



Universidade do Minho

Documentos de Trabalho  
Working Paper Series

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**NIPE WP 8 / 2005**

NÚCLEO DE INVESTIGAÇÃO EM POLÍTICAS ECONÓMICAS  
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**URL:**

<http://www.eeg.uminho.pt/economia/nipe/documentostrabalho.php>

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\* NIPE – *Núcleo de Investigação em Políticas Económicas* – is supported by the Portuguese Foundation for Science and Technology through the *Programa Operacional Ciência, Tecnologia e Inovação* (POCTI) of the *Quadro Comunitário de Apoio III*, which is financed by FEDER and Portuguese funds.

# The Political Economy of Portuguese Intergovernmental Grants

by

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## ***Abstract:***

We use a large and unexplored dataset covering all mainland Portuguese municipalities from 1979 to 2002 to evaluate the impact of political forces in the allocation of grants from the central government to local authorities. Empirical results clearly show that, besides variables that proxy local populations' needs and the macroeconomic situation of the country, political variables condition the granting system: (1) grants increase in municipal and legislative election years; (2) the larger the number of years a mayor has been in office, the larger the amount of funds transferred to his/her municipality. These effects are particularly strong for grants that are not formula-determined.

***JEL classification:*** H77, H59, D72

***Keywords:*** grants, intergovernmental relations, political economy, Portugal

\* We acknowledge helpful comments from Francisco Veiga, Henry Chappell and Paulo Trigo Pereira. Linda G. Veiga also expresses her gratitude for financial support provided by the Portuguese Foundation for Science and Technology under research grant POCTI/2001/ECO/37457 (partially funded by FEDER). Finally, this paper benefited from the efficient research assistance of Diana Lima.

## 1. Introduction

This article's main objective is to evaluate the influence of political forces on the allocation of Portuguese intergovernmental grants. Portugal is an interesting case study for several reasons: (1) it is a recent democracy and, to date, most research on intergovernmental grants has been on long-standing democracies; (2) transfers from the Central Administration represent the main source of funding of municipalities<sup>1</sup>; (3) the institutional structure of local governments and the policy instruments available are identical for all localities; and finally, (4) we have a large, detailed, and unexplored dataset covering all mainland municipalities over a twenty four year period.

We model the central government's behavior in the grants allocation process to municipalities as a function of variables reflecting the twofold desire to improve social welfare and the government's self-interests. Results of estimations performed on a dataset covering all mainland municipalities over the 1979 to 2002 period, using the system-generalized method of moments (system-GMM) for linear dynamic panel data models, allow us to conclude that both social welfare and political variables condition the allocation process. There is strong empirical evidence of grant increases in municipal and legislative election years. Furthermore, municipalities ruled by mayors who had been in office for a longer period were favored in the grants distribution process. These effects are particularly strong for grants that are not formula-determined.

The paper is structured as follows. Section 2 briefly reviews recent contributions to the literature on this topic. Section 3 describes the institutional framework in which the flow of intergovernmental grants from the central to municipal governments is determined. Sections 4 and 5 describe the dataset and the empirical model, respectively. Section 6 presents the empirical results and, finally, section 7 concludes the paper.

## 2. The literature

The theory of fiscal federalism<sup>2</sup> provides a normative framework for the assignment of functions to different levels of the public sector, as well as for the achievement of a balance between responsibilities and resources of each governmental level. Different levels of government typically have access to tax and debt instruments, but there is another important way to allocate funds among different levels of the public sector: intergovernmental grants. The normative approach to such grants assumes that the central government is mainly motivated by efficiency and equity goals, seeking the maximization of the general welfare of the population. Efficiency may result from the internalization of spillover benefits to other jurisdictions deriving from the production of a local public good and from improvements in the overall tax system. Intergovernmental transfers can also be used to promote fiscal equalization by channeling funds from wealthy jurisdictions to poorer ones. In this context, the settlement of grants is mainly supported by formulas, which use indicators of the needs of the population and of the local fiscal capacity.

The economic literature has also provided some positive explanations for the allocation of intergovernmental grants. Among these, the approaches that emphasize the importance of political factors deserve particular attention. In this view, the policies conducted by the central government are determined, at least partly, by its attempt to promote its own interests and by lobbying activities.

When choosing among alternative policies, a government will adopt the one that maximizes its utility, which might simply depend upon the probability of reelection. In

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<sup>1</sup> Since there are no states or administrative regions in mainland Portugal, municipalities are the highest ranking authorities below the national government.

<sup>2</sup> See Oates (1999) for a survey on fiscal federalism.

this context, the economic literature has analyzed the allocation of intergovernmental grants as a strategic tool of central governments aimed at re-election. This is in accordance with the literature on rational political business cycles and “pork-barrel” politics<sup>3</sup>.

