

Does dispersed public ownership impair efficiency? Corporate governance versus political economy

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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 performance. 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, 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.

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 inter-municipal company, which has become an important organizational entity in many countries. 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 inter-municipal company. Such organizations can take advantage of economies of scale in infrastructure sectors like refuse collection and disposal, water supply and sewage treatment, and electricity distribution. Second, local authorities are increasingly applying competitive tendering or other forms of market competition to provide infrastructure services. Inter-municipal companies are subjected 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. Inter-municipal 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 owners-citizens lack the information required to oversee the management in publicly owned companies. Voters do not

necessarily punish elected representatives for lack of efficiency in these companies. 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 for 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.

The current paper explores these propositions by means of data on Norwegian local government. The empirical analysis suggests that number of government owners exert a negative influence on unit costs in refuse collection and disposal. The efficiency losses induced by fragmented ownership often exceed the gains of operating on a larger scale. In the ensuing section, we elaborate on theoretical perspectives. In section 3, we describe the institutional setting. In section 4, we outline the research design and present empirical results on the role of ownership on costs and user fees for refuse collection.

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.

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 company leaders. Lack of collective action among principals leads ownership to become separated from control (Fama and Jensen 1983:309). Second, owners will search of institutional alternatives that compensate for lack of monitoring of company management. One such mechanism is economic incentives. Yet, multiple owners do not necessarily have identical interests, which create 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 and Vishny 1997).

The worst scenario is a combination of indirect and dispersed ownership. One such example is the case where numerous institutional investors (pension funds, insurance companies, etc.) 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 inter-municipal companies should have the weakest performance of all institutional creations.

Political economy theory

In principle, we would not expect elected politicians to behave differently than private owners in their management of publicly owned companies. Inferior performance would imply higher costs than necessary, which would lead to 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 quality 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 and Vishny 1994).

Consider a publicly owned firm. Excess employment is one potential source of inefficiency. Local politicians have an incentive to intervene in the operation of the company for the benefit of its employees (Boyco, Shelifer, Vishny 1996), as 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 informed and concerned about their loss of profitability in a government firm. Consider 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 current context, a public authority purchases services from a publicly owned firm. This means that ‘invisible profits’ and ‘visible subsidies’ are less relevant. In either case, inefficient service provision leads to 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 loosing 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 programs involve personnel reductions (Shleifer and Vishny 1994). Note that infrastructure services are not labour 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

programs. When decisions are made with majority voting in the company's general assembly, proposals that will harm efficiency is 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 inter-municipal ownership than under a single municipal owner (Sappington and Stiglitz 1987). In direct contrast to corporate governance theory, the inter-municipal company should to be more efficient than companies owned by one municipality only.

The two hypotheses – corporate governance and political economy hypotheses - 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 corporate managers at the same time 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.

Empirical studies on public ownership

Ownership dispersion has been studied extensively in the corporate governance literature. Becht, Bolton and Röell (2003:63) have identified several generations of empirical research that addresses this hypothesis. Most show that profitability is higher in owner-controlled companies and family-owned firms (e.g. Bøhren and 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 the board 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. As for other governance mechanisms such as hostile takeovers, large shareholders and CEO incentives, corporate governance research have not reached very robust results (Becht, Bolton and Röell 2003:83)

A large literature addresses the impact of public and private ownership in situations with monopoly and competition. 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 in the interval of 10 to 30 percent. 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 U.K. local authorities refuse collection contracts, and find that a higher number of bids are associated with significantly lower cost of service. In the Dutch case, Dijkgraaf and Gradus (2003) find that contracting out yields cost savings of about 15-20 percent.

Competition does often – but not always - weaken efficiency differences between public and private firms. For example: In the Danish dental sector, Andersen and Blegvad (2006) observe no differences in cost-efficiency or effectiveness between public and private producers. Hjalmarsson and Veidepass (1996) 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) compare 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. Borchering, 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 (no government regulation of refuse collection) is significantly

more costly than contracting, franchise or municipal provision (see Vining and 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 and Navarro 1988:233).

