Fiscal Stress and Productivity Improvement: Local Government Managers' Perspective

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Managers may use fiscal stress to increase productivity.

Introduction

Budgeting and productivity practices in local government appear to be moving toward greater emphasis on enhancing productivity (see Cope, 1987; O'Toole and Stipak, 1988; and Poister and Streib, 1989). In their study of the increasing use of and enthusiasm for newer management tools, Poister and Streib (1989, p. 247) conclude that municipal management culture is shifting toward greater emphasis on "performance, managerial direction and control, informed decision making, and professionalism." How important is this movement?

Perhaps the crucial test of the practical importance of productivity improvement is the role it plays under difficult conditions of fiscal stress, one of the chief external forces important for local government (McGowan, 1984, p. 320). Fiscal stress could act as a major obstacle to productivity improvement efforts, constricting resources potentially available for innovation and thereby leaving little role for productivity improvement. Conversely, fiscal stress could stimulate development of productivity-oriented management tools to aid managers in coping with fiscal stress. Thus, the use of management tools could become an increasingly important response to fiscal difficulties, and may in many cases obviate the reduction of services.

The evidence regarding whether fiscal stress obstructs or stimulates productivity improvement in local governments is inconclusive. On one hand, McGowan and Stevens (1983b, p. 265) indicate that innovation at the local government level, particularly in fiscal and internal matters, may be far more difficult under fiscal stress. Support for this view includes May and Meltsner's study of how ten San Francisco Bay Area organizations responded to California's Proposition 13. This study found that the tax limitation measure placed many of the organizations in "a vicious circle of declining public confidence/revenue gaps/reduced effectiveness/declining public confidence" (1981, p. 177). On the other hand, MacManus (1984, p. 58) sees retrenchment as a potential catalyst for various productivity improvement efforts, particularly for budgeting. Supporting MacManus are studies showing that fiscal stress has prompted local governments to adopt productivity improvements (Greiner, 1986, p. 82), more analytic budgeting approaches (Cope and Grubb, 1982, p. 154), and more sophisticated revenue forecasting techniques (MacManus and Grothe, 1989).

This article examines the role of productivity improvement under fiscal stress, particularly fiscal stress brought on by passage of a tax limitation measure. Based on a conceptual model that views productivity improvement as just one strategy for addressing fiscal imbalance, this study attempts to clarify the relationship between fiscal stress and productivity improvement. This study uses data from surveys of managers of local governments affected by tax limitation to investigate their perceptions of the efficacy of productivity improvement and other strategies for addressing a revenue–expenditure gap, and also examines factors that might affect the perceived utility of these strategies. The findings suggest that fiscal stress may foster greater emphasis on productivity enhancement.

Conceptual Model

Figure 1 depicts the conceptual model underlying this study. The large dashed box shows the four specific ways in which local governments respond to fiscal stress brought on by a tax limitation measure. These four variables are the extents to which the jurisdiction reduces services, raises revenues, improves productivity, and shifts service provision to others (load-shedding). A review of previous discussions of fiscal stress in local government identified these four variables as the major options for restoring fiscal balance (see Wolman, 1980; Honadle, 1984; and Poister and McGowan, 1984).

The conceptual model assumes that several considerations influence how local governments respond to fiscal stress. One consideration is the jurisdiction's revenue situation. Some cutback management literature suggests that variations in responses can result from differences in the extent of fiscal stress experienced by local governments. For instance, McGowan and Stevens (1983a, p. 134) argue that managers will innovate most under conditions of extreme resource abundance or deprivation. In an examination of how financial stress affects budgeting and financial management, Schick (1980) indicates that the strategies local governments use to address fiscal stress change according to the degree and frequency of fiscal stress. Based on these views, jurisdictions experiencing considerable fiscal stress are more likely to initiate productivity improvement efforts than their less fiscally stressed counterparts.

Figure 1. Factors Affecting Local Government's Response to a Tax Limitation Measure

