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**The Economic and Political Impacts of Top-Down Territorial Reforms:  
The Case of Portuguese Parishes**

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**Abstract**

The crisis of the sovereign debt forced the Portuguese government to reach out for joint financial help from the International Monetary Fund, the European Union and the European Central Bank. The Memorandum of Understanding (MoU) stresses the need for a major redefinition of the Portuguese local government system. Currently, the Portuguese local government is structured in two tiers (308 municipalities and 4259 parishes), both with an executive and deliberative elected bodies. The Portuguese government was asked to present a plan to amalgamate these local entities in order to enhance service delivery, improve efficiency and reduce costs. The main argument used is that excessive territorial fragmentation undermines efficiency and precludes scale economies.

The main objective of the paper is to test two competing hypotheses regarding local government spending present in the consolidation/fragmentation literature. The Tiebout (1956) tradition argues that fragmentation induces lower spending through competition between local governments offering different taxes-services packages – the Leviathan model (Brennan and Buchanan 1980). This argument is in sharp opposition with the supporters of amalgamations arguing that territorial centralization can produce economies of scale and significant cost savings, reduce overlaps, and promote better accountability (Rosenfeld and Reese 2004). These hypotheses are tested with data collected from all 278 local governments of continental Portugal. We measure local government spending both in terms of total expenditures and grant transfers to parish governments and territorial fragmentation as the number of parish governments per 1000 individuals. Our findings show that higher levels of fragmentation lead to increased local government expenditures and transfers to parish governments, thus suggesting that the amalgamation proposed by the MoU and mandated by national legislation is likely to induce cost savings and improve financial sustainability.

The most recent financial crisis drove Portuguese government to reach out for help in order to solve sovereignty debt problem. One of the reforms agreed upon in the Memorandum of Understanding (MoU) signed by the Portuguese government with the International Monetary Fund (IMF), the European Union (EU), and the European Central Bank (ECB) is the need to challenge and modify the organization and structure of the local government system. The Portuguese government is required to elaborate a plan seeking territorial amalgamation of subnational governments. While municipalities face a voluntary process of amalgamation, parishes are under pressure to accomplish a mandatory reform.

Parishes are the smallest level of government in the Portuguese local government system and the first access point of citizens to public authority.<sup>1</sup> In most of the cases, parish governments are highly dependent on financial resources granted by the central government and municipalities. Central government grants to parishes are based on a fixed formula, but municipal grants to parishes are much more flexible and the result of discretionary power by municipal governments.

The official reform guidelines argue that territorial fragmentation, particularly municipal fragmentation in parish governments, causes excessive local government spending and transfers to these sub-city governments. The aim of this paper is to analyse whether territorial fragmentation within municipalities is a determinant of municipal government expenditures and transfers to parishes or if, alternatively, other factors unrelated with fragmentation are at play.

Since the 1980s, a remarkable number of academics have examined the effects of metropolitan fragmentation upon local spending. Much of this work looks at metropolitan fragmentation and finds support for the argument that territorial fragmentation and local government competition decreases spending due to more efficient service provision attributed to Tiebout-type effects (Schneider 1986; Marlow 1988; Boyne 1992; Hendrick, Jimenez and Lal 2011). However, most of these works take place in the United States, where highly competitive metropolitan settings suggest that citizen-voters choose between different local government tax-service packages and where competition leads to lower municipal government expenditures (Bish 1971; Ostrom, Tiebout and Warren 1961; Brennan and Buchanan 1980; see Frisken and Norris 2001).

Our work contributes to this body of knowledge in two ways. First, we debate the effect of fragmentation upon local government expenditures in a much less competitive setting. Second, to our knowledge, this work is the first attempt in the literature to investigate how the internal fragmentation of municipalities affects the size of the municipal government in general, and the size of municipal grants to sub-city governments in particular. The key argument is that the amount of local expenditures and the size of municipal government transfers to parishes is a function of the level of municipal fragmentation.

At a time when national and sub-national governments face challenges to control and decrease spending, uncertainty remains as to whether a decentralized or consolidated local government system is more appropriated to accomplish these goals. Supporters of

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<sup>1</sup> Portuguese municipalities are divided into a lower tier of sub-city governments called parishes. Portugal has a total of 308 municipalities and 4259 parishes. This manuscript employs the terms ‘sub-city government’ and ‘parish government’ interchangeably.

decentralized governance argue the need to keep the current territorial organization to protect civic engagement, choice, competition and an accurate representation of citizen choices and preferences. Amalgamation promoters follow the MoU approach and defend the need for a more centralized structure in order to promote scale economies and to avoid pork barrel policies and the duplication and overproduction of public services. The attempts to bridge these opposing views have argued for the need to improve municipal cooperation and utility sharing, but the current context limits voluntary cooperation as a viable short-term solution.

