

A Commission Report

REGIONAL GROWTH

Historic Perspective



Advisory Commission on Intergovernmental Relations
WASHINGTON, D.C. 20575
JUNE 1980

A-74

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Preface

Growing public discussion and controversy concerning the implications of uneven patterns of economic growth in different regions of the United States, as well as allegations that federal government taxing and spending policies have contributed to such disparities, prompted the Advisory Commission on Intergovernmental Relations to undertake a series of research studies on the subject. The results of the ACIR investigations will be issued in a three-volume study entitled *Regional Growth*.

This first volume of the study, *Regional Growth: Historic Perspective*, examines the economic growth of the various regions of the United States and points out the importance of the converging growth rates throughout the nation.

The second volume, *Regional Growth: Flows of Federal Funds, 1952-1976*, focuses on the impact of federal financial activities, both spending and taxing, on states and regions. This study, too, found convergence: interstate and interregional differences in the ratio of federal expenditures to revenues were considerably narrower in 1974-76 than they were in 1952.

The third volume examines the issue of whether interstate tax competition has brought about any significant differential regional growth pattern.

Acknowledgments

Janet Rothenberg Pack prepared this historical perspective on regional economic growth. She was assisted most immediately by Gordon Folkman, Jean Ryan, and Ruthamae Phillips. Will Myers prepared the manuscript for publication. John Shannon, assistant director for taxation and finance, supervised the research and publication process. Other members of the Commission staff reacted to drafts at several steps in the study.

The Commission and its staff sought and received help from many individuals during all stages of the report preparation. Special thanks go to a host of "thinkers" who gathered in Washington at the Commission's invitation and suggested the content of an encyclopedic Frostbelt-Sunbelt study. Personnel and time limitations, unfortunately, forced the Commission staff to tackle the problem in a far less ambitious manner than was suggested at the thinkers' session. When the study reached draft report form, the Commission assembled "critics" to cast a perceptive eye over the findings and conclusions. Particular thanks go to Arnold Cantor, Friedrich Grasburger, I. M. Labovitz, George Peterson, Robert Reischauer, Roger Vaughan, and Bernard Weinstein. In casual and formal meetings and in telephone conversations with many other persons who have been studying regional growth and development, Mrs. Pack was able to gain new insights that helped to identify economic trends. Throughout the development of the report, she was able to call on an otherwise anonymous and certainly unpaid consultant, her husband, Howard Pack.

Full responsibility for the content and accuracy of the study rests, of course, with the Commission and its staff.

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INTRODUCTION

At least since the late 19th century, economic activity and population have dispersed across the nation: there is less concentration in the Northeast. The economies of the regions have begun to look more alike in per capita income and in the division of the labor force between agricultural and other employment. As the regional economies become more similar in terms of development levels and well-being, the question arises as to whether future development will bring relative equilibrium or new disparities. Put simply, if recent differences in rates of regional growth are extrapolated into the future, it is possible that the Northeast will become substantially poorer than the Southeast and Southwest and that the Northeast's relatively slow growth may become absolute decline. It is this type of extrapolation that lies behind the concern about "a new war between the states" and the increasing number of regional organizations and coalitions studying the questions of regional differential growth and urging changes in federal policy to compensate for these differences.

REGIONALISM IN THE 1970s

The 1970s witnessed a transformation of the discussion of regional economic disparities within the United States from an earlier long-standing concern with the relative economic backwardness of the South to one fo-

cluding on the relatively low growth rates in the Northeast. As we shall see below, this change in focus is consistent with, indeed may grow out of, the overall convergence of levels of well-being among the nation's regions and the overall dispersion of population and economic activity.

The relatively more rapid economic growth of the South and Southwest, which has been occurring for more than a century, elicited a reaction from the older industrial states. These states formed regional interest groups; participated in legislative battles, particularly concerning the formulas for the distribution of federal funds; and raised the level of competition for industry.¹

Regional activists from the Northeast and Midwest have united to press their claim for a greater share of federal funds. Spokesmen for the South and West, meanwhile, argue that despite economic gains in the last decade, their regions remain relatively poor and should continue to benefit from federal spending policies.

Soon after the 1969-70 recession, when it became apparent that the economic recovery in many of the older industrial states was wavering, concern mounted about their economic future. This concern was quickly transformed into action as several Northern and Midwestern coalitions were established. In almost every case these coalitions became political in the sense that they actively engaged in pressuring Congress and/or the Administration to redirect federal aid to the North. The events since 1972 that led to the current level of political activity are worth noting.

Natural gas shortages and the 1973 Arab oil embargo prompted early efforts to evaluate economic trends in the context of regional energy and transportation problems.² Regional concerns were further stimulated by yet another recession in 1974 and widening disparities in economic growth rates and demographic change.

In December 1975, a meeting of Northeastern legislative leaders in Albany, NY produced a 204 page volume, *Balanced Growth for the Northeast*. This study evaluated the region's economic difficulties in relation to its older industrial infrastructure and federal economic policies; federal policies were per-

ceived as constraining growth in the Northeast while initiating and reinforcing growth in the South and West.³

In February 1976, the *New York Times* reported in a front-page series that the South was the largest and fastest growing region in the country.⁴ The *Times*' series also suggested that much of the region's growth was a result of a favorable balance of payments with the federal government. Furthermore, one article provoked regional controversy by stating, "The fact that the North continues to send money into the sunbelt states through the federal government . . . may contain the seeds of a regionally divisive issue."⁵

In May of 1976, *Business Week* published a cover story highlighting recent trends in industrial migration from the Northeast to the Southeast, Southwest, and Rocky Mountain regions.⁶ This migration was attributed to lower wages, lower utility costs, and lower state-local taxes in the growing regions. The article also called attention to variations in federal spending in each state with respect to its share of federal taxes. On this basis, the Southern and Western regions were termed "net winners" in the fiscal competition while the Northeast and Midwest were "net losers."

The following month, in June of 1976, the *National Journal* printed an article, "Federal Spending: The Northeast's Loss is the Sunbelt's Gain," arguing that the Sunbelt states received far more from Washington in grants and spending than they paid in federal taxes.⁷ The clear implication was that this was related to differential growth patterns and that it was inequitable.

At just the same time, in June of 1976, the Coalition of Northeast Governors (CONEG) was established for the purpose of providing a coordinated voice for the region to promote federal policies that would benefit its members.⁸ Realizing that their interests were also at stake, the Midwestern Governors' Conference convened as did a conference of officials of Great Lakes states. The objectives of both conferences were (1) to urge Washington to reassess its spending priorities and (2) to form a coalition with the Northeastern states.

The unification of the Frostbelt states was realized with the formation of the Northeast-Midwest Economic Advancement Coalition

(NMEAC). With its 200 Congressional members from 16 states, the NMEAC represents the most politically potent regional coalition to date.⁹ The explicit objective of the NMEAC is the promotion of regional economic interests, specifically:

... to educate the public, the Congress and the Executive Branch to the need for greater regional sensitivity in the formation and administration of federal programs; to examine, review, and publicize the regional impact of legislation as it proceeds through Congress; and most importantly, to develop positive and aggressive legislative initiative aimed at reviving the economies of the Coalition states.¹⁰

To date, the most significant statutory accomplishment of the Coalition has been a revision of the *Housing and Community Development Act of 1977* (HR 6655).¹¹ As a result of significant pressure exerted by the regional coalition, revisions were made in the allocation formula for the Community Development Block Grant Program so as to direct more aid to the aging cities of the Northeast and industrial Midwest.¹²

The major organization providing a coordinated voice in behalf of the Southern states is the Southern Growth Policies Board (SGPB), established in 1971 to plan for growth and change in the South.¹³ After the formula changes in the community development program, the SGPB began to make formula studies of its own.¹⁴

A Western coalition of states met for the first time on June 9, 1977, primarily for the purpose of combatting energy related policies favored by the Northeastern states. Although the Western coalition does not match the lobbying force of the NMEAC, those states have established a common political interest.

CONTEMPORARY CONCERNS AND HISTORICAL PERSPECTIVE

Although there is marked similarity between current regional economic trends and those identified by the earlier investigators,

there are substantially different evaluations of the implications of these trends, of the factors underlying them, and of what if anything should be done to change them.

Most of the more recent presentations of "Sunbelt-Frostbelt" differences concentrate on the trends of the '70s and describe "an accelerating national shift of people and industry in a southerly direction."¹⁵ This perception of acceleration is one of the important emphases in these discussions.

The major earlier studies looked at longer periods, beginning with the mid-to-late 19th century, but were completed by 1960 or the mid-'60s, so that while the trends appear to be similar, the data being examined generally cover different periods.

In a 1960 study, Harvey Perloff, et al, identified, in a very comprehensive fashion, trends for the period 1870-1950:¹⁶

1. Population Growth—"absolute increases were heaviest in the Southeast, Great Lakes, and Middle Atlantic regions . . . (but) rates of increase . . . were highest in the Mountain, Southwest, and Far West regions."
2. Total Income—"the changes in income reflect the impressive growth in volume of economic activities in the Far West and Southwest regions, the gradual decline in the volume shares of the New England and Middle Atlantic regions, and the stability of the Great Lakes region over the period as a whole."
3. Per Capita Income—"there has been a striking trend toward equalization among the regions. In 1880, regional averages ranged from 211% of the national average to 50%. In 1957 the highest income was only 119% of the national average and the lowest, 70%."

Writing in 1964, George Borts and Jerome Stein identified the empirical "regularities to be explained by a theory of growth" as:¹⁷

1. . . a convergence of per capita per-

sonal incomes among states since 1880. The difference among states is narrowing over time.

2. . . . a stable pattern of growth of manufacturing employment since 1869. Some states have persistently grown more rapidly than others.
3. . . . a stable pattern of growth of non-agricultural employment and of the capital employed in nonagricultural industries. Again, some states have persistently grown more rapidly than others since 1919.
4. Certain states have experienced an absolute decline of employment. Many of the "depressed areas," as identified by various government agencies, are clustered in these states.
5. A group of states has persistently experienced a slower-than-average growth of earnings per worker in non-agricultural occupations.

The data supporting these assertions show that between 1880 and 1950, convergence among the different regions brought the highest average per capita personal income, that of the Middle Atlantic states, to only twice that of the lowest average, the East South Central states. In 1880, the difference between the highest and lowest income regions, the Pacific and South Atlantic states, had been nearly four-fold. The data also show how the changes in manufacturing employment growth had been fairly consistent over the period 1869-1949: in nearly all of the eight decades, New England and Northeastern states had lower than national average growth rates and many of the South, Southwest, and Western states had persistently higher rates of growth in manufacturing employment.

The authors of these early studies concluded that these changes were generally a good thing: the movements observed and the differential rates of change were in the desired directions, toward greater equality among regions, with concomitant greater ef-

ficiency for the national economy as a whole as a result of the reallocation of both capital and labor to more productive uses. If anything, the authors argued that change had occurred too slowly, e.g., Perloff, et al, conclude, "The adjustments have been made at a painfully slow rate; as a result, levels of living in agricultural areas in various parts of the country, but especially in the Southeast, continue to be substantially below the national average in spite of very heavy migration from farming and from farm areas."¹⁸ Indeed, Perloff, et al, suggest that if anything is needed it is programs to increase migration from, or employment in, the poorer regions of the country (the Southeast).

Although Borts and Stein identify the older Northeastern states and the older farming and mining areas of the country as problems, their principal conclusion is that the "U.S. interregional and interindustrial growth pattern seems to be tending towards an intertemporal competitive equilibrium and hence towards intertemporal efficiency." Given this, they argue that "The most efficient policy is the federal government subsidy of education, retraining, and migration."¹⁹

In the current context, differential regional economic growth (not differing levels of economic development) has become cause for serious concern, particularly by persons whose interests are in the older industrial states. Analyses prepared by these interests cite growth patterns similar to those of the earlier studies, (generally limited, however, to examination of fairly recent data rather than long-term historical trends). The inference they draw is that the nation is moving not toward equilibrium among regions but rather to a new set of regional disparities.

THIS STUDY AND ITS MAJOR CONCLUSIONS

In this volume, we examine the major historical trends in regional economic activity. Although we are concerned with a long view, the years since the Second World War will be examined in greater detail for evidence of consistency with, or divergence from, earlier patterns. Several explanations of these patterns

of regional economic development will be examined. These include models which emphasize maturity processes and demand shifts, relative cost differences, and finally, those which stress the role of federal intervention, in particular, the importance of the regional sources of federal revenues and the regional destination of expenditures. The differential regional implications of national stabilization policy are also considered.

This study attempts to integrate the findings of a highly varied body of literature, some explicitly addressed to questions of comparative regional economics, some more concerned with general issues, but in which regional economic implications were derived. The studies cover different, sometimes overlapping, time periods, use different variables in their analysis, as well as numerous measures of change, divergence, and convergence. Yet, there is a striking consistency of findings, more qualitative than quantitative, about both patterns and explanations. Thus, many of the recent findings, summarized below, provide further evidence for conclusions of earlier studies. Our purpose has been to bring together a literature which has been highly dispersed, demonstrate the similarity of analyses and conclusions, and to fill some gaps, particularly in the analysis of the regional impact of the federal budget.

Findings

Convergence. Over the last 50 years (perhaps over the last century), economic activity and population movements have resulted in growing equalization of well-being among the eight regions of the country as measured by per capita incomes. In 1930 per capita incomes in the Mideast states were more than twice those in the Southeast. By 1977 they were less than 25% greater.

Decentralization. The convergence in regional levels of well-being has been accompanied by a very substantial dispersion of population and economic activity away from the regions of earliest industrialization. In 1900, for example, the Mideast states had 31% of the nation's total personal income and the

Southeast only 12%. By 1977 these figures were 21% and 20%, respectively.

Divergence in 1970s. During the early 1970s, the variations in the rates of regional economic growth appear to have widened. Although convergence and dispersion of the magnitudes observed have required generally lower rates of growth in the older industrial regions, they seem to have fallen even further behind national growth rates in the 1970s. Between 1950 and 1970, for example, the average annual rate of growth of personal income in the Mideast states was only 8% or 9% below the national average. Between 1970 and 1975 it fell to 25% below the national average growth rate.

Dislocation. These enormous regional shifts in economic activity have, by and large, been accomplished without concomitant disparities in regional unemployment rates. As recently as 1970, the states of the Mideast region all had below average unemployment rates.

Industrial Maturity. National changes in demand patterns for different products cannot account for differential regional growth rates. Despite their slower growth, the sectoral mix of industries in the Northeast and Midwest is still favorable, although these advantages are disappearing. On the basis of its 1968 sectoral composition of employment, New York State would have been expected to show employment increases of about 13% between 1968 and 1973 (about the same as the national average). In fact, employment declined by about 1% in New York State.

Competitive Factors. Since the turn of the century, regional manufacturing wage rates have generally been converging, largely as a result of a slow but steady relative increase in wages in the Southeast. The more rapidly growing regions are generally those with relatively low wages, although the Far West, with high wages and high growth, is an important exception, as is New England with relatively low wages and low growth. Despite the overall convergence in regional wages, the differences may still be large enough to be consistent with further competitive shifts of industry.

National Stabilization. For the last 25 years, at least, the economies of the Northeast and Midwest have been robust only when national growth rates have been high. Other regions, however, continue to grow, sometimes quite rapidly, even during recessions.

Federal Flows-of-funds. Over the last 25 years the rapidly growing states of the Southeast and Southwest have received substantially more in federal government expenditures than they (their residents) have paid to the federal government in taxes and other revenues. The Northeast and Midwest states generally receive far less than they provide in

revenues to the federal government. In 1952, the ratio of expenditures to revenues was 1.51 in the Southeast and only .75 in the Midwest. Over time these differences have narrowed very substantially. By 1974-76, the ratios were 1.11 and 1.02 in the Southeast and Midwest, respectively. The Great Lakes states, however, have consistently low ratios of expenditures received from the federal government relative to revenues paid.

Taxes paid by states (by their residents) to the federal government are very closely related to their per capita incomes, the higher incomes, the higher taxes. No such relationship holds with respect to expenditures.

FOOTNOTES

¹All of this concern and activity has been chronicled—less often analyzed—in a substantial number of articles in the newspapers and special interest magazines. Most of these are cited in the bibliography. Two pieces provide a good introduction: Robert Rafuse, Jr., "The New Sectionalism Controversy: An Overview," paper prepared for the Center for Policy Research and Analysis, National Governors' Conference, January 26, 1977, and Neal Pierce, "Northeast Governors Map Battle Plan for Fight Over Federal Funds Flow," *National Journal*, Washington, DC, Government Research Corporation, November 27, 1976.

²The New England Congressional Caucus and Economic Research Office was established in late 1972, and, in 1974, legislators from nine Northeastern states and Delaware met to discuss regional energy supply problems. The 1974 conference resulted in a report entitled, *The Northeastern States Confront the Energy Crisis*.

³*Balanced Growth for the Northeast*, proceedings of a Conference of Legislators on the Future of the Northeast, Albany, NY, New York State Senate, 1975.

⁴Robert Reinhold, "Sunbelt Region Leads Nation in Growth of Population: Section's Cities Top Urban Expansion," *New York Times*, New York, NY, New York Times Publishing Co., February 8, 1976, pp. 1 and 42; Jon Nordheimer, "Sunbelt Region Leads Nation in Growth of Population: Area Spans Southern Half of Country," *New York Times*, February 8, 1976, pp. 1 and 42; James P. Sterba, "Houston, as Energy Capital, Sets Pace in Sunbelt Boom," *New York Times*, February 9, 1976, pp. 1 and 24; Wayne King, "Federal Funds Pour Into Sunbelt States," *New York Times*, February 9, 1976, p. 24; Roy Reed, "Sunbelt Still Stronghold of Conservatism in U.S.," *New York Times*, February 10, 1976, pp. 1 and 22; Roy Reed, "Migration Mixes a New Southern Blend," *New York Times*, February 11, 1976, pp. 1 and 30; and B. Drummond Ayres, Jr., "Developing Sunbelt Hopes to Avoid North's Mistakes," *New York Times*, February 12, 1976, pp. 1 and 24.

⁵Nordheimer, *New York Times*, *op. cit.*, p. 42.

⁶"The Second War Between the States," *Business Week*, New York, NY, McGraw-Hill, Inc., May 17, 1977.

⁷"Federal Spending: The Northeast's Loss is the Sunbelt's Gain," *National Journal*, Washington, DC, Gov-

ernment Research Corporation, June 1976.

⁸Currently seven states are represented: New Jersey, New York, Pennsylvania, Connecticut, Rhode Island, Massachusetts, and Vermont. CONEG held its first meeting in mid-November 1976 (for details see Neal Pierce, *op. cit.*) at which it formulated a comprehensive plan of action. CONEG's action plan recommended such policies as: a revision of federal grant and procurement policies that would raise the share of funds going to areas experiencing above average unemployment; permanent authorization for countercyclical grants-in-aids for public employment and public works; the inclusion of tax effort and cost-of-living measures in grant formulas, the creation of a regional development and energy corporation which would issue federally guaranteed nontaxable bonds to finance loans for energy development purposes. In addition, CONEG received research support from the Council for Northeast Economic Action which received some \$540,000 from EDA for this purpose.

⁹The 16 NMEAC states are—Connecticut, Illinois, Indiana, Iowa, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, and Wisconsin.

¹⁰Michael J. Harrington, "In Congress, An Effort to Reverse the Tide," *Empire State Report*, New York, NY, New York State Legislative Institute, Vol. 2, October-November, 1976, pp. 353 and 355.

¹¹The *National Journal*, July 2, 1977, *op. cit.*, described the Congressional battle over HR 6655 as follows:

The dividing line was neither political nor ideological, as it usually is in Congressional debates. Instead, the split was a geographical one, with spokesmen for the aging, industrial Frostbelt lined up against representatives of the expanding Sunbelt. When the battle ended, the Frostbelt had routed the Sunbelt by a vote of 261-149.

¹²The NMEAC was also influential in the decision to continue countercyclical aid which also tends to greatly benefit Frostbelt cities. Their future agenda includes such items as: changing formulas in food stamp legislation, welfare, and educational aid to take into account such factors as cost-of-living, tax capacity and effort, and new poverty indicators; encouraging the formation of a Regional Development Bank (a feature of President Carter's Urban Policy); changing federal tax laws which

now favor only new construction so that they include benefits for rehabilitation and maintenance of older infrastructure; reviving the legislative intent of the 1952 federal procurement guidelines that encourage spending in areas of high unemployment.

¹³The SGPB is an interstate agency comprised of 13 states: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Virginia, and West Virginia.

¹⁴"Regionalism in Congress: Formulas Debated," *Congressional Quarterly*, Washington, DC, Congressional

Quarterly, Inc., August 20, 1977, p. 1748.

¹⁵John E. Petersen, "Key Trends of the Seventies," Part 1 of Frost Belt vs. Sun Belt, Boston, MA, First Boston Corporation, Special Report, 1977, mimeo, p. 3.

¹⁶Harvey Perloff, et al. *Regions, Resources, and Economic Growth*, Lincoln, NE, University of Nebraska Press, 1960.

¹⁷George H. Borts and Jerome Stein, *Economic Growth in a Free Market*, New York, Columbia University Press, 1964, p. 19.

¹⁸Perloff, et al, *op. cit.*, p. 606.

¹⁹Borts and Stein, *op. cit.*, p. 214.

Regional Economic Convergence and the Geographical Dispersion of Economic Activity

Over the last 50 years economic activity and population movements have resulted in growing equalization of well-being among the eight regions of the country.

CONVERGENCE IN PER CAPITA INCOME

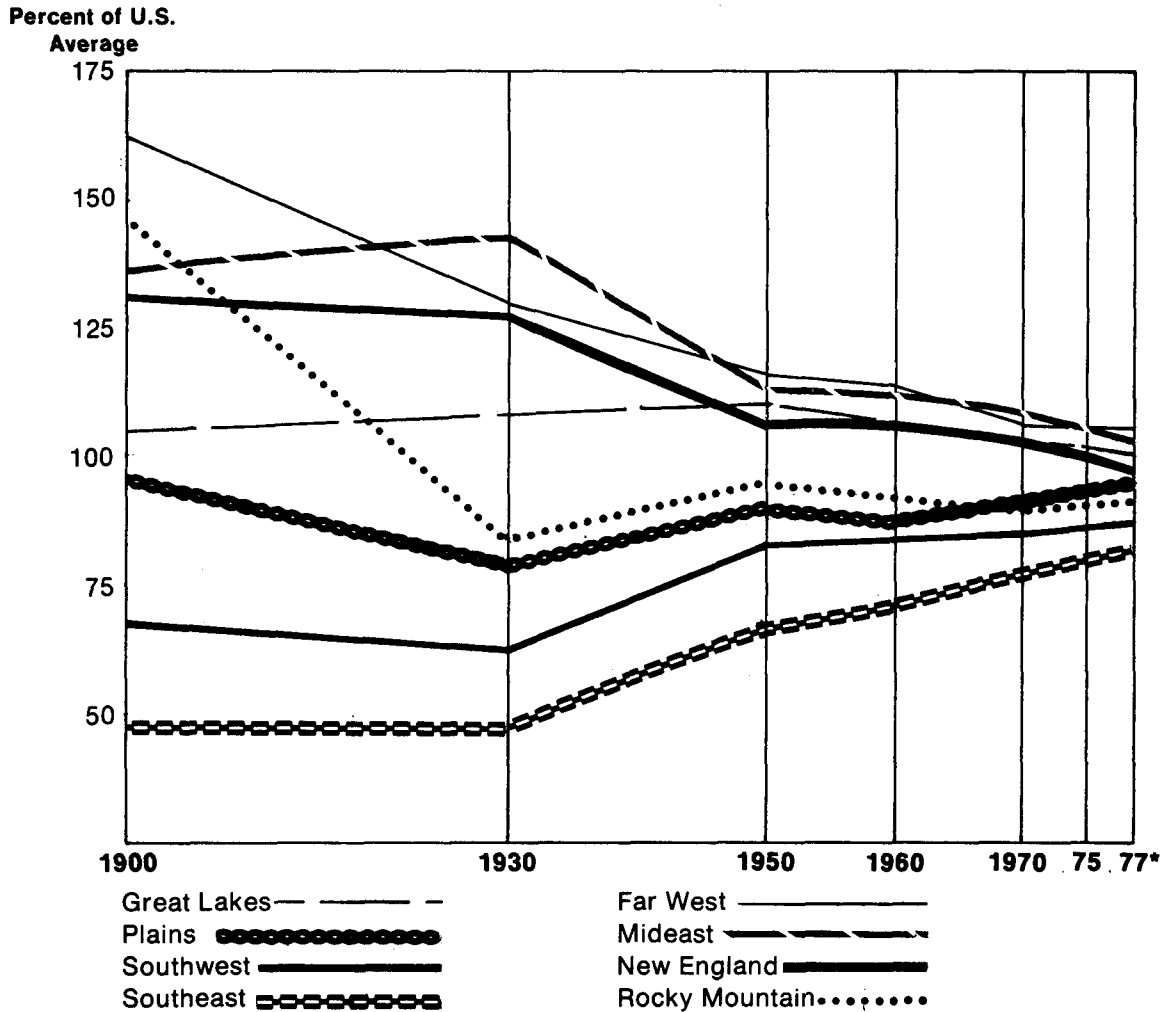
In 1930, per capita incomes in the Mideast, Far West, and New England states were 30% to 40% above the U.S. average and in the Southeast only half this average. Put another way, per capita incomes in the wealthier regions were nearly three times those in the Southeast. By 1977, the highest regional per

REGIONS IN PER CAPITA INCOME ORDER, 1930 and 1977		
Rank	1930	1977
Highest	Mideast	Far West
	Far West	Mideast
	New England	Great Lakes
	Great Lakes	New England
	Rocky Mountain	Rocky Mountain
Lowest	Plains	Plains
	Southwest	Southwest
	Southeast	Southeast

capita incomes, in the Far West, were only 11% above the national average and the lowest, in the Southeast, were only 14% below the national average. *Table 1* and *Chart 1*.

Chart 1

**REGIONAL PER CAPITA INCOME AS A PERCENT OF U.S. AVERAGE,
SELECTED YEARS, 1900-75**



*The 1977 figure is based upon 1976 population figures (state tax collections, 1977) and 1977 third quarter income estimates (Robert Bretzfelder, *Survey of Current Business*, Washington, DC, U.S. Department of Commerce, January 1978, p. 20).

SOURCE: Table 1, page 11.

The rich regions—Midwest, Far West, New England, and Great Lakes—have become relatively less rich and the poor regions—Southeast, Plains, and Rocky Mountain—have become less poor.

Nonetheless, the ranking of the regions is not very different in 1977 from what it was in 1930: the Far West, Midwest, and New England states are among the upper half of re-

gions in the nation and the Plains, Southwest, and Southeast are the three lowest per capita income regions.

Cost of living adjustments to these regional per capita income figures might change their order, but the appropriate cost of living adjustments are neither conceptually clear nor are good data available on actual cost of living differences among regions.¹ Two attempts

Table 1

**REGIONAL PER CAPITA INCOME AS PERCENT OF U.S. AVERAGE,
SELECTED YEARS, 1900-75**

Region	1900	1930	1950	1960	1970	1975	1977
New England	133.7	129.2	107	110	100	103	102
Midwest	137.7	142.6	117	116	113	109	107
Great Lakes	106.2	109.6	111	108	104	104	106
Plains	97.0	61.7	95	93	95	98	94
Southeast	47.8	50.2	68	73	82	86	86
Southwest	68.4	64.3	87	87	89	93	94
Rocky Mountain	145.2	86.2	97	94	91	94	95
Far West	162.9	130.8	120	116	111	111	111

SOURCE: ACIR staff computations based on data provided by the REA Regional Economic Information System, Regional Economic Division: 1977 and U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Washington, DC, U.S. Department of Commerce, April 1974.

to make such estimates of real per capita income by region are nonetheless shown in *Tables 2* and *3*. The differences between the nominal and real series are in the expected directions: incomes in the North, Midwest and West are somewhat lower in real terms and incomes in the Southeast and Southwest are somewhat higher. These are crude adjustments, however, and should be viewed only as illustrative of the general argument

that cost-of-living adjustments could change the regional relative rankings as well as the absolute differences among them.

Major regional convergence (in per capita incomes) was realized in the period between 1930 and 1950. Although the period before 1930 was one of overall convergence, this was

Table 2

**REGIONAL PER CAPITA INCOME AS
PERCENT OF U.S. AVERAGE,
1970 AND 1975
(adjusted for cost of living)**

Region	1970		1975	
	Nominal	Adjusted	Nominal	Adjusted
New England	100	96	103	89
Midwest	113	104	109	100
Great Lakes	104	103	104	102
Plains	95	96	98	99
Southeast	82	92	86	93
Southwest	89	96	93	99
Rocky Mountain	91	93	94	98
Far West	111	106	111	106

SOURCE: ACIR computations based upon state per capita income adjusted for cost of living in Fredrich J. Grasberger "Developing Tools to Improve Federal Grant-in-Aid Formulas," Formula Evaluation Project, Preliminary Report #3, Center for Governmental Research, Inc., Rochester NY, 1978, mimeo.

Table 3

**RELATIVE PER CAPITA INCOME LEVELS,
1975
(U.S. average—100)**

Region	Current Personal Income ^a	Real Disposable Income ^b
FROST BELT	<u>105.6%</u>	<u>102.3%</u>
New England	103.3	95.9
Middle Atlantic	108.4	101.9
East North Central	103.7	104.5
SUN BELT	<u>91.4</u>	<u>98.9</u>
South Atlantic	93.4	100.7
East South Central	79.2	87.3
West South Central	90.6	102.6
U.S. Average		
(Current dollar value)	100.0%	100.0%

^aSurvey of Current Business, August 1976.

^bPersonal income minus federal tax payments adjusted for regional cost of living differences. See C. L. Jusenius and L. C. Ledebur. "A Myth in the Making: The Southern Economic Challenge and Northern Economic Decline, Washington, DC Department of Commerce, Economic Development Administration, November 1976, pp. 8, 44-45 (with modifications), mimeo.

SOURCE: John E. Petersen, *Frostbelt vs. Sunbelt, Part I: Key Trends of the Seventies*, First Boston Bank Corporation, 1977 p. 7.

due almost entirely to the change in the relative position of the Far West and Rocky Mountain states.² When these two regions are ignored, the relative gap in per capita incomes among regions changed very little between 1900 and 1930; if anything it widened slightly.

From 1930 to 1950 there was a substantial decrease in regional differentials. Among many possible measures of convergence we utilize the average annual change in the ratio of the highest to the lowest regional per capita income. Whereas in 1930 the ratio was 2.84, by 1950, it had fallen to 1.76, an average annual rate of decline of 2.4%. In the 1950s the high/low ratio decreased by 1% per annum, in the 1960s by 1.4% per annum, and in the 1970s by about 0.9%. The high/low ratios (and the regions to which they apply) are the following:

1930	2.84	Mid East/Southeast
1950	1.76	Far West/Southeast
1960	1.59	Mid East/Southeast
1970	1.38	Mid East/Southeast
1977	1.29	Far West/Southeast

Thus, despite the often noted surge of the Sunbelt, the Southeast has remained the region of lowest per capita income, although its degree of "relative deprivation" has surely been reduced. These trends are also evident in the position of the individual states. Since, 1950, all the states in the Southeast have experienced growth in per capita income at rates exceeding the national average, yet, as of 1977, none had reached levels of per capita income above the national average. *Appendix Tables A9 and A10*. Conversely, states such as New York, Pennsylvania, Illinois, Michigan, New Jersey, and California that started with high incomes have grown more slowly than the nation, yet have maintained per capita income levels (in nominal terms) above the national average.

Had the 1930-50 rates of convergence continued, the per capita income in the Southeast would already have surpassed that of the New England and Far West states; indeed the latter two regions would have had the lowest per capita incomes, by far, by 1975. *Chart 2*. The fact that this has not happened is attributable to the decrease in convergence rates since 1950 as is clear from *Chart 1*.

Decentralization of Economic Activity

The convergence in regional levels of well-being has been accompanied by a very substantial decentralization of economic activity away from the regions of earliest industrialization. By definition, the closing of earlier regional gaps required the regions to grow at different rates.³ Those who view faster rates of growth in relatively poorer regions with alarm implicitly accept the desirability of the perpetuation of the initial disparities.

Analysts concerned with differences in the rate of growth of regional activity have cited disparities in rates of growth of population, personal income, and total employment or its components. We will briefly review all of these to delineate the nature of the concern. It is necessary to note, however, that each of these is not independent of the other: with a given population, total employment reflects decisions to participate in the labor force as well as opportunities for gainful activity.

If labor force participation rates are similar across regions, population and total employment will be closely related. Similarly, a given total employment level will generate a particular level of total personal income, the precise level depending on such factors as sectoral mix and labor productivity in the same sector across regions: although the correlation will not be perfect, total employment and personal income will vary together; finally, per capita income will depend on the labor force participation rate and the factors determining the productivity of the labor force.

If economic welfare, narrowly defined, were the sole feature of interest in regional economies, the convergence of per capita income, as described earlier, would not need to be augmented by an examination of differential growth rates in employment or personal income across regions. There are a variety of political issues, however, arising from such movements and some economic ones as well. For example, the concern with nonagricultural, especially manufacturing, employment surely reflects the typically higher income per worker associated with such activities as well as the view that they are "dynamic,"

i.e., have the potential for rapid productivity growth.

Between 1910 and 1977, the share of the nation's population in the regions of earliest development (New England, Mideast, and Great Lakes) declined about 10% (from 50% to 44%). In contrast, the shift in total economic activity away from these regions was dramatic: from 63% to 47% of personal income, 70% to 50% of the manufacturing labor force, 77% to 56% (1973) of manufacturing value added and 58% to 50% of service sector labor force. *Tables 4-8.*

During the early 1970s, the variations in the rates of regional population and employment growth appear to have widened and the rates of personal income convergence accelerated. In the 1960s the older industrial regions—New England, Mideast, and Great Lakes—grew at rates which were on the average 70% to 80% of U.S. employment growth, compared with 0 to 38% of the U.S. average during the slow-growth 1970s. Personal income growth which was 90% to 95% of the U.S. average during the 1950s and 1960s was only 75% to 83% during the early 1970s.

Table 4

REGIONAL DISTRIBUTION OF U.S. POPULATION, SELECTED YEARS, 1910-77

(dollar figures in millions)

Region	1910	1920	1930	1940	1950	1960	1970	1975	1977
United States	91,972	105,711	122,776	131,699	151,237	179,954	203,795	213,040	216,332
	100%	100%	100%	100%	100%	100%	100%	100%	100%
New England	7.1	7.0	6.7	6.4	6.2	5.9	5.8	5.7	5.7
Mideast	23.0	23.1	23.3	23.0	22.3	21.4	20.9	20.0	19.6
Great Lakes	19.8	20.3	20.6	20.2	20.2	20.2	19.8	19.2	19.0
Southeast	23.9	23.0	22.2	22.9	22.4	21.6	21.6	22.4	22.6
Plains	12.7	11.9	10.8	10.3	9.3	8.6	8.0	7.8	7.8
Southwest	6.6	7.0	7.4	7.4	7.6	7.9	8.2	8.6	8.8
Mountain	2.2	2.4	2.2	2.3	2.3	2.4	2.5	2.7	2.7
Far West	4.7*	5.3*	6.8*	7.5*	10.3	12.0	13.3	13.5	13.8

*Does not include Alaska or Hawaii.

SOURCE: Harvey S. Perloff, et al, *Regions, Resources, and Economic Growth*, Lincoln, NE, University of Nebraska Press, 1960, p. 12, and The BEA Regional Economic Information System, Regional Economic Division: 1977. The 1977 figures are provisional from the Bureau of the Census, *Current Population Reports*, series P. 20, Washington, DC, U.S. Government Printing Office, April 1978.

Table 5

REGIONAL DISTRIBUTION OF PERSONAL INCOME, SELECTED YEARS, 1900-77
(dollar figures in millions)

Region	1900	1920	1930	1940	1950	1960	1970	1975	1977
United States	\$15,391	\$69,276	\$76,780	\$78,522	\$226,214	\$399,947	\$808,223	\$1,257,354	\$1,518,390
	100%	100%	100%	100%	100%	100%	100%	100%	100%
New England	9.9	8.8	8.6	8.2	6.6	6.4	6.3	5.9	5.8
Mideast	30.8	30.2	33.3	30.5	26.2	24.8	23.5	21.8	21.0
Great Lakes	22.4	22.2	22.6	22.7	22.5	21.7	20.6	19.9	19.9
Southeast	12.0	13.0	11.2	13.2	15.3	15.8	17.7	19.2	19.5
Plains	13.3	10.3	8.9	8.3	8.9	7.9	7.6	7.7	7.6
Southwest	3.8	5.7	4.8	5.2	6.6	6.9	7.3	8.0	8.4
Mountain	2.5	2.5	1.9	2.0	2.3	2.3	2.2	2.5	2.6
Far West	5.3*	7.4*	8.8*	9.9*	12.2	14.1	14.7	14.9	14.7

*Does not include Alaska or Hawaii.

SOURCE: Harvey S. Perloff, et al, *Regions, Resources, and Economic Growth*, 1960, p. 223, and the BEA Regional Economic Information Systems, Regional Economic Division: 1977, however, 1977 figure reported by *Survey of Current Business*, August 1978.

Table 6

REGIONAL DISTRIBUTION OF MANUFACTURING LABOR FORCE

Region	1910	1930	1950	1960	1970	1975
United States	100%	100%	100%	100%	100%	100%
New England	13.42	10.48	9.59	8.7	7.5	7.1
Mideast	33.55	30.31	29.11	26.7	23.3	20.9
Great Lakes	22.61	25.59	28.94	26.8	26.0	25.2
Southeast	12.69	14.38	15.43	16.6	20.2	21.6
Plains	8.35	7.11	5.68	6.0	6.3	6.7
Southwest	2.74	4.13	3.28	3.8	5.1	5.8
Mountain	1.64	1.34	.87	1.1	1.3	1.5
Far West	5.00	6.66	7.10	10.4	10.6	11.3

SOURCE: 1910-1950, Harvey S. Perloff, et al, Table 102; 1960-77 ACIR staff computations from Appendix Table A16.

Table 7

REGIONAL DISTRIBUTION OF VALUE ADDED BY MANUFACTURING

Region	1910	1930	1950 (47)	1958	1966	1973
United States	100%	100%	100%	100%	100%	100%
New England	14.32	10.35	9.36	7.9	7.1	6.2
Mideast	36.90	33.75	29.87	28.2	24.5	21.0
Great Lakes	25.59	31.63	31.57	30.5	30.1	28.3
Southeast	10.04	9.86	12.49	14.7	15.6	18.7
Plains	6.42	5.74	5.54	6.6	6.2	6.8
Southwest	1.49	2.00	3.00	4.7	4.7	5.7
Mountain	1.21	.95	.88	1.3	1.2	1.4
Far West	4.03	5.72	7.49	11.7	10.7	11.8

SOURCE: 1910-50, Harvey S. Perloff, et al, *Regions, Resources and Economic Growth*, Table 103; 1958-73, U.S. Bureau of the Census, *Census of Manufacturing, 1972*, and *Annual Survey of Manufacturers, 1973*.

Table 8

REGIONAL DISTRIBUTION OF SERVICES LABOR FORCE

Region	1910	1930	1950	1960	1970	1976
United States	100%	100%	100%	100%	100%	100%
New England	8.43	7.44	6.27	7.3	7.2	6.7
Mideast	29.48	29.00	24.63	26.9	25.1	24.9
Great Lakes	20.15	21.19	18.95	19.1	18.5	18.1
Southeast	16.13	15.45	19.00	16.1	16.8	18.7
Plains	11.84	9.94	8.91	8.0	7.5	5.5
Southwest	4.72	6.11	7.89	6.7	7.4	8.1
Mountain	2.48	2.03	2.44	2.3	2.4	2.7
Far West	6.77	8.84	11.91	13.4	15.0	15.3

SOURCE: 1910-50, Harvey S. Perloff, et al, *Regions, Resources and Economic Growth*, Table 107; 1961-76, Bureau of the Census, U.S. Department of Commerce, *Statistical Abstract of the United States*.

Table 9

**AVERAGE ANNUAL RATE OF GROWTH OF POPULATION, BY REGION OR STATE,
SELECTED PERIODS, 1950-77**

Region or State	Average Annual Growth Rate				State Rate Relative to U.S. Average			
	1950-60	1960-70	1970-75	1975-77	1950-60	1960-70	1970-75	1975-77
UNITED STATES	1.71%	1.20%	.85%	.77%	100	100	100	100
NEW ENGLAND	1.18	1.17	.48	.22	69	98	56	28
Connecticut	2.35	1.80	0.35	.21	137	150	41	27
Maine	0.62	0.22	1.21	1.22	35	18	142	158
Massachusetts	0.97	1.01	0.39	-.31	56	84	45	—
New Hampshire	1.36	1.99	1.97	1.88	79	166	231	243
Rhode Island	0.84	1.07	-0.51	0.43	49	89	—	55
Vermont	0.26	1.38	1.10	1.27	15	114	129	164
MIDEAST	1.32	.93	.03	-.25	77	78	4	—
Delaware	3.41	2.07	1.00	.26	199	172	117	33
District of Columbia	-0.52	-0.12	-1.08	-1.83	—	—	—	—
Maryland	2.83	2.38	0.80	.50	165	198	94	64
New Jersey	2.28	1.66	0.34	.09	133	138	39	11
New York	1.25	0.82	-0.16	-.55	73	68	—	—
Pennsylvania	0.76	0.42	0.03	-.19	44	34	3	—
GREAT LAKES	1.69	1.05	.28	.10	99	88	33	13
Illinois	1.45	0.99	0.03	.45	84	82	3	58
Indiana	1.65	1.08	0.42	.18	96	89	48	23
Michigan	2.03	1.27	0.59	-.15	118	106	69	—
Ohio	2.01	0.92	0.18	-.27	117	76	20	—
Wisconsin	1.43	1.12	0.79	.49	83	93	92	63
PLAINS	.89	.58	.35	.59	52	48	41	77
Iowa	0.49	0.27	0.27	-1.54	28	22	31	—
Kansas	1.31	0.30	0.16	1.29	76	24	18	167
Minnesota	1.34	1.08	0.57	.63	78	90	67	82
Missouri	0.88	0.81	0.32	.40	51	67	37	51
Nebraska	0.66	0.49	0.72	.61	38	40	84	79
North Dakota	0.24	-0.22	0.54	1.25	14	—	63	162
South Dakota	0.42	-0.22	0.45	.44	24	—	52	56

SOUTHEAST	1.34	1.10	1.60	1.08	78	99	188	140
Alabama	0.68	0.53	0.93	1.05	40	43	109	135
Arkansas	-0.64	0.77	1.84	.66	—	64	216	85
Florida	5.94	3.19	4.04	.63	347	265	474	82
Georgia	1.35	1.54	1.35	1.23	79	127	158	159
Kentucky	0.35	0.61	1.00	.91	20	50	117	118
Louisiana	1.91	1.14	0.75	1.70	111	95	88	220
Mississippi	0.03	0.17	1.11	.91	1	14	130	118
North Carolina	1.18	1.09	1.35	.68	68	91	158	87
South Carolina	1.25	0.83	1.65	1.02	72	68	193	132
Tennessee	0.76	0.97	1.24	1.32	44	80	146	170
Virginia	1.86	1.57	1.29	1.68	108	131	151	217
West Virginia	-0.79	-0.56	0.59	1.54	—	—	69	200
SOUTHWEST	2.18	1.54	1.93	2.18	127	128	227	283
Arizona	5.74	3.10	4.41	1.61	335	258	519	208
New Mexico	3.31	0.70	2.31	1.86	193	58	272	241
Oklahoma	0.47	0.95	1.11	1.81	27	78	130	234
Texas	2.16	1.56	1.72	2.39	126	130	202	310
ROCKY MOUNTAIN	2.19	1.43	2.48	2.00	128	119	292	260
Colorado	2.93	2.31	2.65	1.66	171	192	312	216
Idaho	1.29	0.68	2.72	2.17	75	56	319	281
Montana	1.36	0.28	1.39	.87	79	23	163	112
Utah	2.60	1.71	2.50	2.54	152	142	293	329
Wyoming	1.33	0.09	2.29	4.19	77	7	269	544
FAR WEST	3.34	2.24	1.15	1.89	195	187	135	245
California	4.04	2.34	1.10	1.79	236	195	129	232
Nevada	6.03	5.41	3.73	3.40	352	451	438	442
Oregon	1.47	1.72	1.72	1.90	85	143	202	247
Washington	1.81	1.80	0.77	1.55	105	150	90	201
Alaska	5.43	2.87	2.98	7.53	317	239	350	977
Hawaii	2.26	2.02	2.26	2.49	132	168	265	323

SOURCE: ACIR staff computations based on data in *Appendix Table A6*.

