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The Impact of the Local Government Institutional Framework on the Distribution of Intergovernmental Grants: Greek Republic as a Case Study

Konstantinos J. Hazakis & Panagiotis G. Ioannidis

Abstract

The article analyses grant allocation from central governments to municipalities in Greece during the period 2003-2010. A quantitative analysis is based on two simple models that include normative socioeconomic and institutional factors. Data of 970 municipalities and 50 prefectures of Greece over the period 2003-2010 clearly show that institutional variables such as years of general elections and prefect's experience exert more influence on grant allocation than normative variables such as GDP per capita. A substantial transfer of competences from central to local government could significantly ameliorate local tax revenues.

Keywords: *intergovernmental grants, decentralization, local government expenditure, regional government, regional economic policy.*

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1. Introduction

A crucial issue of local/regional sustainable growth is the financing of lower level governmental structures. Research stresses that intergovernmental grants could limit negative terms of uneven spatial development and could improve income distribution conditions and local living standards (Olson, 1969; Stewart, 1997; Snoddon & Wenn, 1999; Bungey et al, 1991) if specific institutional and political terms are in place (Arrington, 1970; Wright, 1974). Thus, the institutional system of local governance, the content of cooperation between local politicians and central state's officials (Wallis, 1996) and the terms of political power distribution, do affect the revenues that local authorities receive from the central government (Boex & Martinez-Vazquez, 2005). Although scholars agree that local /regional governments have more information on local priorities and developmental needs (Oates, 1999) as well as that accountability is easier at local level, the decentralization of key competences is often not accompanied by relevant revenue-gathering competences.

On the other hand, research also underlines that there are cases where fiscal decentralization occurs but it does not maximize positive spillover effects because it is not based on an efficient allocation mechanism. A plethora of empirical studies on institutional and political aspects of grants distribution reveal the fundamental importance of so called pork-barrel politics (Gist & Hill, 1981; Porto & Sanguinetti, 2001; Johansson, 2003; Pinho & Veiga, 2004). As Tiebout (1956) suggested, preferences of citizens influence local planning and thus local preferences could be indirect factors of intergovernmental grants' allocation (see also Boex & Martinez-Vazquez, 2005). Variables like reelection prospect and maximization of bureaucratic gain, matter more than the reduction of regional disparities. Political identity and experience of head officials of local governments, political preferences of local population and election years are also considered strong determinants of intergovernmental transfers (Veiga and Pinho, 2007; Foucault et al, 2008; Solé-Ollé & Sorribas-Navarro, 2008; Veiga & Veiga, 2011). As a result, central governance too often allocates grants to local governments based on political reasons and thus is not justified on efficiency-equity motives. Johansson (1999) for example, (based on a thorough research in Sweden), confirmed that municipalities receive more funds the more votes they give to the central government.

Although previous research on grants allocation focused on the content of central government's cooperation with regional governments, there is lack of evidence on the interaction among different levels of local governments, concerning allocation of intergovernmental grants (Johanson, 2003; Foucault et al, 2008; Padovano, 2009).

The article attempts to fill the gap in empirical literature by examining grants allocation from central governments to municipalities in Greece during the period 2003-2010 on the basis of the interaction between municipalities and prefectures. The quantitative analysis is based on two simple models that include normative socioeconomic and insti-

tutional factors. Panel data of 970 municipalities and 50 prefectures of Greece are used in a multi-regression model of the OLS (ordinary least squares) method. The results demonstrate that institutional factors influenced more the intergovernmental grants allocation among Greek municipalities than normative factors did.

The paper is structured as follows. Section two reviews the findings of previous research on intergovernmental grants while section three displays the most significant dimensions of local governance system in Greece. Section four presents the methodological pillars and section five outlines the results of the empirical research. Finally, section six concludes highlighting fundamental policy implications.

2. A literature review on the determinants of Intergovernmental grants allocation

There is an extensive literature underlining different facets of intergovernmental transfers to lower level governments. Two distinct strands of analysis emerge, analyzing grants distribution rationale and motives.

The first one, (usually named “public finance explanation”) stresses the necessity to reduce fiscal imbalances between local jurisdictions. Considering the need to efficiently allocate local public goods and taking into account the gap between local expenditure and local spending in order to achieve developmental targets, “public finance explanation” favors intergovernmental transfers to weaker jurisdictions (Oates, 1999). Based on the Pigouvian approach (that is using grants as a tool to internalize negative externalities and to raise social welfare), this first strand links positive spillover effects with local public goods, providing local political figures and bureaucrats with financial tools to offer local services to a socially efficient level. Grants reduce efficiency-equity problems because the advantages of local spending are strong in local GDP/employment as well as in provision of fundamental goods (i.e. health, education). Obviously, equity requires that revenue sharing becomes a critical means of transferring capital to the most needed jurisdictions with insufficient fiscal capacities. Thus, greater per capita intergovernmental transfers should target low revenue jurisdictions with persistent problems in infrastructure, health and education. There are even cases where unconditional intergovernmental transfers take place leaving enough room to local governments to pursue local priorities without central governance interference. Of course, the impact of spillover effects on the local economy, generated by grants, is highly dependent on the characteristics of local government (Berg & Ratso, 2007).

The paradox is that in many cases wealthier local jurisdictions gather more intergovernmental grants (Grossman, 1994), suggesting that efficiency motives outweigh equity motives (Wallis, 1998; Meyer & Naka, 1999; Wright, 1974). The problem is further aggravated in states with persistent structural deficits and macroeconomic imbalances where provision of an efficient level of local public goods through grants, is considered contrary to macroeconomic stabilization targets (i.e. Greece).

Using Kornai's (1980) terminology (originally applied to state owned firms in former socialist countries), "soft budget constraints" are not acceptable during fiscal crisis and bail out through grants is considered a deterrent for municipalities to follow disciplined fiscal behavior.