We gathered data from all 278 municipal jurisdictions in continental Portugal and employ OLS regression to test how territorial fragmentation affects municipal expenditures. The results provide evidence that supports the amalgamation hypothesis, i. e., more fragmented municipalities increase total expenditures, capital expenditures, and capital grants transfers to sub-city governments.

This paper is divided in six sections. The first two sections present a brief review of the literature and theoretical arguments supporting both government amalgamation and fragmentation. These sections introduce the concept of territorial fragmentation and discuss previous findings regarding its effect upon the size of local government. The third section extends prior arguments concerning municipal fragmentation in a metropolitan area to sub-city level fragmentation. Next, we present the research context and the Portuguese local government system. Section five presents the empirical analysis, including data, methods, and empirical findings. The conclusions of this research are presented in the final section along with policy recommendations for territorial reform.

### **The Rationale for Amalgamation: Scale Economies and the New Regionalism**

During the post-WWII years, functional responsibilities assumed by national governments increased substantially, largely motivated by a confidence in the miracles of professional planning, effective co-ordination, and large bureaucracies. In face of this work overload, many national governments were faced with a structural obstacle in transferring service provision responsibilities to local authorities. Many municipalities and communes were involved in a minimal number service functions, covered small geographical areas, and were characterized by part-time local officials and staff.

As a result, the explicit political decision to expand the role of the welfare state became the primary reason for municipal amalgamations. In economic terms, amalgamation supporters argued that service provision covering larger populations would be able to take advantage of economies of scale, because service output was assumed to increase in a greater proportion than service inputs employed (increasing returns to scale).

The decision to engage in territorial reforms was also motivated by the need to create larger municipalities able to provide a large number of services through more professional planning staff, full-time committed politicians, and a greater pool of financial resources (Bennett 1989; Boyne 1996). Part of this argument falls under the heading of economies of scope, suggesting that larger local government units can handle task complexity in a more efficient manner (Dollery and Crase 2004).

The pace and timing of urbanization during the second half of the XX century created several new demands on local infrastructure, particularly in terms of water supply, sewage and garbage disposal, road maintenance, mass public transportation,

housing, and urban-rural clashes. Some local governments were simply too small to cope with these mounting pressures; horizontal fragmentation became a liability and an obstacle to overcome spillover effects across territorial boundary lines. This was especially true for spatially indivisible services (public libraries, health care units, pollution control programs, etc.), since fragmentation generates positive externalities and leads to the underprovision of these types of services due to free-riding incentives (Boyne 1992). Each municipality expects their neighbour(s) to invest in these services, but none of them wishes to bear the full costs of these decisions.

Empirical work points out that government fragmentation and dispersion have related fiscal problems (Gustely 1977; Hendrick, Jimenez and Lal 2011). A fragmented and dispersed local government system is inefficient, loses scale economies and generates service duplication. Firstly, fragmentation increases the cost of government because scale economies in the provision of local services are lost and average costs are higher. Secondly, the overlapping of local governments in some systems leads to inefficiencies due to lost opportunities for the coordination of services to avoid duplication. Thirdly, various smaller governments in an area create spillover effects so that the actions of one government generate benefits (costs) for neighbouring jurisdictions that have not contributed (consented) to these actions. All governments have an incentive to become free riders resulting in the under-supply of local public goods. Fourthly, citizen attribution of credit and blame to local officials will be less accurate in systems with a higher number of overlapping governments (Treisman 2007). Thus, fragmentation leads to unnecessary growth of government through waste and inefficient organization and, consequently, increases the size of the local public sector (Hendrick, Jimenez and Lal 2011). In this sense, an often-suggested alternative to a fragmented and dispersed system is governmental consolidation/amalgamation.

Territorial amalgamation and fiscal consolidation promotes an increase in size that reduces unit costs by capturing economies of scale that make services financially sustainable allowing the production and promotion of supplementary goods and services. Furthermore, size and consolidation prompt better coordination and allocation of services that reduces free-riding behaviour in the case of positive externalities and mitigates opportunism associated with negative externalities.

