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Local government consolidations: The impact of political transaction costs

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Abstract

Local government in Norway comprises a large number of small municipalities. Cost efficiency can be improved by consolidating local authorities, and central government has designed a framework to stimulate voluntary mergers. Existing theories suggest that political transaction costs will impede consolidations. 1) Generous grants compensate diseconomies of scale. Central government has promised small municipalities that grant levels will be maintained, but policy promises may not be credible. 2) Property rights to local revenues are nullified when consolidations have been implemented. High-revenue municipalities will therefore go against merger with a poorer neighbor. 3) A consolidated local council may be composed of different political parties, and it may therefore pursue other policies than an existing council. Expected changes in party strength can lead municipalities to oppose a proposed consolidation. 4) Senior politicians are less likely to support mergers, particularly if they come from small polities.

We offer an explicit test of these propositions based on data for Norwegian local government. Elected politicians and administrative leaders are more interested in consolidating when efficiency gains are large. Local revenue disparities and to some extent dissimilar party preferences are significant impediments to voluntary mergers. Additionally, smaller municipalities are often prepared to sacrifice some efficiency gain to remain independent polities.

Introduction

The proper size of a polity constitutes a classic in political science and political economy. A series of political economy models have addressed political and economic incentives to break up and integrate. Much of this theorizing is intuitive (see for example Bolton and Roland 1996; 1997; Alesina and Spolaore 1997): Regions are more likely to unite when integration produces substantial efficiency gains, when regions have comparable income levels (= per capita tax bases), and when voters in the relevant units have similar political preferences. Young (2002) recapitulates a number of telling examples, and demonstrates the importance of redistribution politics. But secessions and unifications also involve strong political emotions and polarized campaigns, often linked to language, ethnicity, and historically defined identities.

Similar issues arise within nation states attempting reform of local government structures. National governments often believe that efficiency can be improved by consolidating existing local units into larger local institutions. Larger units can exploit economies of scale and scope, they have a more robust economic base and greater governance capacity so they can take on more demanding responsibilities. Almost without exception, consolidation proposals also trigger highly emotional debates and local protests, and centralized restructuring commonly incurs prohibitive political costs.

Although unitary states have the formal power to impose restructuring, it might be better to let local politicians and citizens decide whether to integrate into a larger polity. Integration will presumably take place when citizens in two or more polities believe they can reap net gains by merging into a larger political unit, while the status quo will persist when voters think they are better off in the smaller polity. Unifications of local government can therefore be seen as efficiency-promoting contracts. Following the celebrated Coase-theorem (Coase 1960), we would expect efficient polity sizes to emerge when property rights have been properly defined, when transaction costs are not prohibitively high, and when contracts are enforceable.

Norwegian local government presents an interesting case. The structure is highly decentralized: 434 municipalities have extensive responsibilities for public service provision to about 4,5 million inhabitants. Several observers have noted that the structure of local government has remained unchanged for at least 30 years, while settlement patterns,

communications, local government responsibilities and popular attitudes have changed considerably. For example, a government white paper suggested a major merger of smaller local authorities in 1992. In 1995, the Storting (the Norwegian parliament) voted against enforced mergers, and current policy attempts to use economic incentives to encourage voluntary consolidations. Subsequent governments have restated the call for a restructuring of local government, and legislation has recently been revised to speed up the process. So far little has happened. A straightforward application of the Coase-theorem offers one explanation: Property rights are not sufficiently defined, commitments are not credible and contracts are not enforceable.

We start out by discussing conditions for voluntary mergers of local governments. A core argument is that political transaction costs impede Coasian contracts. Subsequent sections offer an overview of Norwegian local government and present the research design. The empirical analyses use two major sources of data. We have collected extensive data about local politicians' and administrators' preferences for merging their municipality with one or more of their neighbors. These data can be combined with information about the efficiency gains of specific mergers. Efficiency estimates are available from a through analysis by Statistics Norway. These and supplementary data about economic and political effects of consolidations allow us to estimate the parameters of a comprehensive decision-making model for elected and non-elected local leaders.

