Determinants of the assignment of EU funds to Portuguese municipalities

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Abstract The paper examines the determinants of the assignment of EU funds to Portuguese municipalities using a large and unexplored dataset covering all (278) mainland municipalities over 15 years. Empirical results reveal that besides normative objectives, political motivations also influence the distribution of funds by the national government across municipalities. Grants to municipalities increase during local election years, and more funds are transferred to municipalities where legislative elections have been closely contested and where the ruling national party had been supported by voters.

1 Introduction

The main objective of the paper is to analyze the impact of political factors on the distribution of European Union (EU) transfers to Portuguese municipalities.[1] Portugal joined the European Community in 1986, and started receiving European funds through the European Regional Policy. Access to European funds had important impacts on Portuguese municipalities. They enlarged local governments' resources, allowing for an improvement of local infrastructure and for an expansion of the scope of municipalities' activities. More attention was given to the organization of territory and to the establishment of relationships with foreign entities. EU funds represented between 5% and 12% of municipalities' revenues during the period under analysis (1992 to 2006).

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[1]In mainland Portugal there are two levels of public administration, the central government and municipalities. Only the archipelagos of the Azores and Madeira have the status of autonomous regions.

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The Portuguese central government negotiates with the European authorities over funding levels and sets the framework for distributing funds across municipalities. Although the normative goals of these funds, as suggested by the theory on fiscal federalism,[2] are to promote efficiency in the production of local public goods and equity among regions, they may be subject to political influences that prevent them from fully achieving these objectives. The grant giver may distribute more funds in pre-election years in order to increase its chances of reelection, as suggested by the literature on pork barrel politics (Ferejohn 1974) and political business cycles (Rogoff and Sibert 1988; Rogoff 1990). It is also possible that recipient municipal governments exert more pressure to receive funds during local election periods. According to the literature on tactical redistribution, the grant giver may target voters who are not ideologically committed (i.e., swing voters) in the allocation of funds (Lindbeck and Weibull 1987, 1993) but may favor his supporters if he is risk-averse (Cox and McCubbins 1986). Dixit and Londregan (1996) developed a model where parties favor their core support group when they are more effective in delivering benefits to them, but woo the group that is more willing to switch its votes in return for policy favors if they are equally effective in delivering transfers to any group. Parties may also compromise their ideologies by adjusting their platforms and offering pork-barrel projects to attract swing voters (Dixit and Londregan 1998). Several studies have analyzed the political determinants of the distribution of intergovernmental grants but, as far as we know, tests have never been performed using data on EU funds.

Case (2001) examined the impact of political competition on block grants from federal to sub-federal governments in Albania, and found that more assistance was allocated to swing communities (local government units) and to those that might be pivotal to winning a majority of seats in Parliament. Swing communities are defined as those in which the probability of winning is close to one-half, while pivotal communities are those without whom it would be difficult for the party to win a majority. For the Swedish case, Johansson (2003) proposed a new method of estimating the number of swing voters, using factor analysis and a kernel density estimator on election survey data. Using this method she finds that municipalities with many swing voters receive larger grants than other municipalities, but when the closeness of the election is used as a proxy for competitiveness (Case 2001), no statistical significant effects of tactics on the distribution of grants are found. Using data from a temporary program that distributed "ecological" grants from the Swedish central government to municipalities, Dahlberg and Johansson (2002) reported strong support for the hypothesis that the incumbent government (socialist) purchased votes by investing in municipalities where there were many swing voters but not where voter support was reliably strong. The former result is found both for the closeness of the last election proxy as a proxy and the estimate of the density at the cut points proposed by Johansson (2003).

On the contrary, Ansolabehere and Snyder (2006) found that the governing parties skew the distribution of intergovernmental transfers to U.S. counties in favor of areas that provide them with the strongest electoral support. Hanes (2007), using observations for temporary grants in Sweden over three electoral periods, concluded that under Socialist governments (1985 and 1988) municipalities with a large share of Socialist voters were more likely to apply for and to receive grants, while this was not the case under the 1982 Conservative government. Using Spanish data, Solé-Ollé and Sorribas-Navarro (2008) found that partisan alignment has a sizeable positive effect on the sizes of grants received by municipalities.

The impact of political factors in the distribution of intergovernmental grants in Portugal, as the country matured from a young to an established democracy, was examined by Veiga

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[2]See Oates (1999) for a survey of fiscal federalism.

and Pinho ([2007]).[3] Their results indicate that in the early years of democracy (1979–1988), grants were allocated tactically; that is, municipalities ruled by mayors that belonged to the Prime Minister's party and swing municipalities were favored in the distribution process. However, these phenomena were not detected in the established democracy period. Regarding opportunistic effects, they found that grants to municipalities during local and national election years are larger in the later part of the sample (1989–2002), than in the earlier part.

The present paper focuses on the political economy of the allocation of EU funds to Portuguese municipalities. To our knowledge, this kind of analysis has never been performed either for Portugal or any other EU country. The empirical research is implemented on an extensive panel covering all mainland municipalities (278), from 1992 to 2006.[4] This rich data set contains information on municipal accounts, demographic and socio-economic data for local jurisdictions, and election data for local and central governments. Portugal is also an interesting case because access to EU funds allowed for a substantial increase in local governments' financial resources. Furthermore, municipal election dates are set exogenously from the perspective of local governments. They occur in all municipalities at the same time and, during the period under analysis, they were always at the end of the year.

The paper is organized as follows. The next section presents a discussion of the Portuguese institutional structure and Sect. 3 describes the dataset. The empirical strategy is explained in Sect. 4 and the empirical results are presented subsequently. Finally, conclusions are reported in Sect. 6.

2 Portuguese institutional framework

There are two levels of sub-national governments in Portugal: the autonomous regions and municipalities.[5] Regional governments exist only in the archipelagos of Madeira and Azores, so, for mainland Portugal, municipalities are the only sub-national governments.

The first local elections after the reestablishment of democracy in 1974 took place in December 1976. After 1976, elections were held every three years until 1985 and every four years since that. The representative branches of municipal governments are the Town Council and the Municipal Assembly. The members of the Town Council are elected directly by voters registered in the municipality, who vote for party or independent lists. Following the election, the candidate at the top of the list receiving the most votes becomes the mayor; he is the president of the Town Council and has a prominent role in executive tasks.

