Political Business Cycles: Beyond Budgetary Concerns

Georgios E. Chortareas
Department of Economics
University of Athens
gchortar@econ.uoa.gr

Vassilis E. Logothetis*
Department of Economics
University of Athens
aap@econ.uoa.gr

Andreas Papandreou
Department of Economics
University of Athens
vlogothe@econ.uoa.gr

Abstract

We consider the relationship between elections and various forms of regulation for 30 OECD economies during 1993 to 2007. We focus on regulation indicators covering energy, transport and communication industries which have experienced heavy public sector presence. We produce evidence suggesting that elections have positive effects in the overall regulation of these sectors. This result is interpreted in terms of strategic pre-electoral manipulation on behalf of the incumbents. The rents preserved through the positive effect can act as policy instruments substituting fiscal transfers prior to the elections. The above findings are present and robust even in countries with mature democratic institutions were political budget cycles are less likely to occur.
Keywords: Political Cycles; Regulation; Rent-seeking; Panel data
JEL classification: H1, L51

Preliminary Draft
Final Paper submitted by February 12 2012

* (***Corresponding and Presenting Author***) Department of Economics, *University of Athens*, 14 Evripidou Street, Athens 10559, Greece. Email: vlogothe@gmail.com

1. Introduction

The cyclical fluctuations in government's fiscal policies induced by the constitutional dictatum of periodically occurring elections is described through the term Political Business Cycle. The appearance of these cyclicalities is attributed to the opportunistic behavior of incumbents prior to the elections. Politicians in office through strategic manipulation in policy instruments and especially fiscal expansions place an effort to take advantage of voter's economic well being. Recent empirical research has identified such a pre-electoral strategic manipulation of fiscal policies, on behalf of the government, in newly established democracies (Brender and Drazen, 2008). Several other institutional features, like corruption and non transparency that were empirically tested and found statistically significant in explaining political budget cycles can be also attributed to immature political institutions. In the light of these findings the question that arises is whether there are other instruments besides fiscal policy that can be applied for pre electoral manipulation of the electorate without excessive disturbances in government's budget balance and that are present in mature democracies. We argue that economic regulation and the subsequent rents that are generated through government's intervention in the economy can be such an instrument. Alesina et al (2008) provide weak evidence for 21 countries that reforms occur at the beginning of a new term, a result that is confined to certain sectors of the economy and not connected with political budget cycles literature. They attribute their findings to honeymooning effect as reforms in the last years meet strong opposition. In this paper we provide robust evidence for 30 OECD economies that the overall tendency towards deregulation in economic activity decelerates the election years a finding that can be attributed to strategic choices of the incumbents. Moreover we test whether or not this finding is driven by immature political institution and the democracy effect as described by Brender & Drazen (2008). Our results shows that the deceleration of the economic activity is present also in old established democracies a result that verifies our hypothesis for regulation as an alternative instrument of pre electoral manipulation.

Drazen & Eslava (2006) and Katsimi &Sarantides (2010) examine forms of electioneering through fiscal manipulation that do not affect the overall deficit of the country but its targeted to composition of expenditures. Politicians have the incentive not to do so in order to avoid electoral punishment for the voters. As Drazen and

Eslava (2006) argue "Such election-year 'pork barrel spending' by which we mean policies or legislation targeted to specific groups of voters to gain their political support is widely seen as an especially important component of electoral manipulation" (p.1). They develop a model that focuses on electoral manipulation through targeted government expenditures although they have previously identified the case of special legislative action in favor of certain groups. Regulation of economic activity is an example of such a specific legislative action that a government can take targeted at certain groups of voters at the expense of others. Regulation as a process generates rents for the few with the total cost being barred by the whole society and not solely by the government budget. Blanchard & Giavazzi (2003) for example refer to rents created by product regulation enjoyed both by incumbent firms and by labor unions as an obstacle in the deregulation process.

Moreover, as Hillamn & Riley (1985) argue "government policies can also be source of rents, secured for example by the industry specific factors who are beneficiaries of protection, or by the residual claimants in firms which are the beneficiaries of protectionist policies and of regulation" (p.17). The model introduces the notion of asymmetric valuation of the prize (in the notion of politically contestable rents) by the competing agents. A larger value assigned to the political prize by a certain participant acts as an entry barrier for those contesters that have assigned a lower value to it. Thus according to the authors the incumbents have a clear advantage over his potential contestants. An important emerging conclusion is that "Protection transfers income from one group to another, and the losers from a protectionist policy suffer a loss even if they have not been active in countering the protectionist lobbying of the gainers from protection" (p.188). Such a reasoning places regulatory[1] cyclicalities in the context of the Drazen & Eslava (2006) model of no overall deficit increase electioneering. In the paper we investigate the existence of such a pre-electoral manipulation in 30 OECD economies for the period 1991-2007 using a dynamic panel data approach. We test the hypothesis that the deregulation process decelerates in elections years due to strategic manipulation by the government[2].

[1] Cyclicality in regulation is only one of the possible rents created in the pre electoral timing. Tariffs and trade restrictions fluctuating along electoral cycle are present in the literature as cyclically fluctuating policies

[2] Alesina et al (2008) through GLS estimation provide weak evidence (only 2 out of 6 sectors under research give statistical significant results at 10%) for 21 countries that reforms occur at the beginning of a new term. He attributes this finding in the fear for electoral losses as a result of liberalizing or fiscally conservative reforms.

