

This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: Explorations in Economic Research, Volume 3, number 4

Volume Author/Editor: NBER

Volume Publisher: NBER

Volume URL: <http://www.nber.org/books/lint76-1>

Publication Date: October 1976

Chapter Title: The Stabilizing Effects of Government Employment

Chapter Author: Walter Ebanks

Chapter URL: <http://www.nber.org/chapters/c9089>

Chapter pages in book: (p. 120 - 139)

WALTER EBANKSNational Bureau of Economic
Research and Temple University

The Stabilizing Effects of Government Employment

ABSTRACT: Government employment is, indeed, cyclically responsive and in an unexpected way,—that is the proposition this article attempts to document. Empirical evidence presented here suggests rather strongly that the federal government has added to the number of the unemployed during recessions. State and local governments, on the other hand, have not only increased employment but accelerated the rate at which they add to their payrolls during recessions. Consequently, they can take the credit for a sizable amount of the added stability¹ in total employment in the post-World War II period. ¶ The behavior of government employment is examined in light of the increased demand for public goods that are labor-intensive and of a rapidly changing private sector. On the state and local levels, public welfare, natural resources, and highways are responsible for most of the recession-accelerated growth in government employment. By contrast, the Defense Department, the largest civilian employer in the federal government, has been the major source of reduced federal employment during recessions. ¶ The various types of government employment are analyzed via the National Bureau's standard business cycle methods and the BLS employment projections. Based upon the results, the stabilizing effect of government employment is projected to 1985, with the compositional shift in private employment taken into account.

NOTE: I am grateful for the comments of Geoffrey H. Moore and Gary Fromm on an earlier version of the manuscript, and wish to express my appreciation to Michael Boskin, Charlotte Boschan, and Stephen Dresch of the staff reading committee and Dr. Walter Heller, Robert Lampman, and Rudolf Oswald of the Board reading committee. Thanks also go to Hedy D. Jellinek for editing the text and to H. Irving Forman for drawing the charts.

INTRODUCTION

One out of every six employees in the United States is directly employed by the government,² yet employment in the public sector has not been analyzed in terms of its cyclical behavior as much as employment in the private sector. Analysts are often frustrated by the fact that the operations of government do not conform to standard economic theory. Despite this difficulty, or perhaps because of it, economists have come to expect one definite behavior from the public sector—namely, growth.

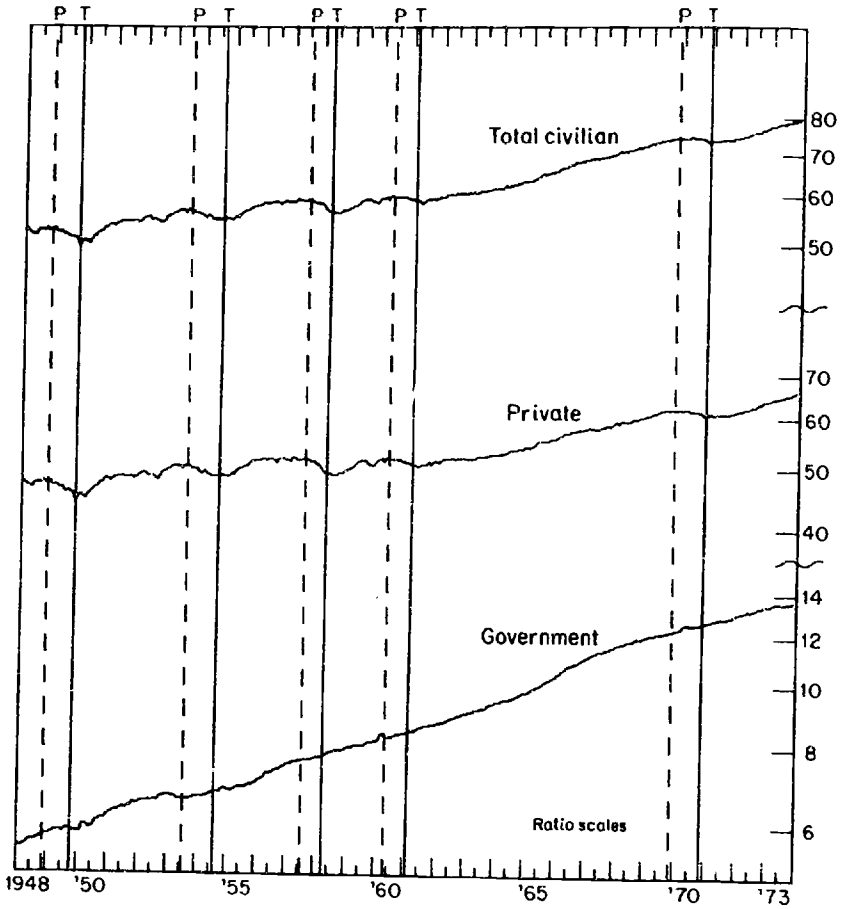
William Baumol [2] has put forth the proposition that the public sector will absorb an increasing amount of labor because of its relatively lower productivity growth. The empirical evidence seems to support this proposition.³ Between 1955 and 1968 government employment grew three and a half times faster than private employment. This trend was expected. And because of it government employment is expected to offset recessionary declines in private employment. By the same token, because of the characteristics of public goods and the budgetary constraint each level of government faces, there is apparently little cause to expect public employment to be particularly cyclically responsive. This paper will document the proposition that public employment is, indeed, cyclically responsive, and in rather unexpected ways.

