The Next Generation of Low-Income Home Owners in Struggling Urban Neighborhoods

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This paper explores how the financial crisis has affected experiences and ideas about community among aspiring low-income home owners. It looks at how different levels of neighborhood decline impact social networks and neighborhood confidence. Utilizing survey data collected from participants of low-income home buyer education workshops, and secondary neighborhood data, the paper examines the relative influence of neighborhood and psycho-social variables on future purchase aspirations. It seeks to explore how urban neighborhood decline might be transforming future geographies of low-income home ownership. The focus on aspiring home owners provides new insight into the future viability of home ownership and community in struggling neighborhoods, and tells a more complex story of vulnerable housing niches in declining urban areas.

Trends of Fiscal Centralization: Portuguese Local Government Reform

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The crisis of the sovereign debt forced Portuguese government to reach out for joint financial help form the IMF (International Monetary Fund), EU (European Union) and ECB (European Central Bank). In the financial agreement terms, IMF/EU/ECB stressed the need of a major redefinition of the local government organization. Nowadays, Portuguese local government is structured in 308 municipalities and 4259 parishes both with elected officials and administrative, financial and patrimonial autonomy. So, Portuguese government was asked to deliver a consolidation plan to reorganize local entities enhancing service delivery, improve efficiency and reduce cost. The main argument used is that excessive territorial and fiscal fragmentation undermines efficiency. This research seeks to measure the impact of territorial and fiscal fragmentation in local government spending. We begin by looking into Tiebout's (1956) argument that an optimal level of local expenditures can be defined based on a consumer-voter preference towards public goods and taxation. Than we balance with the opposite argument, used by international agencies, that, bought territorial and fiscal, centralization can produce economies of scale, reduce overlaps, control free riders and promote better accountability (Hendrick et al. 2011). The main objective of the paper is to test the competitive hypothesis that fragmentation/centralization induces higher spending in local government. To test this hypothesis we

use a quantitative approach collecting primary financial data assembled from all Portuguese local government. We defined as a dependent variable, the level of expenditures per capita in each local government. Then, we use the size of the local government, the number of parishes within each local government, the standard deviation of revenues, as indicators to measure territorial and fiscal fragmentation.

Capital Cities and Anchor Institutions: Anchoring a Federal Agency in the Local Community

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Anchor institutions have long been touted for their potential to catalyze and create opportunities for spin-off development in surrounding communities (Fulbright-Anderson, Auspos, and Anderson, 2001; Initiative for a Competitive Inner City, 2010; Rodin, 2007). Several scholars have examined the ways in which military installations, government agencies, and other federal entities have contributed to the emergence of innovative regional economies (Accordino, 2000; Markusen, Hall, Campbell, & Deitrick, 1991). Little is known, however, about the unique role that anchor institutions play in capital cities. Capital cities play an important role in shaping a nation's cultural, social and political identity and the literature has extensively examined their role as centers of political power. Most studies of capital cities focus on their historical evolution, urban morphology and representation of power, and their position in the national urban system (Gordon, 2006). There is, however, a lack of understanding of capital cities as economic systems and particularly the ways in which the federal and the local communities interact and how federal agencies may or may not play a role in anchoring community economies. This paper draws on recent work related to an emerging opportunity surrounding a new Department of Homeland Security facility on Washington, DC's St. Elizabeths campus, one of the most underserved communities in the region. As part of a larger study of the innovation cluster potential in southeastern DC, we explore how local and federal leaders may better incorporate the surrounding community in the development process and foster sustained and mutually beneficial relationships thereafter.

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Trends of Fiscal Centralization: Portuguese Local Government Reform

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The crisis of the sovereign debt forced Portuguese government to reach out for joint financial help form the IMF (International Monetary Fund), EU (European Union) and ECB (European Central Bank). In the financial agreement terms, IMF/EU/ECB stressed the need of a major redefinition of the local government organization. Nowadays, Portuguese local government is structured in 308 municipalities and 4259 parishes both with elected officials and administrative, financial and patrimonial autonomy. So, Portuguese government was asked to present a consolidation plan to reorganize local entities enhancing service delivery, improve efficiency and reduce cost. The main argument used is that excessive territorial and fiscal fragmentation undermines efficiency.