Table 10

**RATES OF GROWTH OF TOTAL PERSONAL INCOME, BY REGION OR STATE,
SELECTED PERIODS, 1950-75**

Region or State	Average Annual Growth Rate				State Rate Relative to U.S. Average			
	1950-60	1960-70	1970-75	1975-77	1950-60	1960-70	1970-75	1975-77
UNITED STATES	5.76	7.30	10.19	9.89	100	100	100	100
NEW ENGLAND	5.50	7.10	7.70	8.77	95	96	75	89
Connecticut	6.69	7.55	7.62	7.74	116	102	75	78
Maine	5.26	6.13	9.03	10.76	91	83	89	109
Massachusetts	5.19	6.91	7.51	8.62	90	94	74	87
New Hampshire	6.33	7.87	9.40	12.98	137	107	92	131
Rhode Island	4.15	7.11	7.53	8.16	72	96	74	82
Vermont	5.40	7.96	8.59	9.76	94	108	84	99
MIDEAST	5.30	6.70	7.60	7.70	92	91	75	78
Delaware	6.22	7.14	9.41	7.03	108	97	92	71
District of Columbia	2.46	5.34	7.63	5.84	43	72	75	59
Maryland	6.81	8.82	9.35	8.68	118	120	92	88
New Jersey	6.42	7.34	7.78	9.15	111	99	96	92
New York	5.18	6.44	6.68	6.57	90	87	66	66
Pennsylvania	4.73	6.20	8.42	8.42	82	84	83	85
GREAT LAKES	5.40	6.70	8.50	9.66	94	91	83	98
Illinois	5.28	6.51	8.57	7.44	92	88	84	75
Indiana	5.43	6.79	8.88	10.85	94	92	87	110
Michigan	5.42	7.24	8.75	10.93	94	98	86	110
Ohio	5.85	6.51	7.84	10.12	102	88	77	102
Wisconsin	5.50	6.89	9.11	10.79	95	93	89	109
PLAINS	4.60	6.80	9.40	9.30	80	92	92	94
Iowa	3.44	6.87	10.42	6.56	60	93	102	66
Kansas	5.48	6.27	9.52	10.24	95	85	93	104
Minnesota	5.33	7.55	9.14	11.50	95	102	90	116
Missouri	4.88	6.86	8.16	10.33	85	93	80	104
Nebraska	4.22	6.55	10.73	5.73	73	89	105	58
North Dakota	3.29	5.87	13.81	5.23	57	80	135	53
South Dakota	4.11	5.53	10.04	10.44	71	75	98	106

SOUTHEAST	6.20	8.60	11.00	10.63	108	117	108	107
Alabama	6.34	7.42	10.52	11.19	110	101	103	113
Arkansas	4.67	8.38	11.95	10.23	81	114	117	103
Florida	10.47	10.14	12.95	9.57	182	137	127	97
Georgia	6.22	8.99	10.15	10.08	108	122	99	102
Kentucky	5.29	7.62	10.47	11.49	92	103	103	116
Louisiana	6.06	7.57	10.50	11.68	105	103	103	118
Mississippi	4.96	8.13	10.27	12.46	86	110	101	126
North Carolina	5.59	8.59	10.24	10.21	97	116	101	103
South Carolina	5.88	8.80	10.88	11.52	102	119	107	116
Tennessee	5.51	8.10	10.79	10.14	96	110	106	103
Virginia	6.20	8.82	10.69	10.76	108	120	125	109
West Virginia	3.47	5.96	10.59	12.03	60	81	104	122
SOUTHWEST	6.30	7.90	11.20	12.42	109	107	110	126
Arizona	10.20	9.47	12.64	12.02	177	128	124	122
New Mexico	8.04	6.00	11.71	12.82	140	81	115	130
Oklahoma	5.58	7.09	10.37	11.94	97	96	102	121
Texas	5.92	8.08	11.21	12.55	103	109	110	127
ROCKY MOUNTAIN	6.00	7.00	11.80	11.12	104	95	116	112
Colorado	7.30	7.96	12.10	11.19	127	108	119	113
Idaho	4.97	6.65	12.38	10.05	86	90	121	102
Montana	3.69	5.86	10.66	7.23	64	79	108	73
Utah	6.93	6.80	11.54	12.47	120	92	113	126
Wyoming	4.39	5.53	12.48	15.74	76	75	122	159
FAR WEST	7.40	7.60	9.55	11.60	128	103	94	117
California	8.06	7.67	9.16	11.50	140	104	90	116
Nevada	9.55	10.70	11.83	13.39	166	145	116	135
Oregon	4.71	7.10	11.06	12.31	82	96	108	124
Washington	5.36	7.46	9.88	11.47	93	101	97	116
Alaska	7.16	8.18	18.68	13.88	124	111	183	140
Hawaii	7.88	9.07	10.00	9.26	137	123	98	94
Mean	6.75	7.38	10.18					
Median	5.48	7.24	10.24					
Standard Deviation	1.61	1.18	2.00					

SOURCE: Compiled by ACIR staff from data in *Appendix Table A3*.

Population

The population shift away from the older industrial states to the South and West is not a new phenomenon. Since the turn of the century, the proportion of total U.S. population in the New England and Mideast regions has been declining while the proportion in the Southwest and Far West has been increasing. *Table 4.*

In recent years, however, the disparities in population growth have accelerated among the various regions of the country. Between 1960 and 1970 New England's average annual population growth was almost equal to that of the nation; between 1970 and 1975 the region's population growth rate declined to only 56% of the U.S. average. In the Mideast, the average annual rate of population growth was approximately three-fourths of the U.S. average between 1960 and 1970 but only 4% between 1970 and 1975. In the Southeast and Southwest, however, the pattern was reversed. Between 1960 and 1970 the rate of population growth in the Southeast approximated the U.S. average; in the Southwest it was 28% greater than the U.S. average. During the 1970 to 1975 period these rates accelerated to 188% and 227% respectively of the U.S. average. *Table 9.*

Between 1975 and 1977, absolute as well as relative population growth rates accelerated in such energy rich states as Texas, Louisiana, Oklahoma, Alaska, and West Virginia—each growing at a rate at least 200% of the U.S. average. In the Northeast and Great Lakes regions, six states actually lost population between 1975 and 1977. The largest decrease occurred in New York which lost some 198,000 people from 1975 to 1977. The only Northern states to grow faster than the national average over the 1975-1977 period were Maine, New Hampshire, and Vermont.

Personal Income

The average annual changes in total personal income for states and regions indicate a very sharp decline in personal income growth in the Northeast region and states *relative* to the national average between the decade of the 1960s and the first half of the 1970s.⁴ *Table 10.* Personal income in New England,

which had grown at almost the national average in both the 1950s and the 1960s, grew at only 75% of the national average between 1970 and 1975. Similar declines occurred in the Mideast and Great Lakes regions. These differences in growth rates are consistent with acceleration in the relative shift in the share of total personal income away from the Northeast states to the South and West during the 1970 to 1975 period.

During this period the country experienced two economic recessions which exerted a disproportionately adverse effect on personal income growth in the older industrial states of the Northeast and Great Lakes regions.⁵ Both 1970 and 1975 represented troughs in personal income. *Chart 3.* Indeed, the figures for 1975-77, a period of economic recovery, indicate some moderation of this pattern. In both the New England and Great Lakes regions the growth rates of personal income have moved much closer to the national average. The Southwest and Far West regions have, however, increased even further their lead over the rest of the nation in personal income growth.⁶

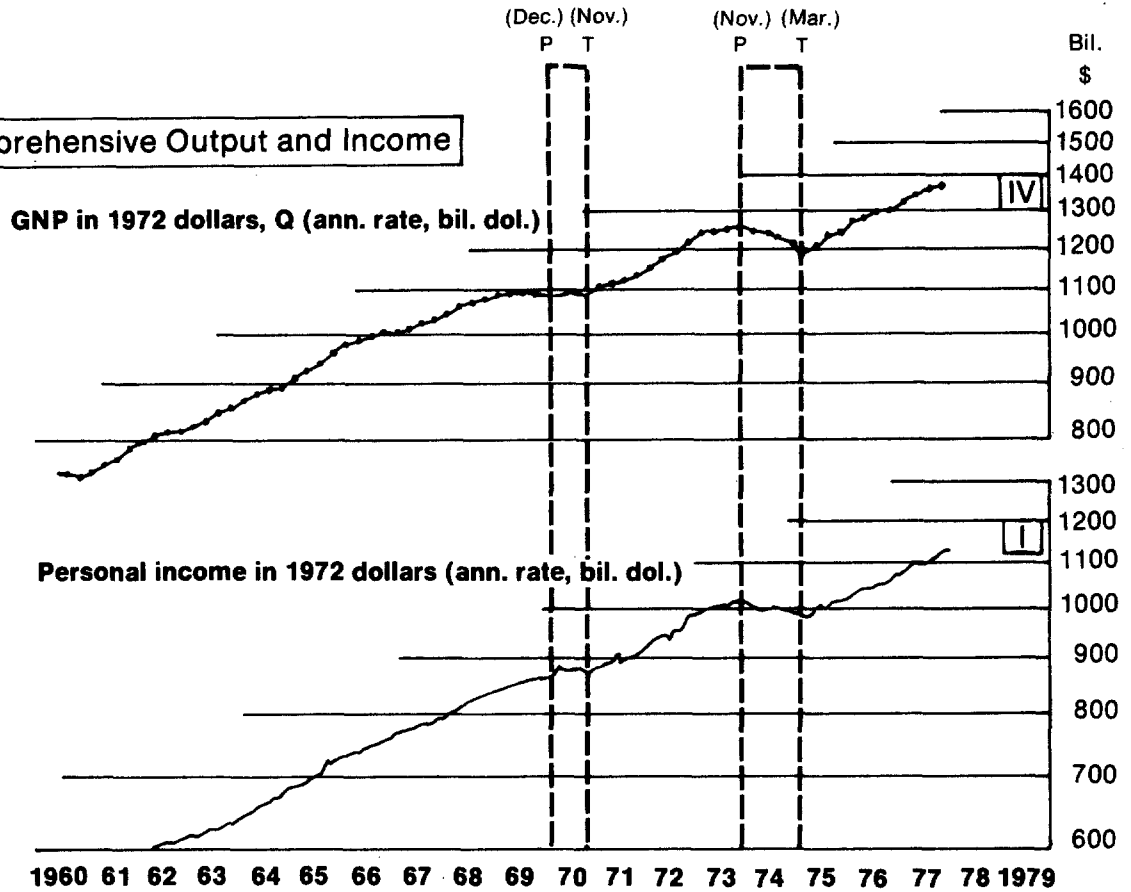
Between 1950 and 1975 nine states (Maine, Massachusetts, Rhode Island, New York, Pennsylvania, Illinois, Indiana, Michigan, and Wisconsin) in the Northeast and Midwest consistently experienced below national average growth in personal income.⁷ Their combined relative share of total personal income dropped from 40.4% to 33.3%—a decline of 6.7 percentage points (16.2%), of which New York alone accounted for nearly 40%. *Table A6.* During the same period, however, ten states in the South and West (Alabama, Florida, Louisiana, South Carolina, Virginia, Arizona, Texas, Colorado, Nevada, and Alaska) consistently grew at rates above the national average, increasing their combined relative share of total personal income from about 13% to 18%; Florida alone accounted for over 40% of this relative increase.

EMPLOYMENT

With few exceptions, total nonagricultural employment has been increasing in all regions and states, albeit at very different rates. For many decades, the rates of increase in non-agricultural employment in the New Eng-

Chart 3
**GNP AND PERSONAL INCOME,
 1960-77**

Comprehensive Output and Income



SOURCE: *Business Conditions Digest*, U.S. Dept. of Commerce,
 Bureau of Economic Analysis, February 1978, p. 20.

Table Table 11

TOTAL NONAGRICULTURAL EMPLOYMENT AS A PERCENT OF U.S. TOTAL, BY REGION, 1950-77

Region	1950	1960	1970	1975	1977
New England	7.4%	6.8%	6.4%	6.1%	6.2%
Mideast	27.1	25.0	23.0	21.1	17.4
Great Lakes	23.0	21.6	20.6	19.7	20.4
Plains	8.0	7.8	7.6	7.7	7.5
Southeast	16.5	17.7	19.5	20.7	21.9
Southwest	6.0	6.8	7.4	8.3	8.9
Rocky Mountain	2.0	2.2	2.3	2.7	2.8
Far West	9.7	12.1	13.2	13.8	14.7

SOURCE: ACIR staff computations based on data from Appendix Table A11.

land, Mideast, and Great Lakes regions have been substantially below those for the U.S. as a whole, whereas the rates of growth in the Southeast, Southwest, Rocky Mountain, and Far West regions have been well above average. Tables 11 and 12. The result of these differences has been that the share of total nonagricultural employment in the three Northeastern regions declined from roughly 58% in 1950 to 44% in 1977.

As was the case with personal income, the

rate of growth in the national economy seems to have a disproportionate effect among the regions. The slower growth rate of the entire U.S. economy between 1970-75 clearly had the greatest adverse effect on employment growth among slow growing regions. In New England the average annual growth rate of nonagricultural employment was 77% that of the U.S. average between 1960 and 1970 but had fallen to only 38% (of a much lower average growth) in the 1970-75 period. Similar patterns were observed in the Mideast and Great Lakes states. In contrast, in the more rapidly growing states, the rates of increase were 1.5 to 2.8 times as great as the national average between 1970 and 1975, compared with 1.1 to 1.3 times as large between 1960 and 1970.

In terms of employment growth, one could make a case (taking only slight license) that the recessions of the 1970s were largely confined to the New England, Mideast, and Great Lakes states. Between September 1974, and June 1975, for example, when national nonagricultural employment declined by 2.5%, employment in the Southwest and Rocky Mountain states actually grew and in the Far West the decline was negligible (-0.18%). Table 13.

In the initial state of the recovery, June 1975, to December 1976, employment grew by

Table 12

AVERAGE ANNUAL RATES OF GROWTH OF NONAGRICULTURAL EMPLOYMENT, SELECTED PERIODS, 1950-75

Region	Rate of Growth			Regional Rate Relative to Growth on U.S. Average		
	1950-60	1960-70	1970-75	1950-60	1960-70	1970-75
United States	1.80%	2.69%	1.69%	100	100	100
New England	.95	2.08	.65	53	77	38
Mideast	.95	1.85	-.05	53	69	—
Great Lakes	1.12	2.25	.65	62	84	38
Plains	1.47	2.46	2.08	82	91	123
Southeast	2.58	3.69	3.00	143	137	178
Southwest	3.04	3.55	4.00	169	132	237
Rocky Mountain	2.72	3.00	4.74	151	112	280
Far West	4.07	3.54	2.58	226	132	153

SOURCE: ACIR staff computations based on data from Appendix Table A12.

Table 13

**PERCENT CHANGE IN TOTAL NONAGRICULTURAL EMPLOYMENT,
BY REGION OR STATE, SELECTED PERIODS, 1974-77***

Region or State	9/74- 6/75	6/75- 12/76	12/76- 7/77	Region or State	9/74- 6/75	6/75- 12/76	12/76- 7/77
UNITED STATES	-2.50%	5.16%	1.32%				
NEW ENGLAND	-2.30	.96	2.15	SOUTHEAST	-1.71	3.94	3.89
Connecticut	-4.66	1.85	1.07	Alabama	-0.41	4.64	5.75
Maine	-0.11	4.66	4.59	Arkansas	-3.39	8.30	3.70
Massachusetts	-1.53	-1.45	1.74	Florida	-1.61	3.00	2.51
New Hampshire	-1.90	3.77	7.83	Georgia	-2.60	2.40	7.37
Rhode Island	-1.14	5.98	-1.38	Kentucky	-0.03	1.03	5.48
Vermont	-3.19	4.89	7.50	Louisiana	.63	10.71	-1.23
MIDEAST	-2.16	-1.35	2.63	Mississippi	-4.44	11.11	2.57
Delaware	-4.46	1.89	2.81	North Carolina	-2.14	.47	4.56
District of Columbia	2.76	-19.33	.89	South Carolina	-5.39	7.19	1.40
Maryland	-1.65	7.16	.79	Tennessee	-2.82	-0.10	6.34
New Jersey	-3.94	.24	6.07	Virginia	-0.23	6.03	2.37
New York	-1.92	-3.10	1.85	West Virginia	1.96	.82	7.26
Pennsylvania	-2.26	.45	2.57	SOUTHWEST	.63	8.29	1.46
GREAT LAKES	-3.13	3.63	1.96	Arizona	-1.72	7.50	.51
Illinois	-3.05	4.85	1.47	New Mexico	3.23	6.21	5.12
Indiana	-6.21	5.82	2.45	Oklahoma	.67	8.44	1.56
Michigan	-3.46	4.51	3.22	Texas	.80	8.57	1.29
Ohio	-2.39	.92	1.45	ROCKY MOUNTAIN	2.96	4.31	2.76
Wisconsin	-0.86	2.97	1.56	Colorado	4.10	3.59	.59
PLAINS	-1.35	3.04	1.90	Idaho	4.08	5.23	4.40
Iowa	-.14	1.73	.30	Montana	2.36	-1.75	8.95
Kansas	-1.04	7.43	1.45	Utah	.36	6.78	.44
Minnesota	-2.30	3.56	3.20	Wyoming	2.70	10.17	10.55
Missouri	-2.69	1.62	.72	FAR WEST	-0.18	5.23	2.85
Nebraska	.09	1.66	2.76	California	-0.60	6.07	2.20
North Dakota	3.41	7.45	4.70	Nevada	3.41	3.48	8.08
South Dakota	1.52	.70	6.77	Oregon	-1.82	3.95	2.64
				Washington	.71	2.29	5.65
				Alaska	9.63	7.64	6.57
				Hawaii	4.25	.26	2.84
				x	-0.58	3.61	3.45
				Standard Deviation	2.98	4.66	2.74
				V	5.13	1.29	.79

*The period starting in September 1974, through July 1977, represents the downturn and recovery from the 1974-75 recession periods as defined by the growth in seasonally adjusted total nonagricultural employment. Specifically, the period between September 1974, and June 1975, represents the downturn and the last two periods represent two phases of the recovery. It should be noted that while the general cycle was defined with seasonally adjusted

figures, the percentages in this table are unadjusted because such an adjustment is not readily available on a state-by-state basis.

SOURCE: ACIR staff computations based on data from U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, various issues, Washington, DC, U.S. Department of Labor.

5.16% for the nation. Employment continued to decline in the Mideast states, however, and grew by less than 1% in New England.

Since December 1976, the benefits of the recovery have been far more evenly dispersed. Indeed, the growth rate in nonagricultural employment in the Mideast states has exceeded that in the Southwest and is about the same as that in the Rocky Mountain and Far West states.

In general, the regional rates of total personal income and employment growth in the decade of the '60s were much more similar than they had been during the '50s and than they have been recently. Overall, the evidence is ambiguous, pointing to greater convergence—when the '50s and '60s are compared—and greater divergence—when the '60s and first half of the '70s are compared.

Manufacturing Employment

The changes in manufacturing employment are far different from the changes in nonagricultural employment just examined. The most dramatic change occurred in the Mideast where the share of manufacturing employment declined from 29% to 16% of the national total between 1950 and 1977; New York and Pennsylvania showed absolute declines over the period. Such absolute declines, for some periods, are also common in the New England and Mideast regions but rare elsewhere. *Table 14.*

Table 14

**TOTAL MANUFACTURING EMPLOYMENT
AS A PERCENT OF U.S. TOTAL, BY REGION,
1950-77**

Region	1950	1960	1970	1975	1977
Northeast	9.6%	8.7%	7.5%	7.1%	7.4%
Mideast	29.2	26.7	23.3	20.9	16.6
Great Lakes	29.4	26.8	26.0	25.2	26.2
Plains	5.7	6.0	6.3	6.7	6.8
Southeast	15.0	16.6	20.2	21.6	23.1
Southwest	3.0	3.8	5.1	5.8	6.4
Rocky Mountain	.9	1.1	1.3	1.5	1.6
Far West	7.1	10.4	10.6	11.3	11.8

SOURCE: ACIR staff computations from *Appendix Table A8.*

During the decade of the 1950s, four of the six New England states had decreases in manufacturing employment, as did Michigan. Between 1960 and 1970, a decade of far more rapid growth in manufacturing employment, only Massachusetts and New York continued to show decreases in manufacturing employment and the other states which had had declines in the previous decade showed modest—far below national average—growth.

The 1973-74 recession in economic activity reversed the expansion of the '60s to the extent that, between 1970 and 1975, 16 of the 17 states in the New England, Mideast, and Great Lakes regions—the only exception being Wisconsin—experienced very substantial decreases in their manufacturing employment. In the rest of the country, growth rates remained positive between 1970 and 1975, although they were generally less than they had been. In only six of the 33 states in the rest of the country did manufacturing employment actually decline during this period. *Table 15.*

The absolute declines in manufacturing employment in the Northeast and Great Lakes regions coupled with the low but positive growth in the South and West has resulted in significant shifts of manufacturing jobs to the expanding regions. Between 1950 and 1975, the share of total U.S. manufacturing jobs in the Northeast and Midwest declined from 68% to 50%.

Overall it is not clear from the data whether the trend in the Northeast and Great Lakes states is one of slow growth in manufacturing or absolute decline. Nonetheless, the decades of the '50s, '60s, and the first half of the '70s reveal a major shift in the national pattern of manufacturing activity, most notably from the Mideast to the Southeast.

The change may be seen most clearly if we define a region's industrial intensity as its share of manufacturing employment relative to its population share. *Table 16.* Whereas in 1950 the New England, Mideast, and Great Lakes regions were two to fourfold more industrialized than other regions, by 1977 these disparities were far smaller. Indeed, in all of the remaining regions, the intensity of industrialization increased over the period by

Table 15

**AVERAGE ANNUAL RATE OF GROWTH IN MANUFACTURING EMPLOYMENT,
BY REGION OR STATE, SELECTED PERIODS, 1950-75**

Region or State	1950-60	1960-70	1970-75	Region or State	1950-60	1960-70	1970-75
UNITED STATES	.88%	1.43%	-0.99%				
NEW ENGLAND	-0.06	.01	-2.10	SOUTHEAST	1.99	3.35	.40
Connecticut	.70	.86	-2.95	Alabama	.93	3.17	.14
Maine	-0.42	.55	-2.96	Arkansas	3.06	5.07	.84
Massachusetts	-0.25	-0.74	-1.77	Florida	7.29	4.52	1.47
New Hampshire	.96	.54	-1.30	Georgia	1.75	3.17	-1.03
Rhode Island	-2.10	.10	-1.00	Kentucky	2.05	3.95	1.54
Vermont	-0.44	1.38	-0.75	Louisiana	-0.21	2.13	.74
MIDEAST	.01	.02	-3.05	Mississippi	3.33	4.24	2.34
Delaware	1.37	1.93	-1.51	North Carolina	1.99	3.50	.46
District of Columbia	.51	-0.82	-2.97	South Carolina	1.53	3.34	.06
Maryland	1.10	.42	-2.82	Tennessee	2.36	3.94	.44
New Jersey	.67	.65	-3.29	Virginia	1.83	2.88	.15
New York	-0.20	-0.65	-3.70	West Virginia	-0.53	.15	-0.72
Pennsylvania	-0.28	.57	-2.39	SOUTHWEST	3.28	4.33	1.64
GREAT LAKES	.01	1.08	-1.59	Arizona	11.23	6.34	1.65
Illinois	.10	1.04	-1.86	New Mexico	5.16	2.32	5.15
Indiana	.24	1.80	-1.76	Oklahoma	2.82	4.45	2.16
Michigan	-0.94	1.03	-1.53	Texas	3.02	4.23	1.52
Ohio	.35	1.09	-2.02	ROCKY MOUNTAIN	3.40	2.39	2.68
Wisconsin	.58	.85	.28	Colorado	3.60	2.97	2.82
PLAINS	1.33	2.01	.25	Idaho	2.54	3.42	2.68
Iowa	1.35	2.01	1.75	Montana	1.26	1.60	-1.64
Kansas	1.99	1.49	3.53	Utah	4.80	1.60	4.30
Minnesota	1.36	3.35	.10	Wyoming	2.76	-1.26	1.57
Missouri	1.05	1.28	-1.82	FAR WEST	4.65	1.58	.41
Nebraska	2.52	2.44	.23	California	5.66	1.70	.35
North Dakota	.64	4.30	8.67	Nevada	4.43	4.52	7.39
South Dakota	1.22	1.89	4.83	Oregon	.45	1.78	1.32
				Washington	1.95	1.01	.38
				Alaska	NA	4.02	-1.44
				Hawaii	NA	-0.04	-1.28

SOURCE: Compiled by ACIR staff from data in Appendix Table A9.

Table 16

**INDUSTRIAL INTENSITY,* BY REGION,
1950 and 1977**

Region	1950	1977
New England	1.55	1.30
Mideast	1.31	.85
Great Lakes	1.46	1.38
Plains	.61	.87
Southeast	.67	1.02
Southwest	.39	.73
Rocky Mountain	.39	.59
Far West	.69	.86

*Regional Share of manufacturing employment divided by share of nation population.

SOURCE: ACIR staff computations.

this measure, but in the older industrial regions, it decreased. By the end of the period, the Mideast had become a "nonindustrial" region, supplanted largely by the Southeast.

This transformation of the regional structure of economic activity occurred in a remarkably short period and was accompanied by few, if any, manifestations of severe dislocation, such as differential regional unemployment rates. Unlike the experience of other Western nations, these changes appear to have reflected a private response to economic forces, rather than being the result of conscious government intervention to achieve regional balance. Indeed, the speed and relative ease with which these considerable regional changes have occurred may explain why the U.S. has established, in contrast with Western European nations, so few mechanisms for dealing with regional disparities.

Unemployment

Enormous regional shifts in economic activity have been accomplished without concomitant disparities in regional unemployment rates. The unemployment rate provides two types of information: namely, the economic well-being of part of the population as well as the state of the labor market. Shifts in economic activity may have several effects on the unemployment rate. Slow growing production combined with a relatively immobile population might result in high un-

employment rates in those regions whose relative growth is low.⁸ Conventional economic analysis would predict that such regions should eventually be more attractive to businesses considering expansion if the higher than average unemployment rate tends to limit the growth of wages relative to other regions. The adjustment may take a considerable time, however, and may be hindered by other factors, such as the closeness to markets or supply sources, the business "climate," and so on.

Paradoxically, it is possible, and some would argue probable, that above average unemployment will also characterize regions of rapid growth. In particular, mobile workers may be drawn to them because of the higher probability of obtaining employment or because of a more desirable industry or occupation mix. If there is sufficient migration in response to these attractions, the labor supply may exceed the demand and result in higher (than national) unemployment rates. Moreover, this phenomenon may not be eliminated by a further growth in employment opportunities if the growth attracts additional migrants.⁹

The preceding suggests that both the slowest and most rapidly growing regions may experience above average unemployment rates. While these explanations of differential regional unemployment rates do not exhaust the current stock of theory, they are suggestive. What are the facts?

Since 1950 the New England and Far West regions have generally experienced above average unemployment rates. The Plains states and the Southwest have, with few exceptions, been characterized by well below average unemployment rates. In the remaining regions the record is more mixed as between states and periods. As recently as 1970 the states of the Mideast region all had below average unemployment rates, while the states in the Far West and Southeast were generally above average. By 1975, four of the six Mideast states had unemployment rates well above average. The Western states were also above average but below the rates of either the New England or the Mideast states.

The figures from 1970 and 1975 may not

represent "trend" values since the 1970 data reflect the cutbacks in defense procurement for the Vietnam War in the Western states and 1975 figures are associated with the general recession in the economy. Support for the assertion that "unemployment (in the Northeast) has become fixed at a higher rate than the national average,"¹⁰ is not unambiguous. Higher than average unemployment rates also have characterized most of the Southeastern and Far Western states since 1970. These may be cyclical phenomena. They are consistent, however, with the two behavioral models outlined at the beginning of this section, namely, relative immobility among the populace of declining areas, as well as the attraction of rapidly growing regions to some members of the labor force, leading to immigration of greater numbers of workers than can be absorbed even in rapidly growing regions. *Table 17, pg. 28.*

At the metropolitan, rather than the regional level, both the immobility and immigration models received limited support in a recent study that examined the association between unemployment rates and local employment growth in the period between 1967 and 1974. In the 26 metropolitan areas with manufacturing employment growth greater than 10%, half had unemployment rates above 4% (average 5.5%). In the declining or stagnating SMSAs, somewhat less than half had high unemployment rates (average 5.10%) and the remainder had relatively low unemployment rates (average 3.2%). The conclusion is that there is very little relationship between overall rates of growth in manufacturing employment in an SMSA and the unemployment rate.¹¹ This still leaves the possibility that unemployment rates are associated with the overall rate of job creation not simply manufacturing.

FOOTNOTES

¹A recent evaluation of the available data on cost-of-living differences, conducted by the Poverty Studies Task Force, *The Measure of Poverty: A Report to Congress as Mandated by the Education Amendment of 1974*, Washington, DC, U.S. Department of Health, Education, and Welfare, April 1976, pp. 82, 86, and 90, concludes that:

- (1) . . . although there may be geographical differences in cost-of-living, there is no known way to make satisfactory geographic adjustments.
- (2) Evidence of geographic differences in living costs is sketchy and inconsistent. . . . The most prominently mentioned source of data is the Bureau of Labor Statistics' Family Budgets (published quarterly for 44 urban areas for two prototypical families and three levels of living). . . . These budgets have certain limitations which preclude their use as accurate measures of cost-of-living differences.

In addition, it was also noted that despite observation that living costs appear to be lower in the Southern states, these differences may stem from different income and expenditure patterns rather than prices. Income levels are generally lower and poverty rates higher in the South than elsewhere. It should be added that differences in living costs between cities within a region, even within the same state, are frequently quite significant.

²The extremely high per capita incomes in the Far West and Rocky Mountain states at the turn of the

century undoubtedly reflect the unusually distorted price structure in those relatively isolated regions at time.

³In this section and throughout the remainder of the study it is assumed that regional income levels and income per capita largely reflect the level of regional production. This assumption is most accurate for wage recipients but is less precise for non wage income such as dividends, interest, and rents, which can, of course, be earned on investments in other regions. Even wage income may be tied to activity in other regions. No information is available to relate regional measure of income originating (value added) to regional household incomes (personal income). Various versions of both are used interchangeably, although it is recognized that some, probably small, misestimates may be made.

⁴Note, however, absolute rates of growth were in fact higher in 1970-75 compared with 1960-70. This is due largely to the higher rate of inflation.

⁵This is discussed further in *Chapter IV*.

⁶Note this does not imply that the same holds for the level of per capita income.

⁷In this paragraph "consistently" refers to those states which experienced either below or above average growth in personal income for each of the periods 1950-60, 1960-70, and 1970-75.

⁸Earlier we noted that population shifts have been considerably smaller than shifts in economic activity.

⁹For a formal model of the process see M. P. Todaro, "A Model of Labor Migration and Urban Unemployment," *American Economic Review*, Menasha, WI, George Banta Co., Inc., Vol. 69, 1969. Empirical evidence on migration is given in J. R. Pack, "Determinants of Migration to Central Cities," *Journal of Regional Science*, Philadelphia, PA, Regional Science Institute, Vol. 13, No. 3, August 1973, and in Michael J. Greenwood, "Research on Internal Migration in the United

Table 17

UNEMPLOYMENT RATE, BY REGION OR STATE, 1950-75

Region or State	Unemployment Rates				Unemployment Rates Relative To U.S. Average			
	1950	1960	1970	1975	1950	1960	1970	1975
UNITED STATES	4.8	5.5	4.9	8.5	100	100	100	100
NEW ENGLAND	6.6	5.7	4.9	9.2	138	104	100	108
Connecticut	5.4	5.6	5.6	10.1	112	101	114	118
Maine	8.8	7.4	5.7	10.2	183	134	116	119
Massachusetts	5.8	5.1	4.6	12.5	120	92	93	147
New Hampshire	6.6	4.1	3.3	6.9	137	74	67	81
Rhode Island	7.2	6.7	5.2	14.6	149	121	106	171
Vermont	5.5	5.4	4.9	10.0	114	98	100	117
MIDEAST	4.7	5.5	4.1	9.0	98	100	84	106
Delaware	3.1	4.2	4.8	9.3	64	76	97	109
District of Columbia	3.9	2.6	3.1	8.1	81	47	63	95
Maryland	4.6	5.6	3.3	7.5	95	101	67	88
New Jersey	5.1	6.7	4.6	10.2	106	121	93	119
New York	6.0	5.6	4.5	10.1	124	101	91	118
Pennsylvania	5.4	8.0	4.5	8.9	112	145	91	104
GREAT LAKES	4.0	5.1	5.0	9.3	83	93	102	109
Illinois	4.0	4.2	4.1	8.3	83	76	83	97
Indiana	3.1	5.2	5.0	8.8	64	94	102	103
Michigan	5.4	6.7	6.7	13.8	112	121	136	162
Ohio	4.4	5.3	5.4	8.5	91	96	110	100
Wisconsin	2.9	3.9	3.9	7.0	60	70	79	82
PLAINS	2.8	3.8	3.9	5.6	58	69	80	66
Iowa	1.8	3.0	3.7	5.7	37	54	75	67
Kansas	2.5	4.1	4.8	4.9	52	74	97	57
Minnesota	3.5	4.6	4.2	5.9	72	83	85	69
Missouri	3.3	4.6	3.3	7.3	68	83	67	85
Nebraska	2.2	2.7	3.1	5.5	45	49	63	64
North Dakota	3.8	5.0	4.6	5.2	79	90	93	61
South Dakota	2.8	2.9	3.3	4.9	58	52	67	57

SOUTHEAST	4.0	6.4	4.9	8.9	83	116	100	105
Alabama	4.2	6.3	4.7	8.9	87	114	95	104
Arkansas	4.7	6.1	5.0	8.9	97	110	102	104
Florida	4.5	5.2	4.4	11.4	93	94	89	134
Georgia	3.4	5.8	4.1	9.6	70	105	83	112
Kentucky	3.6	7.1	5.0	7.7	75	129	102	90
Louisiana	4.6	6.5	6.6	8.3	95	118	134	97
Mississippi	3.5	6.7	4.8	7.7	72	121	97	90
North Carolina	3.3	5.5	4.3	9.1	68	100	87	107
South Carolina	3.4	5.7	5.0	11.1	70	103	102	130
Tennessee	3.9	6.3	4.8	8.5	81	114	97	100
Virginia	3.9	4.2	3.4	6.9	81	76	69	81
West Virginia	4.8	11.9	6.1	8.2	100	216	124	96
SOUTHWEST	5.2	5.1	4.8	7.6	108	93	98	89
Arizona	7.6	4.7	4.4	10.1	158	85	89	118
New Mexico	5.4	5.4	5.9	7.8	112	98	120	91
Oklahoma	3.8	4.9	4.4	6.2	79	89	89	72
Texas	3.9	5.3	4.4	6.1	81	96	89	71
ROCKY MOUNTAIN	4.9	5.0	5.3	6.6	102	91	108	78
Colorado	4.2	3.7	4.4	5.5	87	67	89	64
Idaho	5.5	5.4	5.8	7.4	114	98	118	87
Montana	5.1	6.7	5.5	8.0	106	121	112	94
Utaho	5.2	4.6	6.1	7.5	108	83	124	88
Wyoming	4.3	4.4	4.5	4.6	89	79	91	54
FAR WEST	7.9	5.7	7.5	8.8	165	104	153	104
California	7.9	5.8	7.2	9.0	164	105	146	105
Nevada	6.7	5.8	5.9	9.7	139	105	120	114
Oregon	6.5	4.9	4.5	8.9	135	89	91	104
Washington	6.7	6.4	9.1	9.3	139	116	185	109
Alaska	9.8	8.0	8.7	8.6	204	145	177	101
Hawaii	9.5	3.1	4.7	7.4	197	56	95	87
Mean	4.8	5.4	4.9	8.4				
Median	4.5	5.4	4.7	8.3				
Standard Deviation	1.8	1.6	1.2	2.1				
V	.38	.30	.25	.25				

*Regional figure is an unweighted average.

Note: Unemployment figures represent annual average rates for the respective years and 1975 rates were preliminary (an 11 month average).

SOURCE: Executive Office of the President, *Employment and Training Report of the President*. Washington, DC, U.S. Government Printing Office, 1976, p. 312.

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Determinants of Regional Shifts*

Much of the discussion of differences in regional economies, particularly in their growth rates, is embedded in economic maturity or life cycle concepts. The recurrent references to the "older" economies of the Northeast and Midwest as contrasted with the "newer" or "younger" economies of the West, Southwest, and more recently, the Southeast are reflections of these notions.

ECONOMIC MATURITY OR LIFE CYCLE MODELS

Maturity is seldom defined, although there are two characteristics implicit in the discussion: (1) chronological economic age, e.g., years since manufacturing employment became important in the region, and (2) a performance criterion, e.g., relatively low rates of economic growth. This second is largely an outgrowth of the awareness that over time the growth rates of countries slow so that more mature economies are characterized by slower growth rates, newly emerging economies by higher growth rates.¹ This latter criterion was employed by Borts and Stein in defining mature states: They looked at the growth rates of manufacturing employment in the state relative to that of the nation and defined as mature those which had persistently grown more slowly.²

*N.B.—It should be noted that in this chapter the names and composition of the various regions of the country are those of the authors cited and do not agree in every instance with the regional breakdown and names used by ACIR in this volume.

What produces a mature economy, is it inevitable, what are its characteristics?

On the supply or capacity side of the economy, its supply of labor (its quantity and quality) and the availability of capital, the two primary inputs, together with the state of technology, will determine the output capacity of the region. Changes in technology which favor the region, which make existing supplies of labor and capital more productive, will increase its productive capacity. Differences in regional growth rates of total factor productivity may occur insofar as regions inevitably specialize in some sectors and the rate of technical progress differs among sectors.³ More broadly, innovation which results in new products is also likely to result in advantages in specific regions. Yet, the factors resulting in the establishment of manufacturing facilities for entirely new product lines in particular regions sometimes defy systematic explanation (e.g., semiconductors in the Southwest and California).

On the demand side, there are three principal factors which influence the demand for the region's output: the direct demand stemming from its local population, the intermediate demands of its own industry and government, and demands from outside the region. Growth in national income will differentially affect the growth in regional demand depending upon the income elasticity of demand for the region's products.

It might be supposed that as a regional economy matures it ultimately encounters obstacles in its capacity to produce output and to find new markets. The maturity process or life cycle posits as initial development of new industries; over time they take up space, use capital, and employ labor. They expand and ultimately mature, that is stop expanding, grow slowly, or perhaps decline. Plants become obsolete (i.e., their products can be produced more cheaply with newer technology), perhaps even labor in the region becomes characterized by relatively obsolete skills. If we assume that technological change is more rapid in newer sectors and the supply of land available in a region is limited, then aging would be associated with increasing densities of activity, perhaps reaching capacity limits and going beyond to congestion.

This would stimulate dispersion of activity to relatively less crowded regions—less mature economies. The aging of the capital stock—in physical and technological terms—would increase unit production costs relative to the cost of new plants. Development of new product lines may intensify the dispersion, especially if economically attractive space is a limiting factor in the older economy.

On the demand side, the older region may be characterized by products with low income elasticity of demand and a slower sales growth to external (other regions') purchasers, perhaps reinforced by a population decline and its direct demands. The aggregate result is deaths of firms, slow growth, and perhaps relocation of firms.

In sum, the slow growth of a region relative to the national economy must be explained by a decline in quantity or quality of the labor force and capital stock over time, or changes in technology which favor less developed regions, and/or a relative decline in the demand for its output over time. All other things considered, there is probably a set of factors internal to the region which, left to themselves, combine to produce a process that can be described as the aging or maturing of the regional economy.

In the earlier section on regional economic trends, it was shown that the older industrial regions of the nation are experiencing, and have for many years, generally lower employment and income growth rates than the younger more recently industrializing regions. We now attempt to assess the origins and importance of contributors to this pattern. Most research on this has concentrated on the demand side and our discussion will reflect this. Nevertheless, as suggested above, supply side features may well be as important.

The Demand Side

Estimates have been made of the extent to which national demand changes may have been responsible for the differential fortunes of the nation's regions. The question usually posed is whether the sectoral employment distribution of the older regions is disproportionately concentrated in industrial sectors which are growing more slowly than the national average. The effect of sectoral structure has been investigated through compari-

Figure 1

SUMMARY OF SHIFT SHARE ANALYSES

Study	Period Covered	Areas Covered	Sectors Covered	Unit of Analysis
Perloff, et al	1939-54	states and regions	agriculture; mining; construction; manufacturing (no subsectors); transportation and public utilities; wholesale trade; retail trade; finance, insurance, and real estate; service and miscellaneous; government	employment
Borts and Stein	1919-29 1929-47 1948-53 1948-57	seven mature states plus overall summary	manufacturing	employment
Bretzfelder	1959-69	regions and states	all sectors—41 sector disaggregation	total personal income
Rees	1963-72 1972-76	regions	manufacturing—(aggregate figures only, based upon two-digit SIC calculations)	employment and value added
ACIR	1968-73	New York State	all sectors—two, three, or four-digit disaggregation	employment

son of local with national growth rates, overall and industry by industry.

One would not expect all industrial sectors in the nation to grow at the same rate, particularly due to differences in the income elasticities of demand for their outputs. Thus, even if each sector in a region grew at the national rate, *overall* regional growth rates could differ, given different mixes of sectors within the region. Slow growth might characterize regions heavily dependent upon industrial sectors which were growing very slowly in the nation as a whole. Such aggregate regional differences would then be attributable to differences in regional sectoral structure.

The evidence from four studies,⁴ despite differences in coverage, time periods, and unit of analysis, is quite consistent: national changes in demand patterns for different products cannot account for the differential regional growth rates. The sectoral mix of industries in the Northeast and Midwest is still favorable, although their advantages are disappearing.

In principle, analysis of the implications of changing economic structure should examine changes in the share of gross output and value

added. Most studies, however, use the sectoral structure of employment. Insofar as there are interregional changes in relative labor productivity, analysis of employment shares may confound demand and supply effects; if labor productivity is growing more rapidly in one sector, a growing share of output may be achieved with a constant share of the labor force. If as seems likely, the differential changes in labor productivity have been small relative to demand shifts, the use of employment measures may yield a good approximation of the effect of demand shifts.

In fact, employment changes observed within regions and the shifts among regions have not been the result of demand shifts which favor the industries of one region over those of another. Indeed, over most, if not all, of the 1919 to 1972 period covered by the four studies, the most rapid increases in national economic activity (whether measured by changes in employment or value added), have occurred in those industries which have been very prominent in the older industrial regions. If anything, the older industrial regions have had industrial structures which should have been more conducive to rapid growth than the more recently developing regions.

We turn now to a presentation of the findings of some of these analyses and the inferences drawn from them. *Figure 1* summarizes some important features of the studies: the years over which the data are analyzed, the geographical disaggregation, sectoral coverage and disaggregation, and the unit of analysis.

Borts and Stein compare actual (A) and hypothetical (H) rates of manufacturing employment growth. The hypothetical rates are those which would have occurred had each of the state's industries grown at the same rate at which that industry grew nationally. The data cover the years 1919 to 1957 for seven states which consistently grew at rates well below the national average. Their actual employment growth rates are almost uniformly below the hypothetical or potential growth rate calculations. *Table 18*.

Although actual comparisons are presented only for the seven states described by the authors as mature, the authors' conclusion for the 48 states for which the calculation was made is that,

Except for the period 1948-53, there was no significant association between the actual and hypothetical growth rates. Interstate differences in growth rates of manufacturing production worker employment *do not* arise because states have different

compositions of industries. These differences arise because, in the industries they contain, states grow at rates different from the national average in those same industries. . . . Maturity and decline have *not* resulted from a state's concentration in declining industries.⁵

The ratio of actual to hypothetical growth rates in *Table 18* is a measure of differential shift. The averages across all manufacturing sectors included in the computations shown in *Table 18* indicate that, in general, actual growth rates fall short of the hypothetical rates. This differential diminished, however, over the period considered: the A/H ratios in manufacturing in these mature states were considerably closer to unity in the post World War II decade, 1948-57, than they were in the 1919-29 decade and even the two decades covering the great depression and World War II. The conclusion, then, that industrial structure is responsible for the decline or relatively slow growth rates in manufacturing employment in the mature states is more accurate at the end than at the beginning of the period covered by Borts and Stein.⁶

Perloff, et al, have analyzed employment shifts for all sectors for the period 1939-54. Their findings indicate some very clear re-

Table 18

**ACTUAL AND HYPOTHETICAL GROWTH OF MANUFACTURING PRODUCTION
WORKER EMPLOYMENT IN FOUR BUSINESS CYCLES**

State	1919-29			1929-48			1948-53			1948-57		
	A ^a	H ^b	A/H	A ^a	H ^b	A/H	A ^a	H ^b	A/H	A ^a	H ^b	A/H
Maine	80	98	.82	129	133	.97	101	102	.99	95	99	.96
New Hampshire	80	102	.78	99	121	.82	100	98	1.02	101	93	1.05
Rhode Island	91	102	.89	100	119	.84	95	100	.95	78	96	.81
Vermont	84	105	.80	105	135	.78	107	103	1.04	97	100	.97
Massachusetts	78	104	.75	105	135	.78	103	106	.97	96	104	.92
Pennsylvania	91	103	.88	125	139	.90	105	111	.95	98	109	.90
New York	90	105	.86	128	146	.88	107	113	.95	102	115	.89

A^a = ratio of actual employment at later date to actual employment at earlier date times 100.
H^b = ratio of hypothetical employment at later date to actual employment at earlier date times 100.