2. Literature Overview

The focus on Political Budget Cycles stems from the early Political Business Cycle literature originating in the mid-seventies. The presupposition behind which the literature was built upon is in effect the notion of economic voting. That is the crucial role economic variables play in the process of decision making apprehended by the voter prior to the elections. Several empirical studies have confirmed that pre-election conditions do have great influence in voting patterns in a series of countries. Kramer (1971) focusing on congressional elections from 1896 to 1964 found that total votes going to the incumbent party were negatively affected by the rate of inflation and positive by the growth rate of real per capita income. Stigler (1973) raises concerns over the stability of the results for congressional elections an argument that was interpreted by Crain, Deaton and Tollison (1978) as an indication that voters do not hold responsible their congressmen on macroeconomic performance. Fair (1978) (updated in Fair 1982, 1988) argued that if a causational linkage between economic performance and the incumbent party is established then this is more likely to be expressed in presidential election[3]. Fair found that changes in real GNP per capita or in unemployment rate have an effect on presidential votes. Several other studies extended the analysis in other countries too and have empirically demonstrated that economic voting does not solely emerges in the US elections. Madsen (1980) finds similar results for the Nordic countries (Norway, Sweden and Denmark), Lewis-Beck (1988) for Britain, France, West Germany, Italy and Spain.

The acceptance that economic performance matters in voting provides the incentive to politicians for strategic manipulation of the economy prior to the elections. Such a manipulation has as a primary target the improvement of citizens' well-being and as a byproduct the enhancement of reelection possibilities. The first such models of opportunistic politics were by Nordhaus (1975) and Lindbeck (1976). In Nordhaus model, as well as in the early models on opportunistic political business cycles, the policy instrument applied was monetary policy and favorable economic conditions for voters were derived through exploitation of short term Phillips curve. That is with backward looking expectations on inflation the opportunistic incumbent has the incentive to artificially stimulate the economy by inducing a boom in the

[3] Mueller(2003) concludes after taking into account several empirical studies that "*macroeconomic conditions only influence how citizens vote when the citizens can fairly hold a person or party responsible for these conditions*"(p.437)

period prior to elections, eliminating the inflationary impact with contractionary monetary policies in the post electoral recession that follows. As inflationary expectations are brought down the same pre electoral expansion can be induced in the subsequent elections leading in the formation of a Political Business Cycle. The model has received critique in its theoretical perspective as one of the majors' drawbacks identifies is that it relies on an irrational and naïve behavior by voters that repeats itself following the electoral cycle. The voters can be eternally conceived into voting opportunistic politician without being able to identify the ongoing pattern of pre electoral boom and post electoral recession.

Opportunistic models of Political Business Cycle that rely on monetary policy have been extensively empirically tested. The empirical research has tested both the policy instruments and the economic outcome with no robust results supporting the model. A series of empirical papers test the existence of PBC in economic activity measuring GNP and unemployment fluctuations both in US and other countries prior to the elections. Alesina, Roubini and Cohen (1997) provide a summary of the results of the literature on unemployment and economic growth manipulation and conclude that empirical research demonstrates the lack of support from empirical findings to theory as no evidence of pre electoral increase in economic activity. Lewis-Beck (1988) and Paldam (1979) extend the analysis outside the US again with no significant results verifying an increase in economic activity. The post electoral inflationary episodes that the models predict are present to some extend although the lack the universality that would render the theory robust. Alesina et. al. (1997) find signs of higher post electoral inflation across OECD countries and argue that post electoral inflation in US is a phenomenon that can be identified to the election before 1979. Evidence of monetary policy instruments are in accordance with findings on post electoral inflation. Studies that have put under investigation money supply by measuring changes in M1 volume. Again Alesina et. al. (1992) find such evidence for 18 OECD economies, Berger and Woitek (1997) for Germany, and Allen (1986) for the US. For the last Grier(1989) and Beck(1987) and provides counterevidence on M1 increase arguing that the selection in the time span under investigation is important for the significance of the results. He concludes that such a manipulation is present in the data for the period between 1960 and 1980. Fransese (2006) attributes the lack of empirical evidence to support the idea of PBC in real outcome as a proof of politicians preferences to more targetable and timeable (by incumbents to voters) manipulable (by incumbents), palpable (by voters) and attributable(by voters to incumbents) policies (p.549).

The empirical shortcomings in the research of active monetary manipulation in order to enhance reelection possibilities combined with the identification that politicians have incentives for more targetable and palpable policies have incorporated fiscal policy manipulation into politically induced economic cycles. Tufte (1978) identifies several incidents of opportunistic manipulation in fiscal policies prior to the elections. Such policies following Tufte include fiscal transfers in social security payments, veteran benefits, public hiring/firing, spending increases, delayed cuts. Contrary to the previous model of opportunistic political business cycles, now the Phillips curve becomes irrelevant as voters economic well being is ameliorated through direct and targeted to him fiscal transfers. The term Political Budget Cycles is adopted to characterize cyclical fluctuation in fiscal policies that occur as a part of the electoral cycle.

Rogoff and Sibert (1988) extend the initial opportunistic political business cycles models to rational voters. The adverse selection model they present is based on the assumption that each candidate has a competence level known to him (low or high). Asymmetric information is established for this level as voters are not aware of it and rational expectations regarding the type of the candidate are assessed based on observable fiscal policy outcomes. Prior to the elections the high competence candidate has the incentive to signal this competency by engaging in expansionary fiscal policy. Voters recognize high competency level, as the adoption of such a policy is of much greater cost for the low competence candidate, and reward it by voting in favor. Rogoff(1990) argues that signaling competence can be also achieved by manipulating the composition of expenditures. That is by shifting government expenditure towards more observable set of policies. Direct transfers and consumption spending that yield immediate results are more preferable as policies, by the competent politician, than investment and other less easy to observe and more time needing policies. Although there might be some post electoral inflation, stemming from the undergone fiscal expansion, rational voters respond to such a manipulation, as they are still better off electing the most competent on managing the economy.

Despite the new elements that the aforementioned models incorporate, that is voter rationality and strategic behavior on part of the politician and the electorate, certain theoretical drawbacks were identified. Shi & Svensonn (2003) and Drazen (2000) both distinguish the most prominent one to be the models prediction of an economy being distorted by the most competent politician. In addition it's only him that will be reelected. But besides the theoretical questions a serious limitation on empirical research is implemented as additional information on politician's type is needed in order to test models' predictions.

