The distribution of burdens and benefits of government fiscal policy: an empirical study of the Western Region

THE DISTRIBUTION OF BURDENS AND BENEFITS OF GOVERNMENT FISCAL POLICY: AN EMPIRICAL STUDY OF THE WESTERN REGION

by

Joel Craig Plath

A Thesis Submitted to the Faculty of the

DEPARTMENT OF AGRICULTURAL ECONOMICS

In Partial Fulfillment of the Requirements
For the Degree of

MASTER OF SCIENCE

In the Graduate College

THE UNIVERSITY OF ARIZONA

1 9 7 5

STATEMENT BY AUTHOR

This thesis has been submitted in partial fulfillment of requirements for an advanced degree at The University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this thesis are allowable without special permission, provided that accurate acknowledgment of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the Graduate College when in his judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permission must be obtained from the author.

SIGNED: Joel Craig Plath

APPROVAL BY THESIS DIRECTOR

This thesis has been approved on the date shown below:

Harry W Ayer

H. W. AYER
Associate Professor of
Agricultural Economics

7/22/75
Date

ACKNOWLEDGMENTS

I wish to express my sincere appreciation to the members of my graduate committee, Dr. Harry W. Ayer, Chairman, Dr. Roger W. Fox, and Dr. Gayle S. Willett, who not only provided valuable comments regarding this thesis but who also helped my academic life to be both rewarding and enjoyable. My special thanks go to Dr. Ayer who provided the encouragement and gave so unselfishly of his time and effort so as to make completion of this thesis possible.

My very special thanks and appreciation go to my parents who provided continual encouragement and moral support, as well as financial assistance to get me through the lean period.

I would like to express my appreciation and thanks to Mrs. Paula Tripp who not only typed this manuscript but also offered valuable comments.

TABLE OF CONTENTS

TABLE OF CONTENTS--Continued

LIST OF ILLUSTRATIONS

LIST OF ILLUSTRATIONS--Continued

LIST OF ILLUSTRATIONS--Continued

LIST OF ILLUSTRATIONS--Continued

LIST OF ILLUSTRATIONS--Continued

LIST OF TABLES

LIST OF TABLES--Continued

ABSTRACT

Government taxation and expenditure policies provide one important means by which the public sector can influence income distribution. Little empirical analysis has been conducted to determine the net effect of public fiscal policies upon income distribution because of the inability to objectively determine the value to families of government provided public goods.

It is the objective of this study to estimate the net impact, considering both taxes and expenditures, of government fiscal activity in the Western Region of the United States in 1961. Recent theoretical advances allow the value of public goods expenditures by government to be determined. The distributions of the tax burdens, expenditure benefits, and post-fiscal incomes are determined for the Western Region and for the urban and rural populations of the region. These distributions are then compared with the results of an earlier study done for the entire United States which used the same data sources and methodology.

Public fiscal policies made income distributions more equal in the West in 1961, except for the rural farm population. There was also a net transfer of income into the region as a result of the fiscal policies, with most of the transfer accruing to the rural population.

CHAPTER I

INTRODUCTION AND PURPOSE

The distribution of income has increasingly become a topic of concern in the United States. In her December 1974 address to the American Economics Association, Alice Rivlin of the Brookings Institution predicted that, " . . . income shares and distributional aspects of public actions are going to become a major focus of policy in the next few years" (Rivlin, 1975, p. 1). Several reasons are given for making this prediction: the rise in real incomes while the relative income shares have remained constant has widened the gap between the fairly rich and the fairly poor, mass and instant communications (especially television) have increased awareness of what others have and do not have, the rise of group identities with increased political sophistication in pressing demands, and demographic-social forces which could increase income inequality (for example, given the tendency of persons from similar socioeconomic-educational classes to marry, the increase in the number of women working would increase the incomes of the fairly rich more than the incomes of the fairly poor).

The data in Table 1 give some idea of the inequality of income distribution in the United States. The index of income concentration is based upon a Lorenz Curve such as the hypothetical one depicted in Figure 1. The Lorenz Curve shows the cumulative percent of family households, ranked from the lowest to highest incomes, which receive the indicated

Table 1. Index of Income Concentration, United States and Western Region, 1969.

Area	Index
United States	0.364
Urban	0.357
Rural Nonfarm	0.364
Rural Farm	0.418
Western Region[a]	0.354

a. The Western Region is comprised of the states of Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Source: United States Bureau of the Census, Census of Population, 1970. General Social and Economic Characteristics. Final Report PC(1) - C1, United States Summary.

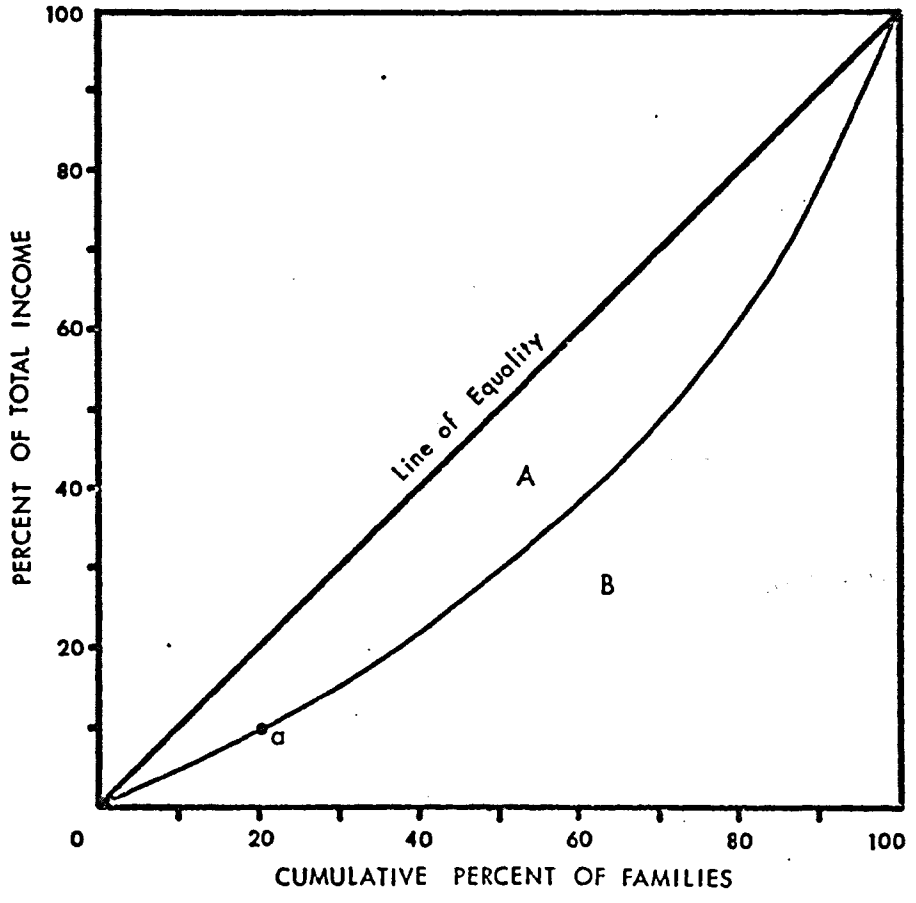


Figure 1. Lorenz Curve.

Note: The index of income concentration, or distribution, is derived by dividing Area A by Areas A plus B. The larger the index, the greater the inequality in the distribution of income. The "Line of Equality" represents an equal income distribution.

cumulative percent of total income. Thus, point "a" would indicate that the lowest 20 percent of families by income receive 10 percent of all income. If incomes were exactly evenly distributed, the Lorenz Curve would be a 45 degree line, called the line of equality. The index of concentration is derived by dividing the area between the actual Lorenz Curve and the line of equality (Area A in Figure 1) by the total area under the line of equality (Area A plus B). Thus, the closer the index of concentration is to 0, the more equal is income distribution. The data of Table 1 suggest that incomes in the United States were quite unevenly distributed in 1969 and that the rural farm sector had the greatest degree of inequality.

The uneven distribution of income in the United States is further highlighted by data on the incidence of poverty, Table 2. The data in Table 3 show that while the real median income has increased over time in the United States, the percent of families with less than one-half the median income has remained virtually unchanged at about 25 percent.

In recent years, there has been a great deal of attention focused upon the disparity of incomes between urban and rural areas and upon the distribution of incomes within these areas. The distribution of population between urban and rural areas, influenced by income differentials, has also received increased attention. It is argued that many of the problems faced by the urban and metropolitan areas -- pollution, crime, traffic congestion, fiscal difficulties -- result in part from overpopulation (Hansen, 1970). And, the argument goes, problems of rural America are at least partially due to population depletion. The problems of rural America, especially income problems, are indeed real. The incidence

Table 2. Incidence of Poverty in the United States and Western Region, 1961.

	United States				Western Region			
	Total	Urban	Rural Nonfarm	Rural Farm	Total	Urban	Rural Nonfarm	Rural Farm
Under Poverty Level								
Number of Families	5,462,216	3,382,653	1,637,736	441,827	773,875	598,096	151,331	33,448
Percent	10.7	9.0	15.0	15.8	8.9	8.2	12.4	12.8
Mean Income	$1,935	$1,936	$2,033	$1,565	$1,886	$1,891	$2,025	$1,181

Source: U.S. Bureau of the Census, Census of Population, 1970. General Social and Economic Characteristics Final Report PC(1)-C1, United States Summary.

Table 3. Percentage of Families in the United States with Incomes of Less than One-half the Median Income (1973 dollars).

Year	Median Income	Percent of families with incomes of less than one-half the median[a]
1947	$ 6,032	23.7
1948	5,876	24.0
1949	5,783	24.7
1950	6,146	25.4
1951	6,349	23.3
1952	6,523	23.8
1953	7,054	24.6
1954	6,884	26.2
1955	7,354	25.3
1956	7,825	24.9
1957	7,837	25.5
1958	7,812	25.5
1959	8,261	25.7
1960	8,436	25.9
1961	8,523	26.0
1962	8,757	25.8
1963	9,067	25.6
1964	9,413	25.2
1965	9,792	24.9
1966	10,269	25.2
1967	10,571	25.2
1968	11,024	24.6
1969	11,433	24.6
1970	11,277	25.1
1971	11,249	24.8
1972	11,813	25.2
1973	12,051	25.5

a. Estimated by interpolation.

Source: U. S. Bureau of the Census, 1975.

of poverty in 1969 was greater in the rural areas (Table 2), and the median incomes of rural families in the United States and the Western Region have been lower than those of urban families (Table 4). Furthermore, as indicated in both the figures on poverty (Table 2) and income concentration (Table 1), the distribution of income among rural farm families is especially uneven. This is the case even though many farm programs of the past have had a stated objective aimed at correcting this income problem.

The problems of income distribution may be attacked through government fiscal activity, which is one of the accepted roles of government. One of the most widely recognized fiscal tools that government has to redistribute income is the power to tax, and the progressive income tax is a generally accepted method of equalizing incomes. The second means of changing income distribution is through governmental expenditures with benefits accruing to different income groups. Economists have conducted many studies to determine the effects of various taxes on the distribution of income. While these studies are extremely important and essential, their implications are somewhat shadowed by the fact that while a particular tax may be progressive (i.e., favoring the lower income classes) and help equalize the income distribution, the benefits from the expenditures generated by this tax revenue may reduce the income equalizing effect of the tax or perhaps even negate it.

There have been few studies identifying both the tax and benefit effects of government fiscal activity on the distribution of net incomes. Part of the reason for this scarcity of empirical studies is the difficulty of empirically estimating who receives the benefits of public goods.

Table 4. Number of Families and Median Incomes of Families in the United States and Western Region, 1959 and 1969.

Year	Area	Number of Families	Distribution of Families (Percent)				Median Incomes of Families			
			Total	Urban	Rural Nonfarm	Rural Farm	Total	Urban	Rural Nonfarm	Rural Farm
1959	United States	45,128,393	100.0	70.8	21.8	7.4	$5,660	$6,166	$4,750	$3,228
1959	Western Region	7,023,860	100.0	78.7	16.9	4.4	$6,348	$6,654	$5,390	$4,653
1969	United States	51,168,599	100.0	73.2	22.5	4.3	$9,590	$10,196	$8,231	$7,082
1969	Western Region	8,681,847	100.0	82.9	14.7	2.4	$10,228	$10,563	$8,728	$8,313

Sources: U.S. Bureau of the Census, Census of Population, 1960 and 1970. General Social and Economics Characteristics. United States Summaries.

In the case of private goods, those goods which can be purchased and enjoyed individually, people reveal their preferences by the price that they are willing and able to pay, the price being an indicator of the value attached to the good. For public goods, however, it is advantageous to the individual to not reveal his preference for the good (the price that he would be willing to pay and therefore the value of it to him) because so long as the public good is provided, he will be able to enjoy it regardless of how much he contributes towards its provision. Recent (since 1970) theoretical and methodological advances have, however, made it possible to estimate the distribution of public goods benefits among income classes.

Besides a scarcity of empirical studies on the distribution of public goods, there are few empirical studies which focus on the distribution of tax and or expenditure benefits among income classes of urban, rural nonfarm and rural farm sectors of the population.

Purpose of the Study

This study will determine the initial (pre-tax, pre-benefit) distribution of income and the distributions of state-local and federal government taxes and expenditure benefits in the Western Region of the United States in 1961. These distributions among income classes will be determined for the United States, the Western States, and for urban, rural nonfarm, and rural farm sectors of the West. More specifically, the following hypotheses will be tested for the Western Region:

(1) The tax burdens of state-local and federal government expenditures are distributed progressively, i.e., taxes fall most heavily on the higher income classes, for both the urban and rural sectors;

(2) The benefits of state-local and federal government expenditures are distributed progressively for the urban and rural sectors, i.e., government expenditure benefits are higher in proportion to income for the lower income classes;

(3) The benefits from government provided public goods are distributed progressively, i.e., in favor of low income classes, for all population groups (urban and rural);

(4) The tax burdens and expenditure benefits are distributed in favor of the rural farm and nonfarm population; and

(5) The net effect (taxes minus benefits) of government fiscal activities at all levels, and for all population groups (urban and rural, nonfarm and farm) is progressive, redistributing incomes from the higher to the lower income classes. The results of this study will then be compared with the findings of a study done for the entire United States that used the same procedures and data sources.

