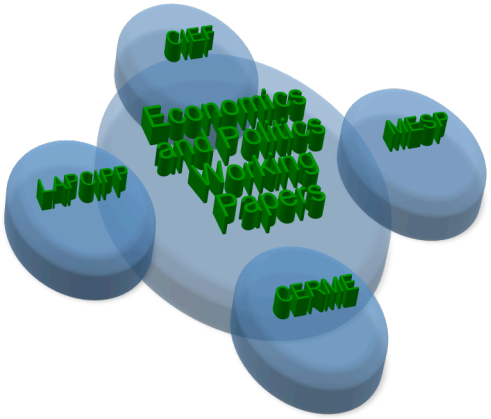

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Partisan Voluntary Transfers in a Fiscal Federation: New evidence from Brazil[1]

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Abstract

This article presents an empirical test to the hypothesis of partisan voluntary transfers in Brazil. That hypothesis postulates that municipalities receive significantly more transfers from the State (Federal) government if the mayor belongs to the governor's (president's) party, or to a coalition of parties that supported him in the electoral campaign. The econometric evidence strongly suggests that partisan transfers are broadly used in Brazil regardless of the ideological position or other characteristics of the party holding the presidency or the state government. Furthermore, we find evidence that there exists in Brazil a two-year long political budget cycle in transfers in spite of the four-year political terms for all executive positions. The Brazilian electoral calendar, which includes staggered elections every two years, could explain this short political cycle. The econometric study also point to a preponderance of the partisan motive at the higher level, i.e., from the President to the mayors, over the intermediate level (from State governors to the mayors). Moreover, there is some evidence that younger parties (founded in the 90s), medium size parties and right-wing parties do not use the partisan transfer mechanism as strongly as the older and more center to left parties. Finally, there seems to be some regional difference in such a way that richer states' governors use more the partisan mechanism than poorer ones. These results call for tighter regulation in order to redress the bias caused by partisan transfers, which could naturally be a responsibility of the National and Regional Electoral Courts in Brazil.

1. Introduction

Economists have long been interested in relationship between economic performance and elections. As early as 1944 Kerr (1944) presented a preliminary study suggesting that favorable economic conditions were positively correlated with the republican vote in the United States. Thereafter, both econometric and theoretical research have focused on better understand this relationship between economics and politics. For instance, Kramer (1971) analyzes American voting behavior between 1896 and 1964, and concludes that a reduction

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[2] According to Stata help information, "xttest3 calculates a modified Wald statistic for groupwise heteroskedasticity in the residuals of a fixed effect regression model, following Greene (2000, p. 598)". This

by 10% in per *capita* income leads to a loss of almost 5% in the congressional vote of the President's party. Furthermore, that paper suggests that economic cycles explain about 50% of the variance of legislative voting.

Given the importance voters confer to economic performance when taking their ballots, incumbents have a clear incentive to seek growth in electoral periods in order to obtain the corresponding political bonus.

The seminal paper that formalized that behavior is Nordhaus (1975), which introduces the term "Political Business Cycle". According to that study, the Executive incumbent increases money supply prior to electoral years in order to enlarge production, thus reducing unemployment. As a consequence, voters reelect the incumbent seemingly ignoring that the incumbent's present policy will redound in increased prices and reduced employment in the near future.

Nordhaus' argument may be challenged in the light of the rational expectations' hypothesis since voters appear to be constantly deluded by the incumbent, despite the limited effect that the increase in money supply brings to economic growth in the medium-run. A refinement of that theory is the "Political Budget Cycle" approach developed in Rogoff (1990). Rogoff focuses the incumbent's action on fiscal policy. According to that article, voters have incomplete information about the Executive incumbent's administrative competence. This incomplete information gives a competent incumbent an incentive to bias pre-election fiscal policy because only the competent type is able and willing to make big policy distortions. Therefore, the competent incumbent is able to signal his competence, thereby enhancing the probability of reelection.

Rogoff (1990)'s main conclusion is that, although political budget cycles cause a distortion in fiscal policy, they also constitute an effective mechanism for information updating about the incumbent's administrative competence, which allows voters to reelect only the most competent politicians. Therefore, Rogoff (1990)'s model reconciles the documented political business cycles literature with the rational choice approach to political economy. Moreover, it derives the political budget cycle as a second-best equilibrium in view of the asymmetric information that exists between voters and their elected representatives. In other words, the political budget cycle is a compromise whereby voters give up some electoral control, the

moral hazard part of voters' concern, in order to gain in the quality of elected officials, the adverse selection part of their electoral concern.

However, the political budget cycle's literature tends to concentrate on the fiscal policy choices of a unitary government, disregarding the intergovernmental relations that are the basis of a fiscal federation. Therefore, one may ask how the intricate systems of transfers between different governments in a federation may affect the budget cycle equilibrium in lower levels of governments, such as state and city governments. Ferreira and Bugarin (2005, 2007) have explored such question under the assumption that voluntary transfers are partisan motivated, i.e., a mayor receives more voluntary transfers if he belongs to the same party as the state governor and/or the president. These studies conclude that, if partisan intergovernmental transfers play a significant role in local municipalities' finances, then voters may give up selecting the most competent politician and focus their electoral decisions on the candidate who is supported by the State governor (and/or the president, depending on the relative size of transfers), since that politician is likely to bring more voluntary transfers into the municipality. In other words, the positive selection effect of the political budget cycle may vanish in a fiscal federation where intergovernmental transfers are valuable.

But, are voluntary transfers actually partisan motivated? As early as 1974, Wright (1974) found evidence that the distribution of resources during the New Deal period favored regions in which the President's party received higher votes. The recent literature also finds evidence pointing in that direction. Ferreira & Bugarin (2005, 2007) present some initial evidence that this may be the case in Brazil. Ansolabehere at all (2006), Khemani (2007) and Sollé-Ollé at all (2008) also find evidence that this is the case in India, the USA and Spain, respectively. The goal of the present paper is to develop an econometric strategy to test if voluntary transfers are partisan motivated in Brazil and to determine which additional factors explain such transfers.

The paper is divided in the following parts. After this introduction, section 2 discusses the role of voluntary transfers in local public finance in Brazil. Section 3 presents the data that will be used in the econometric testing. Section 4 performs the statistical tests of the partisan transfers hypothesis. Finally, section 5 concludes.

2. Voluntary Transfers in Brazil

Rogoff (1990) focuses on a government whose revenues are fully collected from its constituents, such that incumbents have both the bonus and the onus of taxation and public service production. However, most countries are organized as fiscal federations with intricate systems of intergovernmental transfers. When focusing attention in the lowest hierarchical level of government in a federation, it is not uncommon to find that important shares of local revenues come from transfers from the upper-level governments. In this section we introduce the specific case of Brazil.