These limitations were addressed through a series of models based not on adverse selection but on moral hazard. Persson & Tabellini (2000) and Shi & Svensson (2002) introduce such models that distinguish themselves from the previous adverse selection models in two broad issues. Firstly although each politician has a competence type as before, it is assumed that this type is not observed neither by the electorate nor the politician contemporaneously. Secondly the new models give room for hidden fiscal policy actions by instruments not immediately observable by the voters. Thus the incumbent can substitute lack of competency by manipulating policy instrument, signaling a different type than the one he is into. For instance pre electoral borrowing and the consequence increase in fiscal transfers and public good provision acts as an instrument for imitating competence in economic performance. Elections occur after the combination of incumbent's hidden effort and competence has determined the fiscal policy outcome. In equilibrium and despite the fact that the electorate is aware of the incumbents' intentions and incentives for manipulation, there is an excess borrowing that can be expressed as an increased budget deficit for the time before the elections. The notable difference related to empirical research is hence the model's prediction that fiscal manipulation and usage of related policy instruments is not confined to high level competence candidate but can be exerted by all types of politicians.

The empirical findings in favor of political business cycles have been dubious with little significance in the results and an overall sense that monetary manipulation with real economy effects is not present in the data placed under examination. On the other hand empirical research in political budget cycles has been apprehended for a series a years, with the increasing help of advanced econometric techniques that became available the last years, giving robust and statistically significant results indicating the presence of pre electoral fiscal manipulations in the form of increased budget deficits.

Tufte (1978) provides the first evidence on fiscal policy manipulation in the context of direct transfers. Frey & Schneider (1978a 1978b) provide some first econometric evidence of increases in government expenditures prior of election for both the US and the UK. For the Keech & Pak(1989) found electoral cycle in veteran transfers but only for a time period between 1961 and 1978 and Alesina (1988) through OLS regression concluded in the existence of electoral cycles in the net transfers relative to GNP for the period 1961 to 1985. Evidence on such manipulations have been the result of several individual country studies. Krueger & Turan (1993) find pre electoral fiscal manipulation for Turkey and for the years 1950-1980, Gonzalez (2002) find similar results for cycles in government spending in Mexico for the period 1958-1997.

Studies on Political Budget Cycles on a multi-country level again with results backing up the pre electoral fiscal expansion strategy on behalf of the incumbent. Ames (1987) provides supportive evidence of an increase of government expenditure for 17 Latin Americal countries. Block (2002) confirms the fiscal expansionary policy for 44 sub-Saharan African countries[4].Schuknecht (1996) finds similar results in favor of fiscal cycles for 35 developing countries. He stresses that weaker institutions and little or no check and balances live more room for fiscal manipulation in developing countries. The differences in the magnitudes of fiscal cycle size as well as the great variety of countries or group of countries placed under study have generated various results that have shifted attention from if Political Budget Cycles exist to where these cycles occur and why differences are observed among countries.

In this context Shi&Svesson (2002, 2006) find evidence on Political Budget Cycles in both developed and less-developed countries with the magnitude of the phenomenon being much greater in the latter. They also demonstrate that this difference can be attributed to too institutional related variables. PBCs are positively related with politician's rent from remaining in office and negatively correlated with the share of informed voters. Gonzales (2002) in a 43 countries study over the period 1950-97 concludes that that when there is a positive correlation between the degree of democracy and transparency Political Business Cycles is strongest in countries with intermediate levels of democracy. Along the same lines Alt & Lassen (2006) find that fiscal manipulation is present among advanced democracies conditional on transparency of budget institutions as well as polarization of political parties. Akhmedov & Zhuravsaya (2004) derive similar conclusions on transparency in a

[4] He also find evidence in favor of monetary policy manipulation

context of a “young” democracy with larger shifts in expenditures prior of the elections corresponding to Russian regions with lower transparency.

Persson & Tabellini (2003) in an analysis incorporating 60 democracies from 1960 to 1998 study how Political Budget Cycles are affected by the form of government, presidential or parliamentary, and by electoral rules; majoritarian or proportional. They argue that fiscal policy is heavily affected by the very nature of the governmental system as characterized by the fundamental differences aforementioned. Their results demonstrate that pre elections tax cuts are a common phenomenon while post electoral fiscal adjustments can be found in countries with presidential regime. Additionally they find that proportional electoral rules are correlated with increased expenses in the welfare spending both in pre election time and after. Majoritarian electoral rules are correlated with pre electoral spending cuts.

Brender & Drazen (2005) in an influential paper also confirm the existence of political budget cycles but they conclude that the result is driven by the “new democracy” effect. That is the inclusion in the sample of new democracies yields statistical significant political budget cycles. Once these countries are removed from the sample the results appears insignificant. This new democracies experience can be pinned down to both developed and less developed economies and reflects the level of experience with democratic institution that voters have. More experienced voters are less likely to reward and pre electoral fiscal manipulations as “surprises” in election years are treated in a more sophisticated manner. On the other hand inexperienced voters in new democracies that are also more likely to have little available data to draw the correct inferences on observable policies might fell for pre electoral manipulations. Brender & Drazen (2005) carefully acknowledge the fact that previous events of fiscal manipulation that were present in older democracies have not yet occurred in new established ones depriving voters of a helpful and important experience necessary to identify them. They also connect their results with previous empirical research that stresses the importance of transparency on reducing the amount of electioneering taking place through fiscal manipulation.

