Chapter 5
Does Public Ownership Impair Efficiency in Norwegian Refuse Collection?

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Abstract Corporate governance theory suggests that companies with dispersed and indirect ownership suffer from agency costs. A worst case is where several political authorities jointly own a company, which allows managers to operate with inferior efficiency. In political economy, the manager is not the major agency problem. Elected politicians may impair efficiency to improve their re-election prospects. Since politicians have less influence in jointly owned firms, such companies are expected to perform better than those owned by a single public authority. Consistent with corporate governance, but not political economy, the empirical analysis suggests that dispersed municipal ownership impairs cost efficiency. In the Norwegian case of municipal refuse collection presented here, costs of dispersed ownership often outstrip gains from economies of scale. Use of jointly owned companies is not necessarily a proper response to efficiency problems inherent a fragmented local government structure.

Keywords Dispersed ownership · efficiency · agency costs · collection · Norway

5.1 Introduction

Comparing public and private organizations has become a big industry. Researchers have devoted less attention to the efficiency of different types of public service organization. Consider the intermunicipal company, which, in many countries, has become an important organizational entity. First, small local governments are often unable to exploit economies of scale. In many cases, two or more neighboring municipalities set up a jointly owned corporation, an intermunicipal company. Such organizations can take advantage of economies of scale in infrastructure sectors such as refuse collection and disposal, water supply and sewage treatment, and electricity

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distribution. Second, local authorities are increasingly applying competitive tendering or other forms of market competition to provide infrastructure services. Intermunicipal companies are subject to the same legal framework as private companies. They are also better equipped to compete than conventional public agencies. Management and board have considerably greater discretion than leaders of government agencies.

Corporate governance theory suggests that such dispersed ownership creates a collective action problem, which can lead to a loss of ownership control and inferior performance. Public ownership is in itself an extreme case of ownership dispersion. All citizens have a share in the company! Since individual voters lack the power to monitor their agents directly, ownership rights must be exercised through elected representatives. Corporate governance suggests that indirect ownership yields lower efficiency than direct ownership. Ownership control becomes further diluted when more than one political authority controls a company. Intermunicipal companies may therefore have lower cost efficiency than companies owned by a single authority. In principle, the efficiency gains related to scale economics could be smaller than the efficiency loss due to multiple owners.

Political economy offers a completely different story. Where corporate governance theorists consider active owner-representatives to be an asset, political economists see the active politician as the problem. Suppose owner-citizens lack the information required to oversee the management in publicly owned companies. In these companies, voters do not necessarily punish elected representatives for lack of efficiency. Local politicians can therefore use the municipal company to cater for company employees or other important groups of voters. If management in companies owned by several municipalities is more shielded from political pressure than administration companies owned by a single municipality, we should expect the jointly owned corporation to have better cost efficiency than firms owned by a single local government.

This chapter explores these propositions by means of data on Norwegian local government. Looking at the issue of refuse collection and disposal, the empirical analysis suggests that it is the number of government owners that exerts a negative influence on unit costs. The efficiency losses induced by fragmented ownership often exceed the gains of operating on a larger scale. In the section that follows, we elaborate on theoretical perspectives. We then describe the institutional setting, outline the research design and present empirical results on the role of ownership on costs and user fees for refuse collection.

5.2 Corporate Governance Versus Political Economy

Since the early 1990s, there has been a marked interest in issues related to corporate governance in both public and private sector settings. Its basic premise is that a runaway management weakens company performance, and that active owners are desirable to sustain efficiency and profitability. On the other hand, political economy

suggests that active politician-owners are the essence of the problem, not the solution. We provide a brief review of these theories and suggest a way to discriminate empirically between the two conflicting propositions.

5.2.1 Corporate Governance Theory

Agency theory forms the benchmark model of corporate governance. Delegation of ownership rights may improve performance if agents are more competent than principals, but delegation may also entail a loss of control. Concentrated ownership strengthens incentives to oversee company management, which is expected to yield a positive net effect on performance.

