

Electoral cycles in fiscal and monetary policy at different data frequencies

Jorge M. Streb and Daniel Lema*

Universidad del CEMA

August 2008

Preliminary and incomplete

Abstract: Our aim is to analyze the effects of temporal aggregation on electoral cycles in fiscal and monetary policy. We construct panels with annual, quarterly and monthly data that cover 45 countries from Latin America and the OECD over the 1980-2005 period. The fiscal variable is the aggregate budget surplus; the monetary variable is the rate of change of international reserves. Higher frequency data allow to center the electoral year more precisely, pointing towards a symmetrical behavior around elections. The budget surplus falls before elections and rises afterwards in the total sample and in both regions. However, while international reserves in Latin American countries grow significantly less before elections than afterwards, the pattern in OECD countries is, if anything, the opposite.

I. Introduction

Since the pioneering studies by Nordhaus (1975) and Tufte (1978), electoral cycles in monetary and fiscal policy have been widely debated. Drazen (2001), in his review of twenty-five years of evidence, concludes that active fiscal policy is the main impulse behind electoral cycles, while monetary policy has a passive role of accommodating expansionary fiscal policy.

A consensus has recently developed that electoral cycles in fiscal policy are a developing country phenomena (Shi and Svensson 2006), or a phase experienced by

* We warmly thank Pablo Garofalo for his assistance with the research. We thank the SECyt for supporting and helping to fund this project.

countries while they are young democracies (Brender and Drazen 2005). Akhmedov and Zhuravskaya (2004) voice this consensus when they concentrate on Russia because it is a young democracy in an emerging economy. Though they find strong electoral cycles, their interpretation is that they are fading out with time.

These results fit in with the view that voters in developed countries are fiscal conservatives that punish deficit spending (Peltzman 1992). However, most of the existing studies only concentrate on pre-electoral effects. When Persson and Tabellini (2003) introduce post-electoral effects, they find significant electoral cycles in all types of democracies. Since the pre-electoral and post-electoral cycles have opposite signs, Streb, Lema and Torrens (2008) test the restriction that these effects are of equal magnitude. Once this restriction is accepted, significant fiscal cycles appear not only in the complete set of developing and developed countries, but also in the subset of OECD countries that are established democracies (Alt and Lassen 2006 also find cycles in OECD countries, but their results are conditional on the existence of low fiscal transparency).

A drawback of this literature with cross-country panels is the use of annual data. As Akhmedov and Zhuravskaya (2004) emphasize in their study using monthly data from Russia that, since the sign of policies is reversed after elections, lower frequency data masks cycles because the effects cancel out. Higher frequency data allows to uncover the electoral patterns more distinctly.

Our contribution to the literature is the study of the effects of temporal aggregation on electoral cycles in fiscal and monetary policy using a wide cross-country panel that comprises 45 countries, 21 from Latin American and 24 from the OECD, over the 1980-2005 period. We look at the behavior of fiscal and monetary variables as one shifts from annual to quarterly and monthly frequencies.

II. Database

Table 1 has the definition and sources of the variables we use in our econometric estimates. To construct the ratio of fiscal variables to GDP on a quarterly and monthly basis, we interpolated quarterly and monthly GDP using the quarterly and monthly import series from the *International Financial Statistics* (IFS) of the IMF for each country in the sample.

<please see Table 1>

III. Budget surplus

Previous cross-country panel studies of aggregate fiscal cycles use annual data to analyze the behavior of the budget surplus. This is the case of Persson and Tabellini (2003), Brender and Drazen (2005), Shi and Svensson (2006), and Streb, Lema and Torrens (2008).

Persson and Tabellini (2003) find evidence of cycles in developed countries once they control for post-electoral effects. Following their lead, Streb, Lema and Torrens (2008) test and accept the restriction that pre-electoral and post-electoral effects are of equal magnitude and opposite sign in their sample of 67 democracies over the 1960-2001 period, which is drawn from the Brender and Drazen (2005) database.

We now analyze if the restriction that pre- and post-electoral effects are symmetrical holds for different data frequencies in our dataset of 45 countries from Latin America and the OECD. Our intuition is that quarterly and monthly data allow to center the electoral year more precisely, so this should lead to isolate these effects better.

A. Restricted sample

Using annual data, we first concentrate on a reduced sample of 30 countries, 17 from Latin America and 13 from the OECD. The advantage is that data on a yearly, quarterly and monthly frequency is available; the drawback is that we lose a lot of countries, especially from the OECD.

Table 2 shows in column (1) that there is a significant post-electoral effect in the budget surplus in the restricted sample. This behavior is driven by the sub-sample from Latin America, since post-electoral effects are not significant in the OECD. As in Streb, Lema and Torrens (2008), the restriction that pre- and post-electoral effects are of equal magnitude and opposite sign is not rejected by the data. However, this is mainly because pre-electoral effects are completely insignificant.