TOTAL GOVERNMENT EMPLOYMENT

Between 1948 and 1975 the United States experienced six recessions, as identified by the National Bureau of Economic Research. Except for the most recent one, these recessions are generally accepted as milder than their predecessors. One factor responsible for their mildness is the shift in the composition of private employment. Recession-prone industries that experience large percentage reductions in employment during recessions have become less important in the overall economy, while industries that usually continue to expand during recessions have become more important in recent times. The effect of this shift helps to explain the narrowing range of the oscillations in Chart 1, which shows total, private, and government employment. The average decline in private employment during the six recessions was less than 4 percent (Table 1).

Total government employment, on the other hand, rose during each recession. Thus, government employment as a whole has had, as expected, an offsetting or stabilizing effect on total employment. The contributions to this result by federal and by state and local government employment, however, are very different. Except for the most recent recession, federal employment has always declined in recessions. By contrast, the offsetting

CHART 1 Total Civilian, Private, and Government Employment, 1948-1973 (millions of employees)



NOTE: Solid vertical lines indicate business cycle troughs, broken vertical lines, business cycle peaks based on reference cycle chronology.

factor has been the persistent rise in state and local government employment. These offsets (see Table 1) are not unimportant: employment in the public sector has been a large and growing fraction of total employment, up from 13 percent in 1948 to 18 percent in 1975.

FEDERAL EMPLOYMENT*

In 1948, the federal government employed more people than the state governments and contributed about 4 percent to total civilian employment. By 1975, federal employment had fallen below that of state governments

TABLE 1 Changes in Private and Public Employment during Recessions, 1948-1975

Recession Period	Total Government (thousands of persons)		State and Local (thousands of persons)		Total Private		Total Government (percent)		State and Local	
	Peak	Trough	Federal	State and Local	Total Private	Total Government	Federal	State and Local		
Nov. 48	-2514	110	-58	168	-5.3	+1.9	-3.0	+4.3		
July 53	-1736	111	-105	216	-3.5	+1.7	-4.6	+5.0		
Aug. 57	-2529	126	-34	160	-4.9	+1.7	-1.6	+2.9		
Apr. 60	-896	98	-107 ^a	205	-1.7	+1.2	-4.6	+3.4		
Dec. 69	-1037	352	-37	389	-1.7	+2.9	-1.4	+4.1		
Nov. 73	-2258	737	+60	677	-4.3	+5.3	+2.2	+6.0		
Average, six recessions, 1948-1975					-3.7	+2.5	-2.2	+4.3		

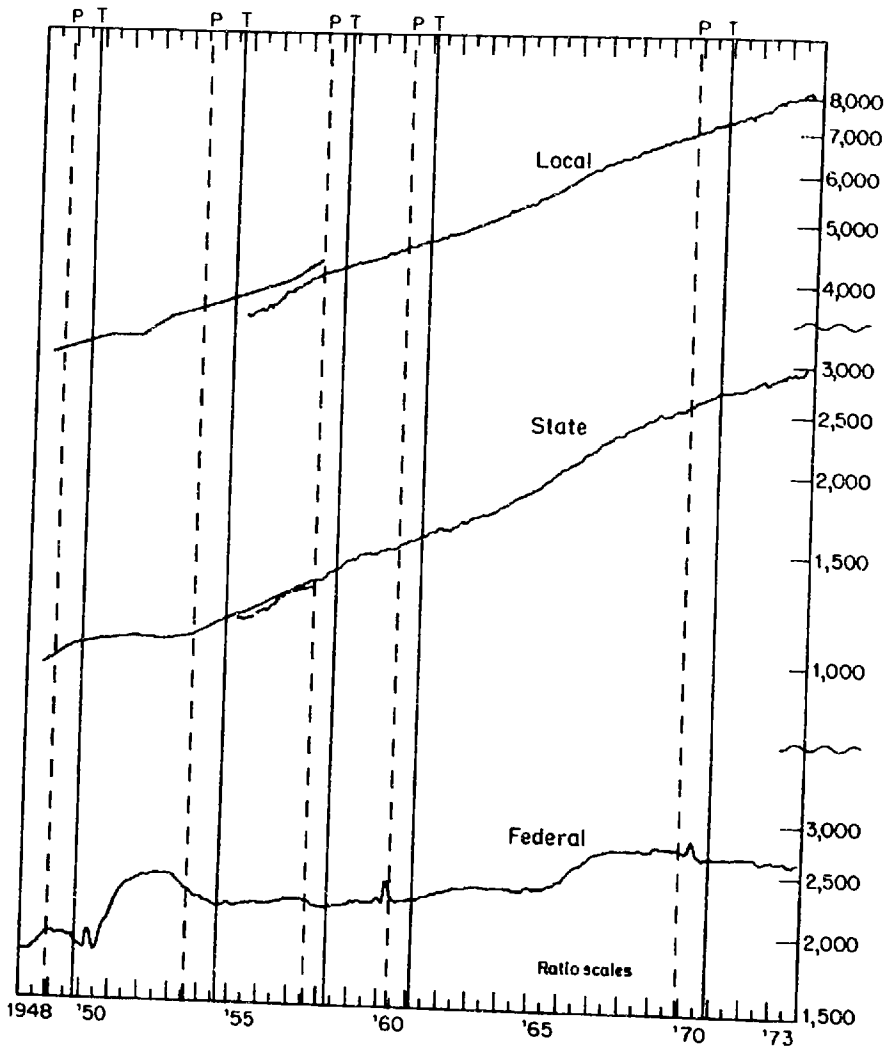
NOTE: Changes are based on three-month averages around business cycle turning points.