There has been a progressive expansion of the scope of competencies or functions assigned to municipal governments over time. During the first years of democracy, local governments were concerned mainly with the development of infrastructure, including facilities for sewage and for water and electricity distribution. In 1984, Decree-Law 77/84 established a wide variety of responsibilities for municipalities in terms of investment. These included

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[3]Also for the Portuguese case, but using data for a single year (1989), Pereira ([1996]) concluded that the regressivity in per capita lump-sum intergovernmental grants with respect to community size was due to the structure of the lobbying activities of local governments, and not to hypothetical economies of scale in the production of local public goods.

[4]Municipalities of the autonomous regions of the Azores and Madeira were excluded from the analysis because they are subject to specific rules concerning EU funds. The status of those ultra-peripheral regions allows them to have access to more funds than mainland municipalities.

[5]There are 308 municipalities in Portugal, and there is also an infra-municipal level composed of 4259 counties (*freguesias*). For a description of local governments in Portugal see Silva ([2008]).

sewage, water and energy, transportation and communication, education, culture, leisure and sports, and health. After joining the European Economic Community in 1986, local governments' financial resources were increased substantially by fund coming from the European Regional Policy. The expansion of funding widened local governments' concerns to other areas, including cultural activities and land use planning. It also promoted the establishment of relationships between local governments and foreign entities, namely with the Spanish regions, and participation in pan-European associations, such as the Conference of European Peripheral Maritime Regions, and especially its Atlantic Arc Commission. By the end of the 1990s, there were new extensions of municipal activities (Law n. 159/99) to promote cultural activities, environmental protection, social security, tourism, urban rehabilitation, and attraction of private investment. Finally, in 2007, a new local finance law (Law n. 2/07) was approved expanding municipal responsibilities, particularly in education, health, social services and fighting drug addiction.

Municipalities have budgetary autonomy, but they depend heavily on transfers from the national budget and on EU funds. As can be seen in Table 1, the two main sources of revenue for local governments are transfers from the central government and local taxes. The former represents around one-third of municipalities' revenues, while the importance of the latter has been increasing over time (from 26% in 1992 to 36% in 2006). European Funds for municipalities represented 12% of revenues in 1992 but their relative importance decreased, particularly in the last decade.[6] Local governments do not receive funds directly from the European Commission, but through a management authority of the program, appointed by the central government. It is up to the national government to negotiate with the European authorities the amount of funds to be allocated to the country, through the submission of development plans.

Transfers from the central government are processed through the National Budget and include municipal funds and conditional transfers to finance specific projects that are important for local communities' development, and that they would be unable to fund otherwise. Municipal funds represent municipalies' share of the main national taxes (Personal Income Tax, Corporate Income Tax and Value Added Tax), and are set according to formulas that have changed over time as the different local finance laws were approved.[7] The main local taxes are property taxes, a municipal tax on vehicles, and a municipal tax on firms' profits. Even with the enlargement of competency implemented in the last revision of the Local Finance Law, Portuguese local governments do not have much freedom to set taxes when compared to other local governments belonging to more decentralised countries.[8] Difference in local governments' reliance on central government transfers depend on being a coastal or an interior municipality, since the former are more attractive economically, generating, as such, more tax receipts. Coastal municipalities generated larger property tax revenues, while interior municipalities have to rely mainly on central government grants.

European funds for Portugal have primarily been allocated through various phases of the Community Support Framework (CSF). The first CSF was set for the 1989–1993 period, the second for 1994–1999, the third for 2000–2006, and the current one for 2007–2013. These have been developed under the European Regional Policy, whose objective is to reduce

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[6]European funds appear only in a separate item of municipal accounts from 1992 onwards. Previously, they were reported in the item *Other transfers*.

[7]Refer to Veiga and Pinho (2007) for a description of the frameworks regulating transfers from the central government to municipalities over time.

[8]In Portugal, the economic weight of the local public sector is modest. Local public spending represents less than 7% of GDP and 15% of overall public spending.

Table 1 Main sources of municipalities' revenue

Year	Tax revenue		Rates, property revenue, sales of goods and services		Transfers from the central government		EU funds		Other transfers		Financial liabilities		Other revenue		Total revenue	
	10^6 €	%	10^6 €	%	10^6 €	%	10^6 €	%	10^6 €	%	10^6 €	%	10^6 €	%	10^6 €	%
1991	580.0	26	325.2	15	787.2	35			381.8	17	118.2	5	43.9	2	2236.3	100
1992	693.3	26	417.9	16	895.1	33	310.6	12	142.1	5	151.3	6	64.0	2	2674.4	100
1993	733.0	26	433.1	15	967.4	34	289.9	10	183.0	6	193.4	7	46.7	2	2846.6	100
1994	776.1	27	448.4	16	988.1	34	245.9	9	155.6	5	216.0	8	46.4	2	2876.6	100
1995	909.5	29	494.5	16	1089.6	35	236.3	8	154.3	5	146.5	5	72.5	2	3103.2	100
1996	987.3	28	546.4	16	1211.9	34	327.8	9	147.2	4	178.2	5	120.7	3	3519.5	100
1997	1090.3	26	635.5	15	1262.8	30	410.9	10	218.9	5	342.9	8	201.8	5	4162.9	100
1998	1335.1	29	627.3	14	1353.7	30	394.9	9	233.0	5	427.3	9	167.5	4	4538.6	100
1999	1613.6	32	740.1	14	1494.6	29	419.9	8	332.5	6	380.2	7	139.1	3	5120.0	100
2000	1725.7	32	752.2	14	1636.9	30	308.1	6	330.8	6	470.5	9	150.9	3	5375.1	100
2001	1805.9	28	817.7	13	1858.4	29	547.9	8	324.0	5	804.5	12	304.0	5	6462.3	100
2002	1945.0	28	799.2	11	2074.0	30	497.4	7	442.4	6	1089.9	16	131.8	2	6979.9	100
2003	2033.9	31	740.4	11	2359.5	36	470.3	7	178.1	3	526.0	8	202.4	3	6510.6	100
2004	2253.4	33	776.2	11	2469.2	36	373.0	5	233.9	3	418.6	6	266.7	4	6791.0	100
2005	2402.0	34	927.6	13	2544.0	36	382.7	5	239.5	3	345.0	5	317.5	4	7158.3	100
2006	2482.7	36	866.2	12	2565.3	37	341.2	5	168.7	2	278.0	4	279.9	4	6982.0	100