This research seeks to measure the impact of territorial and fiscal fragmentation in local government spending. We begin by looking into Tiebout's (1956) *argument that an optimal level of local expenditures can be defined based on a consumer-voter preference towards public goods and taxation. Then we counterpoin with the opposite argument, used by international agencies, that, bought territorial and fiscal, centralization can produce economies of scale, reduce overlaps, control free riders and promote better accountability* (Hendrick *et al.* 2011)

The main objective of the paper is to test the competitive hypothesis that fragmentation/centralization induces higher spending in local government. To test this hypothesis we use a quantitative approach collecting primary financial data assembled from all Portuguese local government. We defined as a dependent variable, the amount of money transferred to parishes in each local government. Then, we use administrative fragmentation index in local government as indicators to measure territorial and population level of fragmentation. With the results of the paper, we hope to contribute to some clarification in the literature about fragmentation and federalist strategies to improve financial sustainability.

The authors would like to express their appreciation for the research assistance provided by Catarina Magalhães. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the *Fundação de Ciência e Tecnologia* (FCT).

INDTROCUTION

Most recent financial crises drove Portuguese government to reach out for help in order to solve sovereignty debt problem. One of the trends of reform agreed, between IMF (International Monetary Fund), EU (European Union) and ECB (European Central Bank) and Portuguese government was the need to challenge and modify local government institutions and organizations. Therefore, it was asked to elaborate a plan seeking territorial consolidation.[1] Nowadays, while municipalities face a voluntary process of amalgamation, parishes are under pressure to accomplish a top-down reform. Parishes are the smallest level of government and the first access point of citizen to public authority.

The guideline of reform argues that present territorial fragmentation damages local governments optimal level of expenditures. The aim of this paper is to analyze territorial fragmentation as a determinate of local government expenditures. A remarkable number of academics have examined the determinants of local spending. Classical argument of public choice theory argues that budgets and the level of expenditures are a result of political cycles that reflect rent-seeking strategies of politicians (Nordhaus 1975) and Niskanen (1968) perspective that bureaucratic budgetary decision are x-inefficient. More recent works argue that the structure, forms of democracy (Macdonald 2008; Carr & Karuppusamy 2010), political fragmentation and level of representation (Hajnal & Trounstine 2010; Feiock *et al.* 2009), civic participation (Gabrini 2010; Park et al. 2010), and the opportunistic behaviour of local actors that promote common-pool resources strategies (Weingast *et al.* 1981; Bradbury & Stephenson 2003; Elgie & McMenamin 2008).determine the size of local government expenditures.

Our work focuses on local spending, mostly on how the fragmentation of municipalities into parishes affects the size of public expenditures. A lot of work has been looking at fragmentation as a determinant of municipal expenditures. In our work we seek to do a multi-level analysis. Parishes are a level of government that, in most of

[1] Municipalities in Portugal are divided into lower levels of administration called parishes. Portugal has a total of 308 municipalities and 4259 parishes.

the cases, is highly dependent on financial resources granted by central government and municipalities. If the former is based on an established rule the latter depends on the several factors revealing more flexibility and on municipalities' discretionary power. Only a few have enough capacity to ensure financial autonomy from the provision of public services. We argue that the level of fragmentation into parishes (lower-level) affects the size of municipal expenditures (higher-level). So, in a time when governments, central and local, face huge challenges to control and decrease their expenditures many doubts can be lifted whether to have a decentralized or consolidated system (Reuben et al. 1982). The choice for the kind of local government organization balance between these two main streams. One arguing with the need to keep actual administrative structure for the sake of civic engagement, choice, competition and accurate representation of citizen choice's and preferences. The other, followed by IMF/EU/ECB, believing on the need to have a more centralized structure in order to avoid pork barrel decisions and overproduction of public services. Additionally, they stressed the need to improve cooperation and share utilities rather than territorial competition mostly because of the variation of population felt over the time.