First, dispersed ownership means that each owner has a weak incentive to monitor the performance of company leaders. Lack of collective action among principals leads ownership to become separated from control (Fama & Jensen, 1983, 309). Second, owners will search for institutional alternatives that compensate for lack of monitoring of company management. One such mechanism is economic incentives. However, multiple owners do not necessarily have identical interests, something that creates a common agency problem. Since incentives to reach one goal may undermine other goals, the overall result may easily be diluted incentives. Dixit (1997) suggests that public agencies must answer to more constituencies than do privately owned organizations. Finally, corporate governance theory observes that government ownership represents a polar case of dispersion. Even in relatively small local governments, ownership controls must be delegated to administrators. All citizens have ownership rights, but very few have control rights. Since administrators pursue objectives that differ from the goals of the owner-citizen, publicly owned companies are expected to perform relatively poorly (Shleifer & Vishny, 1997).

According to corporate governance theory, the worst case is a combination of indirect and dispersed ownership. One such example is the case where numerous institutional investors (pension funds, insurance companies, and so on) own an entire private company. Another example is the case considered here: multiple political authorities (municipalities) exercise ownership rights on behalf of their citizens. Corporate governance theorists suggest that intermunicipal companies should have the weakest performance of all institutional creations.

5.2.2 Political Economy Theory

In principle, in their management of publicly owned companies, we would not expect elected politicians to behave differently from private owners. Inferior performance would imply higher costs than necessary, which would lead to either higher taxes or lesser revenue available for other political purposes. In other words, a politician should seek to minimize costs for a given service output and a given quality in order to maximize electoral support. When citizens are unable to oversee

their elected representatives, politicians can get additional voter support by deviating from efficient operation of the company. Active political ownership may therefore undermine profitability and cost efficiency in publicly owned companies (Shleifer & Vishny, 1994).

In the case of a publicly owned firm, excess employment is one potential source of inefficiency. Local politicians have an incentive to intervene in the operation of such a company for the Benet of its employees (Boycko, Shleifer, & Vishny, 1996), since they are more likely to support incumbent parties that protect the firm. On the other hand, inefficiency diminishes the profitability of the publicly owned firm, which reduces the welfare of other groups of voters. These voters are unlikely to be either informed about or concerned about their loss of profitability in a government firm. In the case of a privately owned firm, in a competitive environment, explicit subsidies must be used to maintain excess employment. Voters not employed by the private firm are likely to become informed and alarmed about such cash transfers. This reduces or eliminates the political gain of surplus employment in a privately owned firm.

In the case addressed in the current empirical analysis, a public authority purchases services from a publicly owned firm. This means that 'invisible ports' and 'visible subsidies' are less relevant. In either case, inefficient service provision leads to either higher taxes or fees or fewer resources are available for providing other public services. Suppose one municipality is the sole owner of a company. When information problems hinder electoral controls, elected politicians can be tempted to purchase from the firm even if it is less than efficient. Incumbent politicians can gain votes from company employees without losing voter support from other citizens.

Compare this situation with one where the company is owned by two or more municipalities. Suppose that facilities have been located in one of the municipalities to minimize costs. Employees living and working in this municipality are likely to resist demanding efficiency initiatives, particularly if such programmes involve personnel reductions (Shleifer & Vishny, 1994). Note that infrastructure services are not labor intensive, and that the surplus employment renders cost per taxpayer and per voter quite insignificant and 'invisible'. Local politicians may support the opposition of local employees to further their re-election prospects. Elected politicians from other municipalities are likely to dispute this, and support efficiency improving programmes. When decisions are made with majority voting in the company's general assembly, proposals that will harm efficiency are not likely to get majority support. This presupposes that a dominant owner is incapable of exploiting the others for its particular political purposes. In other words, governmental intervention entails higher transaction costs under intermunicipal ownership than under a single municipal owner (Sappington & Stiglitz, 1987). In direct contrast to corporate governance theory, the intermunicipal company should be more efficient than companies owned by a single municipality.

The two hypotheses, corporate governance and political economy, are not necessarily incompatible. Both governance problems can arise at the same time. Elected politicians may not speak for the interests of a majority of citizen-principals, while at the same time corporate managers are imperfect agents of their politician-principals.