Recently, the New Regionalists have argued that metropolitan fragmentation is not only problematic from an economic perspective but also from a social standpoint (Rusk 1993; Downs 1994; Durning 2003). Fragmentation generates racial and class homogeneity within governmental boundaries and significant disparities and segregation across each metropolitan area, thus making regional problems much more difficult to address. In contrast, consolidation improves the likelihood that regional problems are addressed in a comprehensive manner to enhance equity of social opportunities and promote economic development (Lowery 2000).

### **The Rationale for Fragmentation: Tiebout Model, Competition, and Efficiency**

Beginning in the end of the 1960s, political economists working from a public choice perspective have taken an opposing view to consolidation. Criticizing pro-amalgamation supporters, political economists argued that fragmentation leads to greater competition among local governments through Tiebout's (1956) fiscal exit mechanism, leading to increased governmental efficiency and a better match between citizen

preferences and local government tax-and-service packages. The Leviathan hypothesis developed by Brennan and Buchanan (1977) suggests that local government competition increases the information available to residents about the price and quality of public services. As governments are afraid of losing local taxpayers, the delivery of public services will be associated with lower spending and significant efficiency gains (Boyne 1992; Dowding and Mergoupis 2003; Park et al. 2010). The Leviathan hypothesis is supported by empirical evidence that fragmentation leads to lower expenditures (Schneider 1986; Marlow 1988; Grossman 1989; Hendrick, Jimenez and Lal 2011).

Furthermore, the efficiency argument stated by the supporters of municipal amalgamation is empirically flawed (Boyne 1998; Sancton 2000). The assumption of scale economies based on population size and municipal area is incorrect, since: 1) scale economies are not uniform across the range of services provided by an individual local government (capital-intensive services yield significant economies of scale, but labour-intensive services usually do not) (Hirsch 1968; Dollery and Crase 2004; Dollery and Fleming 2006); 2) management costs increase significantly with increases in population size, so that some trade-off point exists after which scale diseconomies begin (Boyne 1992; 1996); and 3) population size is a bad proxy for service output because service costs depend on several factors not related with population size (climate, topography, age, income, seasonal fluctuations in target populations, and variations on service quality) (Boyne 1996; Dollery, Byrnes and Crase 2007).

### **The Amalgamation/Fragmentation Debate at the Sub-City Level of Government**

The consolidation versus fragmentation debate has been primarily developed around municipal fragmentation within a metropolitan area. This section suggests the extension of these theoretical insights to sub-city fragmentation. We discuss and present two competing hypothesis in the consolidation/fragmentation tradition and test them in the empirical analysis using several indicators of local government expenditures and transfers to sub-city governments.

Territorial fragmentation is directly associated with the number of existing sub-city governments. As the fragmentation in a jurisdiction increases so does the density of representation and, *ceteris paribus*, this can be considered as a good outcome regarding the quality of local democracy. The multiplication of sub-city governments can be regarded as a way to improve representation, accountability and public participation (Bulut and Taniyici 2006; Tavares et al. 2012).

However, there is a price to pay for improved representation. The ‘political fragmentation’ hypothesis argues that the number of political actors is positively correlated with the size of deficits. Empirical work addressing the political fragmentation hypothesis has examined and found support for the positive effect of legislative fragmentation on the levels of public spending (Volkerink and de Haan 2001; Bradbury and Stephenson 2003; Elgie and McMenamin 2008). In the Portuguese context, the city council has a mixed composition combining parish (*freguesias*) representatives and at-large elected members. Since the city council has the legal competence for budget approval it is expected to be a key player in the overall budget negotiation, including transfers to sub-city governments.

Following the law of  $1/n$ , we argue that the institutional rule linking the size of the city council to the number of parishes in the municipality leads to increased political

fragmentation and generates excessive spending in distributive and geographically-targeted policies (Weingast, Shepsle, and Johnson, 1981; Bradbury and Stephenson 2003; MacDonald 2008). As a consequence, we expect to find less efficiency in total expenditures, capital expenditures, and municipal transfers to parish governments.

Since municipal grants to parish governments are distributed on a purely discretionary basis, it can be expected that these sub-city governments will attempt to lobby their parent municipal executive to obtain larger grants (Tavares and Camões 2007; 2010). Heavily fragmented municipalities will face excessive spending due to lobbying activities by their sub-city governments leading to a fiscal tragedy of the commons. Each parish executive will use the municipal government as a common pool resource seeking to capture a larger proportion of municipal transfers for her/his district and sharing the added fiscal burden equally with their counterparts. As a consequence, all sub-city governments will choose the same strategy seeking short-term benefits ignoring long-term allocation inefficiencies and higher taxes (Ostrom 1990; Bradbury and Stephenson 2003). The result is municipal version of the ‘political fragmentation’ hypothesis where the number of political actors in the jurisdiction is positively related with the size of local government expenditures and grant transfers to parishes (Velasco 2000; Volkerink and de Haan 2001; Elgie and McMenamin 2008).