<please see Table 2>

Turning to the quarterly data in Table 3, one can isolate the electoral year more cleanly. While with annual data the electoral year is simply the year where elections take place, with quarterly data the electoral year is the year that goes up to the election quarter. In column (2), the pre-electoral effects in the total sample are now statistically significant, as are the post-electoral effects. Moreover, the pre- and post-electoral effects are now almost perfectly symmetric, with a budget balance that falls before elections and rises afterwards, and the cycle in column (3) is significant at the 1% level. Though the significance of the results is determined by Latin America, a symmetrical pattern is also apparent in the OECD.

<please see Table 3>

In Table 4, monthly data allow to distinguish between the month of elections and the month of government change. If the month of elections and government change coincide,

as is often the case in parliamentary countries, or if government change takes place a month after elections, there is no intermediate period. Otherwise, we distinguish an interlude that lasts between one and three months, corresponding to those cases where the period between elections and the transfer of power takes between two and four months.

We define the election year as the year that ends the month of elections, and the post-electoral year as the year that follows. However, if there is an interlude the post-electoral year only starts the month the new term in office starts. Hence, the post-electoral year is basically the first year of the new term in office. Since during the interlude the budget surplus is significantly below normal in the total sample (column 1 of Table 4), we lump it together in column (2) with the twelve months in the electoral year to form the electoral variable *ele*.

<please see Table 4>

In the cycle in column (3) of Table 4, the results are very similar to those we found with quarterly data in Table 3. Both the magnitude and the significance of the cycle are similar. Again, what drives the results is the Latin American sample.

B. Extended sample

When we turn to an extended sample of 39 countries for which both annual and quarterly data are available, the patterns are very similar to the previous tables.

<please see Tables 5 and 6>

However, unlike Table 3, the quarterly results in Table 6 now show that there is a significant electoral cycle not only in Latin American countries, but also in OECD countries. What is true is that fiscal cycles are stronger in Latin America, something consistent with the previous literature that points to stronger cycles in developing countries (Schuknecht 1996, Shi and Svensson 2006).

IV. Behavior of monetary variables

Stein and Streb (2004), using monthly data on exchange rates, found that in Latin American countries the rate of devaluation typically rises after elections, and more specifically one month after government changes. If governments are putting their foot on the rate of nominal devaluation during electoral periods, there is an obvious variable to look at: international reserves. Central Banks have to be willing to lose reserves in order to stabilize the exchange rate around elections.

Table 7 looks at annual data on the rate of change of real reserves. In the total sample (column 1), the growth rate of reserves falls in the election year and recovers afterwards. This is determined by Latin American countries, whereas in OECD countries there is no evidence whatsoever of a cycle. Both the pre- and post-electoral effects are statistically significant for Latin America (column 5), and symmetric effects are not rejected by the data in column (6).

<Please see Table 7>

Moving to quarterly data in Table 8, the cycle is now more significant for Latin America than for the total, and post-electoral effects lose significance. Again, there is no evidence of cycles in OECD countries. For Latin America, the cycle variable *pb* is significant at the 1% level, as with annual data.

<Please see Table 8>

Table 9 with monthly data shows in columns (2) and (3) that there is no pattern at all for the total sample. This is not because there is no significant cycle in Latin America, but rather because we now detect a significant cycle in OECD countries in column (9) that is opposite in sign to that in Latin America in column (6).

<Please see Table 9>

This indicates that while the process followed by fiscal policy might be similar in both regions (see previous section), the process followed by monetary policy is quite different. However, for OECD countries it would be important to condition for those countries that manage their peg, to distinguish them from those countries that are free floaters so that one does not ex ante expect any effect on reserves.

V. Final words

The evidence we present is still very preliminary, but it shows that temporal aggregation matters. The fiscal evidence with yearly data is similar to most previous studies: we find significant cycles in the total sample, but the results are driven by what has been described as a developing region with young democracies, Latin America. There is no cycle in OECD countries. However, once we move to quarterly data, our extended sample of OECD countries allows to uncover a significant electoral cycle (in the reduced sample, the coefficients are similar in magnitude, but the standard errors of the estimates are a lot larger). Moreover, quarterly and monthly data reveal that the effects of a fall in the surplus before elections, and a surge afterwards, are almost perfectly symmetric.

We also turn to the behavior of a variable that we have not seen studied in the literature, international reserves. The data also show that in Latin American countries, where countries try to manage their pegs before elections, there is a clear cycle where

international reserves grow more slowly before elections, recovering afterwards. It seems that if there is a cycle in OECD countries, as monthly data reveal, it is just the opposite.

The fact that we found fiscal expansions before elections in the total sample of countries and in both subsamples should in principle point under managed exchange rates to a gain in reserves, rather than a loss, before elections. In this sense, the OECD pattern is more typical of an open economy with high capital mobility. The pattern in Latin America may point to unsustainable fiscal policies or perhaps to uncertainty generated each time a new policy-maker may step in, within an environment characterized by weak institutions.

