

# It Depends on Who You're Looking at: Neighbourhood Effects in Local Government Cultural Expenditures

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## **Abstract**

Governments often see it as their responsibility to support cultural life and at times spend a significant amount of resources in the pursuit of this goal. The present paper analyses whether and how municipalities influence each other in this decision to spend resources on the arts. Specifically, we employ data on local government cultural spending 304 Flemish municipalities in 2002 to assess whether municipality's expenditure decisions depend on that in neighbouring municipalities. The empirical analysis shows that Flemish municipalities' cultural spending is generally positively affected by that in neighbouring municipalities (indicating significant spatial interdependence in cultural policies). Interestingly, however, a more complex pattern arises for municipalities neighbouring the 13 largest Flemish cities.

**Keywords:** Cultural policy, Flemish municipalities, local government expenditures, spatial interdependence.

**JEL-codes:** Z11, H40, H72

## 1. Introduction

A considerable amount of scholarly attention has recently been devoted to spatial patterns in (local) governments' fiscal policies. Recent reviews of this literature by Brueckner (2003) and Revelli (2005) indicate that fiscal decisions in neighbouring jurisdictions tend to play a prominent role in the decision to set one's own tax rate or level of public goods provision. This is also likely to be the case for cultural expenditures. The reason is that the benefits of cultural spending in one jurisdiction cannot easily be shielded from inhabitants of other jurisdictions. For example, lower ticket prices or higher quality due to a subsidization of the local theatre, museum or exhibitions hall will also benefit consumers from neighbouring jurisdictions (unless, of course, price discrimination is applied whereby only inhabitants can enjoy lower ticket prices). The resulting 'spillover' effects make that the optimal policy decision of one jurisdiction should take into account the policies chosen in neighbouring jurisdictions, leading to an observable spatial pattern in cultural expenditures (Kelejian and Robinson, 1993; Brueckner, 2003; Solé-Ollé, 2006).

To the best of our knowledge, the present paper is the first to assess whether such a spatial pattern is indeed observable in cultural expenditures (using a dataset of 304 Flemish municipalities in the year 2002) and what the exact nature of the interrelation between governments' decisions is.<sup>1</sup> Indeed, a positive relation can be expected based on the argument that the arts are an 'acquired taste' (such that consumption instigates further demand). To the extent that the costs of attending cultural manifestations in a neighbouring jurisdiction are relatively low, cultural spending in any given jurisdiction may well lead to an increased

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<sup>1</sup> Withers (1979) and Jenkins and Austen-Smith (1987) study the relation between public cultural spending by different levels of government (arguing that, say, federal arts outlays in a given jurisdiction affect state and local expenditures in that same jurisdiction). We regard horizontal rather than vertical interdependencies between governments.

demand (and public spending) for cultural expenditures both at home and in surrounding jurisdictions. Also, citizens may engage in relative performance evaluations, whereby they use neighbours' cultural policies as a yardstick to judge their own politicians' decisions. As a result, these politicians may (rationally) mimic their neighbours' decisions on cultural spending. A negative relation would, however, result when local governments attempt to free-ride on neighbours' spending decisions.

Importantly, we also regard whether differences in this policy interdependence occur in function of the size of the various municipalities. Although, to the best of our knowledge, such 'agglomeration effects' have not been studied before, they might play an especially important role in our setting. Indeed, it has been argued that cultural goods are "pre-eminently central place functions" (Heilbrun, 1992, 205). The ensuing innate advantage of large municipalities in providing such goods can be expected to affect the reaction of their neighbours to their level of cultural spending. Small municipalities – taking into account their (absolute) cost disadvantage relative to their large neighbours – might therefore be more liable to free-ride on these large neighbour's cultural policies. Our empirical analysis indicates that cultural spending in one municipality tends to be positively related to spending in neighbouring municipalities. Interestingly, however, allowing for 'size' effects by giving the 13 largest Flemish cities a special status in the analysis indicates a more complex pattern for municipalities neighbouring these 13 cities.

The remainder of the paper is structured as follows. Section 2 provides a theoretical framework of the spatial interdependence between jurisdictions, while Section 3 gives an overview of the institutional setting of local cultural policy in Flanders. Section 4 presents the empirical analysis and section 5 concludes.

## 2. Theoretical framework

Governments generally are no isolated actors. Decisions made by one government are likely to have effects on (and be affected by) the decisions of other governments.<sup>2</sup> Technically, the reaction function of any jurisdiction  $i$  – representing  $i$ 's best response to choices in other jurisdictions – will have a non-zero slope (Brueckner, 2003). Consequently, any jurisdiction's decision on the level of cultural expenditures will (at least partly) depend on the level of cultural expenditures made by neighbouring jurisdictions (leading to a spatial pattern in the observed policies). Importantly, this spatial interdependence can take different forms. While section 2.1 presents a case for upward-sloping reaction functions, section 2.2 offers an argument that leads one to expect a downward-sloping reaction function. Finally, in section 2.3, we discuss the effect of the innate advantage that large cities are often thought to have in providing cultural goods.

### 2.1. ACQUIRED TASTES, REFERENCE POINT EFFECTS AND POLICY MIMICKING

We see three reasons for a positive relation between different jurisdictions' cultural spending levels. The first argument builds on the well-established idea that the arts are an acquired taste (Marshall, 1891). This entails that human capital attributes associated with the arts (such as experience and understanding) are acquired through its consumption. The acquisition of these attributes reduces the shadow price of the arts, which instigates further demand. Cultural activities are for this reason often considered to be addictive in the sense that an increase in present consumption increases future consumption (cfr. Becker and Murphy, 1988). Consequently, when governments spend resources on cultural policies, inhabitants

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<sup>2</sup> The most straightforward definition of a jurisdiction's neighbourhood is geographical (i.e. jurisdictions sharing a border). Still, one might also define the 'peer' group in terms of socio-economic or political similarities across jurisdictions (see e.g. Baicker, 2005).

learn to appreciate the arts and demand more of it (increasing future spending on this part of the budget). Importantly, however, non-residents cannot easily be excluded from the benefits of these expenditures (cfr. *supra*). Moreover, in our specific setting, the costs of attending cultural manifestations in a neighbouring municipality are relatively small. Since the average municipality in Flanders is only 44 km<sup>2</sup> in size, the average distance between two municipalities can be estimated at approximately 7 km. Although distance plays a crucial role in deciding whether or not to visit a cultural event (e.g. Verhoeff, 1992; Bille Hansen, 1997; Boter et al., 2005), these limited distances (and therefore travel costs) imply that the impediment to participate in cultural activities in neighbouring municipalities is likely to be small. The ensuing ‘cross-border’ consumption of the arts leads to an increasing demand for cultural activities not only in the municipality that originally spent resources on cultural policies, but also in municipalities that surround it.