Political transaction costs and voluntary mergers

Political decentralization yields a number of advantages, including efficiency gains (Oates 1972). Small units allow each citizen more influence on local policies, such polities are populated with citizens with relatively homogenous policy preferences, and, mobility and competition among numerous local authorities may bring actual policies more in line with voter preferences. At the same time, small local governments are not able to address a number of important issues. They lack governance capacity to offer a number of specialized public services. Economies of scale call for a minimum level of production. Provision of local public goods requires a certain population base to achieve a sufficient degree of cost sharing ("club theory", see Buchanan 1956). This suggests that citizens' welfare is best served when mergers and secessions are decided as part of a democratic process in the affected local governments.

However, changes in the structure of local government generate externalities. For example: suppose that one authority refuses to merge with a neighboring municipality. This will affect cost efficiency of both municipalities (economies of scale), it may affect service provision in both authorities due to lack of “fiscal equivalence” (Olson 1969), and it may reduce tax competition, leading to higher taxes in all governments. The existence of positive and negative externalities does not necessarily imply that a strong central government should impose a (more or less optimal) local government structure. (Inman and Rubinfeld 1997). Following the Coase-theorem (Coase 1960), if property rights are well defined and enforceable, and transaction costs are low, decentralized bargains will lead to an optimal local government structure. We shall argue that local governments are unwilling to merge due to lack of defined property rights, and that central government is incapable of offering credible commitments. Therefore the prospects for voluntary mergers are therefore slim (Dixit 1996, ch. 2).

The impact of revenue disparities

Our starting point is the observation that only parts of local government revenues are collected as local taxes and fees (vertical fiscal imbalances). Central governments in most countries including Norway provide grants designed to compensate authorities with small populations for diseconomies of scale.

Suppose voters and elected leaders in local governments believe that total revenue remain unchanged after a merger. However, merging municipalities cannot claim exclusive rights to local revenues after a merger has been implemented. This follows from principles of representative democracy. For example, in the Norwegian election system, a consolidation implies that two former election districts are merged into one new district. The Local Government Act assigns a new elected council full financial responsibility. Since the institutional structure has no mechanism for maintaining property rights, contracts on future allocation of revenue are not binding. Local politicians attempting to strike a Coaseian contract cannot commit themselves to maintaining the service level in one geographical region. Revenue sharing means that voters and leaders in a municipality will compare what they have with what they expect to get in a consolidated municipality.

First, if a municipality has higher levels of (exogenous) revenues than a potential partner, it will be more reluctant to merge. The per capita revenue loss will be greater when a high-income municipality with few inhabitants merges with a low-income municipality with a large population. Second, improvements in cost efficiency is the major motive for mergers. Efficiency improvements can be large, but smaller than the expected revenue loss for one of the municipalities. In this case, improperly defined property rights will undermine incentives to merge.

Only when efficiency gains are sufficiently large, the affected municipalities will they may exceed the expected revenue losses. Yet estimates of how mergers influence cost efficiency much more uncertain than revenues (taxes and grants), and a risk premium is probably necessary to compensate for this.

The impact of central government grants

Local governments may go against mergers, if cuts in central grants cancel out efficiency gains. As has been done in the Norwegian case (see description below), national government may declare that local governments will maintain current grants levels. But governments are often unable to commit themselves to particular policies, since there is no third party to enforce contracts.² Even if policy announcements are written as part of ordinary legislation, parliament can modify laws and make adjustments in the grant schemes for local governments as it sees fit. A policy that maintains grants for consolidated municipalities may seem optimal at one point, but are not necessarily the best policy at a later point in time (Kydland and Prescott 1977). Future parliaments and cabinets may live up to their predecessor's declarations as long as voluntary mergers go on. When (most) mergers have been completed, parliament lacks an incentive to maintain the grant structure. Hence: local governments are unlikely not believe that central government will maintain grant levels once integration has been implemented.

Consolidations can at least in theory be reversed if central government does not fulfill its obligations (or citizens are generally dissatisfied with the unified polity). But central government has the formal power to veto a new split. A separation requires support from a

² Most analyses of commitment problems address issues of macroeconomic governance. Drazen (2000) provides a review of this literature.

majority of representatives in the consolidated local council. (See point b) in description of *Law on local government structure* below). If local politicians and voters *believe* that mergers are irreversible, central government's commitment problem implies that municipalities receiving small community grants are likely to oppose consolidation proposals. Reductions in central grants may cancel out efficiency gains.