This body of work suggests that fragmentation produces inefficient outcomes and should be reined in much in the way proposed by the supporters of the amalgamation/consolidation perspective and reflected in the MoU signed by the Portuguese government. Hence, the ‘amalgamation hypothesis’ is that:

*H1a: Higher levels of territorial fragmentation lead to higher municipal government expenditures and larger transfers to parishes.*

However, the authors from the public choice perspective argue the exact opposite. The level of sub-city fragmentation, that is, the way each municipal jurisdiction is fragmented into sub-city governments, should produce a higher level of competition within the jurisdiction that can lead to lower service production costs and better democracy.

On one hand, when it comes to sub-city fragmentation, it can be argued that the existence of a single parish or small set of parishes may result in monopoly or overlap in power between the municipal and sub-city governments. In the extreme case of a municipality with a single parish government, the sub-city government overlaps with the municipal government in terms of service provision leading to either collusion between municipal and parish executives that produces an inefficient level of grant transfers or to monopoly power by the parish government that can make all-or-nothing demands regarding municipal transfers (Niskanen 1968; 1971). Either way, the outcome will be higher spending per individual than it would be the case in a fragmented setting. Consistently, municipal transfers to sub-city governments will be smaller under a fragmented municipality because each parish government will be right-sized and more efficient (less expensive) to operate (Ostrom, Tiebout and Warren 1961; Bish 1971). In addition, competition between sub-city governments can improve efficiency and savings through benchmarking practices. This will happen as long as the municipal government coordinates innovations across parishes through grants in order to overcome

informational externalities; in other words, an individual sub-city government can promote innovation because the risk associated with a failed innovation is shared with, and subsidized by, the municipal government and the more fragmented the municipality the lesser risk is involved in experimentation. In the extreme case of a single sub-city government, not only there are no competitors to imitate, but also the risk associated with experimentation is much larger (Rose-Ackerman 1980; Treisman 2007).

On the other hand, sub-city fragmentation can also improve democratic representation. Since parishes in a highly fragmented municipality are similar to neighborhood governments, citizen-voters can choose to live in the sub-city government that better matches their preferences (Tiebout 1956; Ostrom, Tiebout and Warren 1961; Bish 1971). Although there are no substantial differences between Portuguese parishes in terms of fiscal packages to promote competition as required by public choice scholars, there is still sufficient variation in terms of community profile, services offered, and fees charged by each parish government to affect the choices of citizen-voters. As a result of both arguments, sub-city fragmentation enforces competition, enhances efficiency, and improves the accuracy of democratic representation.

In sum, the competition argument suggested by the supporters of fragmentation states that there is a negative relationship between territorial fragmentation and the level of municipal expenditures and grants to sub-city governments, since a high level of fragmentation results in competitive pressures to lower service costs and the size of transfers. The ‘fragmentation hypothesis’ is:

*H1b: Higher levels of territorial fragmentation lead to lower municipal government expenditures and transfers to sub-city governments.*

The empirical analysis tests these competing hypotheses from the amalgamation/consolidation literature in the Portuguese context by examining how different levels of fragmentation within Portuguese municipalities affect the level of municipal transfers to sub-city governments, and the amount of local government total and capital outlays. The following section presents a brief description of the Portuguese local government system with a particular emphasis on parish governments. This outline should provide the necessary information required for understanding the empirical model.

### **Research Context: The Portuguese Local Government System**

The Portuguese Constitution recognizes parishes (*freguesias*) as local governments (art. 238). The origin of parishes lies in the V century when the Catholic parishes (*paróquias*) were the delegations of the *sedes* or *cathedra* of Episcopal Church. The community was built around the church and the priest following communitarian rules. Given the spiritual connection between the church and its followers, these became known as parishioners (*paroquianos*) and the congregation as the parish (*paróquia*). After the Liberal Revolution of 1820, many religious institutions were secularized with a more evident separation between church and state and the parishes assumed different names, depending on their nature. In 1830, parishes were incorporated in the administrative system as civil parishes (*paróquias civis*) as opposed to religious parishes (*paróquias eclesiásticas*). After 1878, the Catholic Parishes remained *paróquias*, but their political equivalent became the *freguesia* (Pereira and Almeida 1985).