Previous empirical research has investigated a number of hypotheses related to the political forces that affect the amount and distribution of intergovernmental grants. Worthington and Dollery (1998) tested whether the aggregate amount of resources diverted to local jurisdictions differ in national electoral years, and other research has investigated a series of hypotheses related to the political forces that affect the distribution of grants across municipalities. First, researchers have tested whether central governments reward their supporters, who are more likely to distribute “pork” and engage in political patronage, or their opponents, whom they might wish to “buy off” (Gist and Hill, 1984; Alperovich, 1984; Bungey *et al.*, 1991; Grossman, 1994; Pereira, 1996; Worthington and Dollery, 1998). Second, others have investigated whether jurisdictions with a larger or smaller representation at the national parliament are treated differently, either because they have larger population and, therefore, more political capital available (votes), or, because they have a smaller population, and therefore potential for a larger increase in *per capita* grant benefits (Wright, 1974; Bungey *et al.*, 1991; Grossman, 1994; Worthington and Dollery, 1998; Porto and Sanguinetti, 2001). Third, it is possible that jurisdictions with more competitive races for the national government or with more swing voters receive a higher proportion of intergovernmental grants, other things equal (Wright, 1974; Bungey, *et al.*, 1991; Case, 2001; Johansson, 2003). Finally, others have tested whether jurisdictions where the

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<sup>3</sup> According to rational opportunistic business cycles models, such as those presented in Rogoff and Sibert (1988) and Rogoff (1990), incumbents relax fiscal policy before balloting periods to increase their reelection chances. See Drazen (2000: 327-331) for an explanation of “pork-barrel” politics.

party in the national government received a higher proportion of votes in legislative elections receive more resources (grants) because they are considered “pivotal” to win a majority of seats in the national parliament (Case, 2001).

Deviations from normative considerations in the allocation of grants may also result from lobbying activities. First, local politicians may pressure the central government to transfer a larger amount of resources during local election years in order to have more funds available for campaigning (Worthington and Dollery, 1998). Second, the design of grant distribution formulae is subject to political pressures since it results from negotiations between central and local governments (Grossman, 1994; Pereira, 1996). Third, interest groups, such as public employees and unions, may lobby to be benefited in the distribution of grants that are not formula-determined (Grossman, 1994; Feld and Schaltegger, 2003; Bork and Owings, 2003; Lowry and Potoski, 2004). Fourth, the costs supported by local governments to lobby the central government may vary according to the geographical and “political” distance from the central government capital (Bork and Owings, 2003). Fifth, fiscal referenda may restrict the impact of interest groups in the determination of intergovernmental grants (Feld and Schaltegger, 2003).

With the exception of Bungey *et al.* (1991), all the above-mentioned studies present considerable evidence that politics matter in the intergovernmental grants allocation process. To our knowledge, there is only one article, Pereira (1996), that investigates the determinants of intergovernmental grants in Portugal using a political-economic approach. Pereira (1996) introduced a new argument: the regressivity or progressivity of *per capita* lump-sum grants towards community size is related mainly to the structure of the lobbying activities of local governments and is independent of hypothetical economies or diseconomies of scale in the production of local public

goods. An empirical analysis was conducted on 186 Portuguese municipalities with 1989 data for formula grants. The findings supported the political-economic approach and rejected the hypothesis that economies of scale are the main explanatory cause for the observed regressivity of *per capita* lump-sum grants.

In this paper we try to shed some additional light on the influence of political forces in the Portuguese granting system. We enlarge Pereira's analysis by investigating several hypotheses that he did not and by using a much larger dataset, both in cross-sectional and temporal terms. We use as our laboratory all the mainland Portuguese municipalities (278) for the 1979 to 2002 period. Furthermore, we have data on non-formula grants and on total grants.

### **3. The Portuguese political and institutional framework**

Democracy was re-established in Portugal after the April 25<sup>th</sup>, 1974 revolution. From 1974 to 1987, several governments ruled, but none succeeded in staying in office for an entire term. In the 1987 elections, after two years in office as a minority government, a single party - the People's Democratic Party / Social Democratic Party (PPD/PSD) - won a majority of seats for the first time since the re-establishment of democracy. It repeated the majority in the subsequent balloting held in 1991. At the end of 1995, the party in office changed again: the socialist party (PS) won the elections and stayed in office until 2002. After that, the country was ruled by a coalition formed by PSD and CDS/PP. Following a Presidential dismissal of the government, elections were called for February 2005. The country is currently run by the socialist party, which has a comfortable overall majority of seats in the National Assembly. See table 1 for a description of parties in office since the 1979.

[Table 1]



The first Portuguese municipal elections were held in 1976 and since then seven ballotings have taken place. Until 1985, municipal elections occurred every three years, and after that the municipal governments' terms were extended to four years. Elections have always taken place in December<sup>4</sup>.

The Portuguese Constitution of 1976, the Local Power Law (Law n. 79/77, October 25) and the first Local Finance Law (Law n. 1/79, January 2) brought new responsibilities and more power to municipalities, allowing for a local finance reform through the consolidation of the financial decentralization. However, tax collection has been mainly a central government task and transfers from the central government represent a very important source of funding for Portuguese municipalities. Municipalities receive both conditional and unconditional grants. Conditional grants provide more control for the central government and less discretion for municipalities than unconditional grants. Conditional transfers from the central government to municipalities are usually regulated by contracts and specific programs<sup>5</sup>. The European Union's structural funds are a special case of conditional grants. They are allocated to each municipality by a central government agency that must follow the E.U. guidelines in the selection of the projects to be financed.