Table 1: Tax Revenues and Total Revenues in the Brazilian Federation, years 2000-2003

			2000			2001			2002			2003		
			R$ million	% nation's revenue	**% local revenue**	R$ million	% nation's revenue	**% local revenue**	R$ million	% nation's revenue	**% local revenue**	R$ million	% nation's revenue	**% local revenue**
Union		Federal revenue	247420	69.14	100.0	280197	68.92	100.0	334325	69.91	100.0	376694	69.4	100.0
	–	Transfers to States	26793	7.49	10.8	30007	7.38	10.7	36060	7.54	10.8	37842	6.97	10.0
	–	Transfers to municiplities	18041	5.04	7.3	20477	5.04	7.3	25412	5.31	7.6	26813	4.94	7.1
	=	Net revenue	202586	56.62	81.9	229713	56.5	82.0	272853	57.05	81.6	312039	57.49	82.8
States		States' revenue	94216	26.33	100.0	108066	26.58	100.0	123683	25.86	100.0	142284	26.22	100.0
	–	Transfers to municipalities	29253	8.18	31.0	33568	8.26	31.1	37802	7.9	30.6	43272	7.97	30.4
	+	Transfers from Union	26793	7.49	28.4	30007	7.38	27.8	36060	7.54	29.2	37842	6.97	26.6
	=	Net revenue	91755	25.64	97.4	104505	25.7	96.7	121941	25.5	98.6	136854	25.21	96.2
Municipalities		muncipalities' revenue	16195	4.53	**100.0**	18302	4.5	**100.0**	20244	4.23	**100.0**	23774	4.38	**100.0**
	+	Transfers from States	29253	8.18	**180.6**	33568	8.26	**183.4**	37802	7.9	**186.7**	43272	7.97	**182.0**
	+	Transfers from Union	18041	5.04	**111.4**	20477	5.04	**111.9**	25412	5.31	**125.5**	26813	4.94	**112.8**
	=	Total local revenue	63488	17.74	**392.0**	72347	17.79	**395.3**	83458	17.45	**412.3**	93860	17.29	**394.8**
Total			357830	100		406565	100		478252	100		542753	100	

Source: Ministry of Finance – Secretariat of Federal Revenue

The political and administrative organization of the Brazilian Federative Republic comprises the Union, 26 States, one Federal District and 5564 Municipalities, all of them autonomous according to Brazilian Constitution. The Constitution establishes which taxes may be collected by each level of government (the Union, the Sates and the Municipalities), as well as the amounts of mandatory transfers that upper levels of government have to make to the lower administrative units. Table 1 shows the total amount of revenue collected by each

government level in Brazil as well as final revenue net of transfers from year 2000 to year 2003. The notation R$ refers to *Reals*, the Brazilian currency, in current values. The data confirms that local (municipal) governments are strongly dependent on higher governments' transfers. Indeed, municipalities' collected tax revenue corresponds to less than one fourth of their total revenue, on average.

Moreover, Table 2 shows the relative participation of voluntary transfers in total transfers from the Union to the states and municipalities from 1995 to 2000, according to Prado (2001), in thousands of reals at 2000 values. One notices that not only the participation of voluntary transfers is significant in terms of total transfers, but it also has increased steadily from 18% to above 30% during the period. One important component of non-constitutional transfers refers to costs of maintaining the integrated national public health system, the SUS. Although these transfers are not constitutional, an important part of them is regulated by detailed legislation. Therefore, one could argue that such expenditures are not voluntary transfers. The last two columns of that table adjust for the SUS transfers and finds a lower relative participation of voluntary transfers, but still at an average of 12.3% of total transfers on average.

Table 2: Relative Participation of Voluntary Transfers on Total Transfers from the Union to States and Municipalities

Year	Constitutional transfers (CT)	Voluntary transfers (VT)	Relative participation (VT/CT)*100	SUS adjusted voluntary transfers (AVT)	SUS adjusted relative participation (AVT/CT)*100
1995	28327821.1	5092844.6	18.0		
1996	29650069.8	7547512.2	25.5		
1997	32144420.8	9503988.5	29.6	3995817.96	12.4
1998	36475624.6	13656605.2	37.4	6539343.12	17.9
1999	38190488.7	11877611.5	31.1	3164650.32	8.3
2000	37296296.9	13477239.2	36.1	3937132.06	10.6

Source: Prado (2001), Table 3.2

A second important characteristic of Brazilian political system is that all Executive mandates last four years. However, while the elections for Federal and the State governments are concomitant, they are staggered by municipal elections in the higher-level governments' midterm. Thus, there are elections in Brazil every two years, once for President and State

governors, then, two years later, for municipality mayors. Both the importance of higher-level government transfers to local finances and the staggered elections may encourage higher-level incumbents to direct voluntary transfers towards municipalities whose mayors belong to their respective parties, the partisan motive.

Ferreira and Bugarin (2005, 2007) present a careful political economy model showing that partisan transfers may have a very negative effect on the ability of voter to select the best politicians, as originally suggested by Rogoff and Sibert (1988) and by Rogoff (1990). Indeed, if partisan transfers from the State government are large enough, then voters prefer to select a less competent mayor who belongs to the same party as the governor, rather than a more competent one who belongs to an opposing party. As a result, the main positive effect of the political budget cycle highlighted in those seminal articles may be completely lost in the subnational elections, when partisan transfers are present.

Ferreira and Bugarin (2005, 2007) also show initial evidence that partisan transfers are significant in Brazil. The present article's goal is to develop a more detailed econometric strategy for understanding voluntary transfers in Brazil and their partisan motivation.

3. The data

We use fiscal and political data for the Brazilian municipalities from 1997 to 2008, a total of 12 years. The municipalities' fiscal data were obtained from the Brazilian National Treasury Secretariat, STN (www.tesouro.fazenda.gov.br). The monetary figures are transformed into constant 1997 values using the GDP deflator from Brazilian Institute of Applied Economic Research, IPEAdata (www.ipeadata.gov.br). Per capita figures were calculated based on the municipalities' population estimates by the Brazilian Institute of Geography and Statistics, IBGE. Data on the municipalities' per capita income index were obtained from the United Nations Development Program, UNDP (www.pnud.org.br). Finally, the political data were obtained from the Brazilian Electoral Management Bodies, the Superior Electoral Court and the Regional Electoral Courts (www.tse.jus.br).

During the 12-year span of the research, there were some changes in municipal geographic areas. Indeed, especially after the new 1988 Federal Constitution, splitting existing municipalities into two created several new municipalities. These municipalities were

removed from the database. Moreover, a reduced number of very small municipalities did not present their complete fiscal data to the Treasury Secretariat. These municipalities were also removed from the database. After that procedure, 3322 municipalities were kept in the database, out of 5564 municipalities existing today.

All econometric tests were performed using the statistical package STATA 10.