Several approaches can be drawn from fragmentation and, in each one, we can find arguments supporting the opposite ends of a consolidation-fragmentation spectrum. Territorial fragmentation is, at the same time, a very well- known and studied issue and it's the "base camp" for other two forms of fragmentation: fiscal and political. For territorial fragmentation we use, on the one hand, Tiebout's (1956) argument that it is possible, using market mechanisms of territorial competition, to determine an optimal level of public expenditures. On the other hand, territorial consolidation can avoid overlapping and duplicate services and produce economies of scale. Fiscal fragmentation or dispersed responsibilities and public resources uniformly distributed among local governments can also produce greater competition between local governments through Tiebout's (1956) fiscal exit mechanism. The main arguments support the reduction of size of local governments. But on the contrary, a fragmented and dispersion structure of local governments could be less efficient and increase the size of those governments. Political fragmentation is also known as the theory of the weak government (Elgie, 2008). It argues that the number of parties in government coalition or the political degree of competition can increase the size of local government expenditures. However, absence of opposition can lead to an uncontrolled government leaving all decisions in their hands and increasing expenditures.

Using the argument that local level structural organization determines the size of the government, constitutional rules establish the type of territorial fragmentation that constrains fiscal options and political representation. Finally, we argue that the way that rules and structures are established – *Institutions* – determine politicians choices', the way they interact, vote, *ie*, their political and economic behaviour and, in this particular case, levels of public spending.

We gathered data from all 278 municipal jurisdictions in continental Portugal and we use OLS regression to measure how fragmentation can determine the local expenditures. Since we focus on local structures, namely on parishes analysis, we measure the size of the government by the amount of financial resources granted to parishes, by local government, and we use several measures of territorial, fiscal and political fragmentation as independent variables. We expect to find evidence that supports one of the two competing explications: that fragmentation promotes accurate levels of competition, corrects fund distribution and welfare, or that consolidation, achieving more economies of scale, is better suited to control municipal expenditures with parishes.

We found evidence that support the fact that territorial fragmentation has an optimal level that minimizes municipal grant to parishes. We also found evidence that let us believe that fiscal fragmentation tends to increase local government spending. So we believe it is necessary to update fiscal and financial rules to better suit the competitive context of parishes.

This paper is divided in four sections. In the first we introduce the context of Portuguese local government bases and the several approaches of fragmentation stating our hypotheses. Second we present the model of hypotheses, key concept and data sources. Thirdly, we present our empirical findings and, finally, we discuss the main conclusion of this investigation.

LOCAL GOVERNMENT FRAGMENTATIONS

Portuguese constitution imposes that all territory must be divided in municipal jurisdictions and, the latter, in parishes (*freguesias*). Current administrative division has its origins in early XIX century and it's linked with the Catholic Church own territorial division. Mostly on rural areas, people that were living in same place had the church as the only form for a community. Then they started to put together some effort in order to organize much needed common services. The creation of parishes was, therefore, recognition of already existing structures.

Nowadays, parishes have all structures democratically elected and have both executive and deliberative bodies. All parishes are treated as equal and they are classified in three different types only to financial grants purposes (in order to correct regional asymmetries). They have all the same competencies and in specific fields such as education (organization of services at kindergarten and elementary school level), wealth (infrastructures), welfare (elderly assistance, homeless, etc.) and other declarations and statements needed by citizens.

However, present-day fiscal pressure stressed Portuguese government to promote financial cut-backs and the exiguity of parishes own revenues combined with a greater dependence on financial grants motivated the debate on the need to reshape the local organizational model of government. Fragmentation had become one major issue of interest and debate. IMF/EU/ECB understanding was that territorial consolidation was a way to follow to achieve the needed budget equilibrium of local governments and, at macro level, national financial stability.

