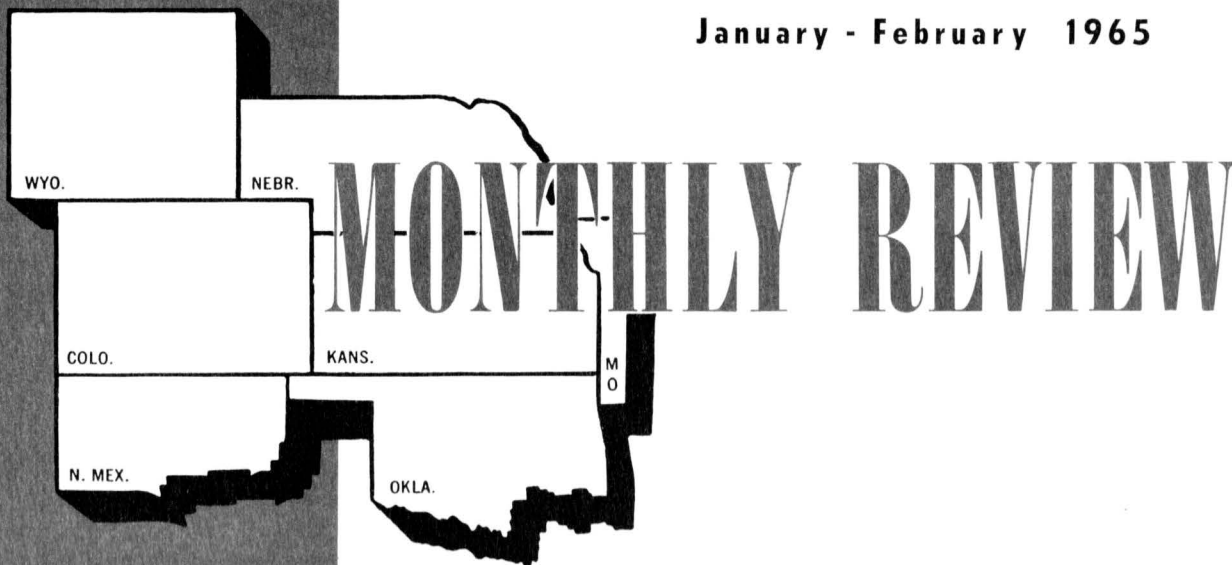


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Federal

Excise

Taxation

EXCISE TAXES, which are levied on purchases of certain commodities and services, have been a part of the Federal tax structure for many years. In the fiscal year 1964, Federal excise tax receipts amounted to about \$13.9 billion, or 12.1 per cent of total Federal receipts from the public in that year.

It has been charged that many Federal excise taxes—other than the liquor, tobacco, and highway trust funds taxes—are a nuisance for the Government to administer and for businesses to collect in relation to the amount of revenue provided. Also, it is contended that such taxes have an undesirable selective impact on the industries taxed and lead to a less than optimum allocation of resources. Furthermore, the relative importance and future role of indirect taxes (broadly speaking, taxes based on expenditures rather than on the receipt of income) in the Federal revenue system, as well as the effect of excise taxes on economic growth and stability, have been receiving increasing attention. As a result, excise tax revision, especially reduction, is being contemplated seriously. It is impossible to review all these issues in a short article. Nevertheless, brief consideration will be given to the questions of the relationship of excise tax revisions to economic stability, economic growth, and a balanced Federal tax structure. Before the basic issues involved in excise tax relationships are examined, a brief classification and description of excise taxes may be useful.

CLASSIFICATION AND DESCRIPTION OF FEDERAL EXCISES

The dozens of different excise taxes imposed by the Federal Government may be classified in various ways, such as by the source at which they are collected, by the functions they are to perform, or by the policy goals they are intended to achieve.

Sumptuary Taxes

Some of the taxes, including several of the larger revenue-producers, are clearly identifiable with particular goals or functions. The taxes on alcoholic beverages and on tobacco and tobacco products—which together in fiscal 1964 provided more than \$5.6 billion, or 40.4 per cent of total excise receipts—are prime examples of sumptuary taxation. That is, these taxes exist not only to raise revenue, but also because they are intended to discourage the purchase and use of those commodities—or at least to penalize the purchasers. The sumptuary basis of taxation is sometimes referred to as a morality basis. However, the case for such taxes also may be expressed in terms of the reduction in social costs believed to result from a reduction in the purchase, use, and production of the goods; or, in instances where the demand for the taxed product is price inelastic, in terms of forcing the purchasers to bear some or all of the social costs involved. On the other hand, such taxes—along with other selective excises—are sometimes criticized as discriminating against certain indi-

viduals solely on the basis of their varying patterns of consumption preferences.

