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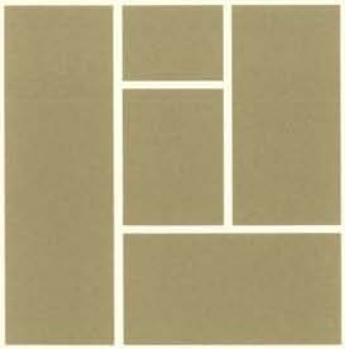

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Project Report

ECONOMIC ANALYSIS OF EFFECTS OF BUSINESS CYCLES ON THE ECONOMY OF CITIES

THE IMPACT OF BUSINESS CYCLES AND INFLATION ON THE FINANCES OF STATE AND LOCAL GOVERNMENTS

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THE IMPACT OF BUSINESS CYCLES AND INFLATION ON THE FINANCES OF STATE AND LOCAL GOVERNMENTS

Roy Bahl,* Bernard Jump, Jr.** and Larry Schroeder***

I. Introduction

More than any other single factor, the performance of the national economy shapes the financial health of state and local governments. For some governments, inflation and recession increase budget deficits, create cash flow problems or, in a few cases, even raise the specter of insolvency; for others the unfavorable budgetary effects are cushioned by revenue systems which are bouyant with respect to rising prices; and for still others the revenue-dampening effects of slow national growth and recession are more than offset by revenue gains accompanying favorable regional shifts in economic activity. The nature of these effects, their measurement, and how they differ across state and local governments are important national policy concerns.

In this paper, we explain how inflation and business cycles affect state and local government budgets, and attempt to measure the extent to which such impacts actually materialized over the decade ending in 1983.

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In terms of theory and measurement, we come up short of being able to generalize about the impact under all situations. As is the case with most applications of economic theory, we are left with the somewhat unsatisfying answer that "it depends"...on various price and income elasticities, on the kinds of discretionary responses which governments take, on the kind of recession and inflation being faced, and on the type of government being discussed. Still, while qualified, the results of our research do provide some new evidence about how inflation, recession and recovery affect the fiscal health of state and local governments.

In the next section, we briefly review those movements in prices and GNP which are the concern in this paper. In section III, we synthesize the state of thinking about this subject and review the results of past studies of the impact of these effects. We then move to a presentation of what has been added by this research effort, beginning in section IV with a discussion of the fiscal impacts of inflation. The response of state and local government revenues and expenditures to recession and recovery is studied in section V and the impacts of the business cycle on large city finances in Section VI. The general conclusions summarized in VII, are focused on the issue of whether state and local government fiscal actions are pro or countercyclical.

II. Inflation and Business Cycles: 1970-84

The pattern of U.S. economic growth over the past decade and a half has been characterized by substantial instability. The national economy has gone through two serious recessions and robust recoveries, and the rate of price inflation has ranged between 3 and 11 percent. Not surprisingly, these fluctuations have produced substantial swings in both the revenue and the expenditure sides of state and local government budgets: slower economic growth has dampened the increase in revenues; rising interest rates have increased governments' capital outlay costs as well as their earnings on idle liquid assets; price increases have affected their ability to provide services and the productivity of their tax systems; and all of the above have induced elected officials to take discretionary fiscal actions. Perhaps the most important change of all, however, is that the uncertainty produced by this economic instability has led fiscal planners to take a more conservative posture than they have in the past.

Inflation

After a relatively long period of price stability, consumer prices began to rise sharply in 1973, increased by 11 percent in 1974 and 9.2 percent in 1975. After falling off to about 6 percent annually for two years, price increases again hit double-digit rates for three years before softening during the 1981-82 recession and then falling to about 4 percent in 1983. The question at hand is how this inflation pattern has affected state and local government budgetary positions. Microeconomic theory

provides some suggestions. If the increase in prices of all goods is uniform, i.e., if there is no change in relative prices, and if the state and local government revenue system is fully responsive to inflation, budgets can remain constant in real terms and there will be no need for discretionary fiscal responses. Tax collections will be higher but tax burdens will not, public employees will earn more but not relative to the private sector, etc. The relative position of the state and local government sector would not change.

In reality, price increases have not been uniform and state and local government revenue systems vary widely in their response to inflation. Does this mean that inflation has caused state and local government expenditures to grow at a rate above or below expenditures in all other sectors of the economy? If so, what are the consequences for government budgets?

The price data shown in Table 1 help answer one part of this question. As noted above, price increases have not been uniform; indeed, changes in the relative prices of energy and food were at the heart of the high inflation rates of the mid-1970s and the softening of prices in the early 1980s. Whether this pattern of inflation has caused the relative size of state and local government tax bases to increase depends on what bases are taxed, and this varies widely across states and across levels of government. In general, food, medical care, and many other services are outside the state sales tax base, but gasoline and utility consumption are taxed. As we shall discuss below, state and local governments would have

TABLE 1

ALTERNATIVE MEASURES OF PRICE LEVEL INCREASE

Year	GNP Implicit Deflator	Labor			Labor and Materials	Capital Outlays		Energy	
		BLS Middle Level of Living[a]							
		Amount	Index	CPI	GNP Deflator for SLG Purchases	Interest Rates on Long-Term Treasury Bonds	Construction Costs[b]	Gas and Electricity	Fuel Oil and Coal
1983	215.63	NA[c]	NA	298.4	236.6	9.47	237.2	428.7	628.0
1982	206.88	NA	NA	289.1	222.9	11.57	222.9	393.8	667.9
1981	195.14	$25,407	222.0	272.4	208.1	11.23	204.2	345.9	675.9
1980	178.42	23,134	202.1	246.8	191.5	8.51	186.0	301.8	556.0
1979	163.42	20,509	179.1	217.4	173.7	6.39	170.5	257.8	403.1
1978	150.42	18,622	162.7	195.4	159.7	5.90	158.2	232.6	298.3
1977	140.05	17,106	149.4	181.5	148.4	5.56	148.6	213.4	283.4
1976	132.34	16,236	141.8	170.5	138.3	6.49	137.3	189.0	250.8
1975	125.56	15,318	133.8	161.2	128.3	6.89	127.2	169.6	253.3
1974	114.92	14,333	125.2	147.7	117.4	6.09	115.8	145.8	214.6
1973	105.69	12,626	110.3	133.1	106.9	5.18	105.9	126.4	136.0
1972	100.00	11,446	100.0	125.3	100.0	5.27	100.0	120.5	118.5
1971	96.01	10,971	95.8	121.3	94.7	5.70	92.8	114.7	117.5
1970	91.45	10,664	93.2	116.3	88.6	6.51	85.6	107.3	110.1
1965	74.36	9,076	79.3	94.5	64.9	3.27	62.4	99.5	94.6

[a]Urban U.S. Intermediate Budget.

[b]Boeckh index, Apartments, Hotels, Office buildings.

[c]not available.

SOURCE: Department of Commerce, Bureau of Economic Analysis, Business Statistics, 1979; and Survey of Current Business, March 1984 and various issues; U.S. Department of Labor, Bureau of Labor Statistics, Autumn Urban Family Budgets and Comparative Indexes for Selected Urban Areas, annual; and Handbook of Labor Statistics, 1978; 1984 Economic Report of the Press, p. 298.

done quite well in the past decade if they had been able to "capture" the potential revenue base increases given to them by inflation.

As for measuring the increase in prices faced by state and local governments in their expenditure decisions, analysts ordinarily have to rely on the implicit deflator for state and local government purchases as reported in the National Income Accounts. This index has increased faster than the implicit price deflator for GNP, a comparable measure of the overall inflation rate in the economy (see Table 1). At first glance, then, it would appear that inflation has driven up the relative price of state and local government purchases; hence state and local expenditures would have had to increase if the volume of inputs was not to fall.

Recession and Recovery

Since 1970 the U.S. economy has moved through three recessions of more than one year's duration and a fourth contraction of short duration during 1980 (see Table 2). The expansions following the 1975 and 1982 recessions were particularly robust, and of longer duration than the recessions.

There have been substantial variations in the effects of these cycles across regions with central cities, in particular, and governments in the declining regions, in general, feeling the most pressure in earlier recessions. It also appears that each recession had its own particular set of effects that were not necessarily duplicated in all recessions. The 1969-70 and 1974-75 recessions hit the older central counties hardest--they went in earlier and deeper and came out slower than the rest

TABLE 2

EXPANSION AND CONTRACTION IN REAL GROSS NATIONAL PRODUCT, 1969:III - 1983:IV[a]

Recession			Expansion		
Peak	Trough	Average Annual Percent Change in Gross National Product	Trough	Peak	Average Annual Percent Change in Gross National Product
1969:III	1970:IV	-0.03%	1970:IV	1973:IV	5.07%
1973:IV	1975:I	-4.58	1975:I	1980:I	4.86
1980:I	1980:II	-9.91	1980:II	1981:III	3.30
1981:III	1982:IV	-2.23	1982:IV	1983:IV	6.20
Unweighted Mean		-4.19			4.86

[a]deflated by GNP implicit price deflator (1972=100).

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, March 1984 and various other issues.

of the country. However, these same central counties seem to have fared relatively better during the 1980-82 recession.

Recoveries have not benefitted all governments equally. All improved to some extent during the long 1975-79 expansion, but the older industrialized regions gained proportionately less than did the rest of the country. Accordingly, cities in these regions may have built relatively less fiscal strength with which to weather the 1980-82 recession.

III. Earlier Research[1]

Earlier studies on this subject have led to some consensus about how recession, expansion and inflation affect the finances of state and local governments. The absence of full unanimity is largely due to the different estimation methods employed, the different data sets used, the different time periods examined, and even some variation in the way different analysts have framed their questions.

Inflation

Aggregate Effects. The most important question is the net effect of inflation on the state and local government budget. That is, does inflation increase revenues by more or less than it increases expenditures? There were at least two major efforts to answer this question for the middle years of the 1970s: one by the ACIR[2] and another by Greytak and Jump.[3] The basic difference between these studies lies in the question asked. The ACIR was interested in the automatic and the induced discretionary effects of inflation, whereas Greytak and Jump were concerned solely with the former.

The ACIR concluded that revenue effects dominate, while Greytak-Jump found expenditure effects to dominate. The ACIR estimated net revenue gains during the 1973-76 period as equivalent to 0.6 percent of own-source revenues in 1973, 3.9 percent in 1974, 5.5 percent in 1975, and 2.9 percent in 1976. However, discretionary tax rate changes were included in their estimates of revenue increase; that is, if tax rates were increased during this period, the ACIR attributed the revenue change to inflation.

Moreover, the ACIR study did not consider the effects of differential price increases among types of state and local government expenditures. The ACIR simply adjusted revenue purchasing power by the implicit price deflator for state and local government purchases--which could produce an underestimate of the inflation effects on expenditures.

In contrast, Greytak and Jump provided explicit estimates of the response of expenditures and revenues to inflation if inflation-induced increases in tax bases were realized in additional revenue and if no discretionary adjustments were made in tax rates, in number of employees and quantities of goods purchased, in programs and service levels, and the like. This approach yielded the conclusion that expenditures were potentially more responsive to inflation than were own-source revenues, at both the state and the local levels during the 1972-74 and 1972-76 periods. Thus, given a revenue system and a set of real inputs to be purchased, state and local governments were made worse off between 1972 and 1976 because of inflation. Under these circumstances governments had no choice except to increase tax rates and seek new revenue sources if they meant to maintain levels of real inputs. Similarly, real expenditures had to be reduced or tax rates increased if budgets were to remain in balance.

The expenditure impacts of inflation, then, are a complicated matter involving direct, automatic effects (which Greytak-Jump attempted to estimate) and indirect, discretionary effects (which ACIR attempted to include in their estimates). These effects depend on input price movements, which are difficult to measure; on the impact of institutional

arrangements, such as public employee unions; and on the political will of elected officials to undertake discretionary actions. The results of these two sets of studies would seem to indicate that the automatic effect of inflation in the mid-1970s was to reduce the purchasing power of state and local governments, but that these losses were recouped by discretionary tax increases. While this is a plausible hypothesis, it leaves unanswered questions. First, to what extent were the discretionary tax actions induced by inflation and to what extent were they a response to recession? Second, was the price elasticity of demand for state and local government purchases large enough for the change in relative prices to have a dampening effect on expenditures? While it is impossible to sort out fully the "pure" effects of inflation, we can get a better feel for the nature of the inflation effect by considering the impact on major components of state and local government expenditures: labor costs; materials, equipment and supplies; capital outlays; and transfer payments.

Labor Costs. Inflationary impacts on labor costs cannot be inferred directly from available data. For example, when labor costs increase faster than the rate of inflation, the empirical problem is how much of the increase should be assigned to inflation. Greytak and Jump dealt with this issue by computing the increment to expenditures that would have been required if nominal compensation levels of state and local employees were to have kept pace with inflation while employment levels remained constant. Of course, it is doubtful that many governments could long behave as if their demand for labor was unaffected by changing compensation costs, though in the 1960s and early 1970s both public

employment and public employee real compensation seemed to move forward inexorably.

The increasing rates of inflation in the 1970s changed this pattern; sometime after 1973 many state and local governments were forced to use discretionary actions, particularly on the wage and employment front, to offset some of the potential expenditure impacts of inflation. Wages and employment were favored targets in part because labor outlays are such a large part of state and local government budgets. Restraint in wage increments was possible because governments are not automatically required to pay full cost-of-living increments in order to continue purchasing the same quantities of labor in the same way that they are required to pay a higher price for a gallon of gasoline. This discretionary action has kept the growth in the price of state and local government labor inputs low relative to the general price level. Moreover, there has been a marked slowing in the rate of growth in public employment rolls.