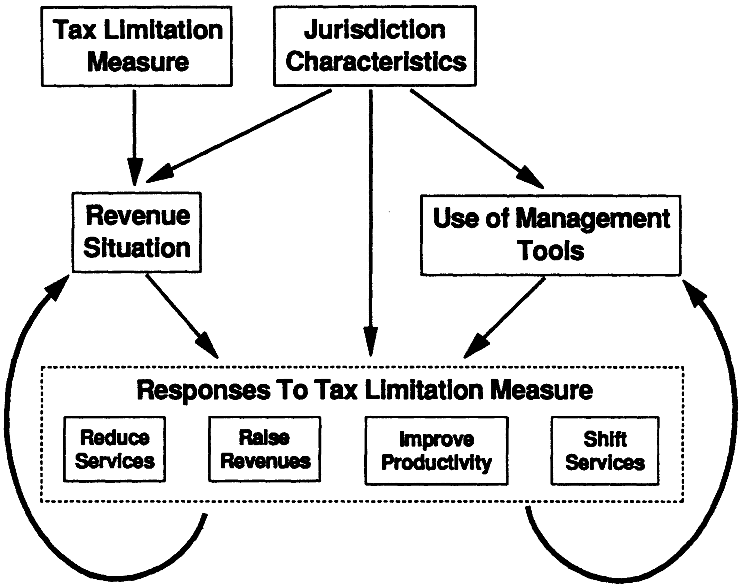


Figure 1 shows that local governments' responses to a tax limitation measure are affected by the current use of management tools. A nationwide study of local government budgeting practices (O'Toole and Stipak, 1988, pp. 8–9) found a relationship between jurisdictions' use of sophisticated budget formats and their use of other productivity improvement tools. Local governments that used output-oriented budget formats (such as program formats) tended to be at the forefront in using performance measures and revenue and expenditure forecasting methods. Given this finding, jurisdictions that already use some sophisticated management tools, compared to jurisdictions that rely less on such tools, may be more inclined to pursue productivity improvement efforts.

Figure 1 also shows that other jurisdiction characteristics can affect responses, both directly and indirectly. For example, previous research indicates that larger local governments engage in more productivity improvement efforts and make greater use of sophisticated management tools (Poister and McGowan, 1984, p. 390; O'Toole and Stipak, 1988, p. 8). Figure 1 shows that such jurisdiction characteristics directly affect local government responses to tax limitation and indirectly affect these responses through their impact on the jurisdiction's use of management tools and on the revenue situation.

The feedback loops in the model indicate that, over time, several reciprocal effects can occur. The government's response to the tax limitation measure eventually affects the revenue situation, perhaps with the intended effect. Changes in the use of management tools may also eventually result, especially if productivity improvement efforts constitute part of the response.

Study

Background to the Study. The passage in 1990 of Oregon's Ballot Measure 5, a property tax limitation measure, provided an opportunity to examine local governments' responses to fiscal stress. Because this measure does not include a limit on assessment increases, it is a "nonbinding overall property tax limitation" (see Joyce and Mullins, 1991, p. 242). Ballot Measure 5's specific features include the following:

For all Oregon cities, counties, and special districts (except school districts), the imposition of an immediate 1 percent property tax rate ceiling.

For all Oregon school districts, a five-year phased reduction in the allowable property tax rate, resulting in a .5 percent rate ceiling.

An obligation for the state government, during this five-year period, to reimburse school districts annually for the property tax revenues they lose due to the reduction in their property tax rate ceiling.

Hence, Ballot Measure 5 increased the degree of fiscal stress confronting many local governments in Oregon.

CEO Surveys. During 1991, the authors collected information on local government managers' perceptions of Ballot Measure 5's impact on their agencies, their agencies' responses to the measure, and the other factors in Figure 1. This reliance on managers' perceptions as a major source of data is found in many public productivity studies (see Ammons and King, 1983; Poister and McGowan, 1984; Poister and Streib, 1989; and Jreisat, 1990). Two survey questionnaires, one for Oregon school districts and the other for Oregon cities and counties, were used in this study. These questionnaires were pretested and mailed to the superintendents of all 293 Oregon school districts and to the top executives of all 274 Oregon cities and counties. Respondents to the city/county questionnaire included finance/budget directors or officers (25 percent), city/county managers or administrators (26 percent), recorders (28 percent), treasurers (3 percent), mayors (5 percent), and other officials (13 percent). A total of 213 school district questionnaires and 221 city/county questionnaires were returned, for response rates of 73 percent and 81 percent, respectively. The responding jurisdictions are representative of the size and regional variation of Oregon's school districts, cities, and counties. Most of these agencies are fairly small, with median budget sizes of $2.5 million for the school districts, $1.2 million for the cities, and $21 million for the counties.