SOURCES: Employment and Earnings, 1909-1972 and October 1975, Bureau of Labor Statistics.

^aThis decline is due to the bulge in federal employment in March, April, and May 1960 because of the temporary hiring of enumerators for the 1960 Census. If we correct for the enumerators, total Federal employment increases by approximately 36,000.

^bMarch 1975 is used as a tentative business cycle trough month. It has not been so designated by the National Bureau.

CHART 2 Total Federal, State, and Local Employment, 1948-1973 (thousands of employees)



NOTE: Solid vertical lines indicate business cycle troughs, broken vertical lines, business cycle peaks based on reference cycle chronology.

and contributed about 3 percent to total civilian employment. Cyclically, however, federal employment has been the most destabilizing part of public employment, as Table 1 and Chart 2 clearly show. Prior to the 1973-75 recession, the federal government had reduced the number of its employees in every recession, the cuts ranging from 34,000 in 1957-58 to 105,000 and 107,000 in 1953-54 and 1960-61, respectively. The percentage decline during these five recessions ranged from two to five percent, or about the same as the percentage declines in total private employment.

Before the 1973-75 recession, civilian Defense Department employment, which consists primarily of maintenance crews and office workers, declined in every postwar recession. In three instances (1948-49, 1953-54, and 1969-70) the percentage declines in Defense Department employment exceeded those in private employment. As Table 2 shows, the Defense Department was the primary contributor to the procyclical behavior of federal employment. (A more detailed breakdown of federal employment is given in Table 3.) Treasury Department employment declined by one percent (annual rate) on the average during the five recessions between 1948 and 1970. Other major departments such as Agriculture and HEW expanded their employment during recessions. The sizable average reduction of 12.8 percent shown for "all other" departments is attributed mainly to the Department of Commerce. Chart 3 shows that the temporary hiring of enumerators for the 1960 Census coincided exactly with the peak of the cycle. In 1970, this temporary hiring of enumerators occurred in the middle of the recession and did not affect the change from peak to trough of the business cycle. In spite of these accidents the overall finding still stands firm.

Only one major department in the federal government showed marked countercyclical behavior in employment: the Agriculture Department. It declined during expansions by an average 0.2 percent and increased during contraction phases by an average 9.0 percent. Its full cycle conformity index is -75, indicating that in seven instances out of eight employment rose faster or fell more slowly during the recession than during the preceding or following expansion phase of the business cycle.

In short, nondefense employment in the federal government is a mixture

TABLE 2 Changes in Federal Employment (Defense and Other) during Recessions, 1948-1975

Recession Period		Defense Department	All Other	Defense Department	All Other
Peak	Trough	(thousands of persons)	(thousands of persons)	(percent)	(percent)
Nov. 48	Oct. 49	-56	-2	-7.5	-0.5
July 53	May 54	-91	-14	-8.1	-1.2
Aug. 57	Apr. 58	-48	+14	-4.8	+1.2
Apr. 60	Feb. 61	-8	-99	-0.8	-7.1
Dec. 69	Nov. 70	-78	+41	-7.2	+2.5
Nov. 73	March 75 ^a	+13	+48	+1.3	+2.8
Average, six recessions, 1948-1975				-4.5	-0.4

^a March 1975 is a tentative trough. All other figures are based on three-month averages centered on the business cycle peak and trough months. Because of rounding they may not sum to the total in Table 1.

TABLE 3 Summary of Cyclical Statistics of Federal Employment, 1948-1970

Employment Series	Secular Change (percent per year)		Cyclical Change during Business Cycles (percent per year)		1949-1970 Conformity Indexes	
	(1)	(2)	(3)	(4)	(5)	(6)
Total civilian	1.4	2.8	-2.9	100	100	100
Total private civilian	1.1	2.5	-3.7	100	100	100
Total federal						
Defense	1.0	2.6	-3.4	100	100	100
Nondense	-0.1	3.2	-7.0	0	100	100
Postal services	0.6	2.0	-0.5	50	0	50
Veterans	1.7	1.3	1.2	50	-50	-75
Agriculture	0.1	-0.2	0.5	-50	0	0
HEW	1.0	-0.2	8.9	0	-50	-75
Treasury	7.2	6.6	7.4	100	-100	0
All other departments	7.1	1.0	-1.1	50	0	50
	1.7	5.3	-12.8 ^a	0	50	50
Executive	1.0	2.6	-3.2	100	100	100
Legislative	0.7	1.1	1.4	25	-25	0
Judicial	3.1	3.2	0.0	50	0	37