Under the influence of these findings that render political budget cycle a phenomenon that does not appear in developed and with long standing democratic institutions countries Drazen & Eslava (2006) propose a Pork Barrel Cycles model. In their model incumbents try to influence voters with direct and targeted spending attributed to specific groups at the expense of other voters. They argue that a strategy of targeting expenditures by cuts on some other type of spending so as not to increase the overall fiscal deficit. This strategy becomes optimal as excess deficits are punished by voters reducing chances of reelection. The manipulation in this model takes place in the composition of expenditures with asymmetric information being introduced not to the politician's competence as before but in the preferences of the incumbent over different voter groups. Thus Pork barrel cycles can emerge even if there is full knowledge over politician's competence and over incumbent's fiscal policy choices.

3. Data and Empirical Specification

3.1 Data on regulation

We use yearly data for 30 OECD countries for the years 1991-2007[5]. Data have been collected by Conway & Nicoletti (2006)[6] and initially covered 21 OECD countries for a time span from 1975-2003. The 2009 update (Nicoletti et. al 2009) expanded the number of countries to 30 and the time span to 2007. The countries for which yearly data are available are: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Korea, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, United Kingdom and United States.

The indicators of non-manufacturing regulation cover the sectors of energy, transport and communication (ETCR)[7]. Their measure varies on a scale from 0 signifying total lack of regulation to 6 which indicates the highest level of economic restriction and regulation. ETCR indicators are compiled for seven sectors of the economy where the state traditionally had increased presence through public owned enterprises, monopolies and strict regulatory legal binding frameworks. The sectors are electricity, gas, air passenger transport, rail transport, road freight, postal services and telecommunications. Indicators have been estimated through a combination of

[5] We restrict out time sample for various reasons. Firstly, in the post soviet era deregulation has no prominent ideological opponent, thus partisan effects are restricted. Secondly the nineties have been the decade where the laggards of deregulation have started catching up. What in the 80's was a process confined to some countries with others following in slow pace has become in the 90's common place. Thirdly, we can incorporate in our dataset ex communist countries now members of OECD and test empirically for the new democracy effect.

[6] Analytical description of the indicators is provided by the authors

[7] OECD's ETCR indicators have been used in applied empirical research. For example Potrafke(2010) uses the aggregate indicators to study partisan effect on deregulation for 21 countries from 1980 to 2003. Alesina et al (2008) use the sector sub-indicators to study the effects of Euro adoption in structural reforms.

national and published sources and low level indicators representing objective measures were constructed. Low level indicators concern entry regulations, public ownership, vertical integration of markets and market structure depending on each specific sector with entry barriers and public ownership applying almost to all[8]. These are aggregated either in indicators concerning sectors of economic activity or on aggregate indicators that represent regulation in "Entry Barriers", "All but Public ownership", "Public Ownership" and "Aggregate ETCR"[9]. Since we are interested in how overall level of regulation changes in the pre electoral period we apply the latter aggregated indicators in our empirical investigation.

3.2 Empirical Model Specification

To estimate the relationship between election and the regulatory indicators we specify a dynamic panel data model with the following structure[10]:

$$Y_{it} = \sum_{j=1}^{2} a_j Y_{it-j} + \beta X_{it} + \gamma ELE_{it} + \mu_i + \varepsilon_{it} \qquad (1)$$

Where Y_{it} denotes the growth rate (Δln) of each one of the four aggregate indicators for product market regulation in country i and year t. X_{it} is a vector of control variables, ELE_{it} an election dummy variable (one in election year and zero otherwise), μ_{it} are unobserved country specific effects and ε_{it} an *i.i.d* error term. The lagged dependent variable $\sum_{j=1}^{2} a_j Y_{it-j}$ tackles the persistence of regulatory level in the economy establishing the dynamic nature of the model under specification. Our control variables are real GDP growth rate to capture the possibility of deregulation as a respond to economic crisis, and rate of unemployment to control for union pressures against the deregulation process.

Equation (1) is standard dynamic panel data specification. The presence of the lagged dependent variable and the country specific effects in OLS regression renders

[8] Exept Road freight

[9] Data Appendix provides more information on these indexes.

[10] The model's structure follows the work of Shi & Svensson (2002, 2006), Brender & Drazen (2005) and Potrafke(2009).

the estimator biased. Although FE estimator removes the country fixed effects, the bias is not addressed due to the lagged dependent variable that is included to address the persistence effects of the estimators. The bias arises as initial condition Y_{i0} is correlated with the country specific effects μ_i, which creates correlation of order $\frac{1}{\mathrm{T}}$ between the lagged dependent variable and the error term. As the bias of FE estimator depends on the time series length this means that as T goes to infinity the FE estimator will be consistent (Nickel 1981; Kiviet 1995).

To address this problem we adopt the GMM estimator developed by Arellano & Bond (1991), Arellano & Bover (1995) and Blundell & Bond (1998). Alvarez & Arellano (2003) discuss the asymptotic properties of several estimators for an autoregressive model when both T and N tend to infinity and concluded that the GMM and LILM estimators are consistent and asymptotically efficient when both N and T tend to infinity. Hayakawa (2007) extends the aforementioned analysis to include the system GMM estimator developed by Arellano/Bover-Blundell/Bond. He derives the asymptotic properties of the system GMM under large T and N asymptotics. He concludes with the help of Monte Carlo simulations that the two-step system GMM estimator that was originally developed for large N and small T panels is also recommended for use in the context of large N and Large T panels. Additionally Soto (2010) through Monte Carlo simulations tests the performance of system GMM estimator when N is small relative to T and he also concludes that the small number of individuals does not have important effects on the properties of the system GMM. He demonstrates that the System GMM estimator has the lowest bias and highest efficiency from a set of estimators incorporated in his analysis when some persistency is present in the series. Soto's analysis focuses in the case where the sample is small a situation common in macro panel data where N is small as well as T and concludes that the accuracy and efficiency of the system GMM estimator makes it a more reliable tool for applied research even when a partial set of instruments is used for the estimation.