When central government cannot commit itself to maintain grant levels, incentives to merge are diluted by a common pool problem. All revenues including the efficiency gain will be collected into the common revenue pool, and redistributed to members of all municipalities. Hence: the existence of economies of scale is *not* likely to stimulate consolidations.

The impact of diverging policy preferences

Citizens of neighboring municipalities commonly have diverging policy preferences. In a merged municipality, the local council may pursue different policies than each of the original councils. This leads to a loss of allocation effectiveness á la Oates (1972). Suppose a small suburban municipality with a non-socialist majority considers a merger with a large municipality with a socialist majority. The rightist voters in the suburban authority will expect to lose its majority position in the elected assembly of the merged polity. They are therefore likely to oppose integration.

Perhaps a Coaseian contract could stipulate that each municipality maintains its entitlement to determine its tax policy and spending priorities for its own citizens? Economies of scale can be exploited for individual services without affecting these policy priorities. Yet, once the new local council is in power, it has no legal obligation (or legal authorization) to fulfill such obligations. Lacking of political property rights means that policy promises (for example relating to tax policies) are not credible.

Once elected, politicians will respond to the demands of the entire citizenry. Local public services must be provided at equal levels for all citizens. Local politicians are more inclined to oppose a merger when the merged local council has a dissimilar party composition compared to the original council.

The impact of elite interests

Efficiency gains are to a large extent attained by cutting down on central administration. Administrators from the more populous municipalities are more likely to stay in office, possibly as leaders of the new polity. Even senior politicians may expect a degrading of their power and status. This appears more likely if different political parties dominate local councils. Elected politicians and administrators from the smaller municipalities may veto a merger out of concern from their position in a consolidated organization. Coasian contracts are hardly credible a unified council is entitled to elect major, deputy major and committee leaders and to (re-)appoint administrative leaders.

The structure of Norwegian local government

Norway is a unitary welfare state where local authorities are institutionally, financially and politically integrated in the national system of governance. Local authorities are an integral part of the welfare state (see for example Rattsø and Sørensen 1988). Compared to other countries outside Scandinavia, the local government sector is large (as a proportion of GDP) and subject to extensive centralized regulation and financial controls. A core justification for this structure is uniform welfare state services throughout the country.

The local level comprises two separate levels of democratic governance, including 434 municipalities and 19 counties. The municipality of Oslo is a combined municipality and county.³ Local elections to municipal and county councils are held every four years in between national elections. The electoral system is based on proportional representation. Local councils elect a mayor and an executive board, and the board comprises senior members from all main parties represented in the council. It is responsible for the preparation of policy proposals and the implementation of council decisions.

The current study focuses on the lower level of local government, the municipalities. They have responsibility for the establishment and operation of kindergartens, primary schools, health centers/primary health services, social welfare, culture (cinema, sports, music schools, etc.), some clerical functions, communication (municipal roads), infrastructure services (water

³ Norwegian local government includes 18 county governments, which are not included in the current empirical analyses. Oslo, the capital, is left out of the analyses, since it is both a municipality and a county.

works, sewers, refuse collection and disposal), planning and construction, industry development, and operation of public utilities and tax collection.

The Norwegian financing system is more centralized than most other countries, and it involves large vertical fiscal imbalances. Local tax revenue accounts for only 41 percent of municipal revenues. Most local tax revenues are collected as a proportional payroll tax, i.e. as taxes on personal income and assets. Central government stipulates the minimum and maximum levels of tax rates, and all municipalities apply the maximum tax rates. In contrast to many other countries, property taxes account for a minor share of total local revenues. Block grants and earmarked grants account for most of the other revenues, about 33 percent to total revenues. The smaller municipalities are much more reliant on grants than the populous municipalities. Of particular importance is that the Norwegian system provides generous central grants tend to make low-population municipalities richer than municipalities with a large population, even when taking a more costly population structure and a dispersed settlement pattern into account. Municipalities collect some fee revenues, particularly in the infrastructure sector and about half the municipalities use property taxes to supplement other revenues.