The second explanatory strand, influenced by the public choice approach, focuses on the impact of political/electoral motives on inter-governmental grants allocation (Samuels & Snyder, 2001). Too often, the nexus between the preferences of central government and the priorities of interest groups in local communities generates conditions for the emergence of pork barrel politics (Veiga & Veiga, 2011). Pork barrel politics are government actions that unofficially tend to benefit specific groups of citizens. In the case of intergovernmental grants the favored interest groups are selected by partisan criteria in order to promote central government's reputation in local and regional societies. This variable highlights also the importance of swing voting in grants distribution as this practice determines crucially the election result. Under this perspective the use of pork barrel politics aims primarily to ensure interests of central government by transferring grants in areas that tend to support its policy.

Thus, local decision making structures are influenced by dominant interest groups (Atlas et al, 1995; Raimondo, 1983) and determine inter-governmental grants allocation. As Boex & Martinez-Vazquez (2005:7) mention "subnational government with powerful political interests can be expected to receive larger intergovernmental grants". Political figures as pure rent seekers, link their electoral success to intergovernmental grants (Alperovich, 1984) and use redistributive strategies as a vehicle (Cox & McCubbins, 1986), to improve their electoral performance (Banful, 2011), downgrading efficiency-equity motives in grants allocation.

It is no coincidence that many surveys focus on interest group lobbying activities (Grossman, 1994; Worthington & Dollery, 1998; Dahlberg et al, 2010) and try to explain when, why and to whom national governments convey resources. It is further argued that central government favors regional allocation of grants based on political bargaining with local jurisdictions (Rodden & Eskeland, 2003; Padovano, 2009; Inman & Fitts, 1992) linking spending priorities to specific political traits of municipalities. As Bungey et al (1991) suggest, strong links between national and local political figures improve political returns to central governments and exert strong influence on intergovernmental grants distribution. Thus, central governments do not act as benevolent rulers but rather accommodate specific utility motives and incentives. Other studies emphasize the importance of local bureaucrats' interests (Gist & Hill, 1984) in intergovernmental grants distribution. The interplay of local administrative agents with central government's politicians generates networks of political cooperation undermining sustainable spatial policy (Porto & Sanguinetti, (2001). Again, political ideology (Case, 2001) of local council members and diversification of district seats in central parliament are considered more influential criteria than persistent disparities among regions (Sørensen, 2003). Consequently, intergovernmental grants are too often used as means for strengthening political capital.

However, there is a diversification of results on the importance that studies attribute to supporters and to swing voters. Although research usually highlights that more voters are interested in private consumption stemming from public investment and consequently that there is a redistributive logic in local elections, the target of grants is not always the same. Dixit & Londregan (1998) found that the priority for central government is swing jurisdictions where voters do not have a clear support for opposition or government. Johansson (2003) based on panel data of 255 Swedish municipalities during the period 1981 to 1985 suggests that municipalities with more swing voters receive more intergovernmental grants. Veiga & Pinho (2007) also found strong evidence that grants are higher during years of election underlining that local jurisdictions with many swing voters receive more intergovernmental grants.

On the other hand, Ansolabehere & Snyder (2006) argue that central governments provide more grants to local jurisdictions that offer them strong electoral support, undermining the swing voter model explanation. Cox & McCubbins (1986) also conclude that risk-averse politicians prefer to invest resources in their voters expecting specific electoral support while they give less capital to opposition groups or swing voters.

The aforementioned analysis emphasizes the relevance of political factors in the distribution of grants and consequently implies that intergovernmental grants are rarely distributed on a per capita basis. Even in the case of an explicit allocation formula for grants, national governments usually retain full discretion to alter the variables included in the formula and change allocation of grants as they see fit. Findings also reveal that pork barrel politics exert a significant influence on regional fiscal policy. Local institutions, local agents and central governments participate in informal networks in order to secure economic and political benefits or even more to maintain rent seeking strategies. Apparently, an efficient institutional framework could pave the ground for multidimensional cooperation as well as for an avoidance of any agent defection or deviation from dominant participatory strategies in local development (Hodgson, 2009; Hazakis, 2010). In this approach the absence of pork barrel politics in grants distribution is *conditio sine qua non* for sustainable local development (Khemani, 2003) and efficient intergovernmental coordination.

3. The System of Local Government in Greece and the Distribution of Intergovernmental Grants

3.1 The System of Local Governance in Greece

According to the constitution the system of local administration in Greece is based on two levels of local governments. The first level of local government refers to municipalities while the second level of local government (constituted up to 2010 by prefectural governments) refers to regional governments. The enforcement of the Kallikrates reform

in 2011 (Law 3852/2010), reorganized the system of local governance which is based on 325 governments of municipalities (first level) and 13 regional governments (second level). Each region consists of regional departments (former prefectures) and each municipality is structured by former small municipalities and rural communities.

A critical assessment of local governance institutional changes in Greece after 1974 clearly demonstrates that reforms were path-dependent and evolutionary. The major objectives have been the amalgamation of municipalities and the enactment of the second level of local government (tables 1 and 2 depict the fundamental traits of this evolutionary process). Historically, one could mention two major periods concerning the decentralization effort of local governance in Greece namely from 1974 to 1993 and from 1994 to 2013.

From 1974 to 1993 decentralization was based on minor legislative interventions. The basic pillars of the effort were 5.755 municipalities and rural communities, the constitution of regions (NUTS 2 level)ⁱ as administrative bodies and the 51 prefectures. Law 1416/1984 forwarded an optional classification of neighboring municipalities (cities) into urban domains and neighboring rural communities into open cities. In total, 54 urban domains and 494 open cities were generated, covering 6.924.105 and 3.446.312 inhabitants respectively. This reform aimed to achieve economies of scale in services provision and maximization of spillover effects from spatial development strategies. Additionally, neighboring municipalities and communities of the same prefecture were able to merge into greater municipalities based on their own volition or adopting collaborative development strategies. Contrary to initial expectations, outcomes of the effort were rather disappointing (Lalenis, 2003: 305).