References

- Akhmedov, Akhmed, and Ekaterina Zhuravskaya (2004). Opportunistic Political Cycles: Test in a Young Democracy Setting, *Quarterly Journal of Economics* 119: 1301-1338.
- Alt, James E., and David D. Lassen (2006). Transparency, Political Polarization, and Political Budget Cycles in OECD Countries, *American Journal of Political Science* 50: 530-550.
- Brender, Adi and Allan Drazen (2005). Political Budget Cycles in New Versus Established Democracies, *Journal of Monetary Economics* 52: 1271-1295.
- Drazen, Allan (2001). Twenty-five Years of Political Business Cycles, *NBER Macroeconomics Annual*, Cambridge, MA: NBER.
- Nordhaus, William (1975). The Political Business Cycle, *Review of Economic Studies* 42: 169-190.
- Peltzman, Sam (1992). Voters as Fiscal Conservatives, *Quarterly Journal of Economics*. 107: 327-361.
- Persson, Torsten, and Guido Tabellini (2003). *The Economic Effect of Constitutions*, Cambridge, MA: MIT Press.
- Schuknecht, Ludger (1996). Political Business Cycles in Developing Countries, *Kyklos* 49: 155-70.
- Shi, Min, and Jakob Svensson (2006). Political Budget Cycles: Do They Differ across Countries and Why?, *Journal of Public Economics* 90: 1367-89.

- Stein, E. H., and Jorge M. Streb (2004). Elections and the Timing of Devaluations, *Journal of International Economics* 63: 119-145.
- Streb, Jorge M., Daniel Lema, and Gustavo Torrens (2008). Discretionary Political Budget Cycles and Divided Government, manuscript, Universidad del CEMA.
- Tufte, Edward R. (1978). *Political Control of the Economy*, Princeton, NJ: Princeton University Press.

Table 1. Definition of variables

Variable	Description	Source
<i>exp</i>	Total government expenditure (year/quarter/month)	IFS
<i>rev</i>	Total government revenue and grants (year/quarter/month)	IFS
<i>bal</i>	Fiscal balance (year/quarter/month), equals <i>rev-exp</i>	IFS
<i>exp_gdp</i>	Total government expenditure as a percentage of GDP	A.C.
<i>rev_gdp</i>	Total government revenue and grants as a percentage of GDP	A.C.
<i>bal_gdp</i>	Fiscal balance as a percentage of GDP, equals <i>rev_gdp-exp_gdp</i>	A.C.
<i>y(-t)</i>	Dependent variable lagged <i>t</i> periods	A.C.
<i>lngdp_pc</i>	Natural log of GDP per capita in constant 2003 dollars (year/quarter/month)	World Bank and A.C.
<i>gdpr</i>	Growth rate of real GDP (year/quarter/month)	World Bank and A.C.
<i>ln(reserves_r)</i>	International reserves in constant 2005 dollars, deflated by the US CPI index	IFS
$\Delta \ln(\text{reserves}_r)$	The log difference of real international reserves	IFS
<i>quinquenum1</i>	Dummy that takes value 1 in period 1980 to 1984	A.C.
<i>quinquenum2</i>	Dummy that takes value 1 in period 1985 to 1989	A.C.
<i>quinquenum3</i>	Dummy that takes value 1 in period 1990 to 1994	A.C.
<i>quinquenum4</i>	Dummy that takes value 1 in period 1995 to 1999	A.C.
<i>monthN</i>	Dummy that takes value 1 in month N and 0 otherwise, where N=1, 2, ..., 11.	A.C.
<i>quarterN</i>	Dummy that takes value 1 in quarter N and 0 otherwise, where N=1, 2, 3.	A.C.
<i>ele</i>	Takes value 1 in election year/quarter/month, 0 otherwise	A.C.
<i>ele(-t)</i>	Takes value 1 <i>t</i> periods before election, 0 otherwise	A.C.
<i>interlude</i>	Takes value 1 in months between election and government change	A.C.
<i>Govch</i>	Takes value 1 in quarter/month government change, 0 otherwise	A.C.
<i>govch(+t)</i>	Takes value 1 <i>t</i> periods after government change, 0 otherwise	A.C.

Notes: IFS refers to the IMF *International Financial Statistics*; A.C., to variables that are the authors' construction.

Table 2. Electoral cycles in ratio of budget surplus to GDP, *bal*, annual data 1980-2005

	Total		Latin America		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>bal</i> (-1)	0.5736*** (0.1437)	0.5672*** (0.1430)	0.4559** (0.2110)	0.4454** (0.2075)	0.7288*** (0.0529)	0.7299*** (0.0529)
<i>lngdp_pc</i>	-1.1488 (1.7521)	-1.1765 (1.7539)	-6.2347*** (2.1926)	-6.3547*** (2.1937)	2.4364 (1.7235)	2.3929 (1.7282)
<i>gdpr</i>	0.0975*** (0.0363)	0.0998*** (0.0365)	0.1240*** (0.0447)	0.1233*** (0.0449)	0.1562* (0.0808)	0.1540* (0.0805)
<i>ele</i>	-0.2674 (0.2410)		-0.5171 (0.4115)		-0.1726 (0.2218)	
<i>ele</i> (+1)	0.8142*** (0.2415)		1.3100*** (0.3613)		0.0354 (0.2863)	
<i>pbcr</i>		-0.5325*** (0.1596)		-0.9096*** (0.2603)		-0.0854 (0.1519)
<i>constant</i>	9.2985 (15.8287)	9.6763 (15.8686)	46.8804*** (17.0602)	48.0106*** (17.0966)	-25.4603 (17.7837)	-25.0397 (17.8300)
Observations	627	627	334	334	293	293
Countries	30	30	17	17	13	13
R-squared	0.40	0.40	0.33	0.32	0.68	0.68
F test (p-value):						
<i>ele</i> =- <i>ele</i> (+1)	2.271	(0.132)	1.890	(0.170)	0.111	(0.739)