The second argument for a positive reaction function starts from the idea that people often resort to relative performance evaluations. Neighbouring governments’ policies are used as a reference point to judge the policies provided by their own government.<sup>3</sup> Importantly, such relative performance assessments generate so-called *transaction* (dis)utility to voters (Thaler, 1985; see also Ashworth and Heyndels, 2000). This transaction (dis)utility is the additional utility that people experience – besides the *acquisition* utility from the policy itself – by assessing its merit (or lack thereof) relative to a reference point (in this case, neighbours’ policies). One example is that people tend to feel worse about a 25% income tax in the own jurisdiction when it is compared to a 20% income tax in neighbouring jurisdictions (for given levels of public goods) than when this tax is compared to a 30% income tax elsewhere (Kahneman and Tversky, 1979). The reason is that they not only consider the 25% income

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<sup>3</sup> Empirical evidence on the electoral cost of taxation mostly confirms the idea that voters engage in such relative performance assessments (e.g. Besley and Case, 1995; Bosch and Solé-Ollé, 2004; Ågren, 2005; Vermeir and Heyndels, 2006; see, however, Revelli, 2002).

tax as such, but also the 5% gain (or loss) compared to neighbouring jurisdictions. Applying the argument to our setting implies that the absence of cultural activities in one's own municipality appears worse when one perceives neighbouring municipalities providing cultural activities compared to the situation where neighbours also lack such arrangements. Hence, higher spending on cultural activities in neighbouring municipalities may put pressure on the local government to increase spending for such activities, leading once again to positive spatial interdependence.

The latter argument is closely related to the political economy literature on “yardstick competition” (cfr. Shleifer, 1985) where voters use neighbouring jurisdictions' policy outcomes to assess the quality of their incumbent authorities (and re-elect or replace them accordingly). Besides the generation of transaction (dis)utility mentioned above, such relative performance assessment also provides politicians caring about re-election with an incentive to mimic policy decisions in neighbouring jurisdictions (e.g. Salmon, 1987; Case et al., 1993; Besley and Case, 1995). Such (rational) mimicking behaviour entails that higher cultural spending in one municipality leads to higher spending in neighbouring municipalities.

H1a: Higher per capita cultural expenditures in one municipality induce an *increase* in cultural spending per capita among its neighbours

## 2.2. SATIATION AND FREE-RIDING BEHAVIOR

The ease with which people can enjoy the arts in neighbouring jurisdictions also provides the basis for two arguments why the slope of the reaction function might be negative. Firstly, the demand for cultural activities in a given area is finite. This limited number of potential consumers implies that only a certain level of supply of cultural activities is (economically)

viable. Provision of cultural activities beyond this ‘satiation point’ is unwarranted (or, at least, inefficient from an economic point of view). When there is a high degree of substitutability of cultural activities across jurisdictions – and inhabitants are indifferent between consuming the arts either ‘at home’ or ‘abroad’ – provision of cultural activities by neighbouring jurisdictions thus reduces the economic rationale for a jurisdiction’s spending on cultural activities. That is, under the stated conditions, the need to provide such activities in one’s own jurisdiction is reduced when neighbouring jurisdictions are (for whatever reason) first to supply cultural activities.

Secondly, the provision of cultural goods by any given government requires funding. Levying taxation to provide these funds is likely to be disadvantageous in terms of popularity (or re-election odds). These (electoral) costs of taxation can be forgone by relying on other jurisdictions’ cultural spending to fulfil the cultural needs of its citizenry. Such free-riding behaviour implies that high levels of cultural expenditures in one jurisdiction may reduce such expenditures in its neighbours. This effect is likely to be stronger to the extent that inhabitants are indifferent about the location where they consume cultural activities (and can relatively easily do so in neighbouring jurisdictions).

H1b: Higher per capita cultural expenditures in one municipality induce a *decrease* in cultural spending per capita among its neighbours.

### 2.3. THE ROLE OF CULTURE AS A ‘CENTRAL PLACE’ FUNCTION

This general characterisation of neighbourhood effects in cultural spending is not the end of the story. Often, cultural activities are economically viable only if a critical mass of consumers can be attained. As such thresholds are more easily reached in larger, or more



densely populated municipalities, this is likely to lead to a concentration of various types of performers, museums, theatres, and so on in large cities (Heilbrun, 1992). Such concentration in turn provides possibilities to generate significant economies of scale in the production of cultural activities. Cultural goods may thus be “pre-eminently central place functions”, giving large municipalities an innate advantage in providing such goods (Heilbrun, 1992, 205).

The benefits of this concentration of cultural talent are not restricted to the producers of cultural activities but might also benefit the local government. Indeed, one additional euro spent in larger municipalities – or, arguably more accurately, ‘central places’ – to supply cultural activities may be (much) more productive than one additional euro spent by a small municipality. This advantage for central place governments can be expected to affect the reaction of its neighbours to its level of cultural spending. That is, the government of a municipality adjoining a central place (along with the residents of this municipality) takes into account its relative cost disadvantage. It realizes that the (electoral) benefits of reducing residents’ travel costs (or increasing the option value of the arts by providing them in one’s hometown)<sup>4</sup> are unlikely to offset the (electoral) costs – in terms of additional taxation – of providing similar cultural services as a central place. As a consequence, it will be more liable to free-ride on its neighbour’s cultural policies.

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<sup>4</sup> This ‘option value’ of the arts has received considerable attention in the literature. Individuals, so the argument goes, might be prepared to pay “for the option to consume art at some unspecified future time, fully realizing that they may never choose to exercise that option” (Shanahan and Hendon, 1979, 12; for empirical support see Throsby and Withers, 1986; Morrison and West, 1986; Bille Hansen, 1997). Important here is that people could be prepared to pay more for the option to consume the arts if it does not involve travelling to neighbouring municipalities. The reason – taken from financial economics – is that an increase in the ‘strike price’ of an option (e.g. through higher anticipated travel costs) to acquire a given underlying commodity (i.e. cultural activities) reduces its value.

H2: As the incentives to free-ride are larger for neighbours of central places, the effect of high levels of per capita spending by these central places is likely to have a less positive (or more negative) effect on their neighbours' per capita spending.

Finally, one could question the extent to which municipalities adjoining a central place focus their attention solely on this larger neighbour – and neglect the policy decisions of their other (smaller) neighbours. This can be expected when the citizenry of these municipalities focuses its attention exclusively on the cultural provisions in the central place. This allows the local government to similarly neglect these smaller neighbours' policy decisions and the reaction function in this case will be flat.