The question is whether the rate of public employment growth would have been different, cet. par., if the rate of inflation had been lower. In theory the answer would appear to be that inflation has dampened the growth in state and local government employment. To sort out this net impact, an income effect and a substitution effect must be identified. If the purchasing power of state and local government revenue declines during inflationary periods, layoffs or a slower rate of employment growth might be expected. Governments, like any consumer, will ordinarily purchase fewer inputs when real income falls. If revenue structures were more responsive to inflation, real revenues would be higher and a higher level

of state and local government employment could be supported. While this real income effect probably dominates in most jurisdictions, there is an offsetting (reinforcing) substitution effect if the relative price of labor falls (rises). The size of the substitution effect will depend on the change in the relative price of labor. For small changes in the wage rate, the substitution effect is likely to be small because the demand for public employees is quite price inelastic, i.e., as wage rates go down (relative to other prices), state and local governments will increase their employment rolls (or at least let them grow faster than they would have otherwise) but not by very much. For example, Ehrenberg's estimates would suggest that a 10 percent wage rate increment would reduce public sector employment by only 3 to 4 percent.[4] On the other hand, if the percentage change in the relative price of labor is large enough, the substitution effect could be greater than the income effect.

In fact, through most of the 1970s, inflation has outrun the increase in state and local government labor costs. Thus, it may be reasonable to speculate that the size of the real public employment budget is smaller than it would have been under a zero rate of inflation. In turn, this would imply that a part of the cost of inflation is borne directly by public employees (in the form of lower real wages) and a part by residents (in the form of the lower public service levels attributable to having fewer public employees).

Non-Labor Cost. Non-labor expenditures respond to inflation more directly since governments have little control over prices paid for materials and supplies purchased. Absent much opportunity to alter the

mix of labor and non-labor inputs, the alternatives are either to pay the higher price or to reduce the quality or quantity of the inputs used. Examples of typical input quality and quantity reductions would include deferral of road maintenance, telephone use restrictions, reduced school busing service, restricted travel, deferral of office machine replacement, reduced hours for public facilities, and cutbacks in the use of supplies.

During the first part of the 1970s, the income effect of inflation undoubtedly led to some reductions in material purchases. Whether there was much opportunity for a substitution effect (even were it technologically possible) depends on whether the unit cost of materials purchased by state and local governments rose as fast as the general price level. Although this question has been examined in several empirical studies, the findings have been mixed.[5] Nevertheless, our reading of the evidence suggests that to the extent inflation dampened real revenue growth in the early 1970s, it probably led to a reduction in the quantity of materials and supplies used.

Capital Costs. The effect of inflation on capital expenditures is more difficult to measure. Again, the question is whether expenditures would be higher or lower, cet. par., with a lower rate of inflation. The dampening of real revenues because of inflation during the early and mid-1970s would surely have worked in the direction of lower capital expenditures. But was the substitution effect also at work and if so in what direction?

Assuming that both the real value of local revenues and the relationship between capital prices (both construction and financing prices) and other prices remained constant, one can estimate the increased

cost of capital projects attributable to inflation--the potential effect. Given the sharp increases in both capital construction costs and financing costs throughout the period, it follows that capital outlays would have had to increase substantially merely to maintain a constant volume of real capital purchases.

But was there a significant substitution because of a change in the relative price of capital expenditures and did it work for or against larger capital outlays? It turns out that the evidence is ambiguous with respect to the relative price of capital items during the last decade. During most of the period construction costs increased at less than the general inflation rate while interest rates went up more rapidly. Yet while we can only speculate about the net impact of these relative price changes, it is clear that state and local governments substantially slowed their rate of capital formation. Inflation may well have contributed significantly to this reduction.

Transfer Payments. Inflation also affects state and local government expenditures by raising the costs involved in transfers--particularly public assistance, Medicaid payments, and transfers to local governments. Reductions in governments' real purchasing power led to some reductions in spending on these programs, and these may have been accentuated by substantial price level increases, especially for medical costs. However, state and local governments do have some discretion over how much they will spend on these programs. Again it is the problem of inflation exerting a direct and an indirect effect.

Medicaid and AFDC are ordinarily the most important of the personal transfer payment programs in state and local government budgets. With

respect to the former, states have three avenues open in adjusting the level of payments in the face of increasing prices. They may tighten eligibility rules thereby effecting a quantity reduction; they may reduce benefit levels which also reduces quantity purchased; and they may adjust fee schedules. Though states have attempted to slow the increase in Medicaid costs by reducing primary health care services, they have been heavily burdened by the rising cost of hospital and nursing home services. Davis and Schoen report that real annual Medicaid payments per recipient rose by only $23, from $338 in 1969 to $361 in 1977, the number of recipients doubled, and the general price of medical care nearly doubled.[6] At least half of the state and local government expenditure increase on Medicaid during this period might be attributed to inflation.

An even greater proportion of the recent increase in state and local government expenditures for public assistance may be attributed to inflation. Since 1970, there has been little real growth in state and local government expenditures for public assistance, though nominal expenditures by state and local governments increased by 90 percent. This pattern, however, masks a real expenditure increase due to an increased number of recipients between 1970 and 1975 and real expenditure cutbacks after 1975.[7]

Transfer payments in the form of state aid to local government are major components of all states' budgets. Does inflation lead a state to cut back on aid to local governments proportionately more than it reduces the scope or quality of direct state expenditures? A time series analysis of the 1957-80 period suggests that this may indeed be the case; cet.

par., that the local aid "share" is dampened by a higher rate of inflation, and is likely to exhibit a stronger positive response to an increase in real income than to the same percentage increase in nominal income.[8] This suggests that another indirect effect of inflation is the tax increases or expenditure reductions by local governments as they attempt to make up for the loss in state assistance.

Summary. To this time, the best estimates we have on the effects of inflation on state and local government expenditures are for the 1972-1976 years. In reaching for some consensus from these results, it is important to distinguish automatic from discretionary actions by state and local governments. The former are the increases in revenue and expenditure which are brought on by inflation without any action being required by elected officials, while the latter are the tax rate, wage and employment, capital spending, etc., adjustments which are consciously made.

The discretionary effects of inflation are especially difficult to estimate because the period studied overlaps a recession. One can, however, infer that discretionary tax increases and expenditure reductions were called for because the purchasing power of state and local government revenues was reduced by inflation. Between 1972 and 1976, if all inflationary increases in tax and expenditure bases had been realized, state and local government purchasing power would have declined by about 7 percent. How much of this purchasing power loss was made up, and how much from tax increase vs. expenditure reduction, is not easily calculated. The ACIR results suggest that there were substantial discretionary tax increases. We can also guess that there was some expenditure reduction--

the extent to which the reduced purchasing power reduced the various components of expenditures depends on the income elasticity of demand of those components. In addition, there is a substitution effect which may reinforce or offset these reductions depending on how relative prices change and on the price elasticities of demand for these components. Relative price effects probably stimulated spending on labor and materials, but the price elasticity was too low to offset the dampening impact of the real income effect. The relative price effect probably accentuated spending reductions in the case of capital expenditures.

A second, but more tentative, finding that we might draw from the Greytak-Jump estimates of automatic effects is that the higher the rate of inflation, the less likely are state and local governments to capture the full increases in their revenue bases. A comparison of the results for 1972-1976 and 1972-1974 shows that revenue purchasing power held about constant during 1974-1976--a period when the inflation rate fell from 9.3 to 5.4 percent.[9] This hypothesis is reexamined below.

Recession and Recovery

The fiscal impacts of recession seem intuitively obvious. As income growth slows, the growth in state and local government revenues will automatically slacken. The harder an area's economy is hit and the more reliant it is on "sensitive" sales and income taxes, the greater its revenue loss. The major impacts on the expenditure side occur in social service functions which are sensitive to movements in the unemployment rate. These direct, or automatic, effects of recession are unfavorable to state and local budgets. The reverse is true for periods of expansion.

As in the case of inflation, there is much more to the recession story than the automatic effects. Revenue declines brought on by recession induce governments to undertake discretionary actions to recoup or at least reduce some of the loss. For example, as revenue growth begins to slow governments may increase tax rates or lay off workers. Such discretionary actions are an important consequence of the business cycle.

The Expected Impacts of Recession. There are reasons to expect that discretionary actions might be taken to cushion the impact of a recession on state and local government finances. A first reason is that governments may expect the recession to be short-lived and take temporary measures to fund existing programs. This may mean tax rate increases, the postponement of new projects, or the drawing down of cash balances. A second reason is that many state and local government expenditures are in the nature of "fixed" commitments that cannot be easily reduced or postponed. These include debt, pensions, "safety net" expenditures, a large portion of wages and salaries, and much of the general overhead of the government. To maintain these, tax rates may be increased to compensate for the revenue loss due to the recession.

Whether the impact of recession on budgets is softened by tax increases or by discretionary expenditure reductions, these policy actions do not produce their intended results instantaneously. On the expenditure side, there may well be a lag before a decision is made to reduce spending or before the decision takes effect, with shortfalls made up temporarily by recourse to expedients such as drawing down "rainy-day" funds or short-term borrowing. Because the full effects of recession and

expenditure decisions that are made to combat the adverse budgetary effects are not felt immediately, the 'pure' expenditure effects of recession may be greater than reported in most surveys.

On the revenue side, any tax whose base is closely tied to income is likely to reflect the effects of recession very quickly. While this tendency may be impaired to a degree if there is also inflation pushing taxpayers into higher marginal tax brackets, the normal pattern for income and sales taxes is one that will add to budgetary pressures. Not so the property tax, however. Whatever faults the property tax has due to the poor reassessment features that typically characterize it, it does have the "advantage" of being comparatively unresponsive to recession thereby providing a stabilizing element for local budgets.

Countercyclical Behavior. Since the 1950s a number of authors have debated how the state and local government sector responded to the business cycle. Early in the debate it was asserted that the sector responded procyclically. That is, during recession governments would not increase expenditures and borrowing, and they would increase tax rates. During expansion it was alleged that they tended to increase spending and cut taxes.

This hypothesis was based on three points. First, the model of an economic downturn was the Great Depression, i.e., a deep, prolonged fall in economic activity.[10] Second, the income elasticity of state and local revenues was considered to be relatively low; revenues were viewed as unresponsive to the business cycle. Third, the expenditures of state and local governments were thought to be invariant to the business cycle.

It was pointed out that one-third of these expenditures were for schools, which could not be cut in expansion and would not automatically increase in recession.[11] Since the automatic responses of expenditures and revenues were thought to be slight, their role in stabilizing the economy would be insignificant. In a deep recession, however, budget balancing discretionary actions would be required. These perverse discretionary responses would outweigh the feeble countercyclical automatic responses, and the net impact of state and local governments on the economy would be pro-cyclical.

Other authors took a different view on the above three points and argued that state and local governments act countercyclically. Their model of recession was the short, mild downturn of the 1950s.[12] Revenues were considered to be relatively income elastic, and thus more sensitive to recession and expansion. With the growth of public assistance programs in the 1960s, expenditures too, came to be viewed as likely to vary countercyclically.[13] The automatic countercyclical response of state and local government budgets would be large. But, due to the mildness and short duration of the recession, strong procyclical discretionary actions would not be required. So the countercyclical response would likely outweigh the procyclical. Supporters of the countercyclical state and local government position also noted that lags in the discretionary response to the business cycle have countercyclical effects. For example, information about revenue shortfalls is not available instantly, and once such information is available, discretionary action in response will also take time. Furthermore, if government

officials expect the recession to be short, they may not be averse to depleting their accumulated balances or issuing short-term debt rather than cutting expenditures or raising taxes.

The pro- and countercyclical positions can be reconciled. First, most supporters of the countercyclical hypothesis agree that, while governments respond to mild recessions countercyclically, they are likely to act procyclically in serious contractions. Second, it is probable that both revenues and expenditures have become more sensitive to the business cycle since the Great Depression. The state-local sector's mix of revenue sources has changed from one heavily dominated by the less responsive property tax, to one that relies far more on relatively responsive sales and income taxes. Improved property assessment practices, the removal of necessities from the sales tax base, and the imposition of more progressive income taxes have also contributed to the responsiveness of revenues to economic fluctuations.[14] Thus, the pro- and countercyclical proponents have each been correct in their times.

A third position emerged in the 1960s. Proponents of this position argued that state and local government behavior was unrelated to the business cycle. The secular growth of the state and local sector in response to rising populations and public services demand appeared to overwhelm any cyclical effects.[15] The pattern of state and local behavior during the 1960s and early 1970s appeared to confirm this view. Perhaps that is why serious study of the state and local response to the business cycle lapsed for nearly a decade.

Fiscal Performance During Recessions: The Evidence. The unstable economic environment of the 1970s and early 1980s and recognition that the state-local sector does not expand inexorably in the face of recession and inflation have rekindled scholars' interest in understanding how state and local governments respond to economic cycles. A number of analysts have attempted to measure the fiscal effects of recession by studying the budgetary performance of state and local governments during the 1974-75 and 1981-82 recessions, and during the following recoveries. At least two tentative conclusions have emerged from this work: (a) the budgets of state and local governments were squeezed enough during the recessions to require compensating tax increases and expenditure reductions; and (b) the fiscal squeeze was more severe for central cities, particularly those in the older industrial region.