[11] T corresponds to the length of the panel.

4. Empirical Results

4.1 Baseline Model

Table 1 reports the results acquired with the growth rate of the four different OECD regulatory indicators as dependent variable. In order for the results to be more comprehendible we have multiplied the regulatory index by minus one, thus transforming the regulatory index to a deregulation one. Higher values of the index correspond to a greater acceleration in the deregulation of the economy. The results show that elections have a significant effect at the deregulatory process. All four indicators enter the equation with a negative sign and are highly significant at 1% level. The negative sign is explained as a declaration of the deregulation process.

The control variables do not enter the equation as statistical significant with the exception of Real GDP growth in the index measuring the extent of public ownership in the energy, transport and communication sector. In this particular case the coefficient enters with a negative sign indicating that a positive GDP growth rate provides disincentives for further deregulation. Unemployment does not enter statistically significant the equation. This can be explained through the understanding of labor market structure both for some key European countries as well as the sectors of the economy for which regulatory indicators are compiled.

The indicators concern sectors of the economy where the state has traditionally increased presence -- through public owned enterprises, monopolies and strict regulatory legal binding frameworks. These rigidities are to a large extended and, for a crucial number of countries, present in the form of a high degree of protectionism for workers employed in those sectors. Consequently and in the context of Alesina's et al (2008) argument[12] a rise in unemployment does not have an effect in deregulation indicator as the highly protected workers are not affected.

[12] Since, in many European countries, the labor unions have effectively become unions of old workers, public employees and pensioners (for instance in Italy the majority of union members are retired) it should not come as a surprise that they tolerated or even endorsed the introduction of temporary job contracts in which young, entry level workers would be hired at will by the employers. In exchange they kept a very high degree of protection for older workers in the traditional labor markets. Spain, Italy and France are prime examples (p.7)

Table 1: OECD Regulation Index (1991-2007): Estimation method Arellano-Bover/Blundell-Bond two-step System GMM

VARIABLES	ETCR	Entry Barriers	All but Public Ownership	Public Ownership
ETCR (-1)	0.031			
	(0.043)			
ETCR (-2)	0.009			
	(0.075)			
Unem	-0.263	-0.190	-0.200	0.0687
	(0.292)	(0.244)	(0.318)	(0.149)
RGDPGrowth	0.0003	-0.0001	0.0001	-0.0007*
	(0.0008)	(0.0006)	(0.0007)	(0.0004)
ELE	-1.139***	-0.674***	-0.960***	-0.628***
	(0.299)	(0.213)	(0.253)	(0.239)
Entry Barriers (-1)		0.260***		
		(0.069)		
Entry Barriers (-2)		0.175***		
		(0.054)		
AllbutPublOwnership(-1)			0.183**	
			(0.076)	
AllbutPublOwnership(-2)			0.101*	
			(0.057)	
Public Ownership (-1)				0.254**
				(0.101)
Public Ownership (-2)				0.108
				(0.099)
Hansen Test[a]	2.67	5.99	3.16	3.28
	(0.615)	(0.200)	(0.531)	(0.512)
Corr. Test[b]	0.975	0.423	0.981	0.705
Observations	343	415	390	405
Number of countries	30	30	30	30

Notes: Robust standard errors in parenthesis with finite-sample correction for the two step covariance matrix as developed by Windmeijer (2005) , *** (**) [*] denote significance at the 1 (5) [10] percent level, All OECD regulation indexes were multiplied by -1 to derive deregulation growth rates. Orthogonal deviation transformations were used not to lose information as some observations are missing from the dataset. The instruments used in GMM regressions are lagged levels (1 period) for the difference equation and lagged difference (1 period) for the levels equation. Instruments were further reduced through *collapse* option in xtabond2 for STATA. Total number of instruments 9 (a) Hansen test for overidentifying restriction, where the null H_0 corresponds to valid overidentifying restriction (b) Arellano-Bond test for second order serial correlation in the first difference residuals, H_0: No serial correlation.

4.2 New Democracy Effect

To test whether the previous results were driven by the inclusion of new democracies in the sample, we test the specification solely on established democracies[13]. Table 2 reports the results for the 26 long established democracies which to a large extend match the previous ones. Again unemployment does not enter the specification as a statistical important factor and Real GDP growth doesn't affect the deregulation index[14].

Elections now enter the equation with the expected negative sign in all four cases but are statistically significant only the three of them. The case where the data does not verify the pre electoral deceleration of the deregulation process concern the indicator that measures the extent of public ownership in the seven sectors of the economy for which data are available. This result can be interpreted due to the lack of the necessary means for such a strategic manipulation. From the 80's and onwards governments have introduced large privatization schemes that have reduced the overall amount of public ownership. Moreover in many countries joint partnership coexist through shares owned by both the public and the private sector rendering such a manipulation more difficult that the one established through direct legislature.

To further test the result in the whole 30 countries data set we introduce a dummy variable only for the elections that were conducted under the classification of a new democratic regime. The results again come as in the two previous cases. Both dummies for elections in old democracies and elections in new, come with negative signs and are statistical significant. The difference comes in the magnitude of the coefficients that is larger in the dummy for the elections in new democracies. This result is consistent with the empirical findings in political budget cycles were the magnitude of the fiscal cycle drops as democratic institutions mature (Table 3).

[13] Appendix B provides more information on the countries of the sample, the number of the election for each country and the year that they became democracy. Here we exclude all countries that have at least one election in the years 1991-2007 that can be characterized as an election of a new democracy. Following Brender & Drazen (2005)Countries excludes are Czech republic, Hungary, Korea, Mexico, Slovak Republic and Turkey.

[14] The argument that deregulation can be seen as a respond to a major crisis is not present as for the years 1991-2007 there was no large and prolonged crisis for major OECD economies.