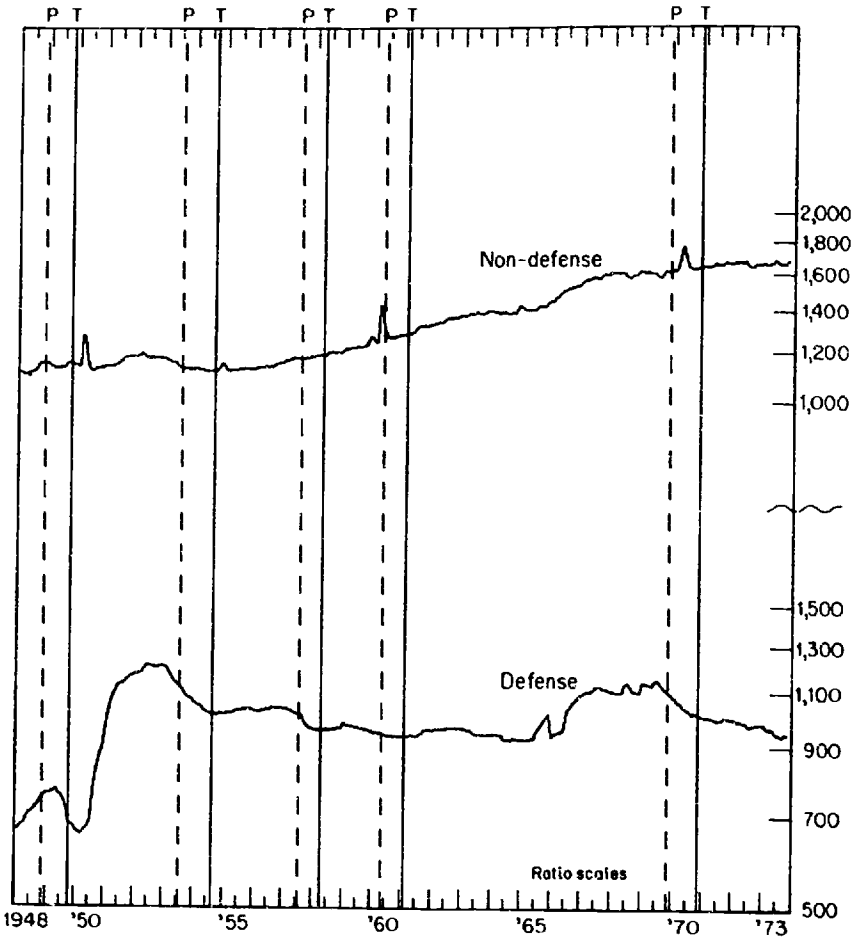
Health and hospitals	1.0	0.4	100	33	33 ^b
Natural resources	2.6	5.1	100	-100	100
Financial administration and general control	1.1	0.5	100	-33	-33 ^b

NOTE: Column 1: the average percent change per year from the mean level of one cycle to the next, weighted by the duration of each cycle; column 2: the average percentage change, at annual rate, from business cycle trough to business cycle peak, over the five business cycle expansions; column 3: the same as (2) but for the five contractions (the base for the percentage change is the mean level during the cycle); columns 4-6: conformity indexes measure the regularity in the response of the series to phases of the business cycle. If the series rises during every expansion, the conformity index in column 4 is +100, and if it falls during every contraction the index in (5) is +100. The conformity index is -100 if the series falls in every expansion or increases during every contraction. The full cycle index is based on the rate of change in the series over each phase of the cycle, with a slower rate during contraction than during the adjacent expansion counted as positive conformity and a higher rate as negative conformity.

^aThis decline is due to the bulge in federal employment in March, April, and May 1960 due to temporary hiring of enumerators for the 1960 and 1970 censuses.

^bData covered only three cycles.

CHART 3 Federal Defense and Nondefense Employment, 1948-1973 (thousands of employees)



NOTE: Solid vertical lines indicate business cycle troughs, broken vertical lines, business cycle peaks based on reference cycle chronology.

of procyclical and countercyclical behavior. However, it seems that the departments with procyclical behavior slightly outweigh the countercyclical ones. Total nondefense employment increased by 2 percent on the average during expansions, but declined by a half percent during the five recessions of the 1948-1970 period, with the full-cycle conformity index at +50. In general, while the behavior of federal nondefense employment was sometimes countercyclical, this was not enough to offset the procyclical effects of defense employment.

Civilian defense employment represented about 40 percent of total federal employment in 1971. Since the Defense Department has experi-

enced the largest average cyclical decline of any of the major departments, it is clearly the major source of the procyclical behavior of total federal employment. The reasons go back to efforts to control inflation, including cutbacks in military contracts awarded shortly before the peak of the business cycles. It appears that, because of the lag between the cutbacks in contracts awarded and cuts in employment, by the time the Defense Department started to reduce its work force recession had already begun. In some instances, notably 1953 and 1969, these cutbacks were sufficiently large to have a substantially depressing effect on the private sector and may have helped to bring on these recessions.