The evidence clearly points to increasing fiscal stress during the recession years of the mid-1970s. The financial disaster that befell New York City and the near disasters that threatened several other large jurisdictions can be traced to the effects of recession.[16] As Stanley's case studies of Detroit, St. Louis, Buffalo, Cleveland and New York City (carried out in late 1975) revealed, projected budget deficits required either sizable expenditure cutbacks or tax rate increases, or both.[17] At least two surveys tried systematically to ferret out the tax and expenditure adjustments made by state and local governments in response to the 1974-75 recession. A Joint Economic Committee survey, covering forty-eight states and 140 local governments, concluded that state and local governments did indeed raise taxes, cut current expenditures and

postpone or cancel capital outlays because of the recession.[18] But the estimated adjustments were a relatively modest 3.5 percent of total state and local government own-source revenue. Indeed, the results of the JEC survey were not indicative of a level of pressure that would bring on acute fiscal distress. The second survey, carried out by the Senate Subcommittee on Intergovernmental Relations, covered about 400 jurisdictions.[19] Though no estimates were made of the magnitude of fiscal adjustments, it was found that one-third of these governments raised taxes, over half instituted personnel limitations and about one-fifth delayed or canceled capital projects. Again, the apparent effects of the recession were not as severe as might have been imagined.

More recent survey work now indicates a similar response by state and local governments in the 1980-82 recessions. The Federal Reserve Bank of New York estimates that discretionary policy increased state and local government taxes by $14.3 billion (approximately 4 percent of total state and local government expenditures) during the 1981:III - 1982:IV recession and reduced expenditures by $6.5 billion.[20] A JEC mail questionnaire survey of forty-eight large cities revealed a pattern of service level cuts, capital project deferrals and tax increases in FY 1982.[21] Tax rate increases were reported by twenty cities and user charge increases by thirty-one of the forty-eight cities in the survey. An ACIR survey confirms the increased use of user charges--215 of 307 responding cities reported increases.[22] The National Conference of State Legislatures' fiscal survey at the end of 1981 showed twenty-nine states with prospects for fiscal year deficits or thin budget margins, and twenty-four states

reporting employment reductions in the preceding year.[23] None of these surveys provided enough information to estimate the severity of budget cutbacks or tax increases in response to the 1981-82 recession. In the 1981 edition of Tax Review, the Tax Foundation reported that tax actions in thirty states in fiscal 1981 would raise first year revenues by a net $2.5 billion.[24] While this was the highest annual statutory increase in ten years, it represented only about 1.5 percent of total state government tax revenues.

All of the surveys mentioned above concluded that fiscal adjustments were more drastic in the more distressed cities and regions. The JEC survey found that the most severe fiscal adjustments took place in areas where the unemployment rate was higher.[25] Other JEC surveys, of sixty-seven large cities in 1977,[26] and of forty-eight large cities in 1981,[27] reached a similar conclusion. Most studies have concluded that city governments were hardest pressed, but the National Association os State Budget Officers has argued that state governments were also hard hit by the 1973-75 recession in terms of the budgetary adjustments that were required.[28] A GAO study concluded that states fared better than cities, and counties better than either.[29]

If there is a general conclusion to be drawn from these studies, it would seem to be that there are great variations in the magnitude of budgetary adjustments resulting from recession. In aggregate terms, however, the discretionary pro-cyclical response to the business cycle may have outweighed an automatic countercyclical response.

The Fiscal Effects of Recession: Quantitative Estimates. Recession creates idle resources and a gap between actual and full employment levels of revenue and expenditure. A proper measure of the effects of recession on revenues would center on the estimation of such a gap, and the few studies which have addressed the revenue-recession impact have taken this approach.

The Council of Economic Advisors estimated the state-local revenue loss due to the recession to be 4.3 percent of actual revenues in 1974, 9.1 percent in 1975 and 6.6 percent in 1976.[30] Vogel and Trost adjusted these estimates to account for discretionary tax rate increases by state and local governments and estimated a revenue shortfall about half as large as the CEA estimate for the 1971 recession.[31] Using a different approach, Crider estimated revenues to be below their potential by 4.8 percent in 1974 and 10 percent in 1975.[32] The ACIR estimated a revenue loss equivalent to 8.4 percent of revenues in 1975.[33]

These approaches share two problems. All except Vogel and Trost are concerned with changes in actual revenues; thus, the estimates include the discretionary reaction of state and local governments to recession and inflation. The other problem has to do with model specification, i.e., with the failure to account for other factors which influence revenue growth. All of the studies attempted to control for inflation but none considered secular trends in regional income or interregional migration. Thus, none of these estimates isolate the pure effects of recession.

The ACIR estimated the recession-related revenue loss for 1976 on a state-by-state basis. As might have been expected the variation was wide,

ranging from revenue losses of 20.5 percent in Maine and 16.3 percent in Connecticut to less than 5 percent in several states. On a regional basis, the greatest impact was in the industrial states of the Mideast and the Northeast. When the recession effects were separately estimated for state and for local governments, the conclusions were that state own-source revenues were almost twice as sensitive to the business cycle as were local own-source revenues.

Little attention has been paid to the impact of recession on state and local expenditures. It is sometimes argued that recessions cause state and local governments to postpone expenditure increases: the ACIR has estimated that a recessionary gap tends to increase expenditures immediately but results in a decrease in expenditures during the following fiscal year.[34] When both the current and deferred effects are considered, the recessionary impact on expenditures is negligible. Again, it is important to note that these are estimates based on how much state and local governments actually spend, hence they reflect not just the effects of recession, but all factors that ultimately determine spending levels.

Crider estimated a $3 billion decline in expenditures between 1973 and 1975, partially offset by a $1 billion increase in state-and local government spending for welfare and related services, or, a $2 billion net recession-related decline.[35] Thus, Crider concluded, just as the ACIR had, that the expenditure effect of recession was miniscule. The Federal Reserve Bank of New York came to a similar conclusion for the 1981-82 recession.

Summary: Recession, Recovery and Inflation. Most studies and surveys of the 1973-76 period place the revenue loss due to recession in the range of 5 percent of total state and local government revenues. Some have estimated a 10 percent loss at the very depths of the recession. For some governments, notably those located in the declining regions and state governments with highly elastic tax structures, the revenue loss was estimated (by ACIR) to be as high as 20 percent. Little impact on state and local government expenditures could be found. There has been much less systematic work on the 1981-82 recession, but the results suggest similarities to the 1975 situation: real tax base reductions, discretionary tax increases (but of a lesser magnitude than in 1973-75), and modest expenditure cutbacks.

Several conclusions can be drawn from these results. First, even a 5 percent recession-induced loss in revenue potential is considerable and a 10 to 20 percent loss could be disastrous for most state governments. Second, many of those states which have elastic revenue structures that make them especially susceptible to recession are located in the declining region. Third, even these estimates understate the automatic fiscal impacts of recession because they do not adjust for the discretionary tax actions taken by these governments. For example, the actual revenue growth in Massachusetts may have been 20 percent less than its full employment/ noninflationary amount in 1976, but the gap may have been even higher if the state and local governments had not increased tax rates to make up forsome of the loss. Finally, while the estimated impact of

recession on expenditures has not been large, most surveys show that important program cutbacks and deferrals occurred during the recession.

The best of the inflation studies seems to imply an impact resulting in a 5 to 10 percent loss in purchasing power of state and local government revenues during the 1972-74 period. The effect cooled off thereafter and inflation-induced revenue and expenditure increases were about parallel between 1974 and 1976. There have been no comparable studies since 1976. At least three important implications might be drawn from this work: local governments which are more labor intensive and more reliant on property taxation will be hurt most by inflation; when the inflation rate rises to high levels, the impact on expenditures outstrips that on revenues by a greater margin; higher rates of inflation probably induce discretionary service level cutbacks.

The studies surveyed above treated the fiscal impacts of recession and inflation as though they were independent of one another. This is not the case, nor does estimating recession impacts in real terms necessarily control for the impact of inflation. Accordingly, one objective of the analysis which is summarized below is to investigate whether recession and inflation effects are reinforcing or offsetting.

IV. The Effects of Inflation on State and Local Government Finances, 1972-1982[36]

Practically all of the analysis presented so far has taken some account of the fact that the last decade was one of high inflation. The analysis has also recognized that inflation is a double-edged sword. Inflation adversely affects the fiscal condition of governments because it requires larger budgets if the real volume of government purchases is to be maintained and if government employees and transfer payment recipients are to retain the purchasing power of their incomes. But governments also gain during inflation without having to take any discretionary action to boost revenues. Inflation raises the value of revenue bases; hence revenues can grow even if no new taxes are enacted and no tax rate increases are imposed.

Up to this point in the discussion we have merely reviewed the results of previous studies of the effects of inflation and economic fluctuations on the state and local government fisc for the period prior to 1977 and we have speculated about what the net effects should be in subsequent years. Now we turn to a systematic effort to quantify the effects of inflation on state and local government expenditures and revenues for the period since 1977.

The approach we used was to hold constant all variables that affect expenditures and revenues--except prices paid for inputs and market values of all components of a revenue base that remains unchanged in real terms. With respect to expenditures, the basic question for which we offer an

answer is: How much growth in state and local government expenditures would have been required during the periods 1972-77 and 1977-82 simply to maintain the status quo in real terms, i.e., a constant volume of inputs, a constant real income level for state and local government employees and transfer payment recipients who were drawing payments at the beginning of the period? The resulting expenditure inflation indexes are designed to measure the increment to government expenditures that would have been required to maintain a fixed level of real inputs and constant real income for a fixed labor force (and a fixed aid recipient population). We are not intentionally making any judgment about political or institutional reality with respect to governments' objectives for the real compensation of their employees.

An analogous approach was followed on the revenue side in answering the question: How much would state and local government revenue have grown during each five-year period if governments had "captured" as additional revenues only the amounts that could be attributed to inflation-induced growth in the revenue base?

The estimates of inflation-induced potential increases in expenditures and revenues were developed in the form of index numbers with the base years being 1972 for the 1972-77 period estimate and 1977 for the 1977-82 period estimates. As will be explained below, comparison of a period's expenditure inflation index number with its revenue inflation index number enables us to provide a tentative answer to the question: Did state and local governments gain or lose on a net basis from inflation?

By selecting 1972 and 1977, we took advantage of the availability of the Census Bureau's quinquennial Census of Governments for 1972 and 1977. This permitted estimation of inflation indexes for each of the Census Bureau's standard classifications of subnational governments--state and local governments combined, states, local governments combined, counties, municipalities, townships, school districts, and special districts. However, it was not possible to produce comparable estimates for the 1977-82 period for townships, school districts, and special districts as separate classifications because the relevant 1982 Census of Governments volume is not yet available.

Trends in Actual State and Local Government Expenditures, 1972-82

Between 1972 and 1977, state and local government expenditure growth for current operations and transfer payments averaged between 10 percent and nearly 17 percent annually depending on the governmental classification (see Table 3). State expenditures outpaced growth in spending by every substate classification except special districts.

Expenditure growth slowed moderately during the 1977-82 period (see Table 4). State government outlays, which continued to grow faster than spending by all local governments, by counties, and by municipalities, averaged about 10 percent annually whereas they exceeded 12.5 percent in the earlier period.

Transfer payment growth lagged sharply behind total expenditure growth throughout the decade.[37] Growth in spending for personal services also trailed total expenditure growth everywhere except counties in the first half of the decade as well as between 1977 and 1982.

TABLE 3

INDEX FOR ACTUAL AND INFLATION INDUCED EXPENDITURES, STATE AND LOCAL GOVERNMENTS, 1972-1977 (1972 = 100)

	Actual Total Expenditures Index, 1977	Inflation Induced Total Expenditures Index, 1977
State and Local	172.5	146.3
State	180.4	147.5
Local	168.6	145.7
County	172.9	147.3
Municipalities	167.0	146.7
Township	172.6	148.5
School District	162.2	143.4
Special District	216.6	146.5

SOURCE: Bernard Jump, Jr., "The Effects of Inflation on State and Local Government Finances, 1972-1982," Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, 1984, unpublished manuscript).

TABLE 4

INDEX FOR ACTUAL AND INFLATION INDUCED EXPENDITURES, STATE AND LOCAL GOVERNMENTS, 1977-1982 (1977 = 100)

	Actual Total Expenditures Index, 1982	Inflation Induced Total Expenditures Index, 1982
State and Local	162.6	153.8
State	172.4	152.9
Local	157.5	154.3
County	159.7	153.8
Municipality	156.1	153.7

SOURCE: Bernard Jump, Jr., "The Effects of Inflation on State and Local Government Finances, 1972-1982," The Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, 1984, unpublished manuscript).

Employee fringe benefit expenditures were the fastest growing outlay everywhere except in states in the 1972-77 period with material input expenditures second in line--and first in the case of states. During the latter half of the decade the situation reversed and material input expenditures led the way with outlays for fringe benefits coming in second--or in a dead heat with material input spending growth at the state level.

State and Local Government Expenditures and Inflation

The expenditure inflation indexes contained in Tables 3 and 4 indicate how much expenditures would have had to grow in each time period had spending increased only enough to offset inflation. Comparison of the expenditure inflation indexes with the expenditure growth indexes shows that total outlays made by the various classifications of state and local governments grew more than enough to offset inflation through the decade.

