

Between privatization and intermunicipal cooperation: Small municipalities, scale economies and transaction costs*

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Abstract: In this paper, we analyze the use of intermunicipal cooperation as a possible mechanism for small municipalities to deliver efficiently local services. The main hypothesis to be analyzed is that small municipalities may use intermunicipal cooperation to exploit scale economies as an alternative to privatization. In this way, lower transaction costs might be a cost advantage that intermunicipal cooperation provides in relation to privatization. In order to test our hypothesis, we first review theories that provide useful insights on cost advantages of different production forms. Then, we analyze extensive data for Spain concerning solid waste collection and water distribution services, which are the local services more commonly studied for their major economic relevance. From such data analysis, we conclude that cooperation is more frequent when production is public, while private production is more frequent when the service is provided by the municipality. Additionally, we show that production costs are lower when intermunicipal cooperation takes place.

En este artículo, se analiza el uso que los municipios pequeños pueden hacer de la cooperación intermunicipal para producir de forma eficiente servicios locales. La principal hipótesis que se analiza es que los pequeños municipios pueden utilizar la cooperación intermunicipal

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como alternativa a la privatización para explotar economías de escala. En este sentido, la cooperación intermunicipal puede implicar menores costes de transacción que la privatización. Con el propósito de contrastar esta hipótesis, se revisan en primer lugar las teorías que ofrecen perspectivas útiles respecto a las ventajas de costes de las diferentes formas de producción. A continuación, se analiza la información que proporciona una base rica de datos respecto al servicio de recogida de basuras y el suministro de agua en España, los cuales constituyen los servicios locales más comúnmente estudiados por su relevancia económica. De este análisis, puede concluirse que la cooperación es más frecuente cuando el servicio es producido por el sector público, mientras que la producción privada es más frecuente cuando el servicio es suministrado a nivel municipal. Además, se muestra evidencia de que los costes de producción son menores cuando tiene lugar la cooperación intermunicipal.

Key words: Privatization, contracting-out, local governments, intergovernmental relations

JEL classification: L33, R51, H70

O. INTRODUCTION

Privatization of local services has been a relevant policy widely implemented all over the world during the last two decades. Indeed, privatization of some public services is one of the strategic choices that local governments have to its disposal. Hence, several empirical studies have been devoted to examine the motivations, characteristics and results associated to local privatization.

One of the aspects that have been more commonly analyzed as a major motivation for privatizing local services is that related to the reduction in costs. Indeed, privatization may allow a more powerful structure of incentives for managers (Shleifer, 1998; Hart, Schleifer and Vishny, 1997). Furthermore, it may provide more opportunities for competition for the market (Niskanen 1971, Savas 1987). And more importantly, private firms may exploit scale economies through the aggregation of production of several territorial jurisdictions (Donahue, 1989). However, all these cost advantages of privatization must be put in relation to the higher transaction costs that are always associated to not produce internally the service.

The use of privatization to exploit scale economies may be particularly relevant for small municipalities, since for many public services they have a scale of production lower than the optimum one. However, several studies show that small municipalities use privatization less often than larger municipalities. Indeed, small municipalities can obtain a modest quantitative advantage from privatization but transaction costs can be substantial (Bel, 2006a; Bel and Miralles, 2003). Additionally, it is not clear that small municipalities have the strong managerial capacity needed to manage private markets (Warner, 2007; Warner and Hefetz, 2003) and, in turn, small municipalities are generally less attractive for private firms (Warner and Hefetz, 2002).

Within this context, there is a further possible explanation for the relatively scarce use of privatization by small municipalities; they may use intermunicipal cooperation as an alternative to privatization. In this paper, the main hypothesis to be analyzed is that small municipalities may use intermunicipal cooperation as an alternative to privatization in order to exploit scale economies and minimize transaction costs. In order to do that, we use extensive data obtained from a nation-wide Survey; *Encuesta Sobre la Producción de Servicios Públicos Locales (Survey on the Production of local Public Services)*.