Highway User Taxes

The basis for another group of Federal excises is equally clear, for their function is explicitly stated in legislation. The Highway Revenue Act of 1956 established the Federal Highway Trust Fund to receive the revenues from certain new and existing Federal excise taxes and to serve as the source of Federal funds for highway construction. The current Federal highway program is to be completed in 1972. At that time, the new taxes imposed for its support are to be terminated and the rates on the taxes existing at the time of the act's passage are to revert to their earlier and lower levels.

The earmarking of the taxes involved (on gasoline; tires, tubes, and tread rubber; trucks and buses; diesel and special motor fuels; and on the use of highway motor vehicles weighing more than 26,000 pounds) clearly shows them to be levied according to the benefit basis of taxation. Financing Federal participation in the extension of an interstate highway program from taxes paid into the Federal Highway Trust Fund reflects the policy that the users of the highways, who are expected to benefit directly from their construction, should pay the costs of the program. In the fiscal year 1964, highway trust fund tax collections of \$3.6 billion made up 25.9 per cent of total Federal excise tax receipts.

Other Excise Taxes

The taxes responsible for nearly two thirds of total excise receipts, then, are immediately identifiable as to the goals sought or functions performed. The many taxes that provide the remaining one third are diverse in character. They generally are grouped under four major headings.

Manufacturers' excise taxes. These taxes are imposed at the manufacturers' level and generally are based on manufacturers' sale prices. Receipts from this group of taxes in 1964 were

about \$2.6 billion—18.9 per cent of total Federal excise receipts. Within the group, the 10 per cent tax on passenger cars contributed nearly twice as much revenue—about \$1.7 billion—as all other manufacturers' excises combined. Products in addition to automobiles on which a manufacturer's excise is levied range through major home appliances, musical instruments, firearms, cameras, sporting goods, and business machines, to cigarette lighters, matches, ballpoint pens, and light bulbs.

Retailers' excise taxes. These taxes are levied at the retail level and are based on retailers' sale prices. In most instances the amounts of these taxes are quoted separately from the retail price of the article taxed. Only four Federal excise taxes are currently found in this group—the so-called luxury taxes on furs, jewelry, luggage, and toilet preparations. The \$475 million in tax receipts from this group amounted to only 3.4 per cent of total 1964 excise tax collections.

Documentary and certain other stamp taxes. Included in this group are taxes on the issue and transfer of stocks and bonds, on deeds of conveyance, and on policies issued by foreign insurers, as well as on playing cards. Revenue from this group is relatively small, about \$172 million, or 1.2 per cent of total Federal excise receipts in fiscal 1964.

Miscellaneous excise taxes. This catch-all category includes such diverse taxable items as certain admissions, dues, and fees; telephone, telegraph, and cable services; transportation of persons by air; wagering; use of safe deposit boxes; coin-operated amusement and gaming devices; and sugar. As a whole, this group was responsible for 9.4 per cent (about \$1.3 billion) of the excise tax receipts of 1964. Taxes collected on general and toll telephone service and on telegraph, cable, and radio service made up more than two thirds (about \$900 million) of miscellaneous excise collections.

Other than for those taxes imposed on a sumptuary or benefit basis, it is difficult to

generalize about the functions performed by the excise taxes or the policy goals sought through them. In some cases the purpose for which the tax originally was levied has vanished, although the tax itself lingers on. For instance, some of the excises were introduced and rates on others were raised during World War II and the Korean War, both to provide additional revenue for wartime needs and to aid in rationing scarce commodities through price increases. Those taxes included in the retailers' excise group also have been popularly known as "luxury taxes." Part of the rationale for such taxes is the notion that collections from them are a suitable source of revenue because the purchase of such "luxury" goods is evidence of taxpaying ability. Perhaps the best generalization that can be made about excise taxes other than those levied on a sumptuary or benefit basis is that they provide a limited source of general revenue which supplements the more important income tax sources.

STABILITY OF EXCISE TAX RECEIPTS

Because excise taxes are expenditure taxes, the amount of revenue collected from them depends on the quantity purchased or amount spent on the taxed goods and services. Some of the taxes, such as the gasoline tax, are levied as a fixed amount per unit of output. However, most are levied as some per cent of the taxed good's selling price.

Just as excise tax receipts depend on the quantity purchased or total expenditures on taxed goods, so does the stability of receipts depend on the relationship of changes in expenditures on the goods to changes in the income of the buyers. Something about the stability of revenues from excise taxes levied at given rates may be inferred from studying the degree of sensitivity to income changes of expenditures on goods subject to excise taxation. If the expenditures that make up the excise tax base are highly sensitive to income change, then collections will rise faster than income

during periods of increasing incomes and, conversely, will fall faster than income when the latter declines. Thus, excise revenues based on highly income-sensitive expenditures add to the built-in flexibility of the tax system, and behave similarly to revenues collected from the progressive income tax. Both provide automatic stabilizing effects on general economic activity. On the other hand, excise collections from an expenditure base with low-income sensitivity have the opposite effect.