This is a well know and studied topic were we found several and opposite understandings and arguments on how fragmentation can affect the size of the municipalities. Looking further at the literature, and beginning with Tiebout's (1956) approach, we can establish a continuum between fragmentation and consolidation of the territory. Tiebout's understanding was based on the belief that local government competition while leading, ultimately, to efficiency and that citizens' choice for any jurisdiction reflects, in fact, a choice for a package of public services and fiscal burden. Besides being important in the structural organization, territorial fragmentation defines, in our opinion, two other major types of fragmentation: fiscal and political. As we said, following previous argument, the degree in which the territory is divided, that is, the municipal jurisdiction is fragmented into parishes, determines the level of competition of the same jurisdiction. Being coherent with Tiebout's arguments, higher competition will lead to lower production cost avoiding x-inefficient situations of monopolies (Weimer & Vining 2010). Finally, territorial fragmentation leads to an increasing number of parishes democratically elected which increase the accuracy of constituents' preferences. By all this, one can say that fragmentation enforces competition, efficiency and representativeness. However, a lot of imperfections can be pointed out to this fragmentation concept. Consolidation position argues that fragmentation leads to overlapping services, budget maximization and weak government perception. The same stream argues that amalgamation and fiscal consolidation drive parishes away from a dangerous situation were their excessive financial dependency could make them administrative extensions of the administrative machinery without any regard for their constituency preferences. Additionally it solves the problem of geographical scarcity and the potential limitation to service delivery due to constrains in the ability to lower average costs through economies of scale. Consolidation allows size increase that enables the reduction of unit costs and thereby makes possible the production and promotion of supplementary goods and services to the population.

In this paper we seek to analyze whether fragmentation drives, or not, to higher spending.

Territorial Fragmentation

Tibeout (1956) sought to understand what motivated the optimal level of public local spending. Analysing the classical problem of overproduction of public goods, Tibeout realizes that it was very difficult to force the consumer-voter to state his true preferences and, additionally, that they will rationally opt for a rent-seeking free ride strategy where consumers hope to enjoy goods avoiding any taxation. In this situation, local spending is expected to be higher and local governments found themselves powerless to counter this situation. Given these problems, the purposed model of government needed to cover three major situations: to force consumer-voter to reveal its preferences; local government ability to satisfy them; and consumers to be taxed accordingly. Territorial fragmentation was argued to be a mechanism to accomplish the stated objectives. Fragmentation induces competition since local governments are viewed as jurisdiction, financially bounded, with a combination of public goods/fiscal burden that better suits the preferences of the citizens that each is trying to capture.

Basically Tiebout's model is based on the assumption that people are permanently looking to evaluate alternatives that might better satisfy their sets of preferences and that local governments are competing for the wealthiest and manage tax mobility to improve their tax base (Reuben et al. 1982).

Tiebout's work leads to what is known as the Leviathan hypotheses (Brennan & Buchanan James 1977; Park et al. 2010). The idea is centred on the assumption that decentralized government encourages competition and lowers public spending. Furthermore, Some work found evidence to support the leviathan hypotheses that fragmentation leads to less expense (Schneider 1989)

However, some downside can be pointed out to this approach. Some linked with its assumptions, other with its accuracy to explain mobility and lastly a different view that argues precisely the need of territorial consolidation.

This model has some specification that can be found hard to comply with. Firstly, the model assumes the mobility of voters. This is the ability and motivation of moving through the territory seeking to better satisfaction. The rigidity of the labor market, as well as their own regional variations, precludes the accurate fulfilment of this proposition. Secondly, there should be perfect information available so that citizens could evaluate the alternatives and realize the choices that best serve their interests. The third assumption is that there is an optimal size, in terms of population, for each territorial unit. As such, local elected officials consciously act to promote the increase, or decrease in population within their jurisdiction.

Besides these remarks, linked to the internal coherence of the model, Bickers *et. al* (Bickers et al. 2006) challenged the own bias of the Tiebout's approach. The authors found alternative explanationscation to the mobility of consumers-voter. Social capita, sense of community, ethnics and level of income are to be considered as important determinants of the mobility between jurisdiction.

Territorial fragmentation can be accused to lead to confusion, political unresponsiveness, duplication of effort, inefficiencies in services provision, large government outlays and units of government to concern with their own problems (Dolan 1990; Reuben et al. 1982). Territorial consolidation is an approach that seeks to coalesce territorial units to improve a better use of services, avoiding opportunistic behaviours and free-riding strategies.

A most common argument is the one that sustains that size and consolidation allow a better coordination and allocation of services that avoids duplicated efforts. And, at the same time, size allows to reduce average costs that make services financially sustainable, so it is argued that consolidation increased efficiency and economies of scale.