We can identify which governance problem is more serious, administrative autonomy or politician control, by examining how number of local government owners affects company performance.

5.2.3 Empirical Studies on Public Ownership

Ownership dispersion has been studied extensively in the corporate governance literature. Becht, Bolton and Roell (2003, 63) have identified several generations of empirical research that addresses this hypothesis. Most show that portability is higher in owner-controlled companies and family owned firms (see for example Bøhren & Ødegaard, 2005). Other empirical studies use indicators of ownership dispersion. The empirical results are not conclusive: several studies suggest that dispersion leads to inferior performance, while a lot of other papers reject the hypothesis.

Empirical studies related to boards of directors have often produced inconclusive results. The message appears to be that boards in many cases are inefficient substitutes for active and concentrated ownership. They are commonly seen as inefficient supervisors of the CEO, sometimes even 'captured' by company management. Taking other governance mechanisms into account, hostile takeovers, large shareholders and CEO incentives, and so on, corporate governance research cannot be said to have shown particularly robust results (Becht et al. 2003, 83)

A relatively large literature addresses the impact of public and private ownership in the contexts of both monopoly and competition in the management of waste. For example, Savas (2000) asserts that the best way of organizing garbage collection is to divide the jurisdiction into appropriate sections and organize competitive bidding for the sections from private firms and municipal agencies. The meta-study of Domberger and Jensen (1997) suggests that most frequently reported cost reductions from contracting out are between 10 and 30 per cent. This appears not to result from reductions in wage levels, but from a broad set of managerial initiatives to improve cost performance. Waste collection has probably been studied more extensively than any other service. For example, Gomez-Lobo and Szymanski (2001) investigate UK local authority refuse collection contracts, and find that a higher number of bids are associated with significantly lower cost of service. In The Netherlands, Dijkgraaf & Gradus (2003) find that contracting out yields cost savings of about 15–20 per cent.

Competition often, but not always, reduces efficiency differences between public and private firms. In the Danish dental sector, Andersen and Blegvad (2006) observe no differences in cost-efficiency or effectiveness between public and private producers. Hjalmarsson and Veiderpass (2002) analyze regulated local monopolists providing electricity distribution in Sweden. This study reveals no significant differences in efficiency and productivity growth between private and public companies. Caves and Christensen (1980) compared two large public and private railroad companies in Canada, which competed over many routes. Initially, the private company had higher productivity than the public company. These differences were soon eliminated, and productivity differences disappeared. Borcherding, Pommerehne,

and Schneider (1982), Domberger and Jensen (1987) and D'Souza and Megginson (1999) provide further evidence and extensive reviews on the impact of public and private ownership.

Dubin and Navarro (1988) provide a rare example of empirical research on the political economy of government ownership. They analyze alternative governance systems of refuse collection in the US setting. They argue that a proper specification of the cost functions, particularly the role of density, is important for assessing the role of alternative systems of garbage collection. Their analysis suggests that private market organization (that is, no government regulation of refuse collection) is significantly more costly than contracting, franchise or municipal provision (see also Vining & Boardman, 1992). This system fails to take into account economies of density in garbage collection. Both municipal provision and contracting is more efficient than private market organization, while franchise is in between (Dubin & Navarro, 1988, 233).

What is striking is the almost total lack of research addressing performance differences between organizations operating within the public sector (Dunsire, Hartley, Parker & Dimitriou, 1988, 368). One exception is the observation that corporatization of public enterprises has a modest disciplining impact on ownership governance and organizational performance (Dunsire, Hartley & Parker, 1991; Shirley 1999). In light of the conflicting theoretical propositions outlined above, it is particularly remarkable that no empirical study has analyzed the performance of companies with more or less dispersed 'public' ownership.