A major follow up took place in 1986 promoting separation of Greece regional administration in 13 units (Law 1622/1986). Even though this provision harmonized the Greek administrative system with European standards, the confusion over competencies between prefectural and regional governments downgraded the modernization of local administration (Hazakis & Ioannidis, 2011). Equally important, the 51 prefectures were highly dependent on central government and consequently there was not enough room for local developmental initiatives. Moreover, head officials of prefectural and regional government were not elected by the electorate, but were appointed by central government leading to a de facto cancellation of regional planning decentralization (Spanou, 1998: 476).

The non realistic number of municipalities and rural communities (5.755) as well as the ambiguity over competences between regional and prefectural governments implied the necessity of bold reforms (Hlepas, 2003). Law 2218/1994 institutionalized the second degree of local government with 51 elected prefectural governments (Lalenis & Liogas, 2002). However, the 51 prefectures were still part of the 13 regions, and the appointed regional governors acted more as gatekeepers of central governance competences than as positive contributors to local governance strategies.

Table 1: Fundamental reforms in local economic governance in Greek Republic after 1974

Institutional Reform	Objective	Period	Administrative Bodies	Financing	Election
Law 1416/1984	Potential Amalgamation and cooperation of cities and rural communities	1984-1987	5.755 municipalities and rural communities, 51 prefectures	From Central Government, Local Taxes	Direct election for mayors from the electorate of municipalities and rural communities. Appointment of prefects by central government
Law 1622/1986	Establishment of regional governments	1987-2010	5.755 municipalities and rural communities, 51 prefectures, 13 regions	From Central State, Local Taxes	Direct election for mayors from the electorate of municipalities and rural communities. Appointment of prefects by central government. Appointment of regional governors by central government.
Law 2218/1994	Establishment of 51 prefectures as second level of local government	1994-2010	5.755 municipalities and rural communities, 51 prefectures, 13 regions	From Central State, Local Taxes, Loans	Direct election for mayors from the electorate of municipalities and rural communities. Direct election for prefects by the electorate of prefecture's municipalities. Appointment of regional governors by central government.
Kapodistrias Plan (Law 2539/1997)	Amalgamation of Municipalities and Rural Communities	1998-2010	900 municipalities 134 rural communities, 51 prefectures, 13 regions	From Central State, Local Taxes, Loans	Direct election for mayors from the electorate of municipalities and rural communities. Direct election for prefects by the electorate of prefecture's municipalities. Appointment of regional governors by central government.
Kallikrates Plan (Law 3852/2010)	Amalgamation of Municipalities and Rural Communities, Substitution of Prefectural Governments by Regional Governments.	2011-present	325 municipalities, 13 regions, 7 decentralized authorities	From Central State, Local Taxes	Direct election for mayors from the electorate of municipalities and direct election for regional governors by the electorate of regional unities (former prefectures).

Source: Hellenic Republic, Government Gazette, several issues

Table 2: Levels of Local/Regional Governments in Greece

Institutional Reform	Period	First Level of Local Government	Second Level of Local Government	Regional Governments
Law 1416/1984	1984-1987	5.755 municipalities and rural communities	-	-
Law 1622/1986	1987-2010	5.755 municipalities and rural communities	-	13 regions (NUTS II)
Law 2218/1994	1994-2010	5.755 municipalities and rural communities	51 prefectures (NUTS III)	13 regions (NUTS II)
Kapodistrias Plan (Law 2539/1997)	1998-2010	900 municipalities 134 rural communities	51 prefectures (NUTS III)	13 regions (NUTS II)
Kallikrates Plan (Law 3852/2010)	2011-present	325 municipalities	-	13 regions (NUTS II)

Source: Hellenic Republic, Government Gazette, several issues

In 1997 the amalgamation of 5.755 municipalities into 900 larger municipalities and 134 rural communities was considered an improvement of the first level of local government (Law 2539/1997) permitting municipalities to operate on a greater spatial scale (Hlepas & Getimis, 2011; Hlepas, 2010). However, central government's budget remained the fundamental source of revenue for local and prefectural governments while local taxes and lending had been reduced (Chorianopoulos, 2008). Equally important, local administration remained dependent on central government since there was no provision for the establishment of a local taxation system. Although mayors and prefects were elected through elections that were scheduled on the same day and for the same period of time (4 years)ⁱⁱ there was still political polarization. Prefectural elections had more political polarization as candidates received direct support from political parties while the qualifications of candidates mattered more than political identity in municipal elections.

Conclusively, all aforementioned reforms did not achieve the transfer of substantial legislative power to local authorities (Chorianopoulos, 2012). Decentralized administration acquired the political legitimacy to act but not the essential power to proceed. In crucial areas, like local entrepreneurship and spatial planning, regional administration despite the significant transfer of powers still is dependent on the central state.

The Kallikrates reform (Law 3852/2010), is the last legislative framework for local governance in Greece. The 1.034 municipalities and rural communities were amalgamated into 325 enlarged municipalities and the 51 prefectures were abolished and absorbed by the 13 regions. As a result, from 2011 the second level of local government is formed by 13 regions whose governors are elected directly by regional electorate.

Moreover, significant competences that refer to local entrepreneurship and public service delivery were transferred to regional governments and municipalities.

3.2 The System of Intergovernmental Grants Distribution in Greece

Intergovernmental grants distribution in Greece is institutionalized by the Greek Constitution (2008). Article 102 accentuates that “...the state takes all legal and fiscal measures that ensure finance autonomy of local governments. [...] Every transfer of competences from central government to local governments ought to be entailed by the transfer of the relative financial resources.”

The Constitution of the Greek Republic is harmonized with the perspective of European Charter of Local Self Government (Council of Europe, 1985). More specifically, article 9 stresses that the resources of local governments should be in proportion with their constitutional powers. Thus, Intergovernmental grants allocation in Greece could be considered a normal budget policy tool and is based on the provisions of Law 1828/1989.