SOURCE: George H. Borts and Jerome L. Stein, *Economic Growth in a Free Market*, New York, NY, Columbia University Press, 1964, p. 47, and ACIR staff computations.

gional patterns. *Table 19*. In the Southwest, the Far West, and the Great Lakes states, total employment grew as a percentage of the national total between 1939 and 1954. It declined almost uniformly in the New England, the Southeast, and the Plains states. In the remaining regions, the Middle Atlantic and Mountain states, the employment picture was mixed.

The disaggregation into proportional and differential shifts is of considerable interest.⁷ In nearly every state in the *older industrial regions* (New England, Middle Atlantic, and Great Lakes), the *proportionality shift was positive*, indicating that the industrial structure of these regions and states in 1939 was such that growth rates over the period 1939-54 would have been expected to exceed national averages if each industry had grown at its national rate. In *every other region*, except for the Far West, the *proportionality shift was decidedly negative*, indicating that their 1939 industrial structures should have resulted in lower than national growth rates over the period 1939-54, given the national rates of expansion by industrial sector.

In sum, industrial structure (mix) as of 1939, favored, if anything, above average expansion in the older industrial states and the Far West and a decline in most of the Sunbelt states. *Actual* growth patterns between 1939 and 1954 were, however, quite the opposite, indicating the importance of the differential shifts.

Outside of the older industrial regions, differential or competitive shifts were overwhelmingly positive, that is favorable: in 22 of 32 states, the differential shift was positive (note further that in 29 of these 32, the proportional shift or industrial mix component of employment change was negative).

In the New England, Middle Atlantic, and Great Lakes states, however, only six of 16 states had positive differential or competitive shifts. Thus, in 1939, employment in the older industrial areas was not concentrated in those industries which experienced slow growth over the next 15 years. On the contrary, quite the opposite was the case. What did occur, however, were differential employment shifts away from these regions. The other regions, those whose industrial struc-

tures in 1939 were not concentrated in the industries which grew most rapidly over the next 15 years, experienced substantial positive differential shifts.

Bretzfelder in more recent analysis, used income, rather than employment as the unit of analysis. His study covered the 1960s and presented some regional summary comparative data for the period 1948-57.⁸ He found that "...interregional variations in growth rates and the resulting shifts in income distribution were less pronounced during the 1960s than during the first postwar decade."⁹ His regional summaries are presented in *Table 20*. They are consistent with the Borts-Stein evidence on employment shifts.

In the three fast growing regions, the Southeast, Far West, and Southwest, differential shifts ("regional share" in *Table 20*) accounted for 21% of the increase in total personal income between 1948 and 1957 but for only 13.4% in the 1959-69 period. Similarly, the negative differential shift in the five slowly growing regions declined from 13.5% to 9.8%, i.e., total personal incomes would have been 13.5% and 9.8% greater, respectively, in the two decades if not for the differential shift factor.¹⁰

When we look at the proportionality factor ("income component mix" in the table), we find that the older industrial regions (the more slowly growing), still retained "favorable" industrial mixes in the 1959-69 decade while the more recently developing regions generally had "unfavorable" structures. Thus, had all of their industries grown at the national growth rate for each industry, respectively, then in both decades the anticipated increase in income for the slow growing regions would have been greater than the national average.

The potential differences had narrowed very substantially between the years 1948-57 and 1959-69. In the latter period, the slow growing regions would have been expected, on the basis of industrial structure and national changes in demand, to have exceeded the national income growth by only 1.1% and the fast growing regions would have been expected to have fallen short by only 1.6%. Between 1948 and 1957, the estimates were 2.9% and 4.9%, respectively.

Table 19

**STATE TOTAL, DIFFERENTIAL, AND PROPORTIONALITY NET SHIFTS IN EMPLOYMENT
AND THE INDUSTRY COMPONENTS OF THE DIFFERENTIAL SHIFTS, 1939-54**

Region or State	Total Employment Shift	One-Digit Components of Total Differential Shift in Employment											
		Total Differential Shift (ABS and Percent*)	Total Proportional- ity Shift (ABS and Percent*)	Agricul- ture	Mining	Construc- tion	Manu- facturing	Transpor- tation and Public Utilities	Whole- sale trade	Retail Trade	Finance, Insurance and Real Estate	Service and Miscel- laneous	Government
NEW ENGLAND													
Maine	-34,687	-40,091	+5,404	13,321	-88	-616	-33,006	-2,989	70	-4,406	-417	-3,404	-8,556
		-88.1	+11.9	+19.9	-.1	-.9	-49.4	-4.5	+1	-6.6	-.6	-5.1	-12.8
New Hampshire	-36,155	-55,248	+19,093	-3,797	-22	-5,352	-24,588	-1,646	973	-2,599	588	-4,463	-14,343
		-74.3	+25.7	-6.5	NM	-9.2	-42.1	-2.8	+1.7	-4.5	+1.0	-7.6	-24.6
Vermont	-24,371	-18,778	-5,593	-1,420	-253	-3,672	-5,766	-1,588	-470	-3,042	306	-1,783	-1,090
		-77.1	-22.9	-7.3	-1.3	-18.9	-29.7	-8.2	-2.4	-15.7	+1.6	-9.2	-5.6
Massachusetts	-119,129	-368,577	+249,448	-16,338	-325	-6,009	-220,229	-16,745	-8,251	-46,794	-1,394	-7,224	-45,268
		-59.6	+40.4	-4.4	-.1	-1.6	-59.8	-4.5	-2.2	-12.7	-.4	-2.0	-12.3
Rhode Island	-50,832	-101,772	+50,940	-1,430	-73	-3,202	-79,962	-1,224	296	-8,657	879	-3,642	-4,757
		-66.6	+33.4	-1.4	-.1	-3.1	-76.8	-1.2	+3	-8.3	+8	-3.5	-4.5
Connecticut	+35,728	-70,713	+106,441	-8,238	68	-7,420	-45,928	-965	5,930	-357	1,723	-4,575	-10,951
		-39.9	+60.1	-9.6	+1	-8.6	-53.3	-1.1	+6.9	-.4	+2.0	-5.3	-12.7
MIDDLE ATLANTIC													
New York	-79,626	-777,501	+697,875	-20,294	1,407	-92,646	-80,440	-107,768	-94,253	-113,294	-160,255	-52,380	-57,578
		-52.6	+47.4	-2.6	+2	-11.9	-10.3	-13.8	-12.1	-14.5	-20.5	-6.7	-7.4
New Jersey	+123,322	-100,699	+224,021	8,930	464	346	-85,263	-5,246	19,733	-6,679	-13,511	-6,128	-13,345
		-31.0	+69.0	+5.6	+8	-15.4	-.7	-3.3	+12.4	-4.2	-8.5	-3.8	-8.4
Pennsylvania	-276,399	-545,910	+269,511	4,734	-86,653	-3,742	-240,017	-29,609	3,797	-64,242	-4,483	-22,999	-102,696
		-66.9	+33.1	967	-7	-1,759	-94	-5.3	+7	-11.4	.8	-4.1	-18.2
Delaware	+14,919	+5,943	+8,976	+8	-15.4	-.7	-42.6	1,506	2,263	2,497	433	581	-444
		+39.8	+60.2	+9.2	-.1	-16.7	-.9	+14.3	+21.4	+23.7	+4.1	+5.5	-4.2
Maryland and D.C.	+105,893	-49,567	+155,460	-4,780	-1,582	-30,770	-20,255	-7,120	-4,810	1,197	4,349	-8,852	23,056
		-24.2	+75.8	-4.5	-1.5	-28.8	-19.0	-6.7	24.5	+1.1	+4.1	-8.3	+21.6
GREAT LAKES													
Ohio	+304,790	+128,436	+176,354	-7,645	-5,897	39,364	71,812	2,812	12,284	298	5,047	19,944	-9,583
		+41.2	+57.9	-4.4	-3.4	+22.5	+41.1	+1.6	+7.0	+2	+2.9	+11.4	-5.5
Indiana	+63,052	+35,339	+27,713	19,726	-2,775	-1,529	27,900	-2,039	6,580	4,142	2,457	-14,903	-4,220
		+56.0	+44.0	+22.9	-3.2	-1.8	+32.3	-2.4	+7.6	+4.8	+2.8	-17.3	-4.9
Illinois	+498	-249,193	+249,691	5,934	-11,699	23,226	-54,784	-17,055	-15,499	-58,935	-45,615	-46,594	-28,172
		-50.0	+50.0	+1.9	-3.8	+7.6	-17.9	-5.5	-5.0	-19.2	-14.8	-15.2	-9.0
Michigan	+227,725	+98,019	+129,706	4,132	2,352	18,388	-3,320	22,421	14,010	14,801	7,274	20,232	-2,271
		+43.0	+57.0	+3.8	+2.2	+16.8	-3.0	+20.5	+12.8	+13.6	+6.7	+18.5	-2.1
Wisconsin	-52,577	-14,966	-37,611	21,112	1,801	-5,028	11,020	629	3,931	-1,508	2,118	-4,100	-44,941
		-28.5	-71.5	+21.9	+1.9	-5.2	+11.5	+7	+4.1	-1.6	+2.2	-4.3	-46.7
SOUTHEAST													
Virginia	-13,591	+36,141	-49,732	-1,712	-2,631	-6,229	-6,311	-1,424	-11,919	26,374	12,781	2,126	25,086
		+42.1	-57.9	-1.8	-2.7	-6.4	-6.5	-1.5	-12.3	+27.3	+13.2	+2.2	+26.0
West Virginia	-159,903	-88,733	-71,170	-25,852	-23,600	-6,889	-24,480	-385	-1,129	-3,364	944	3,053	-7,031
		-55.5	-44.5	-26.7	-24.4	-7.1	-25.3	-.4	-1.2	-3.5	+1.0	+3.1	-7.3
North Carolina	-103,806	+41,250	-145,056	60,358	1,739	-7,450	-52,839	15,254	-19,494	18,475	6,847	5,415	12,945
		+22.1	-77.9	+30.1	+9	-3.7	-26.3	+7.6	-9.7	+9.2	+3.4	+2.7	+6.4
South Carolina	-211,282	-78,006	-133,276	-94,316	125	6,382	-4,672	391	4,190	3,922	7,522	-7,251	5,701
		-36.9	-63.1	-70.1	+1	+4.8	-3.5	+3	+3.1	+2.9	+5.6	-5.4	+4.2
Georgia	-273,931	-115,711	-158,220	-171,044	772	-12,471	10,760	4,710	14,285	8,232	9,561	-7,252	26,736
		-42.2	-57.8	-64.3	+3	-4.7	+4.0	+1.8	+5.4	+3.1	+3.6	-2.7	+10.1
Florida	+250,586	+230,706	+19,880	6,130	3,620	24,450	17,691	7,955	5,237	55,349	20,437	45,579	44,258
		+92.1	+7.9	+2.6	+1.6	+10.6	+7.7	+3.4	+2.3	+24.0	+8.9	-19.7	+19.2

Kentucky	-118,309	+23,258	-141,567	3,535	-10,737	-3,655	21,515	-2,273	2,164	6,700	3,232	11,434	-8,657
		+14.1	-85.9	+4.8	-14.5	-4.9	+29.1	-3.1	+2.9	+9.1	+4.4	+15.5	-11.7
Tennessee	+14,034	+129,041	-115,007	60,108	-1,887	15,231	11,592	3,250	9,050	8,284	9,373	1,665	12,375
		+52.9	-47.1	+45.3	-1.4	+11.5	+8.7	+2.4	+6.8	+6.2	+7.1	-1.3	+9.3
Alabama	-239,053	-62,175	-176,878	-94,401	-10,501	8,319	3,802	-1,034	6,807	11,944	7,708	968	20,852
		-26.0	-74.0	-56.8	-6.3	-5.0	+2.3	-6	+4.1	+7.2	+4.6	+6	+12.5
Mississippi	-299,100	-36,903	-262,197	-30,259	3,822	-14,782	5,658	-1,073	3,632	3,790	4,743	1,656	-14,090
		-12.3	-87.7	-36.2	+4.6	-17.7	+6.8	-1.3	+4.3	+4.5	+5.7	+2.0	-16.9
Arkansas	-211,474	-13,987	-197,487	-13,541	-194	-5,495	10,337	-2,445	1,476	1,466	2,946	3,570	-12,107
		-6.6	-93.4	-25.3	-4	-10.2	+19.3	-4.6	+2.7	+2.7	+5.5	+6.7	-22.6
PLAINS													
Minnesota	-80,226	-1,054	-79,172	24,500	8,862	-5,314	33,770	2,886	-4,490	-15,467	96	-4,509	-41,388
		-1.3	-98.7	+17.3	+6.3	-3.8	+23.9	+2.0	-3.2	-10.9	-1	-3.2	-29.3
Iowa	-117,559	-18,593	-98,966	41,395	-3,064	-14,977	17,000	-6,151	-1,607	-17,696	2,308	-10,808	-24,993
		-15.8	-84.2	+29.6	-2.2	-10.7	+12.1	-4.4	-1.1	-12.6	+1.7	-7.7	-17.9
Missouri	-97,364	-53,463	-43,901	6,399	-2,278	4,614	6,160	5,844	-14,475	-14,875	-2,267	-13,514	-29,071
		-54.9	-45.1	+6.4	-2.3	-4.6	+6.2	+5.9	-14.5	-15.0	-2.3	-13.6	-29.2
North Dakota	-71,289	-2,393	-68,896	3,351	898	4,299	-1,098	799	-1,330	1,445	1,340	-3,847	-8,250
		-3.4	-96.6	+12.6	+3.4	+16.1	-4.1	+3.0	-5.0	+5.4	+5.0	-14.4	-30.9
South Dakota	-39,548	+4,520	-44,068	21,900	204	842	-629	-1,475	342	88	1,175	-1,409	-16,518
		+9.3	-90.7	+49.1	+5	+1.9	-1.4	-3.3	+8	+2	+2.6	-3.2	-37.0
Nebraska	-30,847	+21,314	-52,161	26,591	1,048	-3	13,344	2,642	-1,465	-2,835	4,053	-4,502	-17,559
		+29.0	-71.0	+35.9	+1.4	NM	+18.0	+3.6	-2.0	-3.8	+5.5	+6.1	-23.7
Kansas	+28,708	+92,037	-63,329	17,648	5,433	10,854	55,064	7,640	382	6,279	2,977	1,270	-15,510
		+59.2	-40.8	+14.3	+4.4	+8.8	+44.8	+6.2	+3	+5.1	+2.4	+1.0	-12.6
SOUTHWEST													
Louisiana	-36,947	+63,854	-100,801	-967	25,035	8,695	1,860	11,606	1,513	8,998	7,611	1,059	-1,556
		+38.8	-61.2	-1.4	+36.3	+12.6	+2.7	+16.8	+2.2	+13.1	+11.1	+1.5	-2.3
Oklahoma	-79,746	+19,168	-98,914	-5,435	7,819	2,554	17,396	5,919	1,492	-5,612	3,546	-15,316	6,805
		+16.2	-83.8	-7.6	+10.9	+3.6	+24.2	+8.2	+2.1	-7.8	+4.9	-21.3	+9.5
Texas	+112,286	+408,869	-296,583	-64,896	80,347	-6,911	142,854	35,060	24,166	54,224	33,328	33,436	77,261
		+58.0	-42.0	-11.7	+14.5	-1.3	+25.9	+6.3	+4.4	+9.8	+6.0	+6.1	+14.0
New Mexico	+36,201	+59,403	-23,202	8,403	6,168	4,377	8,225	4,606	3,686	9,236	4,092	-25	10,635
		+71.9	-28.1	+14.1	+10.4	+7.4	+13.8	+7.8	+6.2	+15.5	+6.9	NM	+17.9
Arizona	+68,058	+81,238	-13,180	17,912	3,547	8,135	12,596	4,008	6,124	13,284	4,962	1,512	9,158
		+86.0	-14.0	+22.0	+4.4	+10.0	+15.5	+4.9	+7.5	+16.4	+6.1	+1.9	+11.3
MOUNTAIN													
Montana	-45,079	-17,927	-27,152	-4,539	29	-2,023	-1,376	-989	977	-2,015	1,895	2,240	-12,126
		-39.8	-60.2	-16.1	+1	-7.2	-4.9	-3.5	+3.5	-7.1	+6.7	+7.9	-43.0
Idaho	-8,246	+20,045	-28,291	17,868	218	549	2,736	2,050	564	-945	1,972	429	-5,396
		+41.5	-58.5	+54.6	+7	+1.7	+8.3	+6.3	+1.7	-2.9	+6.0	+1.3	-16.5
Wyoming	-4,986	+3,892	-8,878	60	3,288	-2,215	-1,338	-714	640	1,106	1,013	3,358	-1,306
		+30.5	-69.5	+4	+21.9	-14.7	-8.9	-4.7	+4.3	+7.4	+6.7	+22.3	-8.7
Colorado	+39,695	+51,779	-12,084	12,312	-250	-3,311	9,877	3,619	2,679	3,709	3,264	6,949	12,931
		+81.1	-18.9	+20.9	-4	-5.6	+16.8	+6.1	+4.6	+6.3	+5.5	+11.8	+22.0
Utah	+43,631	+48,968	-5,337	13,821	2,993	1,856	3,533	-157	976	2,705	3,077	2,514	17,650
		+90.2	-9.8	+28.0	+6.1	+3.8	+7.2	-3	+2.0	+5.5	+6.2	+5.1	+35.8
FAR WEST													
Washington	+68,812	+60,810	+8,002	-2,068	-872	666	17,382	-11,062	2,289	4,695	5,198	15,376	29,206
		+88.4	+11.6	-2.3	-1.0	+7	+19.6	-12.5	+2.6	+5.3	+5.9	+17.3	+32.9
Oregon	+48,839	+58,317	-9,478	12,095	23	5,105	13,633	1,809	3,517	5,308	4,627	10,215	2,185
		+86.0	-14.0	+20.7		+8.8	+23.4	+2.8	+6.0	+9.1	+7.9	+17.5	+3.7
California	1,303,805	+1,133,188	+170,617	139,333	3,163	77,708	435,374	74,799	12,267	91,303	28,860	45,615	224,766
		+86.9	+13.1	+12.3	+3	+6.9	+38.4	+6.6	+1.1	+8.1	+2.5	+4.0	+19.8
Nevada	+25,478	+26,290	-812	270	147	4,149	3,507	1,170	841	3,473	1,279	9,283	2,171
		+97.0	-3.	+1.0	+6	+15.8	+13.3	+4.5	+3.2	+13.2	+4.9	+35.3	+8.2

NM—Not meaningful
ABS = Absolute number

*Percentages are based upon sum without regard to sign in order to avoid the extreme distortions of the algebraic sum.

SOURCE: Harvey S. Perloff, et al. *Regions, Resources and Economic Growth*. Table 157.

In sum, when the two decades are compared, we find:

- The gap in net relative changes in income between the fast and the slow growing regions was far larger during the 1948-57 period than during the years between 1959 and 1969.
- Smaller positive and negative industrial mix (or income component mix) factors in the slow and the fast growing regions, respectively, indicate that the industrial mix in the older industrial regions is not as favorable to growth as it was, nor as unfavorable as it was in the South and Southwest.
- Smaller positive and negative differential shifts in the fast and the slow growing regions, respectively, yet they remain

quite substantial and still clearly the principal source of the overall relative changes in total personal income.

Rees' recent analysis of these industrial mix and differential shift effects (here referred to as mix and competitive effects) provides computations for manufacturing only, for the years 1963-72 (see *Figure 1* and *footnote 4*). The regional patterns are very similar overall to those cited above:

- Mix, or industrial structure, or proportionality shifts, are still positive in the older industrial regions, that is, in New England, Middle Atlantic, and Great Lakes states (the latter are grouped as East North Central in the paper).

Table 20
REGIONAL GROWTH EFFECTS

Region	1948-57					1959-69				
	Total Personal Income Change	Income Growth Factors			Net Relative Change ¹	Total Personal Income Change	Income Growth Factors			Net Relative Change ¹
		National Growth	Income Component Mix	Regional Share			National Growth	Income Component Mix	Regional Share	
	(billions of dollars)					(billions of dollars)				
UNITED STATES	139.6	139.6	0	0	0	361.6	361.6	0	0	0
Fast Growing Regions	54.7	45.8	-2.7	11.5	8.9	148.7	131.3	-2.4	19.9	17.5
Southeast	22.3	21.2	-3.1	4.2	1.1	68.6	57.1	-1.6	13.1	11.5
Far West	21.7	15.9	1.2	4.6	5.8	53.6	49.3	.3	4.1	4.4
Southwest	10.7	8.7	-0.8	2.7	2.0	26.5	24.9	-1.1	2.7	1.6
Slow Growing Regions	85.0	93.6	2.5	-11.5	-8.8	210.3	228.7	2.4	-20.6	-18.2
New England	8.7	9.2	1.2	-1.8	-0.5	22.5	23.1	.8	-1.3	-0.5
Great Lakes	30.8	31.9	1.4	-2.5	-1.1	73.3	78.8	.8	-6.3	-5.5
Plains	8.3	13.1	-4.2	-0.8	-4.9	26.3	28.6	-1.0	-1.2	-2.2
Midwest	34.0	36.3	4.8	-7.2	-2.4	80.9	90.0	2.1	-11.2	-9.1
Rocky Mountain	3.2	3.1	-0.7	.8	.1	7.3	8.2	-0.3	-0.6	-0.9
	Percent distribution of dollar change					Percent distribution of dollar change				
UNITED STATES	100.0	100.0	0	0	0	100.0	100.0	0	0	0
Fast Growing Regions	100.0	83.7	-4.9	21.0	16.3	100.0	88.3	-1.6	13.4	11.8
Southeast	100.0	95.1	-13.9	18.8	4.9	100.0	83.2	-2.3	19.1	16.8
Far West	100.0	73.3	5.5	21.2	26.7	100.0	92.0	.6	7.6	8.2
Southwest	100.0	81.3	-7.5	25.2	18.7	100.0	94.0	-4.2	10.2	6.0
Slow Growing Regions	100.0	110.1	2.9	-13.5	-10.4	100.0	108.7	1.1	-9.8	-8.7
New England	100.0	105.7	13.8	-20.7	-5.7	100.0	102.7	3.6	-5.8	-2.2
Great Lakes	100.0	103.6	4.5	-8.1	-3.6	100.0	107.5	1.1	-8.6	-7.5
Plains	100.0	157.8	-50.6	-9.6	-59.0	100.0	108.7	-3.8	-4.6	-8.4
Midwest	100.0	106.8	14.1	-21.2	-7.1	100.0	111.2	2.6	-13.8	-11.2
Rocky Mountain	100.0	96.9	-21.9	25.0	3.1	100.0	112.3	-4.1	-8.2	-12.3

¹The sum of "income component mix" and "regional share." Note—Details may not add to totals because of rounding.

SOURCE: Robert B. Bretzfelder, "Geographic Trends in Personal Income in the 1960's," *Survey of Current Business*, August 1970.

Table 21

**SHIFT SHARE ANALYSIS
1963-72***

Region	Competitive**		Competitive	
	Effect	Mix	Effect	Mix
	(employment in thousands)		(dollar value added in millions)	
New England	- 262	+37 (-7)	-3,407	+925 (-308)
Middle Atlantic	- 692	+57 (-25.6)	-11,031	+1,247 (+146)
East North Central	- 242	+147 (+13.2)	-5,656	+2,387 (+1,265)
West North Central	+64	-6 (+3.2)	+1,981	+183 (+453)
South Atlantic	+356	-8 (-75.3)	+6,034	-444 (-1,237)
East South Central	+263	-16 (-27.9)	+4,089	-117 (-217)
West South Central	+265	-5 (-11.4)	+4,764	-450 (+1,981)
Mountain	+70	-6 (-2.1)	+1,321	-243 (+208)
Pacific	-35	-1 (-19.2)	+1,662	-470 (-9)

*Data in parentheses are based on *Annual Survey of Manufactures* for 1972-76 period.

**Positive competitive effects on employment data do not cancel out negative ones because of disclosure rule for a few standard industrial classification (SIC) groups.

SOURCE: John Rees, "Regional Industrial Shifts in the U.S. and the Internal Generation of Manufacturing Growth in the Southwest," paper prepared for Committee on Urban Public Economics, May 1978.

- Differential shift or competitive effects are still negative for these older industrial areas and far outweigh the positive industrial structure effects.
- For the more rapidly growing regions, (a) the industrial mix effects remain negative, although extremely small—indicating that the shifts which have occurred in the last 50 years or so have reduced very substantially the negative effects of industrial structure; and (b) the differential or competitive shifts remain positive.¹¹

Rees has also computed the mix effects for the 1972-76 period and these are shown in parentheses in *Table 21*. We hesitate to infer any trend, since the period was one of slow growth and undoubtedly confounds cyclical with secular factors. If taken at face value, several reversals of direction are to be noted. For one thing, the still positive industrial structure effects present in the New England and Middle Atlantic states in the 1963-72 period, have turned negative for the first time, though this may be a purely cyclical phenomenon rather than part of the longer term regional shift. It should be noted in this connection that the negative mix effects in the more rapidly growing regions are gen-

erally much larger in the 1972-76 years than in the earlier period.

In terms of value added, only New England, of the three older industrial regions, shows a reversal from positive to negative mix effect. There was a large reduction in the positive magnitude of the industrial mix effect in the Middle Atlantic and East North Central regions. The Southwest, in contrast, shows a very substantial reversal from negative to positive mix effect, in value added terms. This, as Rees points out, however, is largely attributable to the "price escalations in... petroleum and chemicals, the major industrial endowments of that region."¹²

New York State, 1968-73, Disaggregated Sectoral Analysis

All of the analyses cited earlier have been based upon experience in broad general economic sectors—the two-digit level of Standard Industrial Classification (SIC). This may be too aggregated for meaningful testing of the hypothesis that slow growth in the demand for the outputs of the industries predominant in the older industrial regions plays a large part in the relative decline of these areas.

Consider the two-digit sectors, machinery, nonelectrical (SIC 35) and electric and electronic equipment (SIC 36), which both experi-

enced overall decreases in economy wide employment between 1967 and 1972. In the more specific segments of the nonelectrical machinery industry, at the four-digit SIC level, 20 branches of the industry contracted but 15 expanded. Despite the overall decline in employment in the electrical and electronic equipment industry when viewed from the

two-digit level, 22 branches expanded and only ten declined when viewed from the four-digit perspective. An examination of the four-digit branches shows very great differences—large increases in employment in some, large decreases in others. Unless these four-digit branches are evenly spread among the states, very different patterns of economic growth on

Table 22

CHANGE IN EMPLOYMENT FOR THE ELECTRIC AND ELECTRONIC EQUIPMENT INDUSTRY (SIC 36), DISAGGREGATED TO THREE AND FOUR-DIGIT SIC BRANCHES, 1967-72

SIC Code	Branch Name	Total Employment (000)		Percent Change
		1967	1972	
36	Electric and Electronic Equipment	1,813.2	1,661.3	-8.38%
361	Electric Distributing	114.1	116.0	1.67
3612	Transformers	45.6	46.8	2.63
3613	Switch Gears, Boards	68.5	69.2	1.02
362	Electric Industrial Apparatus	206.7	188.0	-9.05
3612	Motor Generators	112.8	90.6	-19.68
3622	Industrial Controls	50.4	50.5	.20
3623	Welding	13.7	15.5	13.14
3624	Carbon and Graphite	11.9	11.3	-5.04
3629	Other (NEC)	17.9	20.2	12.85
363	Household Appliances	169.2	163.0	-3.66
3631	Cooking	20.4	23.3	14.22
3632	Refrigerators	53.0	34.1	-35.66
3633	Laundry	22.2	23.6	6.31
3634	Housewares and Fans	44.6	51.5	15.47
3635	Vacuum Cleaning	9.2	11.2	21.74
3636	Sewing Machinery	6.4	5.3	-17.19
3639	Other (NEC)	13.4	14.0	4.48
364	Lighting and Wiring	157.1	177.1	12.73
3641	Lamps	29.5	31.5	6.78
3643	Current-Carry Wire	40.1	48.3	20.45
3644	Non-Current Carry Wire	22.9	25.7	12.23
3645	Residential Lighting Fixtures		26.5	10.84
3646	Commercial Lighting Fixtures	64.6	18.8	
3647	Vehicular Lighting Equipment		13.6	
3648	Other (NEC)		12.7	

the basis of industrial structure alone could occur. (For illustrative purposes, the data for the employment changes by two, three, and four-digit SIC breakdowns are shown for the electric and electronic equipment industry—*Table 22.*)

The potential distortion in the calculations aggregated to the two-digit SIC level can also

be seen from the figures in *Table 23* where we have computed the rates of change in employment for five important manufacturing sectors, at the four-digit SIC level. While all five sectors (two-digit definition) experienced total employment declines between 1967 and 1972, the growth rates of the subbranches (four-digit disaggregation) differ enormously. Thus,

Table 22 (Cont.)

CHANGE IN EMPLOYMENT FOR THE ELECTRIC AND ELECTRONIC EQUIPMENT INDUSTRY (SIC 36), DISAGGREGATED TO THREE AND FOUR-DIGIT SIC BRANCHES, 1967-72

SIC Code	Branch Name	Total Employment (000)		Percent Change
		1972	1967	
365	Radio and TV Receiving	106.9	130.2	-17.90
3651	Radio and TV Sets	86.5	116.7	-25.96
3652	Phono, Records	20.3	13.6	49.26
366	Communications	453.6	525.3	-13.65%
3661	Telephone and Telegraph	134.4	115.4	16.46
3662	Radio and TV	319.2	409.9	-22.13
367	Electronic Components	336.0	403.4	-16.71
3671	Electron Tubes, Receiving Type	11.4	21.0	-45.71
3672	Cathode Ray TV Picture Tubes	15.2	27.6	-44.43
3673	Electron Tubes, Transmitting	20.5	18.2	12.64
3674	Semiconductors	97.6	85.4	14.29
3675	Electric Capacitors	27.6	251.3	-23.88
3676	Electric Resistors	20.5		
3677	Electric Coil and Transformers	23.9		
3678	Electric Connectors	18.1		
3679	Other (NEC)	101.2		
369	Miscellaneous Electrics	120.4	107.2	12.31
3691	Storage Batteries	22.1	19.3	14.51
3692	Primary Batteries	8.4	11.0	-23.64
3693	X-Ray Apparatus and Tubes	12.1	7.9	53.16
3694	Engine Electrical Equipment	57.9	55.4	4.51
3699	Other (NEC)	19.8	13.6	45.59

SOURCE: Bureau of the Census, *Census of Manufactures*, Washington, DC, U.S. Department of Commerce, 1972 and 1967.

Table 23

**AVERAGE DEVIATIONS OF FOUR-DIGIT SIC INDUSTRIES FROM SELECTED
TWO-DIGIT SIC AGGREGATE PERCENTAGE EMPLOYMENT CHANGES**

Two-Digit SIC Industry	Percentage Change in Employment (two-digit industry)	Average Deviation From Aggregate Change in Employment (four-digit industry)
Chemical and Allied Products	-0.58%	17.77%
Petroleum and Coal Products	-1.55	10.65
Primary Metals	-7.07	13.20
Machinery, Except Electrical	-1.97	17.51
Electric and Electronic Equipment	-8.38	10.05

SOURCE: Bureau of the Census, *Census of Manufactures, 1972 and 1967*.

if employment in the rapidly growing states is concentrated in the rapidly growing subsectors and that in the more slowly growing states in the declining subsectors, then industrial structure may play a very important role in their differential rates of growth, a phenomenon masked at the two-digit level.

In order to evaluate the influence of aggregation, shift-share computations (for both proportionality and competitiveness) were made for New York State at the three or four-digit SIC level, for all sectors for the period 1968-73. The results, described below, do not contradict the more aggregated analysis presented earlier. Generally, New York State industries grow more slowly than they do nationally, i.e., New York's employment change is heavily influenced by differential shifts or negative competitive components.¹³

In *Table 24*, we summarize these computations: the top half of the table is based upon the three or four-digit calculations and the bottom half summarizes the computations made at the two-digit level. The hypothetical change in employment which would have been expected had all New York State's industries grown at the same rate as those industries did nationally, is estimated at 12.8% when the four-digit disaggregation is used and at 13.3% when the two-digit disaggregation forms the basis for the calculation. Nationally, employment grew by 12.5% over the entire period.

Thus, had New York's industries (defined

at either the two or three or four-digit level of disaggregation) grown at their national rates, New York would have increased its employment by about the same percentage as the nation as a whole. In fact, employment in New York declined over the period by about 1%, indicating a very substantial differential shift away from New York. In terms of the summary tables, there is not one major sector in which New York State did not grow more slowly than its national counterpart. The more detailed subsector breakdown generally shows the same pattern.

None of the studies, discussed above, irrespective of differences in industrial coverage, time periods, or unit of analysis support the hypothesis that slow growth in the older industrial regions is attributable to their industrial structure, i.e., to national demand shift to the products of new industries. Differential or competitive shifts away from these regions occur in industries which remain quite robust. Moreover, the differences among regions, as measured by industrial mix shifts in employment, are narrowing. The hypothetical positive and negative deviations of regional employment growth from national employment which could be attributed to industrial structure have become much smaller. Similarly, it appears that the positive and negative competitive shifts have narrowed over time. Both point to more similar growth rates among regions over time.

Thus, the shifts observed earlier in the

regional distribution of economic activity must be sought elsewhere; in altered relative costs of doing business, in changing preferences of households for locational characteristics, in government policies, and in the technological changes in communications and transportation.

SOURCES OF THE CHANGING COMPETITIVE POSITION

Given the competitive shift demonstrated in the preceding section, it is necessary to look at the underlying cost factors which

might account for the differences observed in regional rates of growth.¹⁴

In particular, the productivity with which labor, capital, and materials are used as well as their respective prices determine the production cost. Within an increasingly integrated national economy, one would expect regional convergence in wage and interest rates as well as the price of materials (adjusted for transportation costs). Any differences among regions in these magnitudes induce activities on the part of individuals, businesses, and perhaps the federal government, which will tend to eliminate them.

Table 24

SHIFT-SHARE ANALYSIS—NEW YORK STATE, 1968-73 (employment)

Sector	Actual Change*		Hypothetical Change		Differential Shift	
	Number	Percent	Number	Percent	Number	Percent
(disaggregated, three or four-digit, SIC calculations)						
Agriculture	1,094	11.8	2,712	29.4	-1,618	-17.6
Mining	-1,174	-12.6	21	.2	-1,195	-12.8
Contract Construction	21,339	9.3	47,970	20.9	-26,631	-11.6
Manufacturing	-268,959	-14.2	-570	**	-268,389	-14.2
Transportation and Public Utilities	8,473	1.8	37,230	7.8	-28,757	-6.0
Wholesale Trade	-7,361	-1.6	62,635	13.2	-69,996	-14.8
Retail Trade	37,112	3.9	193,551	20.0	-156,139	-16.1
Finance	36,320	6.7	106,931	19.7	-70,611	-13.0
Services	117,379	9.8	290,661	24.2	-173,286	-14.4
Total	-55,477	-1.0	741,141	12.8	-796,618	-13.8
(aggregated, two-digit, SIC calculations)						
Agriculture	965	10.2	1,604	16.9	-639	-6.7
Mining	-1,133	-11.8	317	3.3	-1,140	-15.1
Contract Construction	23,594	10.7	45,561	20.6	-21,967	-9.9
Manufacturing	-253,227	-13.5	4,737	.3	-268,119	-13.8
Transportation and Public Utilities	9,057	1.9	54,876	11.4	-45,819	-9.5
Wholesale Trade	-13,160	-2.7	52,067	10.8	-65,227	-13.5
Retail Trade	44,209	4.6	200,617	20.8	-156,408	-16.2
Finance	42,060	7.6	129,179	23.4	-87,119	-15.8
Services	115,095	9.4	296,605	24.3	-181,510	-14.9
Total	-42,540	-0.7	785,518	13.3	-828,258	-14.0

* Actual changes in the two sections differ because data are available for fewer sectors in the three or four-digit classification than in the two-digit classification.

** Less than .1%.

SOURCE: ACIR staff computations from the data in Bureau of the Census, *County Business Patterns*, Washington, DC, U.S. Government Printing Office, annual.

For example, in the presence of wage differences (adjusted for skill) among regions, individuals are likely to migrate from low to high wage areas, while firms may locate new plant facilities in the former. The resulting smaller supply and larger demand for workers in the low wage area will tend to increase the wage level relative to high wage regions. Similarly, major lending institutions such as commercial banks and insurance companies scan the entire country for investment opportunities and unusually high returns in any region are likely to elicit an increased flow of investment funds to it, eventually lowering the return (insofar as it was based on region specific factors). Through shifting factors of production, differences in returns are narrowed or removed and growth patterns should become more similar over time, that is, conform to the type of regional convergence reported earlier.¹⁵

Even if regional convergence in underlying cost factors could be documented, the evidence would probably not allay concern about future divergence in regional growth. It would be alarming, however, if divergence in underlying costs is found, with the more rapidly growing regions continuing to exhibit lower costs since the difference in growth rates of the last two decades might then continue. (The implications for the welfare of the average low wage recipient in high growth areas would require some attention.) Some costs (e.g., interest rates) have been found to vary insignificantly among regions. Still others are place and industry-specific (e.g., land prices) and few useful data are available.

Regional tax differences, more accurately state and local differences, are usually cited as a source of cost difference. There is an extensive and growing literature on the importance of tax policies, the argument usually being made that high taxes discourage the location of new firms and investment in expansion of existing ones. It is difficult to evaluate readily such assertions. In particular, they tend to focus on total tax payments per capita in a state as an index of attractiveness to investors.

Since tax differential comparisons ignore the difference between business and personal taxes. The former may well be shifted forward in the form of higher prices for a firm's prod-

uct. The ability of a firm to do so depends on a number of features of the markets in which it sells including the location of its competitors and their tax burdens.

Similarly, it is alleged that higher-than-average personal taxes will raise the production cost as firms must raise remuneration levels to compensate for such taxes. Apart from the likelihood that such compensatory increases would be required for only the most mobile members of each firm's labor force, and may thus constitute an insignificant addition to wages, any such addition may not discourage location if it can be reflected in higher product prices.

An analysis of the incidence of state and local taxes is required to support the initially plausible view that high taxes may lead to slow growth. Moreover, for both firms and individuals, the increase in public services made possible by higher taxes may yield desirable effects (a better pool of educated labor for the firm, cheaper higher education for the employee). Thus, even if firms were to bear the costs of higher-than-average taxes, the benefits derived from government expenditures might make a given state or local area a desirable location. Recent work investigating the response of households to local taxes and expenditures suggests that the increase in house values stemming from local expenditures is roughly equal to the decline caused by the taxation to finance them.¹⁶

In sum, while differences in interstate tax levels may affect the decisions of firms, the specific manner in which they do so is not as simple as implied by studies which calculate the tax "burden" measured by total collections divided by an income measure. A study of the incidence of taxes and the effect of expenditures must be made before policy conclusions can be drawn. While tax burdens may serve as a signal of the business "climate" in a state as well as an indicator of future tax changes, the effect of such signals is, at this stage, conjectural.

REGIONAL WAGE DIFFERENCES

The notion that lower wages in the Southwest and Southeast than in the nation's older industrialized areas have been a major factor in the shift of industry to these regions is well

embedded in our common lore. A discussion of relative regional wages, however, is not a simple matter. Lower hourly (or annual) wages, all other things the same, would make an area more attractive to industry, particularly to relatively labor intensive sectors. If, however, lower wages reflect lower labor productivity, the attraction of the lower wage may be offset. Low labor productivity should be understood as implying that workers equipped with the same complementary factors (buildings, machines) produce less per hour.

The convergence in per capita incomes among regions which was described earlier, is not synonymous with a convergence in regional wages. Incomes are comprised of property as well as labor income. Moreover, they reflect labor force participation rates, e.g., identical annual wages in two states will be consistent with different per capita incomes if different proportions of the total population are at work. For a given population, the higher the labor force participation rate, the higher the per capita incomes.

In addition, differences in average wage rates may reflect sectoral composition, particularly the relative importance of agriculture and manufacturing. Indeed, it is widely believed that a major factor in income and average wage convergence in the United

States has been the general reduction in the proportion of the labor force engaged in agriculture.¹⁷

It is clear that between 1909 and 1929 there was a very substantial convergence among regional wage rates in manufacturing, almost entirely the result of relative declines in the very high wage Western sections of the country: the Far West, Rocky Mountain, Southwest, and Plains states. *Table 25*.¹⁸ In the years since 1929 the overall convergence has been far more modest, the major change being the slow but steady increase in the relative manufacturing wages in the Southeast. Although the Southeast has remained the lowest manufacturing wage region of the country throughout, its wages moved from 67% of the national average in 1929 to 87% in 1976. The New England region, despite its reputation as a high wage area, has been the second lowest wage region in the country; by 1976, falling to parity with the Southeast.¹⁹ In 1929, the average manufacturing wage in the Far West and the Great Lakes was 64% greater than that in the Southeast; by 1976, the difference was only 37%.

The only changes of any significance during the 1970s have been the relative declines in the manufacturing wages in the Far West and the New England states: in the former, from 21% to 12% above the national average in

Table 25

**INDEX OF MANUFACTURING WAGE RATES, BY REGION,
SELECTED YEARS, 1909-76**

Region	1909	1929	1947	1955	1960	1965	1970	1976
United States	100	100	100	100	100	100	100	100
New England	96	90	92	90	89	89	92	87
Mideast	101	104	102	105	106	106	105	105
Great Lakes	104	110	109	116	116	116	116	119
Plains	111	95	94	101	101	101	101	105
Southeast	73	67	77	82	84	85	86	87
Southwest	119	88	94	104	101	98	94	93
Rocky Mountain	143	111	102	111	111	110	106	105
Far West	151	110	116	123	121	121	121	112

SOURCE: 1909-47 data: Simon Kuznets, Ann Ratner Miller, and Richard A. Easterlin, *Population Redistribution and Economic Growth, United States, 1870-1950*; Vol. II of *Analyses of Economic Change*. Philadelphia, PA, The American Philosophical Society, 1960, Table A3.5.

1955-76 data: ACIR computations based on data in Bureau of Labor Statistics, *Handbook of Labor Statistics*. Washington, DC, U.S. Department of Labor, 1972, 1974, 1977.

1976, and in the latter from 92% to only 87% of the average. In all other regions the changes have been modest. Given the relative decrease in the Far West, the Great Lakes states emerge as the highest wage region in the nation.

As indicated earlier, simple comparisons of average wage rates do not provide an adequate basis for labor cost comparisons since these depend upon productivity. Unfortunately, there is no evidence on regional disparities in labor productivity after adjusting for the effect of differences in the quantity of capital with which each worker is equipped. Although investment series by region are available, there are no estimates of regional capital stocks, thus precluding the needed analysis.

Some evidence is available, however, on the effect of the sectoral composition of economic activity on average wage rates. Differences in industrial composition may reflect initial disparities in factor prices, for example, labor intensive industries being attracted to low wage areas. Insofar as some industries, such as steel, are likely to locate near sources of raw material supplies, regional wages may reflect an adjustment to the sector mix rather than be a cause of it. The underlying mechanisms accounting for differences in intersectoral wages are not well understood. Thus, the influence of sectoral composition on regional wages is not meant to imply a causal relation. Rather, it may indicate whether differences in *average* regional wages are associated with industrial mix. If they are not, if wages in the Southwest are on average lower for all sectors, then a stimulus for firm immigration is present and may help to explain differences in observed regional growth rates.

The influence of the industrial composition of the labor force for the years 1960, 1970, and 1975 has been examined by Browne.²⁰ Average hourly earnings in manufacturing for each region are compared and then adjusted to reflect differences in the region's industrial mix (much as was done in adjusting growth rates in employment). The adjusted and unadjusted figures are summarized in *Table 26*. Although the adjustments make little difference in the rank positions of the regions, they do indicate smaller gaps among them in both

1960 and 1975.²¹ Those regions in which high hourly wage rates are observed have a greater proportion of their labor force in sectors which are higher paying on average, the reverse characterizing the lower wage regions.

Whether or not regional wage differences are narrowing over time can also be measured both ways and although the figures are relatively similar, they show somewhat greater narrowing using the adjusted wage rates: between 1960 and 1975, the decline in the coefficient of variation of the unadjusted figures is 10.9% compared with a decline of 16.5% using the adjusted wage rate.

What can we conclude about whether or not wage rates among regions have become and are becoming more similar over time? The long period since 1909 shows a very decided convergence in manufacturing wages among regions, the major changes occurring before 1930. It seems implausible that changes in productivity could have offset such wide movements and hence a convergence in "efficiency" wages (wages adjusted for productivity) also occurred.

Table 26

**AVERAGE HOURLY EARNINGS FOR
MANUFACTURING PRODUCTION
WORKERS, 1960 AND 1975**

Region	Unadjusted		Adjusted*	
	1960	1975	1960	1975
United States	\$2.26	\$4.81	\$2.26	\$4.81
New England	\$2.08	\$4.42	\$2.08	\$4.42
Middle Atlantic	\$3.32	\$4.93	\$2.31	\$4.86
East North Central	\$2.56	\$5.60	\$2.41	\$5.22
West North Central	\$2.28	\$4.92	\$2.16	\$4.65
South Atlantic	\$1.80	\$3.95	\$1.96	\$4.20
East South Central	\$1.88	\$4.07	\$2.00	\$4.16
West South Central	\$2.07	\$4.45	\$2.00	\$4.28
Mountain	\$2.41	\$4.70	\$2.50	\$4.86
Pacific	\$2.62	\$5.31	\$2.50	\$5.10
Range	\$0.82	\$1.65	\$0.54	\$1.06
Standard Deviation	\$0.29	\$0.55	\$0.22	\$0.39
Coefficient of Variation	.128	.114	.097	.081

*Standardized for industry mix.

