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Privatization and cooperative management in the provision of public services in the rural United States

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Abstract

The provision of municipal services by private contractors and cooperative arrangements has become increasingly prevalent in the US. Building on previous studies in Illinois and Wisconsin we attempt to model the municipal decision of how local governments provide residents with town services. In order to test the applicability of past work to smaller towns we conducted a survey of the mostly rural state of New Hampshire in the summer of 2004. This paper will provide descriptive statistics of this New Hampshire survey. We will then begin to outline a possible decision-making model relative to population, location and other exogenous factors. Our analysis will use logit analysis to model the decision to contract out to for profit service providers.

1. Introduction

Town government is an institution that has been part of the American political system for longer and more consistently than nearly any other level of organization. Within this longstanding tradition of local control there are a wide variety of management paradigms. A somewhat recent development has been an interest in contracting out the provision of services in order to improve quality and reduce spending. The theoretical prospect of competitively bid service contracts providing superior quality at low costs is certainly attractive to all towns. The examination of this trend in rural districts has begun in a few places in the Midwest. This thesis will document the occurrence and utility of private contracting in New Hampshire towns as well as begin to examine predictors of the shift to contracting and its success.

1.1. The Prospect of Contracting Out

Towns are constantly seeking to maximize the services provided to a demanding electorate while maintaining a fairly constant and publicly scrutinized town budget. In the face of shrinking revenues, local governments are left with three major options [Deller, 1998]: (1) cut back on services offered; (2) eliminate the service completely and allow market forces to determine if the private sector provides the service; or (3) find more efficient ways to provide necessary services, via consolidation of local governments or cooperative agreements for service production. The fourth major option Deller provides, and the one of most interest, is retention of government responsibility in determining provision of the service while utilizing private contractors to reduce production costs. This fourth option is commonly lumped with the second under the

heading of privatization. This paper uses the term privatization to refer to municipal contracts with private firms not the elimination of public involvement in the decision to provide a service.

Despite the theoretical prospects of competitively bidding contracts these are not necessarily the impetus for awarding contracts. Rapid changes in needs, the seasonal nature of some services or the inability to make capital investments may make the flexibility of contracting more desirable than cost savings. In addition the specialization of the contract provider may provide improvements in quality. On the other hand, many services provided by the public sector have not been traditionally profitable. The same small population that makes contracting to a specialized provider attractive may hamper profitability and discourage bids. There is also some fear that once a contract is initiated a town may have very little recourse to deal with suddenly escalating prices or very poor service. The utilization of contracts also may place an additional burden on towns to monitor performance and adherence to the agreement by the provider.

1.2. Methods

This paper will use data gathered in the summer of 2004 through a mail survey targeted at officials in each of the 234 municipalities in New Hampshire. The survey followed a standard protocol [Dillman, 2000] and produced usable survey data covering nearly sixty percent of New Hampshire towns. According to 2003 Office of Energy and Planning Statistics this sample also encompassed just over sixty percent of the total state population. Our methods follow similar work done in Illinois and Wisconsin. The survey targeted town managers and chairs of the board of selectman as the primary contacts. Only one completed survey was requested from each town and data was collected on the fiscal trends affecting the town, decision-making processes and town employees in addition to the information on services. The responses provided a great deal of heterogeneous information due to the unique nature of individual towns. These responses and comments will serve to inform the qualitative descriptions of current management strategies. The information on service provision was taken in a more uniform manner in order to enable quantitative analysis of the decision to contract out. The survey format of using both discrete and open-ended responses allows for both quantitative and qualitative descriptions of municipal service decisions.

1.3. The New Hampshire Case Study

The state of New Hampshire is unique in a number of aspects including its small size, strong municipal government and rural demographics. Additionally the time period over which this study was done is a period of large state deficit and general economic downturn. This is different than the context of similar studies, which occurred prior to a broad economic downturn after 2000. New Hampshire also represents the New England region as opposed to previous studies in the mid-west. Politically the state has had long term fiscally conservative majorities in both chambers of the state house and has a reputation for smaller government and somewhat libertarian ideals. The strength of local government in New Hampshire rests much more at the local level than with county

government. This prevalence of small political units is often cited as an impediment to regional planning and cooperative action. Despite the relatively diminutive size of the state in both population and land area a great diversity of towns exist in everything from predominant industries to access to urban centers.

