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Local Government Revenue and Expenditure Forecasting

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Soaring inflation rates, the threat of recession, increasing reliance on federal and state grants, taxpayer revolt, public employee unrest, and fears of default all describe the current economic and political environment in which local governments operate. Despite the uncertainties of this environment, government decision-makers must anticipate the future in making fiscal decisions that have implications for periods longer than the traditional single budget year. Collective bargaining negotiations often involve multi-year contracts, capital spending decisions imply long-term debt service and operating expenditure commitments, and decisions to increase service levels can have longer-term implications. The recent and considerable interest in multi-year forecasts of expenditures and revenues is not surprising and is overdue.[1]

In this paper we discuss, in general terms, how cities have approached the multi-year forecasting problem and how the outputs from such efforts have been used.

APPROACHES TO REVENUE AND EXPENDITURE FORECASTING[2]

Perhaps the most important requisite of effective multi-year fiscal forecasting is the independence of revenue and expenditure projections. The point of the exercise is defeated if revenues are forecast and expenditures are simply *assumed* to grow to the level of resources projected. The best of the local forecasting models do recognize this need for independence. That is, local budget forecasters attempt to project what revenues will likely be under a specified set of assumptions about local economic and demographic conditions, changes in the local revenue structure, and the flow of intergovernmental aids. On the expenditure side, parallel assumptions must be made about economic and demographic conditions, service levels, prices of inputs, and mandates from higher levels of government. In this manner it is possible to estimate a revenue gap or shortfall and evaluate the policy decision necessary to avoid such "gaps."

While this general approach is common to the better forecasting work being done by local governments, the specific techniques used vary widely. Such variation is proper and to be expected, given different local economic and demographic circumstances, different uses for the forecasts, and different fiscal structures.

REVENUE PROJECTIONS

Multi-year revenue projections are made in a number of ways, including expert or best guess forecasts, trend analysis, deterministic formulas, and econometric forecasts. Though the degree of sophistication and detail varies, and though some of these approaches provide far more information than others, each has important advantages. Indeed, the forecasting models in most cities make use of some combination of these techniques.

EXPERT FORECASTS

In this approach an individual or several individuals (usually the chief financial officer and his staff) are consulted as to their "best guess" concerning the yield of a particular revenue stream over the forecast period. One should not jump too quickly to conclude that this

1
See, for example, Public Technology, Inc. (1979) which reports on a recent HUD-financed study of multi-year forecasting which culminated in three well-attended two-day workshops.

2
The techniques available for multi-year budgetary forecasting are only sketched out here. For a more complete discussion, see Bahl and Schroeder (1979).

the number of inputs used in the production process (hours of labor, gallons of gasoline) times the projected price of these inputs. Projections of future expenditures can then be derived by forecasting (or assuming) particular levels of both the amounts of inputs *and* the prices paid these inputs. The question then arises as to how such forecasts can be made.

For projections of input prices, the most natural assumption is the level of inflation. Thus most cities attempt to project price changes in line with the macroeconomic assumptions that drive the revenue projections. Furthermore, at least some cities attempt to decompose inputs into relatively homogeneous categories (for example, labor, energy, materials) and utilize differential assumed rates of changes in prices.[4]

There is greater uncertainty attached to the projection of the amounts of inputs, since this depends greatly upon policy decisions that *might* be made sometime in the future. The most common practice appears to be a projection of some type of "constant services" budget. The question remains, of course, as to what constitutes a constant services budget. Some cities simply assume all input levels to remain constant with only price increases contributing to expenditure growth. Others attempt more complex formulations. For example, Dallas projects real inputs on the basis of an assumed constancy in services but then adjusts the required inputs to account for projected increases in productivity, expansion of service area (for example, due to annexation), as well as *existing* policy decisions already made at either the local or higher level of government (City of Dallas, 1979). The latter would include the operating and maintenance effects of capital projects already scheduled for completion, local decisions to alter services in the future, and the state or federal government mandates concerning expenditures.

If this kind of incremental forecasting model[5] is used, there remains the managerial question of how projections of input levels are to be made. One extreme is to derive these increments entirely within one department, for example, in the budget office. The other extreme would give total autonomy to each individual department. Both extremes contain weaknesses. On the one hand, full centralization of the process increases the likelihood that labor and nonlabor impacts of policies such as state or federal mandates or oncoming capital projects will be misestimated. On the other hand, total decentralization increases the likelihood that assumptions will be interpreted differently by different agencies. Decentralization may also increase the opportunity for individual department heads to use the multi-year forecast as a budgetary gaming device—for example, by inflating future resource requirements in hopes that these inflated "needs" will be granted in subsequent budget years. To avoid the weaknesses of either of these administrative arrangements, most forecasting processes are only partially decentralized. Thus, some basic information is collected by the forecasting group from individual departments, programs, or budget units. This information is then reviewed centrally for consistency and reasonableness with the final dollar amounts compiled centrally.[6]

USES OF FORECASTS

It is essential to recognize that multi-year financial forecasts are not predictions in the same sense as, say weather forecasts. We are not

4
The District of Columbia uses an extensive breakdown of price indicators in their multi-year projections. See Washington, D.C. (1978).

5
The model is "incremental" since it concentrates on the additions to inputs necessary to reach some prespecified level of service.

6
The extent of centralization differs considerably across cities with San Antonio having perhaps the most decentralized process, while New Orleans may be the most centralized. See City of San Antonio (1980).

very interested in what the weatherman thinks about how different factors may cause it to rain or shine. We want to know what he predicts for tomorrow. But in the case of budgetary forecasting, we are most interested in how fiscal forecasts might be altered by changing economic conditions.