3.1. The dependent variable

The dependent variable is the total per capita voluntary transfers that the municipalities received from the State and the Federal governments. This is calculated by adding the following fiscal information: Additional current transfers from the Union ("Demais transferências correntes da União"), Other current transfers from the States ("Outras transferências correntes dos estados"), Other capital transfers from the Union and the States ("Outras transferências de capital da União e do Estado"). All these components of the dependent variable were obtained from the STN.

The original amounts were first transformed in 1997 values using the GDP deflator from IPEAdata. Next, the corresponding per capita values were calculated using IBGE's municipalities' population estimates. Then we applied the logarithm function to generate the *VT* dependent variable.

3.2. The control variables

The control variables used in this study can be roughly grouped into three categories, the economic and fiscal variables, the partisan variables, the time variables and the regional variables.

Economic and fiscal control variables

Mandatory transfers (*MT*). These are calculated by adding the Current transfers revenue ("Receita de transferências correntes") to the Capital transfers revenue ("Receita de transferências de capital"), subtracting the voluntary transfers variable, then transforming into constant 1997 values, dividing by the municipality's population and applying the log transformation.

Local tax revenue (*TX*). This variable measures the log of per capita total revenues the municipality receives from collecting taxes locally, in current 1997 values.

Per capita revenue (*HDI-i*). This is an index based on the per capita income of the municipality, which is the income part of the Human Development Index from UNDP.

Given the theory of fiscal federalism (Oates (1999), Musgrave (1959)) one would expect voluntary transfers to aim at correcting regional imbalances. Therefore, one would expect that mandatory transfers, tax revenue and per capita revenue all three move in opposite ways compared to voluntary transfers. Indeed, it is precisely when a municipality receives little mandatory transfers, has a reduced tax base or has low income that one expects it would receive more voluntary transfers, as compensation. Therefore, the sign of the coefficients of *MT*, *TX* and *HDI-i* should all be negative.

Partisan control variables

In order to test the partisan transfers' hypothesis, we included the following political variables.

DGov. A dummy variable that takes value 1 when the mayor and the State governor belong to the same party, but the President belongs to a different party.

DPres. A dummy variable that takes value 1 when the mayor and the President belong to the same party, but the State governor belongs to a different party.

DGovPres. A dummy variable that takes value 1 when the mayor, the State governor and the President, all three belong to the same party.

DCoGov. A dummy variable that takes value 1 when the mayor's party is different from the State governor's party but belongs to the political coalition that supported the Governor in his electoral campaigns.

DCoPres. A dummy variable that takes value 1 when the mayor's party is different from the President's party but belongs to the political coalition that supported the President in his electoral campaign.

Note that, since the coalitions that support the State government's candidate and the Presidency candidate are not necessarily the same, there are only the two *DCoGov* and *DCoPres* coalition dummies. The partisan hypothesis suggests that the signs of the coefficients of all these variables are positive.

There were two different presidencies within the period 1997-2008, that of Fernando Henrique Cardoso from party PSDB (from 1997 to 2002) and Luís Inácio Lula da Silva from party PT (from 2003 to 2008). In order to test for a possible general difference of behavior due to the party occupying the presidency, we introduced the dummy variable *D2003on*, which takes value 1 from the year 2003 on. Furthermore, we also introduced the following dummy variables.

PSDBPres. A dummy that takes value 1 if the mayor belongs to the coalition of parties that supported the president from party PSDB in his electoral campaign.

PTPres. if the mayor belongs to the coalition of parties that supported the president from party PT in his electoral campaign.

Similarly, several different parties held the State government throughout the period. Therefore, in order to test if there is a different behavior in partisan transfers depending on which party the governor belongs to, we introduced the following dummy variables.

PSDBGov. A dummy that takes value 1 when the governor belongs to party PSDB and the mayor either belongs to PSDB or to another party in the coalition that supported the governor in his electoral campaign. We define analogously the other State governor dummies *PTGov*, *PDTGov*, *PSBGov*, *PPSGov*, *PMDBGov*, *PTBGov*, *PFLGov*, *PPBGov*, *PLGov*, *PSLGov, PPGov* and *PPRGov*.

Given the great number of parties that occupied the States' governments throughout the period, we tried to aggregate them according to their ideological positions, according to Rodrigues (2002)'s classification as follows.

DLeft = PTGov + PDTGov + PSBGov + PPSGov

DCenter = PMDBGov + PSDBGov + PTBGov

DRight = PFLGov + PPBGov + PLGov + PSLGov

A second attempt to aggregate the States government's dummies classifies parties according to their sizes.

DSmall. Parties that held the municipal office in less than 3% of the observed data (up to 1100 observations).

DMedium. Parties that held the municipal office in more than 3% of the observed data (above 1100 observations) but in less than 27% of the observed data (up to 10000 observations).

DLarge. Parties that held the municipal office in more than 27% of the observed data (above 10000 observations).

The size dummies were also obtained by adding the corresponding State party dummies.

A third attempt to aggregate the States government's dummies classifies parties according to their seniority, i.e., the decade in which the parties were founded.

D70. Parties founded in the 70s.

D80. Parties founded in the 80s.

D90. Parties founded in the 90s.

Time control variables

In order to control for a possible overall time trend in voluntary transfers, we included the variable *Year*.

Furthermore, in order to test for the electoral cycle, we introduced time dummy variables for all years, except 1997 (to avoid perfect collinearity). These variables are respectively *D1998*,…., *D2008*.

Finally, as mentioned above, we introduced the *D2003on* variable, which takes value 1 from year 2003 up until year 2008, in order to control for a possible change at the level of transfers associated to the change of party holding the presidency.

Regional control variables

Brazil is divided in five administrative regions, each of which encloses several states. The different regions display different patterns of immigration, history, development and GDP, among others. We include the region variables to test whether there is a regional component to the pattern of transfers. Therefore, we composed (multiplied) these variables with the partisan control variables.

NO: Northern region; includes the states of Acre, Amapá, Amazonas, Pará, Rondônia, Roraima and Tocantins.

NE: Northeastern region; includes the states of Alagoas, Bahia, Ceará, Maranhão, Paraíba, Pernambuco, Piauí, Rio Grande do Norte and Sergipe.

CO: Center western region; includes the states of Mato Grosso, Mato Grosso do Sul, Goiás and the Federal District.

SE: Southeastern region; includes the states of São Paulo, Rio de Janeiro, Espírito Santo and Minas Gerais.

SU: Southern region; includes the states of Paraná, Rio Grande do Sul and Santa Catarina.

In order to avoid perfect collinearity, the SE region dummy is removed from the regressions.

Table 3 presents the summary statistics of the per capita voluntary transfers, the dependent variable, and the control variables per capita mandatory transfers, per capita tax revenue and income index.