2. Literature Review

Privatization has been defined in a number of ways. Kolderie distinguishes between the privatization of provision and privatization of production [Kolderie, 1986]. Provision entails decisions about how much and what kind of service will be provided, while production is making those decisions a physical reality. Complete privatization of provision as well as production unearths issues of equity and local control that may be especially inflammatory in rural areas [Kolderie, 1986]. We wish to discuss only the privatization of production of services.

Privatization of production of services has also been commonly described as “contracting out” [Hirsch, 1995]. This contracting process allows the municipality to use competition in the bidding process to drive down costs. Notable problems with this process include the lack of viable bidders for a contract and the inability of a municipality to negotiate a fair contract. In some cases the group winning the contract may be within another branch of government or even in the same municipality as is the case when a public works department competes against private corporations for a service contract.

A theoretical justification for privatization has been widely accepted in the literature [Ostrom, Tiebout and Warren, 1961]. The basic tenets describe a government that becomes smaller and more responsive to citizen needs. The smaller units of government essentially provide a multitude of service “bundles” at differing prices and allow citizens to vote with their feet by moving to a location with the right mix of services. Others advocate privatization on the grounds that politicians cannot make strictly efficient decisions [Boycko, Shleifer and Vishny, 1996]. This theoretical context blends nicely with other general theories of market efficiency, and it has become increasingly popular with federal government. Whether this popularity is driven by empirical evidence is debatable.

Some authors have shown the predictions of the public choice model to be inaccurate in real world applications. Lyons and Lowery tested five propositions of public choice theory and found none of them to be significantly different in a fragmented government structure as opposed to a consolidated one [Lyons and Lowery, 1989]. A wider range of studies has addressed the fiscal aspects of privatization, but they too are mixed. A number of authors point to a selection bias in examining cities that have successfully privatized, because it is unlikely they would have contracted out unless they knew prior to signing that they would save money. A more valid study of privatization may be the census approach, which shows that contracting out is currently a very small percentage of municipal budgets [Hirsch, 1995].

Although the privatization decision process has been studied for quite some time, the majority of the work has focused on urban centers. While some of this may be transferable to smaller scales, it is clear that special conditions must arise at the low population densities found in much of the U.S. The lack of competitive bidders, inability of small governments to enforce contracts, and multiple social roles of municipal employment all change the decision making process for smaller governments. At the same time, federal trends have continued to push service production to smaller levels of government, which may be causing disproportionate fiscal crisis in rural areas [Deller, 1998]. As cost savings are the most common rationale for pursuing privatization, it is not surprising that this fiscal pressure has kept it on the political agenda. Recent work has been done within states to look at various mechanisms municipalities are using to reduce production costs [Deller, Hinds and Hinman, 2001]. In addition to fiscal stress as a mechanism, political ideology and patronage have been shown to influence the privatization decision [Chandler and Feuille, 1994; Lopez-de-Silanes, Shleifer and Vishny, 1997].

3. Methods

3.1. New Hampshire Municipal Services Survey Design and Structure

Our survey was designed to closely follow previous surveys in order to increase comparability. Some minor changes included the addition of a question to determine the year a service was started and a question about population change. Any changes were inserted and the order of questions was not changed from previous surveys. The final survey is in Appendix I. The survey is long and detailed creating some concern about respondent fatigue. This was somewhat mitigated by the professional positions of the sample. The survey also incorporates the most important questions for this project at the front end of the survey.

3.2. Sample Selection

In order to directly target municipal decision makers we worked with the New Hampshire Local Government Center (NHLGC) to create a sample. The NHLGC provided a contact list of municipal officials for each of the 234 local governments in the state. From this list one person from each town was selected with a preference given to the town manager or administrator. In cases where smaller towns had no staff other than an administrative assistant the survey was directed to the chair of the board of selectmen. The survey also asked for the respondent's name and position. In larger towns there was a tendency to pass the survey around in order to find the most appropriate respondent. Targeting one individual initially helped to keep the survey from being lost in the shuffle. We did not differentiate between responses from elected and hired officials although we did record that data.