Notes: robust standard errors in parentheses below coefficients. *** p<0.01, ** p<0.05, * p<0.1. We control for time effects using four quinquennial dummies (the first takes value 1 in the years 1980 to 1984 and 0 otherwise; the other dummies cover the periods 1985-1989, 1990-1994 and 1995-1999).

Table 3. Electoral cycles in ratio of budget surplus to GDP (*bal*), quarterly data 1980:I-2005:IV

	Total		Latin America				OECD		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>lngdp_pc</i>	0.1331 (1.0524)	0.1050 (1.0503)	0.0988 (1.0490)	-2.7809** (1.2711)	-2.8291** (1.2730)	-2.8185** (1.2722)	2.6359 (2.4335)	2.5814 (2.4164)	2.5716 (2.4006)
<i>gdpr</i>	10.4855** (4.7915)	10.7071** (4.8105)	10.7145** (4.8062)	15.3311*** (5.8447)	15.6766*** (5.8402)	15.7143*** (5.8203)	3.7933 (7.8547)	4.6980 (7.6410)	4.8019 (7.7167)
<i>ele(-3)</i>	-0.1759 (0.3348)			-0.2043 (0.4939)			-0.2242 (0.4880)		
<i>ele(-2)</i>	-0.2721 (0.2688)			-0.6838** (0.3239)			0.2913 (0.4354)		
<i>ele(-1)</i>	-0.1254 (0.3800)			-0.1849 (0.3890)			-0.0123 (0.7295)		
<i>ele</i>	-1.3057*** (0.3753)	-0.4832** (0.1952)		-1.4032*** (0.4567)	-0.6329*** (0.2382)		-1.0724* (0.6124)	-0.2606 (0.3204)	
<i>ele(+1)</i>	0.3271 (0.2891)	0.5159** (0.2015)		0.3484 (0.3639)	0.5761** (0.2690)		0.0301 (0.4420)	0.3377 (0.2789)	
<i>ele(+2)</i>	0.5705 (0.4597)			0.2552 (0.7496)			0.9031* (0.4660)		
<i>ele(+3)</i>	0.6383** (0.2834)			0.6438* (0.3327)			0.4379 (0.4717)		
<i>ele(+4)</i>	0.4028 (0.3394)			0.9858** (0.4514)			-0.3454 (0.4682)		
<i>pbc</i>			-0.4968*** (0.1197)			-0.6092*** (0.1593)			-0.2890 (0.1831)
<i>constant</i>	-2.5320 (7.8643)	-2.3536 (7.8486)	-2.3052 (7.8428)	15.5913* (8.1974)	15.8558* (8.2162)	15.7762* (8.2146)	-23.9445 (21.8476)	-23.5072 (21.6962)	-23.4108 (21.5701)
<i>Observations</i>	2311	2311	2311	1359	1359	1359	952	952	952
<i>Countries</i>	30	30	30	17	17	17	13	13	13
<i>R-squared</i>	0.39	0.39	0.39	0.36	0.35	0.35	0.48	0.47	0.47

F test (p-value)

$ele(-3)=ele(-2)=ele(-1)=ele$	2.543	(0.0546)	1.626	(0.182)	1.237	(0.295)
$ele(1)=ele(2)=ele(3)=ele(4)$	0.259	(0.855)	0.444	(0.722)	1.524	(0.207)
$ele=-ele(1)$	0.0107	(0.917)	0.0207	(0.886)	0.0263	(0.871)

Notes: robust standard errors in parentheses below coefficients. *** p<0.01, ** p<0.05, * p<0.1. We control for time effects using four quinquennial dummies, the first of which takes the value 1 in the years 1980 to 1984 and 0 otherwise, while the others cover the periods 1985-1989, 1990-1994 and 1995-1999. We control for seasonal effects using quarterly dummies for the first, second and third quarters. Four lags of the dependent variable are used.