Source: D.G.A.L. (1991–2006), *Finanças Municipais*

Note: Before 1992, EU funds were included in *Other Transfers*

asymmetries among the European Union's regions, in order to increase social and economic cohesion within its borders.[9] The key instruments for this purpose are transfers to national and sub-national levels, particularly the Cohesion Fund and the Structural Funds. They account for about one-third of the overall budget of the European Union and have, for the period under analysis, three main objectives. Objective One is to promote development and structural adjustment of regions whose development is lagging—more specifically, those whose gross domestic product is below 75% of the Community average. Objective Two aims to revitalise all areas facing structural difficulties, whether industrial, rural, urban or dependence on fisheries. Objective Three is to support the adaptation and modernization of education, training and employment policies and systems in regions not eligible under objective 1. The four structural funds are the European Regional Development Fund, the European Social Fund, the European Agricultural Guidance and Guarantee Fund, and the Financial Instrument for Fisheries Guidance. There are also European Union programs, called community initiatives, which seek joint solutions for specific problems, usually in regions eligible for funds under the economic and social cohesion objectives. During the period under analysis, all Portuguese NUTS II regions were eligible under objective 1, funded by the four structural funds[10] and the cohesion fund.

The selection of projects to be financed with European funds is made by national and regional authorities[11] that are led by members of government or appointed by it. In mainland Portugal, regional authorities are headed by non-elected officials and, therefore, the political regional level is not an outcome of a process of decentralisation but of deconcentration. The organizational model for the assessment and monitoring of all CSF operational programs was first defined by Decree-Law 121-B/90, and amended several times over the years. All of these new intermediate administrative bodies finally were formalized by Decree-Law 54-A/2000 that defines the organic structure for the management, follow up, evaluation and control of CSF III and EU structural interventions for Portugal.

Because there are no regional governments in mainland Portugal, central authorities determined the distribution of funds to municipalities. Despite politically neutral official program goals, political influences may distort the decision process.[12] Rent-seeking activities, particularly with reelection purposes, may appear both at the central and local levels. When negotiating with the European authorities, the National Government may try to obtain a higher quota of the funds, not only to promote regional development, but also to use as a political tool. Local authorities may lobby the central government to extract more funds,[13] especially in local election years, in order to signal competence to their constituents.

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[9]The European Union currently comprises 27 countries, encompassing 271 NUTS II regions. The Nomenclature of Units for Territorial Statistics (NUTS) is instrumental in European Union's Structural Fund delivery mechanisms. It was developed by the EU for referencing the subdivisions of countries for statistical purposes. For each EU member country, a hierarchy of three NUTS levels is established by Eurostat. The subdivisions do not correspond necessarily to administrative divisions within the country.

[10]The Lisbon NUTS II region received only transitional support in 2000–2006, given that it was no longer eligible to receive objective one funds.

[11]After European integration, and with the objective of analyzing the regional impact of EU funds, the Nomenclature of Units for Territorial Statistics (NUTS) was introduced in Portugal. It has three levels: level I is continental Portugal and the two autonomous regions of Azores and Madeira; level II comprehends the five regions where the Coordination Commissions intervene and the two autonomous regions; level III comprehends 30 groups of municipalities (including Azores and Madeira).

[12]See Ruivo (2004) for anecdotal evidence.

[13]The National Association of Municipalities, for example, is an organization created as a pressure group for supporting municipalities' interests.

Table 2 Descriptive statistics

Variables	N Obs.	Average	Standard Deviation	Minimum	Maximum
EU Transfers	4150	38.08	61.96	0	814.65
Political variables:					
Legislative Election Year	4146	.27	.44	0	1
Local Election Year	4146	.27	.44	0	1
Same Party	4149	.41	.49	0	1
Years Mayor in Office	4140	8.19	6.02	1	30
Gov % Votes Previous Election	4140	47.00	12.81	12.91	83.80
Abs. Difference Votes Previous Election	4140	22.25	15.59	.02	76.71
Control Variables:					
Trend	4170	8	4.32	1	15
CSFIII	4170	.47	.50	0	1
Lisbon	4170	.004	.06	0	1
Porto	4170	.004	.06	0	1
Population in thousands	4150	35.10	57.41	1.77	648.26
Population squared in thousands	4150	4526.39	22559.86	3.12	420241
Illiteracy rate	4150	14.19	5.90	3.68	36.83
% households without water	4150	6.39	7.09	.18	72.67
National taxes	4149	78.65	78.78	7.10	735.70
Unconditional Transfers	4150	299.40	209.75	0	1475.14
Municipal Taxes	4148	359.75	521.86	10.32	9509.42
Personal Income Taxes	4150	121.59	140.75	0	2135.78

Sources: DGAL, INE, STAPE, EUROSTAT, and IMF

Note: The EU transfers, GDP, and taxes are always expressed in Euros *per capita* (at 2000 prices)

3 The dataset

The dataset used in the paper covers all municipalities in mainland Portugal (278), from 1992 to 2006. It contains information on municipal accounts, demography, socio-economic characteristics and elections for local and national governments. Table 2 reports descriptive statistics for the variables used in the empirical work.

Data on municipal accounts were obtained from the annual publications of the *Direcção Geral das Autoridades Locais* (the General Management of Municipalities), called *Finanças Municipais* (Municipal Finances), and demographic data from the Portuguese Institute of Statistics (Census and Regional Statistical Yearbooks). The amount of national taxes and personal income taxes (IRS) collected in each municipality, as well as the percentage of households not connected to water or sewage network systems were obtained from the Marktest's *Sales Index* database. For the last two variables data are available only for the census years (1991 and 2001). For the years between 1991 and 2001 observations were interpolated assuming a constant growth rate. For later years the values of 2001 were used. The consumer price index was extracted from the IMF's *International Financial Statistics*. The source of political data is the National Electoral Commission and the Technical Staff for Matters Concerning the Electoral Process (*STAPE*), of the Internal Affairs Ministry.