Fragmentation allows the hypotheses of Politicians to perform rationally and pursue pork barrel project (Weingast et al. 1981). Politician can make decisions that grant a net profit to their jurisdiction while sharing the financial burden with the rest of the community. They act taking jurisdiction as a common pool resource were each one seeks approval for his district project, sharing with the rest of the added fiscal burden. As a consequence, all districts will choose the same strategy seeking short-term benefits ignoring long-term allocation inefficiencies and higher taxes (Ostrom 1990) (Feiock et al. 2009; Bradbury & Stephenson 2003).

Territorial consolidation reduces free-riding behaviour in the case of positive externalities. Size minimizes the risks of neighbor populations "invade" their territory in search of goods without having contributed to them (Elgie & McMenamin 2008).

From the literature we can point out arguments to sustain a fragmentation/consolidation continuum. The fragmentation of the municipal jurisdiction in parishes can have one of the two implications: on the one hand, it can raise inter-local government competition and relieve municipal burden of financial support. On the other, increasing numbers of parishes can generate a situation of pork barrel decision associated with logrolling (Buchanan James & Tullock 1962; Macdonald 2008).

Our first hypothesis has the purpose to test Tiebout's argument that there is an optimal level of public expenditures linked with the territorial decentralization. We argue that low levels of fragmentation redraw competing initiative and increase budget and expenditures to a level higher than the optimal:

H1a: Higher levels of territorial fragmentation lead to higher local government public spending levels.

On the other hand, excessive fragmentation can create inefficiency due to overlapping services and territory exiguity limitation to achieve economies of scale. So our hypothesis is:

H1b: Higher levels of territorial fragmentation lead to lower local government public spending levels.

From both hypotheses we can draw a general one that argues that there is an optimal level of fragmentation that minimizes public spending:

H1: Territorial fragmentation has a U shape relation with public spending.

Fiscal Fragmentation

It is commonly accepted that the spectrum fragmentation/consolidation includes a fiscal perspective. Boyne (1992) and followed work of Hendrick, Jimenez and Lal (2011) relates that this dimension of local governments structure is associated with the distribution of responsibilities and public resources. In others words, it refers to the extent to which service delivery and other fiscal responsibilities are concentrated or dispersed. In a concentrated system, for example, most functions and public resources are located in a small number of authorities rather than widely dispersed (Boyne, 1992). In this case and according to the number of local government units, the responsibilities and public resources can be uniformly distributed among local governments or concentrated in a few units.

According to several works, fragmentation and dispersion can lead to greater competition among local governments through Tiebout's (1956) fiscal exit mechanism. The existence of various local governments increases the information available to residents about the price and quality of public services and as governments are afraid of losing local taxpayers, the delivery of public services will be associated with lower spending and efficiency gains (Boyne, 1992; Dowding and Mergoupis, 2003; Hendrick, Jimenez e Lal, 2011). Giving these arguments, fragmentation and dispersion will reduce the size of local governments.

However, Gustely (1977), Hendrick, Jimenez and Lal (2011) and Schneider

(1986) pointed out that government's fragmentation and dispersion have related fiscal problems. A fragmented and dispersed local government's structure will be less efficient and more costly. Firstly, fragmentation increased the cost of government because economies of scale in the provision of local services were lost; Secondly, the overlapping local governments that exist in some systems lead to inefficiencies because of lost opportunities for the coordination of services to avoid duplication and overlap. Thirdly, various smaller governments in an area will create spillover effects in which the actions of one government will benefit or create costs for government nearby. All governments have an incentive to become free riders. Fourthly, citizen's knowledge of the costs of government will be less accurate in systems with a higher number of overlapping governments. 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); Schneider, 1986). In this sense, an often-suggested alternative to fragmented and dispersed system is governmental consolidation/concentration. In a fiscal perspective, consolidation should be associated with lower costs and greater efficiency, producing economies of scale (Boyne, 1992).