Table 4. Electoral cycles in ratio of budget surplus to GDP, *bal*, monthly data 1980:1-2005:12

	Total			Latin America			OECD		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>lngdp_pc</i>	0.6709 (0.9061)	0.6727 (0.9050)	0.6734 (0.9044)	-1.7778* (1.0627)	-1.7628* (1.0631)	-1.7398 (1.0652)	2.4181 (2.5512)	2.2829 (2.5744)	2.2795 (2.5575)
<i>gdpr</i>	-3.8829 (3.8527)	-4.1545 (3.8090)	-4.1510 (3.8118)	1.9322 (4.5240)	1.4950 (4.4843)	1.4957 (4.4936)	-17.2804** (7.4245)	-16.8105** (7.4428)	-16.7858** (7.4296)
<i>ele(-3)</i>	0.2580 (0.4239)			0.3677 (0.4559)			0.0372 (0.7137)		
<i>ele(-2)</i>	-0.4153 (0.2704)			-0.9932*** (0.3715)			0.1314 (0.3832)		
<i>ele(-1)</i>	-0.5143 (0.3322)			-0.4432 (0.3697)			-0.3648 (0.5542)		
<i>ele</i>	-0.8066** (0.3441)	-0.4266** (0.1897)		-0.7657** (0.3533)	-0.5804** (0.2257)		-0.7749 (0.6352)	-0.1629 (0.3282)	
<i>interlude</i>	-1.0540* (0.5513)			-1.3944** (0.6251)			1.0498 (1.0380)		
<i>govch</i>	0.9548*** (0.3119)	0.4557** (0.2097)		1.0225*** (0.2920)	0.5930** (0.2837)		0.5796 (0.5974)	0.2007 (0.2943)	
<i>govch(+1)</i>	-0.0528 (0.5216)			-0.3848 (0.8785)			0.1825 (0.4252)		
<i>govch(+2)</i>	0.4967* (0.2869)			0.8528** (0.3401)			0.0407 (0.4739)		
<i>govch(+3)</i>	0.3857 (0.3481)			0.8168* (0.4631)			-0.0752 (0.5039)		
<i>pbcr</i>			-0.4313*** (0.1191)			-0.5923*** (0.1535)			-0.1574 (0.1768)
<i>Constant</i>	-7.2976 (5.7135)	-7.3355 (5.7104)	-7.3365 (5.7107)	3.9585 (5.5149)	3.8496 (5.5162)	3.7317 (5.5342)	-19.4780 (20.2260)	-18.4180 (20.4099)	-18.3849 (20.2949)
Observations	6625	6625	6625	3776	3776	3776	2849	2849	2849
Countries	30	30	30	17	17	17	13	13	13

R-squared	0.29	0.29	0.29	0.29	0.29	0.29	0.33	0.33	0.33
F test (p-value):									
<i>ele(-3)=ele(-2)=ele(-1)=ele(0)=interlude</i>	1.253	(0.286)		2.056	(0.0840)		0.802	(0.524)	
<i>govch=govch(1)=govch(2)=govch(3)</i>	1.272	(0.282)		0.953	(0.414)		0.304	(0.823)	
<i>ele=-govch</i>		0.00824	(0.928)		0.000963	(0.975)		0.00544	(0.941)

Notes: robust standard errors in parentheses below coefficients. *** p<0.01, ** p<0.05, * p<0.1. We control for time effects using four quinquennial dummies, the first of which takes the value 1 in the years 1980 to 1984 and 0 otherwise, while the others cover the periods 1985-1989, 1990-1994 and 1995-1999. We control for seasonal effects using monthly dummies for the first eleven months of the year. Twelve lags of the dependent variable are used.

Tests of monthly dummies:

	Total	Latin America	OECD
<i>ele(-11)=ele(-10)=ele(-9)</i>	2.781 (0.0620)	2.060 (0.128)	1.429 (0.240)
<i>ele(-8)=ele(-7)=ele(-6)</i>	0.319 (0.727)	0.0702 (0.932)	1.876 (0.153)
<i>ele(-5)=ele(-4)=ele(-3)</i>	0.665 (0.515)	0.129 (0.879)	2.234 (0.107)
<i>ele(-2)=ele(-1)=ele</i>	2.020 (0.133)	4.522 (0.0109)	1.107 (0.331)
<i>govch(0)=govch(+1)=govch(+2)</i>	0.0491 (0.952)	0.866 (0.421)	0.520 (0.594)
<i>govch(+3)=govch(+4)=govch(+5)</i>	3.443 (0.0320)	1.529 (0.217)	1.950 (0.143)
<i>govch(+6)=govch(+7)=govch(+8)</i>	0.215 (0.806)	0.358 (0.699)	1.188 (0.305)
<i>govch(+9)=govch(+10)=govch(+11)</i>	0.872 (0.418)	2.032 (0.131)	0.253 (0.776)

Table 5. Electoral cycles in ratio of budget surplus to GDP, *bal*, annual data 1980-2005 for extended sample