The structure of the paper is as follows. We first review theories that provide useful insights on possible cost advantages of privatization in relation to public production. Then, we explore the use of intermunicipal cooperation as an alternative to privatization to produce efficiently the service. Finally, we analyze extensive data for Spain concerning solid waste collection and water distribution services. To this regard, it is worth noting that these services are the most commonly studied in the literature about public local services since they are among the most relevant in economic terms for local governments. After that, we conclude stressing the main points in our analysis.

1. PRIVATIZATION, SCALE ECONOMIES AND TRANSACTION COSTS: THEORETICAL FRAMEWORK

PRIVATIZATION AND SCALE ECONOMIES

Privatization of local public services has been advocated from different theoretical approaches; most notably by those connected with Public Choice and Property Rights theories. In this way, theories within the Public Choice framework look at incentives to managers and the role that com-

petition can play in reducing excessive public supply of public services (Niskanen, 1971; Savas 1987). In contrast, Property Rights theories put the attention in the stronger incentives for cost reduction that provides private property (Shleifer, 1998). In a specially rich and fruitful work, Hart, Schleifer y Vishny (1997) show that private firms have more incentives to undertake innovations that reduce costs. Additionally, they also show that private firms may also have more incentives to improve service quality. To this regard, it must be said that public managers, in contrast to private managers, are not able to claim the property rights of innovations.

In a pragmatic approach to local privatization, Donahue (1989) argues that external providers have advantages with regard to internal units of the public bureaucracy when competition binds the behavior of those external providers. Among the advantages of external providers, he mentions the following ones: (1) The more flexible use of workers and a more clear allocation of tasks and responsibilities; (2) Less restrictive bureaucratic procedures and more attention to the outcomes. Furthermore, Donahue (1989) stresses that contracting out local services allows the exploitation of scale economies: a) Fixed costs can be shared among several geographical units; b) External providers can offer a broader range of incentives to the workers, as for example a manager position in other cities; c) External providers may claim the property rights of innovations. This implies to have incentives for creating specific innovation centers, while public managers do not have such incentives as they do not receive enough compensation.

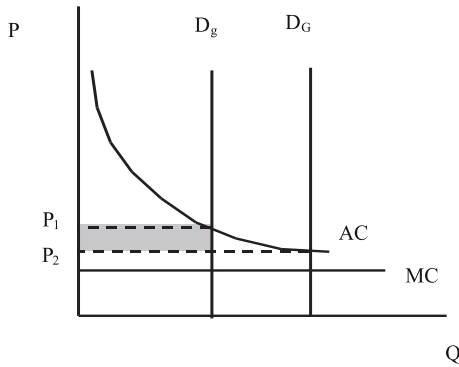
We argue that the exploitation of scale economies through privatization is the more relevant theoretical argument to support local privatization. Many goods publicly provided are characterized for having a significant amount of fixed costs so that the potential for exploiting scale economies is high. To this regard, a major practical problem is to identify the optimum geographical scale of the service: The municipality usually does not fit with that optimum geographical scale from the production point of view. To the extent that the considered local service is affected by scale economies, it may be technically efficient that only one firm delivers the service in several territorial jurisdictions to achieve the optimum production scale.

As we mention above, one of the main motivations for privatizing a local service may well be to reduce costs through the exploitation of scale economies. Since the size of the smallest municipalities is not optimal for delivering some services, as for example in the case of solid was-

te collection¹, contracting out to the private sector can imply that the same firm delivers the service to several municipalities. Hence, contracting out can allow saving costs since the optimum scale of production can be obtained through the aggregation of production of several municipalities. As the external provider is not limited to just one municipality, it can allocate fixed costs in a more efficient way. In this way, the exploitation of scale economies can provide substantial gains in terms of social welfare.

If in the relevant market total demand is higher than the demand of the single municipality, the firms involved in the tender can be willing to offer a price lower than the average cost relative to a single municipality, so that they can get the whole relevant market. In figure 1, we show that in a relevant market strictly local (demand D_g) the minimum price will be P_1 ; nevertheless, if this municipality aggregates its demand to an upper level (demand D_G), increasing the relevant market, the firm may accept a minimum price equal to P_2 . The potential welfare gains for the municipality are represented by the shadow area from figure 1. Figure shows the total potential gains associated to contracting out when the demand of the relevant service moves from D_g to D_G .