According to law, total intergovernmental grants are divided into two main categories i.e. ordinal (regular) and non ordinal (non regular) grants. The terms of ordinal grants allocation among municipalities are constituted primarily by socioeconomic, demographic and spatial variables which are specified as normative variables. Non ordinal grants are not directly linked to these variables, but are compatible with local public services of each municipality. Non ordinal grants finance services like schools, childcare centers and nurseries, athletic centers and projects for elderly people. It is worth mentioning that each municipality has the competence to develop these services according to its own priorities and needs. The use of non ordinal grants by Greek municipalities is therefore important in financing fundamental sets of local public services. According to law (Code of Municipalities, 2006) the allocation of non ordinal grants is based on special characteristics of municipalities and not to a common methodological framework. Thus, decision making for the non ordinal financial aid of Greek municipalities takes into account the spatial heterogeneity of regional space and their different living standards (Ioannidis, 2013).

Taking into account the complexity of the local government's system in Greece, research on the terms of intergovernmental grants distribution becomes crucial. As Greece has been reluctant to apply bold institutional reforms in local governance compared to other European countries (Spanou, 2008; Monastiriotes & Antoniadis, 2009) rent seeking and clientelism emerged while asymmetries in regional planning persisted.

The present research studies the linkages between the amalgamation of municipalities and the strategies to reduce regional divergences. Prior to the Kapodistrias and Kallikrates reforms, the large number of municipalities and rural communities as well as the appointment of prefects by central government favored pork barrel politics as already mentioned.

Thus, the reduction of the number of municipalities as well as the enforcement of local administrative structures are considered *conditio sine qua non* for efficient local /regional governance.

Last but not least, the recent fiscal and economic crisis in Greece forces a dramatic reduction of government revenues and contraction in local expenditure (Mitsopoulos & Pelagidis, 2011). Recession stands as an impediment to the diminution of interregional divergences whereas intergovernmental grants in general are inadequate to face all negative multiplier effects of GDP fall. Thus, extending the analysis of the distribution of grants until 2010 and 2011 is crucial to uncover negative effects of the Greek economic crisis.

4. The Methodology of the research

4.1 Methodological Framework

The objective of our empirical research is to understand the impact that normative and institutional factors had on the allocation of intergovernmental subsidies. Our model is based on the relative estimation that Pinho & Veiga (2004) undertook for the distribution of intergovernmental grants across Portuguese municipalities. Their political economy approach used as dependent variable per capita grants to municipalities and as independent variables the lagged one year dependent variable, a vector of normative factors and a vector of public choice factors. Their results proved that election years, experience of mayors and political identity of mayors increased the total amount of grants that Portuguese municipalities received. Further, population, area and coastline location had also positive effects.

Taking into account the Pinho & Veiga model, our econometric analysis employs a new combination of dependent and independent variables. The basic dependent variable is the sum of grants that municipalities of each of the prefectures of Greece received from the central state between 2003 and 2010 (below we will explain that we did not study 51 prefectures but 50: for a number of reasons we excluded Attica). Research focuses on the influence that normative and institutional factors of prefectures exercised in the subsidies that municipalities of their territory received.

The two multilinear models that are introduced in the OLS (ordinary least squares) regression are the following:

$$TotalGrants_{i,t} = \alpha_0 + \alpha_1 TotalGrants_{i,t-n} + \alpha_2 Normative_{i,t} + \alpha_3 Institutional_{i,t} + \varepsilon_{it} \quad (1),$$

$$OrdinalGrants_{i,t} = \beta_0 + \beta_1 OrdinalGrants_{i,t-n} + \beta_2 Normative_{i,t} + \beta_3 Institutional_{i,t} + \varepsilon_{it} \quad (2),$$

where $n=1, 2, 3$.

$Grants_{i,t}$, is the total amount of money that the municipalities of prefecture i , took for the period t while $Grants_{i,t-1}$, $Grants_{i,t-2}$, $Grants_{i,t-3}$ are lagged variables from one to three years. $OrdinalGrants_{i,t}$, refer to the total amount that municipalities of prefecture i received for period t and $OrdinalGrants_{i,t-1}$, $OrdinalGrants_{i,t-2}$, $OrdinalGrants_{i,t-3}$, are lagged variables for the same period as well. In sequence, $Normative_{i,t}$ is a vector of normative variables for prefecture i in period t (i.e.:GDPperCapita, Population, Area, SortofArea). Respectively, $Institutional_{i,t}$ is a vector of institutional variables for prefecture i in period t (i.e.: PoliticalIdentityofPrefect, YearsinChairofPrefect, YearsbeforePrefecturalElections, YearofGeneralElections, NumberofMunicipalities) while parameters α , β denote the constant term and the coefficients of explanatory variables.

OLS estimation is based on fixed effects that dependent variables exercised in intergovernmental grants allocation. Statistical analysis is based on panel data that capture the period 2003-2010 while six regressions took place, three for each model. This division was decided in order to study the significance of dependent variable, lagged one, two and three years respectively on the final outcome. This selection allowed studying the path dependence of grants distribution in Greek municipalities. Consequently, regressions that included two lags used 350 observations (2004-2010) and regressions that took into account three lags used 300 observations (2005-2010). It should be notified that this option was based on the disposable data of intergovernmental grants of the Hellenic Ministry of Internal Affairs (2002-2010). In addition, the delay of the Hellenic Statistical Authority to address data about regional per capita income, delimited research to go beyond the Kapodistrias reform (i.e. 2011 and further; see tables 1 and 2). We will come back to this below.

We mainly examine the impact that independent variables had on the regular and on the total amount of grants. The purpose was to identify if the increase of financial assistance was followed by potential divergences in the levels of determinant coefficients, especially at the institutional level. All monetary variables (Grants, Grants per Municipalityⁱⁱⁱ, GDP per Capita), were deflated in Euros of 2001 in order to avoid inflation bias.

In the formula above, a negative sign of GDP per Capita means that the distribution of grants favors lagging regions. However, the findings of Wright (1994), and Grossman (1994) gave positive sign in this variable showing that the richest regions receive more. Johansson (2003), also found that municipalities with higher taxable income take less grants. In contrast, results of Aragon & Gayoso (2005), stress that regions with higher levels of poverty rate receive more financial aid than regions with less poverty.