SOURCE: Lynn E. Browne, "How Different are Regional Wages?", *New England Economic Review*, Boston, MA, Federal Reserve Bank of Boston, January-February 1978.

Since 1955 the relative changes have been modest, although some further narrowing of regional wage differentials has continued. The Southwest and New England have remained relatively low wage areas, while the Southeast has steadily increased its relative position.

Thus, the survey of available evidence is consistent with the hypothesis that relative wage differences may be responsible for some of the competitive shifts in industrial location described earlier, although a firmer support requires regional productivity measurements.

The regions in which industry has been growing rapidly are generally low wage rate areas (with the exception of New England) and the areas in which growth rates have been relatively low are the higher wage regions.

Despite the overall convergence in regional wages, the differences may still be large enough (whether adjusted for industrial structure or not) to be consistent with further competitive shifts. The narrowing in these wage differentials over time is also consistent with the historical diminution in competitive shifts described earlier.

FOOTNOTES

¹There is nothing inevitable about the slowing process but it does have empirical support. In principal, sufficient investment and technical innovation combined with immigration could permit sustained rates of high growth.

²George H. Borts and Jerome L. Stein, *Economic Growth in a Free Market*, New York, NY, Columbia University Press, 1964, p. 42.

³See, for example, Benton Massell, "A Disaggregated View of Technical Change," *Journal of Political Economy*, Vol. 69, Chicago, IL, University of Chicago Press, December 1961.

⁴Harvey S. Perloff, et al, *Regions, Resources and Economic Growth*, Lincoln, NE, University of Nebraska Press, 1960. George H. Borts and Jerome L. Stein, *Economic Growth in a Free Market*, op. cit., 1964. Robert B. Bretzfelder, "Geographic Trends in Personal Income in the 1960's," *Survey of Current Business*, Washington, DC, U.S. Department of Commerce, August 1970. John Rees, "Regional Industrial Shifts in the U.S. and the Internal Generation of Manufacturing Growth in the Southwest," paper presented to Committee on Urban Public Economics, May 1978.

⁵Borts and Stein, op. cit., p. 46.

⁶Note that since 1948, the net differential shift for the State of New Hampshire has been positive. The "discovery" of New Hampshire as an attractive state for industry in recent years would appear to have its roots in this earlier period. (See for example "Northern Nirvana: 'New' New Hampshire Finds That Low Taxes Help to Fuel Economy," *Wall Street Journal*, New York, NY, Dow Jones and Co., May 25, 1978, p. 1.)

⁷The proportionality shift is the difference between the change in employment the region would have experienced had it grown in total at the same rate as the nation and the employment growth to be expected if each of its industries grew at its own national growth rate. Positive proportional shifts indicate regions whose industries are concentrated in those which are growing relatively rapidly nationally. Negative proportional shifts indicate that a region's employment is concentrated in nationally slow growing or declining industries. Differential growth occurs when the growth rates of local industries diverge from their national growth

rates, i.e., grow more slowly or more rapidly.

⁸Bretzfelder uses personal income as a measure of regional activity. It should be noted that personal income may reflect differences in living costs and variations in income and expenditure patterns.

⁹Robert B. Bretzfelder, op. cit., p. 14.

¹⁰This change over the two decades is generally observed within each region, although there are a number of exceptions: of the rapidly growing regions, the Southeast's increase in personal income attributable to differential shift actually increased slightly. In the Great Lakes region, one of the slower growing regions, the negative differential shift increased slightly—although it should be noted that its negative differential shift was the smallest (as a percentage of the change in total personal income) of the slow growing regions in the 1948 to 1957 period.

¹¹Rees computes these shifts for both employment and value added. In general, the relationships hold for both sets of variables. The only two differences are that the Far West (Pacific) region shows a small negative competitive effect on employment but a positive competitive effect when measured by value added, and the West North Central states show a negative industrial mix effect when measured by employment but a positive effect when measured by value added.

¹²Rees, op. cit., p. 10.

¹³Still further disaggregation might demonstrate this to be an industry mix problem, though we doubt it.

¹⁴It has become very common to single out energy costs as influencing regional growth patterns. One cannot, however, make a consistent case for their unidirectional influence over time, that is, one which would be consistent with the long-term patterns we have described. As to their future influence, there is little agreement among the major participants in the debate either with respect to forecasts of energy costs generally or concerning their differential regional impact. The elements in the debate include estimates of energy resources, technology assessments of their extraction costs, possible effects of various deregulation proposals, international political factors, etc.

Two papers which give some indication of recent work in this area are Irving Hoch, "The Role of Energy in the Regional Distribution of Economic Activity," paper delivered at "Alternatives to Confrontation," conference, Austin, TX, September 1977, and Seymour Sacks, Harry Wade, Robert Ross, and Robert Dinkelmeyer, "Energy Costs and Use and Patterns of Economic Ac-

tivity in the Northeastern United States," paper prepared for the Northeast Regional Advisory Committee, Syracuse Research Corporation, December 1976.

¹⁵At a given moment these adjustments may not have been completed; indeed, it is the disequilibrium that serves as a continuing impetus to change.

¹⁶See Wallace E. Oates, "The Effect of Property Taxes and Local Public Spending on Property Values: An Empirical Study of Tax Capitalization and the Tiebout Hypothesis," *Journal of Political Economy*, Vol. 77, Chicago, IL, University of Chicago Press, November/December 1969. For a summary and additional evidence on the issue, see Howard Pack and Janet Rothenberg Pack, "Metropolitan Fragmentation and Local Public Expenditures," *National Tax Journal*, Vol. 31, Lancaster, PA, National Tax Association, Tax Institute of America, December 1978.

¹⁷"The most important [factors in the convergence in incomes per capita] appear to have been the nonagricultural share of the labor force, the countrywide ratio of agricultural to nonagricultural service income per worker, and the proportion in the labor force." Richard A. Easterlin, "Redistribution of Manufacturing" in Simon Kuznets, Anne Ratner Miller, and Richard A. Easterlin, *Population Redistribution and Economic*

Growth: United States, 1870-1950, Vol. II, *Analyses of Economic Change*, Philadelphia, PA, The American Philosophical Society, p. 164.

Similarly, Perloff, et al, concludes that "...the strongest force for reduction in interstate income differentials between 1920 and 1950 was differential change among the states in the proportion of the labor force employed in agriculture."

¹⁸The figures for 1909 to 1947 are not entirely comparable with those for the later years. The earlier figures are total wages per wage earner (which does not adjust for hours worked or overtime pay, for example) and the second is average hourly wages for production workers on manufacturing payrolls.

¹⁹The reputation of New England as a high wage region is also found to be undeserved in the recent paper by Lynn B. Browne, "How Different Are Regional Wages?," *New England Economic Review*, Boston, MA, Federal Reserve Bank of Boston, January/February 1978.

²⁰Browne, *ibid*.

²¹In 1960, the coefficient of variation for the unadjusted wage rates was .128 and in 1975, it was .114. The adjusted figures were .097 and .081, respectively.

The Federal Government and Regional Economic Activity

The search for explanation (or blame) *and* for amelioration of regional economic disparities leads frequently to the door of the federal government. The assessment of blame has focused principally on the net flow of funds, in particular, on the “deficit” positions of many of the Northeastern and Midwestern states with the federal government, i.e., taxes paid to the federal government by their residents exceed expenditures made by the federal government in their areas. The argument has also focused on particular categories of expenditure, most often, defense outlays, which are alleged to be similarly biased against the older industrialized states of the Northeast.

Proponents of a more “equitable” federal policy emphasize the size of the federal budget—of procurement expenditures and of federal employment—and its enormous potential for affecting the fortunes of regions. Such arguments underlie legislation already enacted which requires account to be taken of the unemployment rate in an area before relocating military facilities, or proposals (e.g., from the Joint Economic Committee) to permit the government to accept competitive bids above minimum (by 10%) if they come from areas of high unemployment.

More generally, there is a belief that the federal government’s share of total economic activity has grown so large and its laws and

regulatory activities have become so pervasive that it influences in important ways what happens in the private sector of the economy. In this view, regional disparities (in growth rates or levels of well-being) are not unadulterated market phenomena, the result of the pure working out of the regional economic efficiency calculus, but to a major extent they are related to the regional impact of federal activity. Even if federal activity is not a major source of regional disparities, the belief is that such activity is capable of being reoriented to affect regional economic development.

Despite this focus on federal influences, generally on the part of the interested parties, most studies have concluded that the major determinants of differential regional economic growth are not public policies. Rather, the dominant importance of basic long-term forces is emphasized, e.g., adjustments to initial cost differences, technical change in transportation and communications, or population movement (whether population movement precedes or follows the movement of jobs is, however, far from resolved). It would be erroneous to assume, however, that the regional economic trends have been uniform over time or that the underlying forces have remained constant.¹

Inevitably, the federal budget as well as regulatory activities have regional implications. The extent and magnitude of their influence, specifically, how regional growth rates would differ in the absence of federal policies or with a major restructuring of such policies, have not been determined. Clearly the many calls for abandoning "unconscious" regional policy (that which arises as a consequence of policies without regional intent but with regional effects) must be based upon the assumption that these unconscious or unintended effects are quantitatively important.

In considering the possible federal influence on regional economic development, it should be remembered that regional economic shifts have been occurring over a very long period; federal expenditures were not a very large proportion of GNP; and regulatory behavior and tax laws have changed substantially during that history. Indeed, much of the attention now focused on federal policy reflects the experience of the 1970s.

There are two aspects of federal influence which will be considered: (1) macro-economic policy, the extent to which the federal government succeeds in maintaining full employment; (2) flow of funds to regions, that is, the extent to which individual regions or states receive more or less in federal expenditures than they pay in federal taxes.

MACRO-ECONOMIC POLICY

The various regions of the nation have been affected differently by the two recessions of the 1970s. The notion that economic slow-downs are not uniformly felt throughout the nation is not a new one. It has been formulated in terms of an industrial structure argument, that is, different industries are well-known to be more or less sensitive to economic fluctuations. To the extent that industries which exhibit the greatest sensitivity are concentrated in given regions, these would feel the effects of economic fluctuations more severely than other regions. In particular, durable consumer goods and capital goods production—both concentrated heavily in the older industrial areas of the Northeast and Great Lakes states—fluctuate more than other manufacturing sectors' activities.

The 1970s' two recessions and the generally sluggish growth period between them may be responsible for the perceived increase in divergence of regional fortunes in the last few years. Seen in this light, macro-economic stabilization policy may be properly viewed as an important instrument of regional policy (if not in intent, certainly in effect). The targeting discussions, for example, in the countercyclical public works allocation formulas which take unemployment rates into account, recognize this reality.

Since national macro-economic policies are normally triggered, however, by statistics which measure national activity levels (e.g., unemployment rates), subnational differences may not be adequately dealt with. If we think of the nation as two subnations, one growing steadily with some slowing in the rate during recessions, the other experiencing relatively high rates of unemployment and excess capacity during recessions, two very different

“macro” policies may be appropriate, provided they could be implemented to avoid inflationary pressures in the boom region and deflationary pressures in the other.

The importance of aggregate growth for regional economies assumed importance before political discussions of recent years underscored their relevance. For the last 25 years, at least, the Northeast and Midwest economies have been robust only when national growth rates have been high. Other regions continue to grow, sometimes quite rapidly, even during recessions. Regional differences in growth rates have been smaller in periods of strong national expansion and wider during periods of severe economic slow-down.

The differences in annual growth rates of total personal income and nonagricultural employment among states and regions in the slow growth periods of the 50s and 70s far exceed the differences in the 60s. One measure of this variation, the coefficient of variation, is twice as large in the relatively low growth years as in the high growth years. *Tables 10 and A12.*

Personal Income

This relationship may be seen even more sharply in the behavior of nonfarm personal income during postwar business cycles. During expansions, the lowest relative growth rates (in New England) have been about 89% of the average national growth rate.² *Table 27.* The highest relative growth rates during expansions have been experienced by the Southeast, Far West, and Southwest states, with relative rates of 113%, 108%, and 109% of the national average.

During recessions (when aggregate personal income generally continues to expand albeit at a lower rate),³ the spread in relative growth rates in personal income is far larger. The Great Lakes states actually decline and the Mideast growth rate is only about 89% of the national average. In the South, Southwest, and Far West, however, the rate of increase in personal income during recessions is one-and-one-half to two times that of the nation. Thus, although the postwar growth rates of the older industrial states have generally fallen short of national growth rates, the *relative* disparities are far larger during

Table 27

BEHAVIOR OF NONFARM PERSONAL INCOME DURING POSTWAR BUSINESS CYCLES, 1948-70

Regions	Mean Quarterly Percent Changes at Annual Rate			Index, US Average = 100		
	Postwar Annual Growth Rate	Mean Quarterly Percent Changes at Annual Rate		Postwar Growth Rate	Mean Quarterly Percent Change	
		In Expansions	In Recessions		In Expansion	In Contraction
United States	6.5%	7.6%	1.8%	100%	100%	100%
New England	6.1	7.1	2.0	94	93	105
Mideast	5.8	6.8	1.7	89	89	89
Great Lakes	6.0	7.7	-1.3	92	101	-*
Plains	6.3	6.9	3.7	97	91	195
Southeast	7.5	8.6	2.9	115	113	153
Southwest	7.4	8.2	3.9	114	108	205
Rocky Mountain	7.0	7.4	5.2	108	97	274
Far West	7.4	8.3	3.7	114	109	195

*Since the percentage change was negative, the index number would be meaningless.

SOURCE: Robert B. Bretzfelder, "Sensitivity of State and Regional Income to National Business Cycles," *Survey of Current Business*, April 1973, rearrangement of data in Table 1, p. 97.

- Table 28

SELECTED CYCLICAL CHARACTERISTICS OF STATES

Figures indicate percentage declines in employment in states experiencing cycles.

• —indicates skipped cycles.

* —denotes one of ten states with largest absolute cyclical amplitude.

/ —indicates one of ten states with largest relative cyclical amplitude.

—indicates one of ten states with longest "return-to-peak" duration.

^aGrowth ranking one to four (of 33 states) in pre-1960 cycles; growth ranking one to ten (of 47 states and District of Columbia) in post-1960 cycles.

^bRanks among ten states with lowest share of total employment in manufacturing.

^cMore than 20% of the state's total employment was in agriculture for pre-1960 cycles; ranks among ten states with largest share of employment in agriculture for post-1960 cycles.

^dRanks among ten states with lowest share of manufacturing employment in durable goods.

Region or State	1948-53	1953-57	1957-60	1960-62	1970-71	1974-75
UNITED STATES				2.1%	1.5%	3.2%
NEW ENGLAND AND MIDEAST						
New England						
Maine				2.3	1.7	5.5
New Hampshire				1.2	2.3	3.7
Vermont				2.2	2.1	5.2
Massachusetts					* #	
				0.7	2.6	2.1
Rhode Island				/	/ #	/
				2.7	2.8	6.4
Connecticut					* / #	/
				0.9	4.0	5.6
Mideast						
New York				*	* / #	*
				1.8	3.9	4.5
New Jersey						* /
				1.1	1.0	6.2
Pennsylvania				* / #	* / #	*
				4.7	3.2	3.9
Delaware				/ #		/
				3.7	2.5	6.8
Maryland				0.9	•	1.7
District of Columbia	•			• b	• b	• b

MIDWEST						
Great Lakes						
Michigan						
Ohio						
Indiana						
Illinois						
Wisconsin						
Plains						
Minnesota						
Iowa						
Missouri						
North Dakota						
South Dakota						
Nebraska						
Kansas						
SOUTH						
Southeast						
Virginia						
West Virginia						
Kentucky						
Tennessee						
North Carolina						
South Carolina						
Georgia						
Florida						
Alabama						

Table 28 (Cont.)

SELECTED CYCLICAL CHARACTERISTICS OF STATES

Region or State	1948-53	1953-57	1957-60	1960-62	1970-71	1974-75
SOUTH (cont.)						
Mississippi		• c		• c	• c	4.9
Louisiana	•			# 2.1	1.7	1.7 /
Arkansas			• c	• a, c	• a, c	6.5
Southwest						
Oklahoma	•			1.1	1.1	• c
Texas				• a	• a	1.1
New Mexico	• a		• a	2.5	•	• b
Arizona		• a	• a	• a	• a	4.3
WEST						
Rocky Mountain						
Montana	• c	• c		2.1	• c	• b, c
Idaho	• c			2.5	• c	• c
Wyoming				• b, d	• d	1.5
Colorado				• a	• a	3.0
Utah				• a	1.1	1.3
Far West						
Washington				1.8	* /	#
Oregon				* /	6.4	0.7
Nevada		• a		4.4	2.0	2.9
California				• b, c	• a	• a, b
				•	*	*
					2.4	2.0

SOURCE: Georges Vernez, Roger Vaughan, Burke Burright, Sinclair Coleman, Regional Cycles and Employment Effects of Public Works Investments, Santa Monica, CA, The Rand Corporation, January 1977, Tables 2.3, 2.16, 2.21, C.3.

contractions than during expansions of the national economy.

Employment

Additional indicators of differential regional performance in relation to national *employment* cycles exhibit similar traits.⁴ *Table 28*. The general conclusion is that the effects are more severe in the older industrial regions on all of these indicators—absolute or relative cycle amplitude, duration of the cycle, or the occurrence of the cycle at all. Indeed, in relatively mild downturns (as measured by national aggregates), the effects are largely confined to these regions. Of all the New England, Mideast, and Midwest states, none, except for Maryland in 1970-71, skipped any of these cycles. (The District of Columbia, with its federal employment base, does skip most cycles.)

In the rest of the nation, many states skipped one or more cycles, depending upon the severity of the overall employment declines. In the Southeast and Southwest, these states are generally those which are among the most rapidly growing in the nation. In the Plains region, these are states with very little manufacturing employment. In the Rocky Mountain states, those which skip cycles are generally agricultural, nonmanufacturing, and/or rapidly growing. In particular, the effects of the very mild 1970-71 cycle were concentrated in the New England, the Mideast, the Midwest, and to some extent, the Far West states. Indeed, this was more a regional than a national cycle. (The 1960-62 picture is very similar.)

A study by Syron also analyzes relative regional changes in nonagricultural employment (as contrasted with total employment in the preceding table) and includes an additional downturn, 1973-75.⁵ *Table 29*. Very similar conclusions can be drawn about relative regional experiences over the cycle.⁶ Even though the Northeast and Midwest regions experience substantially smaller improvements in nonagricultural employment during expansions than do the regions of the South and West, they fall even further behind during contractions.

If we omit the Rocky Mountain states, with their very small nonagricultural employment

Table 29

CHANGES IN REGIONAL EMPLOYMENT RELATIVE TO NATIONAL CHANGE, DURING POSTWAR RECESSIONS AND EXPANSIONS, 1948-75

Region	Average in Contractions	Average in Expansions
United States	100.0%	100.0%
New England	125.8	75.4
Mideast	125.4	56.6
East North Central	197.8	106.3
West North Central	70.7	87.5
South Atlantic	73.2	126.4
East South Central	88.3	121.0
West South Central	46.5	123.9
Mountain	32.8	163.1
Far West	77.1	131.6

SOURCE: Richard F. Syron, "Regional Experience During Business Cycles—Are We Becoming More Alike?", *New England Economic Review*. Boston, MA, Federal Reserve Bank of Boston, November/December 1978, Tables 3 and 5.

base, we find that during expansions the most rapidly growing region (on average)—the Far West—grew about 2.3 times faster than the most slowly growing region—the Mideast. During contractions, however, the East North Central region (the Midwest states) declined by 4.3 times the rate of the West South Central states and by 2.7 times the decline rate of the Southeastern states.⁷ Thus, whether measured by employment or by personal income, the gaps between the more and less rapidly growing regions appear to be wider during contractions than during expansions.

Syron has also made separate computations for each of the six postwar expansions and contractions. From these, he concludes that interregional cyclical variation has increased over time, i.e., the experience of the regions during cycles has become more divergent. He computes a "summary statistic of variation" (the standard deviation of the relative growth or decline rates) for each of the contractions and expansions; the higher this figure, the more variation among regions. This measure indicates that during contractions divergence among the regions is increasing but no trend appears in expansions.

For purposes of this study, Syron's measure

THE RELATIONSHIP BETWEEN NATIONAL AND STATE GROWTH

Estimated equations relating state growth in employment to national employment growth, for the years 1960 to 1974, indicate strong regional patterns. In a recent study, the following relationship was estimated:¹

$$e_{i,t} = \alpha_i + \beta_i e_{n,t+j} + \mu_i$$

where e_i is the growth rate of employment in area i in month t

β_i is the estimated coefficient relating national and local employment growth rates in area i

e_n^{t+j} is the monthly employment growth in the nation in month $t + j$

μ is a random disturbance term

$t =$ July 1960, . . . December 1974

$j = -6, -3, -2, -1, 0, 1, 2, 3, 6$ (leads or lags)

(e 's are three-month moving averages).

In these equations, estimated separately for each state and several labor market areas, the constant term α_i , may be interpreted as the region's long-term (secular) growth rate independent of national growth. The coefficient, β_i indicates the actual change in local employment which results from a 1% change in national employment. The j values indicate whether and by how many months local changes lead or lag national changes. R^2 indicates the conformity of the area to national patterns of employment change.

The results of these estimated equations indicate strong regional patterns for the state equations. In general, there is much higher conformity (R^2) in the Mideast and Great Lakes states than in the rest of the nation. On average, national growth patterns in employment explain more than 50% of local employment growth in these two regions.

Conformity is lowest in the Rocky Mountain region; only 7% of the variation in local employment growth is attributable to national patterns; slight conformity appears in the Southwest, 26%.

In the remaining regions, there is some conformity; just about one-third of the variation in employment in the Far West and Plains regions is explained by national variation. In the Southeast and in the New England regions, 42% and 43%, respectively, of the employment variation is explained by national growth rates.²

Thus, in general, the older industrialized regions of the nation are quite responsive to national growth patterns, a growing national economy being required for local growth. In contrast, in the Rocky Mountain, Southwest and Western regions, expansion continues even in the absence of national growth.³

The importance of national growth to the older industrial regions may be made even clearer by looking at the long-term secular trends, as indicated by the constant terms, α_i , in these equations. Although no significant levels are provided by the authors, the consistency of the regional patterns is striking.

In nine of 15 states of the New England, Midwest, and Great Lakes regions, the secular trend is one of decline. This is true in only two of the remaining 31 states.⁴ Thus, in more than half of the older industrial states, no national expansion means local contraction; in the rest of the country, growth (often substantial) continues.⁵

FOOTNOTES

¹Georges Vernez, Rogert Vaughan, Burke Burright, Sinclair Coleman, *Regional Cycles and Employment Effects of Public Works Investments*, Santa Monica, CA, The Rand Corporation, January 1977.

RELATIONSHIP BETWEEN REGION AND STATE AND NATIONAL EMPLOYMENT GROWTH, 1960-74

Region and State	Coefficient	Constant	R ²	Region and State	Coefficient	Constant	R ²
NEW ENGLAND	.935	-.0002	.43	SOUTHEAST	.896	.0010	.42
Connecticut	.998	-.0003	.50	Alabama	.970	.0003	.56
Maine	.883	.0004	.35	Arkansas	.415	.0021	.19
Massachusetts	.678	-.0002	.48	Florida	1.132	.0020	.41
New Hampshire	1.138	.0000	.45	Georgia	1.041	.0009	.59
Rhode Island	.979	-.0008	.36	Kentucky	.930	.0009	.35
Vermont	—	—	—	Louisiana	.866	.0006	.31
MIDEAST	.908	.0002	.52	Mississippi	.985	.0010	.44
Delaware	1.219	-.0002	.27	North Carolina	1.048	.0008	.65
District of Columbia	—	—	—	South Carolina	1.067	.0009	.54
Maryland	.778	.0011	.50	Tennessee	1.016	.0009	.56
New Jersey	.788	.0001	.55	Virginia	.640	.0019	.26
New York	.757	.0008	.55	West Virginia	.648	-.0001	.18
Pennsylvania	.998	-.0010	.74	SOUTHWEST	.753	.0011	.26
GREAT LAKES	1.428	-.0012	.59	Arizona	.879	.0027	.19
Illinois	.889	-.0006	.54	New Mexico	.476	.0015	.12
Indiana	1.601	-.0014	.72	Oklahoma	.686	-.0010	.39
Michigan	2.314	-.0030	.45	Texas	.970	.0012	.34
Ohio	1.418	-.0014	.77	ROCKY MOUNTAIN	.468	.0018	.07
Wisconsin	.918	.0002	.46	Colorado	.527	.0025	.10
PLAINS	.744	.0007	.33	Idaho	.602	.0017	.11
Iowa	.780	.0006	.37	Montana	.460	.0011	.07
Kansas	.914	.0001	.36	Utah	.398	.0022	.06
Minnesota	.971	.0005	.48	Wyoming	.350	.0014	.02
Missouri	.931	.0004	.52	FAR WEST	.918	.0014	.32
Nebraska	.458	.0012	.16	California	.829	.0010	.48
North Dakota	—	—	—	Nevada	.453	.0044	.03
South Dakota	.409	.0014	.07	Oregon	1.058	.0006	.36
				Washington	1.333	.0005	.40
				Alaska	—	—	—
				Hawaii	—	—	—

SOURCE: Georges Vernez, Roger Vaughan, Burke Burreight, Sinclair Coleman, *Regional Cycles and Employment Effects on Public Works Investments*, January 1977.

²The magnitudes should not be taken literally. They are estimates from a crude model. They are, nonetheless, suggestive and consistent with other evidence.

³This pattern is also clear in the differential regional response to cycles (as contrasted with growth rates), particularly with respect to those areas which skip cycles entirely.

⁴Only 46 states are included in the analysis: Hawaii and Alaska are omitted because they were not states over the entire 15-year period; Vermont and North Dakota, because not all of the data were available.

⁵This is not, of course, to say that if national employment growth came to a halt, these patterns would continue. These relationships hold only *ceteris paribus*.

Table 30

**INTERREGIONAL VARIATION IN EMPLOYMENT CHANGES
DURING EXPANSIONS AND RECESSIONS**

A. DECLINES DURING RECESSIONS	1948-49	1953-54	1957-58	1960-61	1969-71	1973-75
Summary Statistic of Variation ¹	42	37	48	58	106	51
Coefficient of Variation ²	.45	.38	.62	.82	.94	.48
B. INCREASES DURING EXPANSIONS	1949-53	1954-57	1958-60	1961-69	1971-73	1975-77
Summary Statistic of Variation	28	38	32	25	54	38
Coefficient of Variation	.25	.35	.38	.24	.42	.35

¹Standard deviation of regional relative employment decline or growth.

²Coefficient of variation of regional relative employment decline or growth rates (standard deviation ÷ mean).

SOURCE: Richard F. Syron, "Regional Experience During Business Cycles—Are We Becoming More Alike?" *New England Economic Review*, November/December 1978, Tables 3 and 5, and ACIR staff computations.

of variation has been adjusted to take account of the difference in the average values over the periods, i.e., variation is measured as the standard deviation divided by the mean value of the relative employment increase or decrease. These figures (as well as Syron's) are shown in *Table 30*. (No trend in inter-regional differences in employment growth rate is discernible during the periods of national expansion when the adjusted measure of variation, which takes account of the changes in average values over time, is used. During contractions, increased divergence over time is still observed, but the figure for the most recent recession, 1973-75, is well within the range of its pre-1958 values.

On balance, we would conclude that the evidence for increased divergence in regional fortunes over the business cycles during the postwar period is strong during contractions, although not entirely conclusive. It is weak, at best, during expansions. These findings reinforce the earlier conclusions that inter-regional growth disparities are far smaller during expansions than contractions and, if the divergence is indeed increasing during contractions, the differences are exacerbated. Thus, while the older industrial regions generally have grown more slowly than the rest of the nation, these differences are greatest during recessions and the differential effect of the recessions may even be widening over time.

The evidence demonstrates that regardless

of the specific variables and periods used to measure the effects of national business cycles, the regional effects consistently differ significantly. A stagnant or declining national economy leads to slower growth or decline in the older areas in comparison to the other regions.⁸ While the poor performance in a recession is likely to be attributable, as noted earlier, to a disproportionate representation of cyclically volatile capital goods and consumer durable producers, the better record in expansions in the older regions is not due alone to its industries' cyclical sensitivity.

It is likely that older vintage, higher cost plants are more prevalent in the older regions for all industries and these become profitable to operate only in the midst of expansions, when more modern, lower cost plants are fully utilized. It is possible that in periods of sustained expansion, augmented capacity in all regions might result in the redundancy of high cost plants in older industrial areas. But, the longest postwar economic expansion, from 1961 to 1969, resulted in the smallest regional variation in growth rates, an experience that lends support to the general benefits of vigorous sustained expansion.

Moreover, capacity adjustments take time and, at least during the adjustment period, the predicted beneficial effects on the older industrial regions might be realized. Over the longer term, capacity adjustments might even run counter to the predominant regional patterns of the last few decades if relative cost

changes which are more favorable to the older industrial regions occur.

FEDERAL FLOWS OF FUNDS

As federal outlays have grown in amount, the regional flow-of-funds balance has assumed an increasingly prominent position in the national debate over the effect of the federal government on relative regional fortunes. Already, a major change in a grant program formula (e.g., the addition of an age of housing stock variable to the Community Development Block Grant formula) has been brought about due to the attention given this issue. The Southeast, which "lost," appears to be organizing itself to fight additional "gains" of this type by the Northeast and Midwest.

The flow of funds to a region or state is calculated by adding all federal expenditures received by the area and subtracting from them all tax payments coming from the area. If the balance is positive, that is, the region is in surplus with the national government, the effect is regarded as economically stimulating to the region.

Proponents of this view seem to envision an analogy to the national economy. If the region were not in deficit with the national government, local expenditures could be higher—if the tax payment were lower, more could be spent on local consumption, including local government services. If federal expenditures were higher, the federal component would directly boost expenditures in the local economy and induce additional spending as well—local income and employment would be higher.

One objection to the inferences usually drawn from this analysis concerns leakages in and out of the area, i.e., to what extent would the lower taxes, for example, mean increased expenditures on the goods and services produced by the local economy vs. those produced elsewhere; similarly, to what extent are the surpluses in other regions spent on goods and services produced in the deficit region (both directly and indirectly)?

An additional objection is the extent to which the pattern of expenditures is a reflection of efficiency conditions resulting in a larger overall gross national product (GNP) than would be obtained with a different pattern. Is regional economic activity stimulated more on balance by larger GNP (e.g., are the positive indirect purchases by others from the region greater than the negative deficit effects) or by greater direct local expenditures? This is the basic question and it suggests that knowing the size of the surplus or the deficit on flow-of-funds account may provide little information about the effect of the combination of federal expenditures and taxes on a region in an economy as integrated as that of the United States.⁹

Although many concerned with federal-regional interaction have couched their arguments in terms of familiar, and perhaps misapplied, aggregate demand arguments, a more sympathetic interpretation, focusing on the augmentation of productive capacity stimulated by positive flows of funds, might be made. While much current federal expenditure is redistributive in intent, a considerable fraction, ranging from educational support to procurement of military equipment and civilian goods, may contribute directly to additions to the stock of physical capital (in the defense sectors and their suppliers) and to the growth of skilled labor supplies (via education and more importantly, the effects of learning by doing).¹⁰

Important organizational skills may also be learned by management. Even if the initial basis for the federal government spending decision was a particular institution's excellence, procurement based upon this initial advantage may further increase the discrepancy among regions. Conversely, the initially "backward" regions' capability to supply goods or fruitfully absorb federal outlays might have been strengthened by specific regional preferences (which have been followed in some programs).

Unfortunately, the role of federal expenditures in adding to regional supply abilities has not been widely investigated. Indeed, this is a difficult issue at the national level and has received only limited attention. Yet, given the inadequacies of the flow-of-funds analogy, on

the one hand, and, as we shall see, the strong association between flow-of-funds position and regional growth, on the other hand, an alternative approach emphasizing the supply side would seem a much more promising area of investigation for those concerned with regional discrepancies.

Within a normative framework, the demand that federal flows of funds should be in balance, vis-a-vis particular states or regions, is inconsistent with the values which undergird our fiscal system. The notion that imbalances are inequitable contradicts the redistributive objective of the public economy,¹¹ the principal instrument of which is the progressive income tax. Existing legislation, presumably reflecting a consensus, requires those who have higher incomes to pay a higher proportion of their incomes to finance public sector expenditures. On the expenditure side there are many redistributive programs—redistributive to both lower income persons, e.g., income support programs and redistributive to poorer places, e.g., the CDBG program and revenue sharing—which include local income in their allocation formulas.

With respect to procurement, federal policy seeks to minimize the cost of purchases of goods and, in general, competitive bidding and least cost site selection are followed.

The distribution of federal expenditures for fiscal years 1974-76 may be broken down as follows:¹²

Payments to personal incomes:	
Total	69.3%
Pay of federal personnel, military and civilian	19.3
Other payments to personal income ...	50.0
Military outlays except pay of personnel	10.7
Aid to state and local governments	15.3
Interest on debt, other than payments to personal incomes	3.5
All other expenditures	1.2
Total	100.0%

Approximately 65% of this total—the “other payments to personal income,” which include Social Security and other income support programs, and the aid to state and local governments—is, *in part*, redistributive to lower income persons and places. The remaining 35%—which includes pay of federal

personnel both civilian and military, procurement expenditures, as well as interest on debt—has no purposive redistributive component and should thus bear little relation to per capita income.

Political influence, rather than efficiency, however, may be an important determinant of the distribution of the latter expenditures quite apart from equity or efficiency considerations. Certainly there is a substantial literature on the politics of federal expenditures, in particular, the influence of strategically placed members of Congress in determining the locations of military installations and public works projects. This last issue looms large for those concerned with regional flow of funds.

Given these considerations, what should we expect the state or regional flows-of-funds balances to look like? The revenue side is fairly straight forward: given the progressive income tax (and the overwhelming dominance of personal tax receipts in federal revenues), if incomes are, on the average, higher in some states than others, we would expect tax payments to be higher (both expressed in per capita terms). That is to say, we would expect equity principles to dominate the regional pattern of tax payments to the federal government.

The expenditure side is more complicated as about half are redistributive while the other half, procurement expenditures and wages and salaries, are not. Moreover, the redistributive component does not bear a simple relation to state per capita income. The size of federal payments to poor persons often depends upon the related state and local programs available. In general, states with more generous public assistance programs receive in reimbursement higher payments than states which provide lower levels of public assistance.

On balance, New York State with a far higher per capita income than Mississippi, but with three times the number of poor persons, received more than nine times as many dollars in total federal welfare expenditures. Thus, equity considerations redistribute income to poor persons, but the amounts differ depending upon place of residence.

To return to the original question concern-

COMPARATIVE DATA, NEW YORK STATE AND MISSISSIPPI

Consider the states of Mississippi and New York: New York in 1975 had a per capita personal income which exceeded that of Mississippi by 62% and might, thus, be expected to receive smaller per capita federal aid. This was not the case. In 1976, New York received \$181 in federal welfare spending per capita, compared with \$158 for Mississippi. The explanation for this difference lies in the fact that federal assistance is positively related to the level of state and local assistance. New York State's poor received \$2,859 per person (federal plus state and local funds) and Mississippi's poor only \$530. Thus, higher dollar payments are made to New York than to Mississippi by the federal government. However, the differences are not proportional and federal funds pay nearly 90% of Mississippi's welfare expenditures but only 50% of those of New York State.

	Mississippi	New York
1. Per Capita Income, 1975	\$4,051	\$6,564
2. Number of Poor Persons, 1970	755,000	2,208,000
3. Total Federal Spending		
a) for poor persons, FY 76	\$353 million	\$3,234 million
b) per capita, 1975	\$158	\$181
c) per poor person, FY 76	\$468	\$1,465
4. State and Local Spending Per Poor Person	\$62	\$1,394
5. Total Federal, State, and Local Spending Per Poor Person, FY 76	\$530	\$2,859
6. Ratio of Federal to Total Government Spending Per Poor Person	.883	.512

SOURCE: ACIR staff computations.

ing the relationship between federal expenditures and state incomes, we would not, as a result of the above considerations, expect even redistributive expenditures, like welfare, to bear a close (negative) relationship to state per capita income.

To recapitulate:

1. The discussion of federal flow-of-funds balances (as contrasted with discussions of particular categories of expenditures) focuses on revenue minus expenditures or the ratio of expenditures received to revenues paid. The implicit (often explicit) expectation is that the two should be in balance as a matter of equity.
2. The most frequent rejoinder to this argument is that we should not expect expenditures received and taxes paid to be in balance; our federal fiscal system is redistributive and, thus, we should expect the poorer states or regions to receive more than the relatively wealthier ones; that is, we should expect positive
- balances (surpluses) in the poorer states and negative balances (deficits) or ratios of less than one, in the wealthier states.
3. Although the expectation of point 1 is clearly not warranted, the rejoinder of point 2 is insufficient. For one thing, although taxes may be expected to be positively related to income (that is, the wealthier states pay more and the poorer states less), the expenditure side is more complex, both in terms of the relationship of the explicitly redistributive expenditures to state incomes and of the nonincome related expenditures, procurement of goods and services, which will be determined by efficiency considerations and perhaps also by political influence. In addition, the arguments that surpluses or deficits in a state or region have expansionary or deflationary impacts on the local economy (in much the same way as national budget surpluses and deficits do on the national economy) or on its productive capacity

are not covered by either point 1 or point 2 and warrant further attention.

Estimates of federal flows-of-funds ratios for states and regions for selected years between 1952 and 1976 have been prepared by I. M. Labovitz for this Commission study. The methodology and data are presented in the ACIR publication on regional growth concerned with the flow of federal funds. *Table 31*.

The allegation that federal revenue and expenditure patterns favor the Sunbelt states is certainly borne out by the data insofar as the indicator of favorable treatment is that a state (its residents) receives more from the federal government in expenditures than it pays in taxes. The Southeast, Southwest, Far West, and Rocky Mountain states have consistently received substantially more from the federal government than they have sent back in revenues. The Great Lakes, Mideast, and New England states generally receive far less than they provide in revenues to the federal government. *Over time, however, these differences have narrowed very substantially.* Indeed, by the 1974-76 period the differences were smaller by far than they had been; regions with federal expenditure to revenue ratios of greater than one in 1969-71 had moved closer to equality between the two, as had those whose ratios had been less than one.

Revenues

Revenues received by the federal government from states (from their residents and businesses) are very closely related to their per capita incomes. The estimated statistical relationships between state per capita revenue payments and per capita incomes for the years 1952, 1960, 1970, and 1975 indicate that the differences among the states in per capita income explain between 67% and 93% of the observed variation in per capita revenue payments.¹³ *Charts 4-7.*

The statistical estimates indicate that the relative increase or decrease in state revenues per capita paid to the federal government has been more than proportional to relative incomes. For example, in 1952, a per capita income of 1% greater than the national average resulted, on average, in a per capita revenue

payment to the federal government 1.5% greater than the national average. While progressivity has fallen substantially over the period, it still exists. Thus, in 1975, the estimated relationship indicates that a per capita income 1% above the national average is associated with a relative per capita revenue payment 1.17% greater than the national average.

Using the estimated statistical relationships, we have also calculated the relative revenue payments assuming relative income 75% and 125% of the national average. For states at the lower level, federal tax payments per capita would have risen from 68% to 71% of the national average between 1952 and 1975; for those at 125%, they would have fallen from 143% to 130%. Measured in this way, the tax system may be said to be less redistributive among states in 1975 than it was in 1952.¹⁴

Since state per capita incomes have converged over the period (see *Chapter II*), actual tax collections per capita have become even less dispersed. This is quite clearly seen from the figures in *Table 32*. In 1952, federal revenues per capita in Mississippi were only 29% of the national average (the lowest in the nation), compared with revenues from the State of Delaware (the highest in the nation) which were 238% of the national average—an eight-fold difference.¹⁵

By 1974-76 the difference between the lowest federal revenues paid per capita (still in Mississippi) and the highest (in the District of Columbia) had fallen to just over two-fold. The very substantial convergence in per capita revenues paid, regionally and among states, is due almost entirely to the narrowing of regional and state per capita income differences described earlier.

Expenditures

The relationship between federal expenditures per capita and incomes per capita in the states shows a more complex pattern over time than the revenue relationships.¹⁶ *Charts 8-11.*

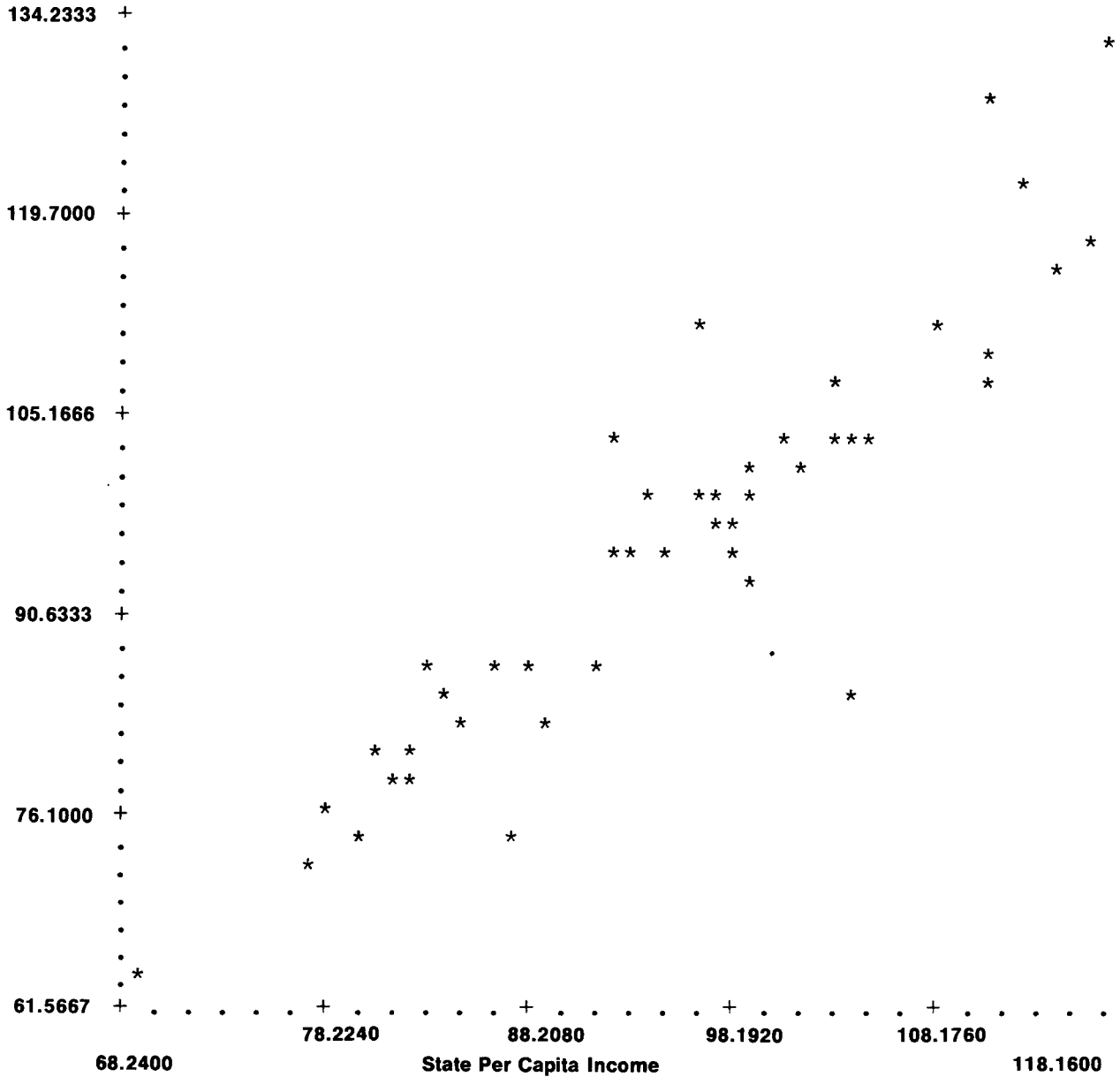
In 1952 and 1960, there was a positive relationship between per capita expenditures and per capita incomes, contrary to the pattern

(Text continues on page 75.)