4 Empirical strategy

Our dependent variable is real EU funds *per capita* received by municipality i in year t ($EU\_Funds_{i,t}$). It is measured in real terms, to control for price increases over time, and defined *per capita* in order to take into account size differences among municipalities. Several political variables characterizing central and local governments, as well as demographic, economic, and social indicators of the municipalities are used as explanatory variables. Lagged values of the dependent variable are included to take into account the autoregressive component of the series. Since the period under analysis (1992–2006) covers several Community Support Frameworks (CSF), a dummy variable for the CSF III (2000–2006) was included to capture specific features of this framework. Subsequent regressions will also be estimated separating the sample for observations within the CSF II (1994–1999) and the CSF III. A time trend (*Trend*) is used to control for time-effects that may affect the distribution of EU funds equally across all municipalities.

The following variables are included to test for political influences on the distribution of EU funds to municipalities:

– *Legislative Election$_{i,t}$* is a dummy variable equal to one in legislative election years, and zero otherwise. This variable tests for grant-funded and electorally motivated pork barrel spending. In order to woo the electorate, the central government may increase grants transferred to municipalities. Thus, a positive coefficient is expected.

– *Local Election Year$_{i,t}$* is a dummy variable that takes the value of one in municipal election years, and zero otherwise. It tests for increases in EU grants during municipal election years. Veiga and Veiga (2007) have found that, in pre-election periods, Portuguese mayors increase expenditures, particularly on items that are highly visible to the electorate, in order to enhance their chances of reelection.[14] If local politicians pressure the central government to obtain more funds to sway voters on Election Day, the coefficient associated with this variable should be positive.

– *Years mayor in office$_{i,t}$* is the number of years a mayor has been in office.[15] It tests the hypothesis that mayors with more experience are also more skilled at seeking and extracting funds from the distributing agency. A positive coefficient is expected.

– *Same Party$_{i,t}$* is a dummy variable that takes the value one when the mayor and the prime-minister belong to the same political party. Since this variable tests Cox and McCubbins's (1986) hypothesis that the grant giver favors his supporters in the allocation of funds, a positive coefficient is expected.

– *Gov % Votes Previous Election$_{i,t}$* measures, for the previous legislative election, the percentage of votes received in the municipality by the party in power in the central government. Under the Cox and McCubbins's (1986) hypothesis, a positive coefficient is also expected for the coefficient associated with this variable.

– *Abs Dif Votes Previous Election$_{i,t}$* is the absolute value of the difference in vote shares in each municipality between the main party in the central government and its principal opponent, in the last legislative election. Following previous research (Hanes 2007; Solé-Ollé and Sorribas-Navarro 2008), this variable allows us to test whether the distribution agency targets swing municipalities (Lindbeck and Weibull 1987; Dixit and Londregan

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[14]Baleiras and Costa (2004) also find evidence of political business cycles for Portuguese municipalities.

[15]There were no term limits during the period under analysis.

1998).[16] A negative coefficient would be consistent with the hypothesis of municipalities with competitive races being favored in the distribution of grants. This variable therefore proxies swing municipalities, that is, those where support for two parties is rather evenly divided, so that the municipality as a whole may swing one way or another across elections.[17]

In order to take the local population's needs and the wealth of the municipality into account, several variables described below were considered. They are lagged one year, because data are not immediately reported and available to policymakers.

– $Population_{i,t-1}$ and $Population\ squared_{i,t-1}$ represent, respectively, the number of inhabitants in a municipality, in thousands, and its squared value, in the previous year. If there are economies of scale in the provision of local public goods, *per capita* grants are expected to decrease with a community's size (a negative coefficient), but diseconomies may arise after a certain value. Therefore, a U-shaped relationship between grants and population is expected.

– $Lisbon_{i,t}$, and $Oporto_{i,t}$ are dummies for Portugal's two largest municipalities. These cities are likely to generate spillovers to neighboring jurisdictions, and therefore, efficiency considerations suggest they should have, other things equal, greater *per capita* grants. However, given that they are wealthy municipalities, if funds are aimed at promoting equity they would receive fewer *per capita* grants.

– $Illiteracy\ rate_{i,t-1}$ is the percentage of illiterates in the municipality's population, in the previous year. This is a proxy for the municipality's level of development. Given that a major objective of EU funds is to reduce disparities among regions, a positive sign is expected for the coefficient associated with this variable.

– $\%\ Households\ without\ water_{i,t-1}$ measures the percentage of households that are not connected to water network systems. Since EU structural funds are aimed, partially, at improving infrastructure in areas of competence of local governments, a positive sign is expected for this variable.

– $National\_taxes_{i,t-1}$ is national taxes *per capita* collected in the municipality, in the previous year. The three main taxes collected by the national government are the value added tax, the personal income tax and the corporate income tax. This variable is a proxy for the municipality's wealth and, therefore, a negative sign is expected for the coefficient associated with it, if grants are distributed to reduce disparities.

The empirical model can be described by the following equation:

$$y_{i,t} = \sum_{j=1}^{p} \alpha_j y_{i,t-j} + \mathbf{X}'_{i,t}\boldsymbol{\beta} + v_i + \varepsilon_{i,t} \quad i = 1, \ldots, N, \ t = 1, \ldots, T \tag{1}$$

where, $y_{i,t}$ is the dependent variable, p is the number of lags of the dependent variable, $\mathbf{X}'_{i,t}$ is a vector of explanatory variables, α and $\boldsymbol{\beta}$ are vectors of parameters to estimate, v_i is the individual effect of municipality i, and $\varepsilon_{i,t}$ is the error term.

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[16]Although some studies (i.e., Case 2001) used the vote share for the winning party less 50% to capture the swing community effect, this proxy is misleading for the Portuguese case since there are more than two parties.

[17]Alternatively to the identification of swing communities, Johansson (2003) proposed a method to estimate the proportion of swing voters using survey election data. This method can not be implemented for Portugal because no survey election data covering all municipalities and the whole period analyzed is available.

The model could be estimated using the Ordinary Least Squares method, assuming that municipal-specific effects as fixed or random. However, in a linear dynamic panel model, when the sample shows a clear dominance of the number of individuals over time periods, this procedure generates inconsistent estimates of the model's parameters, if the lagged value of the dependent variable is correlated with the error term. This is the case of the panel dataset under analysis, which includes 278 municipalities and 15 years of observations. Arellano and Bond (1991) have developed a Generalized Method of Moments (GMM) estimator to overcome the problems mentioned above. Since there is persistence in the series, the extended version of the GMM estimator for dynamic datasets proposed by Blundell and Bond (1998), the system-GMM estimator, will be used in the empirical work.