The results of this study will be of use to policymakers concerned with income distribution among the various sectors mentioned. The study will confirm and expand on data which suggest that incomes are maldistributed. Also, the study will indicate the effectiveness of past state-local and federal government fiscal activity in changing income distributions. Clearly such knowledge of the past is useful for future decision making. In addition, the study illustrates the empirical application of a new theoretical advancement, on a regional and sub-regional

basis, and hence should be of use to researchers in other states and regions who are called upon to estimate fiscal impacts on income distributions in their areas. Finally, this study which uses 1961 data (the last year for which adequate data is available) will provide a benchmark by which to judge the income distribution effects of fiscal activity estimated in future studies based on more recent data.

CHAPTER II

REVIEW OF THE THEORY AND PREVIOUS EMPIRICAL STUDIES

Governments have long been recognized as having an important role in the functioning of societies. They have provided goods and services via revenues from taxation of their citizens. Considerable attention has been devoted by economists to the processes of governmental taxation and expenditures. This interest by economists is not only a result of the increase in the size of government fiscal activity over time but also because of the questions of equity and concern over the distributional impact of the taxes and expenditures. Consequently, a considerably body of literature exists on the theories of taxation and government expenditures.

This chapter will briefly review the major aspects of these theories and trace their development. The first section of the chapter will concentrate on the theories while the second section will review previous empirical studies which have applied the theory in order to determine the impact of government taxes and expenditures on the distribution of income.

The Theory of Public Finance

"Public finance" is the term that is generally applied to the process of government taxation and expenditure, and economists use the term to refer to their studies of the process. Within the field of

public finance, there are two bodies of theory: the theory of taxation and the theory of public expenditures. Although the two bodies of theory are related, this section will discuss them separately to expedite the presentation.

Theory of Taxation

The earliest economists were concerned with taxes and recognized the equitable distribution of tax burdens as an important economic, as well as political, problem. A large amount of economic writing exists attempting to define, using economic analysis, equitable distributions of tax burdens. Unfortunately, economic analysis by itself cannot determine what is equitable. It is the political branch that must determine the equitable distribution of income or wealth for a society, and only then can economic analysis be employed to determine how the tax burden is to be distributed.

Two principles of taxation theory exist that reflect the two primary political criteria of equity: the "benefit principle" which postulates that taxes should be borne in proportion to the benefits received from government, and the "ability-to-pay principle" which states that taxes should be borne in proportion to the ability to bear them. Interestingly, both of these principles have been traced to Adam Smith's first maxim regarding taxes: "The subjects of every state ought to contribute towards the support of the government, as nearly as possible in proportion to the revenue which they respectively enjoy under the protection of the state" (Smith, 1937, p. 777). Myrdal (1954, p. 163) argues that

Smith was postulating the ability-to-pay principle while Fuglestad (1970, p. 6) contends that Smith ascribed to the benefit principle.

The Benefit Principle. The idea that the individual should be taxed according to the value of the benefits derived by him from the government is the essence of the benefit principle. It approximates market behavior in that citizens pay in taxes only for what they receive. This simultaneous consideration of both the tax and expenditure sides of the public budget is an advantage of the principle.

The benefit principle also lends itself very well to the marginal utility theories introduced in the 1870's. The new optimizing technique allowed the equating at the margin of the benefits derived from government expenditures and the costs to the individual.

Despite these two very attractive advantages of the benefit principle, it has a very crucial shortcoming: the difficulty of determining who receives the benefits of government expenditures and how great the benefits are.

In approximating market behavior, the benefit principle assumes that the taxpayer (the consumer) will voluntarily reveal his preferences. However, many of the benefits of government are "public goods" to which the exclusion principle cannot be applied (i.e., the consumption of the good by one does not diminish the amount of the good available to others and does not exclude others from consuming it in equal amounts). Therefore, it is in the interest of the consumer not to reveal his preference for the good in the hopes that he can gain the benefits without paying for the good. The benefit principle, consequently, cannot be applied in

the provision of public goods unless there is a method of determining the value citizens place on public goods.

The Ability-to-Pay Principle. The philosophy behind the ability-to-pay principle is that "taxes should be imposed in proportion to the ability to shoulder them and irrespective of benefits and advantages" (Myrdal, 1954, p. 165). Equity, under this principle is a function of the sacrifice involved in the payment of taxes. Application of the ability-to-pay principle hinges on the determination of taxpaying ability and on the distribution of sacrifice of utility in paying taxes.

Taxpaying ability has usually been indicated by income differences between taxpayers in Anglo-American society, although wealth differences have been used to some extent (Herber, 1971, p. 119).

The distribution of sacrifice of utility in taxpaying under the ability-to-pay principle rests on three "sacrifice theories" (Herber, 1971, p. 119): (1) that of equal sacrifice where each taxpayer sacrifices an equal amount of utility (but not necessarily the same tax amount); (2) that of proportional sacrifice under which the sacrifice of utility in paying taxes be proportionate to income; and (3) that of minimum aggregate sacrifice where taxes would be collected first from the highest income classes and then from the progressively lower classes as more revenue is needed.

The greatest advantage of the ability-to-pay principle is its realistic approach to taxation. Goods and services provided by government are not purchased in the marketplace, each person taking and paying for just what he wants. Rather, government benefits are generally provided regardless of the taxes paid by a particular individual with his

tax burden being the result of a separate and independent decision. Taxes are compulsory and the primary concern is to make the distribution of burden equitable.

However, it is this separation of the expenditure and revenue sides of public finance that is one of the weaknesses of the principle. The tax burden borne by an individual bears no necessary relation to the value he places on the benefits he receives. The techniques of equating benefits and burdens at the margin cannot be applied except perhaps in the aggregate.

Finally, the "sacrifice theories" relating to the distribution of the tax burden are dependent upon the ability to make interpersonal comparisons of utility. If it is not possible to compare utilities, then it is impossible to determine "equity" by means of economic analysis. Rather, distributional decisions must be made through the political process in the form of collective consensus or value judgment.

The United States Tax System. The tax systems employed in the United States utilize both the benefit and the ability-to-pay principles. The motor fuel tax, whose revenues are used for the construction and maintenance of highways, is an example of the application of the benefit principle. Those who pay the tax are those who primarily benefit from the highways (this ignores the complexity of the situation since some of the burdens and benefits of highways are shifted throughout the economy, but this question will not be dealt with here). Other examples are private goods such as electricity and irrigation water which are sometimes provided by government for which users fees are charged.

The most obvious tax which exemplifies the ability-to-pay principle is the graduate income tax. The revenues from this tax go into a general revenue fund and there is no necessary relation between the taxes paid and the benefits received. Excises, customs, and sales taxes which are frequently levied upon the consumption of goods or services (e.g., tobacco, alcohol, and telephone and telegraph) are considered "luxuries," and are also examples of the ability-to-pay principle.

The use of both principles of taxation in the United States is reflective of the inability of economic analysis to objectively determine an equitable distribution of the tax burden. The decisions pertaining to tax equity have therefore been made by the political and administrative areas of government.

Theory of Public Expenditures

Many of the early writings in the field of public finance were principally concerned with taxes and the equity of the distribution of tax burdens. A few writers realized that an equitable distribution is in part a function of the distribution of the benefits derived from government expenditures. As mentioned in the discussion above, one of its main advantages is its consideration of both aspects of public finance. However, a prominent economic theorist associated with the ability-to-pay branch also considered the expenditure side. Pigou argued that to maximize aggregate welfare (or minimize total sacrifice) "is everywhere accepted as the right goal of government" (Pigou, 1928, p. 43). In order to meet this goal, Pigou proposed that the only acceptable rule by which total sacrifice could be minimized was that of equal marginal

sacrifice (Pigou, 1928, p. 61). The optimal allocation of public goods would therefore be at that level at which the marginal utility of the public goods equals the marginal disutility of tax payments. Although this sounds remarkably similar to the benefit principle, Pigou (1928) argued for the application of this rule to society in the aggregate and not to individuals. He supported the ability-to-pay principle for individuals.

Economists have recently incorporated Pigou's concept of marginal utility into a more complete theory of public expenditure. These contributions to the theory are discussed below.

The Concept of Public Goods. Theory of public expenditures rests upon the distinctions between, and properties particular to, two types of goods. The two goods are generally termed "private" and "public" goods. Because of their particular characteristics, the distribution of private goods and the cost share borne by each individual is easily determined in a freely functioning market. Public goods, often called collective or social goods, however, present difficulties in determining the distribution of the cost shares.

Private goods are those goods which are perfectly divisible among consumers such that one person's consumption excludes the consumption of that good by another. The total quantity of the good is the sum of the quantity shares of the consumers. In the case of pure competition, the cost shares would be distributed in such a manner that each consumer would consume up to the point of equality between marginal rate of substitution between two goods and the price ratio of the two goods. In terms of utility analysis, each individual consumes up to the point where

the marginal utility gained from consuming another unit of the good equals the marginal disutility of having to pay for the additional unit.

Public goods have been defined as those goods "which all enjoy in common in the sense that each individual's consumption of such a good leads to no subtraction from any other individual's consumption of that good" (Samuelson, 1954, p. 387). Mathematically, each individual's share of the public good is identical with every other individual's share, and the share of any one individual equals the total quantity available. The total demand schedule for public goods is then the vertical summation of the individual demand functions while the individual demands functions for private goods are summed horizontally to determine the total demand schedule.

The determination of the cost share to be borne by each individual for his consumption of a public good is much more difficult than in the case for private goods. Unlike the consumption of a private good, where each individual reveals his preference for the good through the quantity that he is willing to consume at a given price, the consumption of a public good is unrelated to its price but rather is consumed equally by all by its mere existence. Furthermore, it is advantageous for the consumer not to reveal his preference for a public good in the hopes of enjoying its benefits for free, or if he is obligated to pay something, then to pay at a rate such that the marginal benefits to him are greater than the marginal cost, shifting some of the burden to others. Although public goods are provided in equal quantities to all, this does not "imply any equality in the relevant marginal rate of substitutions or even that they have the same sign" (Samuelson, 1969, p. 102). Public goods,

like private goods, are valued differently by different individuals, and in fact what may be a "good" to some will be viewed negatively by others.

How then, if individuals do not voluntarily reveal their preferences for public goods, are the cost shares to be distributed for their provision? As will be seen, most public expenditure theory has assumed that preferences are revealed, allowing theoretical solutions to public expenditure problems but preventing practical application of the solutions. Some of these theoretical solutions will be reviewed before discussing recent additions to the theory which offer a means of determining how the benefits and costs of public expenditures can be distributed.

Partial Equilibrium Analysis. The partial equilibrium model of public expenditure theory is basically an extension of the benefit principle of taxation to determine the optimal allocation of resources between the private and public sectors (Herber, 1971). The principal contributors to this model were Knut Wicksell, Erik Lindahl, and Howard Bowen in Musgrove and Peacock (1958) and Bowen (1948).

The partial equilibrium model for public expenditures follows the approach of partial equilibrium analysis of the private sector in taking as given preferences, incomes, technology, and prices. This assumes that preferences for public goods are revealed and by applying the benefit principle, the cost of public goods be distributed in proportion to the benefits derived from them. The optimal quantity of public goods is provided at that level where each taxpayer equates his marginal rate of substitution between public and private goods and the price ratio of the two goods.

In Figures 2 and 3, the derivation of an individual's demand function for a public good is shown. In Figure 2, money income is measured on the vertical axis, the horizontal axis measures units of a single homogeneous public good, and the indifference curves represent preferences. A price consumption curve is derived by varying the slopes of the price lines from Y, which is the assumed level of income. The points of tangency of the price lines and the indifference curves are then transposed to Figure 3 to generate an individual's demand function. The process can be repeated for a second individual and the two demand functions are then drawn in Figure 4 as aa' and bb'. The total demand function for a public good, as mentioned above, is the vertical summation of the individual demand functions (in this case, tt'). Assuming constant costs of producing the public good, the supply function is SS' and the equilibrium output of the public good is OE in Figure 4. The cost shares to the two consumers are Pa and Pb, which sum to the total cost of providing the good, and which are also each individual's independent valuation of OE^{th} unit of the public good.

This model allows for the joint and interdependent determination of the total amount of taxes and government expenditures, the allocation of total public expenditures for public goods, the allocation of resources between the public and private sectors, and the allocation of taxes among individuals according to their preferences for, or valuation of the benefits from, the public good. However, the solution relies on the assumption that the existing income shares represent the "proper state of distribution" (Musgrove, 1959, p. 77) and assumes that preferences for public goods are revealed.

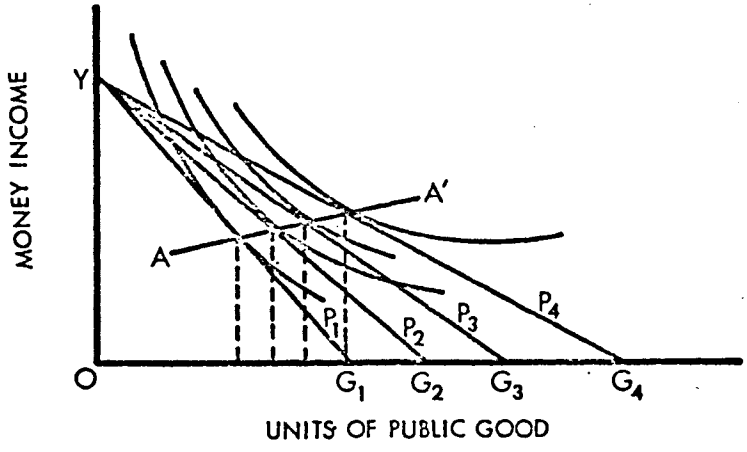


Figure 2. Price Consumption Curve for a Public Good.