In the March 1959 issue of the *Survey of Current Business*, the U. S. Department of Commerce published a study of the income sensitivity of certain personal consumption expenditures to changes in disposable personal income. A number of the categories of consumer expenditures included were equivalent or similar to some of the commodities or groups of commodities upon which Federal excise taxes are levied, thus permitting a rough estimation of the expected sensitivity of excise revenues to income changes.

Since the sumptuary and highway taxes are likely to be continuing elements in the Federal tax structure, the interest in excise repeal or rate reduction centers on the remaining taxes. Out of the approximately \$4.7 billion of 1964 excise receipts collected from those remaining taxes, the commodities for which income sensitivity estimates were made in the Commerce Department study include those responsible for about \$3.6 billion.

For the two largest revenue producers in this group (automobile purchases, and telephone, telegraph, cable and wireless services) expenditures change more than proportionately for a given change in income. That is, their purchase has a relatively high income sensitivity. Commerce Department estimates indicate that a 12 per cent change in expenditure on automobiles and a 16 per cent change in spending for communication services are associated with a 10 per cent change in income. Expenditures on items such as sporting goods and fishing equip-

ment—which produced only about \$30 million in excise collections in 1964—are also income sensitive; an estimated 15 per cent change in spending on them being associated with a 10 per cent change in income.

Taxed commodities upon which expenditures changed proportionately to income change included radios, television sets, records, and musical instruments in the manufacturers' excise group, and toilet articles and preparations in the retailers' excise group. Revenues in 1964 from the former were about \$250 million, and from the latter, about \$177 million. The proportionate response means that a 10 per cent change in spending for these items is associated with a 10 per cent change in income.

Finally, the study of consumption patterns indicated that some taxed commodities have a relatively low income sensitivity of expenditure. These commodities, and their respective excise revenue contributions in 1964, were approximately as follows: auto parts and accessories, \$200 million; jewelry, \$189 million; and major household appliances, \$140 million. The income sensitivity of expenditures on these groups of commodities was estimated to be relatively low, with a 7 to 8 per cent change in their purchase being associated with a 10 per cent change in income.

It generally is supposed that purchases of heavy household durables and other nonroutine expenditures, such as for jewelry, luggage, records, etc., are more responsive to income change than indicated by the estimates of the sensitivity coefficients based on income alone. However, it has been suggested that the findings of a less-than-expected responsiveness of expenditures to income change may have resulted from the rather wide range of goods included in the various categories.¹ With the larger revenue-producing taxes based on ex-

penditures that are relatively sensitive to income change, it appears reasonable to assume that the response of the expenditure base of excise tax revenues other than the sumptuary and highway taxes is at least proportionate to income change. Therefore, these excise taxes probably do contribute slightly to the built-in flexibility of the Federal tax structure and to the Federal budget's automatic stabilizing powers, but not as strongly as do the income taxes.

FORWARD SHIFTING OF EXCISE TAXES

It generally is assumed that the amount, and thus the burden, of an excise tax is shifted forward to the final purchaser of the taxed item. As far as the buyer is concerned, the excise tax is simply a part of the total price of the commodity or service taxed. It makes little difference to the assumption of forward shifting whether the amount of the tax is quoted separately from the without-tax price of the item. If market conditions require it, the seller can absorb part of the tax by reducing the without-tax price of the good when the tax is separately quoted, as well as he can when the tax is simply included in the stated price of the product (as is often true for the manufacturers' excises).

In the case of manufacturers' excise taxes, there is a tendency toward pyramiding the tax as it is shifted forward. The percentage markup used at various stages in the distribution channel is applied to a price which includes the tax, and therefore to the tax itself, with the result that during the distribution process the price to consumers increases by more than the amount of tax collected.

An important implication of the assumption of forward shifting is that, from the standpoint of the purchaser of a taxed good, the result of a change in the tax rate is a change in the price of the product. Therefore, it is through price changes that excise tax reductions or increases primarily influence consumer behavior and economic activity. A price decline likely will

¹Otto Eckstein, "Indirect Versus Direct Taxes: Implications for Stability, Investment, and Economic Growth," *Excise Tax Compendium: Compendium of Papers on Excise Tax Structure*, Part I, House Committee on Ways and Means, 1964, p. 51.

result in an increase in the amount of the product purchased, the size of the increase depending on the price elasticity of the demand for it. The demand for a product is highly price elastic if the amount purchased changes proportionally more than its price changes. If the change in the amount purchased is proportionally smaller than a given price change, the demand for the item is price inelastic. Little empirical evidence is available concerning the price elasticity of demand for various goods, although the relatively high price elasticity of the demand for consumers' durable goods generally has been confirmed in some recent studies.