Presently, parishes are the smallest unit of local government in Portugal and their boundaries are completely contained within a single municipality. The number of parishes in which municipality varies significantly, ranging from one (S. João da Madeira), where the boundary of the parish coincides with the boundary of the municipality, up to 89 (Barcelos), where each parish is essentially equivalent to a neighborhood (Silva 2004). The number of parishes can also be regarded as a proxy for preference heterogeneity at local level because each parish represents a specific set of interests, lobbying the municipal government for more and better services for the residents (Tavares and Camões 2007).

Parishes have democratically elected institutions, including both an executive and a deliberative body. The parish council (*Assembleia de Freguesia*) is a deliberative body elected through direct and universal suffrage proportionally to the number of registered voters in the parish territory. The parish executive (*Junta de Freguesia*) is composed by the parish president and a variable number of cabinet members, two of which will be the secretary and the treasurer. The parish president is the first candidate on the list receiving most votes to the parish council.

Like the municipal government, parish governments have also functional areas assigned by law, including the management of rural and urban infra-structure, pre-school and elementary school buildings, cemeteries, public kennels, and vacant lands, as well as powers in emergency management, planning, community development, and other assorted declarations and attestations required by citizens (Law 5-A/2002, January 11). Besides these, parish governments can also develop their activities in areas delegated by municipal governments through formal agreements involving investments and management of infra-structures. Despite this wide range of intervention areas, parish executives are usually severely restricted by the lack of financial autonomy and reduced yearly budgets that prevent them from completely fulfilling these goals.

Parishes are classified in three different types for the purpose of central government grants to correct regional asymmetries. The Portuguese central government shares part of its tax collection revenues with the remaining levels of government. Parishes are entitled to 2.5% of the arithmetic mean of the revenues from personal income tax (IRS), corporate income tax (IRC), and sales tax (IVA). This intergovernmental grant is the Parish Financial Grant (*Fundo de Financiamento das Freguesias*) – Law of Local Finances (Law 2/2007, January 15) (art.21). It is shared in line with the criteria identified in article 32, according to parish type: urban, semi-urban and rural (see refer to table 1).

1. Urban parishes – population density above 500 people per square kilometer or with a locality with 5,000 or more resident population;
2. Semi-urban parishes – non-urban parishes with population density above 100 people per square kilometer, or with a locality above 2,000 and below 5,000 resident population;
3. Rural parishes – all the others.

[Table 1 here]

The most relevant own revenue sources of parish governments include: 50% of the property tax revenue on rustic/rural buildings, fees charged in services provided by parish governments, street markets and fairs, cemeteries, fines and penalties established by law, income derived from property rental and revenues from concession contracts.



Finally, parish revenues also include municipal grants decided by the parish executive and approved by the city council. These transfers from the municipality to its parishes entail more flexibility and discretionary power by municipal governments. Thus, it becomes relevant to inquire the causes of the variation in municipal transfers and whether territorial fragmentation plays a role in the size of these transfers.

Present-day fiscal pressures and the MoU signed by the Portuguese government forced substantial cut-backs at the local level. The exiguity of parishes' own revenues combined with a greater dependence on upper level grants motivated the debate on the need to reshape the organizational model of local government. Fragmentation has become one major issue of interest and debate and the MoU perspective is that territorial amalgamation is the way to promote lower spending, achieve a balanced budget for local governments and, at macro level, national financial stability.

### Data and Methods

Does fragmentation explain the size of the local government expenditures and transfers to sub-city governments? In order to answer this question, we analyze data from the 278 Portuguese municipalities of continental Portugal and its 4050 parishes in an attempt to verify a link between fragmentation and spending. The consolidation hypothesis suggests that municipalities with a lower degree of fragmentation will display lower levels of spending and transfers to their sub-city governments, whereas the fragmentation hypothesis argues the exact opposite. Our full model can be represented by:

$$Y_i = \beta_0 + \beta_1 (\text{Parishes}) + \beta_2 (\text{PolAlig}) + \beta_3 (\text{NetDebt}) + \beta_4 (\text{MunRevenues}) + \beta_5 (\text{APU}) + \beta_6 (\text{APR}) + \beta_7 (\text{GovGrants}) + \beta_8 (\text{MunGrants}) + \beta_9 (\text{Under15}) + \beta_{10} (\text{Over65}) + \beta_{11} (\text{Area}) + \mu$$

Our dependent variable is the size of local government expenditures. We measure this variable using four indicators: total municipal expenditures per capita, capital expenditures per capita, total grants per capita to parishes and capital grants per capita. All measures are natural logarithmic transformations. The independent variable of interest is *Parishes*, the number of parishes per 1,000 individuals, an indicator that allows us to gauge the degree of territorial fragmentation adjusted for the level of population in each jurisdiction. Highly fragmented jurisdictions can be compensated by a larger population and score low on this indicator of fragmentation. On the other hand, a municipality with the same level of fragmentation and less population will score higher. A positive sign indicates support for the amalgamation hypothesis, whereas a negative sign backs the fragmentation hypothesis.