On the other hand, a positive sign is expected for population, as populous prefectures have more needs. As it is mentioned above, significant services for non adults and adults are financed by ordinal as well as non ordinal grants. Therefore, the total population of prefectures was included in the regressions. Of course, the association between popu-

lation size and the level of public services is ambiguous. Borck & Owings (2003) denote that an increase of population boost the amount that regions take from central government. According to other studies (Johansson, 2003; Padovano, 2009; Foucault et al, 2008), population density affects negatively the total amount of the financial aid that municipalities and regions receive. Veiga & Pinho (2007) argue that effects are negative when all the citizens are included in the population and positive when population refers only to children up to 15 years old and people above the age of 65.

The set of normative factors contains also the variables of area and spatial type of country. Area was measured in squared kilometers of each prefecture and a positive sign is connected more tightly with greater prefectures. Spatial type of country was a dummy variable that refers to islands (3), coastal provinces (2), and mountainous provinces (1). Thus, a negative sign here declares the strategy of central state to protect the most distant regions.

Institutional variables estimated the level of intervention of prefectural government (second level of local government), to the allocation of subsidies that municipalities (first level of local government) of their provinces took from central government. Political identity of the prefect was divided into two categories, i.e. prefects that belong to the same party of central government (1) and prefects that had different political ideology (0). The positive sign is associated with political discrimination against the regions that have not a preference for the governing party. Previous research by Johansson (2003) and Padovano (2009), found positive effects of political affiliation, whilst Foucault et al (2008), stated that political identity matters only when variables like per capita expenditure of municipality and per capital public spending are absent from the analysis.

Years in chair for prefects are a numerical variable measuring the potential correlation of a prefect's experience with the amount of grants that municipalities of its provision and thus take a positive sign (the model of Pinho & Veiga (2004), revealed the importance of prefects' experience). Time before prefectural elections is expressed in numerical terms by measuring the interest of prefects to increase financial aid as elections comes closer. A positive sign here reveals the indifference of prefects to use their power in order to maximize the possibility of reelection. As Padovano (2009) proved intergovernmental grants in Italy were increased at years of regional elections. Year of General election is a dummy variable that comprises the years that general election in Greece took place (1), or not took place (0). The positive coefficient signals the significance of pork barrel politics in the process. Paradoxically, in the period 2003-2010 three general elections took place (2004, 2007 and 2009), even though two (2004 and 2008) resulted from normal political cycle.^{iv} Empirical results of recent studies (Johansson, 2003; Padovano, 2009) demonstrate that political determinants exercise more influence on the allocation of intergovernmental grants than economic and social variables do.

These findings can be connected with the fly paper effect i.e. the increase that intergovernmental grants generate in local public expenditures exceeds the respective increase of local income. According to the seminal approach of Courant et al (1979), fly paper effect gives the potential to local governments to spend rather due to their political priorities than to improve the terms for local development. This term is based on Okun's famous statement that "money sticks where it hits". However, the abovementioned findings demonstrate that money hits where central government's interests sticks. In addition, research findings by Foucault et al (2008), disclosed the importance of this variable for the increase of public investment grants. Last but not least, it is anticipated that the total amount of grants was increased by the number of municipalities of a prefecture. This means that prefectures with more municipalities were receiving more grants in order to face higher administrative costs.

The basic limitation of the research is that prefectures of the Attica region (which includes the entire metropolitan area of Athens) were excluded from the sample. This decision was forced by two reasons. First, regional accounts of the Hellenic Statistical Authority count the normative variables (GDP, Sort of Area) of Attica prefectures as one big county. Second, in Attica reside approximately 40% of the total Greek population and its integration into the sample as a big county might resulted in a selection bias as the policy of grants aims to decentralization of resources. In addition, as the collection of normative variables in Greece concerns the prefectures and not the municipalities, it was not feasible to search the impact that the two vectors of multi-linear regression (normative and institutional variables) had on subsidies distribution of each municipality. The same problem emerged for the political identity of mayors as a considerable number of them did not enjoy political support in the elections during the Kapodistrias period (Ministry of Internal Affairs, 2006).

In addition, it was not feasible to include into the analysis the impact that the Kallikrates reform exercise on grants distribution. More specifically, databases of regional accounts of the Hellenic Statistical Authority do not include data about GDP and population for 2012 and 2013. Taking into account that the first political cycle of Kallikrates reform ends at May of 2014, it would be incoherent to run regressions only for 2011. Therefore, our research captures the period 2003-2010 and refers to the effects of Kapodistrias reform on intergovernmental grants distribution.

Lastly, introduction in the regression of variables like total length of rail and road network and water supply chain which could give more robustness to the analysis^v was not feasible since the Hellenic Statistical Authority does not collect continuous data about these variables.

4.2 Descriptive Statistics

Tables 3 to 5 depict the descriptive statistics of dependent and independent variables.

Table 3: Descriptive Statistics of Intergovernmental Grants (figures in Euros)