What is striking is the almost total lack of research addressing performance differences between organizations operating within the public sector (Dunsire et.al. 1998:368). One exception is the observation that corporatization of public enterprises has a modest disciplining impact on ownership governance and organizational performance (Dunsire, Harley and 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.

Refuse collection in Norwegian local government

Governments are increasingly providing public services by means of publicly owned companies. National governments throughout Europe own companies, which provide postal services, telecommunications, electricity, and public transportation. In local government, the number of 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 sewage, and collect, handle and dispose household and business waste (Sørensen and 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).

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 percent of garbage collection in Spain has been outsourced to private contractors, 60 percent in Germany and 50 percent in France, but only 30-40 percent in the UK and the Netherlands and 10-15 percent 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 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, local government consolidations often face intense popular opposition in at least one of the affected constituencies. Various forms of inter-municipal alliances are politically attractive, as it avoids the political costs of dismantling existing political institutions. Similar to other countries (Dunsire et.al 1988: 366-7), 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 inter-municipal corporation. It has unlimited liability, but can only be owned by two or more local governments. Number of inter-municipal companies has increased from 7 in 1996 to 206 in 2004.

The empirical analysis employs data about refuse collection and treatment, which in the Norwegian context is a municipal responsibility. Local government comprises the 434 municipalities and 18 counties. (Numbers refer to 2005. Oslo has been taken out of the analysis.) Local elections to municipal and county councils are held every four years in between national elections. Municipalities have responsibility for establishing and operating kindergartens, primary schools, health centers/primary health services, social welfare, culture (cinema, sports, music schools, etc.), 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 percent of municipal revenues. Most of the tax revenues are collected as a proportional payroll tax, i.e. as income taxes. Central government stipulates the minimum and maximum levels of tax rates. All municipalities use the maximum tax rates. Property taxes play a minor role. Block grants and earmarked grants 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, the local governments have considerable discretion in how they stipulate unit costs of collecting and handling refuse. Local governments may choose to subsidize refuse collection to reduce user fees, or local governments may use the fees to finance other government services like education or health care.

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 collections points and the service operators transport the garbage to disposal sites. A service operator basically needs drivers, loaders and collection vehicles. The cost of garbage collection potentially depends on several factors such as regional characteristics (e.g. density of collections points), service specifications (e.g. sorting of garbage, frequency of collection,), productivity of labor and capital, and input prices.

In table 1, we present relevant descriptive statistics for the multivariate analyses.

Table 1 here

Table 1 comprises data on two performance variables collected by Statistics Norway, a) yearly fees for refuse collection and handling for a standard household, and b) 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 to be expected, refuse collection can be provided at lower costs and lower prices in central areas.

We utilize three measures of ownership concentration /dispersion: a) Herfindahl index of ownership concentration, which is commonly applied in the corporate governance literature, b) number of municipal owners, and c) 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 inter-municipal cooperation has been derived from a government database on local government organization. Average number of municipal owners of these inter-municipal companies are 6,8, 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 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 used the maximum rates for several decades, municipal revenues per capita can be considered exogenous in this context. Central local governments have higher 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, and the distances between the houses are no more than 50 meters. As to be expected, settlement patterns are denser in centrally located 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 and Harrison 2005). 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 (i.e. estimation of overhead costs) opens up for municipal cross-subsidization of in-house service provision. We have also seen 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 and Boardman 1992; Villalonga 1999). As indicated previously, 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. In table 1, we observe that about 30 percent 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 inter-municipal company to tap economies of scale, or the municipal population when a single municipality produces services. Table 1 provides population number for each municipality for comparison. The least central municipalities have very small populations, with an average number of inhabitants of less than 3.000 inhabitants. The use of inter-municipal 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. Inter-municipal cooperation is widespread in all types of municipalities, central and peripheral authorities.

Based on the data summarized in table 1, we estimate regression models for user fees per household and costs per capita. We assess the impact of ownership dispersion

controlling for the factors displayed in table 1. The regression estimates are displayed in table 2.