	Total		Latin America		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
<i>bal(-1)</i>	0.6103*** (0.1290)	0.6045*** (0.1288)	0.4579** (0.2092)	0.4474** (0.2065)	0.7622*** (0.0408)	0.7621*** (0.0406)
<i>lngdp_pc</i>	0.4559 (1.7126)	0.4514 (1.7132)	-5.2350*** (1.8832)	-5.3114*** (1.8799)	1.8528 (1.2107)	1.8544 (1.2100)
<i>gdpr</i>	0.1062*** (0.0342)	0.1080*** (0.0343)	0.1236*** (0.0420)	0.1217*** (0.0422)	0.1555** (0.0636)	0.1559** (0.0638)
<i>ele</i>	-0.2116 (0.1960)		-0.4359 (0.3817)		-0.1918 (0.1779)	
<i>ele(+1)</i>	0.8040*** (0.2043)		1.2940*** (0.3348)		0.1915 (0.2175)	
<i>pbz</i>		-0.5016*** (0.1330)		-0.8654*** (0.2447)		-0.1782 (0.1206)
<i>constant</i>	-5.1710 (15.9065)	-4.9904 (15.9251)	39.0202*** (14.6689)	39.8237*** (14.6720)	-19.5663 (12.4765)	-19.5824 (12.4666)
Observations	789	789	359	359	430	430
Countries	39	39	19	19	20	20
R-squared	0.46	0.46	0.33	0.32	0.73	0.73
F test (p-value)						
<i>ele=-ele(+1)</i>	3.913		2.649	(0.105)	0.000001	(0.999)

Notes: robust standard errors in parentheses below coefficients. *** p<0.01, ** p<0.05, * p<0.1. We control for time effects using four quinquennial dummies (the first takes value 1 in the years 1980 to 1984 and 0 otherwise; the other dummies cover the periods 1985-1989, 1990-1994 and 1995-1999).

Table 6. Electoral cycles in ratio of budget surplus to GDP, *bal*, quarterly data 1980:I-2005:IV for extended sample

	Total			Latin America			OECD		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>lngdp_pc</i>	1.0412 (1.0938)	1.0076 (1.0929)	1.0016 (1.0921)	-2.7927** (1.2693)	-2.8408** (1.2713)	-2.8302** (1.2705)	3.4588* (1.9615)	3.3983* (1.9548)	3.3778* (1.9524)
<i>gdpr</i>	10.1707** (4.6345)	10.3881** (4.6454)	10.3981** (4.6425)	15.3214*** (5.8229)	15.6906*** (5.8184)	15.7280*** (5.7987)	5.2118 (6.6560)	6.0704 (6.5484)	6.1462 (6.5964)
<i>ele(-3)</i>	-0.2107 (0.3039)			-0.2055 (0.4938)			-0.2886 (0.4041)		
<i>ele(-2)</i>	-0.1349 (0.2514)			-0.6818** (0.3239)			0.3760 (0.3681)		
<i>ele(-1)</i>	-0.3468 (0.3497)			-0.1910 (0.3872)			-0.4515 (0.5854)		
<i>ele</i>	-1.2063*** (0.3384)	-0.4855*** (0.1763)		-1.3973*** (0.4540)	-0.6327*** (0.2384)		-0.9545* (0.4898)	-0.3366 (0.2528)	
<i>ele(+1)</i>	0.3590 (0.2810)	0.5364*** (0.1844)		0.3466 (0.3640)	0.5761** (0.2692)		0.0796 (0.3975)	0.3747 (0.2308)	
<i>ele(+2)</i>	0.5608 (0.4063)			0.2573 (0.7501)			0.7879** (0.3793)		
<i>ele(+3)</i>	0.6763*** (0.2612)			0.6411* (0.3331)			0.4702 (0.3826)		
<i>ele(+4)</i>	0.4237 (0.3145)			0.9878** (0.4513)			-0.1387 (0.4048)		
<i>pbcr</i>			-0.5081*** (0.1095)			-0.6090*** (0.1594)			-0.3466** (0.1503)
<i>constant</i>	-9.2827 (8.4100)	-9.0421 (8.4033)	-8.9901 (8.4000)	15.6918* (8.1897)	15.9562* (8.2087)	15.8767* (8.2071)	-31.3521* (17.5976)	-30.8268* (17.5377)	-30.6421* (17.5235)
Observations	2723	2723	2723	1372	1372	1372	1351	1351	1351
Countries	39	39	39	19	19	19	20	20	20

R-squared	0.43	0.43	0.43	0.36	0.35	0.35	0.53	0.52	0.52
F test (p-value)									
$e/e(-3)=e/e(-2)=e/e(-1)=e/e$	2.650	(0.0473)		1.630	(0.181)		1.782	(0.149)	
$e/e(1)=e/e(2)=e/e(3)=e/e(4)$	0.299	(0.826)		0.447	(0.719)		1.269	(0.284)	
$e/e=-e/e(1)$		0.0317(0.859)			0.0206(0.886)			0.0100	(0.920)

Notes: robust standard errors in parentheses below coefficients. *** p<0.01, ** p<0.05, * p<0.1. We control for time effects using four quinquennial dummies, the first of which takes the value 1 in the years 1980 to 1984 and 0 otherwise, while the others cover the periods 1985-1989, 1990-1994 and 1995-1999. We control for seasonal effects using quarterly dummies for the first, second and third quarters. Four lags of the dependent variable are used.