Figure 1: Contracting out and scale economies



¹ Stevens (1978) suggests that scale economies are significant for the solid waste collection service, but they are rapidly exhausted as long as the population of the municipality increases. Callan and Thomas (2001) have analyzed the scale economies magnitude for selective waste collection in Massachussets (USA), and Bel (2006b) has tested the existence of scale economies for the solid waste collection service in Spain.

PRIVATIZATION AND TRANSACTION COSTS

Contracting out local services implies many difficulties. In practice, many aspects to be confronted threaten the sound properties of ex-ante competition. The contract becomes the agent of the game that takes place between governments and firms, taking into account that firms dominate the information about production costs. Hence, some opportunistic rent-seeking behavior is likely to appear because of the contracting out decision.

The main concern for the government comes from the fact that it is not possible to predict all the possible future eventualities; that is, there exists incomplete and asymmetric information. This is a scenario of incomplete contracts. Taking advantage of the lack of information, firms may well make risky offers in the auction process. Once the firm got the market, it can claim for a renegotiation of the contract with the argument that random cost shocks have arisen. Re-negotiation may also be used to create entry barriers for future auctions that imply some sort of regulator capture. To this regard, it may be said that the actual structure of the market is a bilateral monopoly due to opportunistic behaviors and the own characteristics of the function costs.

Within this framework of problematic situations related to contracting out, the role that transaction costs play is particularly relevant for our purposes. Transaction costs include administrative costs and those costs derived from incomplete contracts as long as it is not possible to elaborate a contract that considers every eventuality that can arise. Bailey and Davidson (1999) find that even ten years later from the contracting out decision, local governments still incur in costs of monitoring inputs and the functioning of the service delivery. Furthermore, these costs are relevant (Brown and Potoski, 2003). In fact, one of the main disadvantages of the public delivery of local services is considered to be the excessive focus on the bureaucratic procedures, and such disadvantages do not seem to disappear with contracting out although they adopt different forms.

In practice, the most recent studies that analyze factors explaining local privatization focus the attention on the role of transaction costs in the delivery choices of local governments. In this sense, Menard and Saussier (2000), Levin and Tadelis (2005), Walls, Macauley and Anderson (2005) and Brown, Potoski and van Slyke (2006) argue that production will be externalized more frequently in services associated with low transaction costs, that is, services with low specific assets and who-

se performance is easily measurable. Additionally, Nelson (1997) argues that the positive relationship found between privatization and population homogeneity is due to the lower transaction costs associated with such homogeneity.²

Indeed, the magnitude of transaction costs will determine the convenience of using contracting out in terms of social welfare. As we mention above, in a non-optimal scale jurisdiction contracting out allows reducing the prices to be paid to the firms involved in the tender, as long as demand can be increased from the local market to an upper level. However, the higher transaction costs implied by contracting out may overcome the lower costs associated to the exploitation of scale economies. In this way, transaction costs will increase the costs borne by the municipality, TC . On the other hand, savings of costs (due to the scale economies effect) by the municipality in figure 1 are $(P_1 - P_2)D_g$. What is crucial here is the comparison between TC and $(P_1 - P_2)D_g$: If $TC < (P_1 - P_2)D_g$, contracting out will generate cost savings. On the contrary, if $TC > (P_1 - P_2)D_g$, the municipality will be worse off.

Table 1 shows a summary of the most relevant factors –related to the influence of transaction costs– that it is convenient to take into account in the contracting out decision.

Table 1. Factors that condition the choice of internal production or contracting out.

Production is more convenient with own employees when....	Contracting out is more convenient when....
1) The higher is, in the beginning, the uncertainty about the process and the outcomes	1) The easier is to establish the requirements in advance
2) The more difficult is to measure the value of production	2) The more difficult is to monitor the internal fulfillment of the instructions or the easier is to measure the outcomes
3) The higher is the knowledge of the principal about the best means to fulfil the tasks.	3) The more concerned is the principal about the outcomes and less concerned is about the process

² Bel and Fageda (2007) provide a review of empirical studies that analyze factors explaining privatization.