Table 3: Summary statistics of the main variables

Variable	Obs	Mean	Std. Dev.	Min	Max
Per capita voluntary transfers	39864	25.43	81.86	0	10890.15
Per capita mandatory transfers	39864	460.04	754.40	0	100941.00
Per capita tax revenue	39864	34.04	52.63	0	1749.34
Income index	39864	0.620	0.093	0.323	0.918

Source: Authors' calculations

4. The econometric evidence

4.1. The Pooled OLS regressions

We start this investigation with POLS regressions. The basic regression is:

$$VT_{it} = \alpha_0 CT_{it} + \alpha_1 TR_{it} + \alpha_2 HDIi_{it} + \alpha_3 Year_{it} + \alpha_4 Dgov_{it} + \alpha_5 Dpres_{it} + \alpha_6 DGovPres_{it} + \alpha_7 DCoGov_{it} + \alpha_8 DCoPres_{it} + \varepsilon_{it}$$

The Breusch-Pagan test for heteroskedasticity yielded a statistic $\chi^2(9)$=1188.87, which strongly suggests the use of robust estimators. Table 4 below presents the robust pooled OLS results.

It is noteworthy that all partisan variables are significant at the 1% level, except *DGov*, which is significant at the 2% level. Moreover, all coefficient signs support the partisan hypothesis, suggesting that when the mayor belongs to the same party or coalition as the governor or the president the municipality receives higher amounts of voluntary transfers. Notice that the highest coefficient corresponds to the variable *DGovPres*, which confirms that belonging to the same party as the governor AND the president yields the highest volumes of voluntary transfers to the mayor.

Table 4: Pooled OLS robust regression

VT	Coef.	Robust Std. Err.	z	P>z	[95% Conf.	Interval]
MT	0.725	0.017	42.49	0.000	0.691	0.758
TR	-0.042	0.011	-3.94	0.000	-0.063	-0.021
HDI-i	1.599	0.132	12.15	0.000	1.341	1.856
Year	-0.280	0.003	-107.39	0.000	-0.285	-0.275
DGov	0.050	0.021	2.39	0.017	0.009	0.092
DPres	0.165	0.031	5.35	0.000	0.105	0.225
DGovPres	0.451	0.032	14.26	0.000	0.389	0.513
DCoGov	0.126	0.022	5.70	0.000	0.083	0.170
DCoPres	0.227	0.022	10.53	0.000	0.185	0.270
_cons	557.881	5.170	107.92	0.000	547.748	568.014

R^2=0.2634

Source: Authors' calculations

Moreover, the coefficient of the local tax revenue is negative, which is compatible with the equalizing hypothesis of fiscal federalism: the lower the local tax collection is, the higher

voluntary transfers are. However, this result is not robust, as it will become clear in the following regressions. Furthermore, the coefficients of the economic and fiscal control variables *MT* and *HDI-i* have positive signs, which is contrary to our expectation. This suggests that rather than the expected equalizing effect, the net result of voluntary transfers in Brazil may, actually, contribute to an increase in inequality among municipalities. This may be a result of the fact that the richer municipalities have, on average, better administrative bodies and, therefore, are better prepared to take advantage of the voluntary transfers programs. However, that result will be partially challenged in the next regressions.

Finally, there appears to be a decrease on the amounts of voluntary transfers over the years, according to the native sign of the coefficient of *Year*. Nonetheless, that result will be consistently challenged in the next regressions.

In order to decide whether the pooled OLS regression is appropriate in the present context, we run the Breusch and Pagan Lagrange multiplier test for random effects. The test yielded a statistic $\chi^2(1)$=3682.29, which rejects the null hypothesis that variances in groups are zero, in favor of the random group effects models. Furthermore, the Hausman test yielded a statistic $\chi^2(9)$=658.80, which suggests that the fixed effects model fits better the data than the random effects one, as one would expect for the municipal data. Furthermore, in order to test for heteroskedasticity, we performed the xttest3 in Stata for the fixed effect panel data regression[2]. The corresponding statistic is $\chi^2(3322)=89797.73$, which gives strong support for the presence of heteroskedasticity. Therefore, we used the fixed effects model with robust standard deviation coefficients in all the remaining regressions.

4.2. The robust fixed effects panel data regressions

4.2.1. The basic model

We start replicating the basic model using now the robust fixed effects panel data regression.

[2] According to Stata help information, "xttest3 calculates a modified Wald statistic for groupwise heteroskedasticity in the residuals of a fixed effect regression model, following Greene (2000, p. 598)". This test was developed by Christopher F Baum, Boston College, USA. Ideas.repec.org/c/boc/bocode/s41801.html

$$VT_{it} = \alpha_0 + \alpha_1 CT_{it} + \alpha_2 TX + \alpha_3 HDIi_{it} + \alpha_4 Year_{it} + \alpha_5 DGov_{it} + \alpha_6 DPres_{it} + \alpha_7 DGovPres_{it} + \alpha_8 DCoGov_{it} + \alpha_9 DCoPres_{it} + \varepsilon_{it}$$

Table 5 below presents the regression results.

Notice that, here, all partisan variables are significant at the 1% level, including *DGov*, which shows that the partisan motive is robust to the model specification. Again, all coefficients signs support the partisan hypothesis, suggesting that when the mayor belongs to the same party or coalition as the governor or the president the municipality receives higher voluntary transfers. Notice that the highest coefficient corresponds to the variable *DGovPres*, which confirms that belonging to the same party as the governor AND the president yields the highest volumes of voluntary transfers to the mayor. The second highest partisan coefficient corresponds to *DPres* and the third highest corresponds to *DCoPres*. This shows a clear prevalence of the political identification between the mayor and the president as the motivating factor for higher voluntary transfer, as compared to the relationship between the mayor and the state governor.

Table 5: Robust fixed effects panel data regression – The basic model

VT	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
CT	-0.366	0.094	-3.88	0.000	-0.550	-0.181
TR	0.005	0.018	0.29	0.769	-0.030	0.040
HDI-i	1.292	0.305	4.24	0.000	0.695	1.889
Year	-0.199	0.008	-25.66	0.000	-0.215	-0.184
DGov	0.077	0.022	3.43	0.001	0.033	0.121
DPres	0.329	0.034	9.53	0.000	0.261	0.396
DGovPres	0.437	0.039	11.22	0.000	0.361	0.514
DCoGov	0.194	0.023	8.44	0.000	0.149	0.239
DCoPres	0.307	0.024	12.60	0.000	0.259	0.354
cons	402.780	15.021	26.81	0.000	373.338	432.221

R^2 within: 0.2796, between: 0.0562

Source: Authors' calculations

Note, furthermore, the coefficient of *CT* remains significant at 1% but is now negative, in accordance to the theory of fiscal federalism that suggests that voluntary transfers should reduce inequality among municipalities. However, *TR* in now insignificant and *HDI-i* remains significant and positive, contrary to expectations.

Finally, the variable *Year* is again significant and negative, suggesting an overall reducing trend in the total amounts of voluntary transfers. This suggests a better look at the time dynamics of voluntary transfers, which is done in the next section.