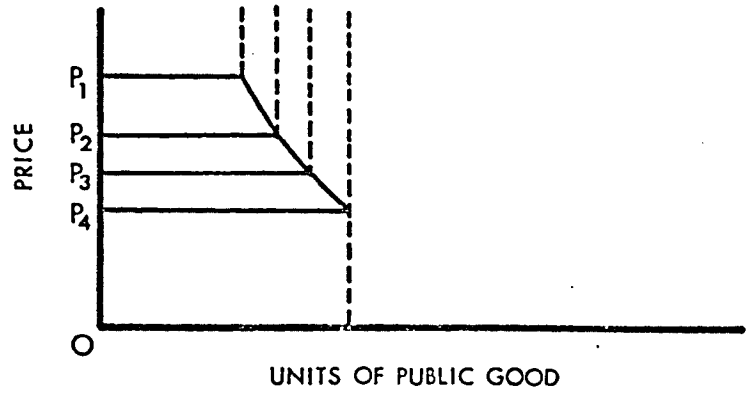


Figure 3. Individual Demand for a Public Good

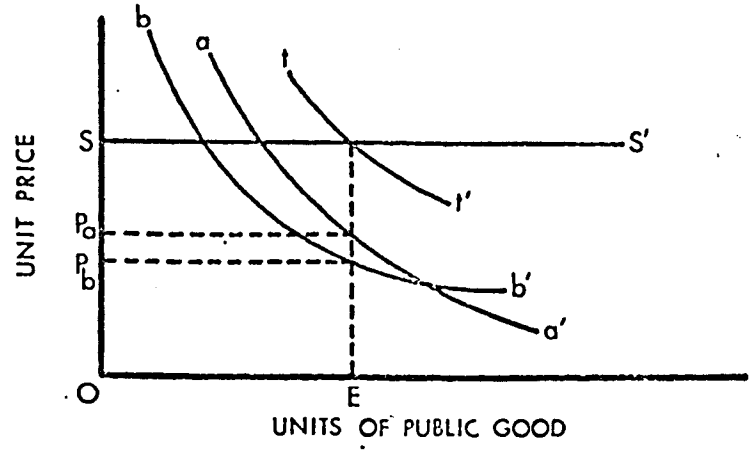


Figure 4. Partial Equilibrium Solution: Bowen.

Source: Burkhead and Miner, 1971, pp. 42 and 44.

The assumption of revelation of preferences for public goods has already been discussed. However, the assumption that the existing income distribution is "proper" is a major weakness of the model since it does not indicate how this "proper state of distribution" is decided upon without knowledge of the level of public goods to be provided. The provision of public goods has an income effect so that a "proper" income distribution must be a function of the amount of public goods that are supplied. But in the partial equilibrium model, the optimal quantity of public goods cannot be determined without first determining the income distribution. That is a problem which the general equilibrium analysis avoids by making the determination of income distribution endogenous and part of the general solution.

General Equilibrium Analysis. Samuelson (1954 and 1955) presented a general equilibrium model in two articles in which he utilized a social welfare function. The social welfare function allowed the mutual determination of income distribution and the prices and quantities of public and private goods so that total welfare is maximized. As in the partial equilibrium model, preferences and technology are given.

The initial article by Samuelson (1954) set forth the assumptions of the model and then defined the optimal solution mathematically. The assumptions upon which the model is based are: (1) there are two categories of goods, public and private; (2) there is no "mystical collective mind that enjoys collective consumption (public) goods"; (3) but rather that each individual has a consistent set of ordinal preferences for the consumption of all goods that can be summarized by a regularly smooth and convex utility index; (4) "a regularly convex and smooth production

possibility schedule" for all outputs; (5) there is a maximal (ordinal) utility frontier representing the Pareto-optimal points; and (6) a social welfare system "representing a consistent set of ethical preferences among all the possible states of the system" (Samuelson, 1954, p. 387). The mathematical presentation of Samuelson's model will be passed over here in favor of the diagrammatical exposition of the model published in the following year (Samuelson, 1955).

In the diagrammatic exposition, Samuelson (1955) simplified the model to a world consisting of two individuals (A and B) and two goods, a purely private consumption good (X_1) and a purely public consumption good (X_2). Figure 5 shows the indifference curves of individual A (U_A', U_A'', U_A'''), and Figure 6 shows the indifference curves for individual B (U_B', U_B'', U_B'''). In both cases, the quantity of the private good is on the vertical axis and the quantity of the public good on the horizontal axis. The production-possibility curve (XY) is illustrated in Figure 7, with the total private goods ($X_1 = X_1^A + X_1^B$) on the vertical axis and the quantity of public goods ($X_2 = X_s^A = X_2^B$) on the horizontal axis.

To determine the optimal income distribution and prices and quantities of public and private goods, a social welfare function must be introduced. For the moment, let us note only that the function will have the property that social welfare will be unchanged so long as each individual remains on his initial indifference curve and that social welfare would be increased if one person remains on his initial indifference curve while the other moved to a higher indifference curve, or if both were to move to higher indifference curves.

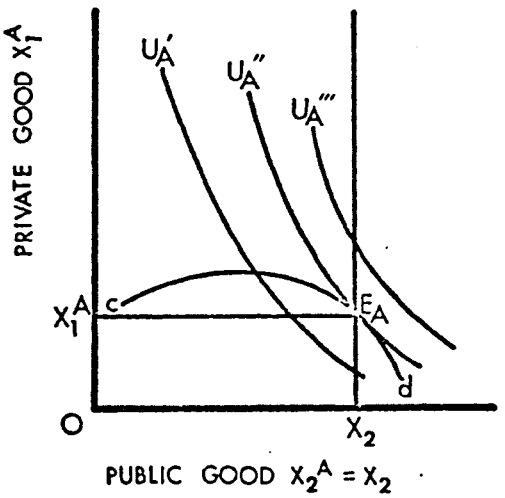


Figure 5. Indifference Curves and Consumption Possibilities of A.

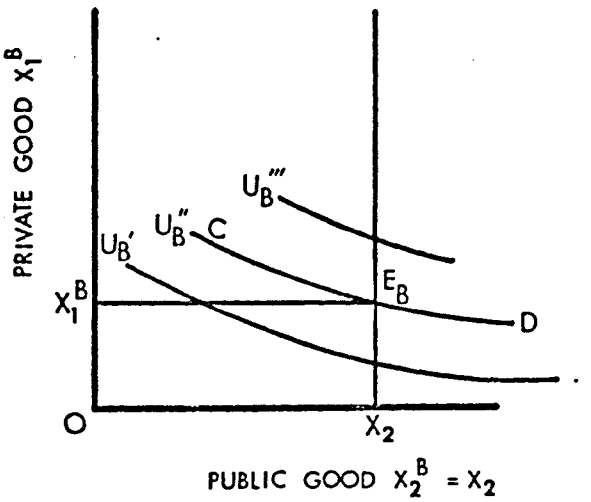


Figure 6. Indifference Curves of B.

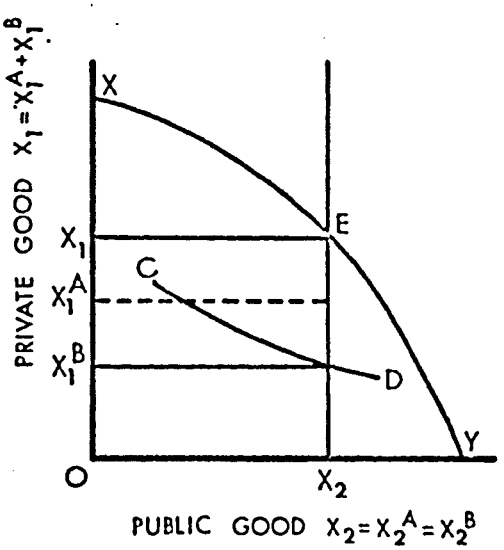


Figure 7. Transformation Curve Between Public and Private Goods.

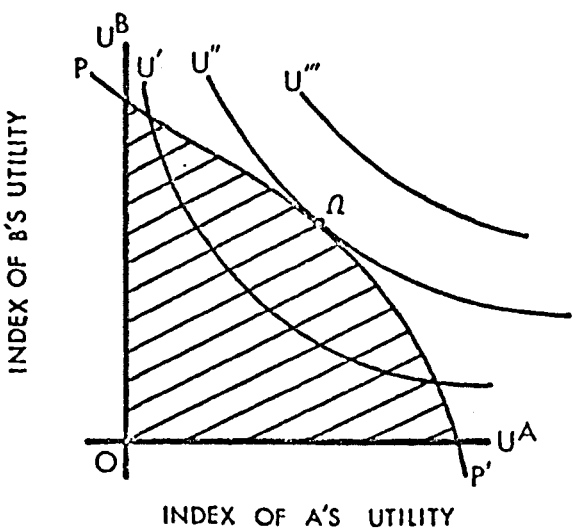


Figure 8. Utility Possibility Frontier.

If we assume that B is on indifference curve U_B'' in Figure 6, we could copy U_B'' (line CD) onto Figure 7. Subtracting CD from XY in Figure 7 vertically gives us the amounts of the two goods that would be available to individual A. This quantity is represented by line cd in Figure 5. The highest indifference curve that A would then be able to achieve, given this limit, would be U_A'', where U_A'' and cd are tangent. This tangency indicates the optimal quantity of the public goods to be provided (M) and also the distribution of the private good between the two individuals (X_1^A to A and X_1^B to B). Furthermore, if the private good is taken as a proxy for income, the optimal distribution of income is determined. Prices for the goods are determined by equating the individual marginal rates of substitution with the price ratios. Once again using the private good as a proxy for income, the tax share of each individual is determined for the provision of the public good by the same equalizing process (which is advocated by the benefit principle).

Providing an amount of the public good as indicated by the tangency in Figure 5 provides a general equilibrium solution indicated by the points E_A, E_B, and E in Figures 5, 6, and 7, respectively. However, an infinite number of indifference curves could be chosen in Figure 6 (or Figure 5) as a starting point, each rendering a different equilibrium. In fact, an infinity of equilibriums could be determined with, as yet, no indication as to which would be the welfare maximizing one. This indeterminancy is avoided with the introduction of the social welfare function in Figure 8.

The infinite number of equilibriums are represented in Figure 8 by line PP', the utility frontier of Pareto-optimal equilibriums. The

optimum of these "optimal" solutions is determined by the social utility (indifference) curves (U', U", U"') which are derived from the social welfare function. The optimum solution is represented by the tangency of the utility frontier and the highest possible social utility curve. In this case, the optimum is represented by Ω (Bator, 1957).

Samuelson's (1955) model is a major contribution to public expenditure theory, but it is not without its shortcomings. The reliance of the model on a social welfare function, the use of interpersonal utility comparisons, and the assumption of revealed preferences for public goods to achieve a general equilibrium solution are the three most crucial handles that must be overcome in order to make the model practical. It has been pointed out that "there is no conceivable way of estimating the parameters of a social welfare function" and that the n need for interpersonal utility comparisons enormously diminish any operational potentialities for the pure theory" (Burkhead and Miner, 1971, p. 73).

A more operational approach to public expenditure theory than Samuelson's (1955), although relying heavily upon his analysis, was recently presented by McGuire and Aaron (1969). This new model conceptually separates the distributive and allocative branches; that is, decisions regarding the distributions of incomes are treated as if they were made by a separate branch of government from the branch that decides upon the allocation of resources between public and private goods provided by government. The model further employs the "Lindahl voluntary exchange decision rule" to arrive at a general equilibrium solution that, unlike Samuelson's (1955), is not dependent upon a social welfare

function nor interpersonal utility comparisons. In their article, McGuire and Aaron (1969) present three solutions, each dependent upon the restrictions placed upon it. The first two solutions will be only briefly summarized here while the third will be examined in more detail because of its contribution to public expenditure theory and its importance to this study.

The first of McGuire and Aaron's (1969) cases is one in which both the initial incomes, taken as private goods, and the cost shares for public goods, are fixed. The solution is one which requires an ethical decision on the "optimal" supply of public goods and the marginal cost of production does not necessarily equal the sum of the individual marginal rates of substitution. The solution is not generally Pareto-efficient.

In the second case, either the income distribution or the cost shares is fixed while the other is variable. The outcome, once a final utility distribution is made, is a unique Pareto-optimal supply of public goods. The solution is efficient in the sense that the marginal cost of production will equal the sum of the marginal rates of substitution, but each individual's marginal rate of substitution does not always equal his marginal cost share. Also, there are an infinite number of Pareto-optimal solutions in this case, one for each particular utility distribution.

In the third case, cost shares, income distribution (allowing for lump-sum income transfer), and the amount of the public good to be provided are all variables. Like Samuelson (1955), McGuire and Aaron (1969) employ a two person (α and β), two goods (private goods, considered to be income and public goods, X) model. The incomes of the two individuals,

distances AD for α and BD for β are shown on the vertical axis in Figure 9 and the distance AB represents total national income. Conceptually separating the distribution and allocation decisions and applying the Lindahl "rule" that the tax share of each individual for the last unit of the public good equal his marginal rate of substitution ($p_i = MRS_i$) for the "commonly desired" quantity of the public good allows for the efficient allocation of resources and the attainment of a unique Pareto-optimal combination of utilities (McGuire and Aaron, 1969, p. 34).

Suppose that in Figure 9 the distribution branch decided that individual α's utility level should be that specified by indifference curve U^*_α. The highest possible utility level attainable by β is U^*_β. This is determined by the curve labeled R, which is the consumption possibility curve for β given α's level of utility. Once the distribution branch has decided upon U^*_α and U^*_β as the utility combination to be achieved, the Pareto-optimal output of the public good is determined by the tangency of R and U^*_β at X*.

The total cost of producing X* must then be allocated between the two individuals. The unit price of the public good to each individual, in terms of income, can be illustrated by price lines from the vertical axis. The unit price is the slope of the price line. McGuire and Aaron (1969) assume that the cost of producing the public good is distributed proportionally to α and β so that the total cost is covered by charges against α and β (McGuire and Aaron, 1969, p. 32).