5.3 Refuse Collection in Norwegian Local Government

Governments increasingly provide public services by means of publicly owned companies. Throughout Europe, national governments own companies which provide postal services, telecommunications, electricity, and public transportation. In local government, the number of such companies has increased considerably in the infrastructure sectors. In the Norwegian context, municipal companies distribute electricity in local and regional networks, provide parking facilities, manage municipal properties, operate ports, provide water and sewerage services, and collect, handle and dispose of household and business waste (Sørensen & Bay, 2002). The number of companies owned by Norwegian local authorities has increased from 1560 companies in 1999 to 2203 in 2004. Numbers of firms that are independent legal entities have increased from 773 companies in 1996 to 1728 in 2004 (Statistics Norway, 2004).

Garbage collection and disposal is one of the most intensely researched infrastructure services. As a relatively simple public service, it is frequently considered well suited for competitive tendering and outsourcing. Furthermore, the European Union has implemented a number of regulations designed to impose more competition into the waste management market. Despite emphasis on competitive regulation and competitive tendering, private contractors' market share varies considerably

across countries. For example, 80 per cent of garbage collection in Spain has been outsourced to private contractors, 60 per cent in Germany and 50 per cent in France.

However, this applies to only 30–40 per cent in the UK and The Netherlands and 10–15 per cent in Norway (Hall, 2006). In the Norwegian case, the number refers to percentage of municipalities that purchase refuse services from private companies. Thus, governments continue to play an important role in the organization of waste collection and treatment in many countries.

Privately owned companies in the waste industry often expand by mergers and acquisitions. Government organizations appear to follow in their footsteps. However, such consolidations in local government often face intense popular opposition in at least one of the affected constituencies. Various forms of intermunicipal alliances are politically attractive, since it avoids the political costs of dismantling existing political institutions. Similar to other countries (Dunsire et al., 1988, 366–367), local governments in Norway have established companies to take advantage of scale economies. In some cases, they set up traditional limited liability companies, which are owned by one or more municipalities, possibly with private owners as well. The entity considered here is called the intermunicipal corporation. It has unlimited liability, but can only be owned by two or more local governments. Number of intermunicipal companies has increased from 7 in 1996 to 206 in 2004.

The empirical analysis presented here employs data about refuse collection and treatment, which in the Norwegian context is a municipal responsibility. Local government in Norway comprises 434 municipalities and 18 counties. It should be noted that data refer to the year 2005 and do not refer to Oslo. Local elections to municipal and county councils are held every four years in between national elections. Municipalities have responsibility for establishing and operating many things: kindergartens, primary schools, health centers/primary health services, social welfare, culture (cinema, sports, music schools, and so on), some clerical functions, communication (municipal roads), infrastructure services (including water works, sewers, refuse collection and disposal), planning and construction, industry development, public utilities and tax collection.

Tax revenues account for 45 per cent of municipal revenues. Most of the tax revenues are collected as a proportional payroll tax, that is, as an income tax. Central government stipulates the minimum and maximum levels of tax rates. In Norway, all municipalities use the maximum tax rates. Property taxes play a minor role. Block grants and earmarked grants from central government account for most of the other revenues. Exogenous per capita revenues include block grants from central government plus revenues from income and asset taxation.

Municipalities collect user fees as well. In the refuse sector, fees are legally required to cover the costs of providing the service (PPP: ‘Polluter pays principle’). Nevertheless, local governments have considerable discretion in how they stipulate the unit costs of collecting and handling refuse. Local governments may choose either to subsidize refuse collection to reduce user fees or they may use the fees to finance other government services such as education or health care.

5.4 The Impact of Dispersed Ownership on Costs and User Charges

Garbage collection is a relatively simple production activity. Households and firms leave their garbage at collection points and the service operators transport the garbage to disposal sites. A service operator basically needs drivers, loaders and collection vehicles. The potential cost of garbage collection depends on several factors such as regional characteristics (for example, density of collections points), service specifications (for example, sorting of garbage, frequency of collection), productivity of labor and capital, and input prices.

In Table 5.1, we present relevant descriptive statistics for the multivariate analyses. The table comprises data on two performance variables collected by Statistics Norway: (1) yearly fees for refuse collection and handling for a standard household; and (2) total direct and indirect costs derived of refuse collection and handling, measured per capita. Both user fees per household and total costs per inhabitant decrease with centrality. As is to be expected, refuse collection can be provided at lower costs and lower prices in central areas (see Box 5.1).