Yet there were important differences between the two periods. First, the gap between actual expenditure growth and the growth needed to maintain real spending narrowed substantially in the latter five years. Second, actual wage outlays between 1977 and 1982 for all groups except states and special districts grew more slowly than would have been required to maintain the purchasing power of the work force in-place in 1977.

A third difference between the two periods was that in the latter period only states appear to have managed to stay more than fractionally ahead of inflation in terms of their purchases. Finally, at least one

thing common to both periods was that the real value of transfer payments declined.

We must emphasize, however, that just because our estimates suggest that actual expenditures grew more rapidly than would have been required to offset inflation and maintain the same workforce size, volume of inputs, etc., this does not necessarily mean that all of these assumptions were realized. For example, the methodology used in this analysis does not enable us to determine whether governments kept their workforces whole with respect to inflation between 1972 and 1977. Although the data show that outlays for wages and salaries grew more rapidly than inflation would have required, this would not be inconsistent with a situation where governments let employee compensation lag behind inflation while they enlarged their workforces.

In any event, the expenditure data for the 1972-77 period do provide a basis for concluding that across the board expenditure squeezes did not characterize that period of high inflation. The 1977-82 period may be another matter however. The gap between actual expenditure growth and the implied growth required to offset inflation is so narrow as to make it entirely plausible that governments reduced the quantities of many of their inputs.

Gross Effects of Inflation on Revenues, 1972-82

As was true of expenditures, the growth of actual state and local government revenues between 1972 and 1977 was well in excess of the growth required just to offset inflation (see Table 5). That is, revenues grew by more than they would have if, in 1977, governments had merely applied

TABLE 5

INDEX FOR ACTUAL AND INFLATION INDUCED REVENUES
STATE AND LOCAL GOVERNMENTS, 1972-1977
(1972 = 100)

	Actual Total Revenues Index, 1977	Inflation Induced Total Revenues Index, 1977
State and Local	170.2	138.7
State	171.5	137.1
Local	170.1	139.9
County	175.7	139.6
Municipality	173.3	136.8
Township	164.4	142.6
School District	159.8	145.0
Special District	217.1	129.4

SOURCE: Bernard Jump, Jr., "The Effects of Inflation on State and Local Government Finances, 1972-1982," Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, 1984, unpublished manuscript).

their 1972 revenue systems to a 1977 revenue base that differed from the 1972 base only by reflecting the inflation that occurred during the period. And just as inflation could "account" for a much larger proportion of actual expenditure increments in the 1977-82 period than in the earlier period, so, too, was the gap much narrower between actual revenues and implied inflation-induced revenues in the latter period (see Table 6). In fact, the inflation component of municipal revenues actually grew by more during 1977-82 than actual revenues did.

Actual growth rates for state and local governments' various major revenue sources varied widely across the revenue components relied on by state and local governments.[38] Not surprisingly, income tax revenues grew more rapidly than any other major tax revenues in each period. In the 1972-77 period, intergovernmental aid revenue increased as fast as income tax revenues for state and local governments but then their growth slowed markedly in the latter period. States' revenue growth throughout the decade was only fractionally faster than the revenue growth of all local governments combined.

Predictably, the state individual income tax had the largest growth in inflation-induced revenue potential in the 1972-77 period, though only at the state level was the difference between the revenue potential of the income tax substantially larger than growth in the revenue potential of the property tax. Further, the tables were turned in the latter period such that potential revenue growth in the property tax was slightly ahead of the rate for the income tax.

TABLE 6

INDEX FOR ACTUAL AND INFLATION INDUCED REVENUES, STATE AND LOCAL GOVERNMENTS, 1977-1982 (1977 = 100)

	Actual Total Revenues Index, 1982	Inflation Induced Total Revenues Index, 1982
State and Local	160.0	148.8
State	162.7	148.6
Local	155.9	151.6
County	159.5	150.3
Municipality	150.8	151.1

SOURCE: Bernard Jump, Jr., "The Effects of Inflation on State and Local Government Finances, 1972-1982," The Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, 1984, unpublished manuscript).

Net Effects of Inflation on Operating Expenditures and Revenues: 1972-82

Our fundamental concern is to determine whether inflation provides state and local governments with more potential revenues than it takes away in potential expenditures. A general answer to the question can be inferred by comparing each period's expenditure inflation index with its revenue inflation index. To the extent that expenditure indexes are larger than the counterpart revenue indexes--as they are in both periods for all classifications of governments except school districts--the conclusion is that state and local governments lost more than they gained in the decade on account of inflation. In other words, maintenance of a constant level of inputs and constant real income for employees and transfer payment recipients would have required a larger increment to expenditures than would have been collected had the governments applied exactly the same revenue system throughout the period to a revenue base that was constant in real terms. The purchasing power loss was equivalent to 5.5 percent of revenues in 1972-1977 and 3.4 percent in 1977-1982.

Thus, the conclusion is that the direct effects of inflation on state and local government current operations during the last decade exacerbated any revenue shortfalls brought about by regional economic shifts, cyclical increases in unemployment, and discretionary cutbacks in intergovernmental aid.

Inflation, Interest Rates, and State and Local Capital Outlays, 1972-1982

Interest rates on virtually every type of financial investment were affected by inflation during the 1970s just as other prices were affected. While sharp increases in the costs of borrowing can disrupt

governments' capital outlay plans, higher interest rates can also work to the advantage of jurisdictions with cash balances available for temporary investment.

That there were gains to be derived during the last decade on account of rising interest rates shows up clearly in an analysis of state and local government interest earnings. As the general level of interest rates rose during the 1970s, state and local governments' interest earnings as a proportion of own-source revenue increased sharply. Moreover, state and local governments managed to hold their spending on interest payments sufficiently in check between 1972 and 1982 so that by 1982 interest earnings exceeded interest expenditures by about 29 percent whereas interest expenditures were more than twice as large as interest earnings in 1972.

Not only did state and local governments gain as interest rates earned on their invested assets rose; they also appear to have kept their borrowing under tight control. For example, state and local governments ended the 1972-1982 decade with a long-term debt service burden essentially unchanged from the burden in 1972. When the burden on short-term debt is also taken into account, the weight of total indebtedness dropped substantially between 1972 and 1982.

Holding the burden of debt in check carried a high price tag for state and local governments in terms of their capital plant. One measure of the price was the decline in the real value of capital outlays: the real value of outlays fell steadily throughout the decade. Capital outlays

also declined as a proportion of all government spending on goods and services.

Overall, the effects of inflation on interest rates and on capital outlays present a mixed picture. Governments gained on the revenue side as a result of investing their liquid assets. But rising interest rates, as well as inflation in the prices of capital purchases, cut against governments with respect to capital outlays. As a consequence, many state and local jurisdictions now find themselves facing a period of catching up on postponed capital facilities and equipment.

V. Cyclical Impacts on the Aggregate State and Local Government Sector Fiscal Position[39]

One important objective of this study is to examine the effects of business cycles and inflation on the budgets of central city governments. Before cyclical effects on the central city fisc can be studied however, one must understand the extent to which the entire state and local government sector has been affected by business cycles. That is, are somehow victims of recession or are they simply part of a more widespread problem? To answer this question we must be able to index the overall financial condition of the state and local government sector and to examine the response of this index to the business cycle. This turns out to be a subjective business.

The approach we take here in measuring financial condition involves focusing on the overall balance between revenues and expenditures for the state and local government sector in aggregate, and then studying the behavior of this balance (that is, budget surpluses or deficits) in times of recession and expansion. This analysis is based on statistics reported in the National Income Accounts (NIA).

The State-Local Sector Surplus

The surplus or deficit position of the state and local government sector is regularly reported in the NIA and is sometimes used as a measure of the sector's fiscal health. At first glance, a state-local surplus

might be interpreted to measure cash reserves available to finance operations. As can be seen from column (1) of Table 7, this amount remained in the $30 billion range from 1977 through 1982, and reached $55 billion in 1983.

However, state and local government surpluses on an NIA basis do not necessarily mean that the sector in aggregate has positive balances that are available to finance general government activities. This is so because the NIA surplus or deficit measure includes net additions to the assets of state and local government pension and other trust funds as well as additions to or subtractions from general balances. If trust fund surpluses are subtracted from the NIA surplus, the remainder can be viewed as the "general" government surplus or deficit. The results of this adjustment (see column 2 of Table 7) show that trust funds frequently account for most or all of the NIA's total state and local government surplus. The size of the general surplus is very modest relative to total state and local government spending; and the surplus can disappear entirely when governments sustain sufficiently large operating deficits, as was the case throughout 1982.

In order to measure the effects of the business cycle on state and local government fiscal health, we first match the trend in the NIA general surplus with cyclical movements in GNP. As may be seen in Table 7, the general surplus follows the general economic cycle, i.e., deficits appear or increase in recessions, and decrease or swing to the surplus side during expansionary periods. To better describe this pattern, four periods of expansion and four of contraction as defined by the Bureau of

TABLE 7

GROWTH IN THE STATE AND LOCAL GOVERNMENT SURPLUS, FEDERAL AID, AND THE FEDERAL BUDGET DEFICIT
(in billions of current dollars)

Year and Quarter		Total NIA Surplus	General Surplus	General Surplus as a Percent of Total Expenditures[a]	Total Federal Aid	Annual Increase in Federal Aid	Federal Budget Deficit
1974:	1	9.5	-0.3				
	2	8.8	-1.5	-1.4	43.3	1.5[b]	---
	3	7.7	-3.0				
	4	4.2	-6.8				
1975:	1	3.7	-7.6				
	2	4.5	-7.2	-2.7	54.6	11.3	- 70.6
	3	6.6	-5.8				
	4	8.9	-4.2				
1976:	1	10.1	-4.5				
	2	13.8	-1.6	0.4	61.1	6.5	- 53.1
	3	17.4	1.4				
	4	25.0	8.4				
1977:	1	23.7	6.6				
	2	26.1	8.4	3.7	67.5	6.4	- 45.9
	3	32.0	13.7				
	4	30.4	11.6				
1978:	1	31.6	12.4				
	2	34.0	14.3	3.4	77.3	9.8	- 29.5
	3	25.7	5.1				
	4	29.8	8.2				
1979:	1	32.3	9.9				
	2	26.8	3.5	2.0	80.5	3.2	- 16.1
	3	30.9	6.7				
	4	31.6	6.4				
1980:	1	30.9	5.2				
	2	26.2	0.3	1.0	88.7	8.2	- 61.2
	3	30.0	2.3				
	4	35.1	6.3				
1981:	1	36.8	7.8				
	2	39.2	9.9	2.0	87.9	-0.8	- 64.3
	3	39.8	9.8				
	4	34.6	3.7				

TABLE 7 (CONT.)

Year and Quarter	Total NIA Surplus	General Surplus	General Surplus as a Percent of Total Expenditures[a]	Total Federal Aid	Annual Increase in Federal Aid	Federal Budget Deficit
1982: 1	32.5	0.4				
2	34.4	1.0	-0.8	83.9	-4.0	-148.2
3	33.3	-1.0				
4	31.5	-3.7				
1983: 1	34.1	-1.9				
2	43.9	7.0	1.5	86.3	2.8	-178.6
3	47.4	9.5				
4	51.2	12.0				
1984: 1	53.9	13.4				

[a]The numerator is the average general surplus over four quarters; total expenditures are for the state and local government sector.

[b]1973-74 increase.

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis, National Income and Product Accounts, 1976-79, July 1980; Survey of Current Business, July 1984 and various issues.

Economic Analysis, are shown in Table 8. Using quarterly, seasonally-adjusted averages as the benchmark, these results show deficits (negative surpluses) during three of the four contractions and surpluses during all four expansions.

We have indexed these changes in fiscal position by calculating the "cyclical swing" in the general surplus. As estimated below, the cyclical swing equals the absolute difference in the average quarterly general surplus between a contraction and the following expansion.

Cycle	Swing	Accumulation
1969:III - 1973:IV	$ 5.6 billion	$ 5.5 billion
1973:IV - 1980:I	8.7 billion	79.3 billion
1980:I - 1981:III	6.9 billion	36.4 billion
1981:III - 1984:I	7.9 billion	40.4 billion

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, July 1984 and various other issues.

For example, the average quarterly surplus "swung" from a negative $3.6 billion to a positive $2.0 billion during the 1969-73 cycle. That is, state and local governments made up the average quarterly deficit of $3.6 billion and added another $2.0 billion for a swing of $5.6 billion during the cycle. Another interpretation of the data takes into account the quarterly duration of the cycle and calculates the "accumulation",[40] i.e., by how much the state and local government sector draw down reserves during contractions and accumulate surpluses during expansions. A larger net accumulation implies that the state and local government sector

TABLE 8

THE STATE AND LOCAL GOVERNMENT SECTOR
AND THE BUSINESS CYCLE[a]

Contractions	General Surplus (mean quarterly amount in billions)
1969:III - 1970:IV	-3.6
1973:IV - 1975:I	-3.8
1980:I - 1980:II	0.3
1981:III - 1982:IV	-0.08
Expansions	
1970:IV - 1973:IV	2.0
1975:I - 1980:I	4.9
1980:II - 1981:III	7.2
1982:IV - 1984:I	8.0

[a]All data are seasonally adjusted. Contraction period calculations include trough quarters; while expansion period calculations include peak quarters.