Chart 4

**FEDERAL TAXES PER CAPITA AND STATE PER CAPITA INCOME,
BY STATE, 1975
(Both Expressed as a Percentage of U.S. Average)**

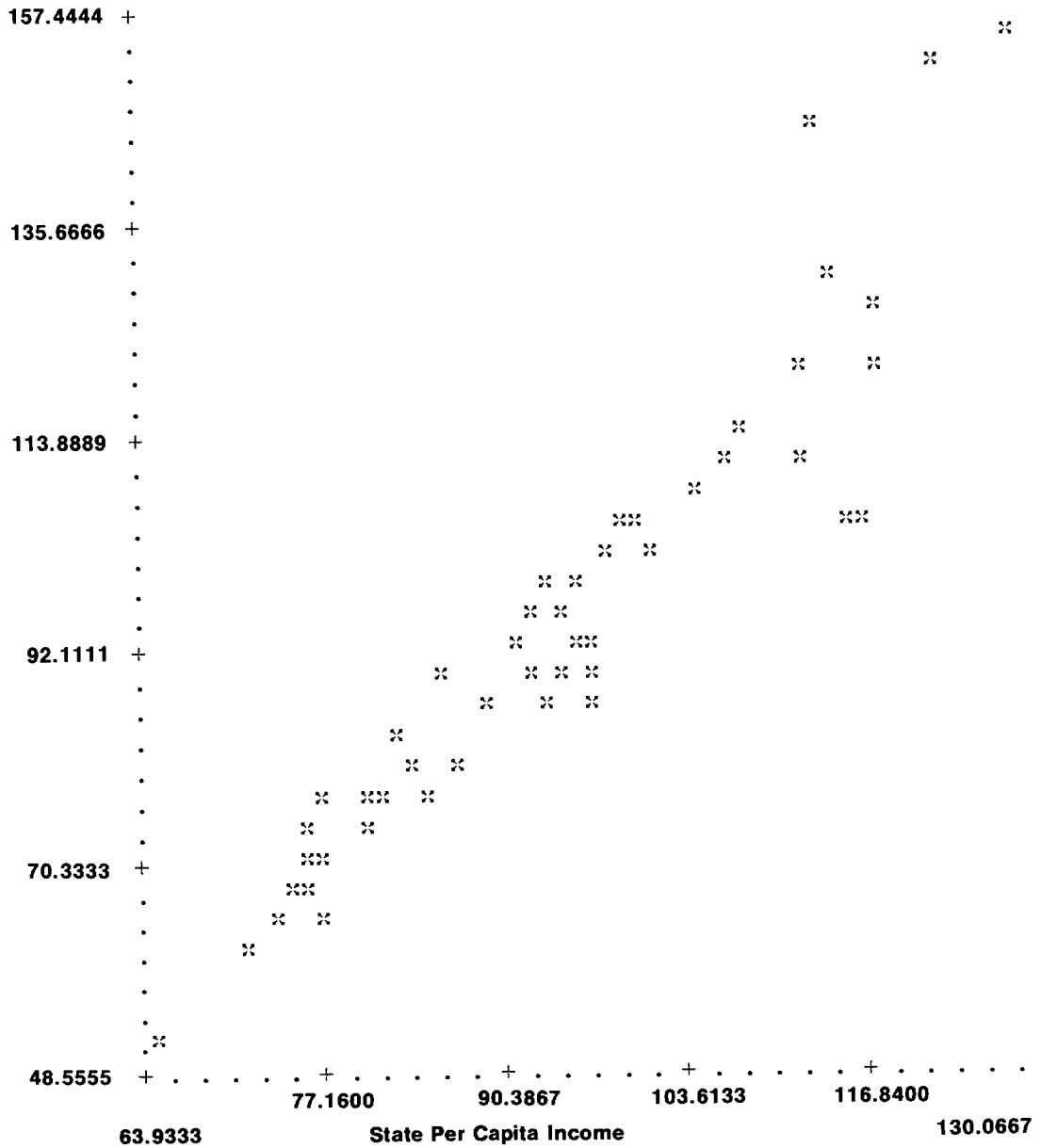
Federal Taxes
Per Capita



SOURCE: Tables 33 and A20.

Chart 5
**FEDERAL TAXES PER CAPITA AND STATE PER CAPITA INCOME,
 BY STATE, 1970**
 (Both Expressed as a Percentage of U.S. Average)

Federal Taxes
Per Capita

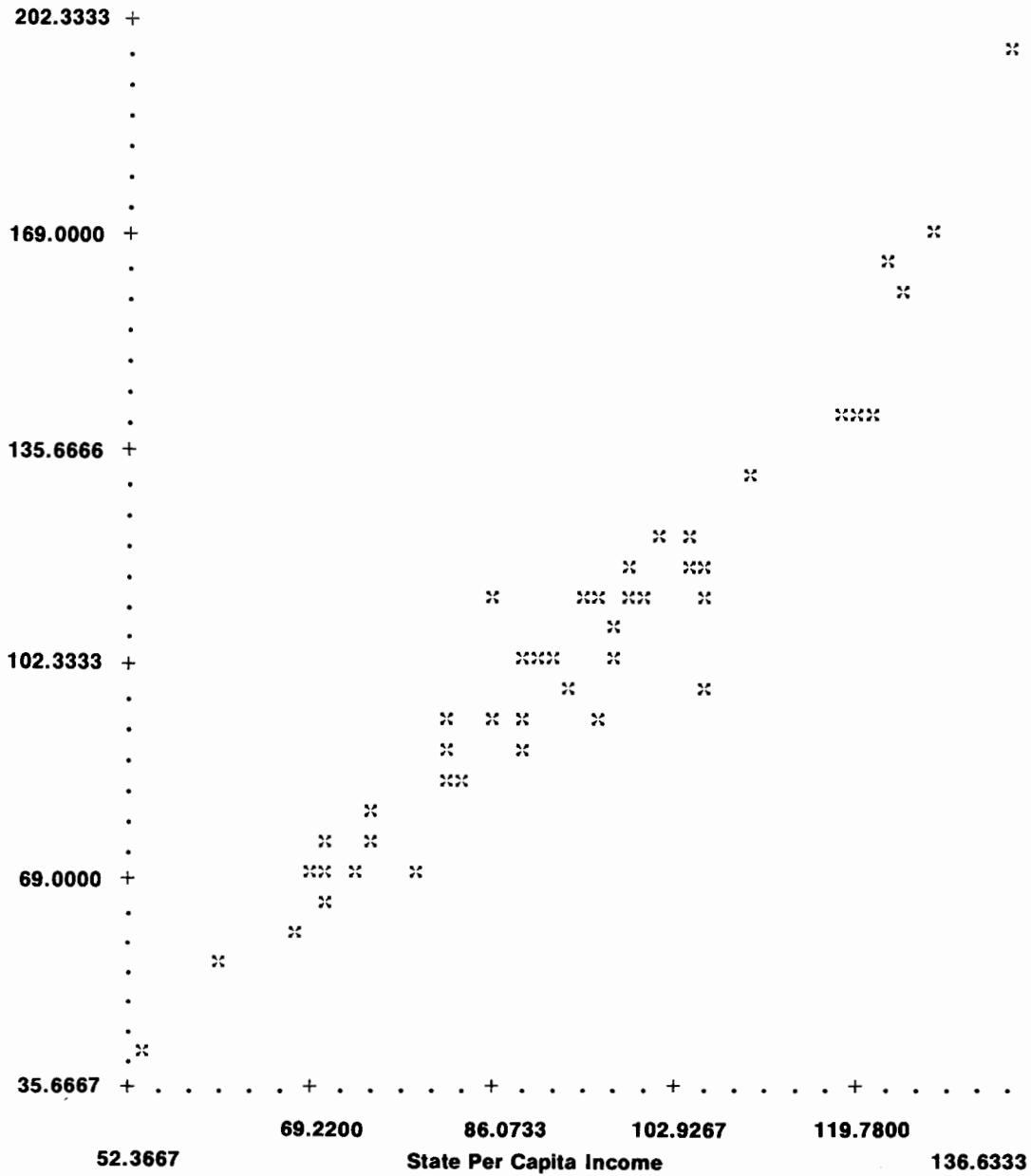


SOURCE: Tables 33 and A20.

Chart 6

**FEDERAL TAXES PER CAPITA AND STATE PER CAPITA INCOME,
BY STATE, 1960**
(Both Expressed as a Percentage of U.S. Average)

Federal Taxes
Per Capita



SOURCE: Tables 33 and A20.

Table 31

**RATIO OF ESTIMATED FEDERAL GOVERNMENT EXPENDITURES IN EACH REGION
AND STATE TO ESTIMATED FEDERAL REVENUES FROM RESIDENTS OF THAT AREA,
SELECTED FISCAL YEARS, 1952-76**

Region or State	1974-76 ¹	1969-71	1965-67	1959-61	1952 ²
UNITED STATES	1.00	1.00	1.00	1.00	1.00
NEW ENGLAND	1.01	.95	.95	1.07	.78
Connecticut	.90	.88	.92	.83	.86
Maine	1.20	1.04	1.14	1.37	.96
Massachusetts	1.06	.95	.90	1.13	.74
New Hampshire	.90	.97	.83	1.24	.64
Rhode Island	1.08	1.14	1.17	1.33	.68
Vermont	1.18	1.02	1.11	.94	.74
MIDEAST	1.02	.89	.75	.83	.75
Delaware	.70	.60	.54	.56	.53
District of Columbia	4.48	2.99	2.16	2.04	1.10
Maryland	1.12	1.39	1.34	1.51	1.09
New Jersey	.80	.75	.71	.87	.90
New York	.95	.78	.62	.70	.61
Pennsylvania	.95	.85	.71	.75	.86
GREAT LAKES	.75	.68	.64	.74	.87
Illinois	.71	.63	.59	.75	.69
Indiana	.74	.81	.75	.85	1.34
Michigan	.78	.61	.58	.65	.87
Ohio	.76	.75	.70	.79	.95
Wisconsin	.77	.71	.67	.69	.85
PLAINS	.97	1.01	1.15	1.00	1.20
Iowa	.81	.83	1.00	.81	1.05
Kansas	.95	1.14	1.44	1.62	1.73
Minnesota	.86	.89	.93	.74	1.26
Missouri	1.10	1.10	1.09	.92	1.01
Nebraska	.90	.91	1.26	1.09	1.12
North Dakota	1.30	1.51	2.04	1.29	1.56
South Dakota	1.32	1.26	1.67	1.60	1.52

SOUTHEAST	1.11	1.24	1.36	1.29	1.51
Alabama	1.28	1.49	1.52	1.41	2.03
Arkansas	1.18	1.20	1.29	1.30	2.15
Florida	.94	1.09	1.15	1.00	.82
Georgia	1.08	1.29	1.52	1.41	1.41
Kentucky	1.17	1.14	1.32	1.34	1.55
Louisiana	1.06	1.19	1.33	.95	1.50
Mississippi	1.62	1.73	1.68	1.64	2.16
North Carolina	.99	.99	1.21	1.19	1.07
South Carolina	1.22	1.25	1.58	1.67	2.30
Tennessee	.97	1.01	1.12	1.03	2.15
Virginia	1.36	1.68	1.73	1.97	1.57
West Virginia	1.19	1.09	1.02	.90	1.15
SOUTHWEST	1.03	1.32	1.37	1.24	1.46
Arizona	1.15	1.19	1.33	1.22	1.39
New Mexico	1.48	1.67	1.68	1.75	2.99
Oklahoma	1.21	1.35	1.36	1.39	1.56
Texas	.94	1.31	1.35	1.17	1.34
ROCKY MOUNTAIN	1.09	1.23	1.34	1.24	1.20
Colorado	1.04	1.24	1.33	1.26	.98
Idaho	1.04	.96	1.15	1.07	1.55
Montana	1.12	1.18	1.53	1.20	1.04
Utah	1.27	1.53	1.32	1.30	1.67
Wyoming	1.02	1.10	1.50	1.33	1.35
FAR WEST	1.13	1.18	1.27	1.16	1.12
California	1.15	1.24	1.32	1.14	1.06
Nevada	.84	.75	.86	1.00	.77
Oregon	.91	.84	.80	.77	.96
Washington	1.19	1.10	1.24	1.52	1.58
ALASKA	1.79	2.76	4.54	7.53	²
HAWAII	1.55	1.53	2.27	2.75	²

¹Revised and adjusted (November 1978).

²Omits Alaska and Hawaii (which were territories in 1952).

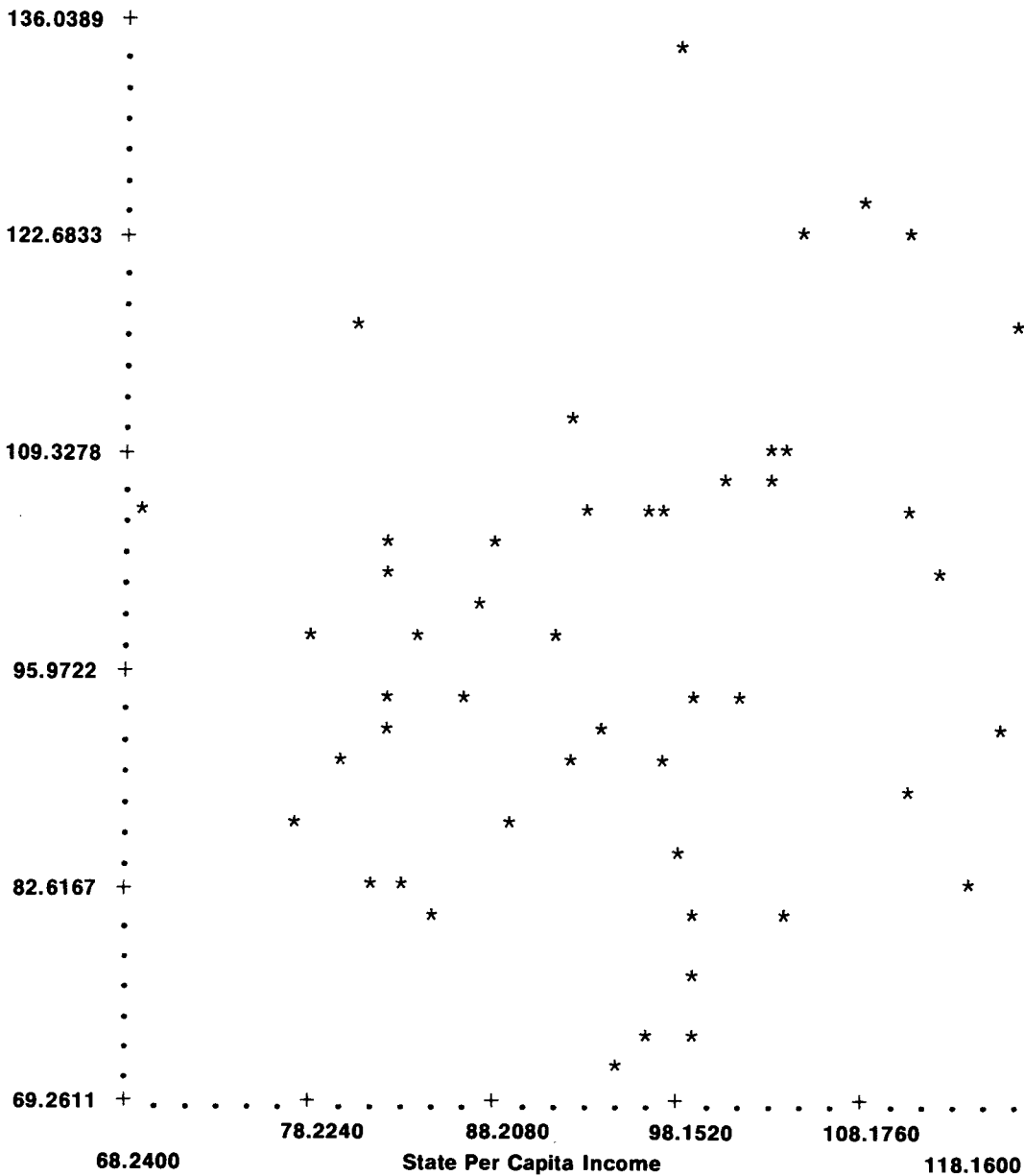
Note: The ratios are derived by dividing for each state or region its estimated percentage of all allocated federal government expenditures by the estimated percentage of federal government revenues contributed by its residents.

SOURCE: I. M. Labovitz for Advisory Commission on Intergovernmental Relations, July 14, 1978.

Chart 8

**FEDERAL EXPENDITURES PER CAPITA AND STATE PER CAPITA INCOME,
BY STATE, 1975
(Both Expressed as a Percentage of U.S. Average)**

Federal Expenditures
Per Capita

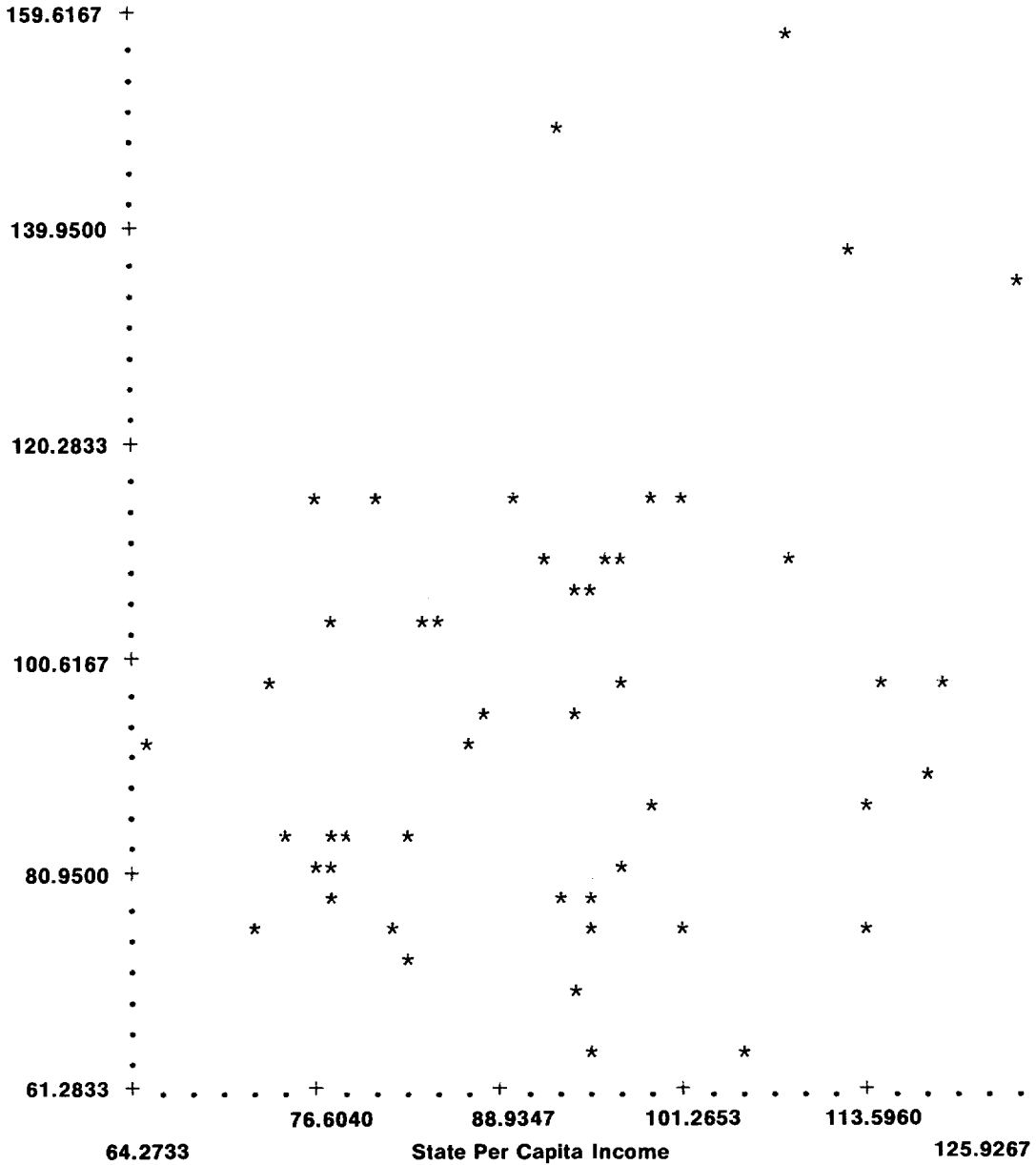


SOURCE: Tables 34 and A20.

Chart 9

**FEDERAL EXPENDITURES PER CAPITA AND STATE PER CAPITA INCOME,
BY STATE, 1970
(Both Expressed as a Percentage of U.S. Average)**

Federal Expenditures
Per Capita

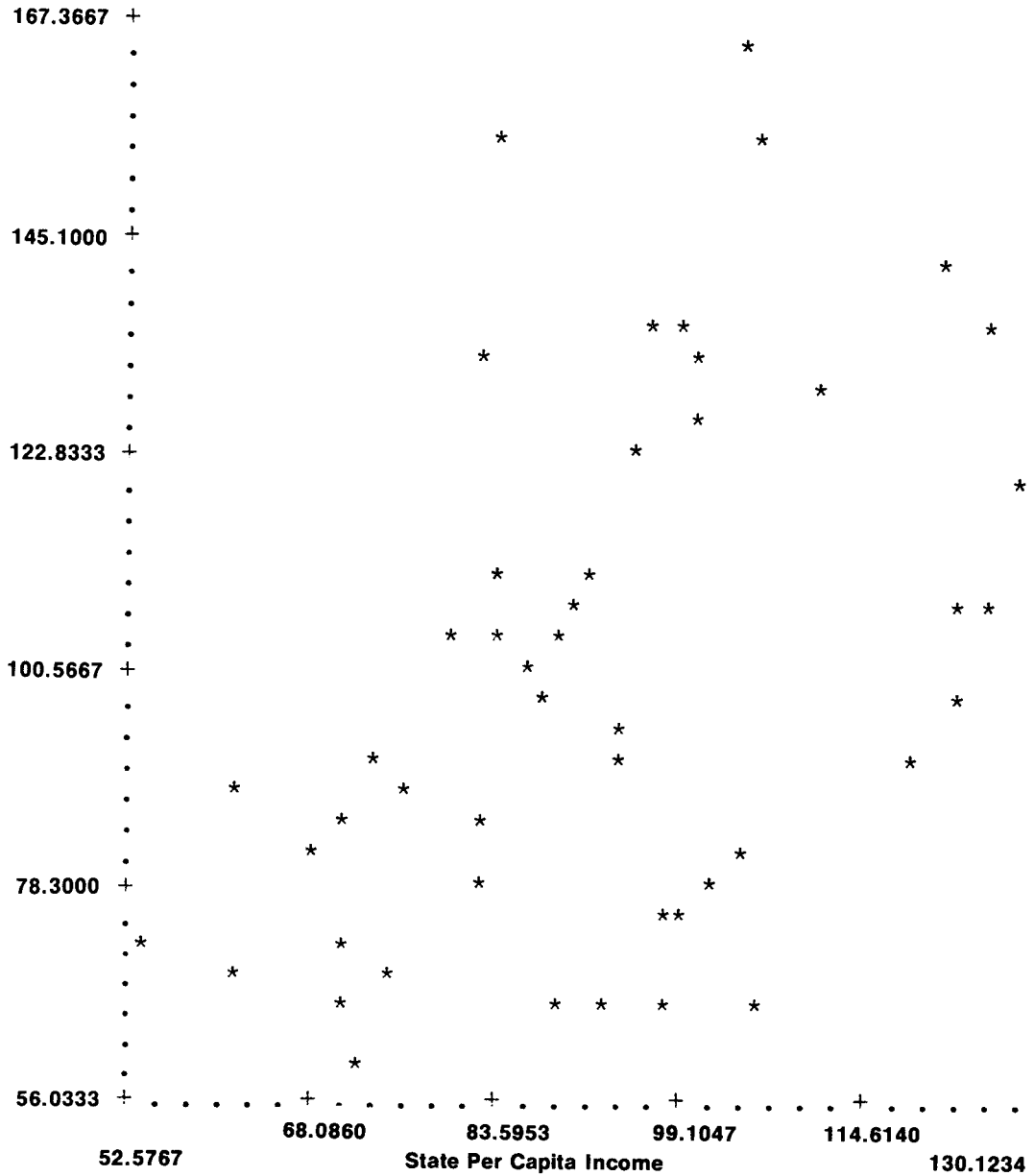


SOURCE: Tables 34 and A20.

Chart 10

**FEDERAL EXPENDITURES PER CAPITA AND STATE PER CAPITA INCOME,
BY STATE, 1960**
(Both Expressed as a Percentage of U.S. Average)

Federal Expenditures
Per Capita

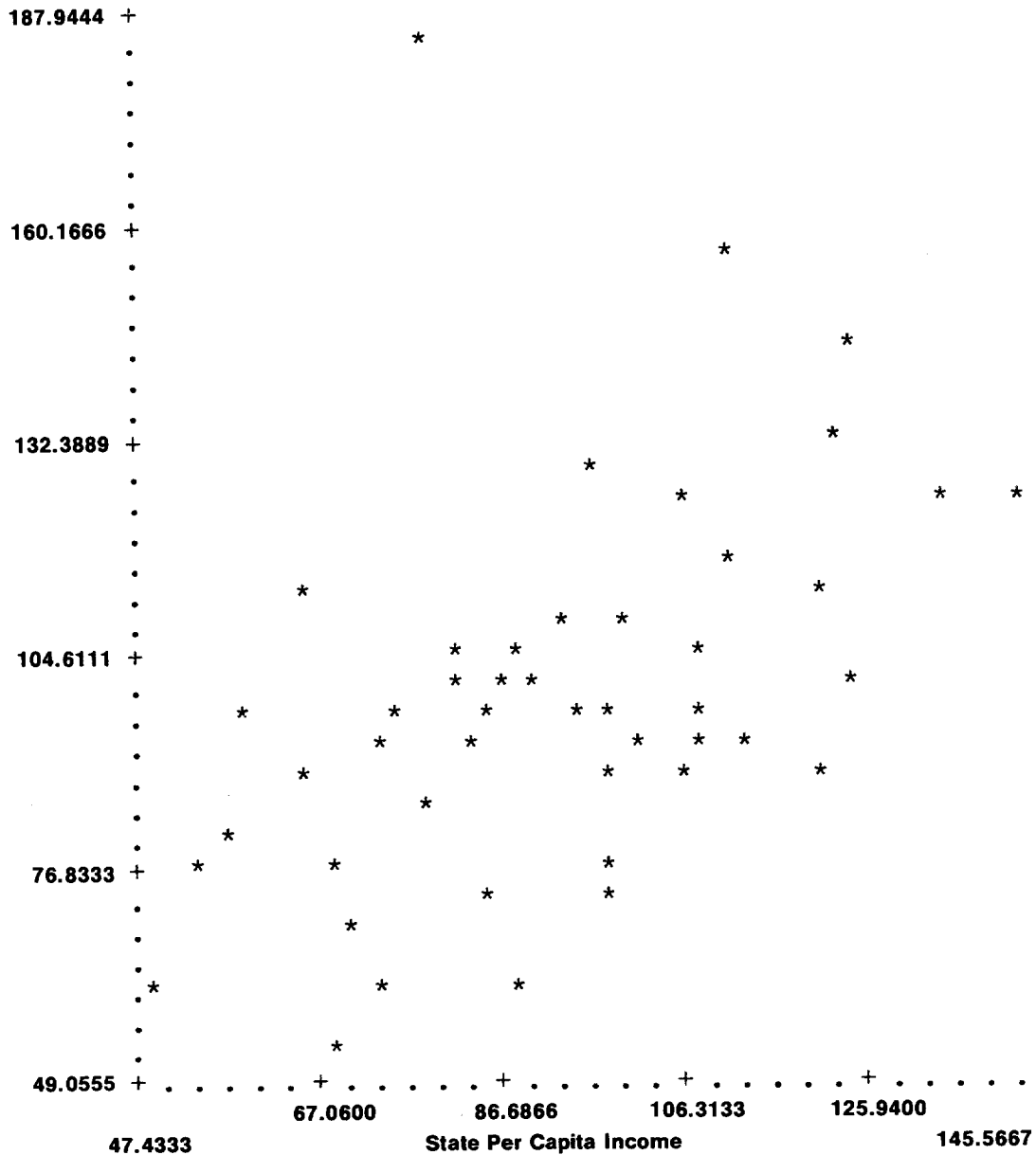


SOURCE: Tables 34 and A20.

Chart 11

**FEDERAL EXPENDITURES PER CAPITA AND STATE PER CAPITA INCOME,
BY STATE, 1952**
(Both Expressed as a Percentage of U.S. Average)

Federal Expenditures
Per Capita



SOURCE: Tables 34 and A20.

Table 32

**INDEX NUMBERS OF ESTIMATED FEDERAL GOVERNMENT REVENUES PER CAPITA
FROM RESIDENTS OF EACH REGION OR STATE, SELECTED FISCAL PERIODS, 1952-76**

Region or State	1974- 1969- 1959-				Region or State	1974- 1969- 1959-			
	76	71	61	1952		76	71	61	1952
UNITED STATES AVERAGE									
PER CAPITA	\$1,321	\$929	\$494	\$435 ¹					
INDEX NUMBER	100	100	100	100					
NEW ENGLAND	107	118	116	133	SOUTHEAST	87	78	68	55
Connecticut	131	150	143	167	Alabama	77	66	58	41
Maine	81	82	81	90	Arkansas	73	63	54	37
Massachusetts	103	115	116	134	Florida	112	98	98	91
New Hampshire	102	99	100	99	Georgia	87	81	65	54
Rhode Island	97	101	103	131	Kentucky	79	72	64	58
Vermont	85	90	83	87	Louisiana	78	70	73	64
MIDEAST	109	118	125	138	Mississippi	65	54	44	29
Delaware	126	144	194	238	North Carolina	83	78	62	52
District of Columbia	143	152	166	201	South Carolina	76	67	53	43
Maryland	111	112	107	116	Tennessee	87	77	64	52
New Jersey	116	121	123	123	Virginia	98	89	79	67
New York	110	127	140	163	West Virginia	80	74	68	61
Pennsylvania	99	103	106	107	SOUTHWEST	95	85	83	73
GREAT LAKES	105	107	106	110	Arizona	95	91	90	75
Illinois	116	119	121	131	New Mexico	80	68	76	61
Indiana	99	96	91	81	Oklahoma	86	78	76	62
Michigan	103	110	103	107	Texas	98	87	85	77
Ohio	102	103	103	110	ROCKY MOUNTAIN	94	84	91	83
Wisconsin	94	93	96	91	Colorado	103	90	98	100
PLAINS	94	89	88	82	Idaho	83	77	81	63
Iowa	92	86	83	72	Montana	87	81	92	88
Kansas	100	85	84	74	Utah	81	75	81	62
Minnesota	93	92	90	87	Wyoming	107	97	99	86
Missouri	95	96	98	98	FAR WEST	106	108	118	117
Nebraska	95	89	87	79	California	107	110	123	123
North Dakota	85	68	69	60	Nevada	122	129	136	163
South Dakota	76	66	66	56	Oregon	100	95	98	98
					Washington	103	103	100	100
					ALASKA	131	104	77	1
					HAWAII	107	103	87	1

¹Omits Alaska and Hawaii (which were territories in 1952).

SOURCE: I. M. Labovitz for Advisory Commission on Intergovernmental Relations, June 1, 1978.

which would occur if redistribution was a major determinant of per capita expenditures. It is consistent, however, with the dominance of procurement expenditures in earlier years, i.e., the higher income states were more industrialized and probably accounted for a much larger proportion of federal government procurement expenditures than the lower income states. *Table 33.*

By 1970 and 1975, there was little relationship between per capita incomes and per capita federal expenditures. This is consistent with the changing composition of federal outlays which became much more evenly divided between those which are explicitly redistributive, i.e., negatively related to per capita incomes, and procurement expenditures which are not so related.

Income to expenditure relationships show that in 1952 and 1960 about 20% of the total variation in expenditures per capita among the states were related to per capita incomes, while in the later years this had dropped to 3%-7%. Thus, although the growth in redistributive programs in the federal budget has greatly changed the relationship between per capita incomes and per capita federal expenditures, it is not the case that on balance lower income states receive higher expenditures. On average, the higher the federal welfare expenditures are the lower the state's per capita income, but the relationship is weak, accounting for less than 10% of the variation in welfare payments per capita in 1975. The reasons for this weak relationship have been described earlier.

Expenditure-Revenue Ratios

To recapitulate, a close positive relationship was found between per capita federal revenues received from the states and the per capita incomes of the states' residents. On the expenditure side, the pattern has changed over time, from one in which the dominance of procurement expenditures in the federal budget resulted in a positive association between federal expenditures per capita in a state and the per capita income of the state's residents, to one in which the growth of redistributive expenditures has muted this relationship, making it insignificant. We turn now to examine the overall flow-of-funds relationship

and the expenditure-revenue ratios, with state per capita incomes. *Table 31 and Charts 12-15.*

For all four periods, the proportion of federal expenditures received by a state relative to taxes paid by that state to the federal government, on average, decline as relative income increases. Moreover, states with very low incomes (very low relative to the national average) receive, on average, about twice as high a proportion of federal expenditures as they pay in revenues. The amount of variance among the states, in the ratios of expenditures received to revenues paid, explained by the single factor of relative income is 25% to 45%—thus, the influence of relative income on federal flow-of-funds ratios or balances is substantial and significant, but far from the entire story.

Over the 23-year period 1952-75, the federal flow of funds has become somewhat less redistributive toward the states with lower than average per capita income.¹⁷ For a state whose per capita income is only 75% of the national average, the dollars received from the federal government relative to dollars paid decrease very substantially, based on the estimated statistical relationships. A state with per capita income of 125% of the national average would receive smaller expenditures relative to revenues paid in the 1970s than in 1960 or 1952, but the decline is far more modest than for the lower income states. *Table 34.*

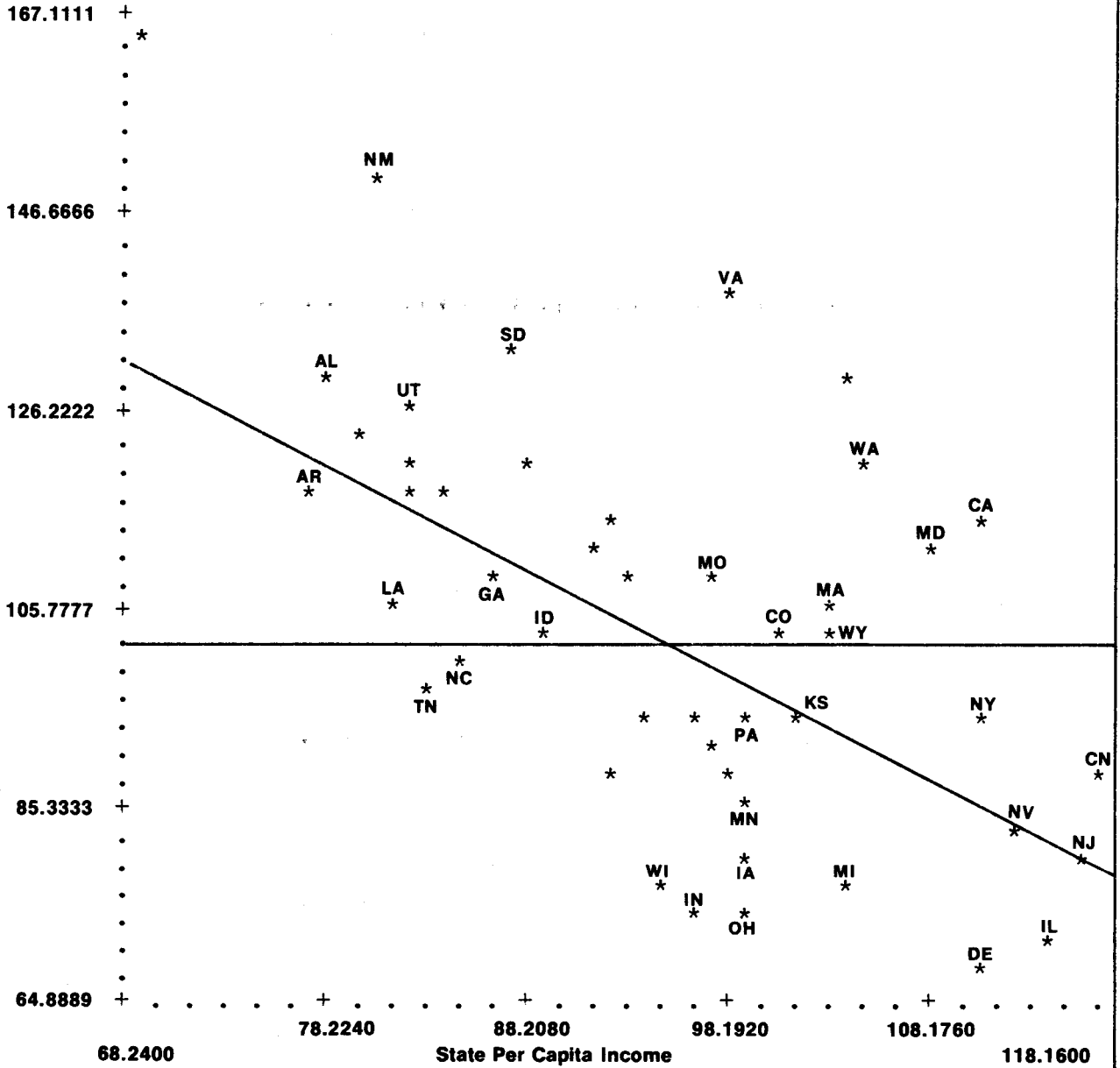
To the extent that equity goals link federal flows of funds to relative per capita incomes, the regression line showing the estimated average relationship between the federal expenditure-revenue ratio and relative state per capita income may be thought of as embodying these equity goals. *Chart 12.* The horizontal line, $E/T=1$, which indicates equality between federal expenditures and revenues, has no similar normative interpretation. Most discussions of flow-of-funds balance are in terms of deviations from the horizontal line, that is, E/T greater than one (surplus) or less than one (deficit). If relevant at all, the discussion might be more properly focused on deviations from the regression line.

A very large number of observations for the 1974-76 period hover relatively close to the

Chart 12

FEDERAL EXPENDITURE TO REVENUE RATIO AND STATE PER CAPITA INCOME RATIO, BY STATE, 1975
 (Both Expressed as a Percentage of U.S. Average)

Federal Expenditure to Revenue Ratio

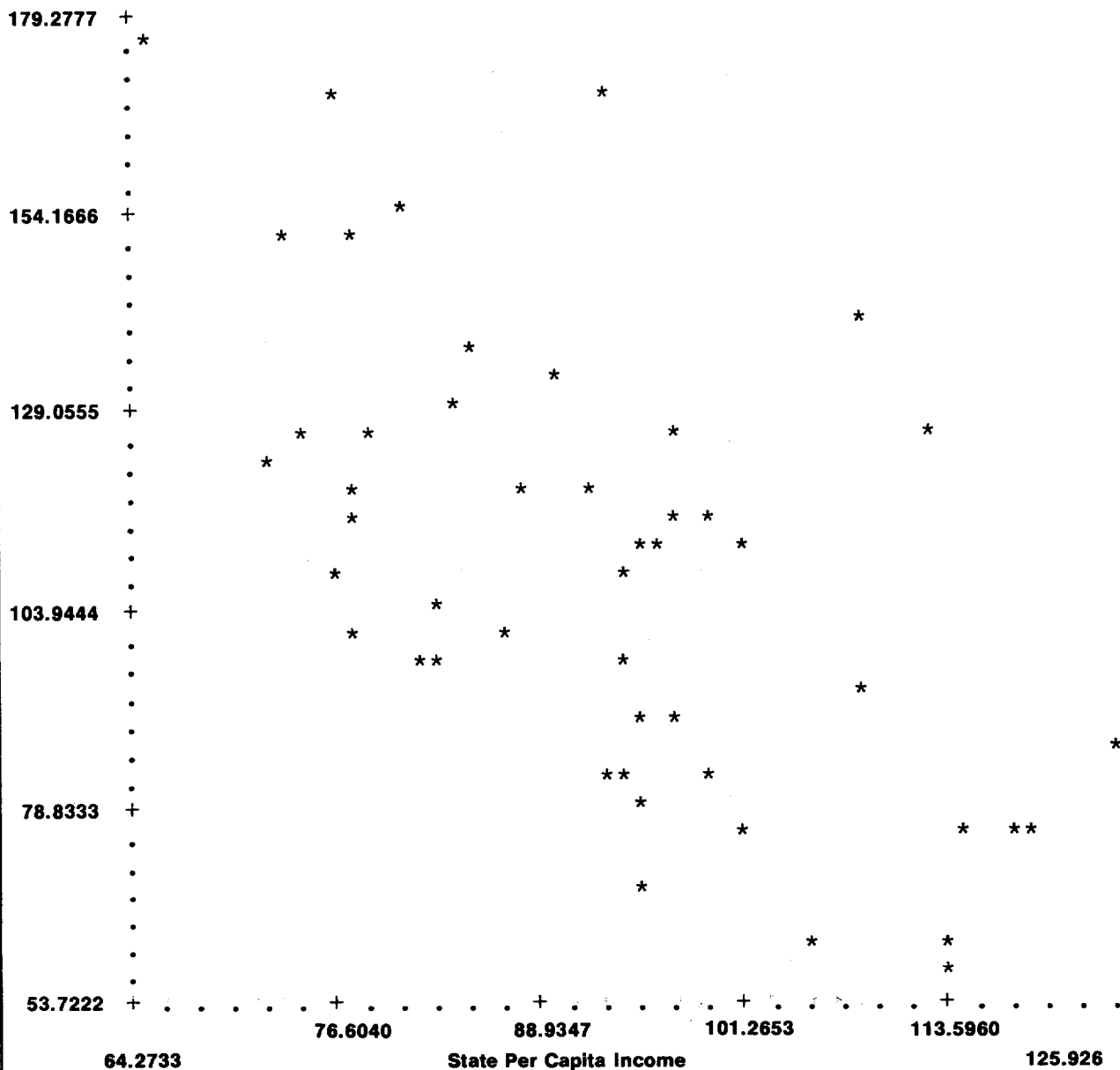


SOURCE: Tables 32 and A20.

Chart 13

FEDERAL EXPENDITURE TO REVENUE RATIO AND STATE PER CAPITA INCOME RATIO, BY STATE, 1970
 (Both Expressed as a Percentage of U.S. Average)

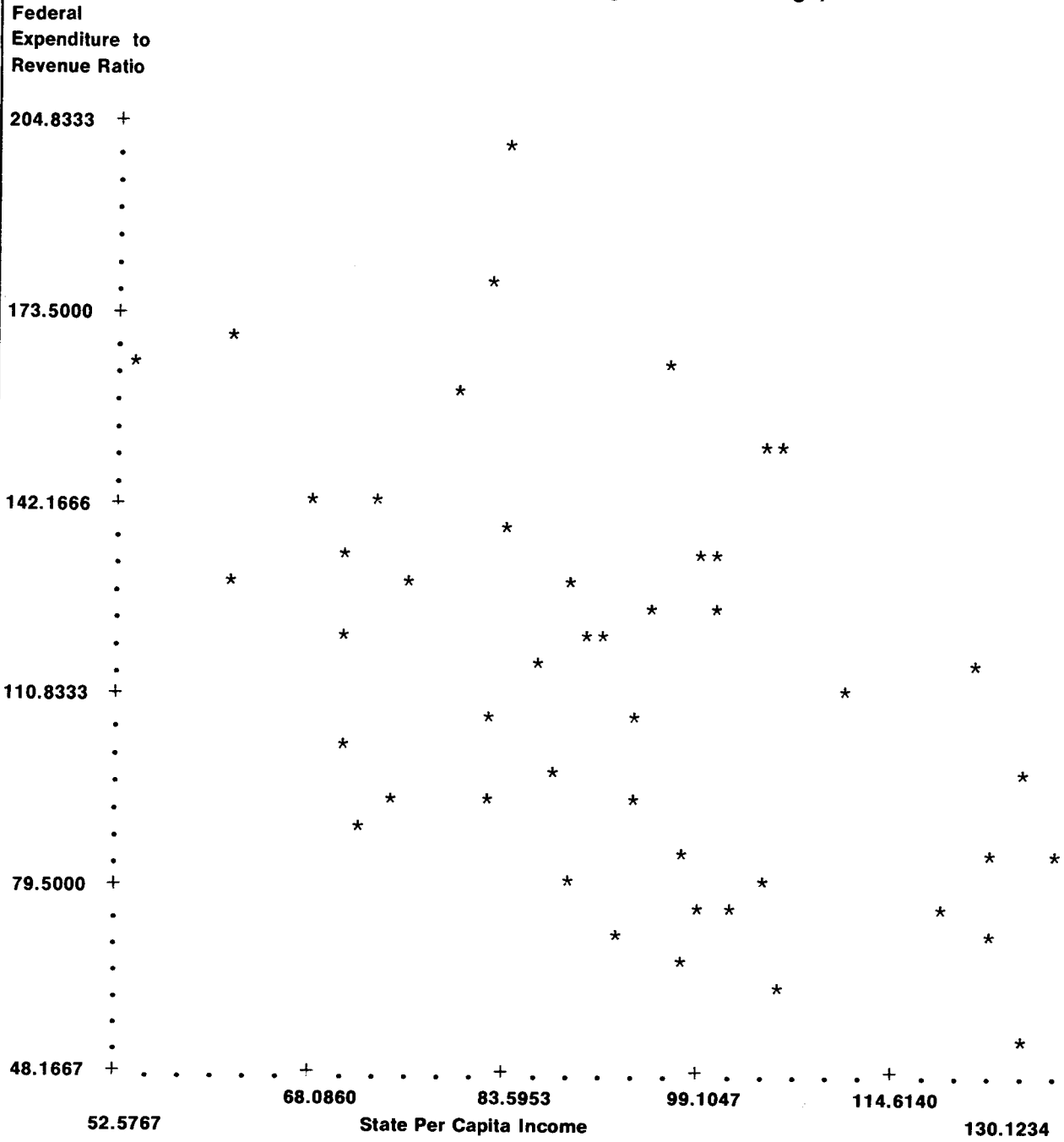
Federal Expenditure to Revenue Ratio



SOURCE: Tables 32 and A20.