In the Portuguese context, the fiscal responsibilities and public resources are distributed among all parishes, by financial grants provided by central government, considering the type of parishes. In this sense, we can enunciate a fiscal fragmentation hypothesis, arguing that a higher level of fragmentation into parishes leads to a higher level of size of local governments. Our second is:

H2: Higher levels of fiscal fragmentation lead to higher local government public spending levels.

Political Fragmentation

Territorial fragmentation is directly associated with the number of existing local governments. It is obvious to see that as long as the fragmentation in a jurisdiction goes we will have higher levels of density of representation. This can be considered as a good outcome regarding the quality of local democracy. The multiplication of local governments can be understood as a way to improve representation, accountability and public participation (Bulut & Taniyici 2006).

Political fragmentation has also been studied as a measure of governmental fragmentation between majority and coalition situations (Elgie & McMenamin 2008). The weak government hypotheses stressed the importance of cohesion for municipal levels of spending (Elgie, 2008). The original hypotheses were mutated to test parliament versus government fragmentation and to analyze the effect issues such as debt and levels of expenditures (Hann and Sturm, 1997). Political fragmentation was also analyzed under the aim of how decision was spread across different actors (Crain & Muris 1995). In most of the situations a strong correlation is found between fragmentation and public expenditures or debt.

At the local level, and in particular to this multi-level analysis, we seek to analyze the effect of political fragmentation in a new sense. In the Portuguese context, city council has mixed composition combining parish (*freguesias*) represent and at-large elected members.[2]. Since city council has the legal competence of budget approval it is expected to be a key player in the overall budgetary negotiation. One can argue that a more coherent political environment, where most of the parishes representative are from the same political party of the executive, can drive to less financial spending. However, it is important to notice that we are willing to establish a relation between the degree of fragmentation and the level of grants that municipalities guarantee to their parishes. Since these grants arenot mandatory, and reflect the level of trust between levels of local government, we can make an opposite argument. A political alignment hypothesis can be drawn stating that municipalities are willing to ensure more financial assistance to entities that share the same political ideology and, therefore, political alignment drives to a higher size of local government. So, our hypothesis is:

H3: Higher levels of political fragmentation lead to lower levels of local government spending

DATA AND METHODS

This research addresses to a main question then divided into three more specific. The first question is: do fragmentation explains the size of the local government? Then we specify our questions on how the territorial/fiscal/political fragmentation sustains the

[2] Portuguese Law rules that in any case can the representatives of parishes out numb the at-large elected.

determination of the size of municipal spending. In order to answer these questions, we analyze data from 278 Portuguese municipalities and 4050 parishes[3] on an attempt to verify a link between size, measured by financial grant given by municipalities to parishes, and levels of fragmentation. We expect to find a positive relation between fiscal fragmentation and the size of the local government and a negative one with political fragmentation. Additionally, we expect to find a U shaped relation between territorial fragmentation and the size of the local government. So, our model seeks to test, in Portuguese context, the Tiebout's arguments that fragmentation improves efficiency through the use of a competitive mechanism. Additionally, since literature points out several approaches that deny the gains of a territorial fragmentation, we use a measure to find an optimal level of fragmentation that minimizes the local government expenditures.

Our model can be represented by:

$$\mathrm{Ln(MunicipalGrant)} = \alpha\ (\#\mathrm{Parishes}_{\mathrm{per\ capita}}) + \theta\ (\#\mathrm{Parishes}_{\mathrm{per\ capita}})^2 + \gamma\ (\mathrm{HHI}_{\mathrm{Financial}}) + \delta\ (\mathrm{Political\ Alingment}) + \omega\ (\mathrm{Net\ indebtedness}) + \varphi\ (\mathrm{Income}_{\mathrm{per\ capita}}) + \varphi\ (\mathrm{Urban\ Soil}) + \mu$$

As a dependent variable we use the *Ln(MunicipalGrant)* as a proxy to the size of the local government, considering that it represents the overall grants fixed by local government to their parishes. These grants are committed to parishes on two regular bases: One is the will of municipalities to voluntarily share some of the legal competence with their parishes. This process of decentralization is compelled to a financial grant to ensure the feasibility of the process. Another situation is when municipalities decide to grant financial funding to a parish in order to make specific investments that originally where confined to the municipal responsibility. Dealing with expenditures has a problem of potential endogeneity since levels of expenditures can be related to incrementalism, taking the former year a decision base (Macdonald 2008; Pettersson-Lidbom 2011). However, we believe that, since our dependent variable is a voluntary grant based on yearly decision, taken by municipalities, we have minimized the main endogeneity problems.