While the financing system is controlled from the center, the structure is highly decentralized with more small local governments than most other countries. The local government level comprises 434 municipalities (4.5 million inhabitants), and the structure has remained quite stable since the late 1960s.⁴ Municipal consolidation has been a recurrent political issue in Norway. In 1992, a government committee (Christiansen committee, see NOU 1992:15) proposed that municipalities should have a minimum of 5 000 inhabitants where communications and settlement pattern permitted. The Storting debated the proposals in 1996, and adopted a motion that "... future changes in the local government structure shall not include municipalities where the local council, or citizens in a referendum, have voted against a merger". Currently, it is assumed that economic incentives will stimulate consolidations. The Storting has recently (2001) revised the legislation that regulates local government consolidations, and some major points are summarized below:

⁴ Municipalities in Denmark and Sweden have comparable policy responsibilities, but the central government in Sweden has implemented more radical consolidation reforms than the central government in Denmark. Denmark therefore has 275 municipalities (5.3 million inhabitants) while Sweden has only 286 municipalities (8.9 million inhabitants).

Elements of Law on local government structure

(For full text in Norwegian, see <http://www.lovdato.no/all/hl-20010615-070.html>)

- a) Cabinet makes a decision on consolidation when the affected local governments concur. If one of the local governments opposes merger, the issue shall be decided by the Storting
- b) Cabinet makes decisions about separation of municipalities if the municipality (i.e. a majority of the council members) supports the division. If the municipality opposes a separation, the Storting makes the decision.
- c) Groups of citizens, local governments and central government can suggest an investigation of a merger. The Ministry of Local Government decides whether a study project shall be carried out.
- d) A referendum is not mandatory. It is recommended that local councils collect information about citizens' attitudes through survey questionnaires, interviews, public meetings or referendums.
- e) Costs relating to preparing evaluation reports can be reimbursed by central government. Central government may also compensate preliminary costs relating to implementing a merger. (In previous consolidations, central government has reimbursed 40-60 percent of these costs.)
- f) In a transition period (unspecified in the law), central government will compensate loss of block grants.
- g) A joint committee with representatives from the affected municipalities will take on governance responsibilities until a new local council has been elected according to the standard procedure.

The Storting has formally approved the principle that consolidated municipalities shall receive an merger grant to fully compensate for lower block grants for a period of 10 years, and a partial compensation shall be maintained for an additional period of 5 years.⁵

⁵ For full documentation in Norwegian see St.prp. nr 62 (1999-2000) or <http://odin.dep.no/krd/komsam/kommunesammenslutning/016051-990729/index-dok000-b-n-a.html>).

Research design

The research design is based on extensive data on elected politicians' and local administrators' preferences for mergers. We regress preferences for consolidation against a set of political and economic characteristics of Norwegian local governments. A survey instrument has been used to measure preferences for merging with one or more neighboring municipalities. In the fall of 2002, we administered a questionnaire to 1) mayors and deputy mayors in all municipalities, 2) top administrators in all municipalities, and, 3) all council members in a sample of 120 municipalities. The survey question does not refer to a particular merger project, which means that respondents define which municipalities to consider: "Do you think that your municipality should be merged with one or more of the neighboring municipalities?" A simple yes or no was recorded. Some of the economic and political indicators used in the multivariate analyses are based on assumptions of which clusters that are relevant consolidation projects (see below). Local politicians and administrators may have considered other types of mergers when they responded on our questionnaire, and this introduces an element of measurement error. The subsequent analyses suggest that the projects identified are relevant and realistic consolidation alternatives.

In Table 1, we report descriptive statistics for the preferences of mayors, local council members and chief administrators. These statistics comprise the municipalities that are deemed suitable for merger in a report by Statistics Norway (see below). The relevant merger projects include 330 municipalities (out of 434 municipalities).

Table 1 here

Only 27 percent of the mayors wanted some form of consolidation. Opinions were significantly more positive in the local councils as a whole. On average, 44-47 percent of council members preferred merger with one or more neighbors. 40-42 percent of chief administrators stated that they had a preference for merger. Political and administrative leaders of municipalities with less than 5 000 inhabitants were much less enthusiastic about consolidation than leaders in municipalities with more than 5 000 inhabitants. This is surprising, as economies of scale are expected to promote mergers in local government.

Efficiency gains are a potential driving force behind mergers. Estimates are based on a disaggregated econometric model of municipal service provision (Aaberge and Langørgen 2004). Economies of scale can be identified in several service areas, particularly in administration and infrastructure (see also Kalseth, Rattsø and Sørensen 1993; Kalseth and Rattsø 1997).