Chart 14

FEDERAL EXPENDITURE TO REVENUE RATIO AND STATE PER CAPITA INCOME RATIO, BY STATE, 1960
 (Both Expressed as a Percentage of U.S. Average)

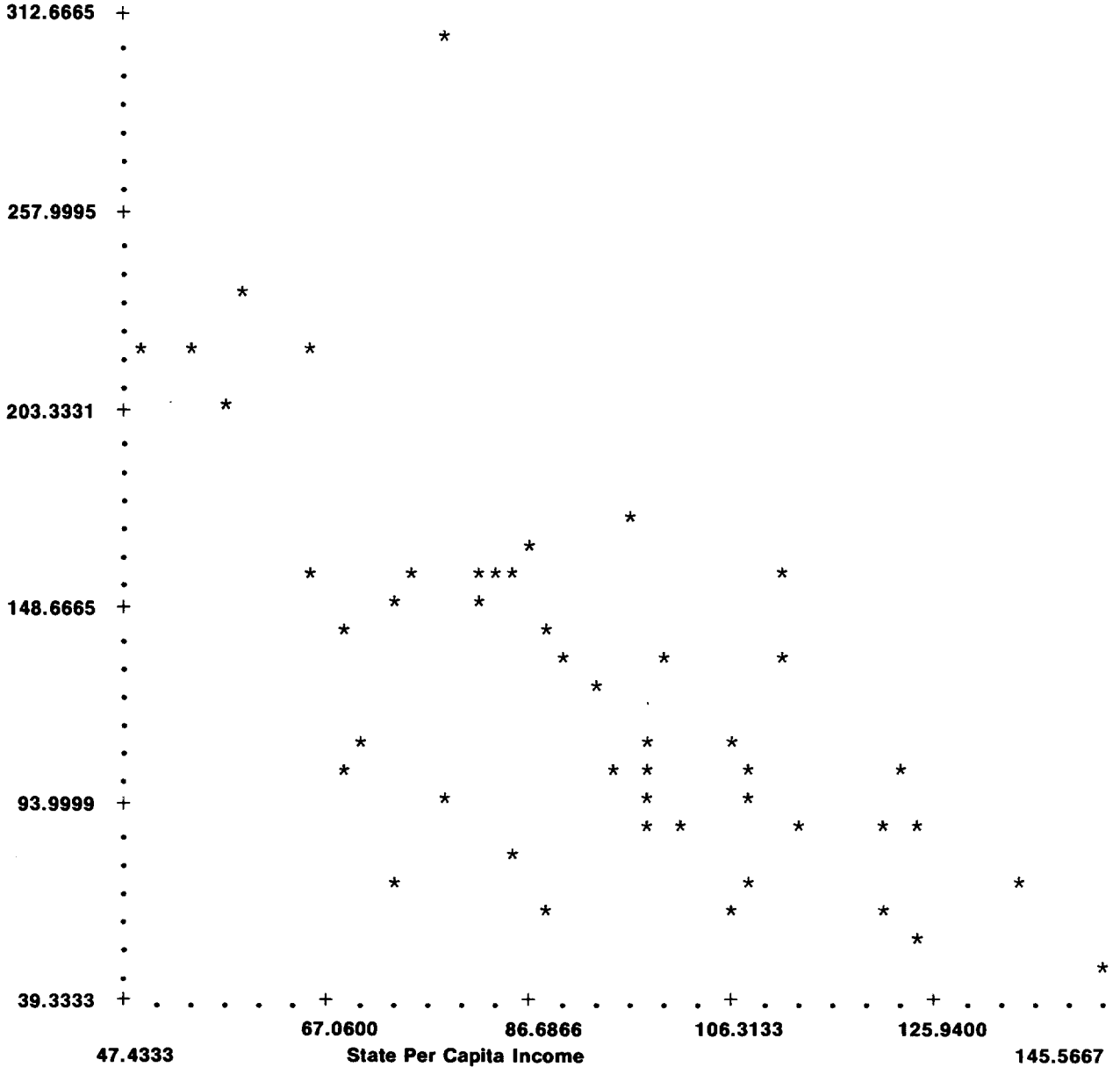


SOURCE: Tables 32 and A20.

Chart 15

FEDERAL EXPENDITURE TO REVENUE RATIO AND STATE PER CAPITA INCOME RATIO, BY STATE, 1952
 (Both Expressed as a Percentage of U.S. Average)

Federal Expenditure to Revenue Ratio



SOURCE: Tables 32 and A20.

Table 33

**INDEX NUMBERS OF ESTIMATED FEDERAL GOVERNMENT EXPENDITURES
PER CAPITA ALLOCATED BY RESIDENCE OF RECIPIENT OR LOCATION OF ACTIVITY
IN EACH REGION OR STATE, SELECTED FISCAL YEARS, 1952-76**

Region or State	1974-	1969-	1959-	1952	Region or State	1974-	1969-	1959-	1952
	76 ¹	71	61			76 ¹	71	61	
UNITED STATES AVERAGE									
PER CAPITA	\$1,524	\$863	\$456	\$430 ²					
INDEX NUMBER	100	100	100	100					
NEW ENGLAND	109	112	124	103	SOUTHEAST	97	96	88	83
Connecticut	117	133	118	143	Alabama	99	99	83	83
Maine	101	85	111	86	Arkansas	87	76	70	78
Massachusetts	109	109	130	99	Florida	105	107	98	74
New Hampshire	91	94	122	63	Georgia	94	105	91	77
Rhode Island	105	115	135	89	Kentucky	93	82	86	90
Vermont	98	93	79	64	Louisiana	83	83	69	95
MIDEAST	111	106	104	104	Mississippi	104	93	72	63
Delaware	89	87	106	125	North Carolina	82	77	74	56
District of Columbia	643	455	339	221	South Carolina	91	84	88	99
Maryland	124	155	162	126	Tennessee	84	79	66	111
New Jersey	93	91	107	111	Virginia	133	148	154	106
New York	105	99	98	100	West Virginia	95	81	62	70
Pennsylvania	95	88	79	92	SOUTHWEST	98	111	104	107
GREAT LAKES	79	73	79	96	Arizona	110	108	109	104
Illinois	83	75	90	90	New York	117	114	133	181
Indiana	73	78	77	108	Oklahoma	104	105	104	96
Michigan	81	67	67	93	Texas	92	113	100	103
Ohio	77	77	81	104	ROCKY MOUNTAIN	102	104	113	99
Wisconsin	73	66	66	77	Colorado	107	110	124	98
PLAINS	91	90	88	99	Idaho	87	74	85	97
Iowa	74	71	67	76	Montana	98	95	111	92
Kansas	95	97	136	128	Utah	104	114	105	103
Minnesota	81	82	67	109	Wyoming	108	108	133	116
Missouri	105	106	90	99	FAR WEST	120	128	136	131
Nebraska	85	80	95	88	California	123	136	140	131
North Dakota	109	104	89	93	Nevada	102	97	134	125
South Dakota	100	84	103	103	Oregon	91	80	76	94
					Washington	123	113	154	157
					ALASKA	236	280	576	2
					HAWAII	166	159	238	2

¹Revised and adjusted (November 1978).

²Omits Alaska and Hawaii (which were territories in 1952).

SOURCE: I. M. Labovitz for Advisory Commission on Intergovernmental Relations, July 14, 1978.

Table 34

**ESTIMATED FEDERAL EXPENDITURE-REVENUE RATIO FOR A STATE
AT THREE ASSUMED LEVELS OF RELATIVE PER CAPITA INCOME**

If State Income:	1952	1960	1970	1975
a) Equals National Average	1.160	1.090	1.050	.990
b) Is Only 75% of National Average	1.560	1.315	1.350	1.265
c) Is 1.25 Times National Average	.760	.865	.750	.715

SOURCE: ACIR staff computations.

Figure 2

**LARGE SURPLUSES AND DEFICITS ON FEDERAL FLOW OF FUNDS,
1960, 1970, 1975¹**

		LARGE SURPLUSES		
		1975	1970	1960
Low² Income States		New Mexico	New Mexico	New Mexico
		Virginia	Virginia	Virginia
		Mississippi	Mississippi	South Dakota
		Arizona	Utah	South Carolina
		North Dakota		Kansas
High² Income States		Hawaii	Hawaii	Hawaii
		Maryland	Maryland	Maryland
		California	California	California
		Washington		Washington
		Wyoming		Wyoming
		Colorado		
		LARGE DEFICITS		
Low Income States		Wisconsin	Wisconsin	Wisconsin
		Indiana		Minnesota
		Ohio		West Virginia
		North Carolina		Louisiana
High Income States				Vermont
		Iowa	Michigan	Iowa
		Michigan		Michigan
				Pennsylvania
				Delaware

¹Large surpluses and deficits are defined as plus and minus two standard deviations or more from the regression line.

²High and low incomes are measured as above and below the national income per capita.

SOURCE: ACIR staff computation based on Tables 32 and A20.

regression line: West Virginia, Georgia, Illinois, and New York lie nearly on the line. *Chart 12*. Yet, West Virginia and Georgia are well above the *horizontal* line (they receive substantially more in federal government expenditures than they pay in taxes) whereas the reverse is the case for Illinois and New York. In terms of the analysis presented, however, these differences are fairly well "explained" by their differences in per capita income.

No similar explanation emerges for Indiana, Wisconsin, Ohio, Iowa, and Michigan, all of which lie well below the regression line. They are not only in deficit (in the flows-of-funds sense) but the deficit cannot be attributed largely to their relative incomes. North Carolina, which received in expenditures about what it paid in taxes, exhibits an equally anomalous position (assuming the federal budget was set with distributional aims). Given the state's relatively low income, North Carolina would be expected to show higher federal expenditures relative to taxes paid.

A substantial number of higher and lower income states appear to be receiving large surpluses (two or more standard deviations above the regression line). *Figure 2* and *Chart 12*. Almost without exception, these are Southern and Western states (Maryland being the only exception and its link to the District of Columbia is the dominant influence). The states with large deficits are similarly regionally concentrated, largely in the Great Lakes or Plains states.

Similar patterns can be seen throughout the period covered by the analysis. *Figure 2*. Although not identical from year to year, the same states do generally turn up in the same positions: Michigan, Wisconsin, Iowa, with very large deficits; Maryland, Hawaii, California, New Mexico, Virginia, with large surpluses.

THE IMPACT OF FEDERAL FLOWS OF FUNDS ON REGIONAL GROWTH

Undoubtedly, some combination of efficiency, equity, and political considerations is influencing the observed pattern of federal expenditures in the states; equity considerations alone do not dominate. The effect of

the tax-expenditure deficits or surpluses on the state or regional economies is an important one irrespective of the explanation of the determinants of expenditures.

Over the last 25 years the most rapidly growing states of the Southeast and the Southwest have received substantially higher payments from the federal government (transfers, procurement, grants) than their residents have paid to the federal government in taxes and other revenues. The opposite pattern is generally characteristic of the more slowly growing states of the New England, Mideast, and Great Lakes regions.

A classification of states by economic growth variables and the federal expenditure to revenue ratios provides additional insights on the relationship of federal government activity and state economic growth trends. *Table 35*. Nationally, per capita income (in current prices) in 1975 was nearly four times what it had been in 1950. For states with expenditure to tax ratios of .80 or less, the average ratio of 1975 per capita income to that in 1950 was only 3.57. Moreover, not one of the five states in this group had a per capita income change over the period which exceeded the national average. For states at the other extreme—where the ratio of federal expenditures to revenue collected from the state was 1.25 or more—the average per capita income in 1975 was 4.61 times what it had been in 1950. In 13 of the 16 states in this group, the growth in per capita income exceeded the national average.

Remarkably, of all the states with higher than national average increases in per capita income, half had expenditure to tax ratios of 1.25 or more; none had ratios of less than .80. The picture is very similar when the figures are computed for average total personal income increases in the states. *Table 35*. The greater the federal expenditure to tax ratio, the larger on average is the growth in total personal income over the 25 years.

From this evidence, it is clear that the argument that there is a causal connection between high state growth rates and positive state balances of payments with the federal government cannot be rejected out of hand. It is also true, however, that such connection has not been demonstrated.

Table 35

**SUMMARY RELATIONSHIPS OF FEDERAL FLOW-OF-FUNDS BALANCES
AND STATE ECONOMIC GROWTH RATES, 1950-75**

	<u>Federal Expenditures¹</u>				
	<u>Federal Revenues</u>				
	<.80	.80<.90	.90<1.10	1.10<1.25	>1.25
Number of States*	5	7	11	9	16
Average State Per Capita Income					
Growth: 1950-75	3.57	3.68	4.13	3.91	4.61
Range	3.17-3.84	3.29-4.09	3.64-4.78	3.34-4.38	3.73-5.60
Percent of States in Group with Greater Than Average National Growth²	0%	14%	64%	67%	81%
Percentage of All States with Greater Than National Growth in Group	0%	4%	27%	19%	50%
Average State Total Personal Income					
Growth: 1950-75	5.01	4.96	5.07	5.98	5.95
Range	4.27-5.71	4.54-5.71	4.15-6.40	4.21-7.70	4.13-7.06
Percent of States in Group with Greater Than Average National Growth³	20%	29%	27%	56%	75%
Percentage of All States with Greater Than National Growth in Group	4%	9%	13%	22%	52%

*Not including Alaska and Hawaii.

¹Average of state ratios for 1952, 1959-61, 1969-71, 1974-76.

²National growth in per capita income over the period 1950 to 1975, 3.99 times.

³National growth in total personal income over the period 1950 to 1975, 5.56 times.

Further Examination of Flow-of-Funds Effects

We are still very far from having the kinds of models, theoretical or empirical, from which estimates of the overall effects on states of the pattern of federal expenditures and revenue collections could be made. A simple way of evaluating the analogy to national macro-economic effects is to consider the *ex ante* equilibrium condition of a simple regional income determination model, namely,

$$I+G+E=S+T+M,$$

where I is investment, G is federal government expenditure on national income account, E is exports, S is private saving, T is tax payments to the federal government, and M is imports.¹⁸

If, *ex ante*, I, E, S, and M were in equilibrium at a given level of regional income, then $T>G$ (tax payments to the federal government greater than expenditures made by the federal government in the region) would indeed reduce this level. Clearly, the difficulty with this simple view is that federal activity

will affect private investment (I) and exports (E) as well. Thus, a state's high level of exports (E) may be attributable to purchases from local industries which are suppliers of primary government contractors in another state. Or, private investment (I) may be greater as capacity is built to augment the production of the local suppliers. The examples can be multiplied for each of the elements, I, E, S, and M: each is a function of private and government activity in other regions.

Whereas for the national economy, the levels of I and E and the parameters determining S and M are, to a first approximation, independent of G and T, this is not true for a state or region. Alternatively, if the United States were itself part of a larger economic entity (e.g., like the European Economic Community), the federal government's full employment surplus would provide no information about the effects of the joint fiscal activities of *all* member countries on the United States' national product. We would

need to know, for example, whether government expenditures in Japan and Germany lead to export of American goods and services. Substitute Texas and California for the former two and New York and Ohio for the latter and the analogy is clear. The focus on the T, G relationship is a misapplication of the full employment surplus concept to a sub-component of the national economy.

A model which more correctly specifies complicated regional interactions and emphasizes dynamic adjustments to changes in demand has recently been constructed by Oakland and Chall.¹⁹ Not only are the indirect demands by one region for the products of another incorporated, but the model also considers the supply capacity of the local economy to meet changes in demands for its output, as well as the effects of capacity utilization on investment. Thus, for example, an increase in expenditures by the federal government, in a region in which no additional output is possible in the short run, will result in an increase in production in some other region. If these demands continue to exceed local capacity, investment will gradually occur to augment the region's capacity and reduce the spillover of demand to other regions.

The authors use their model to estimate the implications of balanced shifts of federal expenditures from one region to another, e.g., a decrease in the South matched by an identical increase in the Northeast. They argue that it is not possible to estimate the overall effects of the federal budget since that would require envisioning the system with and without a government sector and conclude that the latter makes no sense. One alternative would be a comparison of the current regional implications of the federal budget with a locationally neutral budget, an entity they find impossible to define.²⁰

A total of 16 different simulations are worked through—shifts of four different types of expenditures [federal expenditures (i.e., procurement), federal grants-in-aid, federal transfer payments, and total federal outlays] are combined with four sets of regional shifts (from the South or the West to the Northeast or to the Midwest). Although the magnitudes of the effects of each of these expenditure

change combinations differ, the general outcomes are:

1. The initial change in gross output and income in each region, in the first year, is very small.
2. The longer term (over five or ten years) rise in income in the region when expenditures are increased is far less than the change in federal expenditures; the losses in income in the region when expenditures are transferred are far less than the expenditure transfer.
3. Transfers from either the South or the West to the Midwest create losses in the Northeast while transfers to the Northeast produce losses in the Midwest.

This pattern of adjustments results from two principal factors: initially the South and West do not have *income* or *output* declines due to expenditure shifts away from them since they were facing excess demands. Thus, as the federal expenditures in these regions decline, productive capacity can be used to meet other demands which have "spilled-over" in the past to the Northeast and the Midwest. Further, the increase in direct orders placed by the federal government in the Northeast and Midwest is largely offset by these reductions in spillovers from the South and West.

Over the longer period, however, as the excess supply conditions in the Midwest or the Northeast decline, investments in new capacity will be higher than they would otherwise have been. This investment increases output via the multiplier *and* the increase in capacity in the Northeast (Midwest) increases its share of the spillovers from the South (West) and reduces the share of spillovers captured by the Midwest (Northeast).

It should be noted that in this model, the principal interactions among the regions occur because of these demand spillovers to regions of initial underutilization of capacity. They completely dominate the kinds of inter-relationships usually discussed, that is, the demands from one region for the outputs of other regions, either by consumers or businesses.

If these assumptions about excess demands and supply are too extreme, that is, if the South and West are not suffering in fact from as severe a capacity shortage as assumed,

then the spillovers would be much smaller initially. Thus, the expenditure transfers from the South or West to the North or Midwest would result in increases (or decreases) in income and output more similar in magnitude to the transfer size.

Oakland and Chall have also analyzed the implications of the assumed expenditure shifts for the regions using the more traditional export base model, which assumes that the regions face no capacity constraints, i.e., they can meet any output level demanded. Not surprisingly, they find the region's output gain or loss is nearly equal to the federal transfer of expenditures and that the indirect effects on the other regions (through intermediate demands) are very small. Thus, a \$1 billion shift in federal expenditures from the South to the Northeast would result in nearly a \$1 billion loss for the South and a \$1 billion gain for the Northeast. There would also be some impact on the other regions; in this case, for example, a very small \$17 million increase in the gross regional product of the West and a small \$16 million decrease in the Midwest.

The authors are undoubtedly correct in arguing that capacity constraints may limit the ability to respond to changes in demands and that excess supply and demand conditions change over time through investment which adds to capacity. It is appropriate that these factors be incorporated into any model used to analyze the implications of demand shifts among regions. Since the validity of the key assumptions (about initial levels of excess supply and demand and about the ability of the excess supply regions to meet spillover demands from the excess demand regions) has not been demonstrated, the model's results are interesting but cannot be taken as definitive, in terms of either magnitude or interrelationships.

In another recent study, Holmer estimates the regional effects of federal expenditures and taxes by calculating the effects of a balanced budget increase of \$1 billion in federal procurement and construction expenditures, matched by an increase in federal taxes. The initial expenditure increases "are assumed to have the same regional and industrial composition as total expenditures," and the "tax increase is accomplished by a flat percentage surcharge on income tax liabilities."²¹

The regional implications are derived for 1975 using a set of regional input-output tables to work through the effects of the increased tax payments in reducing local, inter-industry, and nonlocal demands, and the effects of the increased expenditures on increasing local and nonlocal demands. Consistent with the balanced budget multiplier model, the overall national effect is to increase demand and employment. The net increase in national employment is about 60,000 jobs (a reduction of 67,450 due to the tax increase and an increase of 127,170 due to the expenditure increases). *Table 36*.

Despite these overall national gains, Indiana and Illinois show a slight decrease in their total employment. All other states or state combinations show an absolute increase, but these vary substantially in absolute and relative magnitude. The largest gainers in absolute terms are Louisiana, Hawaii, Oregon, Washington, and California. New York, New Jersey, Pennsylvania, Ohio, and Michigan gain employment, but just barely (they absorb a far higher proportion of the job decreases than of the job increases).

The last column of *Table 36* makes the regional distinctions most clear; it describes how the ratio of employment increases to employment decreases for each state or state combination compares with the national average ratio of employment increase to decrease. The upper half of the table covers state and state combinations in the Northeast and Midwest: in nearly every case the gains are below the national average. In the South and West (the bottom half of the table), the reverse is true, the gains are above the national average.

A study by Polenske has attempted to estimate the percentage of total labor earnings in a region which may be attributed to federal government expenditures.²² The estimates are based upon final demands in 17 regions, one of the final demands being federal government purchases. The study uses the national input-output tables and local employment, by industry, to produce the estimates. These are crude calculations: they are not based upon regional input-output relationships; the data used to estimate final demands in each of the regions are not identical; the interregional flows are only implicit; and there is no

way of knowing how much of a region's total labor earnings may be attributable to the indirect demands of another region which result from federal purchases. For all these reasons, the percentages estimated should be considered only suggestive.

The findings of this study for 1947, 1958, and 1962 support the generally perceived regional differences in the effect of federal expenditures. *Table 37*. The 1958 and 1962 figures, being more typical of the pattern after World War II, are probably more interesting for present purposes than those for 1947. The

highest proportions of total labor earnings deriving from the federal government are in the West, regions 13-17 on the table, and the lowest proportions are in the Midwest, regions 4 and 5. New England and the Southern states are generally somewhat above the national average and the Mideastern states, regions 3 and 4, are substantially below the average. The magnitudes of difference are large. In California and Nevada, about 25% of labor earnings are attributable to the federal government, compared with about 10% in Minnesota, Wisconsin, and Michigan.

Table 36

EMPLOYMENT CHANGES RESULTING FROM \$1 BILLION DECREASE IN TAXES, \$1 BILLION INCREASE IN FEDERAL PROCUREMENT AND CONSTRUCTION EXPENDITURES

Regions, States, or State Combinations	Tax Induced Decrease in Employment	Expenditure Induced Increase in Employment	Employment Increase Less Decrease	Percent Change Over Previous Level	
				Increase ÷ Decrease	Relative to U.S. Average Change
New England	3,650	+ 6,890	+3,240	1.89%	100%
New York	4,580	5,220	+940	1.14	60
New Jersey, Pennsylvania	4,920	4,940	+20	1.00	53
Ohio, Michigan	4,480	4,840	+360	1.08	57
Indiana, Illinois	4,400	4,040	-360	.92	49
Wisconsin, Minnesota	2,740	4,330	+1,590	1.58	84
Iowa, Missouri	2,600	6,520	+3,920	2.51	132
Kansas, Nebraska, South Dakota, North Dakota	2,170	5,530	+3,360	2.55	134
Delaware, District of Columbia, Maryland	2,560	4,950	+2,390	1.93	102
Virginia, West Virginia	2,570	3,980	+1,410	1.55	82
North Carolina	2,140	3,770	+1,630	1.76	93
South Carolina	1,750	3,380	+1,630	1.93	102
Georgia	1,440	4,170	+2,730	2.90	153
Florida	2,810	4,500	+1,790	1.60	84
Kentucky, Tennessee	2,210	4,660	+2,450	2.11	112
Alabama	1,650	3,280	+1,630	1.99	105
Mississippi	1,880	3,310	+1,430	1.76	93
Arkansas, Oklahoma	2,080	4,580	+2,500	2.20	116
Louisiana	1,710	8,080	+6,370	4.76	251
Texas	3,490	7,240	+3,750	2.07	109
Alaska, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming	3,410	7,230	+3,820	2.12	112
Hawaii, Oregon, Washington	2,480	10,350	+7,870	4.17	220
California	5,630	11,360	+5,730	2.02	107
United States Total	67,450	+127,170	+59,720	1.89%	100%

SOURCE: ACIR computations and reorganization of estimates made by Martin Holmer, "Preliminary Analysis of the Regional Economic Effects of Federal Procurement," paper presented at the Committee on Urban Public Economics Meeting, May 5-6, 1978, pp. 13-14.

Table 37

**PERCENTAGE OF TOTAL LABOR EARNINGS GENERATED BY
FEDERAL GOVERNMENT PURCHASES, 1947, 1958, 1962
ACTUAL YEAR DATA***

Region	States	Actual Year Data			Relative Change (1962-1947)
		1947	1958	1962	
1	New England	12.1%	19.2%	19.3%	60%
2	New York	12.5	15.6	14.8	18
3	New Jersey, Pennsylvania	10.9	15.1	14.1	29
4	Ohio, Indiana, Illinois	9.4	14.1	12.8	36
5	Minnesota, Wisconsin, Michigan	6.4	10.3	9.4	48
6	North and South Dakota, Kansas, Iowa, Nebraska	12.1	13.6	13.4	10
7	Georgia, North and South Carolina	19.9	18.1	17.2	-14
8	Maryland, Virginia, West Virginia, Delaware, District of Columbia	37.6	33.8	32.7	-13
9	Florida	31.0	20.5	21.0	-32
10	Kentucky, Tennessee	16.9	16.0	14.8	-13
11	Mississippi, Alabama, Louisiana	16.3	16.9	16.0	-2
12	Arkansas, Oklahoma, Missouri	15.4	18.8	17.8	15
13	Texas	16.3	19.6	19.5	20
14	Idaho, Montana, Wyoming	12.4	13.4	14.9	20
15	Utah, Colorado, New Mexico, Arizona	15.5	24.6	25.9	66
16	Oregon, Washington	18.5	22.6	21.3	15
17	California, Nevada	23.9	26.9	24.4	2
	Total	14.9	18.2	17.4	16

* Before calculating the percentages for each region, the direct labor earnings are added to the labor earnings generated directly and indirectly by the final purchases of goods and services.

SOURCE: Karen R. Polenske, *Shifts in the Regional and Industrial Impact of Federal Government Spending*, Washington, DC, U.S. Department of Commerce, March 1969, mimeo, Table 3.

Thus, three separate studies addressing different aspects of the question of the regional effect of federal spending all produce qualitatively similar findings, albeit subject to reservations as to model and data adequacy. Many Southern states and most Western ones gain substantially more from the existing pattern of federal expenditures than do the Mideast and the Midwest states, as measured by the proportion of total labor earnings in the region attributable to federal expenditures in the Polenske study. In terms of employment gains, in the Holmer study, the South and the West benefit far more than average from a balanced budget increase in federal procurement and construction expenditures (matched by an equivalent increase in taxes) while the Mideast and the Midwest benefit

far less than average. The Oakland-Chall study, which considers shifts in federal expenditures from one region (the South or the West) to another (the Northeast or the Midwest) shows that over a five to ten-year interval the regions in which expenditures increased would experience a growth in gross regional output. The reverse would be true for regions in which expenditure was decreased. In both cases, however, the magnitude would be smaller than the expenditure shift. It indicates further that gains in the Northeast (the Midwest) are made in part at the expense of the Midwest (the Northeast).

None of these studies tell us, on balance, how much of the recorded past divergence in regional growth patterns can be attributed to differences in overall federal flows of funds.

They do, however, appear to sustain the belief that federal expenditure-revenue patterns have differential regional effects; that they

have substantially greater positive effects on the states of the South and the West than on those of the Northeast and the Midwest.

FOOTNOTES

- ¹See, for example, Jeffery G. Williamson, "Inequity, Accumulation and Technological Imbalance: A Growth-Equity Conflict in American History?", *Economic Development and Cultural Change*, Chicago, IL, University of Chicago, Vol. 27, No. 2, January 1979.
- ²Robert B. Bretzfelder, "Sensitivity of State and Regional Income to National Business Cycles," *Survey of Current Business*, Washington, DC, U.S. Department of Commerce, April 1973. The data cover the period from 1948-IV through 1970-IV. They do not include the 1973-75 recession.
- ³This is not true for employment.
- ⁴These data are compiled from a study by George Vernez, Roger Vaughan, Burke Burright, and Sinclair Coleman, *Regional Cycles and Employment Effects of Public Works Investments*, Santa Monica, CA, The Rand Corporation, January 1977.
- ⁵Richard F. Syron, "Regional Experience During Business Cycles—Are We Becoming More Alike?", *New England Economic Review*, Boston, MA, Federal Reserve Bank of Boston, November/December 1978.
- ⁶Note that when measured in employment terms, recessions mean absolute national declines. Therefore, in Table 29, the higher the index value the worse the region's performance, that is, its employment declined faster than the national average declined.
- ⁷Note that the picture is not qualitatively changed if in fact the Rocky Mountain states are included. They increased their employment during expansions at 2.9 times the rate of the slowest growing region and during contractions, the largest regional percentage decline in nonagricultural employment is six times that of the Rocky Mountain states.
- ⁸Estimates of the relationship between national and state rates of employment change have been made by Vernez, et al. They are discussed in the appendix to this section.
- ⁹A further consideration, quite apart from the issues raised with respect to leakages and the net effects of being part of a highly integrated national economy, is that the observed surpluses and deficits are *ex post* results and the question of whether or not the policy is stimulating or inhibiting, with respect to income and employment, cannot be directly or simply inferred from the observed surplus or deficit. Consider an economy in which policy is highly deflationary, that is, govern-
- ¹⁰For an example of such effects in the defense sector, see A. Alchian, "Reliability of Progress Curves in Airframe Production," *Econometrica*, Bristol, England, Arrow-smith Ltd., Vol. 31, October 1963.
- ¹¹The other objectives are efficient allocation of resources and economic stabilization. See Richard A. Musgrave, *The Theory of Public Finance*, New York, NY, McGraw-Hill, 1959.
- ¹²These figures are taken from I. M. Labovitz, "Federal Expenditures and Revenues and States," Advisory Commission on Intergovernmental Relations, *Intergovernmental Perspective*, Washington, DC, U.S. Government Printing Office, Fall 1978, p. 22.
- ¹³These estimates are shown in the appendix to this section.
- ¹⁴This does not permit inference about changes in the redistributive effect of the tax system among individuals or families.
- ¹⁵The position of Delaware partly reflects less adequate state-by-state data on stockholdings and retail sales in earlier flows-of-funds analyses.
- ¹⁶The estimated statistical relationships are shown in the appendix to this section.
- the lowest "return" on its tax dollar received 56 cents in federal expenditures per dollar of taxes and the state with the highest return received \$1.97. In 1975, the figures were 65 cents and \$1.93.
- ¹⁸For simplicity we omit the role of regional governments' revenues and expenditures.
- ¹⁹William H. Oakland and Daniel E. Chall, "Regional Impact of Federal Expenditures," Washington, DC, Academy for Contemporary Problems (draft, mimeo), no date.
- ²⁰In terms of the present discussion a comparison of the implications of the current expenditure-revenue ratios with equal ratios (that is, all equal to 1) would be of interest. It would not necessarily be locationally neutral.
- ²¹Martin Holmer, "Preliminary Analysis of the Regional Economic Effects of Federal Procurement," paper presented at the Committee on Urban Public Economics Meetings, May 5-6, 1978, pp. 13-14.
- ²²Karen R. Polenske, "Shifts in the Regional and Industrial Impact of Federal Government Spending" (mimeo), March 1969.

CONCLUSIONS

As we look at the trends in regional economic development over the last 25, 50, 75 years, we conclude that the nation and its regions have moved in the right direction. *To evolve from a country of very substantial disparities in regional economic development and per capita incomes to one in which economic activity has dispersed across the nation, with its benefits relatively evenly spread, is a singular accomplishment.* These movements have been relatively continuous, they did not occur overnight, and indeed they continue.

The achievement of relative compactness among regional per capita incomes—whether measured in nominal or real terms—is cause for satisfaction rather than despair. Clearly it would be desirable to keep future differences within reasonably narrow bounds, although perfect equality is not to be expected in a dynamic economy and the regions may shift rankings.

Despite the many indications that the regions of the nation are converging in their economic development in terms of both levels and rates of change (as indicated both in the trends section and in the shift-share analyses examined), there appears to be increasing

concern for the continued decline of the older industrial regions, indeed a fear of regional divergence.

In many respects, the discussion of regional disparities is, in fact, a discussion of other deep-rooted national economic problems that concern race and poverty and their growing concentration in certain older cities. In contrast, the point must be emphasized that this study has for its central aim the investigation of the regional questions raised by the Frost-belt-Sunbelt controversy. The state has been the smallest unit of analysis. We have not been considering cities vs. suburbs or urban-rural disparities but rather broader regional aggregations. *Despite the fact that there is enormous diversity within regions and within states, the broader regional patterns of convergence, not divergence, have clearly emerged.*

The growing fears of regional divergence in recent years may arise largely from the general slowing of national growth. Nearly two decades ago Perloff highlighted two outstanding phenomena of the period, 1870 to 1957. One was the remarkable growth of the Western half of the nation. The other was the maintenance of dominance in the economic position of the Eastern half of the nation. The latter was largely attributable to the very large absolute increases in population and in employment despite the East's lower growth rates.

Since Perloff's observation, the regions' economic bases have become more similar as a result of continued differential growth rates. Thus, continued differences in growth rates now imply much smaller absolute growth in the Northeast and Midwest and much larger absolute growth in the South and West than they did in earlier decades. Moreover, the national economic slowdown of the last decade has produced even smaller absolute growth.

As a result of these changes, the Northeast and Midwest, the older industrial regions, are far more conscious of potential stagnation or decline, not simply in relative terms but in absolute terms. These regional shifts in economic activity also carry with them important shifts in economic and political power, e.g., through the reapportionment

of the votes in the House of Representatives.

The economic catch-up of the South and West has made competition among the regions more active and more obvious. When the South was much poorer, its need for assistance from the rest of the nation was clear, as was the ability of the rest of the nation to provide assistance. *The reduction of regional differences and the generally slower growth, with its disproportionate effect on the Northeast and Midwest regions, brings distributional questions to the fore and calls into question both the need of the South and the means of the North.* Against this background, the generally larger federal role in the nation's economy focuses attention on the influence and responsibility of the federal government for regional economic development.

Continued slow national economic growth could result in the Northeast and Midwest dropping below other regions in relative economic well-being. Predictions of slower growth rates for the 1980s and 1990s are contained in a recent study by the Joint Economic Committee.¹ A decline from the 4% of recent decades to perhaps 3% in the 1980s and even less in the 1990s is envisioned.

In 1974, the Bureau of Economic Analysis published a set of regional population, employment, and income forecasts to the year 1990. They indicated that, in terms of long-term regional disparities, rates of growth would continue to differ among the regions, per capita incomes would move closer together, but the differences in growth rates would be moderate. Moreover, despite the continued faster growth in per capita incomes in the Southeast and Southwest, the two regions would still have the lowest regional levels of per capita income in 1990, with the Mideast, New England, and the Far West still at the top of the range.

These projections are consistent with earlier literature on regional economic development disparities. They found the historical data showing movement toward greater equality and eventual equilibrium, rather than toward new divergences more recently anticipated by the public debate.

In evaluating their earlier forecasts, the Department of Commerce has found that they contain some substantial over and under-

estimates.² Moreover, the observed deviations between actual and projected income, population, and employment figures for the 1971-75 period are regionally biased. It concluded that, "If recent trends [slow growth] continue into the future, then the 1980 projections for the Northeast-Great Lakes industrial states would be too high; those for the fast-growing southern and western states would be too low; and those for the remaining states would be approximately on trend."

Most suggestions to cope with current regional growth disparities are designed to help distressed areas, particularly the central cities. They concentrate on the micro-economic level, on regional development banks, or changes in federal procurement policies, or the location of military bases, or special investment tax credits for distressed areas. Each proposal presumably would help prevent a reversal of the fortunes of one or more of the nation's regions.

Such suggestions are open to several objections however: (1) they exacerbate political conflict and sectionalism; (2) they hamper the necessary adjustments within, and between regional economies and thus, reduce overall economic efficiency; (3) they ignore some of the important natural correctives already built into the nation's economy, e.g., the progressive tax system; and (4) their potential payoff is uncertain at best.

The most important regional policy both in terms of national acceptance and regional efficiency may well be the maintenance of a rapidly growing national economy. This has immediate payoff to the older industrial regions in employment and income growth. Our study found that these regions have been relatively robust in the last 25 years only during periods of rapid national growth. Moreover, a strong national economy would also provide a cushion against which some

necessary restructuring of regional economies could take place.

Given the evidence on differences in regional response to national economic conditions, it may well be that macro-economic policy would in fact be implemented more effectively if it had a regional orientation. Some of the micro-economic remedies indicated above could serve this purpose. They may thus be more promising as supplements to an aggregate growth policy than they would be in the slowly growing national economy anticipated for the next decade or two.

An important area for continuing investigation must be the trend toward divergence or convergence in the underlying prices of land, labor, and capital as well as other costs of doing business in the various regions. If they are becoming more similar (and there is some evidence to support this with respect to wages), then the forces pointing to relative equilibrium are reinforced. If they are becoming more disparate, then the future may be more worrisome.

Given their greater sensitivity to fluctuations in aggregate economic activity, the most apparent danger to the Frostbelt states in the near term is two-fold, namely that (1) the need to contain inflationary pressure may force the managers of the national economy to pursue policies which trade off a reduction in inflation for more rapid national growth, and (2) the relatively slow national growth currently forecast for the next decade or two will actually occur.

Thus, despite the achievement of a very substantial overall reduction in regional economic disparities over the past century, complacency with respect to the future is not warranted. The persistence of earlier disparities over nearly a century would argue for carefully monitoring regional economic developments and being alert for signs of new divergences as contrasted with equilibrium.

FOOTNOTES

¹U.S. Congress, Joint Economic Committee, "U.S. Growth from 1976 to 1986: Prospects, Problems, and

Patterns," Washington, DC, U.S. Government Printing Office, 1976.

²Regional Economic Analysis Division, U.S. Department of Commerce, "Tracking the BEA State Economic Projects," *Survey of Current Business*, Vol. 55, No. 4, Washington, DC, U.S. Department of Commerce, April 1976, pp. 22-29.

Appendix:

Revenue and Expenditure Equations

The following equations were estimated to evaluate the strength of the relationships between federal flows-of-funds to, and from, the states and state per capita incomes.

1. $(T_i/P_i) / (T/P)_t = a_t + b_t (Y_i/Y)_t$,
2. $(E_i/P_i) / (E/P)_t = a_t + b_t (Y_i/Y)_t$,
3. $(E_i/T_i) = a_t + b_t (Y_i/Y)_t$,

where

T_i = total revenues paid by residents of state i to the federal government

P_i = population of state i

T = total federal government revenue receipts

P = national population

Y_i = per capita income in state i

Y = average U.S. per capita income

E_i = total federal expenditures in state i

E = total federal expenditures

t = 1952, 1960, 1970, 1975

Revenues:

The estimates of equation (1) follow.

	1952	1960	1970	1975
Constant terms (a)	-45.16	-29.94	-37.14	-16.44
Coefficient of relative per capita income (b)	1.50*	1.38*	1.38*	1.17*
	(9.718)	(25.261)	(20.251)	(15.786)
R²	.67	.93	.89	.88

*Significant at 1% level (t - values in parentheses). Alaska, Hawaii, and District of Columbia excluded.

The relationship between per capita incomes and per capita federal revenues (largely taxes) is very close. Since 1960, about 90% of the variation in per capita revenues among states is associated with the variation in their per capita incomes. In 1952, state per capita income 1% above average was associated with per capita federal revenue payments 1.5% above average. In 1975, state per capita income 1% above average was associated with per capita federal revenue payments of only 1.17% above average. As the range of state per capita incomes has narrowed so has the range of per capita federal revenue payments.

Expenditures:

The estimates of equation (2) follow.

	1952	1960	1970	1975
Constant (a)	52.46	39.61	60.04	77.02
Coefficient of per capita income (b)	.50*	.65*	.39	.21
	(3.45)	(3.31)	(1.89)	(1.20)
R²	.21	.19	.07	.03

*Significant at 1% level (t - values in parentheses). Alaska, Hawaii, and District of Columbia excluded.

Over the years the relationship between the federal expenditures per capita and state per capita incomes has been weak. In 1960 and 1952, about 20% of the expenditure variation was associated with income variation. By 1970, less than 10% of the expenditure variation was associated with income variation.

In all the years that the relationship is positive, i.e., the higher state per capita income, the higher per capita federal expenditures. The difference between the earlier and later years probably is due to the increase in redistributive, nonprocurement, type expenditures. The positive relationship in the earlier periods was probably due to the importance of procurement expenditures and the dominance of the more industrialized states as the major sources of these goods.

Expenditure-to-Revenue Ratio:

The estimates of equation (3) follow.

	1952	1960	1970	1975
Constant (a)	2.76	1.99	2.25	2.09
Coefficient of per capita income (b)	-.016*	-.009*	-.012*	-.011*
	(-6.136)	(-3.922)	(-5.246)	(-5.274)
R²	.45	.25	.37	.38

*Significant at 1% level (t - values in parentheses). Alaska, Hawaii, and District of Columbia excluded.

A fairly high proportion of the variation in federal expenditure to revenue ratios is associated with variations in state per capita incomes; about 40%. Given the earlier findings, this overall relationship must be due almost entirely to the close association between per capita income and per capita federal revenues. The higher the state per capita income, the lower the expenditure to revenue ratio. A state per capita income 1% above average is associated with a federal expenditure to revenue ratio about 1% lower than average (1.1% in 1975, 1.2% in 1970, 0.9% in 1960, and 1.6% in 1952).

In view of the estimated equations that show higher state per capita income associated with higher per capita federal expenditures and taxes, the revenue relationship comprises the denominator of the expenditure ratio, the overall negative relationship between expenditure to revenue ratios and state per capita income largely reflects the tax relationship.