We utilize three measures of ownership concentration/dispersion: (1) Herfindahl index of ownership concentration, which is commonly applied in the corporate governance literature; (2) number of municipal owners; and (3) whether or not the municipality cooperates with other authorities in the refuse sector. Data on ownership structures has been taken from the official Register of Legal Entities (the Brønnøysund Register), and data on other types of intermunicipal cooperation has been derived from a government database on local government organization. Average number of municipal owners of these intermunicipal companies are 6.8 owners, which appears quite high. The average municipality (including those that operate the service alone) provides refuse services through an organization owned by seven other local governments. The Herfindahl index of ownership concentration is low, with an average of 0.35.

Table 5.1 also contains information on four variables used as controls in the subsequent regression analyses. First, municipal revenues comprise block grants and taxes on income and assets. Due to the regulation of these tax rates and the fact that all municipalities have for several decades used the maximum rates, municipal revenues per capita can be considered exogenous in this context. Local governments that are centrally located have lower per capita tax revenues (income and asset taxes) than peripheral authorities. Central government allocates much higher block grants to rural municipalities. Total local government revenues (other than user fees and small revenues from property taxes) are therefore significantly higher in peripheral municipalities than in central areas.

Second, since transportation costs are an important component of refuse collection, we include information about shares of population living in sparsely and densely populated areas. Densely populated areas have at least 200 inhabitants per settlement, and the distances between houses are no more than 50 meters. As to be expected, settlement patterns are denser in centrally located municipalities.

Table 5.1 Descriptive statistics on refuse collection and handling in Norwegian municipalities, 2005 (averages by municipal centrality)

Municipal centrality	Fees per household (NOK)	Costs per capita (NOK)	Owners	Herfindahl	Cooperation	Competition	Revenue per Capita (NOK)	Share of population in sparsely populated areas, 2005	Cooperating population	Municipal population	N*
1.	1992	1010	7.5	0.25	0.93	0.29	34,500	0.60	32,290	2,895	164
2.	1948	896	6.3	0.37	0.80	0.41	30,290	0.65	40,881	3,881	35
3.	2154	850	7.8	0.29	0.88	0.21	28,887	0.40	35,706	6,807	25
4.	1704	742	4.9	0.41	0.81	0.19	27,676	0.49	31,934	7,927	21
5.	1901	845	8.1	0.30	0.92	0.20	27,027	0.40	53,620	9,660	37
6.	1701	780	4.3	0.51	0.61	0.50	25,826	0.39	59,471	17,965	44
7.	1764	675	6.3	0.44	0.86	0.39	25,092	0.35	112,047	23,753	104
All	1882	858	6.8	0.35	0.86	0.33	29,626	0.49	57,080	10,617	430
(Standard deviation)	(336)	(259)	(4.4)	(0.30)	(0.34)	(0.47)	(7042)	(0.27)	(65 202)	(30 639)	

Box 5.1 Municipal centrality (Standard classification of municipalities)

1. Less central municipalities and does not lie within 2.5 hours (in the case of Oslo: 3: hours) from an urban settlement on level 3(0B)
2. Less central municipalities and lies within 2.5 hours (in the case Oslo: 3: hours) from an urban settlement on level 3(0A)
3. Less remote municipalities and does not lie within 2.5 hours (in the case of Oslo: 3: hours) from an urban settlement on level 3 (1B)
4. Less remote municipalities and does lies within 2.5 hours (in the case of Oslo: 3: hours) from an urban settlement on level 3 (1A)
5. Fairly central municipalities and does no lie within 2.5 hours (in the case of Oslo: 3: hours) from an urban settlement on level 3 (2B)
6. Fairly central municipalities and lies within 2.5 hours (in the case of Oslo: 3: hours) from an urban settlement on level 3 (2A)
7. Central municipalities (3A)