Statistics Norway has identified a number of consolidation projects, and these projects form the basis for estimating estimated efficiency gains related to particular merger projects (Langørgen, Aaberge and Åserud 2002). No municipality is allowed to have less than 5 000 inhabitants, subject to an adequate intra-municipal communications network. This brings the number of municipalities from 434 to 217, that is 117 merger projects. These consolidations yield yearly efficiency gains of nearly NOK 3 billion.⁶ We use these estimates in our analysis of consolidation preferences, and assume that the gains are distributed evenly across the involved municipalities. $\Delta Efficiency$ is measured as the efficiency gain measured in NOK 1 000 per inhabitant.

Lack of local property rights implies that a merger will affect future government revenue. Suppose that current per capita (exogenous) revenues are the best estimates of future revenues. The revenue gain ($\Delta Total\ revenue$) has been estimated as after a potential merger (i.e. the consolidated municipality) less revenues prior to a merger. A large revenue gain will increase the probability of a merger.

$$\Delta Total\ revenue_m = \frac{\sum_{i \in M} Tax\ revenue_i + Block\ grant_i}{\sum_{i \in M} Population_i} - \frac{Tax\ revenue_i + Block\ grant_i}{Population_i}$$

m : merged municipality, i : present municipality,

Note that $Block\ grant_i$ consists of several components, including grants that are set as a function of population size. This implies that $\Delta Total\ revenue$ measures the impact of local

⁶ A ‘radical alternative’ establishes a new local government structure on the basis of Statistics Norway’s economic regions, which implies a consolidated structure with 90 municipalities, and the radical alternative yields a gain of more than NOK 4 billion per year.

revenue sharing only, as it assumes that merger does not lead to lower block grants. (i.e. that $\Delta Grant = 0$ as defined below).

Expected grant losses may discourage mergers. Central government has promised that municipalities shall maintain their current levels of block grants for a period of 10-15 years. The financing system comprises two types of grants that favor municipalities with small populations: the basic grant (equal for all municipalities irrespective of population size) and the regional grant (municipalities with less than 3 000 inhabitants which are located in specific rural areas, particularly in northern Norway). A consolidation would therefore lead to a lower per capita level of basic grants and to a loss of regional grant if the merged municipality has more than 3 000 inhabitants. Suppose central government does not live up to its declarations. Let subscript m signify characteristics of a merged municipality, and let M denote the cluster of merging municipalities. We can define a potential grant gain, $\Delta Grant$ as the per capita grant level after a potential merger less the per capita grant level prior to a proposed integration:

$$\Delta Grant_i = \frac{Basic\ grant_m + Regional\ grant_m}{\sum_{j \in M} Population_j} - \frac{Basic\ grant_i + Regional\ grant_i}{Population_i}$$

m : merged municipality, i : present municipality

In the current setting, the formula of the block grant system implies that $Regional\ grant_m = 0$ since all the merger projects lead to municipalities with more than 3 000 inhabitants. Since the consolidated municipality gets one basic grant only $Basic\ grant_m = Basic\ grant_i$, which means that $\Delta Grant_i < 0$. We also estimate *net* revenue gain excluding basic grants and regional grants by a separate variable $\Delta Net\ revenue$:

$$\Delta Net\ revenue_i = \frac{\sum_{i \in M} (Tax\ revenue_i + Block\ grant_i - Basic\ grant_i - Regional\ grant_i)}{\sum_{i \in M} Population_i} -$$

$$\frac{Tax\ revenue_i + Block\ grant_i - Basic\ grant_i - Regional\ grant_i}{Population_i}$$

In Table 2, we present descriptive statistics on the expected economic impact of consolidations.

Table 2 here

In the upper section of Table 2, we assume that a grant promise is not credible ($\Delta Grant_i < 0$). For municipalities with less than 5 000 inhabitants, the proposed consolidations yield an average efficiency gain of NOK 1 838 per capita. When the small community grants are confiscated by the central government, the grant loss amounts to NOK 3 320 per capita. Despite this loss, small municipalities tend to have higher revenues than their neighbors. The additional distributional loss amounts to NOK 2 006 NOK per capita. The expected net revenue effect is a *loss* of NOK 655 per capita. Municipalities with more than 5 000 inhabitants get an average efficiency gain of NOK 1 493 per capita. Small community grants have less bearing in these authorities, while large municipalities can expect a positive distribution effect, as their neighbors tend to have higher revenue levels. This means that large municipalities expect a revenue *gain* of NOK 1 888 per capita. Note that 32 percent of municipalities with more than 5 000 inhabitants receive a net gain. Ninety-two percent of municipalities with less than 5 000 inhabitants obtain an economic improvement.