The decrease in the price of one good also means that a change has occurred in the entire structure of relative prices, perhaps leading consumers to make significant adjustments in their over-all spending patterns—probably with a time lag. At the same time, the fall in price of a particular product has the effect of increasing the real income of consumers. One of the alternatives available to a consumer so affected, as he reapportions his income among possible uses, is to increase his savings. However, since expenditure taxes fall on the funds involved only when and if they are spent, consumption taxation in general tends to give an incentive to reduce spending and increase saving. Therefore, a reduction in excise taxes may make increased spending a more attractive alternative use of income than increased saving.

On some occasions, reductions in excise taxes have been reflected in lower product prices; on other occasions, they have not. That the excise reductions of 1954 were passed on in the form of lower prices to consumers, at least for some products, was corroborated by John F. Due's case study of the behavior of electrical appliance prices published in the September 1954 *National Tax Journal*. Manufacturers' suggested retail prices on major and minor household electrical appliances were reduced by nearly all makers on most items, fol-

lowing the reduction from 10 per cent to 5 per cent of the manufacturers' excise tax which had been imposed in 1941. The price reduction for major appliances was pyramided, while that for minor appliances was not, leading Due to believe that in the latter case the opportunity was taken to increase margins without an observable increase in prices.

EXCISE TAX REDUCTION

Since the close of World War II there has been much interest in Federal excise tax reduction. The Korean War halted attempts at excise reduction and revision, and brought instead continuation and some increases. A number of the Federal excises have been repealed or reduced since 1954, and other revisions are already scheduled to go into effect on July 1, 1965.

Short-Run Considerations

The short-run goal of further excise tax repeal or rate reduction at this time is the desire to ward off a possible slowing down or reversal of the current cyclical expansion. This aim would be accomplished by an increase in consumers' spending, because of the greater purchasing power resulting from the lower prices presumed to exist after the tax reductions, and by the indirect influence on business spending induced by the growth of consumer demand.

The desirability of pursuing the short-run goal of maintaining the present expansion through excise tax reduction is not universally accepted. In addition to increased Government spending as an alternative to tax reduction, further reductions in personal or corporate income taxes might be better instruments for achieving the goal than lower excise taxes. In any case, it seems improbable that excise tax rates will be chosen for active manipulation in a manner consciously designed to be a major tool of discretionary countercyclical policy. Therefore, excise repeal or major rate reductions that occur are likely to be more or less permanent. It has been suggested that the

value of excise tax reduction as an antirecession tool makes the proper countercyclical timing of its use especially important.²

At least two other short-run considerations deserve mention here. First is the matter of the general atmosphere in which excise rate adjustments would occur. The 1954 reductions took place at a time when business conditions were relatively weak and sellers, eager to stimulate sales, apparently were willing to pass the tax reductions along as price decreases. Although most business forecasters suggest that 1965 will be a year of slower growth, few expect a downturn. Excise cuts in such an atmosphere might lead to fewer and smaller price reductions, thereby weakening the direct impact on consumer spending. Such a consideration may support the suggestion that, for maximum effect, excise tax reductions might well be reserved for antirecession use.

The second consideration concerns the possible anticipatory effects on spending. If the public becomes convinced that excise tax rate reduction or outright repeal is bound to come soon, some postponement of buying is almost certain to occur. Businessmen as well as final consumers would be affected, for the former could refrain from restocking their inventories of goods bearing manufacturers' excises, just as they would in anticipation of any other kind of price decrease. On the part of consumers, postponement would be most likely to occur in the cases of the nonroutine purchase of consumer durable goods such as automobiles and major home appliances. It is reasonable to believe that any disturbing effects of such a situation on the economy would be temporary, affecting only the timing of such postponable purchases.

Longer-Run Considerations

Present consideration of excise tax reductions apparently is not a part of an over-all plan for reform or modification of the entire

Federal tax structure. However, questions revolving around the possible need for greater balance among Federal tax sources recently have been under discussion by experts in the field of public finance. These discussions often have centered on the desirability of a relative shift in Federal finance from the income taxes toward expenditure taxes of some kind and on the equity aspects of alternative tax sources.

Professor Richard A. Musgrave of Princeton University has estimated the effective rates of tax, that is, the ratio of taxes paid to income received for the various income-size groups, in the United States. This ratio is used to determine whether a tax structure is progressive or regressive. If the ratio is higher at higher income levels, then the tax structure is progressive; if lower, it is regressive. That is, a tax structure is regressive when the lower income groups pay a higher *proportion* of their income in taxes than do the higher income groups.

Musgrave estimated that for all levels of Government, the tax structure is moderately progressive; that the Federal tax structure is distinctly progressive while that of state and local governments in the aggregate is regressive; and that excise and sales taxes at all three levels of government are clearly regressive. Thus, it appears that reduction or repeal of the Federal excise taxes would, in itself, push both the Federal tax structure and the total tax structure in the direction of somewhat greater progressiveness.