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, July 1984 and various other issues.

financial position was helped more by the ensuing recovery than it was hurt by the recession. This would appear to have been the case in every business cycle since 1973.

The Determinants of Surplus Size

Using quarterly data for 1969:I - 1984:I (forty-four quarters of expansion and seventeen of contraction) we estimated the response of state and local government current revenues, expenditures, and the general surplus (or deficit) to the business cycle. A single equation linear regression model yielded the overall conclusion that the state and local government surplus is positively related to the business cycle and to federal grant inflows. The specific findings, stated in real terms, were:[41]

1. A 1 percent increase in the unemployment rate lowers the surplus by $1.32 billion;
2. A $1 billion increase in federal grants raises the surplus by $500 million;
3. The surplus was lower during the 1973-79 cycle than during the rest of the period;
4. A 1 percent increase in the real GNP growth rate added $350 billion to the surplus.

Independent estimation of current revenues and expenditures, in real terms, revealed that:

1. A 1 percent increase in the unemployment rate reduced revenues by about $0.62 billion and increased expenditures by $0.88 billion, thereby reducing the surplus;
2. For every $1 billion in federal grants received, $910 million was spent and $90 million was "saved." Current revenues were further stimulated indirectly by another $390 million.

3. Finally, the estimates showed that during expansions revenues respond more than expenditures, thus the surplus increases.

The Surplus and Fiscal Health

Although it is clear that the state and local government sector surplus can fluctuate sharply in response to business cycles, it does not follow that all fluctuations necessarily are indicative of changes in governments' fiscal health. For example, a swing into a deficit (or a decline in the surplus) may only reflect a conscious decision on the part of elected officials to draw down accumulated balances to finance capital outlays. Similarly, observed increases in surpluses (or declines in deficits) might be the result of decisions to postpone compensation increases because of an uncertain economic outlook.

Is the Surplus Too Large?

As a general matter there is some justification for governments to run surpluses. A year-end fiscal surplus for a state or local government is neither unusual nor undesirable, per se; a surplus is not "excess" resources. Most state and local governments are prohibited by law from budgeting for an operating fund deficit; therefore, it is not surprising that the NIA data for state and local governments usually show a year-end surplus. More to the point, governments, like people, save for precautionary reasons by building up cash reserves over a period of years. These balances are accumulated for contingencies such as recession, a prolonged strike, a natural catastrophe (snow, flood), or for

cash flow problems stemming from occasional mismatches in the timing of receipts and expenditures.

The recent increases in the level of the surplus may reflect the demise of the growth orientation of state and local government fiscal planners. The newer concerns are that rapid inflation may re-emerge; that pension system underfunding must be corrected; that tax bases and population are shrinking in some areas; that long-term debt burden is too high to be carried by future revenue growth; and that there seems no possible way to finance "normal" expenditures in the event of another recession. State and local government financial planners, forecasters, and administrators--a conservative lot in the best of times--have become even more careful. At least nineteen states have now established "Rainy Day Funds."

In light of these observations about precautionary balances, one might ask whether reserves in recent years have been inordinately high, say greater than the 5 to 7 percent balance in the general operating account once suggested by the National Association of State Budget Officers as "normal".[42] Unfortunately, our measure is not of the stock of cash balances available but of the annual year end surplus. Still, we can gain some idea of fiscal position from these data.

The operating surplus--which can be derived from the general surplus and defined as the amount available for financing capital expenditures--indicates a cushion within the range of 5 to 7 percent of total general expenditures (see Table 9). The trend in the operating surplus as a percent of locally raised revenues--a measure of annual savings--shows a

TABLE 9

COMPONENTS OF GROWTH IN THE STATE AND LOCAL GOVERNMENT SURPLUS
(in billions of current dollars)

Year	NIA Surplus	General Surplus	Operating Surplus	Operating Surplus as a Percent of: Federal Budget Deficit	Operating Surplus as a Percent of: State and Local Government Revenues Raised From Own Sources	Operating Surplus as a Percent of: State and Local Government Total General Expenditures
1970	1.8	-4.8	8.8	73.9	8.0	6.6
1971	3.4	-3.9	9.8	44.7	8.0	6.6
1972	13.7	5.6	19.1	110.4	13.7	11.7
1973	13.0	4.1	18.4	274.6	12.0	10.2
1974	7.6	-2.9	14.2	132.7	8.5	7.0
1975	6.2	-6.2	9.4	13.3	5.2	4.1
1976	16.6	0.9	12.1	22.8	4.9	4.7
1977	28.0	10.1	18.8	41.0	6.8	6.9
1978	30.3	10.0	22.3	75.7	7.4	7.5
1979	30.4	6.6	11.7	72.7	3.5	3.6
1980	30.6	3.5	20.8	33.8	6.1	6.1
1981	37.6	7.8	27.4	35.8	5.4	5.5

SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Survey of Current Business, various issues; and Bureau of the Census, Governmental Finances in 1980-81, and various other issues (Washington, D.C.: U.S. Government Printing Office, 1982), Table 3.

growth for the post-1975 recovery period, a sharp decline in 1979, and continued growth in 1980 and 1981.[43] Yet the pattern of surplus accumulation in this period is no major departure from that of the recent past. Large operating surpluses are common--the 1970-78 average was $14.8 billion--and the pattern of growth follows the business cycle in a predictable way. In fact, the surplus increase in the 1971-73 recovery period was roughly the same as that during the 1975-78 recovery period.

Further, the surplus during this period was actually small by comparison with earlier years, when the growth in state-local government budgets is considered. The operating surpluses during recovery from the 1975 recession are equivalent to 5 to 8 percent of revenues raised from own-sources, a proportion which is lower than that realized during the previous recovery. The same pattern holds when the operating surplus is viewed as a percent of total general expenditures. Hence, at least in terms of practices during the past decade, the growing surplus in the state-local sector between 1975 and the early 1980s was not abnormal.

The story for the expansion beginning in 1983, however, is quite a different one. Our empirical analysis shows that the surplus during the five expansion quarters since 1983:I has been unusually large by comparison with past expansions. These estimates suggest that about two-thirds of this surplus accumulation can be attributed to the substantial discretionary increases in state taxes in 1983, and about one-third to a continued conservative stance toward expenditure increase.

Non-Cyclical Explanations

Not all of the fluctuations in the state and local government sector surplus are directly related to the business cycle. They have to do with the definition of the surplus and the fact that it may rise with tax reductions and/or deferral of current and capital expenditures. Hence, the surplus since 1975 may also reflect a response to the tax limitation movement, fiscal conservatism in the aftermath of the New York City scare, rising interest rates, and revenue growth due to inflation. There is some evidence to support this position. More to the point of this analysis, do the observed "cyclical" movements in the surplus reflect these other factors?

Consider the 1975-79 period of economic expansion when the surplus increased markedly. No doubt this increase was heavily influenced by state and local government own-source revenue growth. But there were other influences. There were important restraints on the growth of current expenditures--a lid on average compensation and employment increases--a steady decline in real capital spending by state and local governments, and major increases in federal assistance. Tax rate changes also played a role. Similarly, much of the dramatic reduction in the general surplus that came in 1979 was the result of discretionary tax reductions--particularly Proposition 13.

Since 1980, discretionary tax increases by state governments have been slow to come, and they have been lower in percentage terms than those enacted in the early 1970s. By 1983, however, states had begun to increase taxes again and, with the assistance of limited expenditure

growth and strong economic performance, accumulated record surplus amounts.

Aggregation Problems

Another concern is that the surplus is so unevenly spread that it indicates financial health for only a few state and local governments. This is the aggregation problem, i.e., the existence of an operating surplus for the state and local government sector does not imply a healthy fiscal position for every state and local government. Who would argue that a large surplus in the State of Texas makes the fiscal condition of New York State any better? Since the NIA surplus is a measure that offsets surpluses in some states with deficits in others, an aggregate sector surplus would be possible even if most state and local governments were in financial trouble. For example, The Fiscal Survey of the States reported that three states--Alaska, California, and Texas--accounted for more than half of the aggregate balances of reporting state governments in 1978. This suggests that changes in the surplus may also have been concentrated. A similar picture may be seen as states entered 1984, one full year into the recovery: thirty states anticipated balances of 3 percent of annual appropriations or less, or a deficit. Six states accounted for more than 50 percent of the balances expected in FY 1984.[44]

Some very interesting information on the financial condition of large city governments comes from the work of Philip Dearborn in his studies of audited financial statements.[45] Of the twenty-eight large cities in his sample, he finds twenty-one instances of revenue/expenditure imbalances in

at least one year between 1976 and 1979. For the twenty-seven largest cities (excluding New York) his results show an aggregate general fund deficit of $154.2 million in 1976, a surplus of $230.9 million in 1977, and a surplus of $73.6 million in 1978. Dearborn's work is not only informative about the financial condition of cities but it is convincing in demonstrating that sound conclusions about particular jurisdictions are best drawn from careful case-by-case analyses of units' financial statements.

The upshot of this collection of research is that all states and cities do not suffer major fiscal problems during recessions. Indeed, local governments as a whole seemed to fare better than state governments during the 1974-75 recession and during the following national expansion.[46] On the other hand, some cities were hurt more than others during the recession and helped less than others during the recovery. The evidence would seem to point to the larger, older cities as having suffered most through the cycle. This is a subject to which we turn later in this paper.

Summary

The growth path of the general surplus of state and local governments, as reported in the National Income Accounts, is not a perfect measure of the impact of inflation and business cycles on fiscal health: it aggregates the surpluses and the deficits of state governments and local governments, and one cannot tell the difference between a surplus that is large because tax revenues have grown and one that is large because necessary capital expenditures have been put off. Nevertheless, the

surplus does reflect the excess of own-source revenues over current plus capital expenditures in the sector as a whole and thus gives some indication of the cushion that has been built up to draw down in the next recession, or to use for tax reduction, increased capital spending and/or debt retirement. In its deficit form it describes the gap between current revenues available and planned current and capital expenditures, i.e., the amount to be borrowed, drawn from reserves, or financed from next year's tax increases.

We find that the surplus responds in a systematic and predictable way to the business cycle. On average, the state and local government sector has shown a surplus during expansionary periods and a deficit during national contractions. A statistical analysis of sixty quarters between 1969 and 1983 shows that the surplus has been sensitive to changes in the GNP growth rate, the unemployment rate, and the flow of federal grants. In aggregate, the state and local government sector has accumulated more surplus during recoveries than deficits during recession, because the recoveries have been much longer than the contraction periods (there were forty-three quarters of expansion and seventeen quarters of contraction in the time period studied here).

The results derived from this analysis can be used to develop a rough estimate of the amount of federal countercyclical assistance that would have been required to compensate state and local governments for recession. For example, all else being equal, this model suggests that if the unemployment rate had been 6 percent rather than 9.5 percent in 1983:IV, the surplus would have been $2.8 billion real dollars larger. If

we take 6 percent as a "normal" unemployment rate, we might say that, cet. par., the cost of the 1981:II-1982:III recession to state and local governments was $2.0 billion in real terms, and $4.4 billion in current dollars.

Has the state and local government sector behaved in a procyclical or countercyclical way? The answer is that it has done both in the period under study. Fiscal actions in the 1975 recession were procyclical--expenditure growth was slowed and tax rates were increased--but by most accounts the magnitude of the adjustments was not great. The 1975-79 expansion brought countercyclical actions on the expenditure side (real cuts or very slow growth) and procyclical tax rate reductions. The 1980-82 recessions brought on procyclical expenditure cuts, and little revenue increase due to discretionary actions.[47]. The recovery which began in 1983 and which helped to produce an unusually large surplus, has seen countercyclical tax increases and continued expenditure control, if not retrenchment.

Elected officials have become more conservative with respect to expenditure and tax policy, and more reluctant to increase taxes. Is it too much to assign some responsibility for this new fiscal conservatism to the business cycle? In one sense it is not, because the New York City fiscal crisis and the tax limitation movement, which were important influences on the new fiscal conservatism, were both partly results of the poor performance of the U.S. economy. Moreover, the firsthand knowledge of the consequences of recession, and the expectation of frequent recessions are something new to U.S. fiscal planners and politicians and

have helped shape this new conservative behavior.[48] On the other hand, the emerging resistance to government growth also reflects more fundamental changes in the political mood of the country, and changes such as cutbacks in the role of Federal aid which began in the late 1970s have also played a role in shaping the fiscal actions of state and local governments.

VI. The Business Cycle and City Finances[49]

The evidence presented above suggests that state and local government financial vitality has been compromised by the business cycle. The evidence also shows that some state and local governments are harder hit by recessions than others. The results of empirical work reported in the literature are not inconsistent with the hypothesis that some central cities have fared worse than other local governments in terms of their fiscal performance over the business cycle. But the evidence is not conclusive, in part because so many factors other than the business cycle have affected the fiscal condition of cities during the past decade.

The types of cities which would seem most susceptible to cycle-related fiscal problems are those which (a) have economic and revenue bases which are most sensitive to national economic contraction; (b) are located in cyclically sensitive states; (c) are heavily dependent on intergovernmental financing; and (d) have populations who suffer most from recession and therefore require special assistance. On all four counts, the older central cities in the industrialized region would seem to be candidates for the "recession-sensitive" list. The financial problems of such cities may be compounded even further because their economies often do not recover as fully as the rest of the country during expansions.