4.2.2. Voluntary transfers dynamics and the midterm transfers cycle effect

In order to investigate the time dynamics of voluntary transfers we first replace the *Year* variable by individual year dummy variables, excluding 1997 in order to avoid perfect collinearity. Therefore, the results of the corresponding regression in Table 6 show the relative yearly change as compared to 1997.

Table 6: The midterm transfers cycle effect

VT	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
MT	-0.967	0.134	-7.21	0.000	-1.230	-0.704
TR	0.160	0.018	8.99	0.000	0.125	0.195
HDI-i	1.485	0.422	3.52	0.000	0.658	2.313
DGov	0.134	0.021	6.38	0.000	0.093	0.175
DPres	0.146	0.033	4.48	0.000	0.082	0.210
DGovPres	0.156	0.037	4.17	0.000	0.083	0.229
DCoGov	0.094	0.022	4.29	0.000	0.051	0.137
DCoPres	0.051	0.023	2.18	0.029	0.005	0.097
D1998	0.634	0.044	14.35	0.000	0.547	0.720
D1999	0.274	0.051	5.39	0.000	0.175	0.374
D2000	0.493	0.060	8.19	0.000	0.375	0.611
D2001	0.368	0.064	5.72	0.000	0.242	0.494
D2002	-0.485	0.088	-5.53	0.000	-0.657	-0.313
D2003	-1.635	0.084	-19.39	0.000	-1.800	-1.470
D2004	-1.216	0.090	-13.53	0.000	-1.392	-1.040
D2005	-1.509	0.102	-14.76	0.000	-1.710	-1.309
D2006	-1.098	0.111	-9.93	0.000	-1.315	-0.881
D2007	-1.328	0.117	-11.39	0.000	-1.557	-1.100
D2008	-0.829	0.136	-6.09	0.000	-1.096	-0.562
_cons	7.023	0.734	9.56	0.000	5.583	8.462

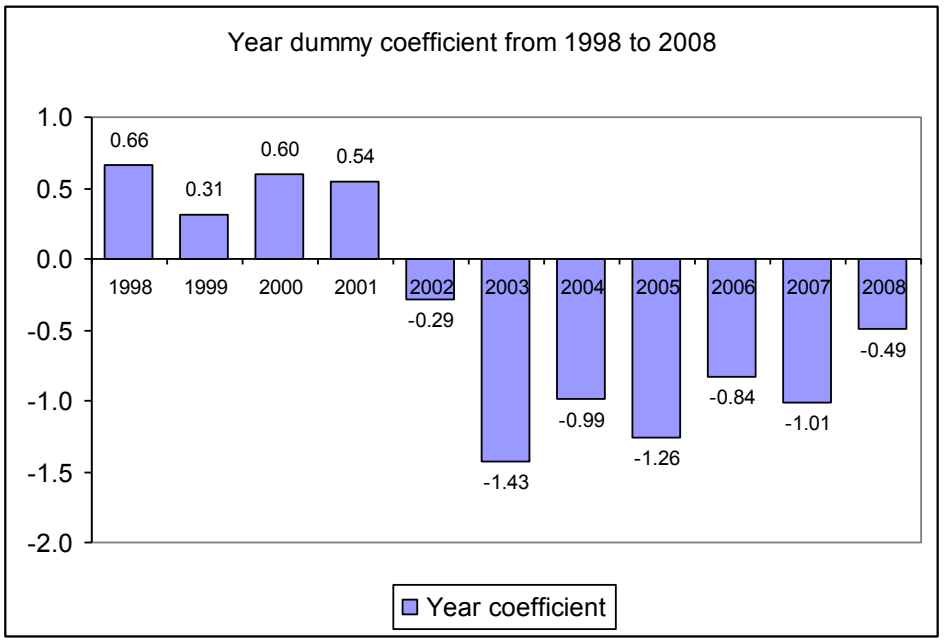
R^2 within: 0.3705, between: 0.1065

Source: Authors' calculations

All partisan variables remain significant at 1%, except for *DCoPres*, which is still significant at 5%. The sign of the economic and fiscal variables are the same as before; furthermore, now they are all three significant at 1%. Furthermore, municipalities that receive more constitutional transfers tend to receive less voluntary transfers, as expected. However, this

regression maintains the unexpected result that municipalities which collect more taxes and which are richer also receive more voluntary transfers.

Graph 1: The coefficients of the year dummy variables



Moreover, all year dummies are significant at 1%. Graph 1 below plots the coefficient estimates. Recall that even years (1998, 2000, 2002, 2004, 2006, 2008) correspond to electoral years. Although the signs of the coefficient change from 2003 on, the graph shows that all electoral years displayed higher voluntary transfers than the year after election, even controlling for the partisan effect. This confirms that there seems to be a short, two-years long electoral cycle in Brazil, a result that was first pointed out in Ferreira and Bugarin (2005). That result, called *the midterm-cycle effect*, reflects the fact that elections are staggered in Brazil, so that there are municipal elections in the middle of a presidential term (and State government term), as discussed earlier. Therefore, the president and the State governor as well, both have incentives to increase transfers for political reason also in the middle of their political terms.

Note, furthermore, that there seems to be a clear change in the level of voluntary transfers when Lula took office in 2003. However, this change in the level of transfers did not seem to be accompanied by a change in the trend, which appears to be increasing both before and after 2003, but most especially after 2003. This graph suggests that the negative sign of the

year coefficient in the previous regressions may not reflect a real trend, but, in fact, may reflect the change in level that occurred in 2003. In order to better fit the data, we replicated the basic regression but including now the dummy variable *D2003on*. Table 7 shows the corresponding results.

$$VT_{it} = \alpha_0 + \alpha_1 CT_{it} + \alpha_2 TX + \alpha_3 HDIi_{it} + \alpha_4 Year_{it} + \alpha_5 DGov_{it} + \alpha_6 DPres_{it} + \alpha_7 DGovPres_{it} + \alpha_8 DCoGov_{it} + \alpha_9 DCoPres_{it} + \alpha_{10} D2003on + \varepsilon_i$$

Table 7: The year 2003 effect

VT	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
MT	-0.836	0.122	-6.88	0.000	-1.074	-0.598
TR	0.075	0.018	4.24	0.000	0.041	0.110
HDI-i	-1.546	0.303	-5.10	0.000	-2.140	-0.951
Year	0.036	0.012	2.89	0.004	0.012	0.061
DGov	0.130	0.022	6.04	0.000	0.088	0.173
DPres	0.144	0.034	4.30	0.000	0.078	0.210
DGovPres	0.195	0.039	5.05	0.000	0.119	0.270
DCoGov	0.111	0.022	4.96	0.000	0.067	0.155
DCoPres	0.069	0.024	2.91	0.004	0.023	0.116
D2003on	-1.609	0.038	-42.22	0.000	-1.683	-1.534
_cons	-63.513	24.305	-2.61	0.009	-111.151	-15.874

R^2 within: 0.3327, between: 0.2103

Source: Authors' calculations

Note that the new regression fits the data better, with a R^2-within of 33% and a R^2-between of 21%. The dummy variable *D2003on* is significant at 1% and negative and the *Year* variable is significant at 1% and is now positive. This confirms that there was, indeed a change in the level of the transfers in 2003, but after that change the governments restarted increasing the amounts of voluntary transfers. One could explain the change in 2003 by the fact that a new party took office at the presidency with little experience in the management of public finance at the federal level. Moreover, Lula took office amid a grave confidence crisis and needed to signal his serious determination towards sound fiscal policy. Once the trust of investors and society was recovered, the ascending trend in voluntary transfers was recuperated.