H3: Neighbours of central places are less likely to take the decisions of their non central place neighbours into account than municipalities that do not adjoin a central place.

### **3. Data and institutional setting**

Belgium is a federal country with a highly complex institutional structure. The country consists of three language 'Communities' (the Dutch-speaking Community, the French-speaking Community and the German-speaking Community) and three territorial 'Regions' (Flemish Region, Walloon Region and Brussels Capital Region). Cultural policy is a responsibility of the Communities. This implies that cultural policy in the Flemish Region is under the control of the Dutch-speaking Community while cultural policy in the Walloon Region is in the hands of the French-speaking Community. In the Brussels Region, where

Dutch *and* French are official languages, the Dutch- *and* French-speaking Communities exercise their powers for their respective language groups through the Flemish and French Community Commission respectively (Coffé, 2006). Cultural policies by the Communities build mainly on subsidization rather than direct provision through state-owned cultural institutions. In fact, subsidies from Community-level governments are an indispensable source of income for many cultural organisations in Belgium (a comparable reliance on public subsidies for example exists for German orchestras; see Schulze and Rose, 1998).

Even though cultural policy is a Community-level responsibility, the municipalities in Belgium – and especially in Flanders – spend a significant amount of resources on cultural policy. The Flemish municipalities are in fact the prime source of cultural expenditures in Belgium. Looking at the period between 1995 and 1999, they account for 33 percent of total cultural expenditures in Belgium, the Dutch- and French-speaking Communities for 25 and 20 percent respectively and municipalities in the Brussels and Walloon Region for 10 and 4 percent respectively (Ministerie van de Vlaamse Gemeenschap 2002, 134). Given their status as ‘big spenders’ on cultural activities, and the absence of municipal-level data for the other Regions, our empirical analysis will concentrate on the Flemish municipalities.

Taking a closer look at cultural spending in the Flemish municipalities in 2002, they together spent €591.4 million. This consists of all expenditures booked in the municipal budget under code 789 (“youth, community development and arts”) and includes spending on youth care, museums, exhibitions, historic buildings, open-air recreation, visual arts, festivities, performing arts and so on. Including “non-art” spending entails, however, a broad interpretation of “culture”. Fortunately, the data allow us to separate spending on arguably non-cultural elements (such as youth care and open-air recreation) from more arts-oriented spending (such as museums, exhibitions and performing arts). Expenditures representing

culture in this stricter sense amounted to €214.3 million in 2002 and fall into five categories: “culture and recreation” (52.27%), “museums” (19.24%), “festivities and ceremonies” (12.79%), “playhouses and performing arts” (10.57%) and “historical monuments, visual arts and exhibitions, literature and specialised libraries” (5.14%). We should note here that these expenditures are financed from the general municipal budget, which is basically a common pool of resources (consisting of tax revenues, general purpose grants, user charges and so on). Hence, the opportunity cost of an extra euro cultural spending is that other service areas in the municipality receive fewer resources.

Where municipal cultural policy traditionally has been quite fragmented and autonomous, a decree by the Flemish Community to stimulate a more structured local cultural policy (i.e. “decreet houdende het stimuleren van een kwalitatief en integraal lokaal cultuurbeleid”) has become effective since 1 January 2002. Under the new decree, municipalities are encouraged – but not obliged – to draw up a general cultural policy plan and to appoint a local cultural policy co-ordinator. In return, they receive additional financial support to pay the cultural policy co-ordinator (i.e. €25,000 or €50,000 depending on whether or not the municipality’s population surpasses 10,000 inhabitants) and to finance the implementation of the plan (i.e. an additional €1 per head of the population). Between 1 January 2002 and 22 October 2003, 206 municipalities in the Flemish and Brussels Regions submitted a cultural policy plan and 173 municipalities appointed a local cultural policy co-ordinator. In the same period, 136 local cultural policy plans have been approved by the Flemish Community (Ministerie van de Vlaamse Gemeenschap, 2003, 164). The additional government support under this new

decree in 2002 amounted to €14.4 million, which is a relatively small amount compared to the overall cultural expenditures of the municipalities.<sup>5</sup>

Still, given that the cost of submitting a cultural policy plan can be assumed equal across municipalities, this submission reflects the intention of the municipality to spend resources on cultural policies. Thus, observed spending levels (even if increased by support from higher level governments) are likely to accurately proxy the desired level of municipal cultural spending. Moreover, notwithstanding this recent legislation, local politicians play a crucial role and enjoy considerable independence in determining local cultural policy. Ultimately, the decision to spend resources on culture at the municipal level remains the political responsibility of the College of Mayor and Aldermen (the executive body of the municipal government). Therefore, local politicians continue to have a predominant impact on local cultural spending decisions. The central question addressed in the following section is what determines these decisions.

## **4. Empirical analysis**

### 4.1. MODEL SPECIFICATION

Our empirical analysis concentrates on cultural expenditures in 304 Flemish municipalities in the year 2002.<sup>6</sup> The independent variable equals the per capita level of local government

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<sup>5</sup> Beside these specific grants and general purpose grants, higher level governments may also provide matching grants for certain cultural activities that municipalities organize. Unfortunately, we lack data on the prevalence and importance of such matching grants.

cultural spending in this budgetary year (as defined by the ‘strict’ definition introduced in the previous section).<sup>7</sup> To address the hypotheses raised in section 2, a regression model such as equation (1) (in matrix notation and with subscript t for time) can be estimated.

$$EXP_t = \alpha + \varphi NEIGH_t + e_t \quad (1)$$

The precise definition of the neighbourhood variable ( $NEIGH_t$ ) depends, however, on the hypothesis being tested. To test H1,  $NEIGH_t$  is defined as the (non-weighted) average level of per capita cultural spending in neighbouring municipalities. Specifically,  $NEIGH_t = W * EXP_t$ , where  $W$  is a (304 x 304) row-normalized spatial weights matrix indicating whether or not two municipalities are neighbours and where  $NEIGH_t$  and  $EXP_t$  are (304 x 1) vectors.<sup>8</sup> Neighbours are thereby defined in a geographical sense as two municipalities that share a border. Thus the weights ( $\omega_{ij}$ ) in  $W$  can be written as:

$$\omega_{ij} = \frac{W_{ij}}{\sum_{j \neq i} W_{ij}} \quad (2)$$

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<sup>6</sup> Data availability precludes inclusion of the remaining four municipalities (and those from the Brussels and Walloon regions). Note also that the 2002 data are the most recent figures available and that a change in the municipal accounting rules in 2000 prevents us from using comparable data for a longer period of time.