For unconditional grants, the discretionary autonomy of the grant giver is more limited since, in the Portuguese case, they are established by a fiscal rule and are formula-based transfers. According to the Portuguese Constitution, municipalities have

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<sup>4</sup> Municipal elections took place at December 12, 1976; December 16, 1979; December 12, 1982; December 15, 1985; December 17, 1989; December 12, 1993; December 14, 1997; and December 16, 2001.

<sup>5</sup> The first Local Finance Law mentioned the possibility of conditional financial help from the central government to municipalities in case of public disaster or unusual circumstances. The Law n. 1/87 considered the possibility of technical and financial cooperation between the central government and municipalities aiming at the promotion of regional and local development. In 1998, a new Local Finance Law was enacted allowing for help from the central government if regional development is at stake or if there is an urgent need of funds that cannot be provided by the municipality. The regulatory framework of conditional financial help is established by the central government in the form of decree-laws (legislation issued by the government under permission from the Parliament).

the right to share national fiscal revenues. Table 2 summarizes the changes that occurred in the allocation criteria of unconditional grants.

[Table 2]

We now proceed by reviewing the changes in the legislation defining the total amount of funds to be transferred to municipalities. Law n. 1/79 requires that total unconditional grants to municipalities constitute no less than 18% of amount allotted to the capital and current expenditures in the National Budget. Therefore, the total amount of grants was not formula driven; it was published each year in the National Budget Law. Grants resulted from the municipalities' right to share tax revenues collected at the central level (artº 5º.b) and other revenues, such as a financial equilibrium fund (artº 5º.c). The 1987 Local Finance Law changed the way the total amount of unconditional grants was determined by establishing that it should be annually corrected on the basis of the expected change in the value-added tax (VAT) revenue<sup>6</sup>, as expressed in the National Budget.

In 1998 a new law was approved (Law n. 42/98) that created the Municipal General Fund (*Fundo Geral Municipal*, FGM) and the Municipal Cohesion Fund (*Fundo de Coesão Municipal*, FCM)<sup>7</sup>. The total amount of these funds was set as a proportion (30,5%: 24% for FGM and 6,5% for FCM) of the actual tax revenues generated two years before by the income taxes and the value-added tax. This represents an important change from the previous local finance law that based the determination of the total amount of unconditional grants on expected tax collections. The National Budget Law of 2001 created a new fund to complement the FGM and the FCM: the Municipal Basis Fund (*Fundo de Base Municipal*, FBM), which allocates an equal

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<sup>6</sup>  $\text{Unconditional Grants}_t = \text{Unconditional Grants}_{t-1} * (\text{VAT}_t / \text{VAT}_{t-1})$ .

<sup>7</sup> The FGM was created to provide municipalities with adequate financial resources for the execution of their tasks, as a function of their levels of operation and investment. The FCM intends to promote

amount of resources to each municipality<sup>8</sup>. The total amount of these funds still represents 30,5% of the actual tax revenues generated two years before by the income taxes, and the value-added tax, but the proportions for component funds are now 20,5% for FGM, 5,5% for FCM, and 4,5% for FBM.

#### 4. The dataset

We use as our laboratory a large and unexplored dataset containing information on all Portuguese mainland municipalities (278) from 1979 to 2002<sup>9</sup>. Data on transfers from the central government to the local authorities and municipalities' area was obtained from the *Direcção Geral das Autarquias Locais*'s annual report called *Finanças Municipais (Municipal Finances)*. This report exists from 1978 to 1983 and from 1986 to 2002. For the two missing years, 1984 and 1985, data was collected from the annual report *Finanças Locais: aplicação em 1984 /1985 (Indicadores Municipais)* also from the *Direcção Geral das Autarquias Locais*.

Data on municipalities' total population and population by age groups were obtained from the Portuguese National Institute of Statistics (Instituto Nacional de Estatística – INE) Census operations that took place in 1981, 1991 and 2001. For the remaining years data on total population was collected from INE's *Estimates of Resident Population*. Data on population by age groups was obtained by assuming a constant growth rate for the period 1979-1989, on the basis of the 1970 and 1981'

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horizontal balance, that is, to reduce inequity among local jurisdictions. This fund is only transferred to municipalities that have a development index below the national average.

<sup>8</sup> As can be seen from table 2, previous local finance laws already assigned an equal amount of funds to all municipalities but not as an autonomous fund.

<sup>9</sup> Overseas municipalities, belonging to the autonomous regions of Azores and Madeira were excluded from the analysis since there are specific rules regulating funds transferred to them.

Regarding the Portuguese geographical organization, one should mention that during the period analyzed four municipalities were created: Amadora, in 1979, and Odivelas, Trofa and Vizela, in 1998. Other minor changes, like the creation of new *freguesias*, were ignored since the impact of those changes is expected to be negligible.

Census operations; for the rest of the period, annual data was acquired from the INE's *Estimates of Resident Population*. Gross Domestic Product and consumer price indexes were acquired from the International Monetary Fund's *International Financial Statistics*.

Political data, namely election dates and municipal and legislative electoral results, were obtained from the National Electoral Commission (“Comissão Nacional de Eleições”) and from the Technical Staff for Matters Concerning the Electoral Process (“Secretariado Técnico dos Assuntos para o Processo Eleitoral”) of the Internal Affairs Ministry.