Notes:
NOK: Norwegian Kroner
Fees: yearly refuse fee for a standard house of 120 square meters, exclusive value added tax. 1.1.2006
Costs: estimated costs (gross current costs + indirect cost + estimated costs on interest + misc. revenues) per capita, 2005
Owners: number of municipal owners of municipal or intermunicipal company or organization, 2005
Herfidahl: Herfindahl index of ownership concentration, 2005
Cooperation: coded 1 if the municipality cooperates with other municipalities in provided refuse collection and handling, and 0 otherwise
Competition: coded 1 if the municipality uses competitive tendering, and 0 otherwise
Revenues: local tax revenues (exogenous) and block grants, per capita, 2005
Cooperating population: population size covered by (inter) municipal cooperation/corporation, 2005
Municipal population: population size in municipality, 2005
N: number of municipalities

Third, market competition can induce optimal organizations. This interpretation is in line with the traditional conjecture that competition is more important than ownership (Bartel & Harrison, 1999). At least two observations suggest that this explanation is dubious in the current context. First, markets for refuse collection are far from perfect. At least in the Norwegian context, many local governments have not established a proper separation between the role of purchasing services and producing. A lack of regulatory transparency (that is, estimation of overhead costs) facilitates municipal cross-subsidization of in-house service provision. There are also examples of local governments that have awarded contracts

to more expensive bidders, leading courts to rule against the municipality. Second, ownership effects can be identified in traditional markets (Vining & Boardman, 1992; Villalonga, 2000). As discussed above, number of owners affects efficiency and profitability for private companies operating in traditional competitive markets. In additional analyses (not presented), we included an interaction term between ownership dispersion and use of competitive tendering. We found no support for interaction, which implies that ownership dispersion and types do not impact differently under monopoly and competition. Table 5.1 shows that about 30 per cent of municipalities use competitive tendering to purchase services. These numbers suggest that ownership and management could have greater efficiency effects as compared to organizations that are subjected to more intensive market competition.

Fourth, we include population sizes to tap economies of scale. The relevant statistic includes the population size of region covered by the intermunicipal company to tap economies of scale or the municipal population when a single municipality produces services. For comparison purposes, Table 5.1 provides population number for each municipality. The least central municipalities have very small populations, with an average number of less than 3,000 inhabitants. The use of intermunicipal cooperation implies that these municipalities can use a single organization to provide refuse collection and handling to a population of more than 30,000 inhabitants. Intermunicipal cooperation is widespread in all types of municipalities, both central and peripheral authorities. Based on the data summarized in Table 5.1, we estimate regression models for user fees per household and costs per capita. We then assess the impact of ownership dispersion controlling for the factors displayed in Table 5.1. The regression estimates are shown in Table 5.2.

Ownership structures impact significantly on user fees and costs. When ownership is measured by the Herfindahl index (column I), estimates suggest that an increase in ownership concentration from 0 to 1 will reduce user fees by nearly 8 per cent and costs by 6 per cent. More municipal owners increase fees and costs (column II). An increase in number of owners from 1 to 6 (see Table 5.1) will increase user fees by about 10 per cent and costs by about 5 per cent. Finally, a dummy variable for use of intermunicipal cooperation (column III) yields similar results. Other factors being constant, local governments that cooperate with other authorities to provide refuse services have user fees and costs that are about 10 per cent higher than those that supply the service single-handedly.

It is interesting to compare these efficiency losses with the gains obtained by economies of scale. As can be seen in Table 5.2, the estimates diverge somewhat for user fees, but the cost-regressions suggest a scale elasticity of about –0,05. If intermunicipal cooperation yields an increase in the population base from 10,000 inhabitants to 60,000 inhabitants, the regression estimate suggest a reduction in costs of about 4 per cent. For many municipalities, governance losses due to dispersed ownership tend to exceed the gains from economies of scale.