2. SMALL MUNICIPALITIES, SCALE ECONOMIES AND TRANSACTION COSTS.

Even though privatization is a mechanism to aggregate production and so to exploit scale economies in the municipalities of small size, contracting out in Spain for the solid waste collection service is lower in less populated municipalities (Bel and Miralles 2003; Bel 2006). One sensible explanation for this obvious contradiction is related to the combination of two factors. On the one hand, relatively small municipalities, and hence municipalities with a low total demand of the service may obtain modest gains in absolute terms from the efficiency improvement. On the other hand, they may well confront relatively high monitoring costs when privatizing the service delivery.³

To this regard, it is worth noting that privatization is not necessarily required to aggregate the production of a service across several municipalities. This is so because production can be aggregated too through the cooperation between several municipalities. Indeed, intermunicipal cooperation is an alternative mechanism to privatization that can be used when pursuing the optimum scale of production in the delivery of a service.⁴ Intermunicipal cooperation also allows exploiting scale economies but probably with lower transaction costs. On the one hand, this is due to the fact that intermunicipal cooperation can take place between supra-municipal entities with a multifunctional nature, such as counties (“comarcas”) or provinces, in which coordination costs are shared among several services.⁵ On the other hand, transaction costs can be shared among all the municipalities that cooperate when the intermunicipal cooperation is accompanied by privatization.

3. INTERMUNICIPAL COOPERATION IN SPAIN

In this section we present information on intermunicipal cooperation in Spain. Data has been obtained from a nation-wide Survey, the *II*

³ Other additional factors can help to explain why small municipalities have less privatization. Among them, Warner (2007), and Warner and Hefetz (2002, 2003) have stressed lower managerial capabilities to deal with private firms, as well as lower attractiveness of small municipalities for those private firms offering delivery of services.

⁴ Although we must recall that using both mechanisms is compatible. Indeed, services produced through intermunicipal cooperation can be contracted out to a private firm at the same time.

⁵ In other cases, as in USA, intermunicipal cooperation is associated to a more relevant role of contracting out between different administrations (Warner, 2006).

Encuesta Sobre la Producción de Servicios Públicos Locales (II Survey on the Production of local Public Services). The Survey's main characteristics are explained in Appendix A.

Table 2 shows the extent of intermunicipal cooperation for solid waste collection and water distribution services in relation to the size of municipalities.

Table 2. Intermunicipal cooperation for solid waste collection and water distribution in Spain (2003-04). Municipalities with more than 2,000 inhabitants (in %)

	Total (municip >2,000 inhab.)	Municip. >30,000 inhab.	Municip. 10,001 to 30,000 inhab.	Municip. 2,001 to 10,000 inhab.
Solid Waste collection				
Spain	44.0	14.6	30.8	52.2
Andalusia	70.7	25.6	56.1	78.6
Catalonia	34.7	2.9	17.6	50.0
Valencian C.	14.7	4.3	8.1	20.0
Madrid	12.2	0.0	0.0	20.0
Aragon	78.1	0.0	55.6	88.4
Water distribution				
Spain	22.6	31.1	20.2	22.1
Andalusia	47.6	20.5	33.3	53.8
Catalonia	14.4	37.1	8.8	13.5
Valencian C.	22.4	4.3	7.7	33.3
Madrid	94.5	96.0	66.7	100.0
Aragon	10.9	0.0	0.0	13.9

Note: We only present data for regions in which the sample allows inferring results statistically significant

Source: Bel (2006a: 223-4) for Spain and all regions, but Aragon. In this case, data has been kindly provided by Melania Mur (Universidad de Zaragoza).

3.1. SOLID WASTE

In Spain, almost half of the municipalities with a population higher than 2,000 inhabitants deliver the solid waste collection service through

intermunicipal cooperation.⁶ However, differences across regions (“CCAA”) are substantial. For example, more than 70 per cent of municipalities in Andalusia and Aragon cooperate, while the aggregation of production through intermunicipal cooperation does not reach the 15 per cent in Valencian C. and Madrid.