5 Empirical results

Estimation results for the model described in the previous section, using the system-GMM method for linear dynamic panel data models,[18] are shown in Table 3. T-statistics are presented in parentheses and the degree of statistical significance is signalled with asterisks. The number of observations and municipalities, the results of the autocorrelation tests, and the p-value of the Hansen test for the validity of the over-identifying restrictions are reported at the bottom of the table.

Column one presents the results for the baseline model. The first lag of the dependent variable is statistically significant, suggesting that there is persistence in the amount of EU funds received by municipalities.[19] The estimated coefficient associated with the trend variable is positive but turned out not to be statistically significant. The dummy for the third Community Support Framework is highly statistically significant, revealing that grants received during CSF III were significantly larger than in the previous frameworks. The dummies for the municipalities of the two main Portuguese cities turned out not to be statistically significant, although the dummy for Lisbon has a p-value close to 0.10, and is marginally statistically significant in the subsequent regressions.[20] As anticipated, there is a U-shaped relationship between EU funds *per capita* and the number of inhabitants. Funds increase as the size of the municipality increases, until the population reaches about 400,000 inhabitants. The coefficient associated with the illiteracy rate is highly statistically significant and positive, suggesting that more grants are allocated to less socially developed communities. However, contrary to our expectations, the percentage of households not connected to water network systems is negatively signed and statistically significant.[21] The *per capita* amount of taxes the national government collects in the municipality, used to proxy *per capita* income within the municipality, does not seem to influence the allocation process.

The results also provide strong evidence of political motivations in the distribution of grants. There is a large increase in grant funds distributed during local election years (approximately 19 Euros *per capita*), an increase of 51% relative to the sample mean (38.08 Euros). Furthermore, grants favor political supporters of the parties in power nationally. The

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[18]The two-step results, using robust standard errors corrected for finite samples, are presented. The software used in the estimations was Stata 10.1.

[19]The choice of the number of lags to include was based on their statistical significance and on the need to avoid second-order autocorrelation of the residuals.

[20]Dummies for the other NUTS II region capitals (Coimbra, Faro and Évora) were also tested in the regressions but never turned out to be statistically significant.

[21]Alternatively, the percentage of households not connected to sewage systems was also tested and generated similar results. These two variables cannot be included simultaneously since they are correlated at 76%.

Table 3 EU transfers to Municipalities (GMM)

	(1)	(2)	(3)	(4)	(5)
EU Transf (−1)	0.445***	0.44***	0.44***	0.44***	0.44***
	(15.37)	(15.55)	(15.56)	(15.86)	(15.52)
Trend	0.59	0.30	0.28	0.37	0.29
	(1.51)	(0.81)	(0.74)	(0.99)	(0.81)
CSF III	26.98***	31.35***	31.20***	31.59***	31.59***
	(6.76)	(9.08)	(9.39)	(9.32)	(8.51)
Lisbon	−66.74	−78.18*	−76.61*	−72.31*	−85.10*
	(−1.22)	(−1.90)	(−1.65)	(−1.88)	(−1.86)
Porto	16.07				
	(0.81)				
Population (−1)	−0.25***	−0.25***	−0.25***	−0.25***	−0.26***
	(−4.32)	(−5.32)	(−4.60)	(−5.59)	(−5.18)
Population squared (−1)	0.0006***	0.0006***	0.0006***	0.0006***	0.0007***
	(2.88)	(3.71)	(3.20)	(4.00)	(3.56)
Illiteracy rate(−1)	1.20***	1.21***	1.15***	1.27***	1.19***
	(5.30)	(5.44)	(5.55)	(6.17)	(4.74)
% Households without water (−1)	−0.53***	−0.51***	−0.47**	−0.52***	−0.50***
	(−2.74)	(−2.81)	(−2.42)	(−3.17)	(−2.91)
National taxes (−1)	−0.002	−0.002	−0.002	−0.002	−0.002
	(−0.94)	(−1.24)	(−1.05)	(−1.14)	(−1.17)
Legislative election year	0.46				
	(0.23)				
Legislative Election Year (1995 & 1999)		7.14***	6.99***	7.26***	
		(6.04)	(5.92)	(6.05)	
Local Election Year	19.44***	20.70***	20.69***		20.62***
	(10.38)	(10.52)	(10.29)		(10.18)
Years Mayor in Office	−0.07				
	(−0.59)				
Same party	2.15	2.47	3.04		
	(0.89)	(1.10)	(1.30)		
Gov %Votes Previous election	0.27**	0.27**		0.31***	0.29***
	(2.33)	(2.57)		(3.04)	(2.84)
Abs Dif Votes Previous Election	−0.16*	−0.14*	0.01	−0.14*	−0.15*
	(−1.80)	(−1.65)	(0.20)	(−1.76)	(−1.93)
Local El. Year* Same Party				19.62***	
				(6.71)	
Local El. Year* Diff. Party				21.94***	
				(7.61)	
Leg. El. Year (1995&1999)* Same Party					8.45***
					(5.08)
Leg. El. Year (1995&1999)* Diff. Party					6.40***
					(5.30)
N. Observations	3853	3853	3853	3853	3853

Table 3 (*Continued*)

	(1)	(2)	(3)	(4)	(5)
N. Municipalities	278	278	278	278	278
Hansen Test (*p*-value)	0.97	0.94	0.92	0.93	0.93
ar1	-6.66^{***}	-6.65^{***}	-6.62^{***}	-6.66^{***}	-6.60^{***}
ar2	0.87	0.84	0.83	0.85	0.84

Sources: DGAL, STAPE, OECD and INE

Notes: – *T*-statistics are between parentheses. Significance level for which the null hypothesis is rejected: ***1%; **5%; and *10%

– Two-step results using robust standard errors corrected for finite samples for estimations of system-GMM linear models for panel data (which combine the equations in first-differences with the equations in levels) and the software Stata 10.1

– m1 and m2 are tests for first-order and second-order serial correlation in the first-differenced residuals, asymptotically distributed as $N(0,1)$ under the null of no serial correlation. Hansen is a test for the validity of the over-identifying restrictions for the GMM estimators, asymptotically χ^2. *P*-value is reported

percentage of votes within the municipality that favored parties in central government in the last election is both positive and statistically significant. The variable used to proxy swing municipalities (*Abs Dif Votes Previous Election*) is marginally statistically significant. The positive sign of its coefficient indicates that municipalities received more grants when the party in office had won by a narrower margin in the preceding election. The results show no evidence that funding is greater in legislative election years. This is not surprising, given that two of the four elections in the sample period took place before the mandatory expiration of the current term, and early in the year (March 2002 and February 2005).[22] Funding does not depend on the years of experience of the mayor, or on party similarity of the mayor and the prime minister.