At the initial income distribution AD and BD, α would be charged a unit price of P^*_α and a unit price of P^*_β (for a total tax burden of $P^*_\alpha X^*$ and $P^*_\beta X^*$, respectively). Although such a solution would be Pareto-optimal

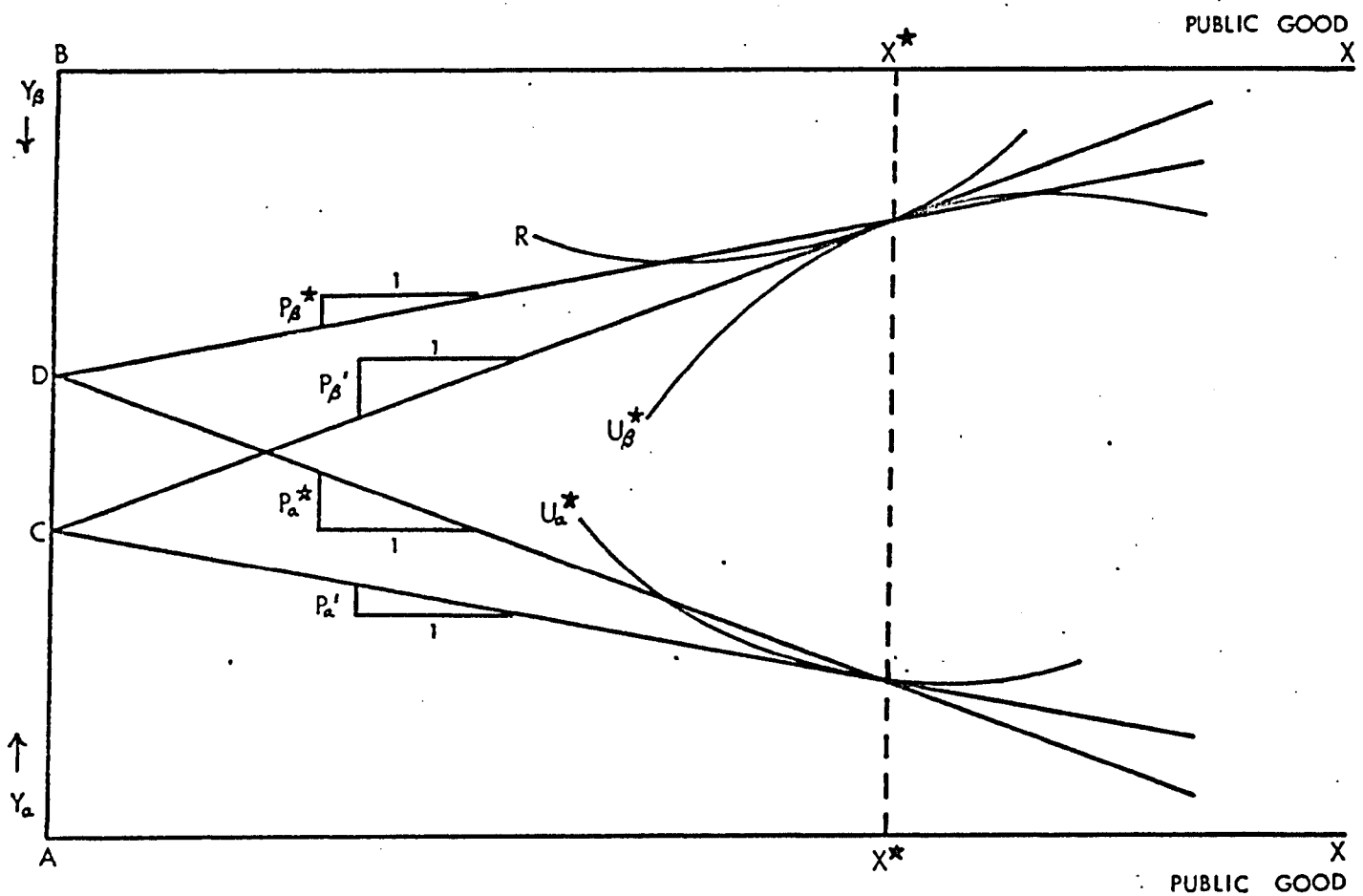


Figure 9. Equilibrium of Private and Public Goods with Variable Income and Cost Shares, McGuire and Aaron Approach.

Source: McGuire and Aaron, 1969.

at their respective unit prices, α would desire less of the public good while β would want more since the unit price charged each would not be equal to their marginal rates of substitution (the slopes of U^*_α and U^*_β at X quantity of the public good).

If the distribution branch knew that the allocation branch would apply the Lindahl "rule" and charge α and β the unit prices of P'_α and P'_β respectively (which would make the price lines tangent to the utility or indifference curves and thus have the unit price charged each individual equal his marginal rate of substitution), then the distribution branch could redistribute the initial incomes so that this goal would be met. The necessary income redistribution would be from α to β in the amount equivalent to the distance CD. Such a redistribution of income would leave the utility combination of U^*_α and U^*_β unchanged and would allow an efficient allocation of resources.

The McGuire and Aaron approach yields a formal solution and while it does not necessitate the use of a social welfare function or make interpersonal utility comparisons, it does assume the revelation of consumer preferences for public goods. The authors freely admit that "the presumed unwillingness of households to reveal true preferences regarding public goods precludes voluntary exchange" (McGuire and Aaron, 1969, p. 38). The model, then, would have practical application only if it were possible to determine consumer preferences for public goods or if consumer utility functions (indifference curves) are assumed.

Previous Empirical Studies

Economists for decades have attempted to estimate empirically the distribution of the burdens and benefits of government fiscal activity between income classes or regions. Most of these studies have attempted to determine what private incomes would be without government taxes and expenditures at some equilibrium and then compare the distribution of incomes, at the same equilibrium after taxes and government expenditures. The distribution of the tax burdens and the benefits from expenditures has usually been done by making some assumptions about their incidence and then making the distribution proportional to some national income accounting item. For example, property taxes are frequently distributed proportional to housing expenditures while corporate income taxes can be distributed proportional to current consumption, dividends, income, or some combination of these.

The benefits from government expenditures are distributed in a similar manner, but the distributions are more problematical. First, governments have expenditures that are asset creating so that their benefits accrue over a period of time, and public expenditures go for the two types of goods mentioned earlier, public and private. Most studies ignore the asset-creating expenditures by assuming that all the benefits accrue in the year in which the expenditure is made, which is not too unreasonable if such outlay are fairly constant over time. Benefits of expenditures for private goods are treated in the same manner as are taxes so that, for example, expenditures for agriculture are usually distributed proportional to farm money income and expenditures for labor proportional to wages and salaries. The benefits from expenditures for

pure public goods are more difficult to assess since, until recently, there has been no way of determining how consumers value the benefits of these expenditures. The distribution has generally been proportional to income (which assumes increasing marginal utility for these benefits), to population (assuming equal marginal utility), or to some combination. Finally, although the benefits reaped from government expenditures may be of a psychological nature, the value of these benefits must be denoted in terms of money, income, or wealth. It is generally assumed that the value of the benefits and the benefits expressed as money, income, or wealth, are synonymous and that total benefits equals total expenditures. This assumes perfect efficiency in that one dollar of expenditure creates benefits of one dollar.

The purpose of this section is to briefly review and discuss some of the studies that have sought to estimate empirically the distribution of tax burdens and expenditure benefits and their effect upon income distribution. Numerous studies have examined particular taxes or expenditure items to determine their effects on incomes, prices, and resource allocation. These studies will not be mentioned here bur rather the emphasis will be on those studies that have examined both aspects of fiscal activity, either at a national or state level. The way in which "income" is defined and the way in which public goods benefits are distributed is especially important in those studies, and this one, and will be emphasized in the review.

The distribution effects of tax systems have customarily been termed "progressive," "regressive," or "neutral." It is appropriate here to discuss the meaning of these terms since they are used also in

reference to the distribution of government expenditure benefits. A progressive tax system is one for which the tax burden, expressed as a percentage of income, increases as income increases; in a regressive tax system the tax burden decreases as income increases, and in a neutral tax system the burden is constant for all income levels. In the distribution of the benefits of government expenditures, progressive means that the benefits, also expressed as a percentage of income, decrease as income increases so that proportionally more of the benefits accrue to the lower income classes. Regressivity in the distribution of expenditure benefits indicates that the proportion of benefits to income increases as incomes rise. Neutrality indicates that the porportion of benefits to income is constant for all income levels. The net effects of fiscal activity (taxes minus benefits) can also be described with the same terms so that in a progressive fiscal system the lower income levels enjoy a negative net effect (indicating an income transfer to them) and the higher income levels show a positive net effect (transferring income from them).

Adler and Schlesinger (1951) were the first to examine the effects of public sector fiscal activity, both federal and state-local, on income distribution in the United States. Their study dealt with the years 1938/39 and 1946/47. Adler and Schlesinger argued that "since several important taxes that are borne by individuals come out of the net national product rather than from personal income" (Adler and Schlesinger, 1951, p. 411), they would use an adjusted personal income as a base. Adjusted personal income was composed of total personal income, corporate income taxes, undistributed corporate profits, and estate and gift taxes. In this research, pure public goods were distributed proportional to income

which, they argue, is plausible "on the ground that the stake of individual households in the government varies proportionately with their income" (Adler and Schlesinger, 1951, p. 387).

Adler and Schlesinger (1951) found the distribution of the tax burden to be progressive in both study years, with some regressivity in the low income classes, and the tax system as a whole became more progressive between 1938/39 and 1946/47. The distribution of the benefits of government expenditures were progressive in both study years, becoming more progressive between 1938/39 and 1946/47. The net effect of fiscal activity was also progressive, indicating income redistribution in favor of the lower income classes for both years, and becoming more progressive in the later years.

The next published research on the net effect of federal and state-local government fiscal activity on income distribution was by Tucker (1953) for the years 1929, 1935, 1941, and 1948. The income base used was total money and nonmoney income. Tucker recognized that "a complete analysis of the distribution of government benefits would have to allow for the fact that many government activities and expenditures are wasteful and some are positively injurious to the nation" but he assumed that "every dollar spent by government represents a dollar's worth of benefit to someone" and ignored the negative effect it might have on others (Tucker, 1953, p. 528). Pure public goods were distributed by two methods; first, on the basis of life expectancy in 1948 and on a per capita basis for the other years; and secondly, according to capital ownership in 1948 and by income in the other years.

The distribution of the tax burden was found to be progressive in all four study years and became more progressive between 1929 and 1948, but with some regressivity in the lower income classes in 1935 and 1941. Government expenditure benefits were distributed progressively for all study years, but the degree of progressivity was quite sensitive to the methods used in allocating the benefits, with the allocation in a per capita basis showing greater progressivity, as would be expected. In all four years, the net effect of the fiscal system was progressive with income being redistributed from the higher income classes to the lower.

The distributions of the tax burden and of expenditure benefits for the State of Minnesota have been analyzed by Brownlee (1960). The study year for Brownlee's study was 1954 and he examined the effects of taxes and expenditures at the state-local level only. A problem encountered at the state-local level which national studies do not confront is the shifting of state taxes to residents of other states. Brownlee estimated that nearly one-third of Minnesota state and local taxes were borne by nonresidents. Minnesota residents also bore a proportion of the tax burden of other states, but Brownlee did not estimate that component of the tax burden of Minnesotans (Brownlee, 1960, p. 1).

For the income base with which to compare tax burdens and expenditure benefits, Brownlee used current income, an income definition used by the Survey Research Center at the University of Michgan in preparing its "Survey of Consumer Finances." The allocation of pure public goods was made using three methods: on a per capita basis, in proportion to income, and using a combination of the first two in equal parts.

Brownlee (1960) found the distribution of the Minnesota state-local tax burden to be regressive in the lowest income classes, neutral for the middle incomes, and progressive for the two highest income groups, with the highest tax burdens (in proportion to income) being borne by the lowest income classes. The benefits from Minnesota state-local government were distributed progressively. Brownlee concluded that the Minnesota fiscal system contributed to greater income equality since benefits received were greater than taxes paid for the low income classes while the reverse was the case for the higher income classes.

Gillespie (1965) examined the effects of government fiscal activity for 1960. His was a study at the national level, but in presenting the results he separated out the different levels of government so that the effects of fiscal activity, federal, state-local, and all governments together, are presented and can be compared. Gillespie used two income bases for his study: the first, defined as "broad" income is composed of money and some nonmoney elements; the second base used an "adjusted broad" income which included "broad" income as well as government expenditures on goods and services plus transfer payments less tax payments to represent an income base inclusive of the entire public sector (Gillespie, 1965, p. 126f). The distribution of pure public goods was done using four methods: (1) proportional to the number of families in each income class, (2) proportional to "broad" income, (3) proportional to capital income, and (4) proportional to disposable income.

In presenting the results, Gillespie only detailed one of the possible situations. The case that he detailed, and which will be reported here, used "adjusted broad" income as a base and distributed the

pure public goods proportional to "broad" income. The distribution of the tax burden at the federal level was found to be progressive for the four lowest income groups, regressive for the next two highest classes, and progressive for the highest class, with the overall system being progressive. At the state-local level, taxes were progressive at the lower levels and regressive for the two highest income classes, with the middle income classes paying the highest tax rate. The combination of federal and state-local taxes yielded a distribution progressive for the lower income classes, regressive for the middle incomes, and progressive for the highest class, with the entire tax system being relatively neutral.

The distribution of benefits from expenditures at the federal level was found to be generally progressive except for the income classes at either end of the spectrum which exhibited some regressiveness. At the state-local level, expenditures were distributed progressively. The combination of all governments yielded an expenditure benefit distribution that was progressive for the entire range.

Net effects at the federal level were generally progressive except for the $7,500 - $9,990 income class whose benefits were greater than their tax payments. The same pattern was consistent for the state-local governments and for the combination of all governments.

In 1967, the Tax Foundation published a study of the distribution of tax burdens and government expenditure benefits for the years 1961 and 1965 (Tax Foundation, 1967). Burdens and benefits were estimated, as in the Gillespie (1965) study, on a federal, state-local, and total government breakdown. Net National Product, income side, was used as the income

base so that all taxes, including those collected from businesses, could be allocated to families and invididuals, and also make a corresponding imputation of income to them. Pure public goods were allocated using two alternative methods: completely to families and individuals on a per capita basis, or one-half on the basis of family money income before taxes and one-half to families and individuals. The second method assumes that some public good benefits enhance the earning of income and protect income.