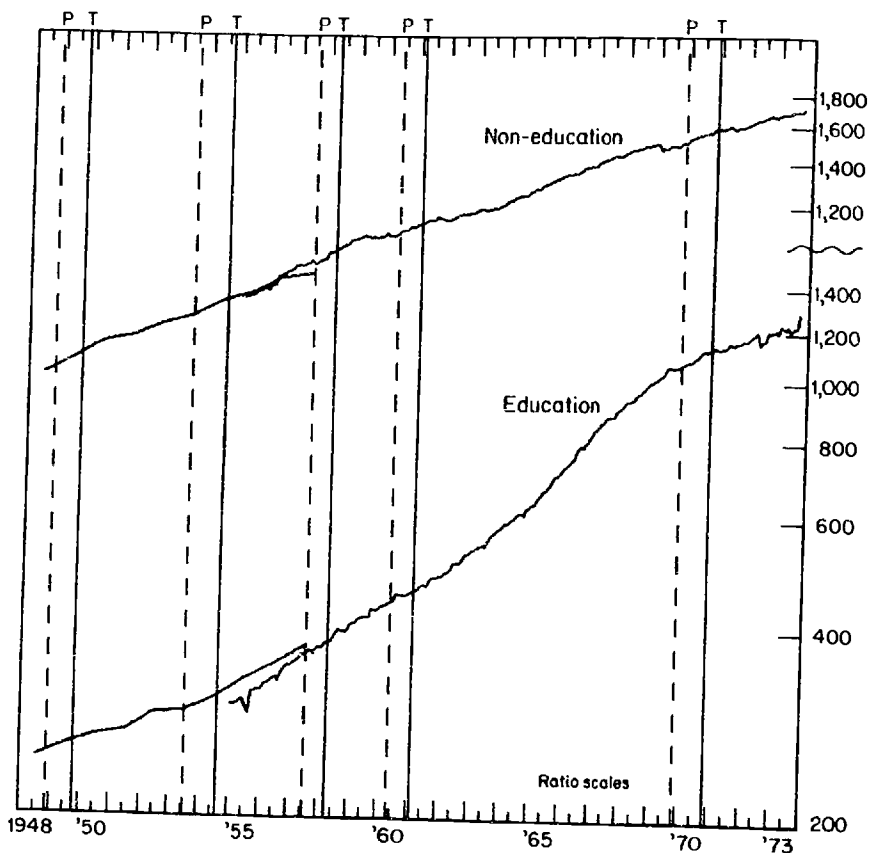
Thus, the federal government's policy with respect to its own employment has not operated effectively to offset cyclical movements in total employment. Indeed, changes in federal employment have tended to counteract, at least in part, what the government has tried to accomplish through monetary and fiscal policies. Usually, its antirecession policies have been directed toward increasing total private employment—by expanding the money supply, easing credit, lowering taxes, and lifting expenditures. By contrast, the Public Employment Program of the Emergency Employment Act of 1971 attempted to bring the economy out of the 1969–70 recession by increasing employment in state and local governments.⁵ Although the policy was new, the effect it was trying to achieve was not. As we shall see below, state and local employment had already accelerated during every post-1948 recession.

STATE EMPLOYMENT

Since the publication in 1944 of Hansen and Perloff's [3] book on state and local finances, many economists have accepted the view that these governmental units are incapable of any stabilizing behavior. The argument offered is mainly that state and local governments have very little fiscal flexibility and even less monetary flexibility. Nevertheless, state governmental units were able to accelerate their hiring of workers during each of the five recessions from 1948 to 1970.⁶ During the latest recession (1973–75), state governments increased their employment by more than 7 percent, creating more than 200,000 additional jobs.

Of the three basic levels of government, the state has shown the fastest-growing rate of employment. During the 1948–1971 period its growth rate was 4.8 percent per year, compared with 4.1 percent for local and 1.6 percent for federal government (Chart 2). State employment now exceeds federal employment, perhaps because goods and services provided by states are generally labor-intensive. In only two of the eight major

CHART 4 State Education and Noneducation Employment, 1948-1973 (thousands of employees)



NOTE: Solid vertical lines indicate business cycle troughs, broken vertical lines, business cycle peaks based on reference cycle chronology.

state functions listed in Table 4—education and financial administration—has employment increased on average more rapidly during the expansion than during the contraction phase of the business cycle. This suggests that the functions that lure proportionately more professionals, such as education, finance, and health care, tend to be procyclical. Even though health and hospitals did accelerate during the contractions, they did so at the slowest rate among the functions that accelerated, and the conformity index for full cycles (+50) suggests a procyclical tendency. On the average, state government increased hiring of financial administration staff 2 percent per year less rapidly during recessions than during expansions, and in education, it actually hired one percent per year fewer employees in recessions than in expansions. On the other hand, it accelerated hiring during recessions well beyond the expansion pace in public