Column two reports results for a slightly different specification. The dummy for Porto and the variable measuring the number of years the mayor has been in office were dropped from the regressions since they were never statistically significant in subsequent regressions.[23] Since incumbent governments did not complete their terms preceding the 2002 and 2005 elections, the dummy variable *Legislative Election Year* was replaced in column two by the dummy *Legislative Election Year (1995 & 1999)*, which only takes the value of one only in 1995 and 1999. The latter dummy is now highly statistically significant, indicating that there is clear evidence of opportunistic manipulation of grants in those election years. The remaining results reported in column two are very similar to those of column 1. The exception is that the dummy for Lisbon is now marginally statistically significant. Its negative sign reveals that equity considerations prevail in the distribution of EU funds. Although Lisbon may generate spillovers to neighboring jurisdictions, it is a wealthy municipality. If EU funds are aimed at reducing regional disparities, Lisbon should receive fewer funds than the average municipality.

To test for the robustness of the result that party alignment between the Mayor and the Prime-Minister have no effect in the allocation of EU funds, $Gov\%Votes_{i,t}$ was dropped

[22]The 2002 election was precipitated by the resignation of government in December 2001, due to the poor results obtained by the ruling Socialist party in the municipal elections. The 2005 election resulted from the dismissal of the government by the President of the Republic.

[23]These variables are never statistically significant when included in the estimations and the results are not affected by dropping it. Furthermore, Wald tests allow for their exclusion.

from the set of independent variables. This was done because these two variables may be measuring a similar effect. As can be seen in column 3, the dummy $Same Party_{i,t}$ continues not to be statistically significant, and therefore, it was excluded from the subsequent regressions.[24] In column 4, the dummy variable for the local election years was interacted with dummy variables indicating whether the party of the mayor is or is not identical to the party of the Prime-Minister. This modification of the model permits a test of the hypothesis that mayors belonging to the prime-minister's party are especially favored in local election years. Both estimated coefficients are significantly different from zero, but a Wald test fails to reject the hypothesis that they are equal. The same interaction was constructed with the dummy for the 1995 and 1999 legislative election years, in column 5. Again, a Wald test does not allow the rejection of the hypothesis that the coefficients estimated for the interactions are equal.

The estimations whose results are reported in Table 4 include other variables that proxy municipal income and local governments' financial resources, besides the *per capita* amount of taxes collected by the national government in the municipality. In column 1, *National Taxes* was replaced by the real *per capita Personal Income Taxes* collected in the municipality, which also turned out not to be statistically significant. This result is not surprising given that the correlation between this variable and *National taxes* is 0.7. Since EU supported projects require co-funding by the local government, we added to the model (see column 2) the two main sources of revenues for local governments: the real *per capita* amount of unconditional transfers from the central government, received by the municipality in the previous year ($Transfers\_Unc\_Gov_{i,t-1}$), and the real *per capita* amount of local taxes collected in the previous year ($Municipal\ Taxes_{i,t-1}$). The results indicate that there is a positive relationship between revenue-sharing from taxes collected by the national government and EU funding, suggesting that local governments having more financial resources receive more EU funds. This is not surprising if we take into account that projects funded by the EU require co-funding with local resources. If we exclude $Personal\ Income\ Taxes_{i,t-1}$ from the regression (column 3), *Municipal Taxes* also shows up as statistically significant, reinforcing this conclusion.[25] Another explanation for the previous results is that municipalities receiving more *per capita* unconditional transfers are those that are less developed and, therefore, the central government is using both types of funds to reduce economic disparities among municipalities.

Since the Lisbon region is the wealthiest and most dynamic of the Portuguese NUTS II regions, we tested whether the results change if the municipalities of the *Lisbon and Tagus Valley* region are excluded from the sample. Estimation results presented in columns four and five are essentially the same as those reported in the previous columns (for the entire sample). Therefore, the results do not seem to be driven by Lisbon and Tagus Valley.

The next step of the empirical analysis was to estimate the model of column three of Table 4 for each of the five NUTS II regions of continental Portugal. The results are presented in Table 5. Consistent with the results shown in previous tables, there is clear evidence of an increase in grant transfers in local election years. The only exception is the *Algarve* region, for which the coefficient of the dummy for the local election year is not statistically significant. But, it should be noted that the estimation for *Algarve* has a much smaller number of observations than those for the other regions and only the lagged dependent variable is

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[24]This variable is never statistically significant when included in the estimations and the results are not affected by dropping it. Furthermore, Wald tests allow its exclusion.

[25]Personal income taxes and municipal taxes are correlated at 0.42.