## **5. The model**

In this paper we apply a political-economy approach to investigate the determinants of the grant allocation process from the central government to local authorities. We model real *per capita* grants to municipalities ( $GRANT_{it}$ ) as a function of (1) lags of the dependent variable since grant programs are likely to persist over a number of years, as are the political and normative factors that impact upon such grants; (2) a vector of variables related with the public choice idea that policymakers take into account their personal political interests in the grant allocation process ( $PUB\_CHOICE_{it}$ ); and, (3) a vector of control variables associated with the normative approach, that views the grant giver as a social well-being maximizer ( $NORM_{it}$ ).

The dependent variable,  $GRANT_{it}$ , is defined in *per capita* terms in order to take into account size differences among municipalities, and avoid heteroskedasticity problems. It is measured in 1995 euros, to control for price increases over time. We start

by considering the total amount of grants transferred to municipalities and, then, investigate those that are not formula-determined<sup>10</sup>.

The first vector of variables ( $PUB\_CHOICE_{it}$ ) consists of political variables that allow us to test if grant givers are self-motivated and if local incumbents' pressures influence the granting process. The following variables were considered:

- $MUN\_ELECT_{it}$ : dummy variable equal to one in municipal election years, and to zero in the other years. It is our belief that mayors lobby the central government in order to receive a larger amount of funds during municipal election years, so that more resources are available for electoral campaigns and vote-enhancing expenditures<sup>11</sup>. Grants allow for an expansion of vote-generating expenditures without a need for additional vote-losing taxation. A positive sign is expected for the coefficient associated with this variable.
- $LEG\_ELECT_{it}$ : dummy variable equal to one in legislative election years, and to zero in the remaining years. It is our belief that, in order to increase its popularity, the central government is likely to transfer a larger amount of funds to municipalities in legislative election years. However, if we follow the Worthington and Dollery's (1998: 306) argument that the returns from purchasing political capital by increasing transfers to local jurisdictions may be off-set by direct returns to central government politicians resulting from increases in national public expenditures, a negative coefficient should be expected.
- $SAME\_PARTY_{it}$ : dummy variable that takes the value of one when the mayor and the prime-minister belong to the same party. This variable allows us to test if similarity of party affiliation between local and central politicians influences the

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<sup>10</sup> Levin-Lu-Chu and Im-Pesaran-Shin panel unit root tests reject the hypothesis that total grants and non-formula grants are non-stationary.

<sup>11</sup> Recall that during the period analyzed municipal elections in Portugal always took place in December.

amount of grants made to a municipality. We have no prior for the sign of the estimated coefficient associated with this variable. The central government may try to reward its supporters, under the hypothesis that they are likely to deliver more political support (votes) in exchange for grants, or try to buy-off its opponents<sup>12</sup>.

- $YEARS\_IN\_OFFICE_{it}$ : number of years that a mayor has been in office<sup>13</sup>. Since mayors' expertise and knowledge of the granting process is likely to increase with time in office, we expect their ability to extract funds from the central government to increase with the number of years in office. Therefore, a positive coefficient is expected for the estimated coefficient associated with this variable.

The second group of explanatory variables ( $NORM_{it}$ ) consists of demographic and economic variables that allow us to test if the granting process strives for improvements of social welfare. These variables proxy the macroeconomic situation of the country, and capture differences in local population needs. The following variables are included in this vector:

- $POPULATION_{it-1}$  and  $POPULATION\_SQ_{it-1}$ : represent, respectively, municipalities' population and population squared (in thousands) in the last year. The existence of economies of scale in the provision of services by local governments constitutes a rationale for *per capita* grants to decrease with communities' size. Since larger jurisdictions can provide identical public service levels with lower taxes, the central government should transfer fewer resources to them in order to promote horizontal equity. However, some authors have criticized

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<sup>12</sup> In Portugal, the number of deputies of the National Assembly elected by each electoral circle is determined according to the share of its population on national population. In mainland Portugal there are eighteen electoral circles. Since electoral circles do not coincide with municipalities our data does not allow us to test whether jurisdictions with a larger representation at the national parliament are treated differently in the allocation of grants.

<sup>13</sup> There are no term limits in Portugal.

this argument based on the idea that local public goods may have “privateness” characteristics<sup>14</sup>.

- DEP\_RATIO<sub>it-1</sub>: percentage of the population under 15 or over 65 years old in the last year. The estimated coefficient associated with this variable is expected to be positive because these groups of the population demand specific services typically provided by local authorities, such as elementary education and facilities for the elderly.
- GDP<sub>it-1</sub>: *per capita* GDP at 1995 prices. The macroeconomic performance of the country conditions tax revenues collected by the central government and, consequently, the amount of funds transferred to municipalities. A positive sign is expected for the estimated coefficient associated with this variable.

In this vector, all variables are lagged one year because it takes time for demographic and economic data to be released and for policymakers to take them into account in the grants allocation process. Table 3 presents descriptive statistics for all variables used in the empirical work.