[3] We use data only from continental Portugal

As independent variable we consider the three different kinds of fragmentation. For territorial fragmentation we use the number of parishes per 1,000 population (Berry 2008; Craw 2008; Hendrick et al. 2011) and its square. This indicator allows us to measure the accurate degree of territorial fragmentation considering the level of population of each jurisdiction. Highly fragmented jurisdiction can be compensated by a larger population and have a low score on this fragmentation indicator. On the other hand, the same level of fragmentation with less population will score higher. We expect to find a U shape relation between fragmentation and the size of the government. Data were collected from the National Bureau for Local Government (*direcção-geral das autarquias locais*) and National Bureau of Statistics (*INE*).

Financial fragmentation is given by levels of fiscal fragmentation that is based on Hirschman-Herfindahl index (HHI). HHI is normally used in industrial context to measure the level of concentration of one market/industry. It gives you an idea of the level of competition of one firm in the market. It is obtained by the sum of the proportion of all units within a system squared.[4]. Then, in order to get the level of fragmentation, as Hendrick (2011) made, we subtracted the index from 1. So, the value of the index ranges from 1 (high fragmentation) to 0 (low fragmentation). Considering that parishes' functions are listed exhaustively by central government and the accomplishment of those functions is provided by central government through financial grants that are distributed according to the type of parishes, we allocate the revenues of financing fund of parishes by each parish, contemplating the municipal jurisdiction. The argument is that higher level of fiscal fragmentation into parishes will increase the level of local governments public spending. As the financial grants are based on an established rule, the larger the number of parishes, the greater the size of local governments. Data were collected from the National Bureau for Local Government (*direcção-geral das autarquias locais*).

Political fragmentation was measured by the relative weight of parishes that belong to a different party of the municipalities over the overall number of parishes in that jurisdiction. The argument is that the higher the level of fragmentation, the weaker the political alignment will be. Being built on a voluntary basis, municipal grants can increase as fragmentation is lower, since municipalities tend to overlook their own

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[4] $\sum_{i=1}^{n} s^2$

parishes.

Our control variables are the net debt, income and urbanization rate. Net indebtedness is obtained by subtracting the assets to the liabilities of the municipality. It allows us to control the effect, in municipal grants, of the overall financial situation of each municipality. It is expected that in situations of higher debt, municipalities will tend to decrease the level of grants. Data were collected from the National Bureau for Local Government (*direcção-geral das autarquias locais*) and National Bureau of Statistics (*INE*). Per capita income is a measure that allows us to control the wealth of a community. Itis expect that wealthier jurisdictions are more willing to share more funds with parishes since their marginal costs are close to zero. Finally, urbanization rate serves the purpose to control the need of population for more urban infrastructures (%urban). Data for population and income, population and urbanization rate were gathered by the National Bureau of Statistics (INE).

[Table 1 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. Results of OLS regressions are presented on table 2:

[Table 2 here]

EMPIRICAL FINDINGS

The overall results confirm the idea that there is a close relation between fragmentation, both territorial and fiscal, and the size of local government grants. Results show evidence of an optimal level of fragmentation that minimizes the size of municipal spending with parishes. The model in table 2 stands for the determinants of the size of municipal grants estimated with OLS regression. The explanatory power of our estimated models is close to explain 30% of the variation in the dependent variable. Every variable display consistent results to our hypotheses and most of them have statistical significance. One of the variables that miss statistical significance is the political alignment which was appointed to be one of the determinants of fragmentation.