Of the 234 towns surveyed 138 provided usable response and an additional dozen respondents with largely incomplete or blank surveys. Our mailing list had only one inaccurate or undeliverable address. Our response rate of 59 percent was only slightly

lower than similar surveys. The prevalence of small and unstaffed towns in our sample would seem to depress response on such a long survey but the support of the NHLGC and their many contacts yielded a more than satisfactory response. For ease of discussion towns with fewer than 1000 residents are considered small, those with 5000 or greater are referred to as large and the middling group as medium. The sample had a mean population of 5675 and a median of 2926 both of which correspond closely to the same statistics for the state as a whole.

3.3. Statistical Analysis of Survey Data

We construct three statistical models using logit regressions. In the first statistical model we determine the predictive capacity of a number of demographic factors on the fiscal stress rating of the respondents. Our second regression uses measures of overall fiscal stress, ideology and demographic data to model current privatization in a polled data set of eight services commonly contracted out in towns of all sizes. Our third regression aims to model respondent stated future predicted changes in service management using current fiscal stress, ideology and demographic data. We try to provide a more accurate model of overall fiscal stress, a model of current private contracting and a set of indicators for future private contract adoption.

4. Descriptive Results of the Municipal Survey

4.1. Community Status and Outlook

The degree to which municipalities pursue cost saving measures is in part due to their current fiscal status as well as their perceived future situation. Survey respondents were asked to place their town in one of five categories of fiscal health. While the responses to this question may be somewhat subjective they do in fact capture the perspective of key officials and helps shed light on their decision making process. It is part of the mental framework these officials use in evaluating the many possible options for service production.

The most common response describing the current situation for towns of all sizes was “adequate revenue but not able to expand services” (Table 1). Twelve of the one hundred and thirty eight respondents chose not to answer the question, many citing the overly simplistic categories as their reason for abstaining. Towns of less than 1000 people (n=27) seem to have the most optimistic view of their situation while medium and larger towns described inadequate revenues much more frequently. This might indicate some bias caused by elected officials being the more frequent respondents in smaller towns compared to professional city managers in larger towns. Acknowledging even tacitly the need for more revenue or services is generally an unpopular political position for those facing reelection.

Table 1

Rate the current financial condition of your municipality.	Town Population			Total
	<1000	1000-4999	>5000	
Adequate Revenue, Reducing Tax	5	10	4	19

Adequate Revenue, Not Expanding Services	17	30	19		66
Inadequate Revenue, Not Reducing Services	3	16	9		28
Inadequate Revenue, Reducing Services Some	1	5	5		11
Inadequate Revenue, Reducing Services Greatly	1	1	0		2
-----+					
Total		27	62	37	126

What are the financial prospects for your municipality for the next five years?	Town Population				Total
	<1000	1000-4999	>5000		
-----+					
Adequate Revenue, Reducing Tax	4	10	4		18
Adequate Revenue, Not Expanding Services	16	27	18		61
Inadequate Revenue, Not Reducing Services	4	14	5		23
Inadequate Revenue, Reducing Services Some	1	9	8		18
Inadequate Revenue, Reducing Services Greatly	1	0	1		2
-----+					
Total		26	60	36	122

In the next five years, will your municipality:	Town Population				Total
	<1000	1000-4999	>5000		
-----+					
Increase Privatization	1	4	10		15
Decrease Privatization	0	3	0		3
Remain the Same	23	37	14		74
Don't Know	4	24	15		43
-----+					
Total		28	68	39	135

The respondents (n=122) gave a slightly more pessimistic view of the next five years. Once again the larger towns seemed to be the most worried about cutting services due to inadequate revenues (Table 1). Although the majority of towns foresaw adequate revenues in the future, more than ten percent saw some reductions in services coming. The trends by town size continued to show larger towns as the most concerned about inadequate revenues. The survey next asked for information about the actual services provided before continuing with additional questions about the respondents' perspective. Information about the services provided will be presented in detail in the next section.