[Table 3]

The baseline empirical model is described in equation (1), where  $t$  represents the year,  $i$  the municipality,  $p$  the number of lags of the dependent variable included in the model<sup>15</sup>,  $\beta$  and  $\gamma$  are vectors of parameters to be estimated,  $v_i$  is the individual effect of municipality  $i$ , and  $\varepsilon_{it}$  the error term:

$$\text{GRANT}_{it} = \sum_{j=1}^p \alpha_j \text{GRANT}_{it-j} + \text{PUB\_CHOICE}'_{it} \beta + \text{NORM}'_{it} \gamma + v_i + \varepsilon_{it}$$

$$i = 1 \dots, N; \quad t = 1, \dots, T \quad (1)$$

<sup>14</sup> For a discussion on this issue see Pereira (1996).

<sup>15</sup> The optimal number of lags was determined according to their statistical significance and the absence of auto-correlation.

The model described above could be estimated assuming municipalities' individual effects as fixed or random. However, the lagged value of the dependent variable would be correlated with the error term,  $\varepsilon_{it}$ , even if the latter was not serially correlated, leading to inconsistent model estimates. This would occur because there is a clear dominance of cross sections ( $N=275$ )<sup>16</sup> over time periods ( $T=24$ ) in our sample.

Arellano and Bond (1991) developed a Generalized Method of Moments (GMM) estimator to solve these problems. By first differencing equation (1) individual effects ( $v_i$ ) are removed and the resulting equation becomes estimable by instrumental variables:

$$\Delta \text{GRANT}_{it} = \Delta \sum_{j=1}^p \alpha_j \text{GRANT}_{it-j} + \Delta \text{PUB\_CHOICE}'_{it} \beta + \Delta \text{NORM}'_{it} \gamma + \Delta \varepsilon_{it}$$

$$i = 1 \dots, N; \quad t = 1, \dots, T \quad (2)$$

The valid instruments are levels of the dependent variable, lagged two or more periods; levels of the endogenous variables, lagged two or more periods; levels of the pre-determined variables, lagged one or more periods; and the levels of the exogenous variables, current or lagged or, simply, the first differences of the exogenous variables. More moment conditions are available if we assume that the explanatory variables are uncorrelated with the individual effects. In this case, the first lags of these variables can be used as instruments in the levels equation. When the dependent variable and/or the independent variables are persistent, lagged differences of the dependent variable may also be valid instruments for the levels equations. Blundell and Bond (1998) show that

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<sup>16</sup> When taking lags and first-differences, the observations for the three municipalities created in 1998 (Odivelas, Trofa and Vizela) are dropped, leading to a panel of 275 municipalities and 24 years of observations.



this extended GMM estimator is preferable to that of Arellano and Bond (1991)<sup>17</sup> in this particular case.

## 6. Empirical results

In this section we describe the results of our empirical analysis. We start by applying the model to total grants received by municipalities (expressed in real and *per capita* terms) and, then, we investigate grants that are not determined by formulae (also in real, *per capita*, terms). All equations were estimated by the method system-GMM for linear dynamic panel data models. The variable measuring the number of years mayors have been in office was treated as an endogenous variable because transfers from the central government represent an important source of funding for local governments, and spending decisions are likely to impact on electoral results. In equations for total grants, the instruments used for the lagged dependent variable and the endogenous variable (number of years in office) were levels of these variables lagged 2 to 5 periods in the equation in first differences<sup>18</sup>, and once lagged first differences in the equation in levels. For non-formula grants equations the same instruments were used, but it was necessary to add levels lagged 6 to 8 periods of the dependent and the endogenous variable in order to have valid Sargan tests. Tables 4 and 5 report the two-step results using robust standard errors corrected for finite samples<sup>19</sup>. T-statistics are presented between parentheses and the degree of statistical significance

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<sup>17</sup> Since there is some persistence of transfers and of some independent variables, it is appropriate to estimate this system-GMM. Furthermore, difference Sargan tests indicate that, for our data, the system-GMM is preferable to the GMM that only includes the first-differenced equations.

<sup>18</sup> Smaller numbers of lagged levels in the equations in first differences generally lead to the rejection of the validity of the over-identifying restrictions (p-values of the Sargan test below 0.1). All equations were also estimated including all available instruments, and results were essentially the same. Although there is a gain in efficiency when all available instruments are used, there is a loss of power, since we get weak instruments in the long lags.

<sup>19</sup> Although it is more common to present the one-step results because the two-step standard errors are generally biased downwards, that problem does not apply to our case, since the econometric software

is signaled with asterisks. The results of m1, m2 and Sargan tests are reported at the foot of the tables, as well as the number of observations and municipalities.