Variables. The actual measures used for the variables in the conceptual model were as follows. The questionnaire asked the respondents to rate the use they anticipated their jurisdictions would make of each of the four responses for improving their fiscal situation. The revenue situation was measured by a questionnaire item asking respondents to rate the total effect of Ballot Measure 5 on their jurisdiction's revenue. The use of management tools was measured by an equally weighted scale created from five questionnaire items concerning the jurisdictions' use of specific management tools. This progressive management scale increases according to whether the jurisdiction uses output-oriented budget formats, strategic planning, workload measures, efficiency measures, and effectiveness measures. Finally, the type of jurisdiction (city, county, or school district) and the size of the budget serve as the measures of jurisdiction characteristics.

Responses to Tax Limitation Measures

City and county administrators placed approximately equal emphasis on three of the four possible responses to fiscal stress: reducing services, raising revenues, and improving productivity. Of the managers surveyed, 34 percent, 39 percent, and 34 percent indicated they relied a fair amount or more on these three strategies, respectively. School district administrators relied most frequently on reducing services (59 percent), followed by improving productivity (44 percent) and raising revenues (28 percent). Shifting services was the least popular response for both city/county administrators (11 percent) and for school administrators (22 percent). The lower reliance of school administrators on raising revenues and their greater reliance on reducing services reflects the tightly constrained fiscal situation in which Ballot Measure 5 has placed school districts. For all types of agencies, productivity improvement ranks as one of the top responses.

These results agree with earlier studies that found that local government managers have a high regard for productivity improvement as a strategy for helping their jurisdictions respond to fiscal stress. For instance, Poister and McGowan's nationwide survey of local government managers found that managers viewed productivity improvement and the development of alternative revenue sources as the most important strategies for preserving fiscal balance. Also, Greiner (1986, p. 82) cites a study of seventeen Massachusetts local governments that found productivity improvement to be the second most common response of those jurisdictions' police and fire departments in the aftermath of that state's property tax limitation measure (Proposition $2\frac{1}{2}$).

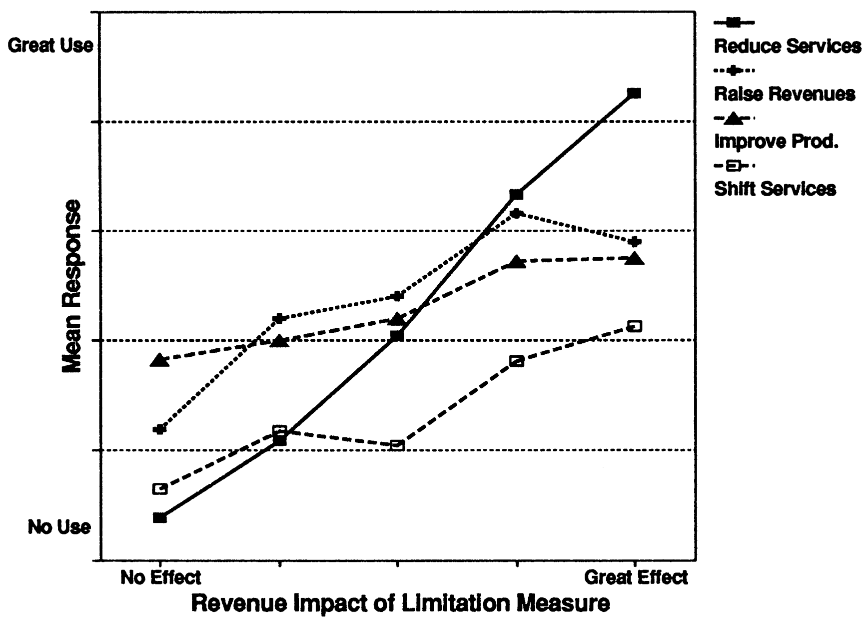
For cities/counties and for school districts, the correlations among the four response measures are positive, but low to moderate (.2–.4). Thus, some tendency exists for managers dealing with fiscal problems to respond by using several of these strategies.

Impact of Revenue Situation and Other Jurisdiction Characteristics on Managers' Responses

The results for cities/counties and for school districts show positive correlations (.2–.6) between the revenue impact variable and the four response variables, with the strongest correlations for service reduction. Figure 2 depicts these relationships for the city/county data by graphing the mean response scores for agencies facing different levels of revenue impact. Service reduction stands out as having the strongest relationship. In short, although managers facing adverse revenue effects tend to use more of the major strategies, as fiscal stress reaches high levels, managers rely especially strongly on service reduction.