<sup>7</sup> The Flemish municipalities spent €132.6 million on local public libraries in 2002. The ‘strict’ definition, however, excludes this spending. The reason is that Flemish legislation requires every municipality to have its own library. One could argue that this diverts cultural spending from the budget of the higher level government to that of the Flemish municipalities and might thus ‘bias’ local cultural spending upwards. Nonetheless, re-estimating the model including library expenditures and subsidies (the latter amounted to €43 million in 2002) does not alter the inferences from the analysis (full results available upon request).

<sup>8</sup> We assume that spending decisions are directly observable by other municipalities and employ the contemporaneous level of cultural spending in the neighbouring jurisdictions in the estimation (a similar assumption is made in Buettner, 2001 and Allers and Elhorst, 2005). This assumption is plausible since council meetings in Flanders are open to the public (except when personnel issues are discussed). Still, lagging the neighbourhood variables by one year to take into account possible lags in the response to neighbours’ spending decisions does not significantly affect our results (available upon request).

where  $w_{ij} = 1$  if  $i$  and  $j$  are contiguous. The entries in each row of the matrix  $W$  are thus  $1/n$  (with  $n$  the number of neighbours of the municipality in row  $i$ ) when the municipality in row  $i$  shares a border with the municipality in column  $j$  and 0 otherwise. The simple border-sharing criterion employed here can be justified since distance plays a central role in deciding whether or not to visit a cultural event (Verhoeff, 1992; Bille Hansen, 1997; Boter et al., 2005). Still, given the small average distance between Flemish municipalities (cfr. supra), we also consider a possible effect from second order neighbours (i.e. neighbours of neighbours). The idea is that not only direct geographical neighbours may influence one's policy, but also governments 'around the next corner' (Heyndels and Vuchelen, 1998). The entries in each row of the spatial weights matrix  $W$  are then redefined as  $1/m$  (with  $m$  the number of second order neighbours of the municipality in row  $i$ ) when one of the neighbours of the municipality in row  $i$  shares a border with the municipality in column  $j$  and 0 otherwise.

However, as argued in H2, cultural spending by larger cities (or, more specifically, central places) may instigate different reactions by their neighbours. We test this proposition in two ways. First, as a second specification of  $NEIGH_t$ , we introduce the population-weighted average level of per capita cultural spending in neighbouring municipalities. The elements in the spatial weights matrix  $W$  ( $\omega_{ij}$ ) are then redefined as:

$$\omega_{ij} = \frac{w_{ij} \cdot \text{pop}_j}{\sum_{j \neq i} (w_{ij} \cdot \text{pop}_j)} \quad (3)$$

where  $w_{ij} = 1$  if  $i$  and  $j$  are contiguous and  $\text{pop}_j$  equals the population in municipality  $j$ . As a larger weight is here attached to the expenditures of large neighbours, support of H2 would imply smaller coefficients for the neighbourhood effects compared to the non-weighted

results. Again, a similar approach is taken for the second order neighbours. Secondly, we identify a number of municipalities that are generally regarded as central places in Flanders and award these a ‘special’ status in the analysis.<sup>9</sup> That is, still constructing our neighbourhood variables through multiplication of the vector of municipal expenditures with a spatial weights matrix, we essentially introduce two separate weights matrices ( $W_1$  and  $W_2$ ) in the model (thus also obtaining two neighbourhood variables for each municipality in the analysis). The weights in the matrix  $W_1$  are given by:

$$\omega_{ij} = \frac{w_{ij} \cdot \text{pop}_j \cdot \text{CP}_j}{\sum_{j \neq i} (w_{ij} \cdot \text{pop}_j \cdot \text{CP}_j)} \quad (4)$$

where  $w_{ij}$  and  $\text{pop}_j$  are defined as before and  $\text{CP}_j = 1$  if municipality  $j$  is one of the 13 largest cities in Flanders. This results in a (population-weighted) average level of per capita cultural spending in those of a municipality’s neighbours that are central places. This variable (denoted “CP-neighbours spending”) thus measures the effect of central places’ cultural spending on their neighbours and has non-zero values only for neighbours of central places. The second weights matrix ( $W_2$ ) has weights as follows:

$$\omega_{ij} = \frac{w_{ij} \cdot \text{pop}_j \cdot \text{NCP}_j}{\sum_{j \neq i} (w_{ij} \cdot \text{pop}_j \cdot \text{NCP}_j)} \quad (5)$$

where  $\text{NCP}_j = 1$  if municipality  $j$  is *not* one of the 13 largest cities in Flanders. This leads to a (population-weighted) average level of cultural spending in those of a municipality’s neighbours that are *not* central places. This variable (denoted “NonCP-neighbours spending”)

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<sup>9</sup> This is the case for 13 Flemish cities: Aalst, Antwerpen, Brugge, Genk, Gent, Hasselt, Kortrijk, Leuven, Mechelen, Oostende, Roeselare, Sint-Niklaas and Turnhout (Moesen, 2001).



measures the effect of non-central places' spending decisions on their neighbours. Support of H2 would imply a larger coefficient estimate for the latter variable.

Consider, for example, the situation in table 1. This table represents 5 municipalities (A, B, C, D and E) located on a straight line, which spend a given amount per head of the population on culture (i.e.  $a$ ,  $b$ ,  $c$ ,  $d$  and  $e$  respectively) and have a population size of  $p_A$ ,  $p_B$ ,  $p_C$ ,  $p_D$  and  $p_E$  respectively. Two of these municipalities are considered central places (viz. A and E). Since only municipalities B and D border a central place, CP-neighbours spending will only be non-zero for these two municipalities – taking values  $a$  and  $e$  respectively. All five municipalities, however, border at least one municipality that is not considered a central place, such that the NonCP-neighbours spending variable has non-zero values for each municipality.

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Table 1  
about here

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Finally, some municipalities only have 'small' (i.e. non-central places) neighbours (such as municipality C in our example) while others' neighbours include both small municipalities and central places (such as municipalities B and D). As H3 argues that a municipality may react differently to small neighbours' spending depending on whether or not it also borders a central place, we interact NonCP-neighbours spending with a dummy variable equal to 1 for neighbours of central places (0 otherwise). This implies estimation of regression equation (1) with the following neighbourhood variables:

$$\psi (\text{CP-neighbours spending}) + \zeta (\text{NonCP-neighbours spending}) + \xi (\text{NonCP-neighbours spending}) * \text{NoCP} \quad (6)$$

where CP-neighbours spending and NonCP-neighbours spending are constructed using the  $W_1$  and  $W_2$  spatial weights matrices as defined above,  $\xi$ ,  $\zeta$  and  $\psi$  are parameters to be estimated for the various neighbourhood effects in the model and NoCP (Neighbour of Central Place) is a dummy variable equal to 1 if the municipality shares a border with one of the 13 largest Flemish cities. For municipalities with only small neighbours, the influence of these neighbours is captured by the coefficient on NonCP-neighbours spending (i.e.  $\zeta$  in equation (6)). For municipalities with small and central place neighbours, the influence of small neighbours is captured by the sum of two coefficients: viz. that for NonCP-neighbours spending and that for the interaction term (or  $\zeta + \xi$  in equation (6)). H3 leads us to expect a negative effect on the interaction term ( $\xi$ ), indicating that the behaviour of such small neighbours is less influential on the behaviour of municipalities adjoining a central place.