[Table 4]

Column 1 of table 4 shows estimates for total grants of our “baseline” model that includes all variables described in the previous section. Several findings are immediately evident. First, the statistical significance of lagged grants suggests that they suffer from some degree of inertia<sup>20</sup>. Second, of the four variables considered in the political vector, three turned out to be statistically significant. As predicted by public choice theories, namely by the literature on political business cycles and “pork-barrel” politics, grants increase during election years. It is important to recall that only after the local finance law of 1998, the total amount of unconditional grants started to be determined by a formula based on actual tax revenues collected two years before. Before that it was based on expectations for the tax revenues or set as a percentage of the National Budget expenditures. Therefore, the central government could easily manipulate the total amount of the “pork” to be distributed. Results indicate that, for all else equal, total grants *per capita* increase by 8.01 1995 euros in municipal election years, a relative increase (compared to the sample mean) of 3.3%. This is in accordance with our prior that mayors’ lobby to receive more grants during balloting years in order to have more funds available for electoral campaigns and vote-enhancing expenditures<sup>21</sup>. During legislative election years total grants *per capita* also increase by 10.71 euros, a percentage increase of 4.5. As suggested by the “pork-barrel” politics, the decision maker (central government) increases the amount of grants distributed to local

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*PcGive 10.4* uses the finite-sample correction suggested by Windmeijer (2000). Thus, we present the two-step results, as these have the advantage of being consistent in the presence of heteroskedasticity.

<sup>20</sup> 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.

governments to improve its popularity, and therefore, its likelihood of reelection. Furthermore, the data suggests that the longer a mayor has been in office, the larger the amount of grants received by his municipality. This may reflect a mayor's accumulation of knowledge on how the Portuguese granting system works, and consequently, a stronger ability to extract a larger share of the distributed funds from the grant giver. Our estimates also indicate that municipalities ran by mayors that belong to the prime-minister's party do not seem to be favored in the grant distribution process.

Third, regarding the variables related to the normative approach to transfers, results indicate that grants *per capita* decline as the size of the community increases until it reaches a population of around 425 thousand inhabitants. As expected, grants *per capita* increase with the dependency ratio, suggesting that more funds are transferred to satisfy the specific needs of these two groups of the population (individuals under 15 and over 65 years old). GDP *per capita*, included to capture the macroeconomic performance of the country, also turned out signed as expected, and highly statistically significant.

Given the finding that grant funding rises in election years, we decided to investigate whether these increases are more pronounced towards municipalities led by mayors that belong to the prime-minister's party. For legislative elections, our prior was that increases would be stronger for municipalities ruled by politicians with the same ideology as the central government, since they are more likely to engage in political patronage that increases the probabilities of reelection of the former. In order to test this hypothesis, we interacted the dummies for the municipal (MUN\_ELECT) and legislative (LEG\_ELECT) election years with the dummies SAME\_PARTY and

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<sup>21</sup> Veiga and Veiga's (2004) empirical results reveal Portuguese mayors' opportunistic behaviour, who increase, in pre-electoral periods, expenditure items highly visible to the electorate, such as investment expenditures on overpasses, streets and complementary works, and rural roads.

DIF\_PARTY (1-SAME\_PARTY). Results presented in column 2 reveal that, for municipal elections, both interactions are statistically significant and that the coefficient for “same-party” mayors is smaller than that for “different-party” mayors. However, a Wald test does not allow us to reject the hypothesis of equal coefficients between the two interaction variables. For legislative elections (column 3), the interaction variables also turned out highly statistically significant, but the coefficient associated with same-party governments is now larger and statistically different from that for different-party governments. The coefficient same-party municipalities almost doubles that for different-party municipalities. In this case, a Wald test allows us to reject the hypothesis of equal coefficients between the two interaction variables at the 5% significance level.

Taking into account that a significant amount of transfers to municipalities are distributed among them according to a formula-based fiscal rule (recall table 2), we continued our empirical analysis by investigating non-formula grants. Evidence reported in table 5 confirms our prior that they are more subject to political influences. The percentage increase in non-formula grants during electoral years is now of 15.7% for municipal elections, and of 8.2% for legislative elections - a much higher increase than for total grants. The relative impact of an additional year a mayor has been in office is also larger (0.8% for total grants, 1.2% for non-formula grants). Despite having more discretionary power over this type of transfers the central government does not seem discriminate municipalities according to their mayors’ party affiliation. The dummy variable SAME\_PARTY turned out not to be statistically significant, as in the case for total grants. Concerning the vector of normative variables, results reveal that estimated coefficients for POPULATION, POPULATION\_SQ, the dependency ratio, and GDP kept their sign and continue to be statistically significant. We can therefore,

conclude that the central government takes into account the specific needs of municipalities' populations, as well as the macroeconomic situation of the country.

[Table 5]

As done for total grants, we interacted the dummies for the electoral years with the dummy SAME\_PARTY. Results reported in columns 2 and 3 of table 5 are essentially the same as before. To test the robustness of the conclusion that party similarity between local and central governments did not interfere with the grants' distribution process, we added to our baseline model a variable measuring the percentage of votes the party in the central government had in the previous legislative electoral balloting, in the municipality. As can be seen from column 4, this variable turned out not to be statistically significant. An alternative variable expressing votes for the party in the national government in absolute terms (in thousands) instead of percentages, also turned out not to be statistically significant (column 5). We can, therefore, conclude that party similarity between local and central governments does not seem to be a relevant issue in the grants distribution process.

## **7. Conclusions**

Using an unexplored and detailed sample consisting of all Portuguese mainland municipalities for the 1979 to 2002 period we investigate the determinants of the intergovernmental grants allocation system. Our results present strong evidence that political factors exert an important role in this process, particularly for non-formula grants. During municipal and legislative election years grants transferred to municipalities increase, which may reflect the opportunistic behaviour of incumbent politicians interested in improving their probabilities of re-election. Furthermore, the longer a mayor has been in office the larger the amount of grants transferred to his/her

municipality. Finally, municipalities ruled by mayors that belong to the prime-minister's party do not seem to be favoured in the allocation process.