When consideration is given to the long-run consequences of excise tax reductions for the structure of the Federal tax system and its influence on general economic activity, at least three other factors should be mentioned. The first concerns the relationship of excise taxes to economic growth. It may be argued that, since excise taxes are expenditure taxes, their imposition discourages spending and encourages saving, which is indispensable to capital formation and economic growth. Therefore, excise tax reduction would hamper growth by

²Eckstein, *op. cit.*, pp. 52, 54.

encouraging spending at the expense of saving. However, such an argument assumes that the economy is operating at full utilization of its productive resources. In a situation where aggregate demand is assumed to be adequate for full employment, it may be desirable to shift resources from consumption to capital formation uses in order to stimulate economic growth. But with the economy performing at less than full employment levels, it is not likely that attempts to raise the savings rate will result in higher rates of economic growth. If high consumption spending is desirable—as has been true in recent years—to achieve the high levels of aggregate demand necessary for full employment, then excise tax reductions may be advantageous for economic growth.

Second, there is the question of the effect of excise tax reductions on the built-in flexibility of the Federal tax structure. Automatic response to cyclical change of Federal tax receipts and of unemployment compensation expenditures has contributed substantially to the stability of the American economy in the post-war years. The corporate income tax is the strongest automatic stabilizer of general economic activity, and the individual income tax also is a stronger stabilizer than are excise taxes. Although excise taxes may contribute slightly to the built-in flexibility of the Federal tax structure, their reduction or repeal would

have little effect on the automatic stabilizing power of Federal fiscal actions since this power comes mainly from the corporate and personal income taxes and the payment of unemployment compensation in recessions.

Third, excise tax decreases would reduce the “fiscal drag” on the economy. Any given Federal budget program of tax rates and expenditures yields different amounts of surplus or deficit at various levels of economic activity. At the full employment level, present programs apparently would yield a moderate surplus—the so-called full employment surplus—with a consequent restrictive effect on over-all demand. In such a situation, a reduction of the full employment surplus by tax reductions which enlarge private after-tax incomes, may strengthen private demand sufficiently to maintain a cyclical expansion and to foster economic growth. The case for the income tax reductions of 1964-65 rested on this kind of analysis, and ensuing events tend to show its apparent correctness. Cyclical expansion continued, personal disposable income and consumption rose at higher rates, and the administrative budget deficit fell from \$8.3 billion in fiscal 1964 to an estimated \$5.7 billion for fiscal 1965. Excise taxes are one of several sources of Federal revenue whose reduction would lessen the “fiscal drag” which contributes to a level of activity below the economy’s potential.

Economic Development in the *Northern Great Plains*

THROUGHOUT MOST of this century, an important economic race has been waged across the Great Plains. The principals in this contest have been agricultural technology on one hand and nonfarm economic growth on the other. In agriculture, the implementation of new technology, together with market changes, have released a flood of human resources from food production. Growth in non-agricultural industries, at the same time, may be viewed as the process of absorbing this manpower in alternative productive activities.

For the most part, the pace of the agricultural revolution in releasing manpower has been so rapid that it has taxed the ability of nonagricultural developments within the Plains States to keep up. This has been evidenced by the outmigration of population and the failure of population growth to attain the rate for the Nation at large. While total population in the seven Northern Plains states declined in only one census period, the 1930's, growth has been slow in comparison with the national average.

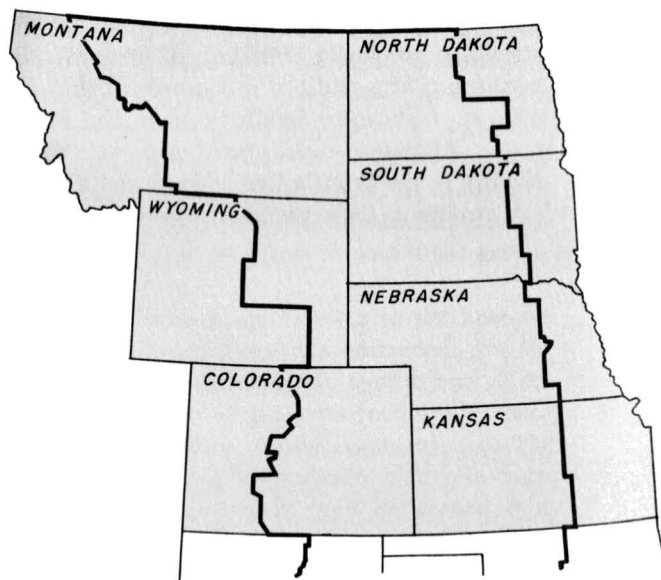
At first glance, the most recent decade—from 1950 to 1960—appears to permit a somewhat more optimistic interpretation of the capacity of the nonfarm economy to provide expanding employment opportunities. In this 10-year period, for example, population growth in the 7-state area came closer to matching the U. S. average than it had in some time.

NOTE: This article was prepared as a background study for State of Society Conference for Church Leaders, University of Nebraska, November 17-18, 1964.