Besides the variable gauging the level of municipal fragmentation, the model includes several control variables that we believe contribute to explain the level of municipal transfers to parishes. A more cohesive local political environment, where most parish executives belong to the same political party of the municipal executive, can lead to a higher level of grants transferred to their parish. Since these grants are discretionary and reflect the level of trust between levels of local government, we can extend the political fragmentation argument to the Portuguese city council. A 'political alignment' hypothesis can be drawn stating that municipal executives ensure more financial assistance to parishes when the proportion of parish executives belonging to the same political party is larger. So, we expect that higher levels of political alignment will be

associated with higher levels of municipal government transfers to parishes. Our political alignment variable (*PolAlg*) is measured as the proportion of parish governments in the municipality belong to the same political party as the mayor. A positive coefficient is expected for this variable.

*NetDebt* is the difference obtained by subtracting the assets to the liabilities of the municipality. This variable allows us to control the effect of the overall financial situation of each municipality. It is expected that in situations of higher debt, municipalities will be more limited in their spending as well as in the level of grants attributed to parish governments. *MunRevenues* is the proportion of municipal own revenues and measures the fiscal health of a community. It is expect that wealthier jurisdictions are more willing to share more funds with parishes. *APU* is the proportion of urban parishes in each municipality and *APR* is the proportion of rural parishes in each municipality. The omitted category is that of semi-urban parishes. We expect that spending and grants will be larger in urban parishes and smaller in rural parishes. *GovGrants* is the natural log of the total central government grants to parishes. Work by Carr and Karuppusamy (2010) shows that cities receiving more intergovernmental grants present higher expenditure levels for all services. We do not have any a priori expectation regarding the relationship between the size of central governmental grants to parishes and municipal spending, but it makes intuitive sense to argue that local governments will spend less if their parishes are already receiving grants from the central government. *MunGrants* is the natural log of municipal government grants per capita to parishes and is expected to be positively associated with local government expenditures. *Under15* is the proportion of resident population under 15 years of age in the municipality and *Over65* is the proportion of resident population over 65 years old in the municipality. *Area* is the area of the municipality in square kilometers. Positive coefficients are expected for these three demographic variables as they express a measure of social welfare needs. Data were collected from the General Directorate of Local Government (*Direcção-Geral das Autarquias Locais*) and the National Bureau of Statistics (*INE*). Table 2 displays a summary of descriptive statistics of all variables included in the analysis.

[Table 2 here]

Ordinary least squares (OLS) regression is employed to estimate the models using the grants conceded from municipalities to parishes (natural logarithm) as the dependent variable. The results of the OLS regressions are presented on table 3.

[Table 3 here]

### **Empirical Findings**

The overall results confirm the idea that there is a positive relationship between the level of fragmentation and local government size, thus lending support for the amalgamation hypothesis. In three out of four models, fragmentation measured as the number of parish governments per 1000 population increases the size of government in terms of total municipal expenditures, capital expenditures and capital grants to parish governments. The fragmentation variable is still positive in the case of total grants to parish governments, but barely misses statistical significance. As expected, our models

are better at explaining the size of local government expenditures than the amount of grant transfers to parish governments. Nevertheless, the overall performance of the four models is fairly consistent with our prior expectations.

Starting with total municipal expenditures, we find that each additional parish per 1000 individuals increases, on average, the amount of total spending by 10 percent. Interestingly, the results also show that this effect is somewhat offset by central government transfers to parishes. In other words, an increase in central government grants by one log reduces total local spending by 27 percent. Perhaps the most impressive result is the impact of elderly population in municipal expenditures at the municipal level. This effect is extremely large, both in terms of total and capital local government expenditures, and entirely consistent with recent empirical work (MacDonald 2008; Carr and Karuppusamy 2010).