A regular pattern is the reduction in the degree of intermunicipal cooperation as long as population of the municipality increases. Intermunicipal cooperation decreases for municipalities with more than 10,000 inhabitants, and this trend is even stronger for municipalities with more than 30,000 inhabitants.

This is consistent with the fact that scale economies in the delivery of local services are exhausted with increases in the population of the considered municipality. In particular, scale economies are fully exhausted for municipalities with population beyond the range of 20,000–50,000 inhabitants, according to empirical evidence in Bel (2006b).

3.2. WATER DISTRIBUTION

Less than one quarter of the municipalities with a population of more than 2,000 inhabitants cooperate to deliver the service in Spain. Here substantial differences across regions can also be observed too. For example, 95 per cent of municipalities from Madrid and almost half of Andalusia municipalities cooperate in the delivery of this service, while intermunicipal cooperation is hardly above 20 per cent in the Valencian C. and it ranges from 10 to 15 per cent in Catalonia and Aragon.

In contrast to the scenario for the solid waste collection, intermunicipal cooperation and population of the municipality are not systematically correlated. The network characteristic of the service infrastructure, which requires a high amount of sunk investments, implies that density economies derived from population concentration play a more relevant role than in the case of solid waste collection. Hence, here the amount of population in the municipality is less relevant than the fact of being a city (town) contiguous to another city (town). This may explain the high degree of cooperation in urban areas that provide the

⁶ Intermunicipal cooperation can involve all or some parts of the service. Taking into account the great array of possible mechanisms that can be used, it has been considered that intermunicipal cooperation takes place when it includes, at least, the most significant part of the service delivery cost for the municipalities, which is usually the collection and transport of waste for elimination.

water distribution service to highly populated municipalities, such as the metropolitan areas of Madrid and Bilbao. In the case of Madrid, Canal de Isabel II, a state-owned regional firm that aggregates almost all the municipalities of the region, delivers the service.

4. INTERMUNICIPAL COOPERATION AND PRIVATIZATION

The aggregation of the service delivery through intermunicipal cooperation does not restrict the options available concerning the production form. Indeed, the service can be delivered by own public employees, or externally through a private firm, a public firm or a mixed firm.

Does there exist any relation between intermunicipal cooperation and privatization? In table 3, it we compare the frequencies of each production form in Spain for 2003-04. To this aim, we have divided the sample between municipalities with cooperation and municipalities without cooperation.

Table 3. Intermunicipal cooperation and production form in Spain (2003-04). Municipalities with more than 2,000 habitants (in %)

Production form	Solid waste collection		Water distribution	
	Supra/inter municipal production	Municipal production	Supra/inter municipal production	Municipal production
Private firm	51.3	71.5	30.1	55.9
Mixed firm	10.1	2.4	8.3	9.6
Public firm	16.5	10.2	53.4	14.7
Direct public management	22.2	15.7	8.3	19.3
Others	0.0	0.3	0.0	0.5

Note: Others indicate the co-existence of different firms or productive units within the same municipality that operate in separated geographical areas.

Source: Bel (2006a: 226).

Data in table 3 shows that the cities/towns with intermunicipal cooperation have a lower frequency of private production than those municipalities characterized by municipal provision. On the contrary, production forms that involve the public sector takes place more often in cities/towns with intermunicipal cooperation. This happens both for solid waste collection and water distribution.

In addition to this, it is worth noting the high frequency of mixed enterprise for solid waste collection in municipalities that cooperate. Aside from using cooperation for exploiting scale economies, it can be used too to deal with a private industrial partner in the delivery of the service. Indeed, intermunicipal cooperation may allow municipalities to have a stronger negotiation power than that achieved by each municipality separately.⁷

Figure 2 and 3 show differences in the type of ownership of the producer according to the level of aggregation of the provision for solid waste collection and water distribution, respectively.