While assessing the existence of neighbourhood effects in municipal cultural spending, we control for a number of socio-economic, financial and political characteristics of the municipalities that have been brought forward in previous studies as potential determinants of public cultural expenditures (e.g. Withers, 1979; Schulze and Rose, 1998; Getzner, 2002). A variety of theoretical models support the inclusion of such variables: e.g. the median voter model (Black, 1948), the Leviathan model (Brennan and Buchanan, 1977), special interest group models (Mueller and Murrell, 1986) or general political economy models (Craig and Inman, 1986). The final estimation model has the following form (in matrix notation and with subscript  $t$  for time):

$$\text{EXP}_t = \alpha + \varphi \text{NEIGH}_t + \lambda \text{SOCIO}_t + \theta \text{FINANCE}_t + \delta \text{POL}_t + e_t \quad (7)$$

As SOCIO is a 304 by 7 matrix containing data from seven socio-economic control variables (summary statistics are provided in table A1 in appendix), it is clear that  $\lambda$  represents a vector containing the coefficients of these seven socio-economic controls. The first socio-economic control is population size (in natural logarithms). Larger municipalities are likely to have a higher per capita demand for public expenditures in general (and cultural spending in particular; Schulze and Rose, 1998). Moreover, they may have a centre function for cultural public goods (Heilbrun, 1992). Both elements lead us to expect higher per capita spending on cultural policies in larger municipalities. Still, the existence of economies of scale when the provision of cultural goods is characterised by significant fixed costs could lead to an offsetting effect (as public cultural expenditures will then increase less than proportionally to the total population). Secondly, we include population density (inhabitants per km<sup>2</sup>), which is a measure for the degree of urbanisation of the municipality. Higher population density tends to decrease the average distance people must traverse to attend the arts within their municipality. As distance is a crucial determinant of attendance, demand for – and public expenditure on – cultural activities is likely to be larger in more densely populated areas (Withers, 1979).

We also account for the share of inhabitants under 19 years of age and the share of those above age 65. It has been argued that the elderly are likely to support the public provision of cultural activities (and higher public cultural expenditures) as their opportunity costs to consume such activities are lower (Pommerehne, 1982; Schulze and Ursprung, 2000). Therefore, we expect a positive relation between the proportion of the population over age 65 and the level of public cultural expenditures. The effect of the proportion of inhabitants under 19 is a priori ambiguous. On the one hand, young people are generally less interested in (especially highbrow) cultural activities and the presence of a large share of (very) young

inhabitants increases the opportunity costs of time for their parents – thereby decreasing overall support for high cultural expenditures. On the other hand, arguments for state intervention in the cultural sector are at times based on the idea that the arts have a ‘bequest’ value (e.g. Bille Hansen, 1997; Schulze and Ursprung, 2000). This could lead to increased support for public intervention *an sich* (and possibly also to higher public cultural expenditures) when the share of young inhabitants is higher.

Real taxable per capita income (in €1000) and the level of education (measured by the share of inhabitants older than 20 with a college or university degree) are included in the model to pick up demand side effects for cultural goods (Schulze and Rose, 1998). Audiences for, say, the performing arts are recurrently found to be of “significantly higher educational, occupational and income status” (Throsby, 1994, 8). Also, survey and contingent valuation studies indicate that support for the arts is significantly higher among the wealthy and highly educated (e.g. Pommerehne, 1982; Bille Hansen, 1997; Schulze and Ursprung, 1998; Getzner, 2004). Moreover, the wealthy and well-educated may constitute a special interest group with an incentive to spread at least part of the costs of their cultural consumption over the entire population (Withers, 1979). As they are likely to be faced with little organized opposition on this issue (Schulze and Rose, 1998), this would lead to a positive effect of income and education on public cultural spending.

As a seventh and final socio-economic control variable we include the share of unemployed in the population. Given the positive income elasticity of demand for cultural goods, we expect lower demand for (and therefore lower public spending on) cultural activities when the share of unemployed increases. This may, however, be counteracted by the fact that the unemployed have more leisure time and lower opportunity costs of time.

The socio-economic variables are complemented with three economic variables to control for the financial situation of the municipality (FINANCE) (Krebs and Pommerehne, 1995).

Firstly, we include the level of per capita financial support some municipalities receive under the new Flemish legislation concerning local cultural policy (see section 3). The subsidies can be expected to lead to higher cultural spending (cfr. Hofferbert and Urice, 1985).

Secondly, we include the level of general purpose grants (per capita, in €1000) the municipality receives from higher level governments. These can be used for whatever purpose the municipality desires. It can be expected that local governments provide more public goods when these can be financed (at least partly) through grants as the perceived cost of spending then is lower. We therefore anticipate a positive relation between the level of grants and the level of spending on cultural policies. Finally, we introduce the lagged level of long-term local public debt (per capita, in €1000) to gauge the strain of past (investment) decisions on municipal finances (Schulze and Rose, 1998; Getzner, 2004). While loans allow a municipality to spread its investment costs over the (economic) lifetime of the investment, interest and amortization of existing debts must be paid out of the current budget. Hence, higher levels of historical debt are likely to translate into lower levels of public goods provided in the current period.

The model is completed by the inclusion of two political control variables (POLI) that tap into the characteristics of the local government in 2002 (and which was elected in 2000). Firstly, we examine whether the ideological persuasion of the local government affects the level of cultural spending. Left-wing parties are generally argued to be more in favour of government intervention, while right-wing parties tend to support the workings of the market (Hibbs, 1977; Tavares, 2004). Survey research from the U.S. indeed indicates that people with a self-described conservative ideology are more opposed to public support for the arts than people with a liberal ideology (with conservative and liberal being U.S. terms) (Brooks, 2001). Left-

wing governments may thus be more prone to subsidize the cultural sector (leading to higher cultural spending). However, this relation is not self-evident. When wealthier voters (who generally have a lower probability of voting for left-wing parties) have a more positive attitude towards cultural policy, this relation may even reverse if politicians wish to cater their electoral public's desires. In line with this, Schulze and Rose (1998) find that the fraction of Christian-Democratic (CDU/CSU) politicians in German community councils significantly increases per capita subsidies for symphony orchestras. A higher presence of social-democratic (SPD) and green politicians tended to have the opposite effect. We measure the ideological complexion of the local government as  $\sum_{i=1}^n (p_i \cdot Complexion_i)$ , where  $p_i$  is the seat share of party  $i$  in the College of Mayor and Aldermen and 'Complexion' refers to the ideological position of this party on a classic Left-Right scale (from 0 to 10).<sup>10</sup>

The second political control variable accounts for the number of parties in the local government. Recent evidence has shown that the size of local government coalitions (in terms of the number of parties) significantly affects government decision-making in Flemish municipalities (e.g. Ashworth et al., 2005, 2006; Goeminne et al., 2005). To the extent that this is also the case for cultural spending, we expect a significant effect from the number of parties in the municipal government.

