

POLITICAL CONTROL OF ADMINISTRATIVE SPENDING: THE CASE OF LOCAL GOVERNMENTS IN NORWAY*

JORID KALSETH AND JØRN RATTSSØ

Excessive administrative spending in local governments has been a concern in the public debate in Norway. Administration takes resources away from welfare services such as primary education and care for the elderly. Since administrative spending varies considerably between local governments, a study of the political and economic factors involved is warranted. The central hypothesis is that the administrators will have more power relative to the politicians when political control is divided between parties. Estimation of a demand model of administration added political structure shows strong empirical correlations between types of coalition governments and socialist controlled governments and the level of administrative spending. Divided political control strengthens the hands of the agenda setting bureaucrats.

THE CONTROL of administrative spending is an issue in most organizations. Since administrators typically work out the budget of the organization, they may be able to influence their own economic conditions. The budget proposals they formulate are expected to build in a bias towards administration. In this study, the organization is a political institution, a local government, and the control of administrative spending is the task of politicians. The relationship between politicians and administrators is in focus.

Excessive spending in local government administration has been a concern in the public debate in Norway. During the 1980's, the local public sector was the leading growth sector in the economy, accounting for all of the increase in total employment, or about 100,000 persons. Within local governments, administration has been expanding most rapidly, with administrative spending performing at an average annual real growth rate of above 8%. Administrative spending has shown strong variation between local governments. Using a broad measure of administration (including "central" and "sectoral" administration), the share of current spending devoted to administration varied between 10 and 30% in 1990. Given this variation, it is of interest to study the determinants of administrative spending.

Local governments allow the analysis of comparable institutions and are therefore an attractive source of empirical testing. The local authorities organize

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the same kind of welfare services across the country, and their administrative activities are similar. The political system is organized the same way, but the local politics differ. This setting invites an investigation of the role of the political system. To identify the effects of political-institutional factors on administrative resource use, other determinants of spending in administration must be taken into account. A model of local government spending decisions is developed to clarify the role of economic, demographic and political factors.

The model represents the institutional setup in Norway, where the budget constraint of local governments is exogenously determined by grants and income tax revenue sharing. The local authorities divide a given pie to different services (notably child care, primary school, primary health care and care for the elderly). Minimum standards of the services often are defined by national law, and the salaries and the working hours of the employees are decided in national bargaining. Even in this centralized system, local governments have sufficiently discretion to produce large spending differences in all services.

The administration addressed in this study, named "central administration" in the local government accounts, is responsible for the coordination and planning of the production of welfare services and serves as a secretariat for the local council. The chief administrator (rådmannen) and her staff present policy proposals to the council, in particular the annual budget, and direct and monitor the implementation of political decisions. Central administration does not capture all activities that can be characterized as administrative, since there is administration at the sectoral level (education, health care etc.) and at the level of the individual institution (school, home for elderly etc.). We have concentrated on a narrow measure of administration to avoid including activities related to direct service production. Furthermore, to have comparable institutions with the same administrative organization, we have excluded the smallest municipalities and the largest cities. In the many small municipalities, the central administration also acts as an organizer of the sectoral service production. In the largest cities, the division of labor between central administration and service sectors varies. 175 (out of 442) municipalities with a population size between 5,000 and 50,000 inhabitants are included.

Current spending for central administration per capita (80% of which is salaries) amounts to 1.150 NOK in 1990 (more than USD 150) on average, or a little less than 10% of total operating costs of the local governments. In the literature (see Mintzberg, 1983), administrative intensity is often analyzed with respect to organizational size. In our context, population size of the municipalities measures organizational size. As documented in Table 1, per capita administrative expenditures vary with respect to population size. A U-shaped curve is indicated, in which the medium sized municipalities of 12,500 to 20,000 inhabitants have the lowest spending per capita. The smallest municipalities included in the study, between 5,000 and 7,500 inhabitants, have per capita expenditures of more than 30% above the medium sized. The role of population size is one of the aspects to be investigated.

TABLE 1. ADMINISTRATIVE SPENDING PER CAPITA AND SHARE OF TOTAL CURRENT SPENDING

Population size	<i>N</i>	Spending per capita	Administrative share
5000–7500	60	1320	0.089
7500–12,500	54	1110	0.082
12,500–20,000	37	980	0.078
20,000–50,000	24	1070	0.083
All	175	1150	0.084

The approach takes the conventional demand model of local government services as the point of departure. Administration competes with welfare services for resources within the local government budget constraint. The political demand for administration depends on the size of the budget, sociodemographic characteristics of the municipality such as population size, and ideological orientation of the political leadership. Administrative spending is determined in a budget process involving bargaining between administrators and politicians. Observed spending is assumed to be the weighted average of the preference points of the administrators and those in political control of the local council. As a result, spending moves inversely with the political strength. Relative bargaining strength is analyzed with respect to two aspects of the political structure: The type of political leadership, measured by a classification in terms of majority/minority and coalition/non-coalition, and party fragmentation of the local council, measured by a Herfindahl index.