Table 2: OECD Regulation Index (1991-2007): Estimation method Arellano-Bover/Blundell-Bond two-step System GMM. New Democracies excluded

VARIABLES	ETCR	Entry Barriers	All but Public Ownership	Public Ownership
ETCR(-1)	0.036			
	(0.046)			
ETCR(-2)	0.026			
	(0.077)			
Unem	-0.251	-0.275	-0.376	-0.221
	(0.299)	(0.291)	(0.387)	(0.203)
RGDPGrowth	0.0003	0.0003	-0.0006	-0.001
	(0.0008)	(0.0007)	(0.0009)	(0.0006)
ELE	-1.041***	-0.620**	-0.756***	-0.163
	(0.286)	(0.258)	(0.276)	(0.344)
Entry Barriers(-1)		0.210***		
		(0.074)		
Entry Barriers(-2)		0.199***		
		(0.065)		
AllbutPublOwnership(-1)			0.158*	
			(0.094)	
AllbutPublOwnership(-2)			0.108	
			(0.073)	
Public Ownership(-1)				0.285**
				(0.123)
Public Ownership(-2)				0.272
				(0.167)
Hansen Test[a]	1.05	5.23	4.34	8.51
	(0.901)	(0.264)	(0.362)	(0.075)
Corr. Test[b]	0.801	0.639	0.550	0.318
Observations	299	323	307	329
Number of countries	23	23	23	23

Notes: Robust standard errors in parenthesis with finite-sample correction for the two step covariance matrix as developed by Windmeijer (2005) , *** (**) [*] denote significance at the 1 (5) [10] percent level, All OECD regulation indexes were multiplied by -1 to derive deregulation growth rates. Orthogonal deviation transformation was used not to lose information as some observations are missing from the dataset. The instruments used in GMM regressions are lagged levels (1 period) for the difference equation and lagged difference (1 period) for the levels equation. Instruments were further reduced through *collapse* option in xtabond2 for STATA. Total number of instruments 9 (a) Hansen test for overidentifying restriction, where the null H_0 corresponds to valid overidentifying restriction (b) Arellano-Bond test for second order serial correlation in the first difference residuals, H_0: No serial correlation.

Table 3: OECD Regulation Index (1991-2007): Estimation method Arellano-Bover/Blundell-Bond two-step System GMM. OldELE and NewELE dummy variables included.

	ETCR	PublicOwnership	AllbutPublicOwnership	Entrybarriers[c]
newELE	-1.523**	-1.191***	-1.219***	-0.798***
	(0.649)	(0.360)	(0.250)	(0.260)
oldELE	-1.114***	-0.615***	-0.920***	-0.599**
	(0.294)	(0.212)	(0.257)	(0.241)
Hansen test	2.62 (0.624	6.56 (0.161)	3.16 (0.532)	3.29 (0.510)
Corr. Test	0.914	0.455	0.532	0.764

Notes: Robust standard errors in parenthesis with finite-sample correction for the two step covariance matrix as developed by Windmeijer (2005) , *** (**) [*] denote significance at the 1 (5) [10] percent level, All OECD regulation indexes were multiplied by -1 to derive deregulation growth rates. Orthogonal deviation transformation was used not to lose information as some observations are missing from the dataset. The instruments used in GMM regressions are lagged levels (1 period) for the difference equation and lagged difference (1 period) for the levels equation. Instruments were further reduced through *collapse* option in xtabond2 for STATA. Total number of instruments 10 (a) Hansen test for overidentifying restriction, where the null H_0 corresponds to valid overidentifying restriction (b) Arellano-Bond test for second order serial correlation in the first difference residuals, H_0: No serial correlation

4.3 Rent Effects

It is common in the political budget cycle literature to test for the effect of political rent in the existence and on the magnitude of the pre electoral fiscal expansion. Here we also test for the politicians rents effects using two different but highly correlated indicators as proxies. Following Shi & Svensson (2006) we construct two variables derived from two common indexes that are used to measure the perceptions on the corruption. The first variable is constructed through the Corruption Perception Index annually published by Transparency International. The second is constructed through World Governance Indicators of the World Bank and specifically the Control of Corruption sub-indicator. These indicators in broad lines capture the subjective perception of the extent to which public power is exercised for private gain, as well as the degree of intervention by elites and special interest groups in the governing process.

Both of them are applied through an interaction term of the form ELE*Corruption index that enters the specification instead of ELE. The corruption index is rescaled by subtracting from each country observation the average of all countries. Thus a country with a 0 value lies in the average of the sample, countries higher are less corrupted and vice versa. The results, although at the expected sign, are not statistical significant. A possible explanation for this is that the deceleration does not occur through pressures exerted at the government by special interest groups but, as the hypothesis we test puts it, is a strategic choice of the government to sustain rents prior to the election as an alternative to fiscal expansion.

4.4 Robustness Tests

A common problem that arises when system GMM is applied as estimator is instrument proliferation. Roodman (2009) indentifies several problems that stem from the use of too many instruments. In his paper he summarizes them into four broad categories, Overfitting of endogenous variables, imprecise estimates of the optimal weighting matrix, downward bias in two step standard errors, weak Hansen test of instrument validity resulting in implausible perfect p-values of 1.000 (p.141). All this matters were taken into consideration from the beginning and the instruments used were restricted in the context that Roodman proposes[15]. Nevertheless results are robust in the increase of instruments, as expected. The use of more lags as instruments, for the difference and level equation does not alter the sign or the level of statistical significance of the coefficients.

The inclusion of additional controls like the logarithm of real GDP per capita or trade as a share of GDP did not affect the coefficient estimates on the election dummy. Additionally we tested the robustness of the results by further removing countries. So besides new democracies we additionally excluded Greece, Spain and Portugal from the sample. The results remain unaffected and the same as in the cases were new democracies were excluded.