TABLE 4 Summary of Cyclical Statistics of State Employment, 1948-1970

Employment Series	Secular Change (percent per year) (1)	Cyclical Change during Business Cycle (percent per year)		Expansion (4)	Conformity Indexes Contraction (5)	Full Cycle (6)
		Expansion (2)	Contraction (3)			
Total state employment	4.7	4.2	7.1	100	-100	-100
Education	7.1	6.8	5.8	100	-100	50
Noneducation	3.9	3.4	6.3	100	-100	-100
Highways	4.2	2.6	7.1	100	-100	-50
Health and hospital	6.0	5.8	6.7	100	-100	50
Police protection	5.7	5.5	7.0	100	-100	0
Public welfare	4.5	4.6	9.2	50	-100	-100
Natural resources	3.0	2.3	6.7	75	-100	-100
Financial admin. and gen. control	4.5	5.0	3.0	100	-66	33
All other functions	4.4	0.9	7.9	0	-50	-75

SOURCE: National Bureau of Economic Research, Inc. See note to Table 3.

welfare, highways, and natural resources, as well as in all noneducation functions taken as a whole.

LOCAL GOVERNMENT EMPLOYMENT

Local governmental units have been the largest employer in the public sector since 1948. Public goods produced at this level cover the widest range and are generally labor-intensive. On the average, local government employment increased about 2 percent faster in recessions than in expansions. In only one cycle (1949-54) did countercyclical acceleration fail to occur, but in that cycle the annual rate of change was only 0.5 percent smaller during the contraction than during the expansion. In terms of number of workers, local governmental units absorbed over 100,000 workers in times of rising unemployment during the average recession. An additional 500,000 jobs were provided by local government during the 1973-75 recession. This means that during one of the worst post-1948 recessions local government employment showed one of its strongest countercyclical responses.

Of the eleven major functions under the jurisdiction of local government, only one (police protection) failed to accelerate during recessions (Table 5). Local highway employment was the only function that actually declined during expansions, on the average, but this was partly due to a change in the reporting of highway employment on the local level in 1958.

The tendency observed on the state level for lower-paying functions to accelerate faster than higher-paying functions in contractions is less true on the local level. All functions except police protection show a substantial acceleration in the contraction phases of the cycle, and all full-cycle conformity indexes except those for police protection are negative. Another aspect that is true for both local and state employment is that the larger the function in terms of employment, the more people are hired during recessions regardless of the rate of acceleration. For example, local education shown in Chart 5 accounts for more than half of total local employment; it employed 39,000 to 171,000 additional workers during the five recessions. Chart 5 also shows the rapid rise in local noneducational employment. The second largest function, health and hospitals, employed between 13,000 and 26,000 additional workers over the same recessionary periods.

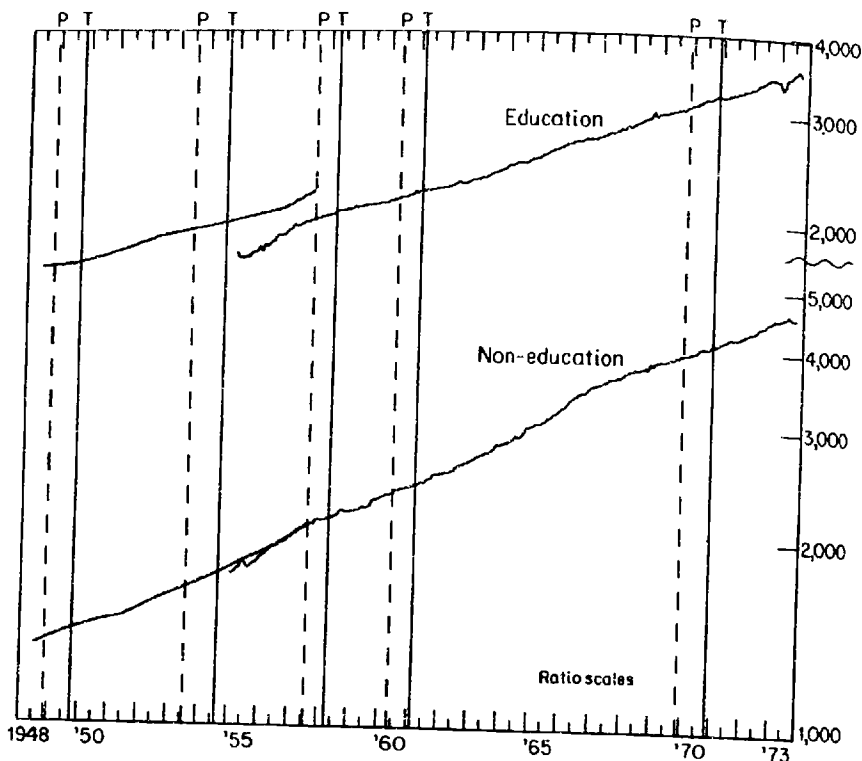
Unlike its behavior on the state level, financial administration and general control on the local level showed a significant countercyclical response. It increased nearly ten times faster on the average during the contraction phase than during the expansion phase. In general, however,