In the lower part of Table 2, we assume that municipalities maintain current grant levels ($\Delta Grant_i = 0$), which means that aggregate revenues are shared among the merging municipalities. Note that this assumption yields larger average net gains. Small municipalities obtain a negative distribution effect of NOK 3 777 per capita, leading to a negative merger effect of NOK 1 939 per capita (48 percent with a positive gain). As is expected, we observe less change among larger municipalities. They receive a positive distribution effect of NOK 1 072 per capita, leading to a positive net effect of NOK 2 565 per capita (96 percent with a positive gain). Hence: consolidations generate efficiency gains which in many instances are offset by lower grant and reduced incomes due to revenue sharing with less wealthy neighbors. And the statistics suggest a tentative answer as to why leaders in small municipalities tend to dislike mergers more than leaders in populous municipalities (see Table 1).

A recent example serves to illustrate this point. Recently, four authorities on Norway's west coast evaluated a consolidation. In fact, these four municipalities is one of the 117 integration projects proposed by Statistics Norway. Appendix 1 presents relevant descriptive statistics. One of the municipalities was a regional center, and it had a large population relative to the three others. The three smaller municipalities have higher levels municipal revenue, mostly due to generous grants from central government. Estimates suggest that a merger would improve cost efficiency. Even when we assume that grants were not reduced as result of a merger, a consolidation would leave citizens in the smaller authorities with a net reduction in available resources: $\Delta Efficiency + \Delta Total\ revenue < 0$. In a referendum carried out in 2003, citizens were invited to state their opinion on the consolidation plan. As to be expected, voters in the larger polity supported the consolidation proposal by a narrow margin, while voters in the smaller municipalities turned it down.

Suppose that citizens express their policy preferences by voting for particular local parties, and that the party composition of local councils affects fee levels and spending priorities (for relevant studies, see Sørensen 1995; Borge 1995). If voters in two neighboring municipalities have identical party preferences, the party composition of a merged council will not change as a result of the consolidation. Since local public policies remain the same, party politics does not speak against consolidation. If voters in relevant municipalities support different parties, expected policy changes can induce voters and elected politicians oppose a merger. A previous study (Borge and Sørensen 2001) found that a 'negotiated party model' (that is based on each party's share of representatives in the council) explained budgetary allocations better than a 'dominant party model' (the political party that holds a majority position). Therefore, let p_{ij} denote party j's share of representatives prior to a potential consolidation, and let p_j^m denote the party's share of representatives in the larger polity m. Note that this variable is based on the consolidation projects identified by Statistics Norway. We calculate expected party change in municipality i: $\Delta Party_i = \sqrt{1/J_i \sum_j (p_j^m - p_{ij})^2}$ where J_i denotes the number of political parties in municipality i. In Table 3 below, we present descriptive statistics for $\Delta Party$ and other control variables.

Table 3 here

Consider the statistics for $\Delta Party$ presented in Table 3. The average value is 0.013 for municipalities with more than 5 000 inhabitants, and 0.080 for municipalities with less than 5 000 inhabitants. Most small municipalities will experience a significant shift of party composition as consequence of mergers. Party politics could be an additional factor explaining the greater resistance to consolidation in smaller municipalities. Appendix 1 provides data for $\Delta Party$ for the failed unification project addressed above.

The analyses include three additional controls. First: traditionally, support for center parties (the Liberal Party, the Christian Democratic Party of Norway, the Centre Party) has been associated with rural values and opposition to centralized governance (including opposition to Norway's membership in the European Union). Note that the center parties have more mayors and somewhat larger voter support in smaller municipalities as compared to larger authorities. We include center party mayor or vote share of these parties as controls in the relevant logistic regressions. Second: local identities and political participation may also be related to population size, and we use dummy variables for municipalities with more than 5 000 inhabitants as an additional control for preferences.