Fiscal forecasts are simply projections of what revenues and expenditures are likely to be under a set of well-defined and consistent assumptions. If the two sides of the projected budget are equal throughout the projection period, or if projected revenues exceed projected spending, all is well. On the other hand, if budget deficits lie ahead, public policy adjustments are called for.

Perhaps the major use of fiscal forecasting is "gap analysis"—identifying the possibility that revenues will fall short of expenditures and analyzing the alternative actions which might be taken to close this gap. The second major use of multi-year forecasting includes numerous types of "impact analyses." While gap and impact analyses are not mutually exclusive activities, we consider each in turn, emphasizing their role in the budget process.

GAP ANALYSIS

Possibly the most difficult task in the multi-year forecasting exercise is interpreting the results to users (policy-makers, the press, and the public). It is crucial for policy-makers to recognize that projected revenue shortfalls are *not* prophecies of deficits. Instead they are projections of revenues falling short of expenditures *if* the entire set of assumptions used to generate the forecast actually hold in the future. It is an early warning signal that something must be altered lest the problems of deficits actually occur. Policy-makers can then begin to search for methods capable of eliminating such gaps.

Such policies may take several forms. One is, of course, to search for alternative local revenue sources or increased utilization of current sources.[7] A second is the case for intergovernmental aid. The forecast of a gap, especially when accompanied by documentation that nearly everything possible is being done locally, may strengthen the locality's argument.[8] Finally, the various service-level alterations necessary to eliminate a revenue shortfall can be initiated from gap analysis. Options such as limitations on wage increments, manpower cutbacks, and even full cancellation of programs can be evaluated with the model in terms of their effects on the budget. New York City's *Four-Year Financial Plan* is probably the most sophisticated example of the use of gap analysis. Rather than simply projecting dollar amounts of the gaps, the city publishes a detailed plan or "Program to Eliminate the Gap" (PEG) for the upcoming budget year. This program has included a combination of state and federal grants, additional locally-raised revenues, and service cutbacks. Furthermore, the city indicates how it would further cut services in the case that not all intergovernmental flows or proposed revenue rate increases would be forthcoming.

IMPACT ANALYSIS

While the fiscal gap receives the greatest amount of attention, other policy-related uses of multi-year forecasts may be as important. One important use is evaluating the effects on the operating budget of

7
It was reported that budgetary gap projections in New Orleans, Louisiana, were used to support the contention that there truly was a need to implement a new set of user charges in the fall of 1978.

8
Portland, Oregon, used their multi-year forecast in that manner to help convince the Oregon State Legislature of the genuine need for additional state grants.

capital projects. While the debt service costs of new capital projects are usually well recognized, operating and maintenance expenses may be less apparent. The incremental expenditure projection technique described above can then play an important role in the capital project decision process, especially if the project budgetary balance is approaching a deficit position.

A second form of impact analysis, especially applicable when using econometric revenue forecasting techniques, is sensitivity analysis of revenue projections. Both during the budget process and into the fiscal year it is of interest to estimate the potential effects of a local economic slowdown or a more rapid increase in prices than originally projected. In this manner, considerably more information about the sensitivity of the local fisc to economic forces can be ascertained.

The fiscal effects of alternative wage packages can also be estimated using the multi-year forecasts. This is most important when labor contracts of more than a single year are being negotiated. Explicit estimates of the costs of state or federal mandates are especially useful when a city wishes to influence higher level legislation. An explicit accounting of the estimated longer-term costs of such legislation can help create considerably stronger arguments than simply suggesting that the mandate will be costly.

The *process* of multi-year forecasting may also provide benefits beyond the action-oriented ones outlined above. Many cities combine the multi-year forecast directly with the annual budgetary process.[9] This practice not only makes those involved in the process more explicitly aware of the longer-term implications of current year requests, but it also broadens the perspective of department or program-level managers. It may lengthen their own planning horizons, thus giving them a managerial perspective that is less short-sited than commonly found in departments concerned only with the immediate situation. Furthermore, knowledge of the entire longer-term fiscal situation of the city may make managers more aware of the total fiscal environment in which they are but one part.

CONCLUSIONS

Local government interest in multi-year fiscal forecasting is growing. The uncertainties of the economy, the threats of aid reduction, and union pressures during periods of high inflation make the fiscal planning process too complicated for guessing techniques and too important for relying solely on one-year budget plans. Unfortunately, it is much easier to make the case for doing multi-year projections than for implementing a specific technique. The science and the art of fiscal forecasting at the local government level is only now beginning to develop, as is the training of public sector analysts to assume the responsibility for operating such models. Yet some local governments have made important inroads in developing and applying such models.

The problem immediately ahead is integrating a sophisticated projection model with the budget-making process. Most budget directors understand that there are long-term consequences of annual decisions, but few have the time, patience, or quantitative skills to decide whether a local forecasting model can ferret out these long-term effects. The convincing clearly lies in the demonstration of usefulness of such models as part of the local government fiscal planning process.

9
San Antonio, Texas, is the only city with which we are familiar where the multi-year forecast process is initiated soon after the start of the next fiscal year, and the forecast document is produced six months before the end of that year. Nevertheless, even there the document is used for first round estimates in the annual budget process.

The fact that cities which have integrated multi-year fiscal forecasting in this process have continued to refine the approach suggests that policy-makers recognize the positive net benefits.

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