There are serious data and conceptual problems which cause us to fall well short of a full exploration of this issue. The most important of these shortcomings is that data availability limited this study to a very

small sample of cities. Specifically, we have reported results for three groups of cities:

-- the ten largest U.S. city/counties,

-- the twenty largest U.S. cities,

-- a small group of cities which publish multiyear fiscal forecasts.

Another important limitation is that we cannot map the business cycle against the financial performance of local governments for exactly the time periods desired because regional employment, income and fiscal data are produced annually rather than quarterly, while recession and expansion periods seldom conform precisely to calendar years. Despite these limitations, one might match up fiscal years and business cycles as follows: designate fiscal (and calendar) years 1974 and 1975 to encompass the impact of the first recession, fiscal years 1980-82 to include the second recession and fiscal years 1976-79 as the expansion period.

Central City Economic Base Changes

We have grouped the ten largest U.S. city-counties as declining or non-declining, according to their rate of population growth between 1972 and 1981. The declining cities in this sample--Baltimore, New Orleans, New York, Philadelphia and St. Louis--are primarily industrialized northern cities. The 'non-declining' cities are Jacksonville, Nashville, Denver, San Francisco and Indianapolis. The purpose of this categorization is to see if fiscal responses are dramatically different in the stereotypical "distressed" cities.

The economic performance of these cities during the past decade may be described as follows: large central counties which were in the declining group fared badly during both recessions in terms of employment loss, and large central counties in general had slower employment gains during the recovery period. Most of the central counties studied lost ground to the suburbs during the business cycle, but these data suggest that the decline in central counties relative to their suburbs was more pronounced for the declining central countries during the 1975 downturn than in 1980 and 1981. More interesting, however, is the indication that most of these central counties seem to have lost more ground to their suburbs during the recovery than during the recession.

Fiscal Responses

The fiscal responses observed for the aggregate state and local government sector do not hold so clearly for large cities, though the sample is small and one cannot stretch the interpretation of these statistical results too far. The following, however, would appear to be the case for these cities. First, there is no evidence that revenue growth was markedly dampened during the 1973-75 recession period, perhaps because discretionary revenue changes are included in these data. In most of these central cities, and in all U.S. cities in aggregate, revenue growth appeared to keep pace with personal income growth. This finding concurs with our hypothesis that the presence of high inflation during the 1973-75 recession prompted significant discretionary tax increases.

The expenditures of these ten cities were not restrained as much during the 1973-75 period as were expenditures in other U.S. cities; city

government employment and employee compensation increases tell a similar story. All U.S. cities held employment per 1000 population about constant during 1973-75 while most of these ten city-counties were increasing their employment-population ratio. Similarly, the public employee wage rate was not checked as much during 1973-75 in most of these ten large cities as in other cities in the nation.

The surprise in these trends, however, comes in the 1975-79 expansion when there appears to have been substantial fiscal restraint among these ten cities. City government employment in six cases increased more slowly than in the rest of the nation, and slowed down even from the 1973-75 rates of increase in seven of ten cases. The average compensation of city employees was held below the increase in prices in six of these central counties.

A parallel analysis of the fiscal behavior of the twenty largest U.S. cities confirms this finding. These cities did not reduce employment or cut wages as much as other U.S. cities during the recession, but their budgets were much more austere than those of all U.S. cities during the 1975-79 recovery. The fiscal position of central cities in the industrialized region seemed most responsive to cyclical changes.

Conclusions From Direct Evidence

Most of the results are consistent with those reached above, but there are important differences. Our sample is quite small--we matched fiscal and economic base behavior for ten city/counties and studied fiscal trends for twenty central cities--hence one cannot stretch the interpretation of

these statistical results too far. The following, however, would appear to be the case for these cities.

-- The "declining cities" fared badly during the two recessions in terms of employment loss, and large central counties in general had slower employment gains during the recovery period. Most of the ten large counties studied here lost ground to their suburbs during the business cycle.

-- There is no evidence that revenue growth was markedly dampened during the 1973-75 recession period, probably because discretionary revenue changes are included in these data. In most of these central cities, and in all U.S. cities in aggregate, revenue growth appeared to keep pace with personal income growth.

-- The expenditure budgets of these ten cities were not restrained as much during the 1973-75 period as in other U.S. cities. City government employment and employee compensation increases tell a similar story. All U.S. cities held employment per 1000 population about constant during 1973-75 while most cities in this sample were increasing their employment-population ratio. Similarly, the public employee compensation rate was not checked as much during 1973-75 in most of these ten large cities as in other cities in the nation.

-- The 1980-82 recession was different in that large cities cut their expenditures and did not increase tax rates to make up for resources lost to the recession and to the reductions in federal grants.

-- The surprise in these trends, however, comes in the recovery when there appears to have been substantial restraint among these ten cities. City government employment in six cities increased more slowly than in the rest of the nation, and slowed down even from the 1973-75 rates of increase in seven of ten cases. The average compensation of city employees was held below the increase in prices in six of these central counties.

-- An analysis of the fiscal behavior of the twenty largest U.S. cities confirms this finding. These cities did not reduce employment or cut wages as much as other U.S. cities during the 1973-75 recession, but their budgets were much more austere during the 1975-79 recovery, and the 1980-82 recession.

-- The fiscal position of central cities of the declining type--perhaps those in the industrialized region--seems more responsive to cyclical changes, but this sample and analysis is far too limited to place much stock in this result.

The fiscal performance of large central cities over the business cycle, then, roughly parallels that of the state and local government sector in aggregate, with a few exceptions. During the 1974-75 recession, large central counties did not retrench as much on the expenditure side--they were less procyclical in their actions. From the beginning of the 1976-79 expansion and through the following recessions, large cities followed a pattern of lowering effective tax rates and controlling or retrenching on the expenditure side--a mixture of strategies which was, on balance, probably procyclical during the 1976-79 expansion (tax reductions dominate) and countercyclical during the 1980-82 recessions. The expansion which began in 1983 appears to be bringing a change in this reaction, and may lead to a countercyclical pattern of tax increases which dominate the expenditure increases due to pent-up wage demands.

The interesting conclusion, then, is that central cities may be hurt as much by the failure of their economies to fully recover as by the impact of recession. One might speculate that a combination of this expectation, the new conservatism of urban fiscal managers, and federal aid reduction dampened fiscal growth during the recovery; and that more prosperous state and local governments seem to be taking the fiscal dividends earned during the recovery in the form of tax burden reductions.

Inferential Evidence From Forecasting Models

The previous evidence was based upon an examination of actual local government behavior. Another way to investigate the effects of business conditions is to examine what jurisdictions indicate would be the likely effects of cyclical phenomena on their fisc. To do this we reviewed twenty-two forecasting documents prepared between 1981 and 1983 in fourteen jurisdictions throughout the nation.

It is important to recognize that, due to the methodological approaches used in creating fiscal forecasts, conclusions different from those obtained above are likely to result. One primary difference between the forecasts and observation of actual behavior concerns balanced budget requirements. While localities are bound either to balance their operating budgets or at least to limit deficits to amounts that can be financed out of accumulated surpluses, forecasts are rarely produced under the same constraint. Indeed, a principal use of a multi-year forecast is to determine if budget gaps or revenue shortfalls would be likely to occur in the future assuming that the current revenue structure and service levels will be maintained throughout the forecast period. As such, foremost results regarding the cyclical effects on local governments can be attributed to the automatic responses of revenues and expenditures to business conditions rather than any combination of automatic and discretionary reactions.

Inflationary Impacts. Since the forecasts reviewed here were produced during or immediately after one of the most prolonged inflationary periods

in United States history, it is not surprising that inflation expectations were a primary factor which shaped forecasts. In general, the forecast documents indicated that cities anticipated a negative net effect on the local fisc from inflation, i.e., that price increases have a greater impact on spending than on revenues.

The two primary reasons why revenues are expected to react sluggishly to inflationary pressures can be attributed to the roles of the property tax and intergovernmental grants. In no instance did the forecasting models link the rate of inflation to property tax revenues. The expectation seems to be either that assessment processes do not pick up inflation-induced changes in property values or that tax rates would be rolled back proportionately to increases in the tax base. In any case, cities do not project property taxes to be inflation responsive.

Likewise, in no instance was a city willing to predict that intergovernmental grants would increase in response to increases in prices even though most state revenue structures are probably responsive to inflation. Instead, cities tended to forecast that state and/or federal aid would remain constant in nominal terms.

Many cities using econometric forecasts use simple trend techniques to project some revenue sources. Trend methods imply that revenues do not respond to changes in the rate of price increases. In fact, for several major cities, including Dallas, Ft. Worth, Kansas City, New Orleans, San Diego, Shreveport and Vancouver, less than 60 percent of total revenues were hypothesized to be positively affected by inflation either directly

by changes in price indices, or indirectly through changes in nominal measures of economic activity.

There were, however, some revenue sources which were anticipated to be highly responsive to inflation. Of particular import were utility franchise taxes imposed in some cities. For example, the forecasting models of Kansas City and Vancouver show CPI elasticities greater than two for natural gas and power and light utilities.[50] Likewise, income taxes were anticipated to be responsive to inflation in the two sampled cities utilizing this revenue source--Cincinnati and New York.

Considering the spending side of the budget, all expenditures are generally tied to price levels in the multiyear forecasting models. This, together with the fact that revenues are assumed to be partially immune to changes in prices, is why inflation is expected to affect cities in a negative manner.

The models show inflation affecting input prices differentially. With labor being the most important input in the public sector production process, the assumptions regarding wage rate responses to inflation are crucial in determining the overall effect of price changes on government spending. Governments vary with respect to their assumptions about the relationship between inflation and wage changes. Many simply make ad hoc assumptions regarding these wage increases. As discussed below, this may be due to the collective bargaining environments in which they operate. Other cities, e.g., San Antonio, Shreveport and Vancouver, tied wage rate increases to projected increases in the CPI. Among these, Vancouver assumed that wages would increase by only 90 percent of increases in CPI

while the other two jurisdictions assumed a one-to-one correspondence. These differential assumptions support the idea that some cities see themselves as having more control over their compensation outlays than other cities do which distinguishes this element of expenditures from most elements of their budgets.

Most cities assume that they have little or no control over price increases of non-personnel inputs. Some cities, such as San Antonio, go to great lengths to capture the likely effects of inflation on the several different types of non-labor spending by disaggregating expenditures by object and using different inflation rates for each.[51] It is interesting to note that in general, cities projected prices of inputs other than personnel to rise more rapidly than wages. Thus, to the extent that labor cost increases were assumed to be tied quite closely to increases in the general price level, such an assumption would result in overall spending forecasts whose implied growth rates were even more rapid.

Concern with inflation seems to have dominated the forecasting models produced during the early 1980s with the models indicating that inflation would adversely affect the fiscal position of a city. Furthermore, at least some cities anticipated that inflation rates would continue at historically high rates throughout the projection period. For example, the "medium inflation" scenario produced by Dallas in 1981 called for wages to increase at a 7 percent annual rate while non-personnel prices would rise at a 10 percent rate through 1984/85. Such expectations would have encouraged spending restraints which, if carried out even when

inflation cooled during the recession, could help account for the procyclical spending cuts mentioned above.

Effects of Recession and Recovery. Can one conclude from the forecasting models that city fiscal positions are highly vulnerable to changes in the business cycle? Based on this review, the answer would seem to be no. Of course, this conclusion may be due to the non-random sample used in reaching the result or due to particular biases built into the forecasting models. In any event, we were unable to find major procyclical revenue responses and essentially no expenditure responses to changes in business conditions.

With property taxes and intergovernmental grants assumed to be unresponsive to the economic climate, it is little wonder that most cities do not anticipate that recession or non-inflationary expansion will have dramatic effects on revenues. We were able to document this by simulating the effects of the 1973-80 business cycle on the revenue models of four cities--Cincinnati, New Orleans, Kansas City and Vancouver, Washington. For the latter three of these four, economic expansion would result in only a very slightly greater revenue increase than during a contraction. In part this was due to the assumed insensitivity of many revenue sources to any changes in business conditions; but it was also partially due to the fact that during the 1973-75 recession prices rose more rapidly than they did, on average, during the expansion. Thus, to the extent that revenues were responsive to inflation, recessionary conditions did not have strong retardation effects on revenues.

These findings were different in Cincinnati, due in great part to its reliance upon income taxes as a primary revenue source. The revenue model there simulates revenues as growing more than twice as fast during an expansion as during a recession.

On the expenditure side, the models examined here do not indicate any cyclical sensitivity. Spending is projected in these models as being independent of revenues. Furthermore, spending activities are forecasted exogenously of any changes in the economy other than price changes. It must also be recognized that cities, in general, assume few countercyclical spending responsibilities. Thus, while the models reviewed here do not suggest countercyclical spending, similar analysis of state or county models could yield different results.

What, if anything, can one infer about the pro- or countercyclical effects of local government on the economy? In general, the implications from this review of forecasting models would suggest that local governments have little effect in either countering or promoting cyclical change. Only those few jurisdictions dependent upon cyclical sensitive revenue sources (e.g., income taxes and cyclically neutral spending responsibilities would, in the absence of discretionary actions, tend to have a significant countercyclical influence on the economy.

Conclusions and Possible Biases. This inferential approach to analyzing the cyclical impacts on the finances of cities through investigation of their forecasting models has suggested that (1) inflation has a negative net effect on a city's fisc and (2) for the most part, city finances are not greatly affected by cyclical movements. Still, there are

several caveats that should be highlighted. First, the models on which these conclusions were based were not randomly drawn. Thus, it is not possible to generalize findings to all cities within the United States.