The results of the capital expenditures model are consistent with the total expenditures model. Again, each additional parish increases, on average, the amount of capital expenditures by 14 percent. A similar effect occurs in terms of central government grants: an increase in central government grants by one log reduces total local spending by 16 percent. In addition, both models indicate that, all else equal, an increase in net debt by 10,000 Euros per capita decreases total and capital expenditures by 1 percent.

Next, we analyze the results of the models explaining the size of municipal transfers to parishes. The results are fairly consistent with our previous findings. Fragmentation increases the level of capital grants to parish governments. Specifically, a one-unit increase in sub-city fragmentation increases the amount of capital grants to parishes by a whopping 47 percent. This suggests that fragmentation is particularly responsible for infrastructure spending at the parish level, something that is less prevalent in less fragmented municipalities.

The models explaining municipal transfers to parishes are also interesting by contrast with those addressing municipal expenditures. The results above show that central government grants to parishes are negatively related with municipal spending, which can be easily understood since local governments are required to spend less with parish governments if an upper level of government is already doing this. However, when we look at municipal grants to parishes we see that they are positively associated with central government grants to parishes. This result is consistent with the idea that parish governments are heavily dependent on upper level grants, so that some parishes receive cumulatively central government grants and municipal transfers.

The variation in capital grants to parishes can also be explained by the type of parish. It appears that municipal transfers are higher in municipalities where there are a larger proportion of semi-urban parishes. Capital grants to parishes are also less frequent in municipal jurisdictions characterized by populations in need (under 15 years-old or above 65). This indicates that capital grants are directed towards communities with a larger proportion of working population.

## **Conclusions and Policy Implications**

This paper contributes to the territorial amalgamation/fragmentation literature in several ways. First, our findings clearly indicate that municipalities with higher levels of fragmentation are associated with higher municipal expenditures and larger transfers to sub-city governments. Thus, from a purely economic perspective, a territorial reform that

promotes parish amalgamations is likely to produce significant savings at the local level and promote efficiency in the use of taxpayer's money. However, in political science, the *small is beautiful* motto is upheld by the empirical literature linking small jurisdiction size with increased voter turnout (Oliver 2000; Larsen 2002) political participation (Verba and Nie 1972; Oliver 2000) and internal political efficacy (Lassen and Serritzlew 2011). Fragmentation is thus regarded as positive for the quality of the local democracy as smaller jurisdictions improve citizen's feelings of competence to understand as well as participate in local politics. Recent work argues that, from a quality of democracy perspective, increased municipal fragmentation into sub-city governments improves democratic representation and civic and political participation by local citizens (Carr and Tavares 2012; Tavares and Carr forthcoming). The confluence of these findings is consistent with the trade-off between economic efficiency and political participation proposed by prior work in the fiscal federalism literature (Inman and Rubinfeld 1997).

Second, our results do not support the 'fragmentation hypothesis', since more fragmented municipalities are associated with both higher expenditures and larger grants to their sub-city governments. However, this finding can be understood in light of one specific feature of the Portuguese local government system. Local governments in Portugal are not responsible for collecting local taxes and their discretion in setting property tax rates is highly constricted by national legislation. As a result, the tax competition effect that drives the Leviathan model argued by Brennan and Buchanan (1977; 1980) is unlikely to work in the Portuguese context. This feature weakens the relationship between citizens and representatives and generates a fiscal common property from which parish governments attempt to graze as much as possible (Padovano 2004).

Finally, recent work by Elgie and McMenamin (2008) finds that institutional fragmentation in ageing democracies leads to excessive depletion of the common pool of the central government budget. Our findings point to a similar effect at the local government level in Portugal. Even though the Portuguese democracy is still fairly young (just under 40 years-old), the overwhelming majority of parish governments are almost two hundred years-old. When combined with our results, this context suggests that the fragmentation effect is becoming more severe as these institutions become more embedded, thus crediting the need for territorial reform outlined in the MoU.

The MoU signed by the IMF/EU/ECB and the Portuguese government points a solution to the problem of territorial fragmentation that is consistent with the amalgamation hypothesis, recommending the mandatory amalgamation of parish governments in order to improve the efficiency and economies of scale to be achieved by these territorial units and reduce the tendency to overspend from the common municipal pool. Our work provides empirical evidence that supports the policy recommendations by the MoU, thus underlining the need for territorial reform of Portuguese parishes. However, we stress that any reform should be accompanied by a revision of functions assigned to parish governments as well as the adoption of a funding mechanism that links taxes and service benefits through the user-pays principle.