Past research indicates that budgetary and productivity practices vary by the size of the local government. Studies of local government managers and finance officers have found that larger jurisdictions make greater use of more sophisticated budgeting and productivity tools, including output-oriented budget formats, productivity measurement, financial forecasting (O'Toole and

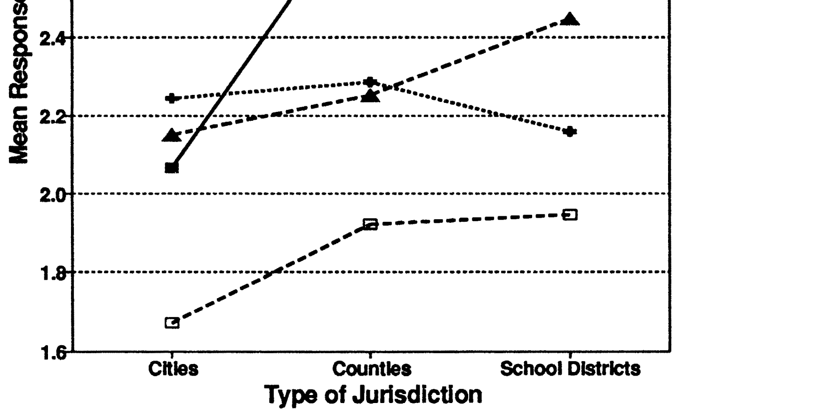
Figure 2. Relationship of Severity of Revenue Impacts to City and County Administrators' Responses to Tax Limitation Measure



Stipak, 1988, p. 8), performance auditing (Jreisat, 1990, p. 325), and productivity improvement (Poister and McGowan, 1984, p. 390). Analysis of correlations and of comparison of means from this study shows a consistent but weak tendency for larger jurisdictions to make more use of all four of the strategies, especially service reduction.

Past research (O'Toole and Stipak, 1988, p. 8) has found evidence that productivity practices vary also by the type of local government. Figure 3 compares the use of the four response strategies by cities, counties, and school districts. Cities are much less inclined to reduce services than counties and school districts. For counties and school districts, reducing services is by far the most popular strategy, but for cities it is the least popular strategy except for shifting services. Shifting services is also more popular for counties and school districts than for cities. The lower emphasis city officials place on service reduction or shifting may stem from officials' lower perceived levels of fiscal stress. Improving productivity is most popular among school districts, perhaps reflecting the high level of fiscal stress and the labor-intensive nature of education.

Figure 3. Relationship of Type of Jurisdiction to Use of Alternative Strategies



Use of Management Tools and Their Impact on Managers' Responses

Although these local governments make substantial use of modern management tools, current use is uneven. Half of the school districts use strategic planning, compared to about one-quarter of the cities and one-third of the counties. On the other hand, none of the school districts use output-oriented budget formats (state law requires school districts to use line-item budgets), compared to one-quarter of the cities and one-half of the counties. The use of workload, efficiency, and effectiveness measures is more consistent (36 to 64 percent) across all jurisdictions. Of these three types, effectiveness measures are used most frequently (50 to 64 percent).

The most commonly cited management and productivity improvement tools that managers of cities/counties and school districts expected to use were revenue and expenditure monitoring, revenue and expenditure forecasting, and efficiency measures. Other tools that managers expected to use more often included effectiveness measures, workload measures, and strategic planning.

To investigate the importance of these management tools in managerial responses to fiscal stress, we first examined whether managers in agencies that use more progressive management tools differ in their overall levels of the four responses to fiscal stress. The results for cities/counties and for school districts show weak positive correlations between the use of tools and the use of the response strategies. Comparisons of means using the city/county data suggest that managers of progressive management agencies rely less on service reduction and more on productivity improvement, but this finding is not replicated with the school district data. The use of output-oriented budget formats is associated with more vigorous use of all four response strategies, and for cities and counties, the biggest and most statistically significant ($p < .01$) difference associated with output-oriented formats is greater emphasis on productivity improvement. This relationship between output-oriented formats and productivity improvement is consistent with the finding from a nationwide study of local government finance officers that jurisdictions on the forefront of productivity measurement and financial forecasting tend to use these types of budgets rather than exclusively line-item budgets (O'Toole and Stipak, 1988, p. 8).

The second analysis examined whether the use of management tools interacts with fiscal stress in affecting managers' responses—that is, whether managers in progressive management agencies tend to react differently to different levels of fiscal stress. One possible hypothesis is that managers in progressive management agencies would be less likely to respond to increasing fiscal stress simply by reducing services because their use of management tools would help them identify alternatives. In fact, we found similar correlations between the revenue impact variable and the service reduction variable for progressive and nonprogressive management agencies. Overall, we found little evidence of a relationship between the use of management tools and the effect of fiscal stress on managers' responses. Surprisingly, greater use of management tools does not predict less tendency to reduce services or more tendency to improve productivity at increasing levels of fiscal difficulty.