Furthermore, both the *CT* and the *HDI-i* are significant and have now the expected sign, contributing to reduce inequality among municipalities. The sign of *TR*, is still positive and significant at 1%, reinforcing the interpretation that a municipality that is able to collect more taxes locally must have a more professional civil servant body, thereby being better prepared

to receive voluntary transfers. As for the partisan variable, the main results remain true, both in sign and size of the coefficients, all variables being significant at 1% level. Note that, although there still appears to be a dominance of the president effect, as *DPres* has the highest coefficient (0.144) after *DGovPres* (0.195), the role of the state governor is also strong with the third highest coefficient of 0.130, nearing that of *DPres.*

4.2.3. Controlling for the President's party

Let us now explore the specific effect of which party holds the presidency, the PSDB or the PT. In order test for such party effect, we replace the control variables *DPres, DGovPres and DCoPres* with the variables *PSDBPres* and *PTPres.* Table 8 presents the corresponding results.

Table 8: The President's party effect

VT	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
CT	-0.835	0.121	-6.88	0.000	-1.072	-0.597
TR	0.078	0.018	4.37	0.000	0.043	0.112
HDI-i	-1.540	0.303	-5.08	0.000	-2.135	-0.946
Year	0.036	0.012	2.88	0.004	0.011	0.060
Dgov	0.124	0.021	5.79	0.000	0.082	0.166
DCoGov	0.108	0.022	4.83	0.000	0.064	0.152
PSDBPres	0.079	0.023	3.45	0.001	0.034	0.124
PTPres	0.184	0.040	4.57	0.000	0.105	0.262
D2003on	-1.629	0.039	-41.78	0.000	-1.706	-1.553
_cons	-63.018	24.179	-2.61	0.009	-110.409	-15.627

R^2 within: 0.3326, between: 0.2126

Source: Authors' calculations

The basic results obtained before remain the same in this regression. In addition, both parties seem to have favored their local supporters by distributing higher amounts of voluntary transfers to municipalities whose mayors belonged to coalitions that supported the president during his electoral campaigns. Note, however, that the coefficient of the *PTPres* is more than 2 times that of *PSDBPres*, which suggests that the *PT* used partisan transfers more heavily than the *PSDB.*

4.2.4. Controlling for the State Governor's party

Let us now explore the specific effect of which party holds the State government. In order test for such specific effect, we replace the control variables *DGov, DGovPres and DCoGov* with the corresponding party dummies. Table 9 presents the corresponding results. The variable *PSLGov* was omitted in order to avoid multicollinearity.

Table 9: The Governor's party effect

VT	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
CT	-0.832	0.121	-6.86	0.000	-1.070	-0.594
TR	0.076	0.018	4.26	0.000	0.041	0.111
HDI-i	-1.344	0.304	-4.42	0.000	-1.941	-0.748
Year	0.038	0.012	3.01	0.003	0.013	0.062
Dpres	0.128	0.034	3.82	0.000	0.062	0.194
DCoPres	0.089	0.024	3.68	0.000	0.042	0.137
PSDBGov	0.126	0.024	5.19	0.000	0.078	0.174
PTGov	-0.141	0.063	-2.23	0.026	-0.265	-0.017
PDTGov	0.355	0.051	6.99	0.000	0.256	0.455
PFLGov	0.069	0.046	1.50	0.134	-0.021	0.159
PMDBGov	0.165	0.026	6.43	0.000	0.115	0.216
PPGov	0.341	0.135	2.52	0.012	0.076	0.605
PPBGov	-0.282	0.072	-3.95	0.000	-0.422	-0.142
PPRGov	0.439	0.321	1.37	0.172	-0.191	1.069
PPSGov	0.437	0.108	4.03	0.000	0.224	0.649
PSBGov	0.220	0.084	2.61	0.009	0.055	0.385
PTBGov	-0.171	0.627	-0.27	0.785	-1.400	1.058
D2003on	-1.637	0.038	-42.92	0.000	-1.712	-1.562
_cons	-66.624	24.300	-2.74	0.006	-114.253	-18.995

R^2 within: 0.3342, between: 0.2101

Source: Authors' calculations

Although both parties used the partisan voluntary transfers strategy at the presidency level, there is more party differentiation at the State level. Indeed, the regression shows no evidence that either the *PFL*, the *PPR* or the *PTB* used such schemes. The remaining parties did use the mechanism at the 1% and 5% significance level. However, there is evidence that at the state level the *PT* (at 5% significance level) and the *PPB* (at 1% significance level) did, actually, disfavored their supporting coalition parties, by reducing, rather than increasing, voluntary transfers to the corresponding municipalities.

The party that displayed the highest coefficient is the *PPS*, followed by the *PDT*, and then by the *PP*. The lowest (positive, significant) coefficients were with the *PSDB*, followed by the *PMDB*.

4.2.5. Controlling for party ideology

Next we group the above State party variables according to the party's ideology. Table 10 below presents the classification as left wing, center and right wing party according to Rodrigues (2002).

Table 10: Brazilian parties' ideological classification

Left	Center	Right
PT	PMDB	PFL
PDT	PSDB	PPB
PSB	PTB	PL
PC do B		PSD
PPS		PSC
PMN		Prona
PV		PSL
		PST

Source: Rodrigues (2002)

Table 11 presents the corresponding results. It suggests that parties to the left and center of the ideological spectrum did use the partisan transfers at 1% significance level, whereas there is no evidence that the parties to the right of the ideological spectrum did follow the partisan motivation to transfers.