Table 7. Electoral cycles in growth rate of international reserves, $\Delta \ln(\text{reserves})$, annual data 1980-2005

	Total		Latin America		OECD	
	(1)	(2)	(3)	(4)	(5)	(6)
$\Delta \ln(\text{reserves}) (-1)$	-0.0450 (0.0467)	-0.0427 (0.0467)	-0.1235* (0.0661)	-0.1176* (0.0661)	-0.0032 (0.0575)	-0.0025 (0.0576)
<i>lngdp_pc</i>	-0.5681*** (0.1327)	-0.5684*** (0.1326)	-0.4117* (0.2351)	-0.4104* (0.2334)	-0.6073*** (0.1948)	-0.6086*** (0.1952)
<i>gdpr</i>	0.0097** (0.0048)	0.0096** (0.0048)	0.0133** (0.0063)	0.0132** (0.0063)	-0.0003 (0.0071)	-0.0005 (0.0071)
<i>ele</i>	-0.0570** (0.0258)		-0.1243*** (0.0471)		-0.0031 (0.0271)	
<i>ele(+1)</i>	0.0304 (0.0256)		0.0849* (0.0440)		-0.0189 (0.0286)	
<i>pbcr</i>		-0.0449*** (0.0157)		-0.1090*** (0.0291)		0.0083 (0.0163)
<i>constant</i>	5.2734*** (1.2374)	5.2709*** (1.2365)	3.2896* (1.8566)	3.2721* (1.8435)	6.2601*** (2.0171)	6.2683*** (2.0206)
Observations	1032	1032	442	442	590	590
Countries	43	43	20	20	23	23
R-squared	0.06	0.06	0.12	0.12	0.11	0.11
F test (p-value)						
<i>ele=-ele(+1)</i>	0.425	(0.515)	0.306	(0.580)	0.239	(0.625)

Notes: robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. We control for time effects using four quinquennial dummies (the first takes value 1 in the years 1980 to 1984 and 0 otherwise; the other dummies cover the periods 1985-1989, 1990-1994 and 1995-1999).

Table 8. Electoral cycles in growth rate of international reserves, $\Delta \ln(\text{reserves})$, quarterly data 1980:I-2005:IV

	Total			Latin America			OECD		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
$\Delta \ln(\text{reserves}) (-1)$	-0.0632** (0.0305)	-0.0605** (0.0307)	-0.0602** (0.0307)	-0.0570 (0.0418)	-0.0486 (0.0421)	-0.0472 (0.0422)	-0.1028*** (0.0359)	-0.1039*** (0.0361)	-0.1038*** (0.0361)
$\ln gdp_pc$	-0.1276*** (0.0393)	-0.1279*** (0.0392)	-0.1276*** (0.0392)	-0.1329** (0.0633)	-0.1341** (0.0632)	-0.1321** (0.0632)	-0.0884* (0.0508)	-0.0897* (0.0514)	-0.0896* (0.0514)
gdp_r	0.0148 (0.1737)	0.0124 (0.1734)	0.0136 (0.1731)	0.3519 (0.2732)	0.3491 (0.2713)	0.3675 (0.2695)	-0.1753 (0.2329)	-0.1920 (0.2327)	-0.1897 (0.2324)
$ele(-3)$	0.0004 (0.0119)			-0.0060 (0.0209)			0.0127 (0.0130)		
$ele(-2)$	-0.0117 (0.0106)			-0.0090 (0.0193)			-0.0124 (0.0104)		
$ele(-1)$	-0.0173 (0.0132)			-0.0546** (0.0221)			0.0172 (0.0142)		
ele	-0.0398*** (0.0117)	-0.0183*** (0.0068)		-0.0815*** (0.0193)	-0.0416*** (0.0116)		-0.0042 (0.0136)	0.0033 (0.0077)	
$ele(+1)$	-0.0227 (0.0229)	0.0046 (0.0083)		-0.0427 (0.0356)	0.0083 (0.0146)		0.0203 (0.0228)	0.0013 (0.0085)	
$ele(+2)$	0.0105 (0.0150)			0.0097 (0.0294)			0.0082 (0.0137)		
$ele(+3)$	0.0080 (0.0119)			0.0271 (0.0212)			-0.0019 (0.0129)		
$ele(+4)$	0.0104 (0.0139)			0.0281 (0.0244)			-0.0095 (0.0151)		
pb_c			-0.0115** (0.0045)			-0.0253*** (0.0082)			0.0013 (0.0047)
$constant$	1.0382*** (0.3078)	1.0406*** (0.3070)	1.0352*** (0.3067)	0.9355** (0.4160)	0.9439** (0.4154)	0.9239** (0.4149)	0.8107* (0.4562)	0.8225* (0.4611)	0.8233* (0.4617)
Observations	3668	3668	3668	1746	1746	1746	1922	1922	1922

Countries	43	43	43	20	20	20	23	23	23
R-squared	0.02	0.02	0.02	0.05	0.04	0.04	0.04	0.03	0.03
F test (p-value)									
$e/e(-3)=e/e(-2)=e/e(-1)=e/e$	2.332	(0.0723)		4.102	(0.00653)		1.524	(0.206)	
$e/e(1)=e/e(2)=e/e(3)=e/e(4)$	0.617	(0.604)		1.149	(0.328)		0.559	(0.642)	
$e/e=-e/e(1)$		1.287	(0.257)		2.595	(0.107)		0.123	(0.726)

Notes: robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. We control for time effects using four quinquennial dummies, the first of which takes the value 1 in the years 1980 to 1984 and 0 otherwise, while the others cover the periods 1985-1989, 1990-1994 and 1995-1999. We control for seasonal effects using quarterly dummies for the first, second and third quarters.