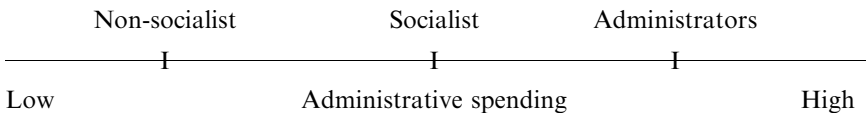
Two methods are applied to reach robust empirical conclusions regarding the determinants of administrative spending. The first is an econometric estimation of a demand function for administrative services including characteristics of the local political structure. The other draws on industrial productivity studies identifying the “best practice” among the municipalities as a benchmark for defining administrative overspending. Data Envelopment Analysis (DEA) is used to calculate the deviation from a minimum required administration for each municipality, taking into account local economic and demographic variables. The effect of political variables on the administrative overspending is estimated using a Tobit model.

The relationship between the two types of agents involved, politicians and administrators, is discussed in section 1, while the decision model of local government administration is developed in sections 2 and 3. The determinants of administrative spending are estimated in section 4. The alternative method taking advantage of a best practice frontier of administrative spending is applied in section 5. Section 6 offers concluding remarks.

1. POLITICIANS AND ADMINISTRATORS

The local council consists of politicians with different preferences regarding the

administrative spending. Many parties are represented, but to simplify the presentation, let us separate between the socialist and the non-socialist camp. Since socialists are oriented towards planning and centralized control, it seems realistic to assume that they prefer higher administrative spending than the non-socialist parties. Given the role of the administration in the budget process, administrators are expected to have a say in the decision about administrative spending too. The models of bureaucracy initiated by Niskanen (1971) assume that bureaucrats prefer high budget appropriations to their own bureau. A large budget allocation is assumed to be positively correlated with various factors entering the utility function of the bureaucrats, such as salary, perquisites, power etc. Accepting these arguments, we assume that the administrators prefer higher administrative spending than socialists. The preference ordering is described below:



What administrative spending will be the outcome of the local decision making process? The results of the models in the Niskanen tradition, implying that the bureaucrats are able to impose their most preferred budget on the politicians, rely on an assumption of bureaucratic agenda setting power. Knowing the demand of the politicians for the output of the bureau, the bureaucrat's budget request presents the politicians with a "take it or leave it" situation where the politicians have zero net gain. In this case, administrative spending will basically reflect the preferences of the administrators. Variation between local governments may be the result of differing ideal points on the preference ordering of administrators of different locations. The agenda setter model is developed and applied to local public choice in a series of articles by Romer and Rosenthal (see Romer and Rosenthal, 1978 and Romer, Rosenthal and Munley, 1992).

An alternative interpretation of the decision making says that administrative spending is determined by the politicians alone. The local council decides the annual budget. The decision is based on the budget proposal of the chief administrator, but the council is free to change any budget item (within the law and given regulation of the budget balance). The council is consequently expected to implement its most preferred budget allocation. When it does, the administrative spending observed reflects the preferences of the politicians. With many parties represented, the preferences of the majority coalition are decisive. In the two-block situation described above, the majority is either socialist or non-socialist. In this case, the actual administrative spending can be analyzed in a demand model taking into account the political orientation of the majority of the council.

There are several possible explanations of why the politicians do not have a decisive influence: First, in a situation of imperfect information, there are costs

associated with developing an alternative budget. The politicians accept the budget proposal of the chief administrator with only small modifications because of these costs. Second, assuming perfect information, the chief administrator may have proposal power due to impatience. This is the key message of the sequential choice model advanced by Baron (1994). The argument implies that the year of the election cycle matters. The council is expected to have greater power after the first year in office, when they have got some experience of the budget process.¹

If the decision about administrative spending is one dimensional, as drawn above, a majority of the council, usually a connected minimum winning coalition, is expected to implement its own preferences. The administration will have no influence on the outcome if there are no information problems or impatience. However, if the decision is multidimensional, the council easily ends up in the voting cycles shown by McKelvey (1976). Since the budget decision simultaneously includes allocations to administration, kindergartens, primary school, care for the elderly, and infrastructure, it is hard to agree on modifications of the budget proposed by the chief administrator. This is our third explanation of the lack of full political control of administrative spending.

We argue that the decision about resource use in administration can be understood as bargaining between the administrators and the political leadership of the local governments. Administrators have agenda setting power by presenting a budget proposal, but the local council can modify the budget proposal. The final budget can be seen as the result of bargaining, and the local councils usually accept the proposal without major changes.² The influence of the administrators can be understood on the background of Eavy and Miller (1984), who have investigated the decision making process using the agenda setter model. Based on experimental data, they argue that having a monopoly on the agenda puts the bureaucrat in a position to bargain with a voting body rather than enabling bureaucrats to impose their most preferred alternative.

The strength of the political leadership can influence the bargaining outcome in terms of incentives to acquire information to influence the budget, time costs to create an alternative to the budget proposal, and abilities to form alternatives due to multi-dimensionality. The bargaining process will reflect characteristics of the political system in each municipality, and thereby the ability of politicians to balance the demands of the administrators against the wish to save resources for welfare services. The bargaining outcome will be located on the preference ordering somewhere between the desires of the politicians and those of the administration.

¹ The panel data needed to study this have not been available.

² In a survey conducted by Rune Sørensen (1995) in 1990–1991, 61 out of 71 chief administrators (86%) answered that the local council accepts their proposals without substantial changes.