Finally, as noted in Section 3, public spending for cultural activities in Flanders is not restricted to the local governments, but also derives from higher level governments. This might be important when, as argued by Withers (1979) and Jenkins and Austen-Smith (1987),

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<sup>10</sup> The data concerning a party's ideological position were obtained from Rihoux (2001) and are based on a self-placement survey asking presidents and spokesmen of the parties in the municipalities to locate their party on an ideological scale between 0 (Left) and 10 (Right). The figures range from 2.6 (Agalev) to 6.0 (VLD) (the extreme-right-wing party Vlaams Blok – now Vlaams Belang – was not represented in any local government and is therefore not part of the dataset).

these different donors take into account each others' spending decisions.<sup>11</sup> Unfortunately, data availability concerning the distribution of Community-level cultural spending over the Flemish municipalities precluded a test of this hypothesis in our setting. The right-hand side of equation (1) could also be expanded by including a lagged dependent variable to control for slow adjustments in local cultural spending. The reason is that municipal budgets are likely to be characterised by “bureaucratic incrementalism” (Krebs and Pommerehne, 1995; Schulze and Rose, 1998). Still, inclusion of this variable adds several econometric complications (Greene, 1993) that are very difficult to confront given the limited historical data we have available (see footnote 5). Hence, we decided not to include the lagged dependent variable in the model estimated in the main text. However, preliminary findings including this variable show that a) municipal cultural budgets indeed appear to be dominated by “bureaucratic incrementalism” and b) the main results of our model with respect to the neighbourhood effects remain valid (results available upon request).

#### 4.2. RESULTS

The estimation results are provided in table 2. Column (1) presents the results when neighbours are defined as two municipalities that share a border. The neighbourhood variables then equal the unweighted average of neighbours' per capita cultural spending. In column (2), the neighbourhood criterion also takes into account the population size of a municipality's neighbours. The neighbourhood variables then become the population-weighted average of neighbours' cultural spending. Columns (3) and (4) provide the results when awarding central places with a special status in the analysis (cfr. *supra*).

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<sup>11</sup> This focus on vertical interdependence between different levels of government is related to studies that address possible crowding-out effects between public subsidies and private or corporate funding for the arts (e.g. Seaman, 1980, 1981; Kingma, 1989; Steinberg, 1991; Brooks, 1999, 2000a,b; Okten and Weisbrod, 2000; Andreoni and Payne, 2003; Borgonovi, 2006).

Before we discuss the results, it is important to note that OLS estimation of equation (7) leads to biased and inconsistent estimates due to the endogeneity of neighbours' cultural spending. Hence, an instrumental variables (IV) approach is employed. Though IV-estimation has been argued to be somewhat less accurate than its ML counterpart in estimating spatial interactions of this kind (e.g. Das et al., 2003), it has the advantage of providing consistent results even in the presence of spatial error correlation (Kelejian and Prucha, 1998). This is important as spatially correlated omitted variables or the existence of common shocks across municipalities may cause the estimates of the spatial interaction terms to be spuriously significant. In line with the spatial econometrics literature, we use neighbours' socio-economic, financial and political covariates as instruments for neighbours' cultural spending (e.g. Heyndels and Vuchelen, 1998; Solé-Ollé, 2003). These instruments are jointly highly significant in the first stage regressions (not reported), suggesting there is no issue of weak instruments. This conclusion is reinforced by the fact that they pass the Cragg-Donald (1993) identification test. Also, the Hansen-J test cannot reject the null hypothesis of over-identification, indicating that the instruments are – as required to obtain valid estimation results – exogenous to the second-stage regression (see bottom row of table 2).<sup>12</sup>

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Table 2  
about here

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<sup>12</sup> In the analyses where central places are awarded a special status (reported in columns (3) and (4)), we expand the set of instruments with dummy variables indicating whether or not a given municipality borders one of more central places. This is necessary to increase the strength of the instruments in these estimations (though their exclusion does not affect the estimation results).



Starting the discussion of the results with the central (neighbourhood) variables, we see in column (1) that there is clear support for positive spatial interdependence in municipal cultural expenditures in Flanders. Cultural spending in neighbouring municipalities has a positive effect on cultural spending in any given municipality (supporting H1a rather than H1b). This effect is only significant for spending of first order neighbours and not for second order ‘neighbours of neighbours’. This indicates that cultural expenditures in municipalities are complementary. These results therefore are supportive of the arguments that the arts are an ‘acquired taste’ (with consumption in surrounding municipalities instigating higher demand at home) and that local politicians tend to follow each other’s lead (which is a rational response to inhabitants engaging in relative performance assessments).

Unfortunately, we are unable to distinguish which of both explanations is the strongest driver of this result (a problem common to the spatial econometrics literature; Brueckner, 2003).<sup>13</sup>

Replacing the unweighted average level of neighbours’ spending by the population-weighted level of spending in neighbouring municipalities (in column (2)) leads to a fall in both the size and the statistical significance of the spatial parameters. This can be interpreted as support for the idea that the incentives for free-riding are larger when neighbours are larger – in line with H2. This is further underlined in column (3) where we distinguish the effect central places have on their neighbours from that of non-central places. The results show that the neighbourhood effect is only statistically significant for the latter. That is, spatial interdependence is especially important between municipalities that are not central places. A

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<sup>13</sup> To ensure that we are actually measuring spatial interdependence, we re-estimated the model using a weights matrix where neighbours are defined according to the alphabetical order of municipalities’ names (cfr. Case *et al.*, 1993; Brown and Rork, 2005; Geys, 2006). Every municipality is awarded one ‘neighbour’ preceding and following it in the alphabetical ordering. Since this alphabetical ranking has nothing to do with the competitive forces between municipalities, the use of such a weighing scheme should not lead to significant estimates of the spatial parameter. In line with this prediction, the estimations indicate the absence of spatial interactions using these alphabetical ‘neighbours’ (results available upon request).