Results indicate that territorial fragmentation has a relevant impact on the size of municipal grants. Controlling for marginal effects of the community financial context and welfare, results show evidence of a U shaped behavior between municipal grant and territorial fragmentation. Low fragmentation cannot promote competition or represent accurately the constituents' preferences. Oligopolistic situation falls under x-inefficiency failure where operating costs are higher than necessary. Increasing number of parishes will lead to competitive behavior between parishes to perform better than its "neighbor". However, too much fragmentation makes it difficult to avoid overlapping cost and inefficient spending. Minimal level of expenditures is reached when we have close to 2, 10 parishes for 1,000 inhabitants. Almost 89% of municipalities are less fragmented than the optimal size determined. Average number of parishes for 1,000 inhabitants is up to 1, 47 parishes, under the expected number to reach optimal level.

Fiscal fragmentation also displays a result that complies with our hypothesis. Present funding rules impose a financial scarcity to parishes, in highly fragmented municipal jurisdiction. Parish national grants (*Fundo Financiamento para as Freguesias – FFF*) are determined by a relative amount redrawn from national taxes. The overall amount of the grant depends on the amount collected by the state and never by the number of parishes. Despite some particular decisions, once we fixed the amount to transfer to parishes it is obvious that increasing number of parishes will ultimately lead to less funding distribution. As a consequence, results tell us that it is expected a higher level of municipal spending.

Political fragmentation, despite having the expected sign, showing evidences that political affiliation to the same party will increase the size of municipal grants, misses statistical significance.

All control variables display the excepted sign even though only per capita income has statistical significance. As expected, more and wealthier population will increase median voter standards making local government more willing to increase expenditures (Downs 1957).

CONCLUSIONS AND POLICY IMPLICATION

This paper aimed to make two core contributions to the literature. One is that it analyzes the fragmentation issue under three different dimensions: territorial, fiscal and political. By doing this, the paper highlights the necessity of a correct balance between institutions and levels of government, wich is the other contribution. One factor to municipal spending is the grants allowed to parishes, if we are looking forward to control expenditures we need to have a coherent set of institutional agreement on fragmentation/consolidation, in order to avoid that on set can overrule the others.

In our analysis we can see that although territorial fragmentation contributes to less expenditure, fiscal fragmentation has an opposite effect. The fragmentation of a municipal jurisdiction into several parishes denotes a sense of competitive trend between local governments. Results tell us that a certain level of fragmentation can be obtained in a way that it can improve sustainability. However, financial rules undermine what territorial fragmentation is doing. We can point out that some improvements need to be done in financial institutions. Seizing the upper hand of a competitive context, funding mechanism could be updated to improve financial autonomy of parishes, otherwise they will keep depending on municipalities to achieve their goals.

The IMF/EU/ECB understanding took a different approach. They bet on territorial fragmentation which, though ignoring competitive context of territorial fragmentation, achieved a reduction on the size of municipalities expenditures based on grants allowed to lower levels of administration.

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Table 1. Descriptive Statistics

Variable	Obs.	Mean	Std. Dev.	Min	Max
Dependent					
Municipal Grants (ln)	274	12.28308	2.679204	0	16.99016
Independent					
Territorial Fragmentation	278	.8866186	.8062606	.0316446	4.237288
Territorial Fragmentation (sq)	278	1.43381	2.552815	.0010014	17.95461
Fiscal Fragmentation	277	.8324952	.1659741	0	.9876594
Political alignment	278	.4817134	.2903415	0	1
Control					
Income (per capita)	278	-2.13e+07	5.45e+07	-8.33e+08	1.06e+07
% Urbanization	272	.113446	.1327556	.0034547	.7877215
Net Debt (per capita)	278	806.3547	146.2044	582.9102	1667.018

Table 2. Ordinary Least Squares Regression (dependent variable: Capital expenditures (Ln))

	Municipal Grants (ln)
Independent	Coefficient (RSE)
Territorial Fragmentation	-2.11258*** (.5325493)
Territorial Fragmentation (sq)	.5024328*** (.1340775)
Fiscal Fragmentation	7.181792*** (1.337536)
Political Alignment	.7610488 (.6050487)
Control	
Income (per capita)	.003864*** (.0012005)
% Urbanization	.6254302 (.8241307)
Net Indebtedness	-1.73e-09 (1.78e-09)
Const	3.716199** (1.795979)
Obs	267
F (7,259)	16.02
Prob>F	.000
R^2	.2777

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