Table 2 here

Ownership structures impact significantly on user fees and costs. When ownership is measured by the Herfindahl index (models I), estimates suggest that an increase in ownership concentration from 0 to 1 will reduce user fees with nearly 8% and costs with 6%. More municipal owners increase fees and costs (models II). An increase in number of owners from 1 to 6 (c.f. Table 1) will increase user fees with about 10% and costs with about 5%. Finally, a dummy variable for use of inter-municipal cooperation (models III) yields similar results. Other factors constant, local governments that cooperate with other authorities to provide refuse services have user fees and costs that are about 10% 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 2, the estimates diverge somewhat for user fees, but the cost-regressions suggest a scale elasticity of about -0,05. If inter-municipal 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%. 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 one percent increase in per capita revenue increases costs with 0,4-0,5 percent. Comparable results have been obtained for other public services in Norway, including health care (Hagen 1997) and education (Borge and 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 fees¹ (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 and Gradus 2003: 153-154).

Conclusion

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 time and again unwilling to approve consolidations between neighbouring local authorities. People want more and better services, but appear unwilling to accept the organizational repercussions. Inter-municipal companies are a substitute for local government consolidations. Such public utilities are prevalent in countries where governments are reluctant to outsource public utilities, and municipal restructuring face intensive popular resistance. Inter-municipal companies are widespread in Belgium, Denmark, Finland, 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 inter-municipal 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 the company, leading to agency losses and inferior performance. The political economy failure suggests that elected politicians may pursue other goals than efficient service provision. The inter-municipal companies allow elected politicians even lesser influence. Such companies

¹ Total fees includes water supply, discharge of sewage, garbage collection and chimney sweep for a standard home

are therefore expected to have better performance than companies 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, inter-municipal 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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Note on data sources:

Further documentation on local government data, including performance indicators can be found on Statistics Norway, KOSTRA-database:

<http://www.ssb.no/emner/00/00/20/kostra/>

More information on ownership data can be found on the following sources: a)

Ministry of Local Government, Local Government Database:

<http://www.dep.no/krd/norsk/tema/kommune/organisasjons/bn.html>; b)

Brønnøysund Register Center, Register of Legal Entities:

<http://www.brreg.no/english/registers/entities/>. The Norwegian Association of Local and Regional Authorities (KS) has provided the data from the Brønnøysund database.

References

- Andersen, L.B. and Blegvad, M. 2006. Does Ownership Matter for the Delivery of Professionalized Public Services? Cost-efficiency and Effectiveness in Private and Public Dental Care for Children in Denmark. *Public Administration* 84:147-164
- Bartel, A.P. and Harrison, A.E. 2005. Ownership versus environment: Why are public sector firms inefficient? *Review of Economic and Statistics* 87:135-147
- Borge, L-E. 2000. Charging for public services: the case of utilities in Norwegian local governments, *Regional Science and Urban Economics* 30: 703-718.
- Borge, L.-E. and Naper, L.R. 2005. Efficiency potential and efficiency variation in Norwegian lower secondary schools. *Working Paper Series* 6205, Department of Economics, Norwegian University of Science and Technology
- Boycko, M., Shleifer, A. and Vishny, R. 1996. A Theory of Privatization. *Economic Journal* 106: 309-319.
- Boyne, G.A. 1992. Local Government Structure and Performance: Lessons from America? *Public Administration*, 70: 333-57.
- Bivand, R. and Szymanski, S. 2000. Modeling the spatial impact of the introduction of Compulsory Competitive Tendering. *Regional Science and Urban Economics* 30: 203-219.
- Bøhren, Ø. Ødegaard, B.A. 2005. Governance and performance revisited. Forthcoming in Gregouriu, G. and Ali, P. (eds.) 2005. *International Corporate Governance after Sarbanes-Oxley* Wiley
- Caves, D. W. and Christensen, L. R. 1980. The Relative Efficiency of Public and Private Firms in a Competitive Environment: The Case of Canadian Railroads. *Journal of Political Economy* 88:958-76