Most towns predicted the same level of privatization as is currently employed, with small and medium towns in particular predicting 'remain the same'. Larger towns responded quite differently with the largest response being unsure followed by no change. Large towns also had a much higher percentage foreseeing increased privatization with one quarter of the group marking this category. By comparison less than six percent of the responses in either small or medium towns were 'increase privatization'. This seems to parallel the response to the first two questions where larger towns were particularly concerned about inadequate revenues. When asked to write in the services most likely to be privatized the most common response was janitorial services. This was followed closely by building/grounds maintenance, payroll administration, and street repair/maintenance.

5. Logistic Regression Results

5.1. Correlation of fiscal stress and ideology to current management

Our hypothesized model includes fiscal stress, ideology, demographics and geography as the key factors affecting the privatization decision. These were regressed against a pooled dependent privatization choice variable. A one indicates that a private contractor provides the service and a zero that another production method was employed. The 826 observations included eight services: solid waste disposal, recycling, street sweeping, parks maintenance, janitorial, building/grounds maintenance, tax assessing and title maintenance. This largely disparate set of services has a generally low level of necessary oversight, unlike school or police services. They also are generally well split between private contract and other service methods.

A wide variety of variables were examined to try and capture the four key areas of influence in four specific variables. The interrelated nature of these variables makes collinearity a problem with many of the available variables yet such a complex decision is unlikely to be adequately modeled with so few variables. Using our theoretical model we narrowed the pool of variables considerably. We selected only one variable in each of the four areas we hypothesize to have an effect on the privatization decision; fiscal stress, ideology, demographics and geography. The goal of this research is to shed light on the direction of influence of key factors for comparison against the many theoretical models that exist. The following is a description of the four variables in our model and their hypothesized direction of influence.

Fraction of 2004 Republican Gubernatorial Votes - Conservative ideology favors smaller government so contracting out services is a political goal. This should create a positive sign as constituents have an ideological preference for private contracts[Lopez-de-Silanes, Shleifer and Vishny, 1997].

Fiscal Stress Interaction Term – This is a multiplication of the stated fiscal condition and the local tax rate. Current stated fiscal condition is translated into a one for inadequate revenues and a zero otherwise. Local tax is used to reflect the pressure of non-school spending on the budget and constitutes a more direct connection with the services in our pool than the overall tax rate. The theoretical hypothesis that privatization provides a relief of fiscal stress would indicate a negative relationship between high current stress and past private contracting. This is our attempt create a variable to reflect the fiscal stress hypothesis put forward by others[Deller, 1998]. The two-part nature of this variable incorporates the decision to consider with the decision to contract-out [Chandler and Feuille, 1994].

Tax Commitment – This measure of budget size incorporates to some degree population, income and government size. We expect these larger towns to have more resources to explore the privatization option and more savings and bids due to their scale. At the same time their size may make some services cost effective to provide in house where smaller towns could not handle capital costs. We hypothesize a slightly positive relationship.

Geo South Dummy – The variable is a one for Rockingham, Hillsborough and Cheshire counties, which form the southern border with Massachusetts, and a zero for all other counties. We hypothesize that the more densely populated three southernmost counties in New Hampshire have better access to private contactors and are more likely to receive competitive and cost saving bids making this relationship positive.

Table 2 – Variable Summary and Logit Model of Current Privatization

Variable	Anticipated Sign	Mean	Std. Dev.	Min	Max
fractrepub	Positive	.4879706	.0880161	.25121	.64516
Qlfiscalst~r	Negative	2.225652	3.558638	-.35	24.53
taxcommit	Positive	1.04e+07	1.60e+07	79873	1.41e+08
geosouth	Positive	.3913043	.4898202	0	1
Logit estimates			Number of obs	=	826
			LR chi2(4)	=	31.06
			Prob > chi2	=	0.0000
Log likelihood = -492.54967			Pseudo R2	=	0.0306
pooledpriv~e	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
fractrepub	1.947989	.9092873	2.14	0.032	.165819 3.73016
Qlfiscalst~r	-.0726433	.0255089	-2.85	0.004	-.1226399 -.0226467
taxcommit	-2.15e-08	7.06e-09	-3.04	0.002	-3.53e-08 -7.64e-09
geosouth	.2009179	.159824	1.26	0.209	-.1123314 .5141672
_cons	-1.487301	.4649559	-3.20	0.001	-2.398598 -.5760045