Estimation of Model of Determinants of Response to Fiscal Stress

Figure 1, as discussed earlier, shows our conceptual framework of the determinants of agency responses to fiscal stress from a tax limitation measure. The analyses reported above investigated the bivariate relationships of variables in the model. To better guard against spurious inference, a version of this model was estimated using multiple regression analysis. The feedback loops and the tax limitation variable in the conceptual model shown in Figure 1 were not included in the statistical model because the loops represent long-term lagged effects and the tax limitation variable represents an event applying to all agencies used in the study.

Table 1 gives the multiple regression results for each of the four response variables. The independent variables include the revenue impact variable for representing the revenue situation, the progressive management scale to represent the use of management tools, a budget size variable, and

Table 1. Predicting Responses to a Tax Limitation Measure from Jurisdiction Characteristics, Revenue Situation, and Use of Management Tools (Multiple Regression Analysis Results)

	Dependent Variables			
Independent Variables	*Reduce Services*	*Raise Revenues*	*Improve Productivity*	*Shift Services*
City jurisdiction[a]	–.20 (.02)	.03 (.79)	.03 (.76)	–.09 (.37)
School district[a]	–.09 (.32)	–.14 (.19)	.06 (.60)	–.07 (.52)
Budget size	.13 (<.01)	.05 (.35)	.09 (.8)	.03 (.56)
Revenue impact	.52 (<.01)	.25 (<.01)	.16 (<.01)	.25 (<.01)
Management tools	.03 (.47)	.12 (.03)	.09 (.10)	.09 (.10)
Multiple R	.60	.28	.24	.30
N of cases	369	372	369	362

Note: Numbers in the table to the right of each independent variable are the standardized partial regression coefficients. The associated 2-tail p-values are given in parentheses.

[a]Reference category for dummy jurisdiction variables is county government.

jurisdiction type dummy variables to represent jurisdiction characteristics. The revenue impact of the ballot measure shows the most consistent and strongest relationship to the use of the different response strategies. In all four equations, the coefficient for revenue impact is positive, highly statistically significant, and by far the largest (absolute value) coefficient in the equation. In short, the greater the anticipated impact, the greater the use of each strategy.

Of the remaining variables, only the use of management tools shows consistent evidence of effects. Greater use of management tools appears positively related to more aggressive use of all four response strategies, and has the strongest association with raising revenues, followed by improving productivity and shifting services. The variables for jurisdictions' characteristics show only weak and inconsistent evidence of effects. Budget size shows an impact on use of the service reduction strategy, but otherwise shows no statistically significant relationships. Cities appear less inclined toward service reduction; otherwise, the different types of jurisdictions show little difference in their responses.

The results in Table 1 may underrepresent the total effect that the jurisdiction characteristics have on responses to fiscal stress because the total effect consists of the direct effect plus the indirect effects through the revenue and management tools variables. Based on estimation results (not presented) for the other two endogenous variables in the model, the calculated total effects for the size variable are somewhat larger than the direct effects. Larger jurisdictions tend to face more fiscal stress and to use more management tools, and both in turn lead to stronger responses. Nonetheless, the indirect effects are always smaller than the direct effects, and the total effect remains small. Although the evidence consistently points to an effect of jurisdiction size, the correlation appears weak.

These statistical results provide strong evidence that the revenue situation affects managers' responses to fiscal stress. Whether obvious jurisdiction characteristics such as those included in this study have important effects appears doubtful. The use of modern management tools does show substantial evidence of impact. In short, the predominant impact of the revenue situation is followed by the agency's use of management tools in determining responses to fiscal stress.

Conclusion

These results indicate that as fiscal stress increases, local managers will respond energetically, using a variety of strategies, including greater use of productivity tools. The existing use of productivity tools may modestly affect how managers respond to fiscal stress: managers using modern management tools show some tendency to respond more aggressively in adopting stress-reduction strategies. However, the findings more strongly support the importance of productivity tools *not* as a determinant of how managers respond, but rather as a choice managers can adopt in responding to fiscal stress.

Because local government managers accept productivity improvement as an important strategy for responding to fiscal stress, fiscal stress could foster further development of productivity improvement methods. Productivity improvement has not, however, surpassed in importance the strategies of reducing services and raising revenues. At extreme levels of fiscal stress, cutting services remains the predominant strategy. In short, productivity improvement has achieved a roughly co-equal status with traditional strategies for coping with fiscal shortfalls.

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