- D'Souza, J. and Megginson, W.L. 1999. The Financial and Operating Performance of Privatized Firms during the 1990s. *Journal of Finance*. 54: 1397-1438.
- Dixit, A. 1997. Power of incentives in private versus public organizations. *American Economic Review* 87: 378-382
- Dijkgraaf, E. and Gradus, R.H.J.M. 2003. Cost Savings of Contracting Out Refuse Collection. *Empirica* 30:149-161
- Domberger, S. and Jensen, P. 1997. Contracting out by the public sector: Theory, evidence, prospects., *Oxford Review of Economic Policy* 13: 67-77.
- Dubin, J.A. and Navarro, P. 1988. How Markets for Impure Public Goods Organize: The Case of Household Refuse Collection, *Journal of Law, Economics and Organization* 4: 217-241.
- Dunsire, A., Hartley, K., Parker, D. and Dimitriou, B. 1988. Organizational status and performance: A conceptual framework for testing public choice theories. *Public Administration* 66:363-388
- Dunsire, A., Hartley, K. and Parker, D. 1991. Organizational status and performance: Summary of the findings. *Public Administration* 69:21-40
- Expertgruppen för studier i offentlig ekonomi, ESO. 1996. *Productivity Trends in the Public Sector in Sweden*. Stockholm: The Ministry of Finance.
- Fama, E.F. and Jensen, M.C. 1983. Separation of ownership and control. *Journal of Law and Economics* 26:301-325
- Gomez-Lobo and Szymanski, S. 2001. A Law of Large Numbers: Bidding and Compulsory Competitive Tendering for Refuse Collection Contracts, *Review of Industrial Organization* 18:105-113.
- Hagen, T.P. 1997. Agenda setting power and moral hazard in principal-agent relationships: Evidence from hospital budgeting in Norway. *European Journal of Political Research* 31:287-314
- Kessides, I.N. 2005. Infrastructure privatization and Regulation, Promises and Perils. *The World Bank Research Observer* 20:81-108
- Lopez-de-Silanes, F., Schleifer, A. and Vishny, R. 1997. Privatization in the United States. *Rand Journal of Economics* 28: 447-471.
- Savas, E. S. 2000. *Privatization and Public-Private Partnerships*. New York: Catham House.
- Shirley, M.M. 1999. Bureaucrats in Business: The Roles of Privatization versus Corporatization in State-Owned Enterprise Reform. *World Development* 27:115-136
- Shleifer, A. and Vishny, R.W. 1994. Politicians and Firms. *Quarterly Journal of Economics* 109:995-1025
- Shleifer, A. and Vishny, R.W. 1997. A Survey of Corporate Governance. *Journal of Finance* 52:737-783

Shleifer, A. 1998. State versus Private Ownership, *Journal of Economic Perspectives* 12:113-150

Sørensen, R.J. and Bay, A.-H. 2002. Competitive tendering in the welfare state: perceptions and preferences among local politicians”, *Scandinavian Political Studies* 4: 357-384.

Monkerud, L. C. og Sørensen, R. J. 2004. Hvorfor konkurranseutsette? En analyse av renovasjonstjenesten i Norge, chapter 8 in Johnsen, Å., Sletnes, I. og Vabo, S. I. (ed.): *Konkurranseutsetting i kommunene*. Oslo: Abstrakt Forlag

Sappington, D.E.M. and Stiglitz, J.E. 1987. Privatization, Information and Incentives. *Journal of Policy Analysis and Management* 6: 567-582

Szymanski, S. 1996. The Impact of Compulsory Competitive Tendering on Refuse Collection Services, *Fiscal Studies* 17(3): 1-19.

Vickers, J. and Yarrow, J. 1989. *Privatisation. An Economic Analysis*. Cambridge, Mass.: MIT-press.

Villalonga, B. 2000. Privatization and efficiency: differentiating ownership effects from political, organizational, and dynamic effects. *Journal of Economic Behavior & Organization* 42:43-74

Vining, A. and Boardman, A. 1992. Ownership versus competition: Efficiency in public enterprise, *Public Choice* 73, 205-239.