	N	T	Mean	St.Dev	Minimum	Maximum
Total Grants						
2003-2010	400	8	25.641.552,97	22.777.367,61	3.036.872,98	202.224.769,44
2004-2010	350	7	26.509.464,09	23.415.652,14	3.036.872,98	202.224.769,40
2005-2010	300	6	27.254.956,59	23.969.050,62	3.036.872,98	202.224.769,40
Total Grants _1						
2002-2009	400	8	25.237.706,09	24.979.064,42	3.036.872,98	253.010.434,95
2003-2009	350	7	25.657.162,77	22.883.979,96	3.036.872,98	202.224.769,40
2004-2009	300	6	26.672.327,38	23.637.287,48	3.036.872,98	202.224.769,40
Total Grants _2						
2004-2010	350	7	24.170.870,36	24.323.406,45	3.036.872,98	253.010.435,00
2005-2010	300	6	24.482.430,53	21.682.769,52	3.036.872,98	178.004.926,00
Total Grants _3						
2005-2010	300	6	24.105.256,52	24.825.932,38	3.036.872,98	253.010.435,00
Ordinal Grants						
2003-2010	400	8	19.138.549,33	18.124.943,38	2.929.292,13	158.230.732,55
2004-2010	350	7	19.897.695,34	18.729.887,43	3.152.954,22	158.230.732,60
2005-2010	300	6	20.930.495,39	19.396.996,20	3.798.619,39	158.230.732,60
Ordinal Grants _1						
2002-2009	400	8	18.076.692,19	17.648.745,38	2.260.541,10	158.230.732,60
2003-2009	350	7	19.027.542,48	18.230.747,40	2.929.292,13	158.230.732,60
2004-2009	300	6	19.894.711,68	18.951.045,19	3.152.954,22	158.230.732,60
Ordinal Grants _2						
2004-2010	350	7	17.096.767,39	16.722.878,41	2.260.541,10	142.186.512,10
2005-2010	300	6	18.042.771,93	17.346.126,81	2.929.292,13	142.186.512,10
Ordinal Grants _3						
2005-2010	300	6	16.573.650,19	16.566.893,26	2.260.541,10	142.186.512,10

Source: Hellenic Ministry of Internal Affairs

Ordinal grants and total grants increased from 2003 to 2010. During the period 2003-2010, the mean value of total grants per prefecture is 25,64 millions whilst for ordinal grants this figure is 19,14 millions. The respective results for years 2004-2010 are 26,5 and 19,87 million euros while for the period 2005-2010 the total grants for each municipality were equal to 27,25 million euros and ordinal grants approached 20,93 million. Evidently, values of the lagged variables followed the same path.

For normative factors, GDP per Capita fluctuated from 13.457,43 (2003-2010) euros to 13.713 euros (2005-2010). The average population of prefectures increased slightly (296 inhabitants) while their area captured 2.568,38 squared kilometers of area. Apparently, sort of area denoted that the majority of Greek prefectures are coastal (1,98).

Table 4: Descriptive Statistics of Normative Factors

Normative Factors	N	T	Mean	St.Dev	Minimum	Maximum
GDP Per Capita (Numerical Variable-Euros)						
2003-2010	400	8	13.457,43	3.284,852	7.623	27.050
2004-2010	350	7	13.644,51	3.304,27	7.623	27.050
2005-2010	300	6	13.713,01	3.378,22	7.623	27.050
Population (Numerical Variable-Total Population)						
2003-2010	400	8	142.438,09	156.806,94	19.275	1.164.245
2004-2010	350	7	142.602,35	157.450,13	19.275	1.164.245
2005-2010	300	6	142.734,52	158.068,12	19.275	1.164.245
Area (Numerical Variable -squared kilometers)						
2003-2010	400	8	2.568,38	1.224,4	356	5.461
2004-2010	350	7	2.568,38	1.224,4	356	5.461
2005-2010	300	6	2.568,38	1.224,4	356	5.461
Sort of Area (Dummy Variable)						
2003-2010	400	8	1.98	0.76	1	3
2004-2010	350	7	1.98	0.76	1	3
2005-2010	300	6	1.98	0.76	1	3

Source: Hellenic Statistical Authority

The majority of prefects was affiliated with the ruling party (54%-55%) and during the period considered, their experience varied from 4,43 to 5,08 years in office. Further, mean time before prefectural elections fluctuated from 2,16 to 2,5 years and general elections took place three times as mentioned above (0,33-0.42).

Table 5: Descriptive Statistics of Institutional Factors

Institutional Factors	N	T	Mean	St.Dev	Minimum	Maximum
Political Identity of Prefect (Dummy Variable: 0: Opposite Political Identity to Ruling Party, 1: Same Political Identity to Ruling Party)						
2003-2010	400	8	0.54	0.49	0	1
2004-2010	350	7	0.55	0.49	0	1
2005-2010	300	6	0.55	0.49	0	1
Years Before Prefectural Elections (Numerical Variable)						
2003-2010	400	8	2.5	1.19	1	4
2004-2010	350	7	2.28	1.03	1	4
2005-2010	300	6	2.16	1.06	1	4
Years in Chair (Numerical Variable)						
2003-2010	400	8	4.43	2.67	1	12
2004-2010	350	7	4.78	2.6	1	12
2005-2010	300	6	5.08	2.6	1	12
Year of General Elections (Dummy Variable, 0: No general elections year, 1: Year that general elections took place)						
2003-2010	400	8	0,38	0,48	0	1
2004-2010	350	7	0,42	0,49	0	1
2005-2010	300	6	0.33	0.47	0	1
Number of Municipalities (Numerical Variable)						
2003-2010	400	8	18.74	9.82	6	48
2004-2010	350	7	18.74	9.82	6	48
2005-2010	2010	6	18.74	9.82	6	48

Source: Hellenic Ministry of Internal Affairs

5. The Empirical Results of the Analysis

Table 6 portrays the results of regression analysis for both ordinal and non ordinal grants.

Regression's results for ordinal grants refer to equation (2). For ordinal grants the explanatory variable with the most significant impact was the year of general elections. During each year of general elections grants to municipalities increased from 1,87 to 5,39 millions Euros. The experience of prefects is influential only when the dependent variable was lagged one year by increasing the total amount to 320 thousands of euros approximately. This finding indicates that for each additional year in prefect chair, grants were increased by more than three hundred thousands in the municipalities of prefectures.

In contrast years before prefectural elections, political identity of the prefect and number of municipalities did not determine significantly the financial aid.

For normative factors only population size had a persistent influence which fluctuated from 75,85 to 93,34 Euros per inhabitant. Geographical location of a prefecture and its per capita income did not matter in the decision making of grants allocation. Moreover, the area of a prefecture was crucial only for the period 2005-2010, as for each additional squared kilometer, municipalities received slightly more than 800 Euros. Equally important, path dependence shaped the ground for grants allocation for only two of the three considered periods but not to impressive sizes (from 0,1 to 0,22 Euros).