2. THE POLITICAL DEMAND FOR LOCAL GOVERNMENT ADMINISTRATION

The analysis of administrative spending must be based on an understanding of the local decision making process. The conventional model concentrates on individual demand functions for public services, as laid out by Inman (1979) and Rubinfeld (1987), whereby administrative services compete with welfare services and private consumption for funds. The median voter formulation has serious shortcomings in the case of Norway, since the local governments take decisions in a multi-dimensional space and a well established party system controls the local councils. The more general community preference model (discussed by Inman, 1979 and Wildasin, 1986), understood as the preferences of the political leadership in the community, is the more relevant framework of analysis.

The standard demand model of local government behavior deals with the choice between private consumption and local public services. In the centralized Norwegian system, the local authorities are only allowed to choose between local public services given an exogenous budget constraint. General grants from central government and income tax revenue sharing are the main sources of revenue for the local authorities. The exogenous budget constraint implies that the choice between private and local public goods is determined at the central level. What is left for the local public choice process is the allocation of the total budget among different services. A rationed demand system of local public services along these lines is suggested by Rattsø (1989). This demand model also can be applied as a benchmark to study administrative spending.

The community preference function of the political leadership is defined for all local public services, including administrative services. The total budget is exogenously given, and the optimization establishes demand functions for the services. The preferences are conditioned on the level of private income in the municipality, allowing for possible non-separability between local public services and those provided by the private market. In general the marginal rate of substitution between two local public services will depend on the level of private income. The size of the local government budget and the level of private income are not much correlated due to the importance of grants. The resulting demand function for administrative services defines the desired per capita administrative spending of the political leadership (A_p) as a function of the prices of each of the services (vector P), total local government spending per capita (Y), and the level of private income (I). The general form demand function for administration is (η and ε are the price- and income-elasticities of administration respectively, γ is the elasticity with respect to private income):

$$A_p = C_p P^\eta Y^\varepsilon I^\gamma \quad C_p > 0 \quad (1)$$

In the empirical implementation, this demand function of administrative spending is extended in two directions. First, the constant term of the demand function is assumed to reflect the ideological orientation of the political leadership. Consistent with other studies in this area, notably Roubini and Sachs

(1989), we identify the share of socialist votes in the local council as the main indicator of ideology.

Second, socio-demographic descriptives of the local governments are taken into account. In the literature, administrative activities are often related to organizational size. In our context, population size is a potentially important factor in explaining local government administration. The standard assumption discussed by Mintzberg (1983) and Blau (1974) says that economies of scale in supervision leads to decreasing administrative intensity with increasing organizational size. Counter arguments relevant for local authorities can be found. Blau (1974) argues that large size generates differentiation and thereby creates additional administrative costs of coordination. Oates (1988) introduces the "zoo effect", here implying that larger authorities add new administrative functions which increase the administrative overhead. In the political science literature, voter control often is related to population size, with small municipalities having a possible advantage. A priori, the role of population size is an open question.

Demographics are important to local government priorities since many of the local public services are private goods of redistributive character directed to specific age groups such as child care, primary school and care for the elderly. Borge and Rattsø (1995) analyze the competition between different age groups for local government services, inspired by the group decision models proposed by Craig and Inman (1985) and Renaud and van Winden (1991). The age composition of the population is included as a background variable in the present study, to represent the demand for local services competing with administration for resources.

3. BARGAINING BETWEEN POLITICIANS AND ADMINISTRATORS

Given the political demand model of administrative spending, characteristics of the political structure are assumed to influence the outcome. The mix of demand factors and political variables has been used in many empirical studies, but the political decision making situation is typically unclear. Inman (1988) explicitly integrates congressional decision making into the demand model in his study of federal assistance to the US states and local governments. Here we introduce an explicit role of political factors at the local level. The determination of actual administrative spending is understood as bargaining between the political leadership and the administrators. A similar bargaining setup is used to understand national interest group politics by Borge and Rattsø (1994).

The demand for administration by the political leadership, A_p in (1), is challenged by desired administration of the bureaucrats themselves, A_b :

$$A_b = C_b P^{\beta} Y^{\gamma} T^{\delta} \quad (2)$$

To simplify the presentation, equation (2) assumes that the administrators and the politicians agree on the demand response to economic variables, but that the

administrators ask for a higher level of administration. This is captured by differences in the constant terms, with $C_b > C_p$. In a more general formulation, administrators may have different price- and income-elasticities too. The bargaining process produces an outcome which is a weighted average of A_p and A_b :

$$A = (C_p\theta + C_b(1 - \theta))P^p Y^e T^e \quad 0 \leq \theta \leq 1 \quad (3)$$

θ is the relative bargaining strength of the political leadership. The actual level of administrative spending varies inversely with the bargaining power of the local politicians. The key hypothesis of this study is that a strong leadership is more capable of resisting bureaucratic pressure.

The analysis throws light on what factors influence the relative strength of the political leadership. In Norway, the final budget decision is taken by the local council, that is elected every 4 year. Most representatives are elected on the basis of party nomination, but also some non-party groups are represented, typically in the periphery. The local council does not work as a parliamentary system which establishes a "cabinet" based on a voting bloc. Instead, an executive board is elected among the members of the local council, with proportional representation of the parties (and non-party groups) in the local council. The system of joint rule tends to facilitate consensual properties, and allows for a more open struggle regarding the political priorities. The mayor and the deputy mayor are elected by and from the council, and are the leaders of the executive board. The constellation behind the political leadership will generally have a majority in the executive board. The basis of this political leadership determines the political strength of the local council.