Wald test indicates that this difference between the effects of central and non-central places is statistically significant at the 5 percent level for first order neighbours ( $\text{Chi}^2(1) = 5.73$ ;  $p < 0.05$ ), though not for second-order neighbours ( $\text{Chi}^2(1) = 0.55$ ;  $p > 0.10$ ).

Finally, in column (4), we include an interaction between NonCP-neighbours spending (i.e. the population-weighted average level of cultural spending in those of a municipality's neighbours that are *not* central places) and a dummy variable equal to 1 for neighbours of central places (0 otherwise). As mentioned, this allows us to distinguish between the effects of cultural spending by small (i.e. non-central place) neighbours depending on whether or not a municipality is also bordering a central place. The interaction term has the expected negative sign, but is statistically insignificant at conventional levels. Hence, we conclude that being situated next to a central place does not appear to significantly affect one's behaviour towards small neighbours. We thus fail to find support for H3.

An interesting corollary to the above findings regards municipalities that are surrounded by both small municipalities and (at least one) central place. We find that these municipalities regard both their large and small neighbours approximately equally. Indeed, the difference between the coefficient of CP-neighbours spending and the sum of  $\zeta$  (i.e. the overall small neighbours effect) and  $\xi$  (i.e. the interaction of the small-neighbours effect with a dummy for neighbours of central places) is not significantly different from 0 ( $\zeta + \xi = 0.230$ ;  $\text{Chi}^2(1) = 0.55$ ;  $p > 0.10$ ). This implies that the citizenry of municipalities that border a central place do not solely focus their attention on the cultural provisions in the central place, but also – and equally strongly – appear to judge their government's cultural policies relative to the small neighbours' cultural provisions.<sup>14, 15</sup>

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<sup>14</sup> Note that although the signs of the variables are generally in line with our hypotheses for second-order neighbours, the effects persistently fail to reach statistical significance in this case. Also, restricting the

Turning to the control variables, population size is a highly significant determinant of municipal cultural spending. The larger the population, the higher cultural spending per capita (the inclusion of a quadratic term proved insignificant). Surprisingly, however, population density has a negative effect on municipal cultural spending. Still, though robust in sign, the effect fails to reach statistical significance. The share of inhabitants under 19 years of age and the share of those above age 65 affect cultural expenditures differently. Indeed, while the former appear to reduce spending (though the effect is statistically insignificant), the latter increases spending. This is in line with the idea that the elderly have a lower opportunity cost of time (Pommerehne, 1982; Schulze and Ursprung, 2000) and that young people may be less interested in (high-brow) cultural activities. Also, our results are supportive of the idea that culture is more appealing to people of higher educational status (Throsby, 1994). Surprisingly, however, this does not hold for income (which appears to have no effect). Income and educational achievement are, however, highly correlated ( $r = 0.79$ ). When leaving out either of these variables, the sign of the other's coefficient estimate is correctly signed (i.e. positive) and becomes statistically more significant (though the income effect still fails to reach significance at conventional levels).

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number of central places to the five provincial capitals, the effects become more in line with our predictions. Indeed, while neighbours of these five provincial capitals significantly regard their large neighbours (as in the main text), they disregard their smaller neighbours (since  $\zeta + \xi$  is insignificantly different from 0 in this case:  $\zeta + \xi = -0.117$ ;  $\text{Chi}^2(1) = 0.60$ ;  $p > 0.10$ ).

<sup>15</sup> The Brussels Capital Region is geographically surrounded by Flanders. This implies that the Flemish municipalities bordering Brussels may be affected by cultural spending decisions in the Brussels Capital Region. Unfortunately, a lack of data on cultural spending in the Brussels municipalities prevents a direct test of this possibility. Nevertheless, to check whether this affects our results, we re-estimated the model excluding those municipalities that are first or second-order neighbours of the Brussels Capital Region. The findings are quantitatively similar to those presented in the main text (available upon request). Also, including a dummy variable to assess whether the (first and second-order) neighbours of Brussels act significantly different from the remaining Flemish municipalities indicates that this is not the case.

Two of our three financial variables have a significant effect on local cultural spending. Unsurprisingly, general purpose grants and the subsidies some municipalities receive under the new Flemish legislation for appointing a cultural policy coordinator and drawing up a general cultural policy plan significantly increase spending on cultural policies. This is in line with the finding of Hofferbert and Urice (1985, 325) that (federal-level) NEA grants in the US “seem to stimulate state arts spending”. Finally, we find that the two political variables included in the model add little to the explanatory power of the model. The coefficient estimates for both the ideological position of the government and the number of parties in the governing coalition fail to reach statistical significance (and, in the case of political fragmentation, are not robustly signed over the estimations). Similar effects for political variables were retrieved in an analysis of Austrian federal-level cultural spending over the period 1967-1998 by Getzner (2002).

## **5. Conclusions**

This paper addressed the question whether Flemish municipalities’ cultural spending is affected by the level of such spending in neighbouring municipalities. In other words, we assessed the prevalence of horizontal interdependencies in local government cultural policies in Flanders. The existence of such interdependencies in fiscal decisions has attracted a lot of scholarly attention in the recent literature (e.g. Brueckner, 2003; Revelli, 2005) and can be expected to play an important role in cultural spending as well. Indeed, as the benefits of cultural spending by any given municipality cannot be reserved exclusively for its own inhabitants, municipalities are likely to be affected by each other’s actions. To the extent that the arts are an ‘acquired taste’, consumption in neighbouring municipalities could result in higher demand at home. Also, local politicians might mimic each other’s decisions as a

(rational) response to citizens engaging in relative performance evaluations (i.e. voters using neighbours' policies as a yardstick to judge their own incumbent's performance). However, incentives for free-riding on neighbours' provision of cultural activities may create a negative interdependence between cultural expenditures across municipalities.

Importantly, the analysis is the first that attempts to assess the prevalence and importance of 'agglomeration effects' in horizontal competition between municipalities. We can exploit this differential behaviour of large and small municipalities' neighbours due to the inherent advantage that large municipalities have in providing cultural goods (cfr. Heilbrun, 1992). Although, to the best of our knowledge, such 'agglomeration effects' have not been subject to empirical scrutiny before, the concentration of cultural talent in so-called 'central places' provides possibilities for economies of scale for both cultural producers and local governments. This might clearly affect neighbouring jurisdictions' behaviour.

Our main findings are first of all that Flemish municipalities' cultural expenditures are positively affected by the level of cultural spending in their neighbours. This is supportive of the 'acquired taste' and yardstick competition arguments. Secondly, when taking into account the distinction between 'central place' and 'small' municipalities, a more complex pattern arises from the data. Spatial interdependence is then shown to be especially important between municipalities that are not central places. Finally, we find that small municipalities that border a central place do not focus solely on the cultural policy in the central place neighbour (and free-ride on its policies), but still take into account what their small neighbours do. Although these central places have an inherent advantage in providing cultural goods, this apparently does not preclude its smaller neighbours to take their actions into account when deciding on their own cultural spending.