Upon closer inspection, it is apparent that most of the relative improvement was due to developments in Colorado and Kansas. Population in Colorado surged upward by nearly a third over the decade and in Kansas the increase fell short of the national average by only 4 percentage points. Montana, with a much smaller total population, recorded a relative increase similar to that in Kansas.

Among most of the other states—North Dakota, South Dakota, and Nebraska—population grew more rapidly in the 1950's than in the two previous decades but the degree

NORTHERN GREAT PLAINS AREA



— Boundary of the Great Plains Area as established by the U. S. Department of Agriculture. For this study, entire states in the Northern Plains Area are included.

to which they fell short of the national rates was not altered significantly. In Wyoming, where population had been increasing more rapidly, the rate over the 1950's slipped below that for the United States.

These observations on population developments suggest that the nonfarm economies of the Northern Plains states have experienced some significant innovations in the pace and composition of their growth. At the same time, the impact has been far from uniform among the states.

EMPLOYMENT TRENDS

The process of reorienting the productive activities of an economy requires time, among other things. During the last quarter century, important changes have occurred in the Northern Plains states. Nonfarm employment in 1963 reached a total of nearly 2.1 million persons—an increase of about 1 million from the level just prior to World War II, or an approximate doubling of employment. Significantly, the relative gain in nonfarm employment in the 7-state area was greater than that for the Nation as a whole.

In the years since World War II, nonagricultural employment in these states has continued to show sizable gains and to surpass the national growth rate. The region's nonagricultural wage and salary workers numbered 41 per cent more in 1963 than in 1947, while the Nation's nonfarm wage and salary employment rose by 30 per cent during those years.

Additional insights concerning recent trends in the nonagricultural sector of the region's economy may be gained by disaggregation in both economic structure and geography. The nonagricultural sector may be subdivided into three component parts: an industrial category, including manufacturing, mining, contract construction, and transportation, communications, and public utilities; a private nonindustrial category, including trade, services, and finance,

insurance, and real estate; and a government category.

In the nonindustrial and government categories, the region just about kept pace in relative terms with national growth in employment from 1947 to 1963. Regional nonindustrial employment grew by 45 per cent; national, by 46 per cent. Regional government employment increased by 71 per cent; national, by 74 per cent. Thus, the industrial category is responsible for the region's greater relative gain in total nonagricultural employment. Industrial employment in the seven states increased by 22 per cent, while the national increase was only 9 per cent.

What groups within the industrial category contributed most to its position as the primary source of relative employment growth compared with the Nation? On the basis of regional totals, it is evident that manufacturing and contract construction provided most of the impetus. The total industrial employment increase of 22 per cent was composed of increases in employment in manufacturing (37 per cent) and in contract construction (80 per cent) and of decreases in mining (-4 per cent) and in transportation, communications, and public utilities (-11 per cent).

Gains in mining employment were restricted to three relatively less important mining states—Nebraska, North Dakota, and South Dakota—and to Wyoming, while the region's more important mining states of Kansas, Colorado, and Montana incurred employment declines. (Crude petroleum and natural gas production are defined as mining activities.) In the transportation, communications, and public utilities group, the widespread postwar reduction in railroad employment was a major influence. Only Colorado among the seven states experienced an increase in this employment category. All seven states gained in manufacturing and contract construction employment, with the relative, but not the absolute, increase in contract construction being larger than that

in manufacturing in every case. Finally, of the approximately 125,500 increase between 1947 and 1963 in regional industrial employment, 107,000 occurred in the three states of Colorado, Kansas, and Nebraska.

Although the region's greater relative growth, vis-a-vis the Nation, in industrial employment has been emphasized, it is equally necessary to recognize the importance of the rapidly rising employment levels in the non-industrial and government categories of the 7-state area. Both in the region and in the Nation, employment in the latter two categories has grown much more rapidly than industrial employment. As a result, industrial employment as a proportion of all nonagricultural employment has declined, while nonindustrial and government employment each constitute a larger share of total nonagricultural employment than in 1947. The importance to the region of employment in these two categories is perhaps better seen in terms of absolute numbers. The regional increase in nonindustrial employment during the period was about 284,000 persons and in government employment, about 200,000. The comparable change in industrial employment was about 125,500.

In relative terms, it is true that industrial employment in the seven states has been growing faster than national industrial employment, while regional employment in the nonindustrial and government categories has simply kept pace with national growth. However, the absorptive power of the region's nonagricultural sector has rested mainly on the large increases in employment in the latter two categories. Barring some unforeseen major shift in patterns of industrial location, it also is likely that the categories of nonindustrial and government employment will continue to provide the major source of job opportunities within the region for those persons released or displaced from the agricultural sector, as well as for the increasing number of youngsters entering the labor force.

INCOME TRENDS

Although a discussion of employment patterns helps to provide an understanding of a region's economic structure and changes therein, it cannot furnish by itself answers to all the pertinent and interesting questions concerning recent economic developments there. A complementary approach to an analysis of economic trends focuses on income changes. The total income of any given area serves as an indication of economic activity there, while per capita income is probably the best available measure of economic welfare. Therefore, it will be useful to discuss recent trends in the behavior of these data for the Northern Plains region and for the several states, as well as the patterns of change in the sources of that income.