Second, it should be remembered that, for the most part, the models were constructed soon after cities had experienced very high levels of inflation. It may be due to this timing that the models reflect a tremendous concern for the effects of inflation. That is, while inflation may have created some difficulties for local governments, the models may have been built in such a way that they magnify these detrimental effects. For example, their experience in the late 1970s and early 1980s with nearly unprecedented rates of inflation may have made forecasters excessively cautious in assuming little in the way of revenue expansion due to inflation. The same explanation probably accounts for the use in forecasting models of expected inflation rates that have turned out to be excessive.

Furthermore, it must be recognized that these forecasts are public documents, produced within a political environment. Thus, unlike "pure" forecasts of what is likely to occur, there may be other objectives for the forecasts we examined. Overstatement of the effects of inflation would be consistent with efforts to keep a tight rein on future budgets. If forecasters err on the optimistic side, it becomes more difficult for elected officials to withstand the inexorable pressure to increase spending or lower taxes. In jurisdictions where the political climate makes such pressures especially severe, multiyear forecasts which show ever increasing fiscal gaps in the absence of discretionary spending

cutbacks or tax increases could be forceful arguments for holding the lid on the budget.

In a similar vein the creation of a public document which everyone, including the jurisdictions's employees, could read might add to the incentive of forecasters to be pessimistic about the expected future rate of inflation and its adverse effects on the fisc. If budget deficits are being projected even where wages are assumed to grow less rapidly then prices generally, union bargainers may have a more difficult time achieving substantial wage gains.

Thus, while the results of our examination of forecasting models are consistent with our earlier discussion about the potential effects of inflation on revenues and expenditures, it is possible that there are biases in the findings. Furthermore, if the forecasted budget shortfalls are large enough to bring about discretionary tax and fee increases and no more than modest wage concessions, the actual net effect of inflation on the local fisc may turn out to be positive and more in line with the earlier findings of the ACIR.

VII. Conclusions: Pro- or Countercyclical Behavior?

Our conclusions with respect to the effects of business cycles and inflation on state and local government finances must be qualified. The effects are not necessarily the same for states as for cities; the impacts on real levels of revenue and expenditure are not independent of what is happening to prices; and there may have been a shift to more conservative behavior on the part of fiscal decisionmakers. If decisionmakers have become more cautious, this is in no small part due to the great instability that has characterized the performance of the U.S. economy during the past 15 years.

Cyclical and Inflationary Impacts: The Evidence

Since 1969, the general surplus of state and local governments has dropped with increases in unemployment rates, risen with increases in the real GNP growth rate, and has responded more strongly to an increase in federal grants than to a like increase in GNP. Chiefly because expansions have lasted longer than contractions, the aggregate state and local government surplus has increased more during expansionary periods than it has decreased during downturns. Yet, the surplus position was weaker during the 1973-79 business cycle than in the rest of the period. This suggests some sort of alteration in the discretionary responses of state and local governments to the business cycle during the past fifteen years.

In the 1973-75 recession, tax rates were increased and expenditure growth was slowed, both of which constitute procyclical behavior. In the following recovery there were real cuts in spending (countercyclical) together with tax rate reductions (procyclical). This same behavior continued in the 1980-82 recessions thereby constituting procyclical behavior. While the current recovery has seen unusually large surpluses, the effect of state and local government budgetary policy has been countercyclical: there have been widespread tax increases and generally modest growth in spending. As we have moved through this fifteen year period, then, the discretionary fiscal responses of state and local governments appear to have moved from pro- to countercyclical.

To what can one attribute this behavior? One factor may be a general rise in anti-government sentiment which has manifested itself in the form of tax limitation movements in some jurisdictions, cutbacks in federal grants, supply-side economic policies, and the like. Still, general business conditions may have contributed to these phenomena. The fiscal crises of several major local governments were attributed to the declines in their economies and federal spending limitations which may be traced, at least in part, to the generally poor performance of the U.S. economy. Finally, inflation or the fears thereof, surely contributed to these changes.

Inflation was an obvious fact of life throughout the period. Furthermore, the work here indicates that the effects of inflation on spending at nearly all levels of state and local government exceeded its effects on revenues. The interesting phenomenon, which is in accord with

the cyclical responses discussed previously, is that actual spending increases during the 1972-77 period still exceeded those that we estimated would have occurred if the real level of inputs in the state local sector remained constant. Conversely, during the 1977-82 period, actual increases in spending were only slightly greater than those which would have been attributed to inflation. This reinforces the observation that state-local decision-makers have become more fiscally conservative. Inflation itself probably contributed to this change.

An examination of the forecasting models used by city governments to project future fiscal positions revealed that by the early 1980s there was, indeed, a general concern for inflation. Furthermore, these same models indicated that the forecasters viewed the local fiscal position to be closely tied to the inflationary experiences of the national economy. In general, inflation was seen to affect nearly all spending but was seldom anticipated to stimulate growth in more than about one-half of the revenue base. On the other hand, the general form of the models used indicated that major real fluctuations in the U.S. economy would not have significant effects on the fiscal position of the cities. This is primarily due to the generally perceived lack of responsiveness of property taxes and intergovernmental revenues to changes in business conditions, as well as to a similar lack of responsiveness in spending needs. We hasten to add that this conclusion may be entirely different if a number of jurisdictions with income transfer responsibilities and different revenue bases could have been studied.

The examination of the forecasting models together with the findings presented in the other parts of this study suggest the importance of expectations in the overall impact of cycles on the state-local sector. The following story might be told: even though procyclical behavior characterized the 1973-75 recession, many local governments, especially older cities, were either in real financial difficulty or feared such difficulty. Furthermore, the inflationary experiences of the early 1970s taught them that inflation, too, had potential negative effects for their fiscal position. Expectations of either a similar economic downturn or of renewed inflation contributed to the discretionary slowdowns in spending and taxation during the late 1970s.

The realization of these inflationary fears in the beginning of the current decade undoubtedly strengthened the resolve to follow policies which would avoid the fiscal difficulties of the mid-1970s. Thus, even though the national income account surpluses were at very high levels, fiscal decision-makers and modelers continued to be greatly concerned about further rises in prices or economic downturns. Such behavior was simply accentuated by more restrictive federal policies regarding intergovernmental grants.

The Joint Effects of Recession and Inflation

There is a longstanding debate about whether the fiscal actions of state and local governments are procyclical or countercyclical, and a more recent set of concerns about how inflation effects budgetary balance. Whether the joint effects of recession and inflation are reinforcing or offsetting is a question that has rarely been addressed, and there

is not a clear cut answer. This is because, first, there are both automatic and discretionary effects at work on both the revenue and spending sides of government budgets, with many possible combinations of outcomes and many possible dominant effects. Second, the cyclical experiences of the U.S. during the past 15 years are not identical--for example, the 1973-75 recession was accompanied by considerably greater increases in prices than was the 1980-81 downturn.

To deal with the myriad of possible effects, we have created a matrix classification which categorizes the several possible outcomes under both alternative inflationary conditions (high inflation and low or no inflation), both business cycle conditions (recession and expansion), and which distinguishes automatic from discretionary changes (see Table 10). The automatic effects of inflation will drive up both revenues and expenditures, as shown under automatic effects in Cases I and II. Yet the relative size of the revenue and expenditure effects may differ under a high vs. a low inflation case. The evidence suggests that certain important revenue sources are assumed to be invariant to the rate of inflation by government budgetmakers and forecasters, but expenditures are assumed to be more sensitive. This suggests that at low rates of price increases, state and local governments may realize a revenue growth that nearly keeps up with expenditure growth, whereas at high inflation rates the positive spending effects outweigh the revenue response. Thus, in the case of high inflation we would expect the expenditure effects to dominate and purchasing power to decline.

TABLE 10

THE FISCAL RESPONSE OF STATE AND LOCAL GOVERNMENTS
TO BUSINESS CYCLES AND INFLATION

Cases	Taxes	
	Automatic	Discretionary
I. High Inflation	+	+
II. Low Inflation	+	-
III. Recession: Procyclical	-	+
IV. Recession: Countercyclical	-	-
V. Expansion: Procyclical	+	-
VI. Expansion: Countercyclical	+	+
	Expenditures	
I. High Inflation	+	-
II. Low Inflation	+	+
III. Recession: Procyclical	+	-
IV. Recession: Countercyclical	+	-
V. Expansion: Procyclical	-	+
VI. Expansion: Countercyclical	-	-

The discretionary reactions one might expect in the high inflation case (I) are increased taxes, a drawing on past accumulated balances, and reduced expenditures, leading to a restoration of purchasing power. In the low inflation case where revenues are more or less keeping up, the pressure is for discretionary action to reduce taxes. By comparing cases I and II, we might say that the discretionary and automatic tax changes attributable to inflation alone are reinforcing in periods of high inflation and offsetting in periods of low inflation; and in the case of expenditures the automatic and the discretionary changes are offsetting in periods of high inflation and reinforcing in periods of low inflation.

Cases III-IV represent the possible combinations of automatic and discretionary reactions to recession and expansion. No matter what is the performance of the economy, the automatic reactions of taxes and expenditures will be countercyclical, i.e., taxes decline (rise) and expenditures increase (decrease) during recessions (expansions). This follows from the income elastic revenue sources used by at least some state and local governments and the income transfer responsibilities assigned to certain of these jurisdictions.

Whether the state/local sector is pro- or countercyclical, then, depends on whether the discretionary reactions by these jurisdictions are offsetting or reinforcing; if offsetting, whether the discretionary actions outweigh the automatic effects; whether expenditure or revenue effects dominate; and whether the rate of inflation is high or low.

The past decade has seen many of the responses described by cases III-VI. For the period 1973-75 there was both high inflation (I) and

recession with procyclical discretionary actions (Cases I and III). The discretionary actions were reinforcing in that both recession and inflation prompted discretionary tax increases and expenditure reductions. These procyclical responses were to some extent by countercyclical automatic responses.

The 1981-82 recession, however, combined the low inflation scenario (II) with procyclical recession response (III). Inflation was conducive to tax cuts and expenditure increases while the recession response would have called for tax increases and expenditure cuts. This may partially explain why the fiscal response to the recent recession was less procyclical than in the case of the earlier recession. Indeed, New York is a good case in point. Its progressive tax structure captured inflation-induced revenue increases and permitted tax reductions, but the size of these reductions and the desired expenditure increases were checked by the fiscal impacts of the recession.

During the long recovery between 1976 and 1980 inflation started out at a relatively low rate and slowly heated up to double digit levels by the end of the decade. Discretionary responses to these external conditions were dominated by cutbacks in both taxes and spending. Such fiscal actions are procyclical on the revenue side (Case V) and consistent with a climate of low inflation rates (Case II). But on the spending side of the ledger these discretionary responses were countercyclical (VI). The procyclical or countercyclical generalization is just not easily made.

As the state and local sector entered into the 1983 expansion, countercyclical discretionary actions began to dominated tax policy and

have reinforced countercyclical automatic responses (Case VI). To some extent, this policy direction was offset by the low inflation setting (Case II) which would suggest a tendency toward discretionary tax reduction. The current expansion also is characterized by countercyclical expenditure response (Case VI). This continued restraint on expenditures has helped to generate the unusually large surplus in 1983 and 1984. While such discretionary action is out of character with the usual behavior of state and local governments during expansionary periods, it is a logical reaction to a long period of historically high inflation, greater uncertainty about the future rate of inflation, and an economy that appears to many observers to be growing more unstable.

What we may say in conclusion, then, is that the discretionary procyclical actions in the 1973-1975 recession were a response to both the recession and to a high rate of inflation. The policy actions taken--tax increases and expenditure cuts--were sufficient to offset the automatic countercyclical impacts. This procyclical response was dampened in the 1980-1982 recession because the rate of inflation was lower and possibly exerted a countercyclical response, and because a cyclically neutral conservative bent--hold the line on taxes and expenditures--had carried over from the previous expansion.

As the state and local sector entered into the current expansion, discretionary actions have been dominated by countercyclical increases in taxes and continued restraint on expenditures helping to account for the unusually large surplus. The forecasting models of the cities reviewed here may help account for this action which one might be expected to

accompany high inflation rates rather than the low rates of inflation experienced during the past two years. The joint effect of previously high rates of inflation which were anticipated to continue into the future together with the effects of the deep recession probably accounted for this outcome.

FOOTNOTES

1. Much of this section was drawn from Roy Bahl and Larry DeBoer, "Inflation, The Business Cycle and State and Local Government Finances," Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, 1983, unpublished manuscript).

2. Advisory Commission on Intergovernmental Relations, State-Local Finances in Recession and Inflation (Washington, D.C.: Government Printing Office, May 1979).

3. David Greytak and Bernard Jump, Jr., "The Impact of Inflation on State and Local Government Finances, 1967-1974," Occasional Paper No. 25, Metropolitan Studies Program, The Maxwell School (Syracuse, New York: Syracuse University 1975); Greytak and Jump, The Impact of Inflation on the Expenditures and Revenues of Six Local Governments, 1971-1974; David Greytak and Bernard Jump, Jr., "Inflation and Local Government Expenditures and Revenues: Methods and Case Studies," Public Finance Quarterly, Vol. 5, No. 3 (July 1977): 275-301.