Two measures of political strength are included: The first relates to the basis of the political leadership in the local council. One party majority behind the mayor and the deputy mayor represents a strong bargaining position. At the other end, two parties in minority behind the mayor and the deputy mayor constitute a weak political leadership. Our empirical measure of strength is based on the information available about the party affiliation of the mayor and the deputy mayor. The leaderships are classified according to the two dimensions majority/minority and coalition/non-coalition (details in the appendix):

- COAL 1 – Minority coalition
- COAL 2 – One party minority
- COAL 3 – Majority coalition
- COAL 4 – One party majority

The classification is similar to the index adopted by Roubini and Sachs (1989), except that it is of interest to separate between one party and coalition minorities in our case. The dummy variable formulation takes into account the criticism of the Roubini and Sachs index by Edin and Ohlsson (1991).

The second measure of strength focuses on the party fragmentation of the local council. Building a coalition to form a controlling majority is made more difficult by the representation of many parties in the council. Schofield (1993) shows how political fragmentation increases the complexity of bargaining situations. We are aware of a possible contrary effect, that the presence of many parties means stronger political competition. Intense competition between parties may strengthen the political influence in the budget making process. The party fragmentation is represented by a Herfindahl index (HERF). When SH_p is the share of the seats held by party p , the index is calculated as follows:

$$\text{HERF} = \sum_{p=1}^P SH_p^2 \quad (4)$$

The index is inversely related to fragmentation. It takes the maximum value of 1 when a single party holds all the seats and the minimum value of $1/P$ when the seats are equally divided among the P parties. When $\text{HERF} = 1$, one party majority leadership is the only option. On the other hand, when $\text{HERF} = 1/P$ and $P > 2$, the only options are a majority coalition or a minority solution.

Our hypotheses about the two political characteristics influencing the bargaining position of the politicians can be summarized in the following equation:

$$\theta = \theta(\text{COAL}, \text{HERF}) \quad (5)$$

+ ?

The relative bargaining power of the leadership is positively related to the basis of the political leadership (COAL), and may or may not rise with reduced party fragmentation (HERF). Since we do not have data about the actual budgeting process of the local governments, we cannot look into more sophisticated aspects of the bargaining process. The chief administrator may benefit from a situation with many parties and disagreement about administrative spending. For example, she can propose a budget in which the composition of welfare services favor the interests of the parties most friendly to administrative spending. Complicated strategies can be thought of in which the administrators are able to build alliances with politicians. Investigations of the bargaining process and the party coalition building in local councils must await better data.

4. ESTIMATING THE DETERMINANTS OF ADMINISTRATIVE SPENDING

The framework outlined above guides our empirical investigation of how political control may influence administrative spending. The analysis is based on economic and political data at the local government level. No independent information about the preferences of politicians and bureaucrats and the bargaining power has been available. It follows that we have an identification problem that is clarified by rewriting the bargain solution (3):

$$A = [C_b + \theta(C_p - C_b)]P^{\theta} Y^{\theta} I^{\theta} \quad 0 \leq \theta \leq 1 \quad (6)$$

In the first parentheses on the right hand side, the parameters describing preferences of politicians and bureaucrats, C_p and C_b , and bargaining power, θ , cannot be identified without specific information. It follows that the quantitative effects of different preferences and factors affecting bargaining power cannot be separated. The estimates will show whether political characteristics influence administrative spending, but we cannot conclude what is the channel of effect – preferences or strength.

The core of the analysis is to show how the two measures of political strength affect administrative spending. To reach robust results, various econometric formulations have been investigated. We start out to demonstrate basic correlations when the strength variables are entered directly in a simple linear framework. The model is estimated using standard OLS and logarithmic form:³

$$\log A = \text{Constant} + \alpha_1 \log Y + \alpha_2 \log I + \alpha_3 Z + \alpha_4 \text{COAL} + \alpha_5 \text{HERF} + \alpha_6 \text{SOC} \quad (7)$$

Since the bargaining solution implies interaction between political preferences and political strength, interaction terms between the political variables (COAL, HERF and SOC) have been added. The explicit functional form of the bargaining solution (6) implies that the strength variables enter in non-linear fashion. This is taken into account by using a maximum likelihood procedure to handle the non-linear relation between the constant terms and bargaining strength. Concentrating on this non-linearity, the socialist share of the council SOC is introduced as a separate variable. In estimating the model, a restricted formulation assuming that the bargaining parameter θ takes values between 0 and 1 is chosen:⁴

$$\log A = \log[C_b + \theta(C_p - C_b)] + \alpha_1 \log Y + \alpha_2 \log I + \alpha_3 Z + \alpha_4 \text{SOC} \quad (8)$$

³ The study is based on expenditure data, and it has not been possible to separate the administrative expenditures in price and volume components. Hence, price effects are left out of the empirical model. The results of other Norwegian studies suggest that the demand function can be estimated without bias in a model which leaves out the effect of prices. The vector Z represents a sociodemographic description of each municipality, assumed to influence local preferences and thereby the composition of local services. The variables analyzed are based on experience gained from previous expenditure studies, and include the population size (N), the age composition of the population (the share of elderly EL) and the settlement pattern (S). Since the raw data reveal a U-shaped relationship between spending and population size, the square of the population size is included. The data set for 1990 is based on local government accounts and a databank of sociodemographic and political characteristics.