Figure 2. Intermunicipal cooperation and ownership for solid waste collection in Spain

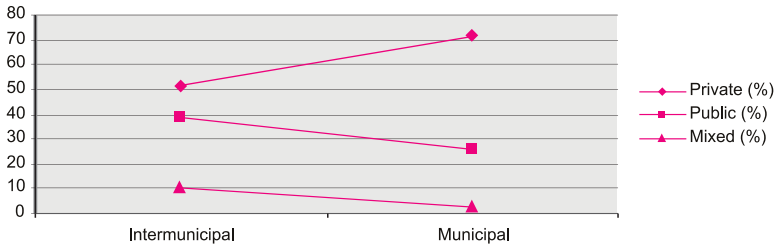
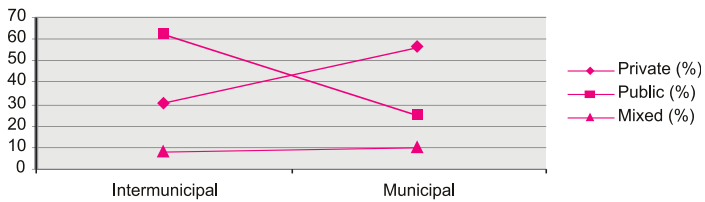


Figure 3. Intermunicipal cooperation and ownership for water distribution in Spain



⁷ However, we do not find significant differences in the frequency of mixed enterprises in relation to intermunicipal cooperation in the case of water distribution services. This might be explained by the fact that the use of mixed firms in water increases with the population of the municipality (Bel, 2006: 203). On the contrary, mixed firms are more frequent in small municipalities in the service of solid waste collection (Bel, 2006: 196)

Concerning solid waste collection, figure 2 shows that pure private production is more common when provision is at the municipal level, while pure public production (public firm + direct public management) is more common when provision is made at a supra-municipal level.

Figure 3 shows that pure public production is more common in the municipalities that cooperate in the water distribution service. This being said, it is worth noting that data of table 3 indicates that the public firm seems to be closely linked to the intermunicipal cooperation. In contrast, the direct public management is more common than the public firm in the municipalities that not cooperate.

To sum up, intermunicipal cooperation is compatible with every form of production. In any case, it is clear that privatization is less common in the municipalities that cooperate. This result is consistent with our initial hypothesis: Intermunicipal cooperation mitigates one of the main advantages of privatization: its utility as a mechanism to exploit scale economies.

6. INTERMUNICIPAL COOPERATION AND COSTS

Based on the information obtained from the *I Encuesta Sobre la Producción de Servicios Públicos Locales (I Survey on the Production of Local Public Services)*, it has been possible to have a sample of 186 municipalities of population larger than 1,000 inhabitants in Catalonia in year 2000 (Appendix B explains the main characteristics of the I Survey). Using data for this sample, we have been able to compare costs of solid waste collection distinguishing between municipalities that cooperate or not cooperate. Table 4 shows the comparisons of average costs (euros per ton). Overall, the average cost for the municipalities that cooperate is 19 per cent lower than the average cost for the municipalities that not cooperate.

If we look at municipalities with a population higher than 20,000 inhabitants, average cost differences are not significant. This has to do with the exhaustion of scale economies for municipalities of this size. Since larger municipalities already operate to the optimum scale, cost improvements with intermunicipal cooperation can not be expected.

In the same way, intermunicipal cooperation concerning the municipalities less populated is strongly related to lower average costs. For the sample of municipalities with a population that is less than 20,000 inhabitants, the average cost is 20 per cent lower with cooperation. If we only compare the municipalities with less than 10,000 inhabitants, the average cost is 22 per cent lower in the municipalities that cooperate.

Table 4. Average costs (solid waste collection) according to the existence or absence of intermunicipal cooperation. Catalonia (2000). Municipalities > 1,000 inhabitants.

Population	Intermunicipal Cooperation	Municipal	t-student
	Average cost (euro/ton)	Average cost (euro/ton)	
Global	54.13	67.21	-5.096***
Population ≥ 20,000	73.42	70.00	0.473
Population < 20,000	53.01	65.96	-4.261***
Population <10,000	53.19	68.09	-4.033***

Note: - t-student : (***) significant at the 1 per cent level.

Source: Estimated based on data from the I Encuesta sobre la Producción de Servicios Públicos Locales.