Federal tax burdens were found to be progressively distributed in both 1961 and 1965. State-local tax burdens were regressively distributed in both years, and the total federal and state-local tax burdens were regressively distributed in both years, with the highest decline of regressivity at the lower incomes. Government expenditure benefits were progressively distributed at all levels of government in both 1961 and 1965. Allocating public good benefits on the per capita basis made the distribution more progressive than in the case where one-half the benefits were distributed proportionally to income.

The net effect of government fiscal activity in both years was progressive, favoring the lower income classes. Again, distributing public good benefits on a per capita basis made the income redistribution more progressive.

Another study of the effects on income distribution done at the state level was published by Eapen and Eapen (1973) for Connecticut for the year 1967. Eapen and Eapen excluded from their study the impact of fiscal activities of the federal and other state-local governments on Connecticut families. Allowance was made for the exporting of a portion

of the total Connecticut tax burden, but no provision was made for the importing of tax burdens from other states.

Eapen and Eapen (1973) used three alternative income bases: the first used income as defined by the United States Bureau of the Census; the second added nonmoney income, capital gains, and retained earnings of corporations attributable to Connecticut shareholders; and the third was the second income base plus all Connecticut state and local expenditures other than transfer payments minus Connecticut state and local taxes. Public good benefits were distributed in one of three ways: proportional to the distribution of families, in proportion to the distribution of money income, and one-half to family and one-half to money income.

The tax burden distribution was found to be quite regressive for the lower income classes with some progressiveness at the higher incomes, but the tax rates were highest for the lowest income level. Benefits from government expenditures were estimated to be progressively distributed by all methods of public goods benefit allocation, but as would be expected, the allocation of the benefits in proportion to the distribution of families allowed the most progressive distribution of benefits. Net fiscal benefits were found to be progressively distributed with families with incomes less than $12,000 receiving benefits greater than the taxes they paid.

In 1970, Aaron and McGuire published an article in which they presented an alternative approach to determining the benefits from public good expenditures (Aaron and McGuire, 1970). It will be remembered that it was these two authors who, in an earlier article mentioned above, employed the Lindahl "rule" and the conceptual separation of the

distribution and allocation branches to achieve a general equilibrium solution in the theory of public expenditures (McGuire and Aaron, 1969). This more recent article used recent advances in the theory of public expenditures by Samuelson (1954, 1955, and 1969) and themselves (1969) to demonstrate that the value to households of public good expenditures "should be imputed (as) a fraction of the total value of the public good, proportional to the reciprocal of its marginal utility of private good expenditure" (Aaron and McGuire, 1970, p. 911).

The mathematical model used by Aaron and McGuire (1970) to arrive at this conclusion rested on eight assumptions:

(a) Each household's marginal rate of substitution between public goods and other goods is known, or assumed.

(b) The total and marginal cost of public and specific goods is known for all relevant outputs of these goods.

(c) All utility functions are identical.

(d) All of each public good enters every household's utility function.

(e) All households in each income bracket can be represented by the average income level and expenditure mix in that bracket.

(f) The marginal cost of public goods equals the average cost at the amount supplied.

(g) The actual output of public and specific goods is allocatively efficient, so that marginal cost equals the sum of marginal rates of substitution (MC = EMRS).

(h) The utilities of public goods and of other goods are independent (Aaron and McGuire, 1970, pp. 910-911).

The model showed that the value of public goods accruing to each household is:

$$(1)\quad Y_p^i = tp^* \frac{MRS^i}{\Sigma_i MRS^i} = tp^* \frac{R/f_y^i}{\Sigma_i R/f_y^i} = tp^* \frac{1/_{+y}^{-i}}{\Sigma_i\ 1/f_y^i}$$ (Aaron and McGuire, 1970, p. 913).

where: Y_p^i = the income value of public goods to household i;

t = the total tax imposed per unit of the physical quantity of public good (p);

p^* = the particular physical amount of public good observed to be supplied by the government;

tp^* = total tax collections, equal to total expenditures on public goods (Y_p);

f_y^i = the marginal utility of income for household i;

MRS^i = the marginal rate of substitution between public goods and income for household i; and

R = a constant.

The authors then concluded that the value of public good benefits determined in this manner could be added to the final disposable income (after all taxes, actual or imputed, have been paid) plus the income value of the specific (private good) benefits of government expenditures received by each income class to determine a total final income. This total final income can then be compared with the pre-tax pre-benefit income of families to determine the net distributional impact of taxation and expenditures (Aaron and McGuire, 1970, p. 914).

To demonstrate the practicality of their approach, Aaron and McGuire hypothesized two utility functions, expressed on the basis of disposable cash income (Y_D^i) plus the estimated income value of the

private goods received through government expenditures (Y_s^i). These two hypothesized utility functions enabled the determination of the marginal utility of income for households. Using equation (1), Aaron and McGuire (1970) utilized the Tax Foundation (1967) data to determine the net distributional impact of government taxation and expenditures in 1961.

The first hypothetical utility function was:

$$(2)\quad U^i = A \log (Y_D^i + Y_s^i) + B$$

where A and B are arbitrary constants, U^i is the total utility of household i, and Y_D^i and Y_s^i are the disposable income and income received from government expenditures on specific goods for household i. With this function, marginal utility is:

$$(3)\quad MU^i = A/(Y_D^i + Y_s^i) = A[(Y_d^i + Y_s^i)^{-1}]$$

and is always positive and total utility increases without limit as income increases. A and B are irrelevant since only the marginal utility ratios are used in the calculations.

The second hypothetical utility function also employed arbitrary constants, the values of which are also irrelevant. The function,

$$(4)\quad U^i = E - C/(Y_D^i + Y_s^i)$$

has a marginal utility schedule of

$$(5)\quad MU^i = C/(Y_D^i + Y_s^i)^2 = C\ [(Y_D^i + Y_s^i)^{-2}]$$

that approaches zero as income rises but which is always positive.

Aaron and McGuire (1970) assumed two possible definitions of the total quantity of public goods whose benefits were to be distributed among income classes. The first definition was identical to that used by the Tax Foundation and included expenditures for national defense, international affairs, general government (excluding interest), transportation

(excluding highways), commerce and finance, housing and community developments, health and sanitation, civilian safety, and miscellaneous (Tax Foundation, 1967, p. 12). Aaron and McGuire (1970) referred to this classification as "Low Total Quantity of Public Goods." The second classification, which termed "High Total Quantity of Public Goods," expanded the definition used by the Tax Foundation to include specified proportions of expenditures on the following items: elementary and secondary education (0.7), streets and highways (0.5), higher education (0.5), agriculture (0.3), public assistance and welfare (0.3), and veterans' benefits (0.3).

The results of their analysis indicated that the net effect of government fiscal activity was less progressive with the use of their hypothesized utility functions than that estimated by the Tax Foundation (1967). And interestingly, the use of the utility function $U^i = E - C/(Y_D^i + Y_S^i)$ under the case of "High Total Quantity of Public Goods" showed income being redistributed from the middle income classes to both the lower and higher income classes. Their results were extremely sensitive, particularly in the lowest and highest income classes, to the utility function that was used to distribute the benefits of public goods. This sensitivity to the choice of utility functions makes the choice extremely important. Aaron and McGuire state that both functions, while arbitrary, are "nevertheless plausible" (Aaron and McGuire, 1970, p. 914).

Even though an improved method of allocating the benefits of public goods by the explicit use of utility functions has been demonstrated by Aaron and McGuire (1970) without a clear indication of the shape of the utility or the marginal utility function, the investigator must

continue to make arbitrary decisions on the allocation of public goods and the results will be biased by this arbitrariness.

Some of the arbitrariness in the allocation of public good benefits was removed by Maital (1973). Maital reviewed the analysis of McGuire and Aaron (1969) and Aaron and McGuire (1970) and presented a simplified version of it.

Maital, like Aaron and McGuire, assumed that the preference maps of all individuals for private and public goods are known. He also regarded private goods to be synonymous with disposable income. Maital's graphical analysis, Figure 10, illustrates the indifference curves of one individual for public and private goods. The individual has an initial (pre-tax, pre-benefit) income of OD. The individual then pays taxes (less transfers) of AD and consumes OG units of public goods, a quantity which by definition is equal for all consumers. After paying taxes, this person has a disposable income of OA.

It can then be determined that the individual is on indifference curve U at point C, the coordinates of which are OA and OG. The value to this person, in terms of income, of the OG units of public good can be determined by drawing a line tangent to indifference curve U at C. The slope of this line is equal to the individual's marginal rate of substitution between public goods and private goods (disposable income). The value, in terms of income, that the individual places on the G^{th} unit of public goods (the amount of income that the person would exchange for the last unit of public goods) and can, therefore, be regarded as a "price." Multiplying the individual's marginal rate of substitution (the "price" he would be willing to pay for the last unit of public goods) by the

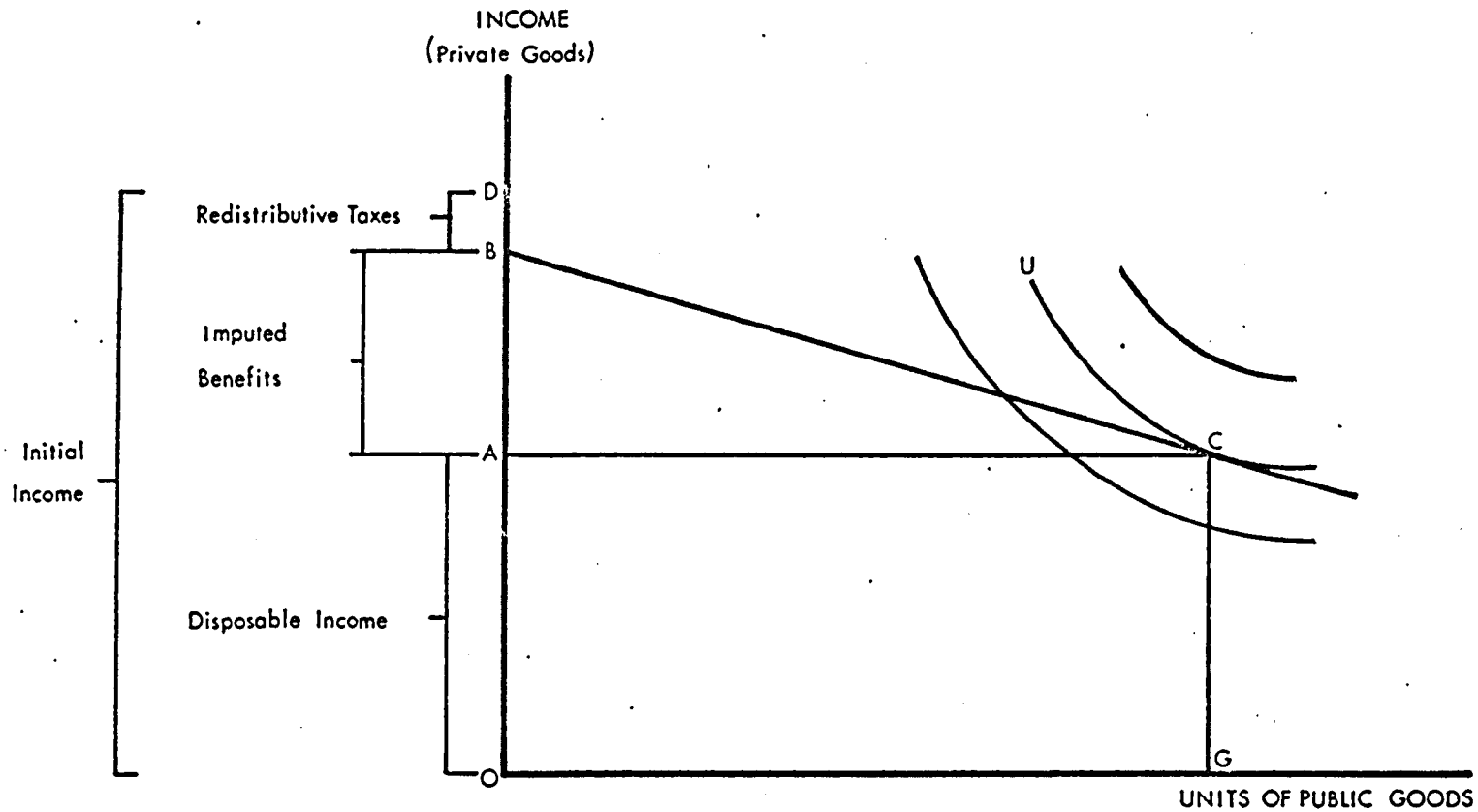


Figure 10. Equilibrium of Private and Public Goods with Variable Income and Cost Shares, Maital Approach.

Source: Maital, 1973, p. 563.

total units of public goods gives an imputed value of public goods in terms of income to the individual. This imputed value of public goods is represented by the distance AB in Figure 10.

This individual has then paid AD of his initial income in taxes (less transfers) and has consumed OG units of public goods, which he values at AB in terms of income. On balance, the individual has paid BD more in taxes than he received in benefits from government provided public goods. The amount BD represents the amount of taxes the individual paid for purposes of redistributing income, which is equivalent to CA (Figure 9) in McGuire and Aaron's (1969) graphical illustration.

It is entirely possible, of course, that point B falls above point D in which case the individual receives redistributive income.

The analysis can be taken further if two individuals (J and K) are considered. If the tangent line BC is drawn for each individual and the segment AB measured for both, then:

(6) $AB_J = (\text{slope } BC_J) \cdot OG$, and

(7) $AB_K = (\text{slope } BC_K) \cdot OG$.

Then by dividing equation (7) by (6),

(8) $AB_K/AB_J = (\text{slope } BC_K) \; / \; (\text{slope } BC_J)$.

For both J and K, by definition,

(9) slope BC = (marginal utility of OG) / (marginal utility of income).