⁴ The bargaining parameter θ is related to the strength parameters according the formulas:

$$\theta = \frac{\exp(\delta_0 + \delta_1 \text{COAL1} + \delta_2 \text{COAL2} + \delta_3 \text{COAL3})}{1 + \exp(\delta_0 + \delta_1 \text{COAL1} + \delta_2 \text{COAL2} + \delta_3 \text{COAL3})}$$

$$\theta = \frac{\exp(\beta_0 + \beta_1 \text{HERF})}{1 + \exp(\beta_0 + \beta_1 \text{HERF})}$$

The functional form assumption imposed by (6) implies both interaction between ideology and strength and a non-linear effect of this interaction term. We have experimented with formulations where the socialist share SOC influences the constant term of the politicians, C_p , and thereby interacts with bargaining strength. That is, α_4 is set to zero and C_p is made a function of SOC in (8).

The type of coalition government clearly is important for the level of administrative spending. The results reported in Table 2 show the effects of estimating specifications (7) and (8), named OLS and ML respectively, when no interaction terms are added.⁵ One party majority serves as a reference group, and the three other types of political leadership (COAL 1–3) have significantly higher administrative spending. The typical one party majority authority is run by the socialdemocratic party. In a few cases, the center party is in majority. Under one party rule, the local government decisions are controlled within one party, and this autonomy leads to lower administrative spending.

The coefficients of the three other types of political leadership indicate that spending is higher, the weaker the type of government. Two party majorities have 8–10% higher spending than one party majorities. A majority coalition consists of either two socialist parties, two non-socialist parties or, although not very often, the socialdemocratic party and the center party. One party minorities have 10–12% higher spending than one party majorities. One party minority is often the socialdemocratic party or, in the countryside, the center party. Minority coalitions, with spending 13–15% above one party majorities, are expected to be coalitions between two non-socialist parties, usually involving the center party, the christian-democratic party and the conservative party.⁶ However, a formal test for equality of the coefficients of the three types of political leadership (COAL 1–3) shows that equality cannot be rejected. The main difference is between full one party control and all other alternatives.

The alternative measure of strength, the party fragmentation of the local council, does not have a well defined impact on administrative spending. The variable is only significant at about 15% level, and the coefficient changes sign when fragmentation is combined with our coalition measure. Since party fragmentation also is associated with party competition, the effect of fragmentation is unclear a priori. The square of the HERF variable has been included to detect a possible U-shaped relationship, but without success. The lack of influence of party fragmentation may reflect a political system where the political leadership has the decisive role.

⁵The total effects of the coalition variables in the maximum likelihood estimations are robust, but the coefficients and their standard error vary with the starting values given. The problem follows from the fact that the preference parameters cannot be identified from the bargaining strength parameters in (6), when we have no independent information about the preferences of the politicians and the bureaucrats or bargaining power.

⁶The election for the 1987–1991 period produced the following constellations of majors and deputy majors: minority coalition, 39%, one party minority, 23%, majority coalition, 14%, one party majority, 24%. The average party fragmentation measured by the Herfindahl index was 0.282.

TABLE 2. ESTIMATION RESULTS, PER CAPITA ADMINISTRATIVE SPENDING

	OLS	OLS	OLS	ML	ML
lnY	0.95 (0.12)	0.96 (0.12)	0.97 (0.12)	0.94 (0.12)	0.97 (0.12)
lnI	-0.12 (0.15)	-0.09 (0.15)	-0.14 (0.15)	-0.12 (0.15)	-0.14 (0.15)
lnN	-2.50 (0.78)	-2.55 (0.80)	-2.36 (0.80)	-2.50 (0.76)	-2.25 (0.77)
lnN ²	0.13 (0.04)	0.13 (0.04)	0.12 (0.04)	0.13 (0.04)	0.11 (0.04)
lnEL	-0.13 (0.06)	-0.14 (0.06)	-0.13 (0.06)	-0.13 (0.06)	-0.14 (0.06)
lnS	-0.06 (0.04)	-0.05 (0.04)	-0.06 (0.04)	-0.06 (0.04)	-0.14 (0.03)
SOC	0.006 (0.001)	0.005 (0.002)	0.005 (0.002)	0.006 (0.001)	0.003 (0.001)
COAL 1	0.13 (0.05)		0.15 (0.06)	0.14 -	
COAL 2	0.10 (0.04)		0.12 (0.05)	0.11 -	
COAL 3	0.08 (0.05)		0.10 (0.06)	0.08 -	
HERF		-0.16 (0.30)	0.25 (0.33)		0.16* -
R ² _{adj}	0.54	0.53	0.54		
SSE	4.31	4.52	4.29		
σ ²				0.0246	0.0254

Dependent variable: ln of per capita administrative spending.

Standard errors in parentheses.

N = 175.

*The estimated difference between the least politically fragmented and the most politically fragmented council is 16%. The effect is only significant at the 15% level.

