1971–1978, 1983–1998	Jordan	1977–2008
Ecuador	1971-1978, 2000-2001	Gabon	1973–1976, 1979–1985, 1989–1991	Saudi Arabia	1996–2008
Peru	1971-1979, 1990-2000	Chad	1971–1976, 1983, 1986–2004	Kuwait	1997–2008
Brazil	1971-1984	Congo Brazzaville	1971, 1980–1983, 1997–2005	Bahrain	1990–2008
Bolivia	1971–1981	Congo Kinshasa	1988–2008	Turkmenistan	1997–2005
Chile	1973-1989	Uganda	1985–2008	Tajikistan	1998–2006
Argentine	1971–1982	Kenya	1971–1997	Kyrgyzstan	1998–2004
Uruguay	1973-1984	Tanzania	1991–2001	Uzbekistan	2002–2006
Spain	1971-1976	Burundi	1973–1986, 1992, 1996–2004	Kazakhstan	1997–2008
Portugal	1971-1975	Rwanda	2002–2008	China	1989–2008
Bosnia	2000-2006	Zambia	1971–1982, 1985–2008	South Korea	1971–1987
Greece	1971-1973	Zimbabwe	1985–2008	Bhutan	1990–2008
Cyprus	1977-1982	Malawi	1971–1990, 1992–1993	Bangladesh	2007–2008
Russia	1997-2008	South Africa	1971–2007	Sri Lanka	1977–1988
Belarus	1997–2008	Nambia	2002–2008	Nepal	1971–1989, 2002–2003
Georgia	1997-2003	Lesotho	1973–1977, 1987–2007	Thailand	1971–1978, 1991
Azerbaijan	1997-2006	Botswana	1973–2008	Malaysia	1971–2008
Gambia	1973-2008	Swaziland	1974–2008	Singapore	1971–2004
Mali	1976-1991	Madagascar	1972–1974, 1988–1992	The Phillipines	1971–1985
Senegal	1971-1999	Morocco	1971–2004	Indonesia	1971–1998
Mouritania	1975-1979	Algeria	1996–2008	Fuji	2002–2008

Appendix A-2: List of Democratic Countries

Country	Period	Country	Period	Country	Period
USA	1971-2008	Austria	1971-2008	Nigeria	1979-1982, 1999-2004
Canada	1971-2008	Hungary	1993–2001	Congo Brazzaville	1992–1996
Dominican Rep	1971-2008	Czech Rep	1997-2008	Uganda	1984
Trinidad	1993-2008	Slovak Rep	1997-2006	Kenya	1998–2007
Mexico	2000-2008	Italy	1971-2008	Brundi	1993-1995
Guatemala	1971–1981, 1986–2008	Albania	1996–2006	Malawi	1994-2008
Honduras	1971, 1982-2008	Macedonia	1998–2006	Madagaskar	1993-2007
El Salvador	1984-2008	Slovenia	1997–2008	Mauritius	1978-2008
Nicaragua	1984-2004	Croatia	1997-2008	Turkey	1971-1979, 1983-2001
Costa Rica	1971-2007	Greece	1974-2008	Islael	1971-1972, 1974-2008
Panama	1989-2008	Cyprus	1983–2008	Mongolia	1996-2008
Colombia	1971-2007	Bulgaria	1995-2008	South Korea	1988-2008
Venezuela	1971-2005	Moldova	1997-2008	Japan	1971–2008
Ecuador	1979-1999, 2002-2003	Romania	1991-2008	India	1971–2008
Peru	1980–2004	Estonia	1997-2008	Bangladesh	1992-2006
Brazil	1985-2008	Latvia	1997-2008	Sri Lanka	1971-1976, 1989-2008
Bolivia	1979, 1982-2007	Lithuania	1997-2008	Nepal	1990-2001
Paraguay	1992-2008	Ukraine	1997–2008	Thailand	1975, 1979-1990, 1992-2003
Chile	1971-1972, 1990-2008	Armenia	1997-2008	The Phillipine	1986-2008
Argentina	1973-1975, 1983-2004	Georgia	2004-2008	Indonesia	1999-2008
Uruguay	1971-1972, 1985-2008	Finland	1971-1998	Australia	1971-2008
UK	1971-2008	Sweden	1971-2008	Papua New Guinea	1990-2005
Ireland	1972-2008	Norway	1971-2008	New Zealand	1979-2008
Netherlands	1971-2008	Denmark	1971-2008	Solomon Islands	2002-2008
Belgium	1971-2008	Mali	1992-2008		
France	1972-2008	Senegal	2000-2008		
Switzerland	1997-2001	Benin	2004-2006		
Spain	1977-2008	Niger	1995, 2000-2008		
Portugal	1976-2008	Sierra Leone	2002-2008		
Poland	1992-2006	Ghana	1971, 1979-1980, 1993-2008		

Appendix B: Descriptive Statistics

Variable	Observations	Mean	Std. Dev	Minimum	Maximum
Fiscal Balance (% of GDP)	3,313	-2.22	5.6	-60.97	39.22
Elections	3,313	0.28	0.45	0	1
Logged GDP per capita	3,313	7.97	1.56	4.97	11.12
GDP Growth	3,313	2.33	4.59	-28.62	36.86
Trade Openness	3,313	70.83	45.19	6.32	411.03
Capital Openness	3,313	0.04	1.49	-1.88	2.38
Oil-Gas Value per capita	3,313	362.9	1462.69	0	28198.55
Population over 65	3,313	6.97	4.73	1.84	21.64
Crowling Peg	3,313	0.31	0.46	0	1
Managed Floating	3,313	0.21	0.41	0	1
Floating Exchange Rate	3,313	0.04	0.2	0	1
Falling Echange Rate	3,313	0.08	0.28	0	1
Dual Exchange Rate	3,313	0.01	0.1	0	1
Civil War Duration	3,313	0.09	0.28	0	1
International War Duration	3,313	0.02	0.13	0	1
Number of Strikes	3,313	0.19	0.61	0	7
Competitive Elections (NELDA)	3,305	0.25	0.43	0	1
Non-Competitive Elections (NELDA)	3,305	0.03	0.16	0	1
Clean Elections (Kelley)	2,940	0.17	0.37	0	1
Mixed Elections (Kelley)	2,940	0.01	0.1	0	1
Dirty Elections (Kelley)	2,940	0.05	0.22	0	1
Polity IV	3,313	3.06	7.05	-10	10