Levels of municipal revenue have a significant positive effect on costs: a 1 per cent increase in per capita revenue increases costs by 0.4–0.5 per cent. Comparable results have been obtained for other public services in Norway,

Table 5.2 The impact of dispersed public ownership on unit costs and fees OLS regression

	I	II	III	I	II	II
Intercept	6.46***	6.82***	6.29***	5.70***	5.82***	6.60***
	(23.7)	(25.3)	(25.2)	(12.4)	(13.5)	(14.8)
Taxes and block grants per inhabitant (log)	0.355***	0.337***	0.399***	0.415***	0.442***	0.477***
	(5.11)	(5.19)	(6.05)	(3.73)	(4.37)	(4.77)
Competition (=1)	0.0012	–0.0047	–0.0049	0.014	–0.021	–0.26
	(0.06)	(0.25)	(–0.25)	(–0.38)	(–0.67)	(–0.79)
Share living in sparsely populated areas	–0.104*	–0.115*	–0.11	0.148*	–0.134*	–0.149*
	(–2.11)	(2.60)	(–2.42)	(–1.87)	(–1.91)	(–2.08)
Total population in cooperating municipalities (log)	0.0009	0.047**	–0.015	–0.040*	–0.066*	–0.058**
	(–0.66)	(–3.36)	(–1.24)	(–1.79)	(–2.71)	(–3.00)
Herfindahl index of ownership concentration	–0.092*			–0.066		
	(–2.22)			(–1.02)		
Number of municipal owners		0.0195***			0.010*	
		(4.82)			(1.68)	
Use of intermunicipal company or cooperation (=1)			0.096**			0.100*
			(2.62)			(1.89)
Fixed effect for centrality	Yes*	Yes*	Yes**	Yes**	Yes	Yes*
F-values	F = 3.26	F = 2.18	F = 3.33	F = 3.71	F = 2.10	F = 3.00
R-Square	0.24	0.292	0.26	0.41	0.41	0.41
N	268	311	311	175	211	211

Notes: t-values in parentheses, * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

including health care (Hagen, 1997) and education (Borge & Naper, 2005). Similar results have also been obtained in the Swedish case (ESO, 1996). It appears that affluence induces inefficiency, even in services financed by user fees. Other studies on the use of user charges in Norwegian infrastructure sectors suggest that local revenue impacts negatively on total infrastructure fees, including water supply, discharge of sewage, and garbage collection (Borge, 2000). Outside the refuse sector, fees are apparently used as a substitute for ordinary taxes. Since the legal framework requires fees to cover costs only, the impact of revenues is quite similar for costs and user fees. Somewhat surprisingly, shares of population residing in sparsely populated areas have a negative impact of costs and fees. The impact of centrality and settlement patterns are relatively small, which is in line with previous studies of the refuse sector (see review in Dijkgraaf & Gradus, 2003, 153–154).

5.5 Conclusions

Communities across Europe are seeking to consolidate local authorities to improve service delivery and take advantage of economies of scale. At the same time, citizens are unwilling to approve consolidations between neighboring local authorities. People want more and better services, but appear unwilling to accept the organizational repercussions. Intermunicipal companies represent a substitute for local government consolidations. Such public utilities are prevalent in countries where governments are reluctant to outsource public utilities and where municipal restructuring faces intensive popular resistance. Intermunicipal companies are widespread in Belgium, Denmark, Finland, The Netherlands, Norway and Sweden. They operate in infrastructure sectors, such as waste collection and disposal, sewage treatment, water supply, public transportation and electricity distribution. Perhaps the intermunicipal company offers an opportunity to reap economic gains of large-scale operations without imposing full-fledged consolidations?

The issue addressed here is whether the hybrid organization suffers from one or more governance failures. The corporate governance failure suggests that dispersed and indirect ownership weakens incentives to control a company, leading to agency losses and inferior performance. The political economy failure suggests that elected politicians may pursue other goals than efficient service provision. Intermunicipal companies allow elected politicians even less influence. Such companies are therefore expected to have better performance than companies that are owned by a single public authority.

Empirical analyses presented here suggest that fragmented ownership to public induces cost-inefficiency relative to companies owned by a single political authority. In fact, intermunicipal cooperation creates more problems than it solves. In many cases, efficiency losses due to numerous owners are greater than the cost reductions obtained by operating on a larger scale. These results suggest that active politician-owners improve organizational performance, while passive owners bring about management-controlled organizations with lesser efficiency. The management failures described by political economy appears to be less relevant than those identified in corporate governance theory.

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