Ideological orientation is the other political dimension included, and a socialist dominated local council clearly tends to increase administrative spending. The importance of political orientation can be calculated: A 10 percentage point increase in the share of socialists increases the administrative spending in the range of 3 to 6% (dependent on model formulation in Table 2). As suggested in the introduction, socialists may allocate resources to administrative activities to stimulate planning and coordination. Strøm (1995) shows that a socialist council tends to produce a higher wage level for local government employees. His result opens up for an alternative interpretation: Socialists drive up administrative expenditures by increasing the salaries of the administrators.

We have shown that a weak leadership combined with socialist majority is likely to produce high administrative spending. Our estimates indicate that the

difference from a strong (one party majority) and conservative council can be large, above 20%. In practice, strength and ideology may cancel each other out in many councils. The local councils with a socialist majority often is controlled by one party, while non-socialist dominated councils have coalitions with several parties involved. The low administrative spending expected from non-socialist ideological dominance may be lost since the political leadership tends to have a weak political base for the bargaining with administrators.

The bargaining solution (6) implies interaction between political preferences and strength, the ideology variable SOC and the strength variables COAL and HERF. The effect of socialist share is not simply the effect of socialist's taste, but also reflects the narrowing of the difference between politicians and bureaucrats (C_p and C_b). We have not found significant interaction terms with any of the formulations estimated. Strictly speaking this suggests that the functional form in (6) is not correct, since the impact of politicians' tastes and bargaining power is separable. To investigate the relationship between bureaucrats and politicians further, we will need specific information about the preferences of the two groups.

The effects of economic and demographic variables are consistent with the estimated results of general demand systems of Norwegian local governments including administration (see Rattsø, 1989 and Borge and Rattsø, 1995). The size of the per capita total budget (Y) is important, and the expenditure elasticity is not significantly different from 1. Administrative spending and total spending go hand in hand. Experiments with interaction between the political variables and the income elasticity have not produced significant effects. The population size (N) has the U-effect indicated in Table 1. The "optimal size" of local governments with respect to administration, the size associated with the lowest per capita administrative spending, is about 19,000 inhabitants. The smallest authorities show economies of scale, probably best interpreted as a cost sharing effect of administration as a collective good. The scale effect is declining with population size, and diseconomies of scale dominate for the larger authorities. The economies of scale presumably are counteracted both by the zoo effect and by increased complexity of administration. The effect is consistent with previous analyses addressing the role of population size in administrative spending (see Kalseth and Rattsø, 1995).

The age composition of the population typically comes out as a strong factor affecting demand for local public services, since many of the services are directed towards specific age groups. Per capita administrative spending tends to be reduced with a higher share of elderly in the population (EL). A bias towards the elderly shifts the services from primary education and infrastructure towards health care/care for the elderly, according to Rattsø (1989). The resource use in administration may be influenced by the composition of services to administer. In our context, an additional effect may be at work. The elderly represent a vocal group in the public debate, and a strong position of the elderly may help the politicians hold back the demands of the administrators. The same mechanism

may be at work to explain the lower administrative spending with a decentralized settlement pattern (*S*). When the population is spread out, high demand for spending in primary school puts a pressure on the budget constraint and the resource use in other areas.

5. POLITICAL DETERMINANTS OF ADMINISTRATIVE OVERSPENDING

To check the robustness of our results, we develop an alternative approach to investigating the influence of political-institutional variables inspired by industrial productivity analyses. In a productivity context, excessive administrative spending can result from two types of administrative inefficiency. The first is technical inefficiency: the authorities use too many resources in administration given the level of administrative output produced. The second type is ineffectiveness: administrative output is produced efficiently, but the priority of administrative services compared to welfare services is too high or too low based on some demand criterium. Both factors may contribute to high administrative spending in the municipality.

The methodology applied in standard productivity measurement of industries, where “best practice” serves as a reference point, can be used to investigate the two types of administrative inefficiency. However, since we are not able to identify and measure the administrative output, we cannot separate the two types of inefficiency. In the context of administration, an alternative to the “best practice” is developed, a minimum requirement frontier. The authorities with the lowest per capita spending on administration, taking into account economic and demographic characteristics, represent a minimum requirement that others can be compared to. The approach is developed by Kalseth and Rattsø (1995), who define the excess of the minimum requirement as “overspending”. Their model is used here to see if political structure can explain some of the overspending.

Data envelopment analysis (DEA) is a programming method generalizing the efficiency measurement proposed by Farrell (1957), and was developed by Charnes et al. (1978). A survey of efficiency measurement approaches is provided by Førsund et al. (1980). The method is explained by Figure 1 presenting the relationship between a local characteristic and per capita administrative spending. Five local authorities are shown, A, B, C, D and E. Authorities A, B, C and D define the minimum requirement frontier. They have the lowest per capita administrative spending given their local characteristics. Administrative overspending is defined relative to the minimum requirement frontier. A reference unit on the frontier is established for each authority, point J for authority E – the predicted minimum required spending given the same local characteristics. The distance JE is spending in excess of the predicted spending – and thus describes the overspending in NOK per capita. The standard productivity measure refers to the “minimum requirement ratio” HJ/HE , the share of the per capita administrative spending in authority E predicted by the local characteristics.