5.2. Results of our model of current management

The results of the logit estimation procedure are presented in Table 2. The ideological variable is significant and has the expected sign. The fiscal stress variable also has the correct sign and is significant at the ninety-nine percent level. The influence of total tax commitment is nearly zero, which corresponds somewhat to the hedged prediction made above. And finally the geography variable has the right sign but is ambiguous in light of its wide confidence interval. The overall model is significant but provides very little explanation of the variation in our data set.

The data used in this model was taken concurrently and does not allow us to really show a causal relationship for any of these factors. Never the less, finding a significant relationship in three of the four variables provides a good deal of support for the theoretical influence of fiscal stress and ideology. Interestingly these two influences on the privatization decision come from somewhat opposing directions. The ideological influence is significant with fiscal stress and tax commitment held constant. This seems to imply a political influence separate from cost-savings and economic concerns.

The interpretation of the fiscal stress variable is less straightforward. Increased fiscal stress is occurring in communities that have privatized fewer services. Ideological supporters of privatization would posit that the pursuit of private contracts has lowered fiscal stress in early adopters. Conversely there may be some aspect of lower fiscal stress that allows municipalities to pursue private contracts. The use of stated fiscal stress, as a piece of this interaction variable may also be problematic due to respondent bias. That bias provides us with fiscal stress as viewed by the decision-making officials, which we defend as a more useful measure in the privatization decision than more abstract variables. Nonetheless a possible interaction between stated fiscal stress and ideology must be considered.

5.3. Relationship of fiscal stress, experience and ideology to predicted changes

In order to test the predictive capacity of our last model we again use a logit regression with the same independent variables as the previous model and adding a variable to capture experience with private contracts. The answer to the question of how privatization will change in the municipality over the next five years serves as the dependent variable with 1 for an increase in privatization and 0 for less or the same. The new experience variable looks at the total number of services privatized in our previous index of eight. A dummy variable was created with zero equal to one or no services privatized (below average) and a one for all other cases

Fraction of 2004 Republican Gubernatorial Votes - Conservative ideology favors smaller government so contracting out services is a political goal. This should create a positive sign as constituents have an ideological preference for private contracts.

Fiscal Stress Interaction Term – In this model we expect that a measure of fiscal stress in the near future should positively influence the rate of privatization. Increasing budget pressure is expected to push towns to find alternative cost saving measures. This variable incorporates the stated fiscal situation for the next five years.

Tax Commitment – This measure of budget size incorporates to some degree population, income and government size. We expect these larger towns to have more resources to explore the privatization option and more savings and bids due to their scale. At the same time their size may make some services cost effective to provide in house where smaller towns could not handle capital costs. We hypothesize a slightly positive relationship.

Geo South Dummy – We expect this to continue to have positive influence as in the previous regression.

Experience Dummy – This looks at the index in our last model and assigns a 0 to towns who have privatized one or none of the eight services in the index. This division corresponds to above and below average experience and seeks to capture the learning that may be occurring with these new arrangements.

Table 3 – Variable Summary and Logit model of future privatization

Variable	Anticipated Sign	Mean	Std. Dev.	Min	Max
fractrepub	Positive	.4879706	.0880161	.25121	.64516
Q2fiscalst~r	Positive	2.485	3.722251	-.35	24.53
taxcommit	Positive	1.04e+07	1.60e+07	79873	1.41e+08
geosouth	Positive	.3913043	.4898202	0	1
expertotal~m	Positive	.5072464	.5017688	0	1
Logit estimates			Number of obs	=	95
			LR chi2(5)	=	8.24
			Prob > chi2	=	0.1437
Log likelihood = -37.31763			Pseudo R2	=	0.0994
Q4Privatel~m	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
fractrepub	-3.277978	3.073316	-1.07	0.286	-9.301568 2.745611
Q2fiscalst~r	-.0323457	.1080034	-0.30	0.765	-.2440285 .1793371
taxcommit	5.10e-08	2.32e-08	2.20	0.028	5.52e-09 9.65e-08
geosouth	.4748847	.6018006	0.79	0.430	-.7046228 1.654392
expertotal~m	.6580231	.6257437	1.05	0.293	-.5684121 1.884458
_cons	-1.106163	1.550808	-0.71	0.476	-4.145691 1.933365