Finally, level of municipal revenue may also affect preferences for consolidation. Local government revenues are exogenous, as they comprise block grants and income taxes defined by the maximum tax rates. We use the official cost index to adjust these revenues for demographics, settlement pattern, social factors and diseconomies of scale. Adjusted municipal revenue measures local purchasing power in NOK per capita.⁷ Despite these "adjustments", Table 3 shows that small municipalities have 14 percent higher revenues than the (relatively) larger municipalities.

Empirical analyses

Let P^j denote the probability that a municipal mayor, a council member or a chief executive wants his or her municipality to merge with one or more of the neighbors. A first regression specification (I) assumes that promises on central government grants are not credible. We

⁷ The cost index is documented on the Web-site of the Norwegian Ministry of Local Government, see <http://odin.dep.no/krd/norsk/regelverk/rundskriv/016051-250064/index-dok000-b-n-a.html>

would not expect efficiency gains to affect consolidation preferences, while the size of a small community grant will be an independent component of the decision-making. The second model specification (II) assumes that these central government’s promises are credible: $\Delta Grant = 0$. Both specifications include $\Delta Party$ capturing the influence expected policy changes. Logistic regression models are used to test the above hypotheses (subscripts for municipalities have been suppressed):

Model specifications:

(I) $\log\left(\frac{P^j}{1-P^j}\right) = \alpha_0^j + \alpha_1^j \Delta Efficiency + \alpha_2^j \Delta Grant + \alpha_3^j \Delta Net\ revenue + \alpha_4^j \Delta Party + Controls^j$

(II) $\log\left(\frac{P^j}{1-P^j}\right) = \lambda_0^j + \lambda_1^j \Delta Efficiency + \lambda_2^j \Delta Total\ revenue + \lambda_4^j \Delta Party + Controls^j$

j = Mayors and deputy mayors, council members, chief executives

Each municipality has one chief executive, and we use conventional logistic regression estimation for this group. Local councils comprise two top politicians (mayor and deputy mayor) and several council members, and we apply logistic regression with random effects for municipalities. We also present two regressions using the share of council members preferring integration as response variable. In Table 4, we present estimates for these models.⁸

Table 4 here

Efficiency gains have positive effects on the probability of preferring a consolidation, and estimates are significant in most specifications. Mayors, council members and chief administrators are more likely to support merger when efficiency gains are large.

Organizational adoptions required to reap economies of scale cannot be made instantly, and merger effects occur gradually. Since efficiency gains affect consolidation preferences, it appears that decision-makers have a relatively long-term horizon. One standard deviation

⁸ We do not have data on consolidation preferences for all relevant municipalities. Missing data bias is potentially relevant for analysis of local council members (N=70). We specified a selection equation including all exogenous variables, and estimated the structural parameters conditional on observed responses. Since exogenous variables have no missing data, we can predict the probabilities of being included in the sample. Corrections for missing data bias did not affect our estimates significantly.

increase of cost efficiency (NOK 1 331 per capita) leads to an odds ratio⁹ of preferring consolidation of about 1.3-2.0. This means that the common pool effect examined in the Dixit-Londregan model does *not* cancel out efficiency gains related to consolidation. It appears that a sizable part of the grant declarations are credible. Further, we observe that $\Delta Grant$ has small and insignificant effects in model I specifications. Since expected grant gains have no influence on consolidation preferences, central government's assurances appear to be credible.

Why do local leaders believe that the national parliament (*Stortinget*) honor their grant obligations after consolidations? A majority of national politicians may consider the political benefits of sticking to the contract are larger than the costs, even in a situation where the municipal structure has been consolidated. Peripheral election districts have more parliamentary seats per voter than central regions, and it is therefore cheaper to "buy" a seat in these districts (Sørensen 2003). Voters in rural municipalities with small populations are also more prone to locate themselves at the center of the left-right axis. If voters living in small municipalities are more sensitive to reductions in grants than voters living in urban areas (swing voter hypothesis, Dixit and Londregan 1995), this could add to the political influence of peripheral districts even after widespread consolidations.