The empirical evidence also suggests that total grants *per capita* transferred to a local jurisdiction are influenced by the needs of their population, as suggested by the normative approach to intergovernmental grants. The number of inhabitants, as well as their age structure, influence the amount of grants received. The macroeconomic situation of the country also conditions the total amount of transfers.

The importance of political variables in the Portuguese granting system, and of the distortions they may generate, has policy implications. First, the introduction of a rule determining the total amount of the “pie” to be distributed would turn grants less dependent of the political cycles. The change in the local finance law operated in 1998 goes in this direction. Second, our result that the longer a mayor has been in office the larger the amount of grants his/her municipality receives will lose importance if term limits are introduced at the municipal level, as has been discussed for quite a long time in Portugal<sup>22</sup>.

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<sup>22</sup> In 2002, the average number of years mayors had been in office was 8.2 and six mayors held office

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since the first municipal elections took place in 1976.



**Table 1: Legislative elections and parties in government since 1979**

Dates of elections	Winning party	Share in Parliament	Prime Minister	Form of government
-	-	-	Mota Pinto	Pres. appointment (1978-79)
-	-	-	M. L. Pintassilgo	Pres. appointment (1979-80)
December 2, 1979	AD	51,2%	Sá Carneiro	Coalition (PSD+CDS+PPM), majority
October 5, 1980	AD	53,6%	Pinto Balsemão	Coalition (PSD+CDS+PPM), majority
April 25, 1983	PS	40,4%	Mário Soares	Coalition (PS+PSD), majority
October 6, 1985	PPD/PSD	35,2%	Cavaco Silva	One party, minority
July 19, 1987	PPD/PSD	59,2%	Cavaco Silva	One party, majority
October 6, 1991	PPD/PSD	58,7%	Cavaco Silva	One party, majority
October 1, 1995	PS	48,7%	António Guterres	One party, minority
October 10, 1999	PS	50,0%	António Guterres	One party, minority
March 17, 2002	PPD/PSD	45,7%	Durão Barroso <sup>(a)</sup>	Coalition (PSD+CDS/PP), majority
February 20, 2005	PS	52,6%	José Sócrates	One party, majority

*Source:* National Elections Commission.

*Note:* PPD/PSD - People's Democratic Party / Social Democratic Party; PS - Socialist Party; CDS/PP - Democratic and Social Center / People's Party; PPM - Monarchic People's Party; AD = PSD + CDS + PPM.

(a) In July 2004 Durão Barroso resigned and a new government, also a coalition of PSD and CDS/PP) was formed under the leadership of Santana Lopes.

**Table 2: Allocation criteria of unconditional grants to municipalities**

	Law n. 1/79		Decree-law n. 98/84	Law n. 1/87	National Budget Law 1992	Law n. 42/98		National Budget Law 2001		
	artº 5º.b)	artº 5º.c)				FGM	FCM	FGM	FCM	FBM
Population	50%	35%	45%	45%	-	-	-	-	-	-
Population/Nights spend in tourism facilities	-	-	-	-	40%	35%	-	40%	-	-
Area	10%	15%	10%	10%	15%	30% (d)	-	30%	-	-
<i>Per capita</i> direct taxes	40%	-	15%	10%	-	-	-	10%	-	-
Single Income Tax	-	-	-	-	-	10%	-	-	-	-
Fiscal need index	-	-	-	-	5%	-	-	-	-	-
Number of <i>freguesias</i>	-	15%	5%	5%	5%	15%	-	15%	-	-
Road Network	-	(a)	-	10%	10%	-	-	-	-	-
Number of dwellings	-	-	-	5%	-	-	-	-	-	-
Accessibility index	-	-	-	(b)	5%	-	-	-	-	-
Needs index	-	35%	20%	-	-	-	-	-	-	-
Socio-economic development index	-	-	-	5%	-	-	-	-	-	-
Population under 15 years old	-	-	-	-	5%	5%	-	5%	-	-
Development index (c)	-	-	-	-	-	-	100%	-	100%	-
Equal amount to all municipalities	-	-	5%	10%	15%	5%	-	-	-	100%
	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Source: Diário da República.

Notes: (a) Included in the needs index.

(b) Included in the socio-economic development index.

(c) Allocated only to municipalities with an index below the national average.

(d) Weighted by a factor related to altimetry.

**Table 3: Descriptive statistics**

<b>Variables</b>	<b>N.Obs.</b>	<b>Average</b>	<b>Standard Deviation</b>	<b>Minimum</b>	<b>Maximum</b>
<b>Grants:</b>					
Total grants	6 125	239.4	165.6	14.8	1 384.9
Non-formula grants	4 483	72.5	71.3	0.0	804.2
<b>Political variables:</b>					
Municipal Election Year	6 889	0.3	0.5	0	1
Same Party	6 877	0.4	0.5	0	1
Years in Office	6 870	6.4	4.9	1	27
Legislative Election Year	6 888	0.4	0.5	0	1
<b>Demographic-economic variables</b>					
Population (thousands)	6 893	34.7	59.9	1.9	808.0
Dependency Ratio	6 888	36.6	4.0	23.2	58.2
GDP <i>per capita</i> at 1995 prices	6 889	6 994.5	2 090.7	4 072.2	10 053.1

*Sources:* DGAL, INE, IMF and STAPE.