7. CONCLUDING REMARKS

In this paper, we have explored the different alternatives that small municipalities have to deliver local services. We have focused our attention on solid waste collection and water distribution, which are among the most relevant services from an economic point of view. From our analysis of survey data for Spanish municipalities, we can stress some results.

First, in solid waste collection as well as in water, private production is more common when the municipality provides the service. However, when municipalities cooperate in providing the service, public production is much more important in both services than it is when provision is strictly municipal.

Second, small municipalities tend to cooperate more often than larger municipalities when considering the solid waste service. However, intermunicipal cooperation tends to be frequent too in municipalities of major urban areas when considering the water distribution service. This can be explained by the different cost structure of these services. Solid waste collection is affected by scale economies, which refers to the amount of output produced. Otherwise, water distribution is affected by density economies, which refers to population density and the contiguity of the inhabited areas.

Third, the production cost of solid waste collection is lower in small municipalities when intermunicipal cooperation takes place. This difference does not take place for larger municipalities, as they already operate at the optimal scale level.

Taking these results together, we infer that cooperation between small municipalities that maintain public production (usually through a public firm) may have been a relevant factor for reducing cost differences between private production and public production. This is particularly true for the solid waste collection services. Hence, small municipalities may be using intermunicipal cooperation as an alternative to privatization to deliver efficiently local services

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APPENDIX A: MAIN CHARACTERISTICS OF THE II SURVEY ON THE PRODUCTION OF LOCAL PUBLIC SERVICES

The II survey was implemented for Spanish municipalities concerning two local services; solid waste collection and water distribution. In the fall of 2003, the survey was sent to all the Spanish municipalities with a population larger than 2,000 inhabitants. In the spring of 2004, the survey was sent again to all the Spanish municipalities that did not answer previously. The implementation of the survey has allowed obtaining complete and sufficient information for 540 municipalities in the case of solid waste collection services and for 548 municipalities in the case of water distribution. Information is referred to 2003. Concerning small municipalities, we have data for 78 municipalities whose population ranges from 2,000 to 5,000 inhabitants when considering solid waste collection, and for 76 municipalities when considering water distribution services.

The sample includes 25 per cent of municipalities with a population larger than 2,000 inhabitants in Spain. Concerning small municipalities, the sample includes about 8 per cent of municipalities whose population ranges from 2,000 to 5,000 inhabitants. Such percentage increases up to 10 per cent when considering municipalities that ranges from 2,000 to 10,000 inhabitants.

If we analyze the representativeness of the sample, the coverage degree of population is higher than that obtained for the number of municipalities. This may be explained by the fact that the frequency of answers increases with population. In this way, the population included in the sample represents almost 75 per cent of the total population of municipalities with a population larger than 2,000 inhabitants, and the 70 per cent of the total population of Spain

APPENDIX B: MAIN CHARACTERISTICS OF THE I SURVEY ON THE PRODUCTION OF LOCAL PUBLIC SERVICES

The I survey was executed in two stages for Catalan municipalities concerning two local services; solid waste collection and water distribution. The first stage was made in the period that goes from May to October 2000. Data about the production form, aside other information, was obtained in this stage. The second stage was made in the period that goes from February to October 2002. In this second stage, we expanded the request for information to municipalities with a population larger than 1,000 inhabitants that respond to the survey of the first stage. The aim

here was obtain data on costs paid by the municipalities for the service of solid waste collection in year 2000.

The implementation of the survey has allowed obtaining complete and sufficient information for 186 municipalities, taking into account that 89 of them are characterized by having a population that ranges from 1,000 to 5,000 inhabitants.

The sample includes 44 per cent of municipalities from Catalonia that have a population larger than 1,000 inhabitants. With regard to small municipalities, it must be said that the sample includes 35 per cent of municipalities whose population ranges from 1,000 to 5,000 inhabitants, proportion that can be considered to be very high for these type of municipalities.

If we analyze the representativeness of the sample, the coverage degree of population is higher than that obtained for the number of municipalities. In this way, the population included in the sample represents almost 79 per cent of the total population of municipalities with a population larger than 1,000 inhabitants, and the 76 per cent of the total population of Catalonia. In any case, the percentage of answers by municipalities of more than 1,000 inhabitants is always high.