Table 11: Parties ideological spectrum effect

VT	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
CT	-0.834	0.122	-6.86	0.000	-1.072	-0.595
TR	0.075	0.018	4.24	0.000	0.041	0.110
HDI-i	-1.474	0.304	-4.86	0.000	-2.069	-0.879
Year	0.036	0.012	2.85	0.004	0.011	0.060
Dpres	0.140	0.033	4.22	0.000	0.075	0.206
DCoPres	0.078	0.024	3.21	0.001	0.030	0.125
Left	0.151	0.036	4.18	0.000	0.080	0.221
Center	0.144	0.019	7.68	0.000	0.107	0.180
Right	0.037	0.039	0.96	0.338	-0.039	0.113
D2003on	-1.619	0.038	-42.55	0.000	-1.694	-1.545
_cons	-62.618	24.301	-2.58	0.010	-110.248	-14.988

R^2 within: 0.3328, between: 0.2135

Source: Authors' calculations

4.2.6. Controlling for party size

Next we group the State party variables according to the relative size of the parties. We define a party as *Large* if there are at least 10000 observations in which the mayor belongs to that party in our database. This corresponds to 27% of the observations. We define a party as *Medium* if there are between 1100 and 9999 observations in which the mayor belongs to that party in our database. This corresponds to the range from 3% to 27% of the observations. Finally, we define a party as *Small* if there are less than 1100 observations in which the mayor belongs to that party in our database. This corresponds less than 3% of the observations. Table 12 presents the results of the corresponding regression. The main conclusion of this analysis is that both small and large parties do make significant use of the partisan transfer mechanism, whereas there is no consistent evidence that medium size parties do make partisan transfers.

Table 12: Party size effect

VT	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
CT	-0.831	0.121	-6.85	0.000	-1.069	-0.593
TR	0.076	0.018	4.29	0.000	0.041	0.111
HDI-i	-1.454	0.304	-4.79	0.000	-2.050	-0.859
Year	0.035	0.012	2.82	0.005	0.011	0.060
Dpres	0.131	0.033	3.91	0.000	0.065	0.196
DCoPres	0.067	0.024	2.83	0.005	0.020	0.113
Small	0.196	0.039	4.99	0.000	0.119	0.273
Medium	0.041	0.034	1.20	0.232	-0.026	0.109
Large	0.144	0.019	7.72	0.000	0.108	0.181
D2003on	-1.618	0.038	-42.68	0.000	-1.692	-1.544
_cons	-61.853	24.228	-2.55	0.011	-109.341	-14.365

R^2 within: 0.3329, between: 0.2109

Source: Authors' calculations

4.2.7. Controlling for party seniority

We next group State party variables according to the party seniority, i.e., how old the party is. Brazilian parties have suffered from two long periods of authoritarian rule during the 20s century which resulted in short lived parties. Today's parties's foundation can be tracked down to three different decades: the 70s, the 80s and the 90s. Table 13 presents the corresponding regression when parties are grouped according to their foundation decade. Although all party variables have positive sign, younger parties, those founded in the 90s, did

not show significant evidence of partisan transfers. This result may suggest an institutional evolution in which newer parties tend to use cleaner political strategies than partisan transfers.

Table 13: Party seniority effect

VT	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
CT	-0.835	0.122	-6.87	0.000	-1.074	-0.597
TR	0.077	0.018	4.32	0.000	0.042	0.111
HDI-i	-1.529	0.303	-5.05	0.000	-2.123	-0.936
Year	0.036	0.013	2.86	0.004	0.011	0.060
Dpres	0.135	0.033	4.06	0.000	0.070	0.201
DCoPres	0.065	0.023	2.77	0.006	0.019	0.111
70s	0.151	0.023	6.67	0.000	0.107	0.196
80s	0.113	0.021	5.38	0.000	0.072	0.154
90s	0.080	0.057	1.40	0.161	-0.032	0.191
D2003on	-1.615	0.038	-42.55	0.000	-1.689	-1.540
_cons	-63.027	24.355	-2.59	0.010	-110.763	-15.290

R^2 within: 0.3327, between: 0.2143

Source: Authors' calculations

4.2.8. Controlling for regional differences

Finally, we control for regional differences in the next two regressions. The first regression, presented in Table 14, tests for a regional effect in the behavior of the State governor. Taking the 1% significance level as the criterion, only the governors in the Southeastern region –the richest of the Brazilian regions– displays direct use of partisan transfers. This may be explained by the fact that State governors in that region manage higher budgets. That result suggests an additional concern to political regulation. Indeed, there may be a natural trend towards higher use of partisan transfers as the country develops and its state governors manage higher state budgets.

On the other hand, governors of the Center western region tend to favor the parties in their supporting their political coalitions, rather than their own parties, with partisan transfers, whereas governors in the Southern region, on an opposite trend, tend to reduce partisan transfers to parties in their supporting political coalitions.

Table 14: The regional partisan transfers' effect of the governor's party

VT	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
CT	-0.833	0.122	-6.82	0.000	-1.072	-0.594
TR	0.076	0.018	4.28	0.000	0.041	0.111
HDI-i	-1.513	0.303	-4.99	0.000	-2.107	-0.918
Year	0.036	0.013	2.86	0.004	0.011	0.061
Dpres	0.114	0.033	3.44	0.001	0.049	0.179
DCoPres	0.050	0.024	2.11	0.034	0.004	0.096
D2003on	0.154	0.070	2.21	0.027	0.018	0.291
CWGov	0.086	0.054	1.59	0.112	-0.020	0.192
NEGov	-0.162	0.147	-1.11	0.269	-0.449	0.125
NOGov	0.071	0.038	1.88	0.060	-0.003	0.144
SEGov	0.178	0.032	5.54	0.000	0.115	0.241
SOGov	0.179	0.070	2.56	0.011	0.042	0.317
CWCoGov	0.146	0.050	2.90	0.004	0.047	0.244
NECoGov	0.019	0.132	0.15	0.884	-0.239	0.278
NOCoGov	0.061	0.034	1.78	0.075	-0.006	0.128
SECoGov	0.071	0.041	1.73	0.083	-0.009	0.152
SOCoGov	-1.634	0.038	-42.73	0.000	-1.709	-1.559
_cons	-63.698	24.550	-2.59	0.009	-111.817	-15.580

R^2 within: 0.3326, between: 0.2150

Source: Authors' calculations

The second regression, which presented in Table 15, tests for a regional bias in the behavior of the President. Taking the 1% significance level as the criterion, there is evidence of partisan transfers in all regions, except the Northern and the Southeastern regions. Paradoxically, these are, respectively, the least and the most developed regions of the country. Note, however, that the president bias takes the opposite direction of reducing voluntary transfers in the very region that contains the nation's capital, the Center western region. Note, however, that the Federal District was not included in the dataset due to the particularities that singles it out from the rest of the observations.

Furthermore, a bias towards higher political transfers to the parties in the president's coalition was only detected in the Northeastern region of the country.