Consider model specifications II. $\Delta Total\ revenue$ has a significant and positive effect for both mayors and council members, which implies that inter-municipal revenue effects are important for politicians' consolidation preferences. When distributional gains increase one standard deviation (NOK 5 600 per capita), the odds ratio of preferring consolidation is about 2.3-3.6 for council members and 2.9 for mayors. Distributional effects appear to have little bearing for administrators' preferences. Efficiency appears to be the focal concern for administrative leaders. This suggests that local politicians' main concern is cost efficiency and local revenue sharing. Consolidation incentives are *not* blunted by lack of credible grant promises from central authorities.

⁹ In a logistic regression, the odds ratio is defined as $\Psi = \frac{P_j^* / (1 - P_j^*)}{P_j^{**} / (1 - P_j^{**})} = e^{\beta X}$ where P_j^* denotes the probability when the independent variable $X=X^*$, and P_j^{**} denotes the probability when $X=X^{**}$ and other variables in the regression equation are constant.

A further hypothesis proposes that changes in party support have negative effects on consolidation preferences. All but one of the logit coefficients in table 4 take expected negative signs, and the parameter has statistical significance for council members (column IV). For example, if $\Delta Party$ increases 0.10 units (= one standard deviation), the odds ratio of preferring consolidation is about 0.7. Lack of additional significant results among mayors/deputy majors could be due to the relatively small number respondents, and, measurement error as proposed consolidation projects do not necessarily match premises for response on questionnaire (see previous discussion). These estimates lend some empirical support to idea that political heterogeneity impedes voluntary consolidations.

In Table 1, we observed that leaders in smaller municipalities were less enthusiastic about mergers than politicians and administrators in large municipalities. According to Table 4, members of the executive board are somewhat less positive to unification as compared to other council members (not significant).¹⁰ However, it seems that politico-economic effects do not eliminate the effect of population size as such. This could suggest that local identities and values attached to miniature democracy with less than 5000 residents explain part of the resistance to mergers.

The strength of center parties is associated with less willingness to merge. Particularly for council members, we observe that the share of center party seats reduces the odds-ratio of preferring consolidation. Adjusted municipal revenue has a modest negative impact on council members preferences for merger, and little bearing on mayors' and administrators' consolidation preferences.

Conclusions

Norwegian local government comprises a large number of very small authorities. Cost efficiency can be improved by unifications, and central government has therefore designed a

¹⁰ We have also included an interaction term to test whether the effect of membership in the executive board differs between small and large municipalities (not reported). As to be expected, the negative effect of board membership in Table 4 was larger (more negative) for council members from small authorities. It could suggest that representatives from small authorities are more concerned with their political position.

framework to stimulate voluntary mergers. Efficiency gains are larger among authorities with a small population base. Somewhat surprisingly we observe that opposition to unifications are greatest among politicians and administrators in these small municipalities. The Coase theorem – i.e. lack of property rights - is a part of the explanation:

- 1) Generous grants from central government overcompensate diseconomies of scale in local government. Municipalities with small populations receive higher levels of government revenue per capita. By means for new legislation, central government has promised to maintain these grants for 10-15 years after a merger. Lack of central credibility appears not to be a major problem since the level of the small-community grants has little influence on merger preferences.
- 2) When local governments have different levels of (exogenous) revenue, the high-revenue municipalities go against merger with a poorer neighbor.¹¹ The Coase conditions do not apply as property rights to local revenues are nullified when consolidations have been implemented. This is a major reason for lacking local support for unifications in local government.
- 3) A consolidated local council may be composed of different political parties, and it may therefore pursue other policies than an existing council. Expected changes in party strength lead local politicians – particularly in small municipalities - to oppose a proposed consolidation. Again the theoretical background is lack of political property rights as defined by Coase.
- 4) Senior politicians are more likely to oppose a merger if they expect a lesser position and lower influence and prestige in a unified polity. We find some empirical support for this hypothesis, particularly among elected politicians from small municipalities.

After taking these factors into account, we observe that local politicians and top administrators in small municipalities remain more reluctant to merge than leaders in more populous municipalities. Elimination of revenue disparities would certainly further consolidations, but local leaders (and probably citizens) are prepared to pay a price (in terms of diseconomies of scale) to persist as independent polities.

¹¹ Since we have data for all exogenous variables used in Table 4, we can predict the probability that all particular mayors, council members or administrators will support merger. We also estimated the lowest probability (veto power) for each merger project (115 projects), and median probabilities are 0,11 (mayors), 0,18 (council members) and 0,30 (chief administrators).

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