TABLE 5 Summary of Cyclical statistics of Local Employment, 1948-1970

Employment Series	Cyclical Change during Business Cycle					
	Secular Change (percent per year) (1)	Expan- sion (2)	Contra- ction (3)	Expan- sion (4)	Conformity Indexes Contra- ction (5)	Full Cycle (6)
Total local employment	4.1	3.7	5.8	100	-100	-50
Education	5.0	4.5	5.4	100	-100	-50
Noneducation	3.1	2.7	7.0	100	-100	-50
Highways	0.8	-1.2	10.7	50	-50	-50
Health and hospitals	3.3	2.7	5.5	100	-100	-50
Police protection	3.6	4.0	3.9	100	-100	0
Public welfare	5.8	5.7	6.2	100	-100	-100
Natural resources	2.4	1.0	7.1	25	-75	-100
Financial and general control	1.8	0.5	4.9	33	-100	-50
Fire protection	3.2	2.7	4.7	100	-100	-50
Sanitation	3.6	3.1	4.5	100	-50	-50
Utilities	1.1	1.2	3.6	100	-100	-100
All other functions	-1.2	1.7	17.2	50	-50	-50

SOURCE: National Bureau of Economic Research, Inc. See note to Table 3.

CHART 5 Local Education and Noneducation Employment, 1948-1973 (thousands of employees)



NOTE: Solid vertical lines indicate business cycle troughs, broken vertical lines, business cycle peaks based on reference cycle chronology.

the difference in the growth rate in employment between recessions and expansions was not as dramatic on the local as on the state level. But since more people are involved in every function on the local level than on the state level, the change in total local employment during recessions is larger than that in state employment. The increases in local employment were more than enough to offset the declines in federal employment.

Table 6 brings together in parallel fashion the principal cyclical measures in Tables 4 and 5, and indicates the broad similarity in the findings for the two levels of government. Public welfare, natural resources, highways, and police protection employment have identical full-cycle conformity at both levels of government. The two levels of government differ most dramatically in the areas of education, health and hospitals, and financial and general control—these categories of employment tend to be positively conforming on the state level but inversely conforming on the local level. By contrast, total state employment is more consistently countercyclical than total local employment.

TABLE 6 Comparative Cyclical Performance of State and Local Government Employment, by Function, 1948-1970

Employment Series	State Government			Local Government		
	Expansion (percent change per year during business cycle)	Contraction	Conformity Index, Full-Cycle	Expansion (percent change per year during business cycle)	Contraction	Conformity Index, Full-Cycle
Total	4.2	7.1	-100	3.7	5.8	-50
Noneducation	3.4	6.3	-100	2.7	7.0	-50
Public welfare	4.6	9.2	-100	5.7	6.2	-100
Natural resources	2.3	6.7	-100	1.0	7.1	-100
Highways	2.6	7.1	-50	-1.2	10.7	-50
Utilities	n.a.	n.a.	n.a.	1.2	3.6	-100
Sanitation	n.a.	n.a.	n.a.	3.1	4.5	-50
Fire protection	n.a.	n.a.	n.a.	2.7	4.7	-50
"All other"	0.9	7.9	-75	1.7	17.2	-50
Police protection	5.5	7.0	0	4.0	3.9	0
Financial and general control	5.0	3.0	33	0.5	4.9	-50
Health and hospitals	5.8	6.7	50	2.7	5.5	-50
Education	6.8	5.8	50	4.5	5.4	-50

SOURCE: Tables 4 and 5.

It is not surprising to find that the state and local functions that received substantial federal support—highways and public welfare, for example—showed the most contracyclical response. Procyclical functions such as education and financial administration have not had as much federal aid over the period covered. Unfortunately, it was impossible to get data on the sources of revenue for the various state and local government functions. Therefore, total revenue data had to be used in our analysis of total state and local employment to explain the accelerated growth. The regression analysis (not shown here) suggested that neither federal aid⁷ to state government nor state revenues from their own sources explain the accelerated growth in total state employment during recessions. Similarly, revenues of local governments, whether by way of state aid, federal aid, or own sources, do not explain the acceleration in local employment during recession; neither does local borrowing.

To some extent the accelerated growth in state and local employment is "built in." That is, services such as the issuance of unemployment benefits and welfare are in increased demand during recessions, so that more workers in these areas are needed. This argument should not be taken too far, since the number of workers involved in these so-called automatic stabilizing functions is relatively small. The largest contributor of jobs during recession is education and considering the short duration of recessions, it is difficult to argue that educational institutions are able to respond so quickly to any increased demand.

In short, the attempt to explain the accelerated growth in state and local employment seems to suggest that there are factors at work other than revenues. It appears that state and local governments have taken some discretionary actions which reduce the rate of growth in other expenditures and increase employment. Perhaps they were motivated by the favorable labor market conditions and the desire to provide more public services. The effect of those actions is to prevent the outflow of economic units to other jurisdictions and stabilize total employment.

Finally, a note of caution may be in order. In drawing conclusions from the findings presented here, one must bear in mind that the employment activity of any level of government may not be indicative of the overall cyclical impact it exerts on total economic activity.