The territorial reform of Portuguese local government is currently under implementation, largely determined by national legislation adopted by the center-right coalition government lead by Prime-Minister Passos Coelho. Future work should address this highly complex process, namely the role played by city council members in a reform that affects them directly. Although the reform is based on criteria mandated by

legislation, there is some discretion regarding the actual amalgamation choices. Perhaps one of the most interesting topics of future research is the analysis of which city councils voluntarily engaged in parish amalgamations respecting top-down predefined criteria and which ones did not, and why. After the institutionalization of this reform, work comparing before-and-after spending will be of extreme value to determine whether this reform actually achieved the goals of its proponents.

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Table 1. Central Government Grants to Parishes (Criteria and Weights)

Parish Financial Grant	Criteria	Weight	
2,5% of the arithmetic mean of the revenues from personal income tax (IRS), corporate income tax (IRC) and sales tax (IVA)	5% equally shared by all parishes		
	Population	30% proporcional	
	Area	15% proporcional	
	Typology	50% according to parish type	14% urban parishes
			11% semi-urban parishes
25% rural parishes			

Table 2. Descriptive Statistics

<i>Dependent</i>	Obs	Mean	Std. Dev	Min	Max
Total expenditures per capita (ln)	278	6.925	.466	5.824	8.099
Capital expenditures per capita (ln)	278	5.935	.587	4.099	7.464
Total grants per capita (ln)	266	2.805	1.151	-2.922	4.864
Capital grants per capita (ln)	218	2.3	1.368	-5.896	4.587
<i>Independent</i>					
Fragmentation (parish units per 1000)	278	.889	.807	.032	4.237
<i>Control</i>					
Political Alignment (% same party)	278	.686	.222	0	1
Net indebtedness (per capita)	278	-778.368	732.096	-6694.879	915.538
Municipalities Own Revenues (%)	278	.317	.177	.038	.809
APU (%)	278	.237	.302	0	1
APR (%)	278	.525	.325	0	1
Area (km <sup>2</sup> )	278	320.026	283.605	7.943	1720.609
Governmental grants to parishes (ln)	278	13.25	.637	12.154	15.624
Grant transfers to parishes per capita (ln)	266	2.805	1.151	-2.922	4.864
Population under 15 (%)	278	.133	.025	.067	.188
Population over 65 (%)	278	.221	.056	.107	.4

Table 3. Ordinary Least Squares Regressions

	Municipal Expenditures		Municipal Grant Transfers to Parishes	
	Total Expenditures per capita (ln)	Capital Expenditures per capita (ln)	Total grants per capita (ln)	Capital grants per capita (ln)
<i>Independent</i>	Coefficient (RSE)	Coefficient (RSE)	Coefficient (RSE)	Coefficient (RSE)
Fragmentation (parish units per 1000s)	.1092*** (.0298)	.142*** (.041)	.16 (.136)	.47*** (.148)
<i>Control</i>				
Political Alignment (% same party)	-.0103 (.0809)	.035 (.117)	.195 (.281)	.046 (.344)
Net indebtedness (per capita)	-.0001** (.0001)	-.0001* (.0001)	.00001 (.0001)	.0001 (.0001)
Municipalities Own Revenues (%)	.056 (.11)	.073 (.1646)	.3 (.33)	-.318 (.476)
APU (%)	.066 (.101)	-.215 (.152)	-.795* (.431)	-.929*** (.402)
APR (%)	.055 (.123)	.085 (.164)	-.582 (.432)	-1.136*** (.445)
Area (km <sup>2</sup> )	.0003** (.0001)	.0001 (.0001)	.0006** (.0002)	.001** (.0004)
Governmental grants to parishes (ln)	-.27*** (.0529)	-.162*** (.06)	.47*** (.13)	.36** (.169)
Grant transfers to parishes per capita (ln)	.0167 (.016)	-.001 (.023)	-	-
Population under 15 (%)	2.149 (1.836)	-.764 (2.611)	-.37 (6.056)	-18.375** (7.554)
Population over 65 (%)	3.88*** (.87)	3.229*** (1.075)	.839 (2.532)	-6.824** (3.215)
Constant	8.978*** (.935)	7.184*** (1.07)	-3.632 (2.465)	1.717 (2.907)
Observations	266	266	266	218
F	55.48	29.49	5.64	7.92
Prob>F	.000	.000	.000	.000
R <sup>2</sup>	.656	.5365	.1331	.184

\*p<.10; \*\*p<.05; \*\*\*p<.01; two-tailed tests. Robust standard errors in parentheses.