Total personal income in the United States increased by 122 per cent—about \$253 billion—from 1948 to 1963. Because population also was growing during that period, national per capita personal income growth was not as great, amounting to a 72 per cent increase. Of the seven Northern Plains states, only Colorado's growth in total personal income was greater than the Nation's, while only Kansas and Colorado experienced an increase in per capita personal income comparable with the national advance. The per cent changes between 1948 and 1963 for the seven states were as follows:

	Total Personal Income	Per Capita Personal Income
	(Per Cent)	
Colorado	166	71
Kansas	106	75
Montana	83	40
Nebraska	81	57
North Dakota	60	47
South Dakota	60	33
Wyoming	96	56
United States	122	72

Because only one state grew faster than the Nation in total income, the region's income as a percentage share of the Nation's declined. Moreover, it appears that the convergence of state per capita income toward the national average which existed during most of the 1940's did not extend into the next decade for most of the Northern Plains states. Per capita income in the Dakotas recently has been running between 70 and 85 per cent of U. S. per capita income, except for 1962. Kansas and Nebraska have achieved per capita income levels which generally have been more than 90 per cent but less than 100 per cent of the national average. Colorado's per capita income has tended to fluctuate rather closely around the national level. Per capita income in both Wyoming and Montana has fallen from roughly 110 per cent of the U. S. average in 1948. In Wyoming, per capita income ended its relative decline in the mid-1950's and has fluctuated around the U. S. figure since then. Montana income, on the other hand, has tended downward relative to the national average.

Thus, since the close of World War II, per capita personal income growth in these states generally has not kept pace with that of the Nation. Compared with the national average income per person, current levels are about the same in Wyoming and Colorado, somewhat below in Nebraska, Montana, and Kansas, and substantially below in the Dakotas. Nor does there appear to have been in the past 15 years or so any strong and sustained bettering of the relative income positions of these states. In fact, the reverse has tended to be true for the region as a whole.

Total income may be divided into that part received by persons as a result of current production activities, called participation income, and another part received as a return on investments or as transfer payments. Movements in participation income, which makes up about 80 per cent of total income, have been very similar to those in total income. Participation

income, in turn, may be allocated by industrial source and thus may be used in a more intensive discussion of variations in regional income.

In a national economy as highly integrated and interdependent as that of the United States, the most important component of income growth in a state or region derives from its participation in the over-all growth of the national economy. If there were no differences among states or regions, each would grow at the national rate. Thus, in attempting to explain how observed differences in income growth among regions have come about, a "national growth element" for each region may be determined by computing the regional income growth that *would* have occurred over a given period if the region had actually increased its income at the national rate. For example, if the 7-state Northern Plains region had increased its total participation income from 1948 to 1962 at exactly the same pace as the United States, its regional income would have grown by about \$7.8 billion. As a matter of fact, however, income in the region grew more slowly and the actual gain was approximately \$6.9 billion.

No region experiences income growth at precisely the same rate as does the Nation, for two broad reasons. First, any region's economic structure or "industry-mix" is different from that of the Nation.¹ Total economic structure is composed of some rapidly growing industries and some slowly growing (or declining) industries. When an area has a favorable industry-mix, i.e., a preponderance of rapid-growth industries, it will grow faster than the national rate, and vice versa. Second, quite apart from whether an industry is growing rapidly or slowly over all, it may be growing faster in a particular area than it is nationally. If this is the case, the industry, even if it is a slow-growth industry according to the industry-mix criterion,

¹The analysis of this section is based on an article in the U. S. Department of Commerce, *Survey of Current Business*, April 1964.

**COMPONENTS OF CHANGE IN INCOME FROM PARTICIPATION IN
CURRENT PRODUCTION, 1948-62***
(Millions of Dollars)

	Total Participation Income					Nonagricultural Participation Income				
	Change due to effect of			Total Change**	Net Relative Change†	Change due to effect of			Total Change**	Net Relative Change†
	National Growth	Industry Mix	Regional Share			National Growth	Industry Mix	Regional Share		
Kansas	2,072	-427	152	1,797	-275	1,709	42	154	1,905	196
Colorado	1,439	-129	898	2,208	769	1,339	20	947	2,306	967
Nebraska	1,606	-566	86	1,126	-480	1,120	35	67	1,222	102
Montana	754	-275	27	506	-248	566	-40	-23	503	-63
North Dakota	717	-405	224	536	-181	374	7	40	421	47
South Dakota	802	-444	86	444	-358	415	22	69	506	91
Wyoming	367	-72	-30	265	-102	336	-28	-40	268	-68
Northern Plains States	7,757	-2,318	1,443	6,882	-875	5,859	58	1,214	7,131	1,272

*Income from participation in current production is the sum of wages and salaries, proprietors' income, and other labor income.