THE FUTURE

If the Bureau of Labor Statistics' 1985 projections of industrial employment are realized, total employment will continue to become increasingly more stable because of the shift in the composition of private employment.

TABLE 7 Estimated Percent Change in Total Employment during an Average Recession, 1955, 1972, and 1985

	Percentage Distribution of Employment		Average % Change during 5 Recessions 1948-1970	Estimated Contribution to % Change in Total Employment during Average Recession			Change in Estimated Contribution		
	1955	1972		1985 ^a	1955	1972	1985	1955-1972	1972-1985
	1955	1972		1985 ^a	1955	1972	1985	1955-1972	1972-1985
Federal	3.3	3.3	2.6	-0.1	-0.1	-0.1	0	0	
State and local	7.2	12.4	14.9	+4.5	+0.3	+0.6	+0.3	+0.1	
Total government	10.5	15.5	17.5	+2.2	+0.2	+0.5	+0.3	+0.1	
Total private	89.5	84.5	82.5	-3.8	-2.9	-2.2	+0.7	+0.2	
Total	100.0	100.0	100.0	-3.0	-2.7	-1.7	1.0	0.3	

SOURCE: Geoffrey H. Moore, "Some Secular Changes in Business Cycles and Their Implications for Research and Policy," *American Economic Review*, May 1974.

^a Based on Kutscher's employment projections to 1985 [5].

Manufacturing, mining, transportation and utilities, and contract construction, which usually decline sharply in recessions, are projected to employ proportionally fewer people by 1985. Wholesale and retail trade, services, finance, insurance, real estate—relatively stable industries—are projected to employ proportionally more people. This shift in the private sector, as shown in Table 7, is estimated to be responsible for two-thirds of the increased stability in total employment.

The other one-third is attributable to government employment. But federal civilian employment was projected to remain at about the same level as in 1972, in which case its relative impact, whether it remains destabilizing or not, will be reduced. Therefore, the projected added stability will be coming from state and local employment.

Overall, the public sector seems likely to become increasingly important in the economic picture. We are continuing to demand increasing amounts of goods not traditionally produced by the private sector. Primarily because of this demand state and local decision makers are able to respond to the excess supply of labor during recessions and provide additional jobs at a time when the private sector and the federal government traditionally hand out pink slips. During the current recession (1973–75), contrary to past experience, the federal government has increased its employment more than 2 percent. At the same time, state and local employment has shown the largest growth in any post-1948 recession, 6.0 percent (Table 1). However, the recent financial difficulties of New York and other cities indicate that local governments may find it more difficult to add to their payrolls during future recessions.

NOTES

1. The definition of stability used here considers any component of total government employment which fluctuates procyclically as destabilizing, regardless of its amplitudes. A more general definition would be that any component of total employment that fluctuates less than the total at the same frequency is stabilizing. Even under this broader definition total federal employment is destabilizing. Gary Fromm points out that under the broader definition, federal nondefense employment is stabilizing.
2. Indirect government employment (i.e., employment on government contracts) and employment in the armed forces, which we do not examine in this paper, would increase the governmental proportion substantially.
3. See Charles Ardolini and Jeffrey Hohenstein, "Measuring Productivity in the Federal Government," *Monthly Labor Review*, November 1974, pp. 13–18.
4. The armed forces are omitted. In view of voluntary enlistment this component of federal employment does have the potential of contracyclical behavior.
5. See U.S. Department of Labor, *Manpower Report of the President*, March 1973, pp. 42–45.

6. Annual Census Bureau data are used here for 1948-1957 because the Bureau of Labor Statistics started to publish separate monthly state and local figures only in 1955. The discrepancies between the two sets of data are partly due to differences in statistical methods of collection. The census estimates for educational employment are higher than the BLS estimates on both levels of government.
7. This conclusion is consistent with James A. Maxwell's findings in *Federal Grants and the Business Cycle*, NBER, 1952, pp. 33-38.

REFERENCES

- [1] Ardoini, Charles and Hohenstein, Jeffrey. "Measuring Productivity in the Federal Government." *Monthly Labor Review*, November 1974.
- [2] Baumol, William. "Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis." *American Economic Review*, vol. 57, 1967.
- [3] Ebanks, Walter. "Public Employment and Post-World War II Economic Fluctuations: A Study of the Stabilizing Effects of Government Employment," Ph.D. dissertation, New York University, 1973.
- [4] Hansen, Alvin and Perloff, Harvey. *State and Local Finance in the National Economy*. New York: Norton, 1944.
- [5] Kutscher, Ronald E. "The United States Economy in 1985: Projections of GNP, Income, Output, and Employment." *Monthly Labor Review*, December 1973, p. 39.
- [6] Maxwell, James. *Federal Grants and the Business Cycle*. New York: NBER, 1952.
- [7] Moore, Geoffrey, "Some Secular Change in Business Cycles and Their Implications for Research and Policy." *American Economic Review*, May 1974.
- [8] U.S. Department of Labor. *Manpower Report of the President*. Washington, D.C.: March 1973.