Table 15: The regional partisan transfers' effect of the president's party

VT	Coef.	Robust Std. Err.	t	P>t	[95% Conf.	Interval]
CT	-0.823	0.121	-6.81	0.000	-1.060	-0.586
TR	0.087	0.018	4.80	0.000	0.052	0.123
HDI-i	-1.600	0.303	-5.27	0.000	-2.195	-1.006
Year	0.034	0.012	2.69	0.007	0.009	0.058
DGov	0.107	0.022	4.96	0.000	0.065	0.149
DCoPGov	0.096	0.022	4.26	0.000	0.052	0.140
CWPres	-0.311	0.117	-2.66	0.008	-0.540	-0.081
NEPres	0.299	0.088	3.40	0.001	0.127	0.472
NOPres	0.329	0.194	1.69	0.090	-0.052	0.709
SEPres	0.045	0.051	0.89	0.376	-0.055	0.145
SOPres	0.169	0.055	3.10	0.002	0.062	0.276
CWCoPres	-0.105	0.070	-1.50	0.133	-0.242	0.032
NECoPres	0.251	0.050	5.01	0.000	0.153	0.349
NOCoPres	0.056	0.135	0.42	0.677	-0.209	0.322
SECoPres	0.000	0.035	-0.01	0.992	-0.069	0.068
SOCoPres	-0.022	0.039	-0.56	0.573	-0.098	0.054
D2003on	-1.623	0.038	-42.63	0.000	-1.697	-1.548
_cons	-58.499	24.244	-2.41	0.016	-106.018	-10.980

R^2 within: 0.3332, between: 0.2161

Source: Authors' calculations

5. Conclusion

The present paper tested the hypothesis of partisan motivation in voluntary transfers in the Brazilian federation. It found strong and consist evidence that municipalities whose mayors belong to the same party as the president's (respectively, the State governor's), or to a coalition of parties that supported the president (respectively, the governor) during his electoral campaign systematically receive more voluntary transfers than other municipalities.

Furthermore, the paper found evidence that there is a political cycle in the voluntary transfers in Brazil that is completed every two years. This corresponds to the fact that, in Brazil, there are elections every other year. Evidence of a short two-year transfer cycles were first documented in Ferreira and Bugarin (2005).

The change of party in the presidency in Brazil that occurred in 2003, when the PSDB gave place to the PT was accompanied by an overall reduction in voluntary transfers to the

municipalities in 2003. However, once we control for this level change in 2003, our regressions suggest that a trend towards raising voluntary transfers started anew, with higher impetus.

Both parties at the presidency did use extensively the mechanism of partisan voluntary transfers in Brazil. However, there is statistical evidence that the PT put higher emphasis into that mechanism.

On the other hand, we found no evidence that governors belonging to the PT, the PFL, the PPR or the PTB used such mechanism at the State level, at the 1% confidence level. Governors from the PPB, on the other hand, appear to have reduced voluntary transfers to municipalities whose mayors belonged to their own parties. Governors belonging to other parties seemed to have used it, although at different intensities.

The study found evidence that parties at the left and center of the ideological spectrum did use partisan voluntary transfers, whereas no such statistical evidence was found for the right wing parties.

Parties of different sizes in terms of electoral representation did make use of the mechanism. Small and large parties did it at the 1% level. However, medium size parties did not display significant evidence of use of such mechanism.

Older parties, founded in the 70s and in the 80s, did show evidence of partisan transfers' behavior, whereas more recent parties, founded in the 90s, did not show such evidence. Furthermore, the partisan motive seems to be more present in the older parties, as the corresponding dummies bear the highest value.

Finally, the partisan transfers' mechanism seems to be used by the president in different intensities in the different regions of the country, with no clear cleavage in terms of richer versus poorer regions. However, that mechanism seems to be used by governors most significantly in the richest region of the country. This result suggests that regulation should attend to this trend as the country gets richer and state governors start managing higher budgets.

The main message of this study is that partisan transfers appear to be pervasive in Brazilian political practices, not different, actually, from the evidence found in Ansolabehere (2006) for the USA, Khemani (2007) for India, and by Sollé-Ollé (2008) for Spain, for example. As an implication for institutional improvement, one could suggest the follow up on the evidence of partisan transfers and the establishment of equalizing goals to be attained by the governments' bodies to offset the partisan motive in voluntary transfers. The Supreme Court and Regional Electoral Courts could naturally be in charge of following up the transfers data to assess the existence of biases and to impose redressing measures.

As a suggestion for further research, we recommend a more detailed and separated analysis of transfers according to the source, be it the State or the Federal government, to assess if there is a preponderance of the Presidency as implied by this study.

References

Ansolabehere, S.; Gerber, A. and Snyder Jr, J. 2002. "Equal Votes, Equal Money: Court Ordered Redistricting and the Distribution of Public Expenditures in the American States.'' *American Political Science Review*, 96: 767-777.

Ansolabehere, S. and Snyder Jr, J. M. 2006. "Party control of state government and the distribution of public expenditures." *Scandinavian Journal of Economics*, 108(4): 547-569.

Ferreira, I.; Bugarin, M. 2005. *"Transferências voluntárias no federalismo fiscal brasileiro: Efeito do ciclo fiscal de meio de mandato sobre as eleições muncipais"*. (Voluntary Transfers in Brazilian Fiscal Federalism: The Midterm Fiscal Effect on Municipal Elections) in: ESAF (org.): Finanças Públicas: IX Prêmio Tesouro Nacional. (Public Finance: 9th National Treasure Secretariat Prize) vol. IX: 221-278, Brasília: ESAF.

Ferreira, I.; Bugarin, M. 2007. "Transferências voluntárias e ciclo político-orçamentário no federalismo fiscal brasileiro" (Voluntary transfers and political budget cycles in Brazilian fiscal federalism). *Revista Brasileira de Economia*, 61 (3): 271-300.

Greene, W. H. 2000. *Econometric Analysis,* Prentice Hall, New Jersey, 4th edition, 2000.

Kerr, W. A. 1944. "A Quantitative Study of Political Behavior", *Journal of Social Psychology*, 19: 273-281.

Khemani, S. 2007. “Does delegation of fiscal policy to an independent agency make a difference? Evidence from intergovernmental transfers in India”, *Journal of Development Economics*, 82(2): 464-484.

Kramer, G. H. 1971. “Short Term Fluctuations in U.S. Voting Behavior, 1896–1964”, *American Political Science Review*, 65:131-143.

Musgrave, R. 1959. *The Theory of Public Finance: A Study in Public Economics*. New York: McGraw Hill.

Nordhaus, W. D. 1975. “The Political Business Cycle”. *The Review of Economic Studies*, 42(2): 169-190.

Oates, W. 1999. “An Essay on Fiscal Federalism”. *Journal of Economic Literature*, 37: 1120-1149.

Rogoff, K. 1990. “Equilibrium Political Budget Cycles”. *The American Economic Review*, 80(1): 21-36.

Rogoff, K. and Sibert, A. 1988. Elections and macroeconomic policy cycles. *Review of Economic Studies*, 55: 1-16.

Sakurai, S. 2004. “Political business cycles: procurando evidências empíricas para os municípios paulistas (1989-2001)”. Master degree thesis, USP.

Solé-Ollé, A. and Sorribas-Navarro, P., 2008. “The effects of partisan alignment on the allocation of intergovernmental transfers. Differences-in-differences estimates for Spain”. *Journal of Public Economics*, 92(12): 2302-2319.

Wright, G. 1974. “The political economy of New Deal spending, an econometric analysis.” *The Review of Economics and Statistics*, 56: 30-38.