Table 4 EU transfers to municipalities—additional results

	(1)	(2)	(3)	(4)	(5)
	All municipalities			Without the Lisbon and Tagus Valley region	
EU Transf (−1)	0.44***	0.37***	0.37***	0.44***	0.38***
	(15.86)	(13.46)	(13.40)	(14.04)	(12.20)
Trend	0.36	−1.00**	−1.03**	0.52	−0.96**
	(1.02)	(−2.33)	(−2.35)	(1.25)	(−2.06)
CSF III	32.26***	31.79***	32.10***	33.01***	33.28***
	(10.27)	(9.20)	(8.94)	(9.06)	(8.92)
Lisbon	−93.82**	−35.96*	−37.50**		
	(−2.42)	(−1.85)	(−2.16)		
Population (−1)	−0.26***	−0.13***	−0.13***	−0.35***	−0.12**
	(−5.51)	(−3.44)	(−3.28)	(−4.36)	(−2.47)
Population squared (−1)	0.0006***	0.0003***	0.0002***	0.001**	0.0002*
	(4.06)	(2.57)	(2.58)	(2.55)	(1.68)
% Households without water (−1)	−0.47***	−0.31***	−0.31**	−0.35*	−0.20
	(−2.79)	(−2.43)	(−2.55)	(−1.93)	(−1.61)
Illiteracy rate (−1)	1.31***	−0.29	−0.29	1.21***	−0.18
	(6.04)	(−0.96)	(−0.94)	(4.65)	(−0.59)
Personal Income Taxes (−1)	0.005	0.001		0.01	
	(0.60)	(0.15)		(0.90)	
Transfers_Unc_Gov (−1)		0.08***	0.08***		0.08***
		(5.69)	(5.58)		(5.83)
Municipal Taxes (−1)		0.02	0.02*		0.03**
		(1.45)	(1.81)		(2.48)
Legislative Election Year (1995 & 1999)	7.40***	7.21***	7.28***	6.60***	6.63***
	(6.31)	(6.35)	(6.41)	(5.34)	(5.62)
Local Election Year	21.08***	19.48***	19.60***	21.15***	20.22***
	(10.47)	(9.69)	(9.99)	(10.26)	(10.41)
Gov %Votes Previous election	0.32***	0.31***	0.31***	0.28**	0.27**
	(3.09)	(3.06)	(3.02)	(2.35)	(2.45)
Abs Dif Votes Previous Election	−0.15*	0.17**	−0.17**	−0.13	−0.14**
	(−1.81)	(−2.37)	(−2.35)	(−1.41)	(−1.97)
Constant	−24.18***	−15.33**	−15.07**	−23.30**	−18.82**
	(−3.27)	(−2.34)	(−2.23)	(−2.39)	(−2.29)
N. Observations	3853	3853	3853	3152	3152
N. Municipalities	278	278	278	227	227
Hansen Test (p-value)	0.90	0.91	0.89	0.94	0.91
ar1	−6.64***	−6.57***	−6.58***	−6.33***	−6.30***
ar2	0.85	0.36	0.37	1.14	0.77

Sources: DGAL, STAPE, OECD and INE

Notes: – T-statistics are between parentheses. Significance level for which the null hypothesis is rejected: ***1%; **5%; and *10%

– Two-step results using robust standard errors corrected for finite samples for estimations of system-GMM linear models for panel data (which combine the equations in first-differences with the equations in levels)

– m1 and m2 are tests for first-order and second-order serial correlation in the first-differenced residuals, asymptotically distributed as $N(0,1)$ under the null of no serial correlation. Hansen is a test for the validity of the over-identifying restrictions for the GMM estimators, asymptotically χ^2. P-value is reported

Table 5 Results for the NUTS II regions

	(1) North	(2) Center	(3) Lisbon and Tagus valley	(4) Alentejo	(5) Algarve
EU Transf (−1)	0.36***	0.70***	0.26***	0.30***	0.03
	(7.40)	(5.13)	(5.93)	(4.65)	(0.09)
EU Transf (−2)		0.032			
		(0.31)			
Trend	−0.72	−3.10***	−0.59	3.03**	84.23
	(−1.12)	(−5.95)	(−1.12)	(2.30)	(1.39)
CSF III	17.00***	27.95***	22.48***	33.61***	135.5
	(3.09)	(5.58)	(2.91)	(4.42)	(0.14)
Lisbon			25.14		
			(0.36)		
Population (−1)	−0.08	0.13	−0.004	−0.79	20.34
	(−0.85)	(0.94)	(−0.03)	(−0.79)	(0.43)
Population squared (−1)	0.0001	−0.0006	−5.28e−05	0.007	−0.25
	(0.52)	(−0.73)	(−0.14)	(0.50)	(−0.40)
% Households without water (−1)	0.39	−0.55	−0.09	0.55	137.3
	(0.68)	(−1.60)	(−0.12)	(0.57)	(1.38)
Illiteracy rate (−1)	−0.08	−0.27	−1.37**	−0.30	−33.55
	(−0.40)	(−1.55)	(−1.97)	(−0.85)	(−1.31)
Transfers_Unc_Gov (−1)	0.07***	0.06***	0.15***	0.02	−1.58
	(2.93)	(2.82)	(2.90)	(1.08)	(−1.32)
Municipal Taxes (−1)	0.032	−0.03	−0.03	−0.12	0.07
	(1.32)	(−0.97)	(−0.83)	(−1.10)	(0.21)
Legislative Election Year (1995 & 1999)	1.28	7.28***	7.56***	4.29	833.5
	(0.57)	(3.50)	(3.34)	(1.18)	(0.32)
Local Election Year	18.58***	22.36***	14.60***	25.54***	56.71
	(6.43)	(6.74)	(2.70)	(4.40)	(1.03)
Gov %Votes Previous election	−0.16	0.004	0.58*	0.96***	12.29
	(−0.67)	(0.02)	(1.73)	(3.25)	(1.23)
Abs Dif Votes Previous Election	−0.23	−0.06	−0.26	−0.48	−3.81
	(−1.13)	(−0.91)	(−1.16)	(−1.38)	(−0.96)
Constant	5.27	11.46	−26.82*	−42.46	−2,77
	(0.35)	(1.02)	(−1.69)	(−1.61)	(−0.94)
N. Observations	1178	1014	701	658	224
N. Municipalities	86	78	51	47	16
Hansen Test (p-value)	0.99	0.99	0.99	0.99	1
ar1	−4.17***	−3.60***	−2.31***	−2.98***	−0.34
ar2	0.02	1.59	−1.00	−0.17	0.33

Sources: DGAL, STAPE, OECD and INE

Notes: – T-statistics are between parentheses. Significance level for which the null hypothesis is rejected:
   ***1%; **5%; and *10%
 – Two-step results using robust standard errors corrected for finite samples for estimations of system-GMM linear models for panel data (which combine the equations in first-differences with the equations in levels)
 – m1 and m2 are tests for first-order and second-order serial correlation in the first-differenced residuals, asymptotically distributed as $N(0,1)$ under the null of no serial correlation. Hansen is a test for the validity of the over-identifying restrictions for the GMM estimators, asymptotically χ^2. P-value is reported

statistically significant. The evidence for increases in transfers in legislative election years is weaker, as the dummy for the 1995 and 1999 elections is only statistically significant for the regions of *Center* and *Lisbon and Tagus Valley*. Furthermore, evidence that governments favor politically supportive municipalities is present only for the *Alentejo*'s region estimation. The proxy for swing municipalities is statistically insignificant in all of the estimations that control for regions. Regarding the normative determinants of EU funds, unconditional transfers received by municipalities seem to exert a positive influence in the North, Center, and Lisbon and Tagus Valley regions.