Table 9. Electoral cycles in growth rate of international reserves, $\Delta \ln(\text{reserves})$, monthly data 1980:1-2005:12

	Total			Latin America			OECD		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<i>lngdp_pc</i>	-0.0647*** (0.0120)	-0.0649*** (0.0120)	-0.0649*** (0.0120)	-0.0682*** (0.0220)	-0.0682*** (0.0220)	-0.0674*** (0.0219)	-0.0581*** (0.0163)	-0.0586*** (0.0164)	-0.0586*** (0.0163)
<i>gdpr</i>	0.0812 (0.0553)	0.0803 (0.0554)	0.0806 (0.0553)	0.0750 (0.0870)	0.0734 (0.0871)	0.0748 (0.0871)	0.1063* (0.0635)	0.1033 (0.0635)	0.1034 (0.0635)
<i>ele(-3)</i>	0.0062 (0.0039)			0.0061 (0.0071)			0.0073* (0.0043)		
<i>ele(-2)</i>	-0.0026 (0.0035)			0.0000 (0.0064)			-0.0035 (0.0036)		
<i>ele(-1)</i>	-0.0002 (0.0039)			-0.0094 (0.0071)			0.0068 (0.0042)		
<i>ele</i>	-0.0135*** (0.0039)	-0.0039* (0.0022)		-0.0316*** (0.0068)	-0.0129*** (0.0040)		-0.0013 (0.0044)	0.0032 (0.0024)	
<i>interlude</i>	-0.0160* (0.0087)			-0.0292*** (0.0108)			0.0269** (0.0108)		
<i>govch</i>	-0.0017 (0.0052)	0.0004 (0.0025)		-0.0028 (0.0106)	0.0046 (0.0049)		0.0003 (0.0046)	-0.0024 (0.0026)	
<i>govch(+1)</i>	0.0052 (0.0044)			0.0143 (0.0089)			-0.0010 (0.0043)		
<i>govch(+2)</i>	0.0002 (0.0039)			-0.0006 (0.0075)			0.0012 (0.0041)		
<i>govch(+3)</i>	-0.0023 (0.0044)			0.0084 (0.0080)			-0.0102** (0.0050)		
<i>pbv</i>			-0.0021 (0.0014)			-0.0088*** (0.0026)			0.0028* (0.0014)
<i>constant</i>	0.4685*** (0.0820)	0.4705*** (0.0820)	0.4692*** (0.0819)	0.4252*** (0.1201)	0.4253*** (0.1200)	0.4195*** (0.1194)	0.4630*** (0.1286)	0.4681*** (0.1289)	0.4679*** (0.1289)
<i>Observations</i>	11957	11957	11957	5139	5139	5139	6818	6818	6818

<i>Countries</i>	43	43	43	20	20	20	23	23	23
<i>R-squared</i>	0.03	0.03	0.03	0.06	0.05	0.05	0.03	0.03	0.03
<i>F test (p-value)</i>									
<i>ele(-3)=ele(-2)=ele(-1)=ele=interlude</i>	4.453	(0.0014)		6.070	(0.0001)		2.932	(0.0196)	
<i>govch=govch(1)=govch(2)=govch(3)</i>	0.624	(0.599)		0.840	(0.472)		1.297	(0.274)	
<i>ele=-govch</i>		0.824	(0.364)		1.358	(0.244)		0.0366	(0.848)

Notes: robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. We control for time effects using four quinquennial dummies, the first of which takes the value 1 in the years 1980 to 1984 and 0 otherwise, while the others cover the periods 1985-1989, 1990-1994 and 1995-1999. We control for seasonal effects using monthly dummies for the first eleven months of the year. Four lags of the dependent variable are used.

Tests of monthly dummies:

	Total	Latin America	OECD
<i>ele(-11)=ele(-10)=ele(-9)</i>	1.382 (0.251)	3.748 (0.0236)	0.533 (0.587)
<i>ele(-8)=ele(-7)=ele(-6)</i>	2.453 (0.0861)	0.709 (0.492)	1.400 (0.247)
<i>ele(-5)=ele(-4)=ele(-3)</i>	1.188 (0.305)	1.367 (0.255)	0.285 (0.752)
<i>ele(-2)=ele(-1)=ele</i>	0.626 (0.535)	1.331 (0.264)	0.246 (0.782)
<i>govch(0)=govch(+1)=govch(+2)</i>	2.511 (0.0812)	3.651 (0.0260)	1.486 (0.226)
<i>govch(+3)=govch(+4)=govch(+5)</i>	0.606 (0.545)	0.241 (0.786)	3.121 (0.0442)
<i>govch(+6)=govch(+7)=govch(+8)</i>	0.347 (0.76)	0.0623 (0.940)	1.407 (0.245)
<i>govch(+9)=govch(+10)=govch(+11)</i>	0.213 (0.809)	0.0894 (0.915)	0.313 (0.731)