Substituting equation (9) into (8),

(10) $$AB_K/AB_J = \frac{(\text{marginal utility of OG})_K}{(\text{marginal utility of income})_K} \; / \;$$

$$\frac{(\text{marginal utility of OG})_J}{(\text{marginal utility of income})_J}$$

If it is now assumed that all individuals have identical preference maps and that the utility derived from public and private goods are independent, then the marginal utility of public goods (OG) for both J and K will be equal (Maital, 1973, p. 563):

(11) $(\text{marginal utility of OG})_K = (\text{marginal utility of OG})_J$

Equation (11) can then be used to simplify (10):

(12) $AB_K/AB_J = \frac{(\text{marginal utility of income})_J}{(\text{marginal utility of income})_K}$

The income values of OG units of public goods for K and J can now be written as:

(13) $AB_K = AB_J\ (MU_J/MU_K)$ and

(14) $AB_J = AB_K\ (MU_K/MU_J)$, where MU_J and MU_K represent the respective marginal utilities of income of individuals J and K.

Assuming that the total income value of OG units of public goods to J and K equals the total expenditures on OG units of public goods, then

(15) $AB_J + AB_K = OG.$

By definition, it follows that:

(16) $AB_J = AB_J\ (MU_J/MU_J).$

Using equations (13) and (16), (15) can be rewritten as:

(17) $AB_J\ (\frac{MU_J}{MU_J}) + AB_J\ (\frac{MU_J}{MU_K}) = OG$, or as

(18) $AB_J\ (\frac{MU_J}{MU_J} + \frac{MU_J}{MU_K}) = OG.$

The income value of OG units of public goods to J can now be written as:

$$(19)\quad AB_J = OG \;/\; \left(\frac{MU_J}{MU_J} + \frac{MU_J}{MU_K} \right)$$

Referring back to the marginal utility of income schedules hypothesized by Aaron and McGuire (1970) in equations (3) and (5), the marginal utility of income for an individual can be written in the general form:

$$(20)\quad MU_i = c/x_i, \text{ where}$$

$$(21)\quad x_i = (Y_d^i + Y_s^i)^{-\phi} \quad \text{and c is a constant.}$$

"ϕ" represents the inverse of the elasticity of substitution between public and private goods and reveals the relationship between utility and income so that a specific utility function can be determined (Maital, 1973, pp. 561 and 564).

Equation (19) can now be rewritten, using (20), as:

$$(22)\quad AB_J = OG \;/\; \left(\frac{X_J}{X_J} + \frac{X_K}{X_J} \right) = OG \;/\; \frac{\Sigma_i X_i}{X_J} = OG\ (X_J \;/\; \Sigma_i X_i),$$

which is identical with equation (1), the central proposition of Aaron and McGuire (1970, p. 913). Substituting (21) into (22), we find:

$$(23)\quad AB_J = OG\ [(Y_D^J + Y_S^J)^{-\phi} \;/\; \Sigma_i\ (Y_D^i + Y_S^i)^{-\phi}\ ].$$

It should be noted that all items in the right-hand side of (23) are directly observable, with the possible exception of the value of ϕ. Aaron and McGuire (1970) used two hypothesized values for ϕ in their analysis: a value of -1 in Equation (3) and a value of -2 in Equation (5). It will be remembered that the results of the Aaron and McGuire study (1970) were sensitive to the value of ϕ selected.

Maital (1973) reviewed three independent studies which estimated the value of ϕ (Fellner, 1967; Mera, 1969; and Powell, Van Hoa, and Wilson, 1968). Maital found that these three empirical studies all estimated the value of ϕ to be -1.5 or very close to it.

This value of ϕ was used by Maital (1973) in recomputing the distribution of public goods benefits using, like Aaron and McGuire (1970), the data provided by the Tax Foundation (1967). The equation for the marginal utility of income that Maital used was:

$$(24)\quad MU^i = \text{constant} \;/\; (Y_D^i + Y_S^i)^{1.5}.$$

With the use of this equation, whose value for ϕ is exactly midway between the ϕ values used by Aaron and McGuire (1970), it is not surprising that the imputed benefits from public goods as determined by Maital (1973) fall between the Aaron and McGuire estimates. With a "Low Total Quantity of Public Goods," Maital found the net effect of public fiscal activity to be progressive, but not as progressive as the Tax Foundation (1967) estimates and falling between the two distributions estimated by Aaron and McGuire. The results were much the same for the "High Total Quantity of Public Goods," except that the net effect was considerably smaller; that is, a greater degree of income redistribution resulted when a lower total quantity of public goods is provided by the government. Maital concluded that "under a given tax system, the desire for a more equal distribution of incomes requires that government supply less public goods, rather than more" (Maital, 1973, pp. 567-568).

CHAPTER III

RESEARCH PROCEDURES AND TECHNIQUES

Determining the tax burden and value of government expenditure benefits for each income class has traditionally been done on the basis of assumptions regarding the incidence of the individual taxes and the distribution of the expenditure benefits. Once the tax burden and expenditure benefit distributions are determined, the initial income distribution (the pre-tax pre-benefit income distribution) can be compared with the income distribution after taxes and benefits. This initial income distribution is crucial since it must represent what incomes would be without either taxes or benefits. Some corporate income taxes, for example, are not borne directly by consumers, but can be shifted to them in the form of higher prices, lower wages, or reduced dividends. The initial income must then include the imputed income value of these shifted taxes if it is to represent a "true" pre-tax income. As indicated in the previous chapter, the various empirical studies used differing income bases to represent the initial income. This income base must then be allocated among the various income classes to determine the initial distribution of income.

The procedure used in this study to determine the net effect of government fiscal activity on the distribution of income by income class is to first determine the initial distribution of income (i.e., the income distribution that would exist at a given time before taxes are

subtracted and government benefits assigned to each income class). From this distribution is subtracted the tax burden of each income class, and then the benefits accruing to each class, observed and imputed, are added, giving a post-fiscal income distribution. This post-fiscal income distribution is then compared with the initial distribution to determine the net effect of government fiscal activity upon income distribution.

It is the purpose of this chapter to discuss the income base and the methods used in this study to allocate the income base, the tax burden, and the government expenditure benefits among income classes. Finally, the sources of the data used in the study will be discussed.

Methods of Allocation

The results of this study are compared with the findings of the Tax Foundation (1967) as modified by Maital (1973), which considered the entire United States. Accordingly, the same income base and methods of allocating the income to determine the initial income distribution, tax burden, and expenditure benefits are used.

Income Base

The Tax Foundation (1967) decided upon the income side of the net national product as the most appropriate income base as a means to estimate the burden of all taxes, including those paid by businesses. It was therefore necessary to impute to families and individuals the burden of corporate taxes and also make a corresponding imputation of income to the families and individuals. If it is assumed that corporate taxes, in the final analysis, are borne by families in the form of higher prices, lower dividends, and lower wages and salaries, it must also be assumed

that undistributed corporate profits and the corporate profits tax are part of family income. The Tax Foundation concluded that:

> It would not be consistent to attribute the tax burden to individuals and families without also attributing as income all portions of the national income (or output) which may be affected by those taxes. For this reason net national product (or its income equivalent) is used as the most appropriate base against which to measure the total tax burden (Tax Foundation, 1967, p. 8).

The basis for the allocation among income classes of the net national product is shown in Table 5. Data for items on the right-hand side of the table are reported in the U. S. Bureau of Labor Statistics (BLS) Survey of Consumer Expenditures and Income, 1960-61 (1965). This study, like the Tax Foundation (1967) study, uses the "income side" instead of the "product side" of net national product accounts. The product side of the net national product accounts would be a more accurate measure of the economic welfare of families since it includes the benefits from government expenditures. However, the Tax Foundation relegated it to secondary status since it differs substantially from the layman's idea of income and because of the problems involved in imputing to families the benefits of government expenditures (Tax Foundation, 1967, p. 9).

Tax Allocation

Table 6 shows the allocation bases employed by the Tax Foundation (1967) and used in this study for allocating the tax burden among income classes. Each particular basis of allocation rests upon an implicit assumption and these are examined in more detail.

Table 5. Bases of Allocation for Net National Product, Income Side.

Relation of Money Income to NNP	Basis of Allocation
BLS Money income before taxes	BLS Money income
Plus: "Other" labor income	Wages and salaries
Net rent, owner-occupied dwelling	Homeowners' housing expenditures
Services furnished by financial intermediaries	Interest receipts
Food grown and consumed on farms	Value of farm consumed food
Food furnished employees	Number of full-time earners
Difference between personal taxes in BLS survey and in national income accounts	Personal taxes
Imputed items in personal saving[a]	Homeowners' housing expenditures
Other and unaccounted	Money income
Equals: Personal income	
Less: Transfer to persons	
Social insurance benefits	Social insurance benefits
Civilian government pensions	Private pensions
Veterans benefits	Military allotments and pensions
Relief and other	Public assistance and private relief
Net interest paid by government	Interest receipts
Net interest paid by consumers and subsidies less current surplus of government enterprises	Total current consumption
Plus: Non-personal taxes	
Corporate profits tax	Half on consumption and half on divided income
Contributions for social insurance	
Personal contributions	Social insurance contributions
Employer contributions	Total current consumption
Indirect business taxes	Total current consumption
Undistributed corporate profits	Dividend income
Equals: Net national product	

Table 5. (continued)

a. Consists largely of investment in housing.

Source: Tax Foundation (1967).

Table 6. Bases for the Allocation of the Tax Burden by Income Class.

Tax	Basis of Allocation
Individual income	Personal taxes
Corporate income	Half total current consumption and half divided income
Estate and gift	To the highest income class
Excises, customs, and sales:	
Alcoholic beverage	Alcoholic beverage expenditures
Tobacco	Tobacco expenditures
Telephone and telegraph	Telephone and telegraph expenditures
Auto purchase	Automobile purchase expenditures
Auto operation	Automobile operation expenditures
Other excises, etc.	Total current consumption
Property	Half housing expenditures and half total current consumption
Personal insurance:	
Personal contributions	Social security, railroad and government retirement contributions
Employer contributions	Total current consumption

Source: Tax Foundation, 1967.

The individual income tax is allocated proportional to the amount of personal taxes paid by each income class. Although the personal taxes item includes taxes other than the income tax, the income tax is the largest component and therefore a valid basis for allocation.

Allocating the corporate income tax on the basis of total current consumption and dividend income assumes that this tax is shifted both to the consumer in the form of higher prices and to the shareholder in the form of reduced dividends. Of course, it is possible that some of the burden is borne by the workers in the form of lower wages and salaries than would be the case if there were no tax.

The estate and gift tax is generally paid by the donor and it is arbitrarily assumed to be borne exclusively by the highest income class. Although some of the total tax revenue is probably collected from other income classes, this is regarded as a realistic method of allocation.

The estate and gift tax is generally paid by the donor and it is arbitrarily assumed to be borne exclusively by the highest income class. Although some of the total tax revenue is probably collected from other income classes, this is regarded as a realistic method of allocation.

The excise, custom, and sales taxes are allocated on the basis of the expenditures by each income class for the taxed items, except in the case of "Other Excises" where the amounts are small or there is no clear means of allocating them.

Property taxes are assumed to be borne partly by those who own property, using housing expenditures as a proxy. The other portion is assumed to be borne by consumers in the form of higher prices paid, the

property owner using part of his sales revenue for paying his property tax.

Contributions for the personal insurance taxes are allocated using employee contributions to social security and railroad and government retirement as proxies. Employer contributions to the tax are allocated proportional to total current consumption, which assumes that this contribution is shifted to the consumer in the form of higher prices.

The Tax Foundation recognized that some of these methods of allocation are arbitrary but felt that they were warranted given the purpose of the study to present a broad picture of the distribution of the burdens and benefits of government fiscal activity. These allocative bases would undoubtedly have to be changed if the scope were narrowed or the purpose changed (Tax Foundation, 1967, p. 11).

A complete determination of the distribution of tax burdens should include an adjustment for that portion of an area's tax burden that is shifted, or "exported," to residents outside the region and for the "importation" of the taxes that residents of the area pay but which are collected by governments outside the area. Several studies have examined the "exporting" of state and local taxes and have found that the portion of "exported" taxes can be significant (McLure, 1967). However, there have been no studies which estimate the extent of tax "importations." It will be assumed in this study that the net effect of such shifting of tax burdens is negligible, that is, that the "importing" and "exporting" of tax burdens into the Western Region offset those shifted out of it.

Benefit Allocation

Allocating the benefits of government expenditures has always been problematical for researchers. Part of the problem in allocating the benefits lies in the nature of the goods and services that governments provide. Public expenditure theory differentiates between two types of goods: the pure public good which by nature enters the utility function of all and benefits all, and the pure specific (or private) good that has no externalities so its consumption by one restricts the quantity available for consumption by others. This distinction simplifies the theoretical analysis but breaks down in practical application since there exist few purely public or specific goods. The first problem of the researcher is to determine which government expenditures are to be treated as pure public good expenditures and which as pure private good expenditures (or what proportions of the expenditure items will fall under each category).

Public goods, as defined by the Tax Foundation (1967, p. 12), are expenditures for national defense, international affairs, general government (excluding interest), postal service, civilian safety, transportation (excluding highways), commerce and finance, health and sanitation, natural resources, public utilities, and other and miscellaneous expenditures. All other government expenditures were treated as specific goods.

Aaron and McGuire (1970), however, used two alternative public good categories. The first they labeled as "Low Total Quantity of Public Goods" and it consisted of the items used by the Tax Foundation (1967). The second category, "High Total Quantity of Public Goods,"

consisted of the first category plus the inclusion of portions of government expenditures for elementary and secondary education, higher education, public assistance and other welfare, veterans' benefits and services, highways, and agriculture. These were included because they felt that these additional expenditures "generate significant externalities" even though the portion classified as public goods was arbitrary (Aaron and McGuire, 1970, p. 915).

The two categories of public goods as defined by Aaron and McGuire (1970), are used in this study and can be seen in Tables 7 and 8. Table 7 shows the "Low Total Quantity of Public Goods" (Alternative A), while Table 8 shows the "High Total Quantity of Public Goods" (Alternative B).