4. Ronald Ehrenberg, "The Demand for State and Local Government Employees," American Economic Review 63 (June 1973).

5. For example, David Greytak, Richard Gustely, and Robert J. Dinkelmeyer, "The Effects of Inflation on Local Government Expenditures," National Tax Journal, Vol. XXVII, No. 4 (December 1974): 583-598; Greytak and Jump, Jr., "Inflation and Local Government Expenditures and Revenues: Methods and Case Studies;" Edward M. Cupoli, William A. Peek and C. Kurt Zorn, "An Analysis of the Effects of Inflation on Finances in Washington, D.C.," Occasional Paper No. 36, Metropolitan Studies Program, The Maxwell School (Syracuse, New York: Syracuse University, April 1979). Greytak, Gustely and Dinkelmeyer constructed an index for New York City material input costs for the 1965-72 period, using over 60 categories of purchases and a separate price index for each. Their findings showed the cost of supplies to be increasing at a slower rate than the CPI, but materials and equipment to be increasing at about the same rate. Using a similar method for the 1971-74 period, Greytak and Jump found the same relationship between the increasing price of material inputs and the CPI--material input prices increased by about 90 percent of the rate of increase in the CPI. Their findings were similar for five other local government areas studied. However, Cupoli, Peek and Zorn, studying Washington, D.C. expenditures for the 1972-75 period estimated that inflation drove up material costs by 31.6 percent as against a 28.7 percent increase in the CPI.

6. Karen Davis and Cathy Schoen, Health and the War on Poverty: A Ten Year Appraisal (Washington, D.C.: Brookings Institution, 1978), Chapter 3.

7. For detail on this pattern of growth, see Ann Kalman Bixby, "Social Welfare Expenditures, Fiscal Year 1979," Social Security Bulletin, Vol. 44, No. 11 (November 1981): 3-12.

8. Roy Bahl, Financing State and Local Governments in the 1980s (New York: Oxford Book Co., 1984), p. 99.

9. Roy W. Bahl (ed.), The Fiscal Outlook for Cities: Implications of a National Urban Policy (Syracuse, NY: Syracuse University Press, 1978).

10. See Alvin Hansen and Harvey Perloff, State and Local Finance in the National Economy (New York: W.W. Norton and Co., 1944).

11. Mabel Newcomber, "State and Local Financing in Relation to Economic Fluctuations," National Tax Journal 7 (June 1954); and Eugene Myers and Randall Stout, "The Role of States and Local Governments in National Fiscal Policy," National Tax Journal 10 (June 1957).

12. James A. Maxwell, "Countercyclical Role of State and Local Governments," National Tax Journal 11 (December 1958); Morton Baratz and Helen Fair, "Is Municipal Finance Fiscally Perverse?" National Tax Journal 12 (September 1959).

13. Robert W. Rafuse, Jr., "Cyclical Behavior of State-Local Finance," in Essays in Fiscal Federalism, edited by Richard Musgrave (Washington, D.C.: The Brookings Institution, 1965); and Ansel Sharp, "The Behavior of Selected State and Local Fiscal Variables During the Phases of the Cycles 1949-61," in 1965 Proceedings of the Fifty-Eighth Annual Conference on Taxation (Harrisburg, Pa.: National Tax Association, 1966).

14. Dennis Zimmerman, "The Sensitivity of the State-Local Tax System to Economic Activity: Experience From the Great Depression to the 1970s," in The Business Cycle and Public Policy, 1929-80, U.S. Congress, Joint Economic Committee (Washington, D.C.: Government Printing Office, 1980).

15. Rafuse, "Cyclical Behavior of State-Local Finances"; and Sharp, "The Behavior of Selected State and Local Fiscal Variables During the Phases of the Cycles 1949-61."

16. Roy Bahl, Alan Campbell, David Greytak, Bernard Jump, Jr., and David Puryear, "Impact of Economic Base Erosion, Inflation and Retirement Costs on Local Governments," Testimony: Fiscal Relations in the American Federal System: Hearings before a Subcommittee on Government Operations, House of Representatives, 94th Congress, First Session, July 15, 1975.

17. David T. Stanley, "Running Short, Cutting Down: Five Cities in Financial Distress" (Washington, D.C.: The Brookings Institution, March 1979), unpublished manuscript.

18. U.S. Congress, Joint Economic Committee, Subcommittee on Urban Affairs, The Current Fiscal Position of State and Local Governments, Survey of 48 State Governments and 140 Local Governments, 94th Congress, 1st Session (Washington, D.C.: Government Printing Office, December 17, 1975).

19. U.S. Senate, Committee on Governmental Affairs, Subcommittee on Intergovernmental Relations, The Counter-Cyclical Assistance Program: An Analysis of Its Initial Impact, 95th Congress, 1st Session (Washington, D.C.: Government Printing Office, February 28, 1977).

20. Peter Skaperdas, "State and Local Governments: An Assessment of Their Financial Position and Fiscal Policies," Quarterly Review, Federal Reserve Bank of New York, Winter 1983-84, pp. 1-13.

21. U.S. Congress, Joint Economic Committee, Emergency Interim Survey: Fiscal Condition of 48 Large Cities, 97th Congress, 1st Session (Washington, D.C.: Government Printing Office, January 14, 1982).

22. Reported in Municipal Finance Officers Association, Resources in Review (Washington, D.C.: MFOA, 1982), p. 11.

23. Stephen Gold and Karen Benker, State Fiscal Conditions as States Entered 1982 (Denver: National Conference of State Legislatures, 1982).

24. Tax Foundation, Tax Review, Vol. XLII, No. 8 (September 1981).

25. U.S. Congress, Joint Economic Committee, Subcommittee on Urban Affairs, The Current Fiscal Position of State and Local Governments, Survey of 48 State Governments and 140 Local Governments, 94th Congress, 1st Session (Washington, D.C.: Government Printing Office, December 17, 1975).

26. U.S. Congress, Joint Economic Committee, Subcommittees on Economic Growth and Stabilization and on Fiscal and Intergovernmental Policy, The Current Fiscal Condition of Cities: A Survey of 67 of the 75 Largest Cities, 95th Congress, 1st Session (Washington, D.C.: Government Printing Office, July 28, 1977).

27. U.S. Congress, Joint Economic Committee, Emergency Interim Survey: Fiscal Condition of 48 Large Cities, 97th Congress, 1st Session (Washington, D.C.: Government Printing Office, January 14, 1982).

28. National Association of State Budget Officers, State Fiscal Survey Fiscal Years 1975, 1976, and 1977, Summary Report (Lexington, KY: National Association of State Budget Officers, February 1977), p. 3.

29. The Comptroller General of the United States, Report to Congress, Antirecession Assistance is Helping but Distribution Formula Needs Reassessment (Washington, D.C.: General Accounting Office, July 20, 1977). For more details, see The Comptroller General of the United States, Impact of Antirecession Assistance on 15 State Governments, Impact of Antirecession Assistance on 16 County Governments: and Impact of Antirecession Assistance on 21 City Governments (Washington, D.C.: General Accounting Office, February 22, 1978).

30. See U.S. President, Economic Report of the President (Washington, D.C.: U.S. Government Printing Office), 1977.

31. Robert C. Vogel, "The Responsiveness of State and Local Receipts to Changes in Economic Activity: Extending the Concept of the Full Employment Budget," Joint Economic Committee of the U.S. Congress, Studies in Price Stability and Economic Growth (Washington, D.C.: Government Printing Office, June 1975); and Robert Vogel and Robert Trost, "The Response of State Government Receipts to Economic Fluctuations and the Allocation of Counter-Cyclical Revenue Sharing Grants," The Review of Economics and Statistics, Vol. LXI, No. 3 (August 1979): 389-400.

32. Robert Crider, The Impact of Inflation on State and Local Government, Urban and Regional Development Series No. 5 (Columbis, Ohio: Academy for Contemporary Problems, July 1978).

33. ACIR, State-Local Finances in Recession and Inflation, pp. 80-81.

34. Ibid.

35. Crider, The Impact of Recession on State and Local Finance.

36. This section draws substantially from Bernard Jump, Jr., "The Effects of Inflation on State and Local Government Finances, 1972-1980," Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, January 1983).

37. Details regarding actual and inflation-induced potential expenditure change by type of expenditure are contained in Jump, "The Effects of Inflation on State and Local Government Finances, 1972-1980."

38. For details about actual and inflation induced potential revenue change by type of revenue source, see Ibid.

39. This section draws substantially from Roy Bahl, "Business Cycles and the Fiscal Health of State and Local Governments," Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, July 1984).

40. Net accumulation is defined as the sum of quarterly surplus (deficit) amounts for contraction periods plus the sum of quarterly surplus (deficit) amounts for expansion periods. For example, during the 1969:III - 1970:IV contraction, state and local governments amassed a deficit of $18.2 billion, and accumulated a surplus of $23.7 billion during the 1970:IV - 1973:IV expansion. The net accumulation for the cycle was calculated to be $5.5 billion, which equals the sum of the amounts for the two periods (23.7 - 18.2 = 5.5).

41. The regression equations are reported in Bahl, "Business Cycles and the Fiscal Health of State and Local Governments," Table 4.

42. National Association of State Budget Officers, Understanding the Fiscal Condition of the States (Lexington, Kentucky: NASBO, 1978), p. 12.

43. The alert reader will have noted that the data in Table 9 which show the NIA state and local surplus growing over the period 1970-1981 appear to contradict the implications of the data in Tables 3-6 which indicate that the index of actual spending during the periods 1972-77 and 1977-82 exceeded the revenue index for those same periods. The contradiction is more apparent than real and can be explained. The expenditure indexes reflect expenditure growth over base years 1972 and 1977, but tell us nothing about revenue-expenditure balance in the base year. Moreover, the NIA surplus does not measure the same simple difference in revenues and expenditures as used in the inflation indexes.

44. Steven Gold and Corina Eckl, State Fiscal Conditions Entering 1984 (Denver, CO: National Conference of State Legislature, February 1984), p. 5.

45. Philip Dearborn, Elements of Municipal Financial Analysis: Part IV: Condition of Major City Finances (New York: First Boston Corporation, 1977); and The Financial Health of Major U.S. Cities in 1978, Working Paper (Washington, D.C.: Urban Institute, 1979).

46. See David Levin, "Receipts and Expenditures of State Governments and Local Governments, 1959-1976," Survey of Current Business (May 1978).

47. There is some ambiguity about the direction taken by state-local discretionary tax actions during the 1980-1982 period. Fiscal year 1980 was one of the tax reductions (The ACIR estimates a $2 billion decline due to political actions; NCSL reports only that two states

raised sales tax rates, and none raised personal income tax; FRBNY estimates discretionary revenue reduction of $3.3 between 1980:I - 1980:III).

FY 1981 and 1982 are harder to characterize as to whether the preponderance of state and local tax action was in the direction of increasing taxes or decreasing taxes. NCSL reports that in 1981, five states increased sales tax but none increased income tax. In 1982, they report five states increased sales and four increased income taxes. However, 35 states enacted 75 tax measures during these two years, but 54 were excise taxes and half of those gasoline (FRBNY). The FRBNY estimated the revenue change due to discretionary policy to be +$21.4 billion in 1981:I - 1983:IV, but only $14.3 billion in 1981:III - 1982:IV. This would be 3-4 percent of total taxes in this period.

The ACIR estimates that political actions increased taxes by $0.4 billion in FY 1981 (3.1 percent of total increase) and $3.8 billion in FY 1982 (29.5 percent of increase and 1.5 percent of total revenues).

What might one say from these data?

FY 1980	reductions
FY 1981	very little discretionary increase
FY 1982	political actions more important

In aggregate, the ratio of state and local taxes to personal income:

1980	11.57 percent
1981	11.29 percent
1982	10.96 percent

In 1983, ACIR shows only $3.5 billion due to discretionary action (a 42 percent increase but a small percentage of total taxes). FRBNY estimates $7.1 billion due to political action; while NCSL says 22 states raised sales or income tax, 21 states raised the tax revenue at least 5 percent, and estimates the total amount at $9.9 billion. See Advisory Commission on Intergovernmental Relations, Significant Features of Fiscal Federalism: 1982-83 Edition (Washington, D.C.: Government Printing Office, 1983); Skaperdas, "State and Local Governments: An Assessment of Their Financial Position and Fiscal Policies"; and Gold and Becker, "State Budget Actions in 1983."

48. The last major recession in the U.S. before 1974-1975 was in the late 1950s.

49. This section draws from Bahl, "Business Cycles and the Fiscal Health of State and Local Government" and Larry Schroeder, "Effects of Business Cycles on City Finances--Insiders' Views," Metropolitan Studies Program, The Maxwell School (Syracuse, NY: Syracuse University, April 1984).

50. Note, of course, that while the CPI was used in these franchise tax equations, the extremely large elasticities were probably in great part due to the fact that the utility component of the CPI was increasing most rapidly during a significant portion of the estimation period used to derive these estimates. Had utility prices increased only just as rapidly as had the CPI, a zero price elasticity of demand for utilities would have resulted in a unitary revenue elasticity with respect to CPI.

49. Indeed, in the document prepared for use by individual departments in completing their forecasts, slightly differential inflation rates are applied to spending on durables such as desks, automobiles and handcuffs. See San Antonio, 5-Year Financial Forecast Manual, Instructions and Requirements (San Antonio, undated).