Furthermore the electoral dummy variable coefficient remains effectively the same when difference transformation is used instead of orthogonal deviations and when one step system GMM is employed instead of the two step.

5. Conclusion

This paper produces evidence on cyclicalities in the regulatory process of the economy. The question of whether such cycles exist or not is directly linked to the existence of other instruments besides fiscal expansion that can be used for strategic pre electoral manipulation as rents created can substitute direct transfers from behalf

[15] Implementation of collapse option and use of certain lags instead of all available lags for instruments.

of the government. The answer to that question is important as it sheds light to ways, beside the ones described until now in the political budget cycle literature, for manipulating the electorate and overcome fiscal conservatism of voters who punish incumbents that run excess deficits.

Our empirical results indicate that the deregulation process in the Energy, Transport and Communication sectors of the economy decelerates during the election years, a result derived from a panel of 30 OECD economies and for a time span from 1991 to 2007, resulting in the maintenance of rents enjoyed by certain parts of the electorate. We further test whether this result can only be attributed to new democracy effect as is the case with political budget cycles. We find that deregulation decelerates both in new and old established democracies constituting the regulation of economy an instrument for electoral manipulation that is used in advanced democracies with mature political institutions. Thus fiscal conservatism of voters can be over passed through the implementation of strategies that do not augment budget deficits. Additionally we provide evidence that such manipulation is of greater magnitude in new economies a result consistent with political budget cycles literature.

References

Akhmedov, A., & Zhuravskaya, E. (2004). Opportunistic political cycles: Test in a young democratic setting. *Quarterly Journal in Economics*, 119, 1301-1338.

Alesina, A. (1988), *Macroeconomics and Politics* In *NBER Macroeconomics Annual 1988 11-55*, The MIT Press:Cambridge

Alesina, A., Cohen, G. & Roubini, N. (1992), " Macroeconomic Policy and Elections in OECD Democracies" *Economics and Politics* 4, 1-30

Alesina, A., Roubini, N. & Cohen, G. (1997), *Political Cycles and the Macroeconomy,* The MIT Press:Cambridge

Alesina, A., Ardagna, S., & Galasso, V, (2008) The Euro and Structural Reforms (November 2008). *NBER Working Paper Series, Vol. w14479*

Allen, S. D., (1986) The Federal Reserve and the Electoral Cycle" *Journal of Money, Credit and Banking* 18, 88-94

Alt, J. E., & Lassen, D. (2006). Fiscal transparency, political polarization, and Political Budget Cycle in OECD countries. *American Journal of Political Science* 50, 530-50

Alvarez*, J. &* Arellano, M. (2003). The Time Series and Cross-Section Asymptotics of Dynamic Panel Data Estimators *Econometrica*, 71, 1121–1159

Ames, B. (1987), *Political Survival*, Berkeley, CA: University of California Press.

Arellano, M., Bond, S., (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *Review of Economic Studies* 58, 277–297.

Arellano, M., & Bover, O., (1995). Another look at the instrumental variable estimation of error components models. *Journal of Econometrics* 68, 29– 51.

Beck, N. (1987), Elections and the Fed: Is there a Political Monetary Cycle? *American Journal of Political Science* 31, 194-216

Berger, H. & Woitek U. (1997) Searching for Political Business Cycles in Germany, *Public Choice* 91, 203-20

Blanchard O., & Giavazzi F., (2003) The Macroeconomic effects of Labor and Product Market Deregulation. *Quartely Journal of Economics,* 118 (3), 879-909

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

Blundell, R., & Bond, S., (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics* 87, 115– 143.

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

Conway, P. & G. Nicoletti (2006), "Product market regulation in non-manufacturing sectors in OECD countries: measurement and highlights", *OECD Economics Department Working Paper No.530.*

Crain W. M., Thomas H. D., Tollison R. D. (1978) Macroeconomics determinants of the vote in Presidential Elections *Public Finance Quartely* 6, 427-38

Drazen, A., (2001). The Political Business Cycle After 25 Years, p. 75-138 in , *NBER Macroeconomics Annual 2000*, Volume 15, National Bureau of Economic Research

Drazen, A. & Eslava,M. (2006).*Pork Barrel Cycles* NBER Working Papers 12190, National Bureau of Economic Research

Fair, R. (1978). The effects of Economic Events on votes for President *Review of Economics and Statistics* 60, 159-72

Fair, R. (1982). The effects of Economic Events on votes for President: 1980 Results *Review of Economics and Statistics* 64, 322-25

Fair, R (1988), The effects of Economic Events on votes for President:1984 Update *Political Behaviour* 10, 168-79

Franzese, R., & Jusko, K. L. (2006). Political-economic cycles. In D. Wittman & B. Weingast (Eds.), *Oxford handbook of political economy* (pp. 545–586). Oxford: Oxford University Press

Frey B. S., & Schneider F, (1978a) An Empirical Study of Politico-Economic Interaction in the US *Review of Economics and Statistics* 60 174-83

Frey B. S, & Schneider F, (1978b) A Politico-Economic Model of the United Kingdom *Economic Journal* 88 243-53

Gonzalez, M. 2002. Do changes in democracy affect the political budget cycle? Evidence from Mexico. *Review of Development Economics*, 6, 204-224.

Grier, K. (1989). On the Existence of a Political Monetary Cycle *American Journal of Political Science* 33, 376-89

Hayakawa K. (2007). The Asymptotic Properties of the System GMM Estimator in Dynamic Panel Data Models When Both N and T are Large, working paper, Hitotsubashi University

Hillman, A. L., & Riley J. G. (1989), Politically Contestable Rents and Transfers, *Economics and Politics*, 1, 17-39

Keech, W., & Pak K. (1989). Electoral Cycles and Budgetary Growth in Veterans' Benefit Programs," *American Journal of Political Science* 33, 901-11.