*Note:* All types of grants are expressed in euros (at 1995 prices) *per capita*.

Data for grants goes from 1979 to 2002, for the remaining variables from 1979 to 2003.

**Table 4: Estimation results for total grants**

	(1)	(2)	(3)
GRANT(-1)	.75 (23.8)***	.70 (22.5)***	.75 (24.4)***
MUN_ELECT	8.01 (4.49)***		8.21 (4.60)***
MUN_ELECT*SAME_PARTY		4.37 (1.76)*	
MUN_ELECT*DIF_PARTY		11.17 (4.21)***	
LEG_ELECT	10.71 (7.41)***	10.07 (7.24)***	
LEG_ELECT*SAME_PARTY			14.41 (6.26)***
LEG_ELECT*DIF_PARTY			7.55 (3.41)***
SAME_PARTY	.516 (.22)	1.37 (.56)	-2.01 (-.74)
YEARS_IN_OFFICE	1.88 (3.51)***	1.28 (2.35)**	1.77 (3.30)***
POPULATION(-1)	-.34 (-2.94)***	-.31 (-2.68)***	-.32 (-2.72)***
POPULATION_SQ(-1)	.0004 (2.52)**	.0004 (2.29)**	.0004 (2.32)**
DEP_RATIO(-1)	5.81 (5.79)***	6.79 (6.27)***	5.79 (5.86)***
GDP(-1)	.02 (9.86)***	.02 (10.9)***	.02 (9.92)***
m1	-8.08	-8.04	-8.14
m2	.56	.49	.57
Sargan (p-value)	.19	.39	.25
No. Observations	5 995	5 995	5 995
No. Municipalities	275	275	275

- Notes:*
- Estimations of system-GMM linear models for panel data (which combine the equations in first-differences with the equations in levels), using the econometric software *PcGive 10.2*;
  - two-step results using robust standard errors corrected for finite samples;
  - T-statistics are between parentheses. Significance level for which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%.
  - 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.
  - Sargan is a test for the validity of the over-identifying restrictions for the GMM estimators, asymptotically  $\chi^2$ . P-value is reported.

**Table 5: Estimation results for non-formula grants**

	(1)	(2)	(3)	(4)	(5)
GRANT(-1)	.27 (8.34)***	.27 (8.38)***	.27 (8.35)***	.29 (9.09)***	.29 (9.14)***
GRANT(-2)	-.10 (-2.68)***	-.10 (-2.68)***	-.10 (-2.68)***	-.11 (-2.89)***	-.11 (-2.95)***
MUN_ELECT	11.38 (5.13)***		11.37 (5.12)***	11.61 (5.31)***	11.67 (5.32)***
MUN_ELECT*SAME_PARTY		8.04 (2.48)**			
MUN_ELECT*DIF_PARTY		14.26 (4.46)***			
LEG_ELECT	5.92 (3.16)***	5.92 (3.16)***		6.32 (3.32)***	6.02 (3.23)***
LEG_ELECT*SAME_PARTY			7.97 (2.48)**		
LEG_ELECT*DIF_PARTY			4.41 (1.69)*		
SAME_PARTY	1.34 (.49)	3.18 (1.20)	.54 (.17)	1.52 (.57)	1.12 (.42)
YEARS_IN_OFFICE	.86 (2.21)**	.83 (2.13)**	.87 (2.23)**	.89 (2.38)**	.97 (2.55)**
%VOTES_GOV				-14.63 (-.79)	
THOUSAND_VOTES_GOV					.1 (.25)
POPULATION(-1)	-.31 (-3.00)***	-.31 (-3.03)***	-.31 (-3.03)***	-.31 (-3.15)***	-.34 (-2.23)**
POPULATION_SQ(-1)	.0004 (2.07)**	.0004 (2.09)**	.0004 (2.10)**	.0005 (2.12)**	.0005 (2.05)**
DEP_RATIO(-1)	4.15 (4.60)***	4.11 (4.57)***	4.11 (4.53)***	3.96 (4.64)***	4.07 (4.67)***
GDP(-1)	.02 (8.72)***	.02 (8.73)***	.02 (8.67)***	.02 (7.91)***	.02 (8.71)***
m1	-6.82	-6.85	-6.83	-6.84	-6.84
m2	.37	.23	.37	.26	.25
Sargan (p-value)	.21	.21	.22	.35	.32
No. Observations	3 838	3 838	3 838	3 838	3 838
No. Municipalities	275	275	275	275	275

Notes: - Estimations of system-GMM linear models for panel data (which combine the equations in first-differences with the equations in levels), using the econometric software *PcGive 10.2*;  
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- T-statistics are between parentheses. Significance level for which the null hypothesis is rejected: \*\*\*, 1%; \*\*, 5%; and \*, 10%.

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