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Table A-1

**AVERAGE ANNUAL RATE OF GROWTH IN PER CAPITA INCOME, BY REGION AND STATE,
SELECTED PERIODS, 1950-78**

Region and State	Average Annual Per Capita Income Growth				Average Annual Per Capita Income Growth Relative to U.S. Average			
	1950-60	1960-70	1970-75	1975-78	1950-60	1960-70	1970-75	1975-78
UNITED STATES	4.00%	5.90%	8.20%	9.91%	100	100	100	100
NEW ENGLAND	4.20	5.80	7.20	9.01	105	98	88	91
Connecticut	4.23	5.65	7.24	8.62	106	96	88	87
Maine	4.62	5.90	7.72	9.53	116	100	94	96
Massachusetts	4.18	5.84	7.09	9.04	105	99	86	91
New Hampshire	4.90	5.76	7.29	11.46	123	98	89	116
Rhode Island	3.28	5.97	8.08	8.57	82	101	99	86
Vermont	5.12	6.50	7.41	9.80	128	110	90	99
MIDEAST	3.80	5.60	7.50	8.56	96	95	91	86
Delaware	2.72	4.97	8.33	8.13	68	84	102	82
District of Columbia	2.99	5.46	8.80	8.62	175	73	107	87
Maryland	3.87	6.29	8.49	8.90	97	107	104	90
New Jersey	4.05	5.60	7.42	9.28	101	95	90	94
New York	3.88	5.57	6.86	7.80	77	94	84	79
Pennsylvania	3.95	5.76	8.40	9.21	99	78	102	93
GREAT LAKES	3.60	5.60	8.10	10.35	90	95	99	104
Illinois	3.78	5.47	8.54	9.46	95	93	104	95
Indiana	3.72	5.65	8.43	10.88	93	96	103	110
Michigan	3.32	5.90	8.11	11.18	83	100	99	113
Ohio	3.76	5.54	7.65	10.57	94	94	93	107
Wisconsin	4.01	5.71	8.26	9.94	100	97	101	100
PLAINS	3.70	6.10	9.00	9.76	93	104	110	98
Iowa	2.94	6.58	10.13	9.61	74	112	125	97
Kansas	4.11	5.96	9.35	9.38	103	101	114	95
Minnesota	3.94	6.40	8.52	10.85	99	108	104	109
Missouri	3.97	6.00	7.82	9.90	99	102	95	100
Nebraska	3.54	6.03	9.94	7.60	89	102	121	77
North Dakota	3.04	6.11	13.19	7.76	76	104	161	78
South Dakota	3.68	5.76	9.55	11.69	92	98	116	118

Table A-2

**PER CAPITA PERSONAL INCOME, BY REGION AND STATE,
SELECTED YEARS, 1950-78**

Region and State	Per Capita Amounts						Per Capita Amounts Relative to U.S. Average					
	1950	1960	1970	1975	1977	1978	1950	1960	1970	1975	1977	1978
UNITED STATES	\$1,496	\$2,222	\$3,966	\$5,902	\$7,135	\$ 7,836	100	100	100	100	100	100
NEW ENGLAND	1,601	2,435	4,300	6,098	7,316	7,900	107	110	108	103	103	101
Connecticut	1,874	2,838	4,917	6,974	8,208	8,911	125	128	124	118	115	114
Maine	1,185	1,862	3,302	4,788	5,922	6,292	79	84	83	81	83	80
Massachusetts	1,633	2,461	4,340	6,113	7,330	7,924	109	111	109	103	103	101
New Hampshire	1,323	2,135	3,737	5,313	6,616	7,357	88	96	94	90	93	94
Rhode Island	1,606	2,216	3,959	5,839	7,155	7,472	107	100	100	99	100	95
Vermont	1,121	1,848	3,469	4,960	6,070	6,566	75	83	87	84	85	84
MIDEAST	1,756	2,573	4,471	6,433	7,731	8,230	117	116	113	109	108	105
Delaware	2,131	2,786	4,524	6,750	7,854	8,534	142	125	114	114	110	109
District of Columbia	2,221	2,983	5,078	7,743	9,565	9,924	148	134	128	131	134	127
Maryland	1,602	2,341	4,309	6,475	7,766	8,363	107	105	108	110	109	107
New Jersey	1,834	2,727	4,701	6,722	8,097	8,773	123	123	118	114	114	112
New York	1,873	2,740	4,712	6,564	7,826	8,224	125	123	118	111	110	105
Pennsylvania	1,541	2,269	3,971	5,943	7,233	7,740	103	102	100	101	101	99
GREAT LAKES	1,666	2,392	4,135	6,121	7,621	8,224	111	108	104	104	107	105
Illinois	1,825	2,646	4,507	6,789	8,277	8,903	122	119	114	115	116	114
Indiana	1,512	2,178	3,772	5,653	6,987	7,706	101	98	95	95	98	98
Michigan	1,700	2,357	4,180	6,173	7,953	8,483	114	106	105	104	112	108
Ohio	1,620	2,345	4,020	5,810	7,224	7,855	108	106	101	98	101	100
Wisconsin	1,477	2,188	3,812	5,668	7,028	7,532	99	98	96	96	98	96
PLAINS	1,428	2,056	3,751	5,785	6,759	7,650	95	93	95	98	95	98
Iowa	1,485	1,983	3,751	6,077	7,042	8,002	99	89	94	103	98	102
Kansas	1,443	2,160	3,853	6,023	7,166	7,882	96	97	97	102	100	101
Minnesota	1,410	2,075	3,859	5,807	6,829	7,910	94	93	97	98	96	101
Missouri	1,431	2,111	3,781	5,510	6,690	7,313	96	95	95	93	94	93
Nebraska	1,491	2,110	3,789	6,086	6,776	7,582	100	95	95	103	95	97
North Dakota	1,263	1,705	3,086	5,733	5,675	7,174	84	77	77	97	80	92
South Dakota	1,243	1,783	3,123	4,927	5,257	6,864	83	80	78	83	74	88

SOUTHEAST	1,022	1,629	3,257	5,055	6,135	6,773	68	73	82	86	86	86
Alabama	880	1,519	2,948	4,643	5,718	6,291	59	68	74	79	80	80
Arkansas	826	1,390	2,878	4,620	5,616	5,969	55	62	72	78	79	76
Florida	1,281	1,947	3,738	5,638	6,787	7,573	86	88	94	95	95	97
Georgia	1,034	1,651	3,354	5,086	6,105	6,705	69	74	84	86	86	86
Kentucky	981	1,586	3,112	4,871	6,079	6,607	66	71	78	82	85	84
Louisiana	1,120	1,668	3,090	4,904	5,894	6,716	75	75	77	83	83	86
Mississippi	755	1,222	2,626	4,051	5,089	5,529	50	55	66	69	71	71
North Carolina	1,037	1,590	3,252	4,952	6,071	6,575	69	71	81	84	85	84
South Carolina	893	1,397	2,990	4,618	5,668	6,288	60	62	75	78	79	80
Tennessee	994	1,576	3,119	4,895	5,969	6,547	66	70	78	83	84	84
Virginia	1,228	1,864	3,712	5,785	6,870	7,671	82	83	93	98	96	98
West Virginia	1,065	1,621	3,061	4,918	5,897	6,624	71	72	77	83	83	85
SOUTHWEST	1,297	1,927	3,546	5,487	6,612	7,527	87	87	89	93	93	96
Arizona	1,331	2,012	3,665	5,354	6,405	7,372	89	90	92	91	90	94
New Mexico	1,177	1,843	3,077	4,774	5,755	6,574	79	82	77	81	81	84
Oklahoma	1,143	1,876	3,386	5,250	6,313	7,137	76	84	85	89	89	91
Texas	1,348	1,936	3,606	5,631	6,794	7,730	90	87	90	95	95	99
ROCKY MOUNTAIN	1,457	2,099	3,590	5,577	6,661	7,478	97	94	91	94	93	95
Colorado	1,487	2,252	3,855	5,986	7,133	8,105	99	101	97	101	100	103
Idaho	1,295	1,850	3,290	5,157	6,258	7,015	87	83	82	87	88	90
Montana	1,622	2,035	3,500	5,420	6,175	6,755	108	91	88	92	87	86
Utah	1,309	1,979	3,226	4,923	5,992	6,566	88	89	81	83	84	84
Wyoming	1,669	2,248	3,814	6,134	7,475	8,636	112	101	96	104	105	110
FAR WEST	1,793	2,613	4,384	6,523	7,821	8,826	119	118	111	111	110	113
California	1,852	2,706	4,493	6,593	7,940	8,927	124	122	113	112	111	114
Nevada	2,018	2,797	4,564	6,647	8,202	9,439	135	126	115	113	115	120
Oregon	1,620	2,220	3,719	5,770	6,931	8,092	108	100	93	98	97	103
Washington	1,674	2,360	4,053	6,247	7,515	8,495	112	106	102	106	105	108
Alaska	2,385	2,808	4,645	9,443	9,553	10,963	159	126	117	160	134	140
Hawaii	1,387	2,369	4,623	6,660	7,469	8,437	93	107	116	113	105	108

SOURCE: ACIR staff computations based on data from Tables A-3 and A-6.

Table A-3

**PERSONAL INCOME IN CURRENT DOLLARS, BY REGION AND STATE,
SELECTED YEARS, 1950-78**
(in millions)

Region and State	1950	1960	1970	1975	1977	1978
UNITED STATES	\$226,214	\$399,947	\$808,223	\$1,257,354	\$1,518,390	\$1,708,545
NEW ENGLAND	14,911	25,645	51,096	74,319	87,932	96,820
Connecticut	3,779	7,219	14,952	21,584	25,055	27,612
Maine	1,087	1,815	3,292	5,071	6,221	6,867
Massachusetts	7,654	12,697	24,767	35,568	41,964	45,751
New Hampshire	704	1,300	2,773	4,346	5,547	6,409
Rhode Island	1,262	1,895	3,765	5,413	6,332	6,984
Vermont	425	719	1,547	2,336	2,814	3,197
MIDEAST	59,268	99,306	190,104	274,420	318,332	347,485
Delaware	684	1,251	2,493	3,908	4,477	4,972
District of Columbia	1,790	2,282	3,839	5,544	6,210	6,684
Maryland	3,772	7,288	16,968	26,533	31,337	34,646
New Jersey	8,934	16,645	33,814	49,181	58,589	64,281
New York	27,841	46,135	86,078	118,958	135,089	145,963
Pennsylvania	16,189	25,706	46,913	70,296	82,630	90,939
GREAT LAKES	50,849	86,822	166,681	250,838	301,646	339,119
Illinois	15,948	26,688	50,149	75,666	87,346	100,091
Indiana	5,998	10,178	19,624	30,023	36,890	41,412
Michigan	10,895	18,463	37,158	56,526	69,554	77,943
Ohio	12,930	22,822	42,869	62,514	75,809	84,432
Wisconsin	5,078	8,670	16,882	26,109	32,047	35,241
PLAINS	20,139	31,712	61,373	96,533	115,316	130,194
Iowa	3,897	5,466	10,623	17,440	19,802	23,170
Kansas	2,765	4,715	8,665	13,655	16,594	18,505
Minnesota	4,227	7,107	14,721	22,793	28,337	31,703
Missouri	5,672	9,134	17,726	26,244	31,943	35,538
Nebraska	1,978	2,990	5,638	9,384	10,491	11,868
North Dakota	782	1,081	1,913	3,652	4,044	4,677
South Dakota	814	1,218	2,086	3,365	4,104	4,733

SOUTHEAST	34,589	63,343	143,231	241,406	295,466	334,155
Alabama	2,691	4,974	10,175	16,779	20,745	23,540
Arkansas	1,575	2,486	5,560	9,775	11,878	13,047
Florida	3,599	9,741	25,596	47,055	56,496	65,084
Georgia	3,574	6,533	15,453	25,052	30,358	34,087
Kentucky	2,881	4,823	10,056	16,541	20,561	23,114
Louisiana	3,021	5,439	11,285	18,591	23,187	26,638
Mississippi	1,643	2,667	5,830	9,504	12,019	13,290
North Carolina	4,219	7,270	16,578	26,995	32,791	36,671
South Carolina	1,886	3,341	7,765	13,014	16,186	18,346
Tennessee	3,295	5,636	12,281	20,501	24,869	28,527
Virginia	4,070	7,430	17,294	28,732	35,246	39,492
West Virginia	2,136	3,003	5,360	8,867	11,129	12,318
SOUTHWEST	14,850	27,435	58,925	100,523	127,032	146,478
Arizona	1,006	2,658	6,568	11,908	14,943	17,352
New Mexico	811	1,758	3,148	5,476	6,970	7,969
Oklahoma	2,547	4,382	8,693	14,237	17,839	20,556
Texas	10,486	18,636	40,515	68,903	87,280	100,601
ROCKY MOUNTAIN	5,092	9,132	18,088	31,686	39,123	45,343
Colorado	1,970	3,984	8,569	15,168	18,752	21,645
Idaho	764	1,241	2,362	4,234	5,128	6,156
Montana	962	1,382	2,443	4,054	4,661	5,299
Utah	911	1,781	3,439	5,937	7,510	8,585
Wyoming	484	744	1,274	2,294	3,073	3,658
FAR WEST	47,592	56,553	118,725	187,632	222,459	268,952
California	39,774	42,947	89,892	139,337	173,214	199,010
Nevada	327	814	2,250	3,935	5,059	6,229
Oregon	2,482	3,934	7,814	13,201	16,651	19,775
Washington	3,995	6,737	13,834	22,158	27,534	32,058
Alaska	322	643	1,412	3,324	4,311	4,415
Hawaii	692	1,478	3,523	5,674	6,773	7,465

SOURCE: 1950-75: U. S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, Regional Economic Division.

1978: *Survey of Current Business*, August 1979, Part II.

Table A-4

**PERSONAL INCOME AS A PERCENT OF U.S. TOTAL, BY REGION AND STATE,
SELECTED YEARS, 1950-78**

Region and State	1950	1960	1970	1975	1977	1978
UNITED STATES	100.0%	100%	100.0%	100.0%	100.0%	100.0%
NEW ENGLAND	6.6	6.4	6.3	5.9	5.8	5.7
Connecticut	1.7	1.8	1.8	1.7	1.7	1.6
Maine	0.5	0.5	0.4	0.4	0.4	0.4
Massachusetts	3.4	3.2	3.1	2.8	2.7	2.7
New Hampshire	0.3	0.3	0.3	0.3	0.4	0.4
Rhode Island	0.6	0.5	0.5	0.4	0.4	0.4
Vermont	0.2	0.2	0.2	0.2	0.2	0.2
MIDEAST	26.2	24.8	23.5	21.8	21.3	20.3
Delaware	0.3	0.3	0.3	0.3	0.3	0.3
District of Columbia	0.8	0.6	0.5	0.4	0.4	0.4
Maryland	1.7	1.8	2.1	2.1	2.1	2.0
New Jersey	3.9	4.2	4.2	3.9	3.8	3.8
New York	12.3	11.5	10.7	9.5	9.1	8.5
Pennsylvania	7.2	6.4	5.8	5.6	5.5	5.3
GREAT LAKES	22.5	21.7	20.6	19.9	20.3	19.8
Illinois	7.0	6.7	6.2	6.0	6.0	5.9
Indiana	2.7	2.5	2.4	2.4	2.4	2.4
Michigan	4.8	4.6	4.6	4.5	4.7	4.6
Ohio	5.7	5.7	5.3	5.0	5.0	4.9
Wisconsin	2.2	2.2	2.1	2.1	2.1	2.1
PLAINS	8.9	7.9	7.6	7.7	7.4	7.6
Iowa	1.7	1.4	1.3	1.4	1.3	1.4
Kansas	1.2	1.2	1.1	1.1	1.1	1.1
Minnesota	1.9	1.8	1.8	1.8	1.8	1.9
Missouri	2.5	2.3	2.2	2.1	2.1	2.1
Nebraska	0.9	0.7	0.7	0.7	0.7	0.7
North Dakota	0.3	0.3	0.2	0.3	0.2	0.3
South Dakota	0.4	0.3	0.3	0.3	0.2	0.3

SOUTHEAST	15.3	15.8	17.7	19.2	19.4	19.6
Alabama	1.2	1.2	1.3	1.3	1.4	1.4
Arkansas	0.7	0.6	0.7	0.8	0.8	0.8
Florida	1.6	2.4	3.2	3.7	3.7	3.8
Georgia	1.6	1.6	1.9	2.0	2.0	2.0
Kentucky	1.3	1.2	1.2	1.3	1.4	1.4
Louisiana	1.3	1.4	1.4	1.5	1.5	1.6
Mississippi	0.7	0.7	0.7	0.8	0.8	0.8
North Carolina	1.9	1.8	2.1	2.1	2.2	2.1
South Carolina	0.8	0.8	1.0	1.0	1.1	1.1
Tennessee	1.5	1.4	1.5	1.6	1.7	1.7
Virginia	1.8	1.9	2.1	2.3	2.3	2.3
West Virginia	0.9	0.8	0.7	0.7	0.7	0.7
SOUTHWEST	6.6	6.9	7.3	8.0	8.2	8.6
Arizona	0.4	0.7	0.8	0.9	1.0	1.0
New Mexico	0.4	0.4	0.4	0.4	0.4	0.5
Oklahoma	1.1	1.1	1.1	1.1	1.1	1.2
Texas	4.6	4.7	5.0	5.5	5.6	5.9
ROCKY MOUNTAIN	2.3	2.3	2.2	2.5	2.6	2.7
Colorado	0.9	1.0	1.1	1.2	1.2	1.3
Idaho	0.3	0.3	0.3	0.3	0.3	0.4
Montana	0.4	0.3	0.3	0.3	0.3	0.3
Utah	0.4	0.4	0.4	0.5	0.5	0.5
Wyoming	0.2	0.2	0.2	0.2	0.2	0.2
FAR WEST	12.2	14.1	14.7	14.9	15.1	15.7
California	8.7	10.7	11.1	11.1	11.3	11.6
Nevada	0.1	0.2	0.3	0.3	0.3	0.4
Oregon	1.1	1.0	1.0	1.0	1.1	1.2
Washington	1.8	1.7	1.7	1.8	1.8	1.9
Alaska	0.1	0.2	0.2	0.3	0.3	0.3
Hawaii	0.3	0.4	0.4	0.5	0.4	0.4

SOURCE: Compiled by ACIR staff from Table A-3.

Table A-5

**PERSONAL INCOME, AVERAGE QUARTERLY RATES OF GROWTH, BY REGION AND STATE,
1975 FIRST QUARTER TO 1977 THIRD QUARTER**

Region and State	Rates of Growth			Relative to U.S. Average		
	1975 I- 1977 III	1975 I- 1976 III	1976 III- 1977 III	1975 I- 1977 III	1975 I- 1976 III	1976 III- 1977 III
UNITED STATES	2.47	2.51	2.42	100	100	100
NEW ENGLAND	2.10	2.03	2.21	85	80	91
Connecticut	1.95	1.76	2.24	79	70	92
Maine	2.55	2.95	1.95	103	117	81
Massachusetts	2.02	1.81	2.33	82	72	96
New Hampshire	3.18	3.33	2.96	129	132	122
Rhode Island	1.81	2.28	1.11	73	90	46
Vermont	2.42	2.84	1.80	98	113	74
MIDEAST	1.94	2.12	1.68	79	84	70
Delaware	1.87	2.00	1.66	75	79	69
District of Columbia	1.67	2.64	0.24	68	105	10
Maryland	2.06	2.31	1.70	84	92	70
New Jersey	2.30	2.20	2.46	93	87	102
New York	1.61	1.84	1.27	65	73	52
Pennsylvania	2.22	2.42	1.94	90	96	80
GREAT LAKES	2.38	2.58	2.07	96	102	86
Illinois	1.84	2.56	0.78	75	102	32
Indiana	2.72	2.66	2.82	110	105	116
Michigan	2.74	2.95	2.44	111	117	101
Ohio	2.40	2.21	2.69	97	88	111
Wisconsin	2.64	2.68	2.57	107	106	106
PLAINS	2.41	2.14	2.82	98	85	117
Iowa	2.17	2.77	1.29	88	110	53
Kansas	2.43	2.35	2.55	98	93	106
Minnesota	2.65	1.99	3.65	107	79	151
Missouri	2.80	2.69	2.97	113	106	123
Nebraska	1.52	1.21	1.99	61	48	82
North Dakota	1.15	-0.53	3.73	47	-21	154
South Dakota	2.58	0.24	6.19	104	9	256

SOUTHEAST	2.75	2.79	2.71	111	111	112
Alabama	2.91	2.88	2.96	118	114	122
Arkansas	2.96	2.75	3.29	120	109	136
Florida	2.44	2.29	2.68	99	91	111
Georgia	2.68	2.83	2.50	108	112	103
Kentucky	3.01	3.40	2.44	122	135	101
Louisiana	2.87	2.62	3.26	116	104	135
Mississippi	2.83	2.65	3.10	114	105	128
North Carolina	2.70	2.97	2.31	109	118	95
South Carolina	3.02	3.38	2.49	122	134	103
Tennessee	2.73	3.14	2.13	111	124	88
Virginia	2.78	2.68	2.93	112	106	121
West Virginia	2.97	2.74	3.31	120	109	137
SOUTHWEST	3.31	3.41	3.16	134	135	131
Arizona	2.80	2.54	3.19	113	101	132
New Mexico	3.59	3.62	3.55	145	144	147
Oklahoma	3.30	3.16	3.51	133	125	145
Texas	3.38	3.60	3.06	137	143	127
ROCKY MOUNTAIN	2.78	2.92	2.60	113	116	107
Colorado	2.89	2.90	2.88	117	115	119
Idaho	2.63	4.15	0.39	106	165	16
Montana	1.98	1.28	3.04	80	51	126
Utah	2.78	2.95	2.53	112	117	104
Wyoming	3.74	3.37	4.30	151	134	178
FAR WEST	2.66	2.46	3.05	108	98	126
California	2.62	2.34	3.04	106	93	126
Nevada	3.31	3.40	3.19	134	135	132
Oregon	3.06	3.05	3.08	124	121	127
Washington	2.59	2.28	3.05	105	90	126
Alaska	3.81	5.71	1.06	154	227	44
Hawaii	2.35	2.17	2.61	95	86	108

SOURCE: ACIR computations from U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, April 1976, and January 1978.

Table A-6

POPULATION, BY REGION AND STATE, SELECTED YEARS, 1950-78
(in thousands)

Region and State	1950	1960	1970	1975	1977	1978*
UNITED STATES	151,237	179,954	203,795	213,040	216,332	218,065
NEW ENGLAND	9,316	10,532	11,883	12,188	12,242	12,257
Connecticut	2,016	2,544	3,041	3,095	3,108	3,099
Maine	917	975	997	1,059	1,085	1,091
Massachusetts	4,686	5,160	5,706	5,818	5,782	5,774
New Hampshire	532	609	742	818	849	871
Rhode Island	786	855	951	927	935	935
Vermont	379	389	446	471	483	487
MIDEAST	33,726	38,597	42,519	42,660	42,449	42,225
Delaware	321	449	551	579	582	583
District of Columbia	806	765	756	716	690	674
Maryland	2,355	3,113	3,938	4,098	4,139	4,143
New Jersey	4,872	6,103	7,193	7,316	7,329	7,327
New York	14,865	16,838	18,268	18,122	17,924	17,748
Pennsylvania	10,507	11,329	11,813	11,829	11,785	11,750
GREAT LAKES	30,530	36,290	40,313	40,978	41,056	41,234
Illinois	8,738	10,086	11,128	11,145	11,245	11,243
Indiana	3,967	4,674	5,202	5,311	5,330	5,374
Michigan	6,407	7,834	8,890	9,157	9,129	9,189
Ohio	7,980	9,734	10,664	10,759	10,701	10,749
Wisconsin	3,438	3,962	4,429	4,606	4,651	4,679
PLAINS	14,103	15,424	16,360	16,687	16,884	17,019
Iowa	2,625	2,756	2,832	2,870	2,879	2,896
Kansas	1,916	2,183	2,249	2,267	2,326	2,348
Minnesota	2,997	3,425	3,815	3,925	3,975	4,008
Missouri	3,964	4,326	4,688	4,763	4,801	4,860
Nebraska	1,327	1,417	1,488	1,542	1,561	1,565
North Dakota	619	634	620	637	653	652
South Dakota	655	683	668	683	689	690

SOUTHEAST	33,860	38,885	43,983	47,760	48,796	49,334
Alabama	3,058	3,274	3,451	3,614	3,690	3,742
Arkansas	1,908	1,789	1,932	2,116	2,144	2,186
Florida	2,810	5,004	6,848	8,346	8,452	8,594
Georgia	3,458	3,956	4,607	4,926	5,048	5,084
Kentucky	2,936	3,041	3,231	3,396	3,458	3,498
Louisiana	2,697	3,260	3,652	3,791	3,921	3,966
Mississippi	2,176	2,182	2,220	2,346	2,389	2,404
North Carolina	4,068	4,573	5,098	5,451	5,525	5,577
South Carolina	2,113	2,392	2,597	2,818	2,876	2,918
Tennessee	3,315	3,575	3,937	4,188	4,299	4,357
Virginia	3,315	3,986	4,659	4,967	5,135	5,148
West Virginia	2,006	1,853	1,751	1,803	1,859	1,860
SOUTHWEST	11,450	14,235	16,618	18,319	19,127	19,460
Arizona	756	1,321	1,792	2,224	2,296	2,354
New Mexico	689	954	1,023	1,147	1,190	1,212
Oklahoma	2,229	2,336	2,567	2,712	2,811	2,880
Texas	7,776	9,624	11,236	12,237	12,830	13,014
ROCKY MOUNTAIN	3,494	4,350	5,039	5,682	5,911	6,064
Colorado	1,325	1,769	2,223	2,534	2,619	2,670
Idaho	590	671	718	821	857	878
Montana	593	679	698	748	761	785
Utah	696	900	1,066	1,206	1,268	1,307
Wyoming	290	331	334	374	406	424
FAR WEST	15,392	21,641	27,080	28,765	29,865	30,472
California	10,677	15,870	20,007	21,133	21,896	22,294
Nevada	162	291	493	592	633	660
Oregon	1,532	1,772	2,101	2,288	2,376	2,444
Washington	2,387	2,855	3,413	3,547	3,658	3,774
Alaska	135	229	304	352	407	403
Hawaii	499	624	762	852	895	897

*The 1978 figures are provisional from U.S. Department of Commerce, Bureau of the Census, *Current Population Reports*, Series P-25, #790, December 1978.
SOURCE: U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System, Regional Economic Division: 1977.

Table A-7

**POPULATION AS A PERCENT OF US TOTAL, BY REGION AND STATE,
SELECTED YEARS, 1950-78**

Region and State	1950	1960	1970	1975	1977	1978
UNITED STATES	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
NEW ENGLAND	6.2	5.9	5.8	5.7	5.7	5.6
Connecticut	1.3	1.4	1.5	1.5	1.4	1.4
Maine	0.6	0.5	0.5	0.5	0.5	0.5
Massachusetts	3.1	2.9	2.8	2.7	2.7	2.6
New Hampshire	0.4	0.3	0.4	0.4	0.4	0.4
Rhode Island	0.5	0.5	0.5	0.4	0.4	0.4
Vermont	0.3	0.2	0.2	0.2	0.2	0.2
MIDEAST	22.3	21.4	20.9	20.0	19.6	19.4
Delaware	0.2	0.2	0.3	0.3	0.3	0.3
District of Columbia	0.5	0.4	0.4	0.3	0.3	0.3
Maryland	1.6	1.7	1.9	1.9	1.9	1.9
New Jersey	3.2	3.4	3.5	3.4	3.4	3.4
New York	9.8	9.4	9.0	8.5	8.3	8.1
Pennsylvania	6.9	6.3	5.8	5.6	5.4	5.4
GREAT LAKES	20.2	20.2	19.8	19.2	19.0	18.9
Illinois	5.8	5.6	5.5	5.2	5.2	5.2
Indiana	2.6	2.6	2.6	2.5	2.5	2.5
Michigan	4.2	4.4	4.4	4.3	4.2	4.2
Ohio	5.3	5.4	5.2	5.1	4.9	4.9
Wisconsin	2.3	2.2	2.2	2.2	2.1	2.1
PLAINS	9.3	8.6	8.0	7.8	7.8	7.8
Iowa	1.7	1.5	1.4	1.3	1.3	1.3
Kansas	1.3	1.2	1.1	1.1	1.1	1.1
Minnesota	2.0	1.9	1.9	1.8	1.8	1.8
Missouri	2.6	2.4	2.3	2.2	2.2	2.2
Nebraska	0.9	0.8	0.7	0.7	0.7	0.7
North Dakota	0.4	0.4	0.3	0.3	0.3	0.3
South Dakota	0.4	0.4	0.3	0.3	0.3	0.3

SOUTHEAST	22.4	21.6	21.6	22.4	22.6	22.6
Alabama	2.0	1.8	1.7	1.7	1.7	1.7
Arkansas	1.3	1.0	0.9	1.0	1.0	1.0
Florida	1.9	2.8	3.4	3.9	3.9	3.9
Georgia	2.3	2.2	2.3	2.3	2.3	2.3
Kentucky	1.9	1.7	1.6	1.6	1.6	1.6
Louisiana	1.8	1.8	1.8	1.8	1.8	1.8
Mississippi	1.4	1.2	1.1	1.1	1.1	1.1
North Carolina	2.7	2.5	2.5	2.6	2.6	2.6
South Carolina	1.4	1.3	1.3	1.3	1.3	1.3
Tennessee	2.2	2.0	1.9	2.0	2.0	2.0
Virginia	2.2	2.2	2.3	2.3	2.4	2.4
West Virginia	1.3	1.0	0.9	0.8	0.9	0.9
SOUTHWEST	7.6	7.9	8.2	8.6	8.8	8.9
Arizona	0.5	0.7	0.9	1.0	1.1	1.1
New Mexico	0.5	0.5	0.5	0.5	0.6	0.6
Oklahoma	1.5	1.3	1.3	1.3	1.3	1.3
Texas	5.1	5.3	5.5	5.7	5.9	6.0
ROCKY MOUNTAIN	2.3	2.4	2.5	2.7	2.7	2.8
Colorado	0.9	1.0	1.1	1.2	1.2	1.2
Idaho	0.4	0.4	0.4	0.4	0.4	0.4
Montana	0.4	0.4	0.3	0.4	0.4	0.4
Utah	0.5	0.5	0.5	0.6	0.6	0.6
Wyoming	0.2	0.2	0.2	0.2	0.2	0.2
FAR WEST	10.2	12.0	13.3	13.5	13.8	14.0
California	7.1	8.8	9.8	9.9	10.1	10.2
Nevada	0.1	0.2	0.2	0.3	0.3	0.3
Oregon	1.0	1.0	1.0	1.1	1.1	1.1
Washington	1.6	1.6	1.7	1.7	1.7	1.7
Alaska	0.1	0.1	0.1	0.2	0.2	0.2
Hawaii	0.3	0.3	0.4	0.4	0.4	0.4

SOURCE: Compiled by ACIR staff from data in *Table A-6*.

Table A-8

**MANUFACTURING EMPLOYMENT AS A PERCENT OF U.S. TOTAL, BY REGION AND STATE,
SELECTED YEARS, 1950-78**

Region and State	1950	1960	1970	1975	1978
UNITED STATES	100.00%	100.00%	100.00%	100.00%	100.00%
NEW ENGLAND	9.60	8.70	7.50	-7.10	7.23
Connecticut	2.49	2.43	2.29	2.07	2.07
Maine	0.71	0.62	0.57	0.51	0.55
Massachusetts	4.69	4.17	3.35	3.21	3.18
New Hampshire	0.52	0.52	0.47	0.47	0.54
Rhode Island	0.97	0.71	0.62	0.62	0.66
Vermont	0.24	0.21	0.21	0.21	0.23
MIDEAST	29.20	26.70	23.30	20.90	19.11
Delaware	0.34	0.35	0.37	0.36	0.34
District of Columbia	0.13	0.12	0.10	0.09	0.07
Maryland	1.53	1.55	1.40	1.27	1.19
New Jersey	4.96	4.83	4.46	3.96	3.52 est.
New York	12.56	11.21	9.09	7.90	7.29
Pennsylvania	9.70	8.59	7.87	7.32	6.70
GREAT LAKES	29.40	26.80	26.00	25.20	24.87
Illinois	7.85	7.23	6.93	6.62	6.08
Indiana	3.80	3.55	3.67	3.52	3.63
Michigan	6.97	5.73	5.53	5.38	5.61
Ohio	7.98	7.54	7.27	6.89	6.78
Wisconsin	2.85	2.75	2.59	2.75	2.76
PLAINS	5.70	6.00	6.30	6.70	6.79
Iowa	1.01	1.05	1.11	1.27	1.23
Kansas	0.62	0.69	0.69	0.87	0.92
Minnesota	1.32	1.37	1.65	1.74	1.76
Missouri	2.32	2.34	2.30	2.21	2.23
Nebraska	0.34	0.40	0.44	0.47	0.46
North Dakota	0.04	0.04	0.05	0.08	0.08
South Dakota	0.08	0.08	0.08	0.11	0.12

SOUTHEAST	15.00	16.60	20.20	21.60	22.09
Alabama	1.42	1.41	1.67	1.77	1.80
Arkansas	0.50	0.61	0.87	0.95	1.06
Florida	0.67	1.23	1.66	1.88	2.07
Georgia	1.88	2.03	2.40	2.40	2.51
Kentucky	0.92	1.02	1.31	1.48	1.43
Louisiana	0.95	0.85	0.91	0.99	1.02
Mississippi	0.57	0.72	0.94	1.11	1.16
North Carolina	2.74	3.04	3.71	3.98	3.94
South Carolina	1.38	1.46	1.76	1.85	1.92
Tennessee	1.64	1.88	2.40	2.57	2.57
Virginia	1.50	1.64	1.89	1.99	2.01
West Virginia	0.86	0.74	0.65	0.66	0.61
SOUTHWEST	3.00	3.80	5.10	5.80	6.31
Arizona	0.11	0.29	0.47	0.54	0.61
New Mexico	0.07	0.10	0.11	0.81	0.16
Oklahoma	0.43	0.52	0.69	0.15	0.84
Texas	2.38	2.92	3.83	4.33	4.69
ROCKY MOUNTAIN	0.90	1.10	1.30	1.50	1.67
Colorado	0.40	0.52	0.61	0.73	0.82
Idaho	0.15	0.17	0.21	0.25	0.29
Montana	0.12	0.12	0.12	0.12	0.13
Utah	0.19	0.28	0.28	0.37	0.39
Wyoming	0.04	0.05	0.04	0.04	0.04
FAR WEST	7.10	10.40	10.60	11.30	11.93
California	4.98	7.86	8.05	8.60	9.19
Nevada	0.02	0.03	0.04	0.07	0.09
Oregon	0.90	0.86	0.89	1.00	1.07
Washington	1.17	1.29	1.24	1.32	1.40
Alaska	NA	0.03	0.04	0.04	0.06
Hawaii	NA	0.15	0.13	0.13	0.12

SOURCE: Compiled by ACIR staff from data in *Table A-9*.

Table A-9

MANUFACTURING EMPLOYMENT, BY REGION AND STATE, SELECTED YEARS, 1950-78
(in thousands)

Region and State	1950	1960	1970	1975	1978
UNITED STATES	15,257.7	16,753.2	19,368.8	18,452	20,332
NEW ENGLAND	1,468.6	1,451.7	1,455.6	1,310	1,470
Connecticut	379.9	407.2	443.7	382	420
Maine	109.0	104.5	110.4	95	111
Massachusetts	715.7	698.0	648.3	593	647
New Hampshire	79.1	87.0	91.8	86	110
Rhode Island	148.0	119.7	120.9	115	135
Vermont	36.9	35.3	40.5	39	47
MIDEAST	4,456.2	4,465.8	4,507.9	3,855	3,886
Delaware	51.3	58.8	71.2	66	69
District of Columbia	19.2	20.2	18.6	16	15
Maryland	232.9	259.9	271.1	235	242
New Jersey	756.4	808.6	863.0	730	715 est.
New York	1,915.8	1,878.7	1,760.6	1,458	1,483
Pennsylvania	1,480.6	1,439.6	1,523.4	1,350	1,362
GREAT LAKES	4,493.4	4,495.2	5,032.1	4,643	5,056
Illinois	1,197.9	1,210.5	1,342.1	1,222	1,237
Indiana	480.1	593.9	710.2	650	738
Michigan	1,063.2	967.6	1,071.5	992	1,140
Ohio	1,217.7	1,262.8	1,407.4	1,271	1,379
Wisconsin	434.5	460.4	500.9	508	562
PLAINS	874.0	1,001.4	1,226.2	1,244	1,381
Iowa	154.4	176.6	215.5	235	250
Kansas	95.3	116.0	134.5	160	187
Minnesota	200.7	229.7	319.4	321	358
Missouri	353.8	392.7	446.1	407	453
Nebraska	52.1	66.8	85.0	86	93
North Dakota	6.1	6.5	9.9	15	16
South Dakota	11.6	13.1	15.8	20	24

SOUTHEAST	2,291.6	2,789.6	3,903.5	3,989	4,491
Alabama	216.1	237.0	323.8	326	365
Arkansas	75.7	102.3	167.8	175	216
Florida	102.3	206.7	321.6	346	420
Georgia	286.5	340.8	465.6	442	510
Kentucky	140.1	171.6	252.9	273	290
Louisiana	145.0	142.0	175.4	182	207
Mississippi	86.4	119.9	181.7	204	236
North Carolina	418.3	509.3	718.4	735	802
South Carolina	210.4	244.8	340.0	341	390
Tennessee	249.9	315.6	464.6	475	522
Virginia	229.5	275.0	365.2	368	408
West Virginia	131.4	124.6	126.5	122	125
SOUTHWEST	463.3	642.1	987.0	1,074	1,283
Arizona	17.0	49.3	91.2	99	125
New Mexico	10.1	16.7	21.0	27	33
Oklahoma	65.6	86.6	133.9	149	171
Texas	363.6	489.5	740.9	799	954
ROCKY MOUNTAIN	137.8	192.3	244.2	279	339
Colorado	61.6	87.7	117.5	135	166
Idaho	22.4	28.9	40.3	46	58
Montana	18.0	20.4	23.9	22	26
Utah	29.4	47.0	55.1	68	80
Wyoming	6.4	8.4	7.4	8	9
FAR WEST	1,079.8	1,746.6	2,046.5	2,090	2,426
California	759.7	1,317.3	1,558.8	1,586	1,869
Nevada	3.5	5.4	8.4	12	18
Oregon	138.0	144.4	172.3	184	218
Washington	178.6	216.6	239.4	244	285
Alaska	NA	5.8	8.6	8	12
Hawaii	NA	25.7	25.6	24	24

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings, States and Areas 1959-75*. Bulletin 1370-12, 1977; and U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States, 1979*.

Table A-10

**NONAGRICULTURE EMPLOYMENT AS A PERCENT OF U.S. TOTAL, BY REGION AND STATE,
SELECTED YEARS, 1950-78**

Region and State	1950	1960	1970	1975	1978
UNITED STATES	100.00%	100.00%	100.00%	100.00%	100.00%
NEW ENGLAND	7.40	6.80	6.40	6.10	6.02
Connecticut	1.70	1.69	1.69	1.58	1.56
Maine	0.56	0.51	0.47	0.46	0.47
Massachusetts	3.92	3.53	3.20	3.02	2.89
New Hampshire	0.37	0.37	0.37	0.38	0.42
Rhode Island	0.66	0.54	0.48	0.45	0.46
Vermont	0.22	0.20	0.21	0.21	0.22
MIDEAST	27.10	25.00	23.00	21.10	19.46
Delaware	0.27	0.28	0.30	0.29	0.29
District of Columbia	1.11	0.99	0.97	0.93	0.68
Maryland	1.59	1.66	1.84	1.85	1.83
New Jersey	3.69	3.73	3.69	3.45	3.12
New York	12.41	11.44	10.11	8.81	8.13
Pennsylvania	8.11	6.87	6.14	5.73	5.40
GREAT LAKES	23.00	21.60	20.60	19.70	19.34
Illinois	7.03	6.52	6.12	5.74	5.47
Indiana	2.83	2.65	2.61	2.51	2.53
Michigan	4.79	4.35	4.25	4.06	4.09
Ohio	6.14	5.83	5.48	5.20	5.07
Wisconsin	2.27	2.21	2.16	2.17	2.17
PLAINS	8.00	7.80	7.60	7.70	7.70
Iowa	1.36	1.26	1.25	1.29	1.28
Kansas	1.03	1.03	0.96	1.03	1.06
Minnesota	1.79	1.78	1.86	1.91	1.95
Missouri	2.64	2.49	2.35	2.23	2.23
Nebraska	0.71	0.71	0.68	0.72	0.65
North Dakota	0.24	0.23	0.23	0.26	0.27
South Dakota	0.26	0.26	0.25	0.27	0.27

SOUTHEAST	16.50	17.70	19.50	20.70	21.27
Alabama	1.38	1.44	1.43	1.49	1.55
Arkansas	0.66	0.68	0.75	0.80	0.84
Florida	1.57	2.44	3.04	3.54	3.61
Georgia	1.79	1.95	2.20	2.24	2.30
Kentucky	1.24	1.21	1.29	1.35	1.42
Louisiana	1.42	1.46	1.47	1.56	1.64
Mississippi	0.69	0.75	0.82	0.87	0.94
North Carolina	2.06	2.21	2.25	2.59	2.62
South Carolina	1.03	1.08	1.19	1.27	1.31
Tennessee	1.69	1.71	1.88	1.94	1.98
Virginia	1.79	1.88	2.15	2.28	2.36
West Virginia	1.17	0.85	0.73	0.73	0.71
SOUTHWEST	6.00	6.80	7.40	8.30	8.78
Arizona	0.36	0.62	0.77	0.94	1.02
New Mexico	0.34	0.44	0.41	0.47	0.51
Oklahoma	1.06	1.08	1.09	1.15	1.19
Texas	4.27	4.69	5.14	5.73	6.06
ROCKY MOUNTAIN	2.00	2.20	2.30	2.70	2.84
Colorado	0.80	0.95	1.05	1.23	1.31
Idaho	0.29	0.29	0.29	0.35	0.38
Montana	0.33	0.31	0.28	0.31	0.32
Utah	0.42	0.49	0.51	0.57	0.61
Wyoming	0.18	0.18	0.15	0.19	0.22
FAR WEST	9.70	12.10	13.20	13.80	14.60
California	7.14	9.06	9.82	10.14	10.68
Nevada	0.12	0.19	0.29	0.34	0.40
Oregon	0.97	0.94	1.00	1.08	1.16
Washington	1.52	1.50	1.53	1.57	1.73
Alaska	NA	0.10	0.13	0.21	0.19
Hawaii	NA	0.35	0.41	0.44	0.43

SOURCE: Compiled by ACIR staff from data in Table A-11.

Table A-11

NONAGRICULTURAL EMPLOYMENT, BY REGION AND STATE, SELECTED YEARS, 1950-78
(in thousands)

Region and State	1950	1960	1970	1975	1978
UNITED STATES	45,222	54,234	70,920	77,051	86,446
NEW ENGLAND	3,344.8	3,697.9	4,549.0	4,696.7	5,203
Connecticut	766.1	915.4	1,197.5	1,220.4	1,350
Maine	253.9	277.5	332.2	356.1	405
Massachusetts	1,761.0	1,904.7	2,268.3	2,324.7	2,499
New Hampshire	168.3	200.7	259.9	293.2	362
Rhode Island	298.6	291.7	343.2	343.0	398
Vermont	96.9	107.9	147.9	159.3	189
MIDEAST	12,210.8	13,497.7	16,308.2	16,240.8	16,820
Delaware	120.5	153.9	213.1	226.6	249
District of Columbia	497.8	535.5	683.7	715.0*	590 ¹
Maryland	716.1	896.4	1,300.7	1,424.3	1,586
New Jersey	1,657.1	2,017.1	2,608.6	2,667.9	2,700 est.
New York	5,576.0	6,181.9	7,154.8	6,791.1	7,025
Pennsylvania	3,643.3	3,712.9	4,347.3	4,415.9	4,670
GREAT LAKES	10,368.2	11,643.2	14,593.6	15,161.7	16,715
Illinois	3,160.0	3,522.0	4,328.6	4,424.9	4,729
Indiana	1,272.4	1,431.4	1,849.0	1,903.4	2,191
Michigan	2,153.9	2,350.7	3,004.9	3,127.0	3,535
Ohio	2,759.8	3,147.2	3,880.7	4,009.5	4,381
Wisconsin	1,022.1	1,191.9	1,530.4	1,669.9	1,879
PLAINS	3,607.8	4,193.3	5,361.5	5,944.1	6,652
Iowa	609.6	681.0	382.8	993.1	1,105
Kansas	463.8	559.0	677.0	796.9	913
Minnesota	803.1	959.8	1,317.2	1,469.9	1,683
Missouri	1,184.9	1,344.5	1,662.0	1,718.5	1,928
Nebraska	319.2	381.2	482.1	554.1	558
North Dakota	108.7	126.3	163.2	203.1	232
South Dakota	118.5	141.5	177.2	208.5	233

SOUTHEAST	7,411.0	9,543.8	13,771.8	15,919.4	18,388
Alabama	619.6	776.4	1,010.4	1,149.8	1,336
Arkansas	298.3	367.3	534.3	620.0	726
Florida	704.4	1,320.6	2,152.1	2,729.0	3,124
Georgia	806.6	1,051.1	1,557.5	1,724.8	1,992
Kentucky	556.6	653.6	910.1	1,041.7	1,224
Louisiana	636.2	789.8	1,041.6	1,199.4	1,416
Mississippi	311.6	404.0	577.2	667.3	813
North Carolina	927.3	1,195.5	1,782.7	1,996.3	2,265
South Carolina	461.4	582.5	842.0	977.8	1,134
Tennessee	759.3	925.3	1,327.6	1,497.3	1,708
Virginia	805.4	1,017.6	1,519.6	1,755.0	2,036
West Virginia	524.3	460.0	516.7	561.0	614
SOUTHWEST	2,711.5	3,683.4	5,245.8	6,389.6	7,593
Arizona	161.6	333.8	547.4	724.3	884
New Mexico	151.6	236.3	292.7	364.8	445
Oklahoma	476.9	581.6	769.5	887.4	1,026
Texas	1,921.4	2,531.7	3,636.2	4,413.1	5,238
ROCKY MOUNTAIN	909.4	1,199.4	1,619.6	2,044.1	2,456
Colorado	358.2	515.4	742.7	948.3	1,135
Idaho	131.6	155.2	207.8	267.5	329
Montana	149.0	166.8	201.4	240.0	278
Utah	190.2	264.8	358.7	441.6	525
Wyoming	80.4	97.2	109.0	146.7	189
FAR WEST	4,384.5	6,566.6	9,326.7	10,620.7	12,620
California	3,209.4	4,896.0	6,947.7	7,815.3	9,230
Nevada	53.8	103.4	203.0	263.7	350
Oregon	437.6	509.2	709.2	830.8	1,005
Washington	683.7	812.6	1,080.0	1,209.4	1,497
Alaska	0.0	56.6	93.1	162.3	164
Hawaii	0.0	188.8	293.7	339.2	374

* The reporting jurisdiction for the D.C. area changed between 1970 and 1975 so this figure was adjusted to make it comparable with previous years.

¹Comparable figure with previous years not readily available.

SOURCE: 1950-75, U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings, States and Areas 1939-1975*, Bulletin 1370-12, 1977; U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States, 1979*; and Bureau of Economic Analysis, *Survey of Current Business*, January 1980.