Total benefits from government expenditures for public goods are allocated among income classes according to the method outlined by Aaron and McGuire (1970) and by Maital (1973) as discussed in Chapter II. That is, the value of public goods to a family unit in income class J is equal to:

$$AB_J = OG[(Y_D^J + Y_S^J)^{-\phi} \; / \; \Sigma_i (Y_D^i + Y_S^i)^{-\phi} \;]$$

where: AB_J = the dollar value to family unit J of public goods

OG = dollar value of all public goods provided

Y_D^J = disposable income of family unit J

Y_S = dollar value of government provided specific goods to family unit J

ϕ = inverse of the elasticity of substitution between public and private goods and equals 1.5.

The method of allocating specific goods among income classes is shown in Table 7. As in the case of allocating the income base and

Table 7. Bases for the Allocation of Government Expenditure Benefits by Income Class, Alternative A.[a]

Expenditures	Basis of Allocation
PUBLIC GOOD EXPENDITURES:	Marginal utility of income: $AB_J = OG\left[\frac{(Y_D^J + Y_S^J)^{-\phi}}{\Sigma_i (Y_D^i + Y_S^i)^{-\phi}}\right]$
National defense and international affairs	
Other general benefit expenditures	
General government	
Postal service	
Civilian safety (police, fire, etc.)	
Transportation (excluding highways)	
Commerce and finance	
Health and sanitation	
Other and miscellaneous	
Natural resources	
Public utilities	
SPECIFIC GOOD EXPENDITURES:	
Education:	
Elementary and secondary	Number of children under 18
Higher education	Higher education expenditures of families
Public assistance relief and other welfare	Income from public social assistance and private relief
Labor and manpower	Wages and salaries
Veterans benefits and services	Military allotments and pensions
Highways	Half auto operation expenditures and half total current consumption
Agriculture	Farm money income before taxes
Net interest	Interest income
Social insurance benefits	Public unemployment and social security benefits

a. Alternative A is low total quantity of public goods.

Source: Tax Foundation (1967) and Maital (1973).

Table 8. Bases for the Allocation of Government Expenditure Benefits by Income Class, Alternative B.[a]

Expenditures	Basis of Allocation
PUBLIC GOOD EXPENDITURES:	Marginal utility of income: $AB_J = OG\left[\frac{(Y_D^J + Y_S^J)^{-\phi}}{\sum_i (Y_D^i + Y_S^i)^{-\phi}}\right]$
National defense and international affairs	
Other general benefits expenditures:	
General government	
Postal service	
Civilian safety (police, fire, etc.)	
Transportation (excluding highways)	
Commerce and finance	
Health and sanitation	
Other and miscellaneous	
Natural resources	
Public utilities	
Education:	
Elementary and secondary (70%)	
Higher education (50%)	
Public assistance and other welfare (30%)	
Veterans benefits and services (30%)	
Highways (50%)	
Agriculture (30%)	
SPECIFIC GOOD EXPENDITURES:	
Education:	
Elementary and secondary (30%)	Number of children under 18
Higher education (50%)	Higher education expenditures of families
Public assistance relief and other welfare	Income from public social assistance and private relief
Labor and manpower	Wages and salaries
Veterans benefits and services (70%)	Military allotments and pensions
Highways (50%)	Half auto operation expenditures and half total current consumption
Agriculture (70%)	Farm money income before taxes
Net interest	Interest income
Social insurance benefits	Public unemployment and social security benefits

a. Alternative B is high total quantity of public goods.
Source: Tax Foundation (1967) and Maital (1973).

taxes, the items used as bases for allocating the private goods benefits are from the U. S. Bureau of Labor Statistics Survey of Consumer Expenditures and Income, 1960-61 (1965) which gives data for these items for each income class. A brief discussion of the allocation of the benefits of particular specific goods expenditures follows.

The benefits from government expenditures on elementary and secondary education are assumed to accrue proportionally to the number of families with children under eighteen years of age, while higher education expenditures are assumed to benefit families proportionate to their expenditures for higher education.

Expenditures for public assistance and other welfare are assumed to benefit families in proportion to that part of their income which comes from public social assistance and private relief. Such a method of allocation should primarily benefit the lower income classes. Veterans' benefits and services expenditures are allocated so that the benefits go to families in proportion to their receipts from military allotments and pensions.

Family expenditures on auto operation and total current consumption are used as the basis for allocating the benefits from government highway expenditures. This assumes that those who receive the benefits of this expenditure item are the users of highways and consumers since many consumer items are transported on the highways.

Government expenditures for agriculture are assumed to benefit farmers in proportion to their farm money income before taxes. (Farm money income represents total receipts from farm production minus operating costs.) Even where a portion of these expenditures are

categorized as public good expenditures, this basis of allocation ignores that some of the benefits from government agricultural programs have helped provide consumers with generally abundant quantities of food at relatively low prices.

Finally, the net interest payments by government are assumed to benefit families in proportion to their interest income, and social insurance benefits are allocated proportionally to the receipts of families from public unemployment compensation and social security.

As in the case of the allocation of taxes, no adjustment is made for the shifting of government expenditure benefits provided in the Western Region to residents outside the region. Nor is there an adjustment for the benefits reaped by residents in the region provided by government expenditures outside the region. It is assumed that the shifting of benefits into and out of the Western Region nullify each other's effect.

Sources of Data

The items discussed above that are used as bases of allocation are taken from the U. S. Bureau of Labor Statistics' Survey of Consumer Expenditures and Income, 1960-61 (1965). This survey itemized the income sources and expenditures from a representative sample of households in all parts of the United States in 1960-61. The results have been broken down into geographical regions and by area of residence (urban, rural nonfarm, and rural farm). These classifications are the same as those employed by the Bureau of the Census. The results were also presented showing the average amounts received from each income source and spent

for each expenditure item by the various income classes. The Survey divided the population into ten income classes (under $1,000; $1,000-$1,999; $2,000-2,999; $3,000-3,999; $4,000-4,999; $5,000-5,999; $6,000-7,499; $7,500-10,000; $10,000-15,000; and over $15,000) in tabulating the findings. Only nine income classes were used by the Tax Foundation (1967), which combined the two lowest income classes. This procedure was followed by Aaron and McGuire (1970) and Maital (1973), and is continued in this study.

The amounts of income (income side of net national product) to be allocated among the income classes in the Western Region are derived from the amounts used by the Tax Foundation (1967). The Tax Foundation derived these amounts from the national product data reported by the U. S. Department of Commerce (1963) and then allocated these amounts to the income classes proportional to each class's share of the bases of allocation as reported by the U. S. Bureau of Labor Statistics (1965) survey. Since net national product data are reported for the entire United States only, the Western Region's share of the net national product in 1961 is determined by allocating the dollar amounts of the items which comprise the net national product in proportion to the Region's share of the bases of allocation. The component items of the net national product and the basis of allocation are shown in Table 5.

Federal government taxes and expenditures for the Western Region are determined in a similar manner. It is a nearly impossible task to precisely determine what share of the total Federal tax burden was borne by the Western Region in 1961, as is the determination of Federal expenditures made in the Region. Consequently, the total amounts of Federal

taxes and expenditures reported by the Tax Foundation (1967) are allocated to the Western Region in the same manner as was the Region's share of net national product. Federal expenditures for public goods, of course, are less problematical to deal with since, by definition, the benefits from these expenditures are enjoyed by all, only the valuation of these benefits differs.

State-local tax and expenditure amounts in the Western Region are derived from the total amounts reported by the Tax Foundation (1967) and the U. S. Bureau of the Census (1964). The U. S. Bureau of the Census (1964) reported the sources of Tax revenues and expenditure items by states. It is then possible to determine the proportional shares of the tax revenues and expenditures for the Western Region in 1962. Assuming that there was an insignificant change in the proportions between 1961 and 1962, these proportions are used to determine the tax revenues and expenditures at the state-local level in the Western Region using the Tax Foundation (1967) amounts as a base. These amounts are then allocated to the income classes and sectors of the Region using the bases of allocation discussed above.

The total tax burden of the Western Region can be determined in the manner just described, but the determination of the burden of the estate and gift taxes borne by each sector is done in a different manner. The assumption that the estate and gift taxes are borne entirely by the highest income class implies that the payment of these taxes is primarily a function of income. Accordingly, the proportion of these taxes to be allocated to each sector is determined to be equal to the proportional

share of money income, as reported by the U. S. Bureau of Labor Statistics (1965), enjoyed by the highest income class in each sector.

Western Region state-local government expenditures for public goods are assumed to benefit all residents of the Region regardless of where a particular public good expenditure may have been made. For example, public good expenditures made by urban governments are assumed to benefit rural residents as well, even though in reality this is likely to not be the case. This assumption is necessary because of the unavailability of detailed financial data for all levels of government in the Western Region for 1961.

It is recognized that some of the assumptions and methods used in determining the tax burdens and government expenditure benefits for Western Region residents in 1961 may estimate tax revenue and expenditure amounts that are different from the actual amounts. This approximation of reality is used because:

(1) It is difficult to determine the actual amounts due to the unavailability of data and differences in the data that are reported by various sources;

(2) The determination of the actual amounts would require compromises and the making of assumptions that would not necessarily make these amounts more reliable than the amounts are used here; and

(3) The amounts used by the Tax Foundation (1967) were determined using certain assumptions and methods.

Using state budget data to determine the actual amounts without knowing the Tax Foundation's (1967) assumptions and methods would reduce the comparability of the results. For example, data on tax revenues

generally list the total amounts collected from the various sources, and then separately list the total tax refund amounts. The Tax Foundation allocated these refunds to the various tax revenue sources to derive a "net" tax revenue from each source. These "net" figures were used for their computations, and the allocation method was not reported.

It is believed that although the amounts used here may differ from the actual amounts, the results showing the progressiveness or regressiveness of the distributions of the tax burdens, expenditure benefits, and income redistribution effects are quite reliable.

In summary, the method of determining the net effect of government fiscal activity on income distribution is as follows:

(1) Determine the distribution of income that would exist in the absence of government fiscal activity by allocating net national product (income side) to the various income classes.

(2) Determine the tax burden borne by each income class by allocating the total tax burden to the classes as discussed above, and then subtract this burden from the initial (pre-tax, pre-benefit) incomes received by each income class.

(3) Determine the benefit received by each income class by allocating government expenditures for specific goods in the manner discussed above. The benefits from government expenditures for public goods are distributed to each income class proportional to each class's marginal utility of income, as was advocated by Maital (1973). The total benefits are then added to the initial incomes, less taxes paid, of each income class.

(4) The resulting, post-tax, post-benefit income distribution is then compared with the initial income distribution to determine whether income has been redistributed as a result of government fiscal activity and whether the resulting distribution of income has increased the equality of income distribution.

(5) The same procedure is followed for the urban and rural farm and rural nonfarm populations to determine the net effects on these groups and whether income has been redistributed between the groups.

CHAPTER IV

RESULTS OF THE ANALYSIS

The allocation methods described in the previous chapter allow estimates to be made of initial (pre-tax, pre-benefit) income, tax burdens, and the value of benefits of specific and public government goods for each income class. The net effect of tax burdens and government benefits on each income class can then be computed and the resulting net income distribution compared to the pre-tax, pre-benefit distribution of income. These estimates are all presented in this chapter. All estimates are made for the United States, the West, and urban, rural nonfarm and rural farm sectors of the West. Figures and tables are used in the text to present the findings. Data and estimates from which the figures were constructed are given in Appendices A and B.

All computations are given on a per family basis for each income class. A negative net effect for an income class represents an income transfer in favor of that class, while a positive net effect indicates an income transfer from that income class.

The degree of progressiveness or regressiveness of the distributions of tax burdens and expenditure benefits and of the income redistributive effect are estimated by determining the proportion of its initial income that each income class pays in taxes, receives in government expenditure benefits, and receives or pays for income redistribution.

The results for the entire United States are taken directly from the Tax Foundation (1967) and Maital (1973), which determined the distributions of the total (state-local and federal) tax burden and the total expenditure benefits. To increase the comparability with these earlier studies, the state-local and federal taxes and government expenditures are separated from the total and are presented.

Initial Income Distribution

The initial income distribution, as has been mentioned, refers to the distribution of income before taxes are subtracted and before government benefits are assigned. It is determined by allocating the income base, the aggregate of initial incomes, among the income classes. Net national product, income side, is used as the income base in this study. The components of net national product in 1961 for the United States and the Western Region are shown in Table 9, along with the income base amount to be distributed among the income classes. The amounts allocated to each income class are given in Appendix Tables B.2.a to B.2.d.

Table 10 shows the distribution of families among income classes and the average initial income of each income class for the United States and the Western Region in 1961. In the United States, 36.65 percent of the families were in the three lowest income classes and received 11.54 percent of the total initial income, while in the Western Region 28.53 percent of the families were in the lower three income classes and received 8.50 percent of the Region's total income. The three lowest income classes contained 26.98, 33.43, and 39.29 percent of the urban,

Table 9. Relation of BLS Money Income to Net National Product; Amounts to be Allocated, United States and Western Region, 1961 (millions of dollars).

	United States	Western Region[a]
BLS Money income before taxes	$348,041	$60,931
Plus: "Other labor income"	12,746	2,152
Net rent, owner-occupied dwellings	6,992	1,261
Services furnished by financial institutions[b]	5,296	985
Food grown and consumed on farms	1,105	105
Food furnished employees	2,113	334
Difference between personal taxes in BLS survey and in national income accounts	13,731	2,443
Imputed items in personal savings	15,500	2,796
Other and unaccounted	11,290	1,976
Equals: Personal income excluding capital gains	416,814	72,983
Less: Transfers to persons		
Social insurance benefits	18,034	2,730
Civilian government pensions	2,499	366
Veterans benefits and pensions	5,544	1,030
Relief and other	4,344	862
Net interest paid by government	7,390	1,375
Net interest paid by consumers and subsidies less current surplus of government enterprises	9,067	1,608
Plus: Non-personal taxes		
Corporate profits tax liabilities	23,104	3,661
Half on consumption	(11,552)	(2,049)
Half on dividends	(11,552)	(1,612)
Contributions for social insurance		
Personal contributions	9,598	1,764
Employer contributions	11,843	2,101
Indirect business tax and non-tax liability	47,699	8,462
Undistributed corporate profits[c]	12,687	1,770
Equals: Net national product	474,865	82,770

a. Estimates using BLS Survey of Consumer Expenditures 1960-61 (1965).
b. Excludes insurance companies.
c. Includes inventory valuation adjustment.