Kiviet, J., (1995). On bias, inconsistency, and efficiency of various estimators in dynamic panel data models. *Journal of Econometrics* 68, 53–78.

Kramer G.(1971). Short-Term Fluctuations in US Voting Behavior, 1896-1964 *American Political science Review* 65, 131-43

Krueger, A., & Turan, I. 1993. *The politics and economics of Turkish policy reform in the 1980's*. In: Bates, R., & Krueger, A. (eds), Political and Economic Interactions in Economic Policy Reform: Evidence from Eight Countries. Basil Blackwell: Oxford

Lewis-Beck, Martin S.,(1988) *Economics and Elections: The Major Western Democracies*, Ann Arbor: University of Michigan Press.

Lindbeck, A. (1976). Stabilization policy in open economies with endogenous politicians *American Economic Review*, 66, 1-19

Madsen, H(1980), "Electoral Outcomes and Macroeconomic Policies: The Scandinavian Cases" in P.Whitely, ed, *Models of Political Economy*, London:Sage 15-46

Mueller, D. (2003). *Public Choice III*, Cambridge University Press 3rd ed.

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

Nordhaus, W (1975), The Political Business Cycle" *Review of Economic Studies* 42, 169-90

Paldam, M., (1979) "Is There an Electional Cycle? A Comparative Study of National Accounts' Scandinavian Journal of Economics 81(2), 323-42

Persson, T., & Tabellini, G. (2000). *Political Economics: Explaining Economic Policy*. The MIT Press:Cambridge

Persson, T., & Tabellini, G. (2003). *The Economic E®ect of Constitutions: What do the Data Say*. The MIT Press: Cambridge.

Rogoff K. (1990). Equilibrium Political Budget Cycles, *American Economic Review* 80, 21-36

Rogoff K. & Sibert A (1988) "Elections and Macroeconomic Policy Cycles" *Review Economic Studies* 55, 1-16

Roodman D. (2009) A note on the theme of too many instrument's, *Oxford Bulletin of Economics and Statistics* 71, 135-58

Schuknecht, L. (1996). Political business cycles and fiscal policies in developing countries. *Kyklos*, 49, 155-170.

Shi, M., & Svensson, J. 2002. *Conditional political budget cycles*. CEPR Discussion Paper. No. 3352.

Shi, M., & Svensson, J. (2003) Political budget cycles: A review of recent developments, *Nordic Journal of Political Economy*, 29, 67-76

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

Soto M., (2010) *System GMM Estimation with a Small Sample*, working paper, Instituto de analysis Economico, Barcelona

Stigler, G. J. (1973). General Economic Conditions and Natural Elections *American Economic Review* 63, 160-7

Tufte E., (1978) *Political Control of the Economy*, Princeton University Press

Windmeijer, F. (2005) A finite sample correction for the variance of linera efficient two-step GMM estimators. *Journal of Econometrics* 126, 25-51

Wölfl, A., Wanner, I., Kozluk, T. & Nicoletti, G. (2009), Ten Years of Product Market Reform in OECD Countries: Insights from a Revised PMR Indicator, OECD Economics Department Working Papers No 695, OECD, Economics Department,

Appendix I: Data Description

The OECD indicators of regulation in energy transport and communications (ETCR) summarize regulatory provisions in seven sectors: **telecoms, electricity, gas, post, rail, air passenger transport**, and **road freight.** Four aggregate indicators are available focusing on different aspects of regulation in the aforementioned sectors. The four aggregate indicators are:

Variable	Description	Source
Public Ownership	The indicator reflects public ownership structures in certain sectors of the economy (telecommunications, energy, air transport) where governmental control can vary depending on the proportion of the economy under direct state control.	OECD, Conway and Nicolleti(2006)
All But Public Ownership	The indicator reflects the extent of regulation in those segments of the aforementioned sectors that are not under direct state control.	OECD, Conway and Nicolleti(2006)
Entry Barriers	The indicator reflects both the entrance difficulties in the aforementioned sectors and the extend of choice of supplier by the consumer.	OECD, Conway and Nicolleti(2006)
ETCR	The indicator captures the Market structure formulation whether competitive or not plus the degree market intergration.	OECD, Conway and Nicolleti(2006)
Real GDP Growth	Real GDP Growth measured in constant (2000) local currency unit.	World Development Indicators (World Bank)
Unemployment	Unemployment as a fraction of total labor force.	World Development Indicators (World Bank)
Election	Election Years	Institute for Democracy and Electoral Assistance(IDEA) / Own Collection

Appendix II: Country Description

No	Country	Year of becoming Democracy	Number of elections in the sample
1	Australia		6
2	Austria		5
3	Belgium		5
4	Canada		5
5	**CzechRepublic**	1990	**4**
6	Denmark		5
7	Finland		5
8	France		4
9	Germany		4
10	Greece		5
11	**Hungary**	1989	**4**
12	Iceland		5
13	Ireland		4
14	Italy		5
15	Japan		5
16	**Korea**	1988	4
17	Luxembourg		3
18	**Mexico**	1988	3
19	Netherlands		5
20	New Zealand		5
21	Norway		4
22	**Poland**	1989	**4**+2
23	Portugal		5
24	**SlovakRepublic**	1993	**4**+1
25	Spain		4
26	Sweden		5
27	Switzerland		5
28	**Turkey**	1983	**2**+3
29	United Kingdom		4
30	United States		4

The table is an extension of the one provided by Brender & Drazen (2005). In the cases were a country has undergone a coup or a military junta the authors indicate the first four elections after democracy is reestablished as elections where the new democracy effect is taken into account. Thus as the our time span is from 1991 and after Portugal, Spain and Greece that suffered coups d'etat are not entering the sample as new democracies. On the contrary all former communist countries do so. In the cases of Turkey and Mexico the first two elections in the sample are omitted when considering the new democracy effect.