**Sum of the changes due to effect of national growth, industry-mix, and regional-share.

†Sum of changes due to effect of industry-mix and regional-share, and represents the amount by which a state exceeded or fell short of national growth rate.

SOURCE: U. S. Department of Commerce, *Survey of Current Business*, April 1964.

ion, will add to the area's relative income growth.

This second element in an area's growth is referred to as the "regional-share effect;" the first element as the "industry-mix effect." Along with the national growth element, they compose the total change in an area's participation income. The industry-mix and regional-share effects together measure a region's net relative income change; that is, the extent to which the area's income growth surpasses or falls short of over-all national growth.

Across the Nation, the regional-share effects were the dominant influences in determining net changes in the geographic distribution of income between 1948 and 1962. In the Northern Plains region, however, the opposite situation prevailed. Income changes due to industry-mix effects were larger than those related to regional-share. This particular pattern of influences on income growth reflected the decline in farm income which had a maximum impact in this agriculturally oriented region.

Thus, total participation income in the Northern Plains region increased at a pace slower than that of the Nation, due to the special position of agriculture in the area. Every

one of the seven states had an adverse industry-mix effect, primarily because of the role of agriculture. This adverse effect was strong enough to offset favorable regional-share effects in six states and to cause the region as a whole to show a total growth below the national rate. Colorado alone had a favorable regional-share effect strong enough to offset the adverse influence of its industry-mix.

When agricultural income is withdrawn and only the nonagricultural sector is surveyed, some important differences appear. First, the growth of nonfarm income in the region exceeded the national rate from 1948 to 1962. Second, this rapid pace of income expansion rested primarily upon large regional-share effects, that is upon the relative rates of growth of industries within the region. With the absence of agriculture, in other words, the regional-share influence became the dominant component of income change and the pattern of influences thus became similar to that for other regions. Finally, the industry-mix effect became a positive influence and contributed to the relative income growth of the region.

Five of the states—Kansas, Colorado, Nebraska, and the Dakotas—experienced fa-

avorable effects from both the regional-share and industry-mix influences. Their income expansion was large enough to give the region a more rapid expansion than the Nation in nonfarm income during the period. Montana and Wyoming incurred small adverse effects on nonfarm income growth of both the industry-mix and regional-share types.

How can the region's relatively rapid growth in nonagricultural income be explained? Income growth in Colorado was responsible for most of the favorable growth pattern. That is, it accounted for most of the amount by which the region's income exceeded the national growth rate. The analysis also corroborates the conclusion drawn from the study of employment trends, namely, that manufacturing, government, nonindustrial activities (especially finance), and construction have been among the most important sources of growth and of absorbing idled agricultural manpower in the region.

Growth in income from manufacturing played a significant role in Kansas and Colorado. In Kansas, income generated by military aircraft production at Wichita was the dominant factor in the expansion. Employment and income arising from this activity passed their peaks some time ago and have subsequently declined. In addition, income growth from motor vehicle assembly at Kansas City and from expanded employment in machinery and in stone, clay, and glass activities has been relatively important. Food processing, on the other hand, increased more slowly in Kansas than nationally and subtracted from the state's income growth. In Colorado, ordnance and metal industries were the major source of income growth in manufacturing. Most of the defense production activity is centered in the Denver area. Nonauto transportation equipment, printing, food, and the stone, clay, and glass activities also contributed relatively large amounts to manufacturing income growth in the state.

Among the remaining Northern Plains states,

the most significant additions to manufacturing income occurred in the food, the ordnance, primary and fabricated metals, and the electrical machinery industries of Nebraska, as well as in lumber and furniture production in Montana. In manufacturing industries of the other states—and for other industries in the above-mentioned states as well—income growth was more or less parallel with that for the Nation as a whole. Thus, they did not contribute in a significant way to a growth rate in excess of the national average.

SUMMARY

In general, three broad conclusions emerge from this study of the economic development of the Northern Great Plains states. First, the nonagricultural economy of the area has grown more rapidly than that of the Nation during the postwar period in terms of both income and employment. Second, expansion has not been uniform among the states nor in the industrial structure of the area. Rather, it has been concentrated both geographically and industrially. Manufacturing employment and income growth, for example, have been centered in Colorado and Kansas. In each of these states, defense procurement of the Federal Government was a major factor in the growth. Finally, the region's growth measured in absolute terms yields somewhat different conclusions from those implied by analysis in relative terms. Although the region depended upon industrial expansion for its relatively more rapid growth in nonfarm employment, the capacity of the nonindustrial and government (state and local as well as Federal) sectors to absorb manpower released from agriculture was much greater. Income and employment growth in the region depended heavily upon growth in government, finance, services, and construction. Expansion in these activities occurred rather broadly over the region, although Colorado and, to a lesser extent, Kansas dominated the pattern.