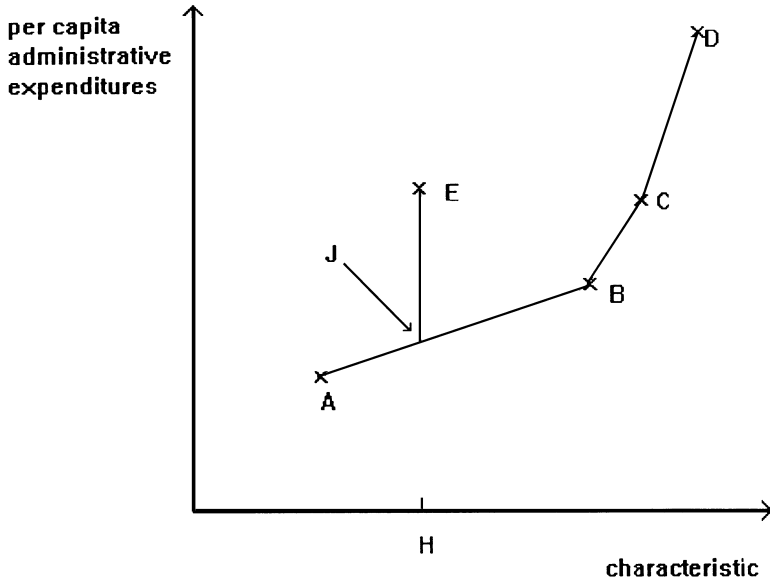


Figure 1. Reference frontier and efficiency measurement. Administrative expenditures per capita relative to a local characteristic.

The strength of the method is that the overspending compared to the minimum requirement can be identified for each authority. The minimum required administration is not necessarily the best. Needless to say, more administration may improve the political decision making and contribute to cost savings and better quality services. We cannot say whether the extra resources put into administration represent bureaucratic waste or the priority of the political leadership to achieve cheaper and better services. The minimum requirement and the overspending defined are not without interest, however. Some authorities can make do with the minimum required administration, and there are no evident differences in service levels related to variation in administrative spending. The authorities with the lowest spending in central administration have costs of about 5% of current expenditures.

The overspending compared to the minimum requirement serves as a benchmark for the analysis of political factors influencing the variation between municipalities. The analysis proceeds in two steps. First, DEA is used to calculate the minimum requirement for each municipality. The minimum requirement is defined taking into account the economic and demographic factors included in the demand model. Second, the variation in spending relative to the minimum requirement is related to the characteristics of the political structure introduced above, measured both as the minimum requirement ratio and overspending per capita.

TABLE 3. DEA ANALYSIS: MINIMUM REQUIREMENT RATIO OF ADMINISTRATIVE SPENDING

	<i>N</i>	Average	Stdev	Minimum	Maximum
COAL					
Minority coalition	68	0.796	0.142	0.083	1.00
One party minority	41	0.778	0.147	0.496	1.00
Majority coalition	24	0.821	0.118	0.670	1.00
One party majority	42	0.767	0.139	0.475	1.00
SOC					
<30%	32	0.875	0.111	0.647	1.00
30–45%	45	0.790	0.130	0.553	1.00
45–55%	46	0.749	0.142	0.483	1.00
>55%	52	0.768	0.141	0.475	1.00
All	175	0.788	0.139	0.475	1.00

Number of authorities with ratio equal to 1 is 24.

The identification of overspending takes into account that the municipalities differ with respect to total spending, population size and other economic and demographic characteristics. The econometric demand model in equation (7), which excludes the variables representing political orientation and political structure, serves as a benchmark. Per capita administrative spending is analyzed in relation to per capita total spending (Y) and the inverse of after-tax income per capita ($1/I$), population size ($1/N$), the share of elderly ($1/EL$) and settlement pattern ($1/S$).⁷ The method determines the reference frontier by a piecewise linear envelopment of the data. The minimum requirement ratios, calculated as the share of observed per capita administrative spending predicted by the minimum requirement, are reported in Table 3.

The average minimum requirement ratio is 0.788, i.e. the overspending compared to the minimum requirement is about 21% on average, about 240 NOK (USD 35) per capita or 570 mill. NOK total in the 175 municipalities.

Based on the hypotheses in section 1, administrative overspending is expected to be reduced by strength and to rise with the share of socialist representatives in the local council. The minimum requirement ratio consequently is expected to be negatively related to socialist ideology (SOC) and positively related to strength as measured by COAL. A description of the variation between municipalities according to political structure is shown in Table 3. In all groups of municipalities, whether classified by type of political control or socialist share, there are units defining the “best practice”. No simple pattern emerges out of the

⁷ To use the DEA method, it is necessary to transform the variables ensuring a positive relationship between administrative spending and the explanatory variables. This implies restrictions on the functional relationship. In particular, we can only include the U-shaped effect of population size by partitioning the data in two sets, and have chosen to represent the population size by the inverse.

descriptive statistics, although there is a tendency for local governments with a lower socialist share to have less overspending. The one municipality with the most overspending (minimum requirement ratio of 0.475, predicted is less than 50% of actual), has one party majority and a socialist share above 55%. To isolate the role of the different factors, a statistical analysis is needed.