Regression of ordinal grants variable demonstrate that socio-economic factors (GDP per capita, sort of area) had no importance, while demographic factors (population, area) and institutional factors did exert influence on the financial assistance from central government to municipalities.

Table 6: Regression Results

	Ordinal Grants			Total Grants		
	2003-2010	2004-2010	2005-2010	2003-2010	2004-2010	2005-2010
Constant	-3.772.191,832 (-1,429)	-3.386.533,332 (-1,145)	-142.646,541 (-0,046)	2.407.524,198 (1,36)	2.052.576,360 (1,202)	4.290.613,335 (2,84*)
Grants_1	0,224 (4,957*)	0,105 (2,076**)	0,008 (0,144)	0,064 (3,23*)	0,144 (3,543*)	-0,173 (-3,879*)
Grants_2		0,209 (4,003*)	0,049 (0,864)		0,054 (2,729*)	0,307 (6,3*)
Grants_3			0,118 (1,244)			0,014 (0,847)
Normative Factors						
GDP Per Capita	165,725 (1,309)	130,005 (0,932)	-83,77 (-0,565)	148,741 (1,752***)	142,556 (1,685***)	47,736 (0,631)
Population	78,372 (15,245*)	75,852 (12,09*)	93,243 (11,674*)	126,162 (39,253*)	113,143 (20,147*)	125,067 (20,594*)
Area	551,205 (1,07)	59,288 (1,48)	806,966 (1.847***)	1.051,368 (3,047*)	812,297 (2,361**)	884,354 (2,841*)
Sort of Area	563.752,813 (0,883)	199.479,238 (0,303)	922.247,35 (-1,295)	-368.687,104 (-0,862)	-586.175,483 (0,171)	-478.740,921 (-1,246)
Institutional Factors						
Political Identity of Prefect	154.357,440 (0,196)	-447.716,942 (-0,514)	-684.099,86 (-0,739)	-96.919,326 (-0,184)	-521.505,136 (-0,972)	-541.421,314 (-1,129)
Years Before Prefectural Elections	-217.005,761 (-0,536)	611.237,686 (1,169)	534.589,794 (0,993)	-1.646.605,009 (-6,113*)	-1.381.287,457 (-4,312*)	-1.416.760,542 (-5,285*)
Years in Chair	320.902,659 (1,975**)	275.085,381 (1,608)	6..907,25 (0,038)	237.751,930 (2,215**)	183.216,400 (1,743***)	-32.926,491 (-0,354)
Years of General Elections	3.707.296,036 (4,346*)	1.872.489,644 (1,764***)	5.399.409,99 (4,585*)	4.854.602,587 (8,468*)	4.472.588,024 (6,825*)	5.669.774,471 (9,253*)
Number of Municipalities	3.0868,383 (0,457)	-3,896 (-0,091)	-29.709,53 (-0,645)	51501,203 (1,143)	58.757,899 (1,318)	82.249,405 (2,047**)
Observations	400	350	300	400	350	300
R²	0,829	0,839	0,857	0,951	0,961	0,974
Adjusted R²	0,824	0,834	0,851	0,95	0,959	0,971
F	187,119*	160,633*	142,316*	753,07*	752,441*	910,317*
Durbin-Watson	1,747	1,816	2,0364	1,528	1,477	1,872
* p<0.001, **p<0.05, ***p<0.1						

More significant results are derived from regressions that concerned total grants mentioned in equation (1). As it is shown, years of general elections had a clear impact ranging from 4.47 millions to 5.67 millions Euros for each electoral year. Moreover, electoral cycles decisively intervened with intergovernmental grants meaning that the longest the year of prefectural election was, the less money municipalities received. This means that during the initial periods of political cycle municipalities were receiving less grants than in the periods just before the prefectural elections. Prefects' experience was more important in total grants than ordinal grants as total amount was increased significantly for each additional year in office for periods 2003-2010 & 2004-2010 (from 183 to 237 thousand Euros approximately). Nevertheless, political identity followed the same path as in the case of ordinal grants but for each additional municipality, grants advanced by 82,249 thousands Euros during 2005-2010.

Interestingly, per capita income received positive sign for the first two regressions as each extra euro in purchasing standards was accompanied by increases in grants (142,55-148,74 Euros). On the contrary, sort of area is a variable with no influence at all in grants distribution, following the same path with ordinal grants. Population impact is significant with high levels per inhabitant (113,14-125,16 Euros). Similarly, each square kilometre increase was followed by a boost of financial aid (from 812 to 1.051 Euros). It is also evident that path dependence had an impact although not so significant as in the case of ordinal grants.

Our results also demonstrate that there is a linear relation between population size and grants. This connection becomes stronger as ordinal grants increase to total grants revealing that the supply of local public services is associated with the population size. Area variable seems to be influenced by the fact that the dispersion of settlements is greater at bigger prefectures. Nonetheless, the positive sign of GDP per Capita proved that healthier prefectures received more. This asymmetry reveals that reduction of interregional divergences across Greek territory was not a policy objective during the Kapodistrias reform.

The strong intervention of central government in grants distribution was also observed at institutional factors. The general elections effect was bigger rather for total grants than ordinal grants, but more significant differences were extracted for ordinal grants (see table 7). The greater impact of ruling party objectives on total grants can be explained by the fact that new decentralized public services were adopted before general elections.