Table A-12

**RATE OF GROWTH OF NONAGRICULTURAL EMPLOYMENT, BY REGION AND STATE,
SELECTED YEARS, 1950-78**

Region and State	Average Annual Rate				Growth Rate Relative to U.S. Average			
	1950-60	1960-70	1970-75	1975-78	1950-60	1960-70	1970-75	1975-78
UNITED STATES	1.80%	2.69%	1.69%	3.91%	100	100	100	100
NEW ENGLAND	.95	2.08	.65	3.46	53	77	38	88
Connecticut	1.80	2.72	0.38	3.43	99	101	22	88
Maine	0.89	1.82	1.40	4.38	49	67	82	112
Massachusetts	0.79	1.76	0.49	2.44	43	65	29	62
New Hampshire	1.78	2.62	2.44	7.38	98	97	144	189
Rhode Island	-0.23	1.64	-0.01	5.08	-12	60	—	130
Vermont	1.08	3.20	1.50	5.86	60	119	88	150
MIDEAST	.95	1.85	-.05	1.17	53	69	—	30
Delaware	2.48	3.31	1.24	3.19	137	122	73	82
District of Columbia	0.73	2.47	0.90	1	40	91	53	1
Maryland	2.27	3.79	1.83	3.65	126	140	108	93
New Jersey	1.00	2.60	0.45	0.40	110	06	26	10
New York	1.04	1.47	-1.04	1.14	57	54	—	29
Pennsylvania	0.19	1.59	0.31	1.88	10	59	18	48
GREAT LAKES	1.12	2.25	.65	3.30	62	84	38	84
Illinois	1.09	2.08	0.44	2.24	60	77	26	57
Indiana	1.18	2.59	0.87	4.80	65	96	51	123
Michigan	0.88	2.49	0.80	4.17	48	92	47	107
Ohio	1.32	2.12	0.66	3.00	73	78	38	77
Wisconsin	1.55	2.53	1.76	4.01	86	94	104	103
PLAINS	1.47	2.46	2.08	3.82	82	91	123	98
Iowa	1.11	2.63	2.38	3.62	61	97	140	93
Kansas	1.88	1.93	3.31	4.64	104	71	196	119
Minnesota	1.80	3.22	2.22	4.62	99	119	131	118
Missouri	1.27	2.14	0.67	3.91	70	79	39	100
Nebraska	1.79	2.38	2.82	0.23	99	88	167	6
North Dakota	1.51	2.60	4.47	4.53	83	96	264	116
South Dakota	1.79	2.28	3.31	3.77	99	84	195	96

SOUTHEAST	2.58	3.69	3.00	4.92	143	137	178	126
Alabama	2.28	2.67	2.62	5.13	126	99	154	131
Arkansas	2.10	3.82	3.02	5.40	116	141	178	138
Florida	6.49	5.00	4.86	4.61	360	186	287	118
Georgia	2.68	4.01	2.06	4.92	149	149	121	126
Kentucky	1.62	3.37	2.74	5.52	89	125	162	141
Louisiana	2.19	2.81	2.86	5.69	121	104	169	146
Mississippi	2.63	3.63	2.94	6.80	146	135	174	174
North Carolina	2.57	4.08	2.29	4.30	142	151	135	110
South Carolina	2.36	3.75	3.04	5.06	130	139	179	129
Tennessee	2.00	3.67	2.44	4.49	111	136	144	115
Virginia	2.37	4.09	2.92	5.08	131	152	172	130
West Virginia	-1.30	1.17	1.66	3.06	-72	43	98	78
SOUTHWEST	3.04	3.55	4.00	5.92	169	132	237	151
Alabama	7.52	5.07	5.76	6.87	417	188	340	176
New Mexico	4.54	2.16	4.50	6.85	111	105	266	175
Oklahoma	2.00	2.84	2.89	4.96	252	80	171	127
Texas	2.80	3.69	3.95	5.88	155	137	233	150
ROCKY MOUNTAIN	2.72	3.00	4.74	6.31	151	112	280	161
Colorado	3.71	3.72	5.01	6.17	205	138	296	158
Idaho	1.66	2.96	5.18	7.14	92	110	306	183
Montana	1.13	1.90	3.57	5.02	63	70	211	128
Utah	3.36	3.08	4.25	5.94	186	114	251	152
Wyoming	1.92	1.15	6.12	8.81	106	42	362	225
FAR WEST	4.07	3.54	2.58	5.92	226	132	153	151
California	4.31	3.56	2.38	5.70	239	132	140	146
Nevada	6.75	6.98	5.37	9.90	375	259	317	253
Oregon	1.58	3.37	3.22	6.55	84	125	190	168
Washington	1.74	2.87	2.29	7.37	96	107	135	188
Alaska	NA	5.10	11.76	0.35	—	189	695	9
Hawaii	NA	4.52	2.92	3.31	—	167	172	85
Mean	2.10	3.00	2.67	4.66				
Median	1.80	2.81	2.44	4.72				
Standard Deviation	1.60	1.12	2.07					
V	.76	.32	.78					

*Not computed. See footnote 1, Table A-11.

SOURCE: ACIR staff computations based on data from Table A-11.

Table A-13

UNEMPLOYMENT RATE, BY REGION AND STATE, 1973-78¹

Region ² and State	1973	1974	1975	1976	1977	1978
UNITED STATES	4.9%	5.6%	8.5%	7.7%	7.0%	6.0%
NEW ENGLAND	5.5	6.2	10.0	8.5	7.5	5.6
Connecticut	6.3	6.1	9.1	9.5	7.0	5.2
Maine	5.7	6.4	10.3	8.9	8.4	6.1
Massachusetts	6.7	7.2	11.2	9.5	8.1	6.1
New Hampshire	4.4	5.5	9.1	6.4	5.9	3.8
Rhode Island	4.6	5.3	10.9	8.1	8.6	6.6
Vermont	5.3	6.4	9.4	8.7	7.0	5.7
MIDEAST	5.2	5.9	8.7	8.9	8.4	7.2
Delaware	5.1	6.7	9.8	8.9	8.4	7.6
District of Columbia	6.3	6.1	7.6	9.1	9.7	8.5
Maryland	4.1	4.7	6.9	6.8	6.1	5.6
New Jersey	5.6	6.3	10.2	10.4	9.4	7.2
New York	5.4	6.4	9.5	10.3	9.1	7.7
Pennsylvania	4.8	5.1	8.3	7.9	7.7	6.9
GREAT LAKES	4.5	5.5	8.8	7.1	6.3	5.8
Illinois	4.1	4.5	7.1	6.5	6.2	6.1
Indiana	4.3	5.2	8.6	6.1	5.7	5.7
Michigan	5.9	8.5	12.5	9.4	8.2	6.9
Ohio	4.3	4.8	9.1	7.8	6.5	5.4
Wisconsin	4.0	4.5	6.9	5.6	4.9	5.1
PLAINS	3.1	3.3	4.7	4.4	4.4	3.8
Iowa	2.1	2.2	4.2	4.0	4.0	4.0
Kansas	3.0	3.4	4.6	4.2	4.1	3.1
Minnesota	4.5	4.3	5.9	5.9	5.1	3.8
Missouri	3.9	4.6	6.9	6.2	5.9	5.0
Nebraska	2.0	2.6	3.9	3.3	3.7	2.9
North Dakota	3.6	3.5	3.6	3.6	4.8	4.6
South Dakota	2.6	2.7	3.7	3.4	3.3	3.1

SOUTHEAST	4.4	5.4	8.3	6.9	6.7	6.0
Alabama	4.5	5.5	7.7	6.8	7.4	6.3
Arkansas	4.3	5.2	9.5	7.1	6.6	6.3
Florida	4.3	6.2	10.7	9.0	8.2	6.6
Georgia	3.9	5.2	8.6	8.1	6.9	5.7
Kentucky	3.7	4.5	7.3	5.6	4.7	5.2
Louisiana	6.8	7.1	7.4	6.8	7.0	7.0
Mississippi	3.9	4.5	8.2	6.6	7.4	7.1
North Carolina	3.5	4.5	8.6	6.2	5.9	4.3
South Carolina	4.1	5.9	8.7	6.9	7.2	5.7
Tennessee	3.9	5.1	8.3	6.0	6.3	5.8
Virginia	3.6	4.5	6.4	5.9	5.3	5.4
West Virginia	6.8	6.9	8.6	7.5	7.1	6.3
SOUTHWEST	4.8	5.9	8.7	7.6	6.6	5.2
Arizona	5.0	6.8	12.1	9.8	8.2	6.1
New Mexico	7.4	8.0	9.9	9.1	7.8	5.8
Oklahoma	3.0	4.4	7.2	5.6	5.0	3.9
Texas	3.9	4.3	5.6	5.7	5.3	4.8
ROCKY MOUNTAIN	4.5	4.7	6.1	5.5	5.5	4.9
Colorado	4.1	4.1	6.9	5.9	6.2	5.5
Idaho	4.8	5.1	6.2	5.7	5.9	5.7
Montana	4.9	5.2	6.3	6.1	6.4	6.0
Utah	5.2	5.5	6.8	5.7	5.3	3.8
Wyoming	3.3	3.4	4.2	4.1	3.6	3.3
FAR WEST	7.1	7.6	9.1	9.0	8.0	7.2
California	7.0	7.3	9.9	9.2	8.2	7.1
Nevada	6.0	7.6	9.7	9.0	7.0	4.4
Oregon	6.2	7.5	10.6	9.5	7.4	6.0
Washington	7.9	7.2	9.5	8.7	8.8	6.8
Alaska	8.4	7.8	6.8	8.0	9.4	11.2
Hawaii	7.3	8.0	8.2	9.8	7.3	7.7

¹Data are not comparable with those published in earlier *Manpower Reports*.

²Regional figure is an unweighted average.

SOURCE: U.S. Department of Labor, *Employment and Training Report of the President, 1978*. U.S. Government Printing Office, Washington, DC, Table D-4; and U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States, 1979*.

Table A-14

**UNEMPLOYMENT RATE RELATIVE TO U.S. AVERAGE, BY REGION AND STATE,
1973-78**

Region ¹ and State	1973	1974	1975	1976	1977	1978
UNITED STATES	100	100	100	100	100	100
NEW ENGLAND	112	111	118	110	107	93
Connecticut	129	109	107	123	100	87
Maine	116	114	121	116	120	102
Massachusetts	137	129	132	123	116	102
New Hampshire	90	98	107	83	84	63
Rhode Island	94	95	128	105	123	110
Vermont	108	114	111	113	100	95
MIDEAST	106	105	102	116	120	120
Delaware	104	120	115	116	120	127
District of Columbia	129	109	89	118	139	142
Maryland	84	84	81	88	87	93
New Jersey	114	113	120	135	134	120
New York	110	114	112	134	130	128
Pennsylvania	98	91	98	103	110	115
GREAT LAKES	92	98	104	92	90	97
Illinois	84	80	83	84	89	102
Indiana	88	93	101	79	81	95
Michigan	120	152	147	122	117	115
Ohio	88	86	107	101	93	90
Wisconsin	82	80	81	73	70	85
PLAINS	63	59	55	57	63	63
Iowa	43	39	49	52	57	67
Kansas	61	61	54	55	59	52
Minnesota	92	77	69	77	73	63
Missouri	80	82	81	81	84	83
Nebraska	41	46	46	43	53	48
North Dakota	73	63	42	47	69	77
South Dakota	53	48	44	44	47	52

SOUTHEAST	90	96	98	90	96	100
Alabama	92	98	91	88	106	105
Arkansas	88	93	112	92	94	105
Florida	88	111	126	117	117	110
Georgia	80	93	101	105	99	95
Kentucky	76	80	86	73	67	87
Louisiana	139	127	87	88	100	117
Mississippi	80	80	96	86	106	118
North Carolina	71	80	101	81	84	72
South Carolina	84	105	102	90	103	95
Tennessee	80	91	98	78	90	97
Virginia	73	80	75	77	76	90
West Virginia	139	123	101	97	101	105
SOUTHWEST	98	105	102	99	94	87
Arizona	102	121	142	127	117	102
New Mexico	151	143	116	118	111	97
Oklahoma	61	79	85	73	71	65
Texas	80	77	66	74	76	80
ROCKY MOUNTAIN	92	84	71	71	79	82
Colorado	84	73	81	77	89	92
Idaho	98	91	73	74	84	95
Montana	100	93	74	79	91	100
Utah	106	98	80	74	76	63
Wyoming	67	61	49	53	51	55
FAR WEST	145	136	107	117	114	120
California	143	130	116	120	117	118
Nevada	122	136	114	117	100	73
Oregon	127	134	125	123	106	100
Washington	161	129	112	113	126	113
Alaska	171	139	80	104	134	187
Hawaii	149	143	96	127	104	128

¹Regional figure is an unweighted average.

SOURCE: Computations based on data from *Table A-13*.

Table A-15

**TOTAL WAGES PER WAGE EARNER IN MANUFACTURING ESTABLISHMENTS,
BY REGION AND STATE, SELECTED YEARS, 1909-47**

Region ¹ and State	Wages			Relative to U.S. Average		
	1909	1929	1947	1909	1929	1947
UNITED STATES	\$512	\$1,300	\$2,540	100	100	100
NEW ENGLAND	492	1,172	2,334	96	90	92
Connecticut	521	1,302	2,659	102	100	105
Maine	468	1,051	2,202	91	81	87
Massachusetts	513	1,240	2,433	100	95	96
New Hampshire	457	1,072	2,187	89	83	86
Rhode Island	485	1,140	2,324	95	88	92
Vermont	510	1,225	2,200	100	94	87
MIDEAST	517	1,352	2,588	101	104	102
Delaware	463	1,211	2,413	90	93	95
District of Columbia	645	1,591	2,769	126	122	109
Maryland	409	1,103	2,431	80	85	96
New Jersey	518	1,375	2,733	101	106	108
New York	553	1,485	2,677	108	114	105
Pennsylvania	512	1,344	2,506	100	103	99
GREAT LAKES	530	1,435	2,765	104	110	109
Illinois	584	1,472	2,753	114	113	108
Indiana	501	1,314	2,703	98	101	106
Michigan	510	1,585	2,967	100	122	117
Ohio	546	1,478	2,758	107	114	109
Wisconsin	510	1,324	2,642	100	102	104
PLAINS	567	1,238	2,380	111	95	94
Iowa	513	1,207	2,449	100	93	96
Kansas	567	1,283	2,550	111	99	100
Minnesota	549	1,244	2,471	107	96	97
Missouri	521	1,167	2,253	102	90	89
Nebraska	566	1,261	2,337	111	97	92
North Dakota	625	1,307	2,221	122	101	87
South Dakota	627	1,199	2,381	123	92	94

SOUTHEAST	372	866	1,957	73	67	77
Alabama	362	813	2,007	71	63	79
Arkansas	408	838	1,748	80	65	69
Florida	393	799	1,943	77	62	77
Georgia	321	661	1,770	63	51	70
Kentucky	411	1,063	2,151	80	82	85
Louisiana	435	930	2,057	85	72	81
Mississippi	360	778	1,654	70	60	65
North Carolina	278	752	1,844	54	58	73
South Carolina	274	659	1,882	54	51	74
Tennessee	365	855	1,923	71	66	76
Virginia	346	919	2,042	68	71	80
West Virginia	512	1,323	2,463	100	102	97
SOUTHWEST	610	1,142	2,394	119	88	94
Arizona	846	1,353	2,659	165	104	105
New Mexico	540	848	2,232	106	65	88
Oklahoma	536	1,281	2,377	105	99	93
Texas	516	1,085	2,309	101	84	91
ROCKY MOUNTAIN	732	1,434	2,590	143	111	102
Colorado	688	1,296	2,484	134	100	98
Idaho	654	1,415	2,596	128	109	102
Montana	961	1,619	2,598	188	125	102
Utah	697	1,194	2,406	136	92	95
Wyoming	658	1,646	2,868	129	127	113
FAR WEST	771	1,423	2,933	151	110	116
California	710	1,421	2,865	139	109	113
Nevada	962	1,569	3,109	188	121	122
Oregon	691	1,314	2,885	135	101	114
Washington	720	1,389	2,873	141	107	113

¹Regional figure is an unweighted average.

SOURCE: Simon Kuznets, Ann Ratner Miller, and Richard A. Easterlin, *Population Redistribution and Economic Growth, United States, 1870-1950*: Vol. II of *Analyses of Economic Change*. The American Philosophical Society, 1960, Table A3.5.

Table A-16

**AVERAGE HOURLY EARNINGS OF PRODUCTION WORKERS ON
MANUFACTURING PAYROLLS, BY REGION AND STATE,
SELECTED YEARS 1955-78¹**

Region ² and State	1955	1960	1965	1970	1972	1974	1976	1978
NEW ENGLAND	\$1.59	\$1.95	\$2.27	\$2.99	\$3.36	\$3.86	\$4.48	5.19
Connecticut	1.88	2.32	2.69	3.43	3.87	4.42	5.12	5.96
Maine	1.45	1.77	2.06	2.71	3.03	3.51	4.16	4.91
Massachusetts	1.71	2.09	2.45	3.23	3.65	4.16	4.79	5.54
New Hampshire	1.47	1.77	2.06	2.81	3.20	3.65	4.25	4.93
Rhode Island	1.55	1.88	2.18	2.85	3.15	3.62	4.15	4.71
Vermont	1.51	1.85	2.17	2.93	3.28	3.78	4.40	5.10
MIDEAST	1.87	2.31	2.69	3.42	3.96	4.57	5.40	6.36
Delaware	1.84	2.31	2.77	3.44	4.04	4.58	5.45	6.59
Maryland	1.82	2.26	2.62	3.40	3.92	4.62	5.52	6.55
New Jersey	1.94	2.37	2.74	3.46	3.99	4.57	—	6.20
New York	1.90	2.31	2.68	3.46	3.98	4.53	5.27	6.08
Pennsylvania	1.88	2.31	2.66	3.36	3.88	4.57	5.36	6.37
GREAT LAKES	2.06	2.54	2.95	3.78	4.42	5.10	6.08	7.21
Illinois	2.00	2.45	2.83	3.65	4.22	4.91	5.82	6.76
Indiana	2.03	2.51	2.92	3.72	4.35	5.04	6.00	7.17
Michigan	2.24	2.75	3.22	4.15	4.94	5.62	6.81	8.13
Ohio	2.11	2.60	3.01	3.81	4.44	5.12	6.10	7.29
Wisconsin	1.92	2.37	2.75	3.61	4.15	4.81	5.69	6.69
PLAINS	1.79	2.19	2.56	3.29	3.70	4.25	5.38	6.04
Iowa	1.84	2.35	2.78	3.70	4.30	4.91	5.85	7.00
Kansas	1.93	2.36	2.69	3.25	3.76	4.18	4.95	NA
Minnesota	1.90	2.36	2.72	3.54	4.00	4.66	5.53	6.44
Missouri	1.79	2.24	2.62	3.39	3.79	4.37	5.17	6.21
Nebraska	1.70	2.08	2.40	3.21	3.56	4.06	—	5.84
North Dakota	—	1.97	2.36	2.93	3.32	3.81	—	5.54
South Dakota	1.59	2.02	2.37	2.98	3.20	3.79	—	5.19

SOUTHEAST	1.46	1.83	2.15	2.81	3.25	3.72	4.46	5.28
Alabama	1.49	1.92	2.24	2.86	3.22	3.76	4.46	5.40
Arkansas	1.29	1.56	1.83	2.48	2.79	3.30	—	4.72
Florida	1.40	1.86	2.16	2.89	3.24	3.74	4.36	5.01
Georgia	1.34	1.66	2.01	2.67	3.04	3.54	4.10	4.88
Kentucky	1.75	2.13	2.51	3.27	3.69	4.30	5.14	6.26
Louisiana	1.66	2.12	2.55	3.28	3.68	4.40	5.33	6.42
Mississippi	1.20	1.52	1.82	2.43	3.77	3.18	3.83	4.56
North Carolina	1.28	1.54	1.82	2.46	2.77	3.28	3.80	4.47
South Carolina	1.30	1.57	1.88	2.51	2.81	3.32	3.91	4.66
Tennessee	1.49	1.84	2.09	2.73	3.07	3.62	—	5.13
Virginia	1.45	1.77	2.11	2.73	3.10	3.65	4.30	5.11
West Virginia	1.91	2.41	2.74	3.42	3.87	4.53	5.42	6.68
SOUTHWEST	1.86	2.20	2.49	3.07	3.42	3.95	4.76	5.63
Arizona	2.01	2.46	2.77	3.31	3.85	4.40	5.19	6.03
New Mexico	1.83	2.08	2.31	2.68	2.87	3.33	4.06	4.79
Oklahoma	1.78	2.10	2.41	3.09	3.46	3.97	4.82	5.81
Texas	1.80	2.17	2.48	3.18	3.51	4.08	4.98	5.88
ROCKY MOUNTAIN	1.97	2.42	2.79	3.46	3.89	4.54	5.36	6.49
Colorado	1.89	2.42	2.82	3.50	3.98	4.58	—	6.22
Idaho	1.93	2.25	2.65	3.29	3.73	4.41	5.29	6.53
Montana	2.08	2.45	2.80	3.70	4.18	4.95	—	7.81
Utah	1.93	2.46	2.84	3.46	3.79	3.92	—	5.68
Wyoming	2.03	2.54	2.86	3.36	3.81	4.85	5.44	6.21
FAR WEST	2.19	2.63	3.04	3.94	4.38	5.20	6.05	6.73
California	2.11	2.62	3.05	3.80	4.24	4.73	5.59	6.43
Nevada	2.23	2.75	3.18	4.09	4.39	4.89	5.61	6.54
Oregon	2.26	2.55	2.94	3.82	4.30	5.02	6.07	7.23
Washington	2.17	2.63	3.09	4.06	4.53	5.23	—	7.56
Alaska	—	—	3.70	4.66	5.27	7.10	7.82	NA
Hawaii	—	—	2.28	3.17	3.56	4.25	5.14	5.90

NA = not available.

¹For 1976, data in several states not strictly comparable with prior years. (Based on 1972 SIC Manual.)

²Regional figures are unweighted averages.

SOURCE: *Handbook of Labor Statistics 1972, 1974, 1976, 1978*; and U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States, 1979*.

Table A-17

**STATE AVERAGE HOURLY EARNINGS FOR PRODUCTION WORKERS
ON MANUFACTURING PAYROLLS RELATIVE TO U.S. AVERAGE,
SELECTED YEARS, 1965-78**

State	1965	1970	1972	1974	1976	1978
UNITED STATES	100.0	100.0	100.0	100.0	100.0	100.0
NEW ENGLAND						
Connecticut	105.3	104.6	103.7	102.5	99.7	98.7
Maine	80.6	82.6	81.2	81.3	81.0	81.3
Massachusetts	95.9	98.5	97.8	96.4	93.3	91.7
New Hampshire	80.6	85.7	85.7	84.6	82.8	81.6
Rhode Island	85.3	86.9	84.4	83.9	80.8	78.0
Vermont	85.0	89.3	87.9	87.6	85.7	84.4
MIDEAST						
Delaware	108.4	104.9	108.3	106.2	106.2	109.1
Maryland	102.6	103.7	105.0	107.1	107.5	108.4
New Jersey	107.3	105.5	106.9	105.9	—	102.6
New York	104.9	105.5	106.7	105.0	102.7	100.7
Pennsylvania	104.1	102.5	104.0	105.9	104.4	105.5
GREAT LAKES						
Illinois	110.8	111.3	113.1	113.8	113.4	111.9
Indiana	114.3	113.4	116.6	116.8	116.9	118.7
Michigan	126.1	126.6	132.4	130.3	132.7	134.6
Ohio	117.8	116.2	119.0	118.7	118.8	120.7
Wisconsin	107.7	110.1	111.2	111.5	110.8	110.8
PLAINS						
Iowa	108.8	112.8	115.2	113.8	114.0	115.9
Kansas	105.3	99.1	100.8	96.9	96.4	NA
Minnesota	106.5	108.0	107.2	108.0	107.7	106.6
Missouri	102.6	103.4	101.6	101.3	100.7	102.8
Nebraska	94.0	97.9	95.4	94.1	—	96.7
North Dakota	92.4	89.3	89.0	88.3	—	91.7
South Dakota	92.8	90.2	85.7	87.8	—	85.9

SOUTHEAST

Alabama	87.7	87.2	86.3	87.1	86.9	89.4
Arkansas	71.6	75.6	74.8	76.5	—	78.1
Florida	84.6	88.1	86.8	86.7	84.9	82.9
Georgia	78.7	81.4	81.5	82.0	79.9	80.8
Kentucky	98.3	99.7	98.9	99.7	100.1	103.6
Louisiana	99.8	100.0	98.6	102.0	103.8	106.3
Mississippi	71.2	74.1	101.0	73.7	74.6	75.5
North Carolina	71.2	75.0	74.2	76.0	74.0	74.0
South Carolina	73.6	76.5	75.3	76.9	76.2	77.2
Tennessee	81.8	83.2	82.3	83.9	—	84.9
Virginia	82.6	83.2	83.1	84.6	83.8	84.6
West Virginia	107.3	104.3	103.7	105.0	105.6	110.6

SOUTHWEST

Arizona	108.4	100.9	103.2	102.0	101.1	99.8
New Mexico	90.4	81.7	76.9	77.2	79.1	79.3
Oklahoma	94.4	94.2	92.7	92.0	93.9	96.2
Texas	97.1	97.0	94.1	94.6	97.0	97.4

ROCKY MOUNTAIN

Colorado	110.4	106.7	106.7	106.2	—	103.0
Idaho	103.7	100.3	100.0	102.2	103.1	108.1
Montana	109.6	112.8	112.0	114.7	—	129.3
Utah	111.2	105.5	101.5	90.9	—	94.0
Wyoming	112.0	102.5	102.1	112.4	106.0	102.8

FAR WEST

California	119.4	115.9	113.6	109.6	108.9	106.5
Nevada	124.5	124.7	117.6	113.3	109.3	108.3
Oregon	115.1	116.5	115.2	116.4	118.3	119.7
Washington	121.0	123.8	121.4	121.2	—	125.2
Alaska	144.9	142.1	141.2	164.6	152.4	NA
Hawaii	89.3	96.7	95.4	98.5	100.1	97.7

NA = not available.

SOURCE: ACIR computations based on Table A-16.

Table A-18

**STATE AND LOCAL GENERAL REVENUE FROM OWN SOURCES
PER \$1,000 PERSONAL INCOME, BY REGION AND STATE,
SELECTED YEARS, 1942-78**

Region ¹ and State	1978	1977	1975	1970	1965	1960	1957	1953	1942
UNITED STATES	\$162.26	\$162.52	\$157.29	\$146.27	\$128.25	\$108.82	\$ 98.65	\$ 86.31	\$ 78.10
NEW ENGLAND	158.50	159.09	153.58	140.05	121.84	106.93	96.45	88.19	76.93
Connecticut	138.57	142.43	1277.47	124.26	106.49	88.10	81.20	66.43	60.16
Maine	164.43	152.42	152.50	148.07	128.39	115.18	102.03	98.53	76.22
Massachusetts	175.61	177.03	165.57	142.29	116.56	104.63	99.87	94.35	81.81
New Hampshire	133.39	137.37	135.85	121.88	116.63	100.87	95.56	93.63	92.88
Rhode Island	156.09	156.59	145.93	129.79	114.76	93.53	85.28	75.80	59.48
Vermont	182.90	188.72	194.17	174.02	148.19	134.25	114.76	100.41	91.02
MIDEAST	166.12	164.53	155.93	140.88	114.58	94.85	83.94	72.53	66.28
Delaware	165.82	160.08	156.30	149.22	118.54	83.30	67.06	58.98	48.44
District of Columbia	158.59	150.09	133.81	119.26	94.35	84.77	76.74	65.05	43.87
Maryland	167.05	165.93	156.07	149.79	113.00	98.58	87.15	72.11	53.62
New Jersey	149.85	151.79	142.28	124.94	107.76	91.46	81.34	73.01	74.87
New York	207.93	217.49	205.18	172.10	140.36	120.67	105.24	97.89	99.14
Pennsylvania	147.49	141.82	141.96	129.97	113.46	90.32	86.13	68.16	77.73
GREAT LAKES	149.71	151.41	148.95	139.70	123.79	103.51	91.06	79.41	77.28
Illinois	141.90	139.93	141.52	132.45	104.49	90.83	82.11	68.02	75.11
Indiana	134.43	137.06	148.19	126.84	126.66	100.31	83.53	77.39	69.12
Michigan	163.19	168.23	153.49	145.68	131.95	112.12	98.64	81.89	73.53
Ohio	130.78	131.73	128.24	117.88	108.20	97.94	81.69	67.87	68.81
Wisconsin	178.23	180.11	173.33	175.63	147.67	116.34	109.33	101.89	99.82
PLAINS	160.84	164.94	155.28	155.57	143.84	122.37	113.84	108.38	96.96
Iowa	154.15	158.62	156.80	156.14	141.89	122.55	111.79	109.18	87.44
Kansas	151.14	149.15	142.14	141.85	143.67	125.40	113.51	99.90	76.98
Minnesota	186.66	192.34	184.04	162.46	158.64	131.69	118.86	110.31	109.97
Missouri	125.36	129.98	131.39	123.90	106.49	81.84	76.71	67.11	66.12
Nebraska	166.24	171.21	150.88	149.85	120.44	102.31	93.45	94.84	74.97
North Dakota	182.92	182.01	165.98	183.91	176.19	157.79	155.88	154.47	151.51
South Dakota	159.44	171.28	155.75	170.87	159.58	135.03	126.66	122.87	111.71

SOUTHEAST	149.28	147.45	146.84	139.05	129.54	113.05	106.32	91.92	75.49
Alabama	147.94	144.54	144.68	139.30	128.92	104.62	97.48	86.20	61.87
Arkansas	136.80	136.05	131.72	130.72	122.91	115.27	105.57	93.85	70.07
Florida	145.62	143.74	137.31	138.85	137.52	116.91	107.49	102.29	80.86
Georgia	155.24	152.43	149.82	136.24	130.19	111.51	107.24	90.65	63.01
Kentucky	145.79	145.71	151.40	137.09	122.06	95.24	93.89	73.93	71.52
Louisiana	171.37	169.55	176.35	162.09	161.78	152.79	139.60	123.86	96.24
Mississippi	167.39	166.34	162.19	166.14	154.63	137.62	135.45	107.76	84.48
North Carolina	138.74	138.51	135.26	131.99	123.45	106.42	101.89	93.59	79.42
South Carolina	151.43	148.02	146.87	129.59	122.60	115.15	108.75	99.45	74.62
Tennessee	145.24	141.42	136.85	128.88	121.30	104.85	99.85	81.63	71.38
Virginia	141.88	138.30	138.14	128.56	108.05	93.28	94.95	73.16	68.15
West Virginia	143.91	144.75	151.46	139.11	121.07	102.89	83.63	76.69	84.22
SOUTHWEST	166.06	163.06	163.80	155.20	147.97	123.74	115.13	102.34	85.82
Arizona	178.58	180.23	168.05	167.66	152.63	128.87	113.53	102.84	84.85
New Mexico	196.50	182.21	198.57	183.41	174.73	137.86	133.61	117.52	100.77
Oklahoma	147.30	148.27	147.58	141.40	137.49	120.87	116.19	105.91	91.53
Texas	141.88	141.54	141.00	128.33	127.02	107.37	97.18	83.09	66.12
ROCKY MOUNTAIN	181.49	176.82	166.46	166.70	149.60	129.95	117.62	103.75	89.06
Colorado	168.60	172.17	160.94	157.82	144.48	126.04	114.65	105.82	93.95
Idaho	162.33	151.94	147.20	151.36	153.44	127.72	115.82	110.48	82.93
Montana	184.02	178.81	170.18	161.91	149.91	135.38	119.55	94.28	99.96
Utah	171.79	166.72	159.58	163.91	143.70	123.32	112.30	97.56	79.86
Wyoming	220.73	214.48	194.41	198.49	156.45	137.29	125.79	110.63	88.58
FAR WEST	179.23	177.88	175.76	162.31	143.58	122.85	115.66	98.35	69.15
California	191.95	187.78	179.89	164.82	144.31	119.61	110.68	97.12	76.33
Nevada	177.55	176.63	181.99	166.25	137.84	121.37	120.04	99.73	61.24
Oregon	178.20	178.21	166.94	152.72	140.82	123.30	121.35	97.88	70.86
Washington	171.90	166.97	163.84	152.97	146.64	124.68	110.56	98.67	68.15
Alaska	275.14*	303.15*	230.20*	914.87*	130.42*	83.78*			
Hawaii	176.56	179.81	186.10	174.78	148.33	125.31			

¹ Regional figures are unweighted averages.

*Not included in regional averages.

SOURCE: ACIR computations from U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various issues.

Table A-19

**STATE AND LOCAL TAXES PER \$1,000 PERSONAL INCOME, BY REGION AND STATE,
SELECTED YEARS, 1942-78**

Region ¹ and State	1978	1977	1975	1970	1965	1960	1957	1953	1942
UNITED STATES	\$127.53	\$128.05	\$122.84	\$116.58	\$104.36	\$ 90.29	\$ 82.83	\$ 73.84	\$ 69.67
NEW ENGLAND	129.25	130.03	126.27	118.87	104.48	93.81	85.23	79.56	71.30
Connecticut	116.38	119.97	108.19	106.64	90.85	74.41	71.31	58.48	56.36
Maine	132.89	124.38	125.90	126.44	109.84	101.78	89.44	89.44	71.06
Massachusetts	151.09	151.36	142.00	124.47	102.07	92.81	89.90	85.41	76.03
New Hampshire	105.12	106.23	107.54	98.66	95.06	85.51	81.69	81.02	83.12
Rhode Island	125.24	126.37	119.40	110.25	101.87	88.69	76.73	68.54	56.01
Vermont	144.80	151.84	154.58	146.76	127.22	119.67	102.32	94.46	85.26
MIDEAST	134.65	133.27	124.18	116.62	94.70	79.68	70.97	61.73	60.19
Delaware	122.82	117.96	116.55	111.16	89.76	65.93	48.34	40.54	43.71
District of Columbia	136.32	130.47	106.73	103.73	80.91	72.03	68.87	59.05	39.92
Maryland	130.14	129.47	122.60	123.27	93.43	83.00	72.94	61.30	47.46
New Jersey	124.19	126.06	115.91	105.76	90.65	77.63	69.66	63.88	68.53
New York	171.88	176.83	166.53	146.20	118.72	103.11	90.64	85.81	91.17
Pennsylvania	122.54	118.80	116.75	109.63	94.73	76.40	75.35	59.81	70.35
GREAT LAKES	117.72	119.34	116.13	113.04	101.96	86.60	77.31	68.59	68.65
Illinois	118.03	117.26	117.28	114.28	88.88	78.85	72.58	61.96	70.41
Indiana	102.95	105.41	111.49	98.29	102.39	82.44	69.17	67.62	62.89
Michigan	126.68	130.39	116.65	115.47	106.72	93.36	82.66	69.09	63.78
Ohio	99.33	100.04	96.94	91.07	86.36	78.98	67.44	56.31	60.77
Wisconsin	141.62	143.61	138.30	146.10	125.45	99.35	94.72	87.96	85.44
PLAINS	117.52	121.81	115.44	118.56	112.13	98.06	92.72	89.67	81.36
Iowa	116.17	120.25	121.38	124.88	116.31	102.57	95.71	94.06	76.58
Kansas	112.88	113.24	108.57	109.61	117.00	105.35	95.93	88.82	70.47
Minnesota	141.64	146.92	139.44	125.04	127.19	105.66	97.45	91.40	92.27
Missouri	99.36	102.60	103.53	99.67	87.37	69.19	66.18	59.88	60.13
Nebraska	121.47	127.84	109.57	112.48	93.35	82.23	76.38	78.22	64.10
North Dakota	116.30	118.36	109.54	125.32	117.66	113.86	114.68	111.48	116.27
South Dakota	114.80	123.47	116.05	132.94	126.00	107.56	102.73	103.86	89.71

SOUTHEAST	110.56	109.74	108.96	105.35	101.06	90.47	85.86	77.91	64.85
Alabama	102.08	99.96	99.45	97.75	97.37	80.44	76.17	68.68	53.42
Arkansas	101.77	101.78	99.02	97.52	97.67	93.74	86.52	78.95	59.58
Florida	106.40	104.74	99.44	105.18	105.33	92.56	86.23	87.49	68.68
Georgia	112.61	111.50	107.86	100.40	99.61	88.05	86.38	75.68	54.59
Kentucky	112.61	112.76	113.19	104.62	96.17	76.90	77.80	63.65	63.57
Louisiana	122.52	120.13	129.80	115.80	120.54	117.50	102.64	101.75	81.14
Mississippi	117.72	118.18	118.37	125.27	118.53	110.79	110.49	93.05	74.98
North Carolina	109.29	109.83	105.78	105.13	99.69	86.96	84.52	81.48	70.80
South Carolina	110.92	107.67	104.63	101.22	96.70	92.58	87.35	84.84	66.13
Tennessee	107.44	107.27	100.45	97.97	97.08	87.03	83.51	70.92	64.58
Virginia	110.50	106.68	106.70	102.42	85.52	72.45	77.52	60.41	43.17
West Virginia	112.87	116.39	122.68	110.91	98.51	86.62	71.24	68.05	77.65
SOUTHWEST	121.88	118.96	119.73	113.99	110.87	95.12	87.92	80.89	72.42
Arizona	142.81	144.15	132.58	132.04	121.45	103.62	90.68	83.71	72.15
New Mexico	132.64	119.55	135.41	126.79	121.57	96.71	91.64	84.55	78.44
Oklahoma	106.61	106.53	105.30	100.02	104.43	95.80	92.80	89.28	82.81
Texas	105.47	105.61	105.65	97.11	96.03	84.33	76.59	66.04	56.26
ROCKY MOUNTAIN	133.85	132.67	120.52	125.43	116.79	103.51	94.78	85.15	74.94
Colorado	125.55	129.72	116.09	122.09	113.96	99.63	93.65	88.87	81.90
Idaho	120.01	116.98	110.21	116.79	121.41	105.23	93.93	91.71	67.90
Montana	137.58	136.04	125.70	127.21	117.83	108.70	98.89	75.31	82.83
Utah	126.65	125.87	116.29	126.73	117.84	103.10	93.56	82.80	72.03
Wyoming	159.46	154.76	134.34	134.33	112.83	100.90	93.88	87.05	70.06
FAR WEST	137.00	135.29	132.92	126.43	113.02	100.20	94.31	79.86	59.76
California	157.99	154.93	145.91	133.80	119.80	101.48	93.83	81.68	66.77
Nevada	130.99	129.30	132.29	123.92	106.86	96.09	93.14	76.47	52.37
Oregon	128.44	129.25	121.33	115.15	109.38	99.58	101.92	82.11	60.68
Washington	127.34	122.27	120.65	115.33	111.84	98.32	88.38	79.16	59.24
Alaska	174.89*	234.82*	123.53*	100.14*	81.13*	58.19*			
Hawaii	140.25	140.70	144.45	143.99	117.21	105.41			

¹ Regional figures are unweighted averages.

*Not included in regional averages.

SOURCE: ACIR computations from U.S. Department of Commerce, Bureau of the Census, *Governmental Finances*, various issues.

Table A-20

PERSONAL INCOME, SELECTED YEARS, 1950-76

Region and State	Four Calendar Years, 1973-76			Index of Amount Per Capita (U.S. Average Equals 100.0)					Rank Order, Highest to Lowest		
	Total Personal Income (millions)		Average Annual Amount Per Capita,	Four Years 1973-76, Place of Residence			Calendar	Calendar	Calendar	1973-76	1950
	By Place of Work	By Place of Residence	By Place of Residence	1970	1965-67	1960	1950				
UNITED STATES	\$3,729,868	\$4,812,367	\$5,665	100.0	100.0	100.0	100.0	100.0			
NEW ENGLAND	211,313	284,777	5,845	103.2	108.4	109.5	109.6	107.0	4 ¹	4 ¹	
Connecticut	59,671	81,789	6,603	116.6	124.0	124.3	127.7	125.3	3	5	
Maine	14,750	19,740	4,677	82.6	83.3	83.4	83.8	79.3	45	38	
Massachusetts	103,110	136,371	5,871	103.6	109.4	111.2	110.8	109.2	15	13	
New Hampshire	11,876	17,086	5,272	93.1	94.2	94.2	96.1	88.4	32	31	
Rhode Island	15,119	20,793	5,530	97.6	99.8	102.6	99.8	107.3	25	17	
Vermont	6,788	8,998	4,780	84.4	87.4	86.3	83.1	74.9	40	41	
MIDEAST	816,487	1,052,947	6,164	108.9	112.7	112.9	115.8	117.4	2 ¹	2 ¹	
Delaware	11,909	14,586	6,305	111.3	114.1	120.1	125.3	142.5	9	3	
District of Columbia	33,367	20,287	7,080	125.0	128.1	134.1	134.2	148.5	2	2	
Maryland	71,451	100,929	6,140	108.4	108.6	109.2	105.4	107.1	11	18	
New Jersey	135,790	192,383	6,562	115.8	118.5	117.2	122.7	122.6	4	8	
New York	355,856	456,818	6,305	111.3	118.8	119.1	123.3	125.2	8	6	
Pennsylvania	208,017	267,945	5,651	99.8	100.1	100.2	102.1	103.0	20	19	
GREAT LAKES	765,153	964,711	5,896	104.1	104.3	108.6	107.7	111.4	3 ¹	3 ¹	
Illinois	228,243	290,965	6,499	114.7	113.6	119.2	119.1	122.0	5	9	
Indiana	93,730	116,286	5,478	96.7	95.1	103.3	98.0	101.1	28	20	
Michigan	172,567	216,079	5,935	104.8	105.4	109.7	106.1	113.7	13	10	
Ohio	193,956	242,369	5,649	99.7	101.4	102.9	105.5	108.3	21	15	
Wisconsin	76,656	99,012	5,407	95.4	96.1	99.8	98.5	98.7	29	24	
PLAINS	285,574	369,398	5,530	97.6	94.6	95.2	92.5	95.5	5 ¹	6 ¹	
Iowa	48,565	64,717	5,652	99.8	94.6	98.6	89.2	99.3	19	23	
Kansas	37,744	52,651	5,767	101.8	97.2	96.3	97.2	96.5	17	25	
Minnesota	69,952	88,170	5,620	99.2	97.3	97.0	93.4	94.3	22	27	
Missouri	80,963	100,840	5,284	93.3	95.3	95.6	95.0	95.7	31	26	
Nebraska	26,395	34,363	5,568	98.3	95.5	95.0	95.0	99.6	24	21	
North Dakota	11,845	15,127	5,934	104.7	77.8	80.7	76.7	84.4	14	35	
South Dakota	10,111	13,530	4,959	87.5	78.7	79.3	80.3	83.0	37	36	

SOUTHEAST	706,213	924,314	4,879	86.1	82.1	76.7	73.3	68.3	8 ¹	8 ¹
Alabama	50,048	64,179	4,452	78.6	74.3	69.6	68.4	58.8	49	49
Arkansas	27,136	36,536	4,386	77.4	72.6	67.3	62.6	55.1	50	50
Florida	123,554	178,810	5,482	96.8	94.3	88.5	87.6	85.6	27	34
Georgia	78,009	96,623	4,926	87.0	84.6	79.3	74.3	69.1	38	45
Kentucky	48,888	63,405	4,694	82.9	78.5	74.9	71.4	65.6	42	47
Louisiana	54,648	70,245	4,630	81.7	77.9	76.4	75.1	74.9	46	42
Mississippi	28,578	36,976	3,954	69.8	66.2	59.3	55.0	50.5	51	51
North Carolina	84,225	104,039	4,813	85.0	82.0	75.5	71.6	69.3	39	44
South Carolina	40,173	50,674	4,532	80.0	75.4	68.0	62.9	59.7	48	48
Tennessee	63,124	78,625	4,724	83.4	78.6	74.6	70.9	66.4	41	46
Virginia	81,980	110,439	5,578	98.5	93.6	88.1	83.9	82.1	23	37
West Virginia	25,849	33,763	4,693	82.9	77.2	73.6	73.0	71.2	43	43
SOUTHWEST	293,832	381,808	5,244	92.6	89.4	85.0	86.7	86.7	7 ¹	7 ¹
Arizona	34,623	45,916	5,252	92.7	92.4	86.3	90.5	88.9	33	30
New Mexico	15,979	20,907	4,604	81.3	77.6	80.6	82.9	78.7	47	39
Oklahoma	40,274	54,583	5,037	88.9	85.4	83.1	84.4	76.4	36	40
Texas	202,956	260,400	5,349	94.4	90.9	85.7	87.1	90.2	30	20
ROCKY MOUNTAIN	95,559	120,927	5,356	94.6	90.5	91.6	94.5	97.4	6 ¹	5 ¹
Colorado	46,129	58,048	5,729	101.1	97.2	93.5	101.4	99.4	18	22
Idaho	12,885	16,341	5,076	89.6	83.0	84.4	83.3	86.6	35	33
Montana	11,760	15,432	5,202	91.8	88.2	88.0	91.6	108.4	34	14
Utah	17,950	22,385	4,689	82.8	81.4	85.1	89.1	87.5	44	32
Wyoming	6,832	8,721	5,868	103.6	96.2	93.1	101.1	111.5	16	12
FAR WEST	525,857	679,934	6,185	109.2	110.3	115.0	117.8	120.4	1 ¹	1 ¹
California	410,763	530,612	6,289	111.0	113.3	111.0	121.8	123.8	10	7
Nevada	12,232	14,888	6,382	112.7	115.1	119.6	126.0	134.9	6	4
Oregon	39,199	50,293	5,524	97.5	93.8	99.1	99.9	108.3	26	15
Washington	63,664	84,140	5,954	105.1	102.2	107.0	106.2	111.9	12	11
Alaska	12,566	11,857	8,258	145.8	117.1	116.6	126.4	159.4	1	1
Hawaii	17,314	21,692	6,360	112.3	116.6	103.4	106.6	92.6	7	28

¹Regional rank order.

Note: Alaska and Hawaii are not included in the national average for 1950.

SOURCE: *Survey of Current Business*, as follows: 1973-76—August 1977, pp. 18-31; 1970 and 1960—August, 1976, p. 17; 1950—August, 1973, p. 43; 1965-67—April, 1968, p. 11, as compiled in 90th Congress, 2d Sess., House Committee on Government Operations, Intergovernmental Relations Subcommittee, "Federal Revenue and Expenditure Estimates for States and Regions, Fiscal Years 1965-67" (Committee print, October 1968), p. 32.

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