Tobit regression is used to estimate the impact of political factors on administrative overspending. Table 4 shows the results of the estimation of both the minimum requirement ratio (MRR) and the overspending per capita (NOK) dependent on socialist share and type of coalition government. The results are basically in line with the estimated demand function of section 4. A high share of socialists in the council and a weak political leadership widens the difference between the predicted required minimum spending and actual spending, thus contributing to high administrative spending. The quantitative effect is about the same: A 10 percentage point rise in the socialist share increases overspending in the range of 3 to 4 percentage points, while a shift from the weakest to the strongest political leadership (from minority coalition COAL 1 to one party majority COAL 4) reduces the overspending by approximately 10 percentage points. However, in this formulation minority coalition is the type of political leadership that is significantly different from the others. Even though the coefficients indicate that majority coalitions and one party minorities have higher administrative spending than one party majorities, the differences are not significant.

TABLE 4. ESTIMATED METHODS OF ADMINISTRATIVE OVERSPENDING, TOBIT ANALYSIS

	MRR	NOK
SOC	-0.03 (3.95)	6.72 (4.48)
COAL 1	-0.73 (2.35)	153.59 (2.64)
COAL 2	-0.40 (1.56)	89.64 (1.87)
COAL 3	-0.44 (1.34)	89.36 (1.45)
Const	7.24 (10.76)	-188.56 (1.89)
SqCor	0.1069	0.1398
P(Y < 1)	0.9126	0.8728

Dependent variable: the minimum requirement ratio of administrative spending (MRR) and overspending per capita (NOK).

Normalized coefficients, asymptotic *t*-values in parentheses.

SqCor: squared correlation between observed and expected values.

P(Y < 1): Predicted probability of dependent variable less than 1 given average *X* (I).

N = 175.

6. CONCLUDING REMARKS

Political structure is shown to be important for administrative spending in Norwegian local governments. The analysis has investigated the role of economic, demographic and political factors in explaining the variation in administrative spending among municipalities. Two approaches have been applied to identify the determinants. First, a bargaining model of administrative services including a description of the political structure has been estimated. Second, a method to measure productive efficiency, DEA-analysis, has been used to define a "best practice" administration, the lowest per capita administrative spending taking into account economic and demographic characteristics of the municipalities. This minimum requirement serves as a benchmark for the measurement of administrative overspending. The influence of political factors on overspending is estimated in a Tobit model.

The central hypothesis is that the administrators will have more power relative to the politicians when political control is divided between parties. Estimation of a demand model of administration added political structure shows strong empirical correlations between types of coalition governments and socialist controlled governments and the level of administrative spending. Divided political control strengthens the hands of the agenda setting bureaucrats. Socialist oriented local councils tend to have higher administrative spending.⁸

The way Norwegian local politics is set up, it is hard for voters to avoid administrative overspending. If they vote non-socialist to have low priority for administration, they may still end up with high administrative spending. On the non-socialist side, many parties compete for votes, and they can only assume political leadership through a broad coalition. Socialists have a high priority for administration, but they often form one party majority. They are in a better position to hold down the spending pressure from administrators.

JORID KALSETH AND JØRN RATTSØ

Department of Economics

Norwegian University of Science and Technology

N-7055 Dragvoll

Norway

⁸ An extension of this analysis can introduce the service producers of the local governments in the battle for funds. They can be strong advocates for the clients of their services, zealots, or spokesmen of their own well organized interests as a profession. Weak political leadership is not only in a weak position towards the administration, but can be even more vulnerable to exploitation by strong professional interest groups. If they are, the position of the administration can in fact be strengthened. Confronted with service producers pressure for increased spending, a weak council may prefer a strong administration to control and counteract these expenditure driving forces. Needless to say, such an analysis will need data describing the bargaining process over the budget in more detail.

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APPENDIX

Documentation of the variables

We have used the local government accounts and the Norwegian Social Science Data Services' (NSD) databank of social, economic, demographic and political variables describing each municipality. NSD is not responsible for the analysis of the data used or the interpretations made. The analysis includes 175 of the 442 municipalities (1990). These are the authorities with a population above 5000 and below 50,000.

Definition of variables:

A – administrative spending per capita.

Y – total local government operating budget per capita.

I – average after-tax income per capita.

EL – the share of population above age 67.

N – the population size.

S – the average travelling distance (in minutes) to the administration center of the local authority.

SOC – the share of socialist representatives in the local council.

HERF – a Herfindahl-index for the party fragmentation of the local council:

$$\text{HERF} = \sum_p SH_p^2$$

SH_p – the share of the seats of the local council held by party p , $p = 1, 14$, $\text{HERF} \in [1/P, 1]$

Based on the available data describing the political council of each local government, we have constructed a classification of the strength of the political leadership:

COAL – dummy variables for strength of the local council

COAL 1 – Minority coalition (multiparty coalition) – the mayor and the deputy mayor elected by the local council represent different parties

and the two parties together hold less than 50% of the seats in the local council.

- COAL 2 – One party minority – the mayor and the deputy mayor elected by the local council represent the same party and this party holds less than 50% of the seats in the local council.
- COAL 3 – Majority coalition – the mayor and the deputy mayor elected by the local council represent different parties and the two parties together hold more than 50% of the seats in the local council.
- COAL 4 – One party majority – the mayor and the deputy mayor elected by the local council represent the same party and this party holds more than 50% of the seats in the local council.