5.4. Results from the future privatization model

This model gives us so little explanatory power that the absence of any strong relations is notable in and of itself. The results of the chi-squared test for this model do not reject the possibility of all the independent variables having no effect. This is not terribly surprising due to the much smaller data set ($n = 95$) and increasing uncertainty with questions regarding future choices. The confidence intervals range above and below zero making any inferences about the direction of influence highly speculative. The exception is the tax commitment variable, which like our first model is near zero and has no real marginal effect on the outcome of the model. Despite rather poor model performance these variables may suffer more from the small data set than incorrect specification.

6. Conclusions

We have attempted to combine some measure of fiscal stress with other characteristics influencing the privatization decision. As a result we have turned up little by way of a mechanical model for this institutional decision. Despite a fair amount of literature support for ideology and fiscal stress as determinants we find little support for this in our sample. Nor have our own additions of geographic location and experience with contracting provided real clues as to independent factors influencing municipal decisions. While New Hampshire towns are stubbornly independent it is hard to believe that there is so little pattern in such a common decision. Despite trying to control for ideology and geography we have found little indication that fiscal stress, as we have

specified it, has much influence on the decision to privatize municipal services in the future.

Our relative lack of success in modeling future privatization in our second model must be considered against a clear relationship between current conditions and management decisions demonstrated in our first model. Existing private contracts show a clear relationship with ideology and fiscal stress. The existence of a relationship between low current fiscal stress and increased privatization does not necessarily support the theoretical cost savings that we have proposed. The use of union contracts to increase political patronage might indeed be analogously considered for private contracts. The possibility that under low fiscal stress politicians may indeed be increasing patronage by the awarding of possibly lucrative private contracts could also be explored. This second proposal for the relationship of fiscal stress and privatization is put forth only to demonstrate other possible explanations for our findings.

We have proposed a fiscal stress interaction variable in order to include the nebulous influence of fiscal stress on municipal management decisions. The influence of this variable in our first model of existing decisions justifies further exploration and refinement in future studies. A longitudinal study may also provide a more useful data set for the second model than our use of predicted future privatization. Despite some limitations we have shown both ideology and fiscal stress play a role in determining where privatization occurs. Accordingly future work would benefit from incorporating both political and economic variables into examinations of the privatization decision at the municipal level.

References

- Boycko, M., A. Shleifer, et al. (1996), A theory of privatization, *The Economic Journal*, 106, 309-19.
- Chandler, T. D. and P. Feuille (1994), Cities, unions, and the privatization of sanitation services, *Journal of Labor Research*, 15, 53-71.
- Deller, S. C. (1998), Local Government Structure, Devolution, and Privatization, *Review of Agricultural Economics*, 20, 135-154.
- Deller, S. C., D. G. Hinds, et al. (2001). Local Public Services in Wisconsin: Alternatives for Municipalities with a Focus on Privatization, Univ. of Wisc. Madison: 1-19.
- Dillman, D. A. (2000). Mail and Internet Surveys. The Tailored Design Method. New York, John Wiley & Sons.
- Hirsch, W. Z. (1995), Contracting out by urban governments: A review, *Urban Affairs Review*, 30, 458-472.
- Kolderie, T. (1986), The two different concepts of privatization, *Public Administration Review*, 46, 285-91.
- Lopez-de-Silanes, F. A., A. Shleifer, et al. (1997), Privatization in the United States, *RAND Journal of Economics*, 28, 447-471.

Lyons, W. E. and D. Lowery (1989), Governmental fragmentation versus consolidation: five public-choice myths about how to create informed, involved, and happy citizens, *Public Administration Review*, 49, 533-543.

Ostrom, V., C. M. Tiebout, et al. (1961), The organization of government in metropolitan areas: a theoretical inquiry, *The American Political Science Review*, 55, 831-842.