The last empirical exercise performed, which is reported in Table 6, was to estimate the same model for the different Community Support Frameworks (CSF). This was also a way of checking whether or not results change across time. Column one shows the results obtained when the sample is restricted to the first two CSFs. In fact, since data on transfers of EU funds start only in 1992, the sample used in the estimation of column one covers the period 1992–1999. The results clearly show that grant transfers to municipalities increase in local election years, and there is also support for the hypothesis that governments that target swing municipalities and those where they have the largest voter support. Finally, there is no evidence that transfers increase in legislative election years. Virtually identical results are obtained when the sample is restricted to the period under CSF II, 1994–1999 (see column 2).

The results obtained for CSF III (2000–2006) are reported in column 3. Again, they are supportive of the hypothesis that grant transfers increase in local election years. In fact, the estimated coefficient is much larger than in columns one and two, indicating that the opportunistic manipulation of grant transfers was larger in the period 2000–2006 than in previous years.[26] The results concerning legislative elections are exactly the opposite, as the estimated coefficient for *Legislative Election Year* is negative and statistically significant. This means that transfers of EU funds to municipalities where smaller in the election years of 2002 and 2005 than in the non-election years of the period covered by the CSF III. As mentioned above, those two legislative elections occurred at the beginning of the year (February and March), after the fall of the respective governments prior to the end of their terms. Since the premature ends of the mandates were not anticipated, there was no room for opportunistic manipulation of EU funds transferred to municipalities. The results for this period (2000–2006) also indicate that governments targeted the municipalities where they enjoyed greater support, but did not target swing municipalities. The coefficient associated with the percentage of votes the parties in central government had in the previous election is much larger than in the previous CSFs.

6 Conclusions

Portugal's entry into the European Community in 1986 allowed local governments to benefit from EU funds. These transfers significantly increased their revenues, contributing to an expansion in the scope of their activities and to an improvement of local communities' welfare. However, this paper has shown that political factors also affect the allocation of European Union funds to Portuguese local governments. Econometric results based on a panel of municipalities over a 15-year period reveal that the amount of EU funds *per capita* transferred

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[26]This result is consistent with the findings of Veiga and Pinho (2007), who show that the opportunistic manipulation of total grants transferred to Portuguese municipalities is greater in the later years of their sample.

Table 6 Results for the community support frameworks

	(1) CSF I & II 1992–1999	(2) CSF II 1994–1999	(3) CSF III 2000–2006
EU Transf (−1)	0.59***	0.57***	0.40***
	(13.61)	(10.96)	(14.12)
Trend	0.37***	0.41***	−1.93***
	(3.24)	(3.20)	(−3.11)
Lisbon	−13.36	−17.67***	−56.96**
	(−1.03)	(−3.36)	(−2.00)
Population (−1)	−0.02*	−0.046***	−0.24***
	(−1.85)	(−3.65)	(−3.73)
Population squared (−1)	7.91e−05	0.0001***	0.0005***
	(1.47)	(3.54)	(2.87)
% Households without water (−1)	−0.01	−0.01	−1.24*
	(−0.32)	(−0.26)	(−1.86)
Illiteracy rate (−1)	0.08	0.068	0.31
	(0.75)	(0.88)	(0.43)
Transfers_Unc_Gov (−1)	0.01***	0.01**	0.08***
	(2.77)	(2.16)	(5.12)
Municipal Taxes (−1)	0.008*	0.005	0.03*
	(1.74)	(1.16)	(1.82)
Legislative Election Year (1995 & 1999)	0.14	−0.005	
	(0.24)	(−0.009)	
Legislative Election Year			−13.80***
			(−4.53)
Local Election Year	2.57***	2.86***	41.12***
	(3.56)	(3.63)	(10.76)
Gov %Votes Previous election	0.19***	0.16***	0.46**
	(4.07)	(4.15)	(2.36)
Abs Dif Votes Previous Election	−0.15***	−0.13***	−0.06
	(−3.18)	(−4.26)	(−0.38)
Constant	−7.62***	−4.92***	11.69
	(−3.79)	(−2.72)	(0.81)
N. Observations	1925	1650	1928
N. Municipalities	275	275	278
Hansen Test (p-value)	0.84	0.88	0.81
ar1	−5.53***	−5.37***	−6.18***
ar2	0.26	0.25	0.32

Sources: DGAL, STAPE, OECD and INE

Notes: – *T*-statistics are between parentheses. Significance level for which the null hypothesis is rejected: ***1%; **5%; and *10%

– Two-step results using robust standard errors corrected for finite samples for estimations of system-GMM linear models for panel data (which combine the equations in first-differences with the equations in levels)

– m1 and m2 are tests for first-order and second-order serial correlation in the first-differenced residuals, asymptotically distributed as $N(0,1)$ under the null of no serial correlation. Hansen is a test for the validity of the over-identifying restrictions for the GMM estimators, asymptotically χ^2. *P*-value is reported

to local governments increases significantly during election years. Furthermore, funds seem to be used strategically by the central government to win local political races. There is evidence of grant increases for the two legislative election years (1995 and 1999) that preceded mandatory elections. Further, the distribution of grant funding is skewed towards municipalities with more competitive races and where the parties in central government have stronger political support.

The results complement Veiga and Pinho's (2007) conclusion that, even when democracy was well established in the country, opportunistic effects in the distribution of general intergovernmental transfers in Portugal were strong, particularly during periods of political stability when incumbents could plan and implement electoral policies. However, they differ from Veiga and Pinho's (2007) finding that tactical manipulation of general grants is present only during the early years of democracy (1979–1988). For European Union funds, there is evidence of tactical redistribution over the entire period covered in the paper (1992 to 2006), and during the third Community Support Framework favoritism towards municipalities supportive of the central government is larger. It is possible that as democracy matured and general transfers (mainly unconditional) become more clearly formula based, tactical manipulation shifted to other types of grants, namely matching grants, such as EU funds. Given the importance of European Union funds to local governments and the normative objectives that underlie their allocation to the country, more transparency in the distribution process would be desirable. Research for other countries would also be desirable in order to determine whether the political influence found herein is common across other EU members.

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