Table 7: Differences due to General Elections and due to Political Identity

	Ordinal Grants			Total Grants		
General elections	2003-2010	2004-2010	2005-2010	2003-2010	2004-2010	2005-2010
Yes	21.272.257,21	21.272.257,21	25.057.938,31	27.798.564,21	27.798.564,21	30.679.591,76
No	17.858.324,59	18.866.773,92	18.866.773,92	24.347.346,23	25.542.639,01	25.542.639,01
t	-1,829***	-1.19	-2,632*	-1,469	-0,892	-1,756***
F	2,913	2,039	2,893***	0,874	0,391	0,775
N						
Yes	150	150	100	150	150	100
No	250	200	200	250	200	200
Political Identity	2003-2010	2004-2010	2005-2010	2003-2010	2004-2010	2005-2010
Same	19.515.466,87	20.068.782,86	21.026.320,90	26.316.020,99	27.145.808,31	27.769.199,89
Different	18.700.510,01	19.682.456,18	20.811.786,16	24.857.711,75	25.708.902,02	26.617.908,93
t	-0,448	-0,191	-0,095	-0,638	-0,57	-0,413
F	0,001	0,005	0,003	0,338	0,653	0,402
N						
2004-2010	350	7	0,42	0,49	0	1
2005-2010	300	6	0,33	0,47	0	1

Prefects also exercised a strong influence on the total amount of financial aid that municipalities of their prefectures received. Experienced prefects had greater success while their political future had greater impact on total grants constitution. Nonetheless, political identity of the prefect did not exercise significant impact. This might be a sign of commonly accepted tactics that were adopted by political opponents, or enemy policies that were applied by local politicians (prefects and mayors) belonging to the same party.

In other words, swing voting was an informal determinant of grants distribution as political preferences of local citizens have been exploited by central government. The finding that during general election years intergovernmental grants increased, highlights the intervention of central government at local res publica. As a consequence, pork barrel politics did exert strong influence on the distribution of intergovernmental grants .

6. Conclusions - Policy Implications

The basic objective of the research presented above is to highlight the determinants of grants distribution among municipalities in Greece during the period 2003-2010. Available data on normative factors (i.e. demographic and socioeconomic factors) delimited research to the Kapodistrias period. Our econometric estimation was based primarily on the model of Pinho & Veiga (2004) but we estimated the institutional framework in a more profound way.

The intervention of central governments and prefect governments in the distribution of intergovernmental grants across municipalities underlines the institutional perspective of our empirical analysis. Concerning the influence of election years and the experience of prefects there are deviations from the basic model due to the impact of normative variables and political identity of local governors. Further, excluding the population effect there are similarities with Johansson's research (2003), about the grants allocation in Swedish municipalities as well with research findings by Padovano (2009), for Italian regions. Specifically Johansson's findings (2003), emphasizes the influence that swing voters exercised on grants allocation to Swedish municipalities whereas Padovano's research (2009), underlines the importance of general election years in the financial aid that Italian regions received by central government. Our results are opposite to Foucault et al (2008) regarding socioeconomic factors as in their research unemployment rate determined crucially the intergovernmental grants to French municipalities.

Pork barrel politics' influence on intergovernmental grants distribution prevailed to the detriment of the target to reduce interregional divergences. Apart from the substantial influence of institutional factors, the positive sign of GDP per Capita denotes that intergovernmental grants were used rather as means of central and prefectural government power politics than as a policy tool which aims for decentralization. Future research should also analyze the influence of the Kallikrates reform on grants distribution taking into account the persistent fiscal economic crisis in Greece.

Results demonstrate that central government had a major influence on grants distribution among Greek municipalities. Paradoxically, the central level of governance and the second level of local governance determined more the level of intergovernmental grants for municipalities, than the socioeconomic and the demographic elements of the latter. Even though the intergovernmental grants of Greek municipalities are determined by the provisions of Law 1828/1989, empirical findings demonstrate that political gain of general and prefectural governments mattered more.

Moreover, the complexity of competences between different levels of local government and the intervention of central government in local decision making should be taken into account when examining intergovernmental grants allocation in Greece. In most European countries local governments are responsible for revenue collection, while central governments are not directly involved in local administration affairs (Council of European Municipalities and Regions, 2012). Additionally,

in most European states regional administration holds the second level of local government, while in Greece during 2003-2010 prefectures performed this duty. Under this perspective, it can be stated that dispersed decentralization of local governance, did not deteriorate pork barrel politics but in contrast upgraded their importance to intergovernmental grants distribution.

Last but not least, another special feature of the Greek case is that pork barrel politics are combined with the flypaper effect as political factors increased local public spending more than socioeconomic factors did. Especially this fly paper effect determined the terms of grants allocation. A positive sign of GDP per capita shows that “money sticks where it hits” under the condition of a suitable match with political interests of central and prefectural governments. In other words, healthier prefectures of Greece received more when voting preferences served political considerations.

Sequentially, a number of improvements is required in order to use intergovernmental grants as a tool for the reduction of interregional divergences in Greece. Thus, the priorities of policy implications should focus, above all, on the transfer of competences to municipalities in order to collect a significant share of their own revenues. A stronger tax gathering competence of local government could ameliorate optimal grants allocation and could enhance local institutions leverage in local development. Equally important, interregional transfer of funds from the richest to the poorest regions could outweigh the negative effects of current spatial planning for lagging regions.

Overall, positive effects for local economic development could be maximized if intergovernmental grants are earmarked, scheduled on a multiannual basis and subject to local sustainable development strategy. Moreover, financing grants should take into serious consideration the traits of fiscal decentralization, the content of local financial autonomy, the competences of local tax authorities, the willingness of local political elites to contribute to development and last but not least specific social and institutional conditions of each municipality. Evidently, institutional variables should function as determinants of efficient grants allocation and not as elements of pork barrel politics or rent seeking strategies.

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Endnotes

- ⁱ The European Union ‘Nomenclature of Territorial Units for Statistics’ which subdivides EU countries for statistical purposes. There are currently three levels.
- ⁱⁱ The first simultaneous election of mayors and prefects took place at the local government’s elections of 1994.
- ⁱⁱⁱ Grants per Municipality, is a variable that denotes the mean value of grants that the municipalities of a prefecture i , received for a year (t), i.e.

$$\text{Grants per Municipality}_{i,t} = \frac{\text{Total Amount of Grants}_i}{\text{Number of municipalities}_i}$$

- ^{iv} According to the Greek Constitution general elections take place every four years. However this administrative provision is not binding as each government reserves the right to call elections before the completion of the political cycle.
- ^v Law 1828/1989 includes these variables as spatial factors of grants distribution.

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