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Table 1: Neighbours' spending in the presence of central places

	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
Cultural spending	<b>a</b>	<b>b</b>	<b>c</b>	<b>d</b>	<b>e</b>
Population	$p_A$	$p_B$	$p_C$	$p_D$	$p_E$
CP-neighbours spending	0	a	0	e	0
NonCP-neighbours spending	b	c	$b\left(\frac{p_B}{p_B + p_D}\right) + d\left(\frac{p_D}{p_B + p_D}\right)$	c	d

Table 2: Estimation results

Variable	(1)	(2)	(3)	(4)
Neighbours' cultural spending (1 <sup>st</sup> order)	0.298 *** (3.33)	-	-	-
Neighbours' cultural spending (2 <sup>nd</sup> order)	0.194 (1.19)	-	-	-
Population-weighted neighbours' cultural spending (1 <sup>st</sup> order)	-	0.089 ** (2.56)	-	-
Population-weighted neighbours' cultural spending (2 <sup>nd</sup> order)	-	0.017 (0.51)	-	-
CP-neighbours spending (1 <sup>st</sup> order)	-	-	0.027 (1.15)	0.091 ** (2.01)
CP-neighbours spending (2 <sup>nd</sup> order)	-	-	0.012 (0.60)	0.009 (0.20)
NonCP-neighbours spending (1 <sup>st</sup> order)	-	-	0.419 *** (2.62)	0.457 *** (2.59)
NonCP-neighbours spending (2 <sup>nd</sup> order)	-	-	0.151 (0.82)	0.209 (0.88)
NonCP-neighbours spending * neighbour of central place (1 <sup>st</sup> order)	-	-	-	-0.226 (-1.51)
NonCP-neighbours spending * neighbour of central place (2 <sup>nd</sup> order)	-	-	-	0.015 (0.08)
Population size (log)	3.437 *** (2.58)	2.909 ** (2.11)	3.477 ** (2.47)	3.711 *** (2.61)
Population density (per km <sup>2</sup> )	-0.002 (-0.87)	-0.002 (-0.75)	-0.001 (-0.46)	-0.001 (-0.62)
% under 19 years	-0.580 (-1.00)	-0.589 (-1.07)	-0.662 (-1.12)	-0.700 (-1.12)
% over 65 years	1.150 ** (2.34)	0.967 ** (2.06)	0.860 * (1.88)	0.786 * (1.69)
Income (in €1000)	-0.161 (-0.17)	-0.689 (-0.74)	0.208 (0.20)	0.248 (0.24)
Education level	0.341 * (1.76)	0.352 * (1.75)	0.308 (1.58)	0.318 * (1.64)
Unemployment rate	-0.166 (-0.10)	0.285 (0.19)	-0.123 (-0.07)	-0.004 (-0.00)
General purpose grants (in 1000€)	95.591 *** (5.33)	95.062 *** (5.09)	93.708 *** (5.27)	92.678 *** (5.28)
Cultural policy subsidies	3.842 *** (11.99)	3.958 *** (13.31)	3.945 *** (12.13)	3.880 *** (11.68)
Debt per capita (in €1000)	3.482 (1.42)	4.341 (1.59)	3.335 (1.42)	3.335 (1.47)
Number of parties in government	0.182 (0.19)	-0.025 (-0.03)	0.608 (0.57)	0.563 (0.51)
Ideological complexion of Government	1.146 (1.07)	0.974 (0.93)	1.441 (1.31)	1.201 (1.09)
Intercept	-60.601 ** (-2.34)	-39.082 * (-1.71)	-63.335 ** (-2.12)	-64.812 ** (-2.19)
Centered R <sup>2</sup>	64.52	64.69	62.60	63.38
Cragg-Donald	340.78 ***	807.15 ***	122.77 ***	86.46 ***
Hansen J test	24.460	29.055	29.272	28.271

Note: N = 304; robust z-statistics in brackets; \*\*\* significant at 1% level, \*\* at 5% and \* at 10%. 1<sup>st</sup> and 2<sup>nd</sup> order refer to first and second order neighbours respectively. The Cragg-Donald (1993) identification test assesses the relevance of our instruments while Hansen J test examines over-identification of these instruments. Both have a Chi<sup>2</sup> distribution with degrees of freedom depending on the number of instruments employed (24 instruments in columns (1) and (2) and 29 in columns (3) and (4) – see text).

## Appendix A: Summary statistics

Table A1: Summary statistics (N=304)

Variable	Mean	Standard deviation	Minimum	Maximum
Cultural spending per capita	21.413	19.689	0.665	122.372
Neighbours' cultural spending (1 <sup>st</sup> order)	23.841	10.536	5.129	72.326
Neighbours' cultural spending (2 <sup>nd</sup> order)	21.369	6.302	7.026	44.422
Population-weighted neighbours' cultural spending (1 <sup>st</sup> order)	33.565	20.911	6.072	111.986
Population-weighted neighbours' cultural spending (2 <sup>nd</sup> order)	31.092	15.906	8.679	82.848
CP-neighbours spending (1 <sup>st</sup> order)	23.671	36.608	0	121.138
CP-neighbours spending (2 <sup>nd</sup> order)	30.070	36.322	0	121.138
NonCP-neighbours spending (1 <sup>st</sup> order)	22.879	9.944	5.351	85.510
NonCP-neighbours spending (2 <sup>nd</sup> order)	22.033	7.095	7.572	50.757
NonCP-neighbours spending * central place dummy (1 <sup>st</sup> order)	7.590	11.550	0	47.181
NonCP-neighbours spending * central place dummy (2 <sup>nd</sup> order)	10.407	12.191	0	45.220
Population size (log)	9.547	0.767	4.431	13.014
Population density (per km <sup>2</sup> )	512.513	441.297	52.079	3092.250
% under 19 years	23.044	1.846	17.934	28.822
% over 65 years	16.655	2.351	10.069	25.170
Income (in 1000€)	12.431	1.534	8.665	17.294
Education level	24.145	6.306	9.203	48.366
Unemployment rate	1.767	0.598	0.796	4.199
General purpose grants per capita (in 1000€)	0.114	0.063	0.075	0.821
Cultural policy subsidies per capita	1.736	2.786	0	18.225
Debt per capita (in 1000€)	1.089	0.483	0	3.546
Number of parties in government	1.868	0.728	1	4
Ideological complexion of Government	4.893	0.644	2.78	5.97