Sources: Tax Foundation (1967) and Bureau of Labor Statistics, Survey of Consumer Expenditures, 1960-61 (1965).

Table 10. Distribution of Families and Average Initial Income by Income Class, United States and Western Region, 1961.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total[a]
United States										
Number of Families (000)	7,860	6,077	6,334	6,972	7,018	8,399	7,585	3,962	1,100	55,307
Percent of Total Families	14.21	10.98	11.45	12.60	12.68	15.18	13.71	7.16	1.98	
Average Initial Income	$1,046	$2,501	$4,674	$6,561	$8,328	$10,148	$13,482	$19,453	$44,500	$474,865
Percent of Total Income	1.73	3.58	6.23	9.63	12.30	17.93	21.53	16.23	10.30	
Western Region										
Number of Families (000)	918	707	877	1,098	1,124	1,661	1,361	796	224	8,766
Percent of Total Families	10.47	8.06	10.00	12.52	12.82	18.94	15.52	9.08	2.55	
Average Initial Income	$1,111	$2,646	$4,737	$6,469	$8,117	$10,701	$13,713	$18,688	$36,504	$82,770
Percent of Total Income	1.23	2.26	5.01	8.58	11.02	21.47	22.54	17.97	9.87	
Urban Sector, West										
Number of Families (000)	656	537	688	823	910	1,359	1,095	720	178	6,966
Percent of Total Families	9.41	7.70	9.87	11.81	13.06	19.50	15.71	10.33	2.55	
Average Initial Income	$1,123	$2,605	$4,612	$6,464	$7,985	$10,475	$13,754	$18,913	$38,045	$67,581
Percent of Total Income	1.09	2.07	4.69	7.87	10.75	21.06	22.28	20.14	10.02	
Rural Nonfarm Sector, West										
Number of Families (000)	205	137	154	245	169	268	227	53	26	1,483
Percent of Total Families	13.82	9.23	10.38	16.52	11.39	18.07	15.30	3.57	1.75	
Average Initial Income	$712	$2,467	$5,058	$6,045	$7,899	$11,582	$13,322	$18,792	$39,538	$12,237
Percent of Total Income	1.19	2.76	6.36	12.10	10.90	25.36	24.71	8.13	8.40	
Rural Farm Sector, West										
Number of Families (000)	57	33	35	31	45	35	39	23	20	318
Percent of Total Families	17.92	10.37	11.00	9.74	14.15	11.00	12.26	7.23	6.28	
Average Initial Income	$2,088	$3,303	$6,000	$7,677	$8,089	$10,200	$12,667	$16,478	$35,100	$2,975
Percent of Total Income	4.00	3.66	7.05	8.00	12.23	12.00	16.60	12.73	23.59	

[a]Dollar amounts in millions

Sources: Tax Foundation (1967) and Appendix Tables B.1. a -d and B.2. a -d.

rural nonfarm, and rural farm families respectively, and 7.85, 10.31, and 14.71 percent of total initial income was allocated to these groups.

The three highest income classes contained 22.85 percent of the families in the United States and 27.15 percent in the Western Region, and received 48.06 and 50.38 percent of the total initial income respectively. For the urban, rural nonfarm, and rural farm populations of the Western Region, 28.59, 20.62, and 25.77 percent of the families were in the three highest income classes and received, respectively, 52.44, 41.24, and 52.92 percent of the total allocated initial income.

The initial income distribution is summarized in Figure 11 using Lorenz Curves. It can be seen that the most equal distribution of initial income is in the urban population of the Western Region. The incomes of the Western Region and its population groups, except for the rural farm population, were more equally distributed than were incomes in the nation as a whole. The most unequal distribution of income was among the rural farm population of the West, especially in the higher income classes.

Tax Burden Distribution

The total tax burden, itemized by type of tax, that must be allocated among the citizens of the United States and residents in the Western Region is shown in Table 11. (The actual allocation of the tax burden in the Western Region is shown in Appendix Tables B.3.a to B.3.d.) Individual income taxes, widely recognized as one of the most progressive taxes, accounted for 44.54 percent of the total tax receipts of the federal government in the United States in 1961 and 45.24 percent of

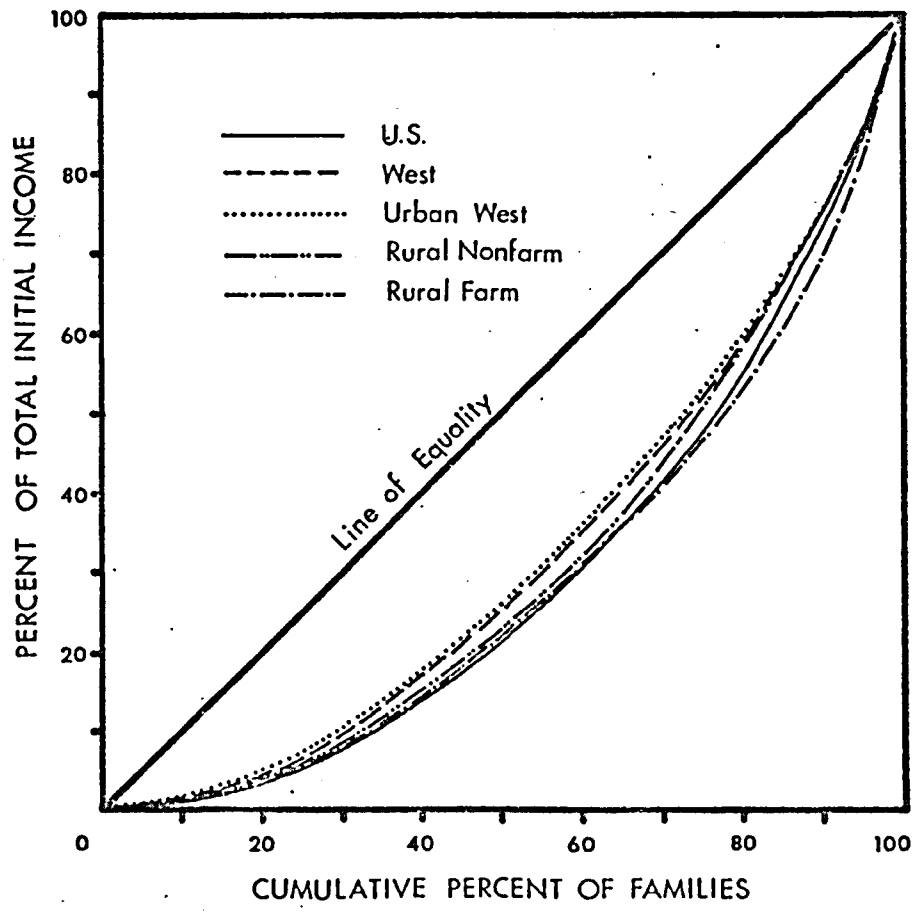


Figure 11. Initial Income Distribution, United States and Western Region, 1961.

Source: Table 10.

Table 11. Tax Amounts to be Allocated by Income Class, United States and Western Region, 1961 (millions of dollars).

	United States	Western Region
Federal, Total	$95,795	$16,780
Individual Income	42,668	7,591
Corporate Income	21,751	3,444
Half on consumption	(10,875)	(1,929)
Half on dividends	(10,876)	(1,515)
Estate and gift	1,814	348
Alcoholic beverage	3,212	670
Tobacco	2,015	305
Telephone and Telegraph	836	142
Auto purchase	1,859	356
Auto operation	2,323	444
Other excises, etc.[a]	3,561	632
Other taxes	(3,120)	(554)
Nontax receipts	(441)	(78)
Social Insurance	15,756	2,848
Personal contributions	(8,228)	(1,512)
Employer contributions[b]	(7,528)	(1,336)
State - Local, Total	$48,839	$9,306
Individual Income	2,648	492
Corporation Income	1,353	382
Half on consumption	(676)	(191)
Half on dividends	(677)	(191)
Gift and inheritance	489	101
Alcoholic beverage	701	97
Tobacco	1,038	109
Auto purchase	550[c]	105
Auto operation	5,178	932
General sales (excluding auto purchase)	4,192	1,113
Property tax	17,938	3,584
Half on consumption	(8,969)	(1,792)
Half on housing expenditures	(8,969)	(1,792)
Social insurance	5,685	1,017
Personal contributions	(1,370)	(252)
Employer contributions[b]	(4,315)	(765)
Other excises, etc.[a]	9,067	1,374
Other excises	(5,273)	(799)
Nontax receipts	(3,794)	(575)

a. Includes nontax receipts.
b. Unemployment insurance classified as a state tax.
c. Estimate based on Bureau of the Census data.

Sources: Tax Foundation (1967), Table B-6, p.44; and U.S. Bureau of the Census, Census of Governments, 1962 (1964).

total federal tax receipts in the West. Income tax receipts accounted for only 5.42 percent of state-local government tax receipts in the nation and 5.29 percent in the West. State-local governments have traditionally relied more heavily on sales, excise, and property taxes for their tax revenues. These observations would indicate that the distribution of the tax burden is generally progressive for the federal government and regressive for state-local governments.

These expectations are confirmed by the findings of this study, which are presented numerically in Table 12 and graphically in Figures 12, 13, and 14. For the nation as a whole, the federal tax system was progressive, although there was some regressiveness in the lower income classes. The tax burden, as expected, was regressive for all state-local governments in the United States. The total tax burden of the United States was slightly regressive although average tax payments (in dollar amounts) increased as income increased. This regressiveness was a result of the regressive state-local tax systems and also because the federal government did rely on some sales and excise taxes.

In the Western Region, the results are similar to those for the nation, though the tax rate (tax burden as a percent of initial income) was generally higher than for the total United States. The federal tax burden was generally progressive in the West and the state-local tax burden regressive, with the lower income classes paying higher tax rates than the higher classes and the lower income classes in the West paid higher rates than in the nation as a whole.

The tax burdens of the urban and rural nonfarm populations of the Western Region were distributed in much the same way as were the total

Table 12. Average Family Tax Burden by Income Class, United States and Western Region, 1961.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, All taxes	$476	$930	$1,471	$1,923	$2,407	$2,948	$3,822	$5,748	$17,330	$2,615
Percent of Initial Income	45.50	33.20	31.47	29.30	28.90	29.05	28.34	29.54	38.94	30.45
Federal Taxes	224	500	869	1,179	1,509	1,892	2,539	4,064	14,031	1,732
Percent of Initial Income	21.41	17.85	18.59	17.96	18.11	18.64	18.83	20.89	31.53	20.17
State - Local Taxes	252	431	602	745	899	1,057	1,284	1,685	3,298	883
Percent of Initial Income	24.09	15.38	12.87	11.35	10.79	10.41	9.52	8.66	7.41	10.28
Western Region, All taxes	$606	$966	$1,640	$2,020	$2,357	$3,186	$3,990	$5,676	$14,758	$2,976
Percent of Initial Income	54.54	36.50	34.62	31.22	29.03	29.77	29.09	30.37	40.43	31.51
Federal Taxes	279	498	948	1,195	1,396	1,986	2,576	3,887	11,464	1,914
Percent of Initial Income	25.11	18.82	20.01	18.47	17.19	18.55	18.78	20.79	31.40	20.27
State - Local Taxes	327	468	692	825	961	1,200	1,414	1,789	3,295	1,062
Percent of Initial Income	29.43	17.68	14.60	12.75	11.83	11.21	10.31	9.57	9.02	11.24
Urban Sector, West, All taxes	$602	$970	$1,610	$2,051	$2,398	$3,101	$4,098	$5,761	$15,045	$3,075
Percent of Initial Income	53.60	37.23	34.90	31.72	30.03	29.60	29.79	30.46	39.54	31.69
Federal Taxes	276	507	916	1,222	1,437	1,904	2,661	3,961	11,646	1,985
Percent of Initial Income	24.57	19.46	19.86	18.90	17.99	18.17	19.34	20.94	30.61	20.45
State - Local Taxes	326	464	695	829	960	1,196	1,437	1,800	3,399	1,091
Percent of Initial Income	29.02	17.81	15.06	12.82	12.02	11.41	10.44	9.51	8.93	11.24
Rural Nonfarm Sector, West, All Taxes	$459	$905	$1,734	$1,882	$2,219	$3,964	$3,687	$5,604	$16,269	$2,610
Percent of Initial Income	64.46	36.68	34.28	31.13	28.09	34.22	27.67	29.82	41.14	31.62
Federal Taxes	190	416	1,071	1,061	1,231	2,451	2,304	3,642	12,769	1,641
Percent of Initial Income	26.68	16.86	21.17	17.55	15.58	21.16	17.29	19.38	32.29	19.88
State - Local Taxes	268	489	662	820	988	1,243	1,383	1,962	3,500	969
Percent of Initial Income	37.64	19.82	13.08	13.56	12.50	10.73	10.38	10.44	8.85	11.74
Rural Farm Sector, West, All Taxes	$1,175	$1,061	$1,771	$2,452	$1,844	$2,371	$2,795	$2,783	$10,250	$2,503
Percent of Initial Income	56.27	32.12	29.51	31.93	22.79	23.24	22.06	16.88	29.20	26.75
Federal Taxes	632	636	1,086	1,645	1,089	1,400	1,821	1,826	8,150	1,642
Percent of Initial Income	30.26	19.25	18.10	21.42	13.46	13.72	14.37	11.08	23.21	17.55
State - Local Taxes	544	424	686	806	756	971	974	957	2,100	862
Percent of Initial Income	26.05	12.83	11.43	10.49	9.34	9.51	7.68	5.80	5.98	9.21

Sources: Tax Foundation (1967) and Appendix Tables E.6. a - e.

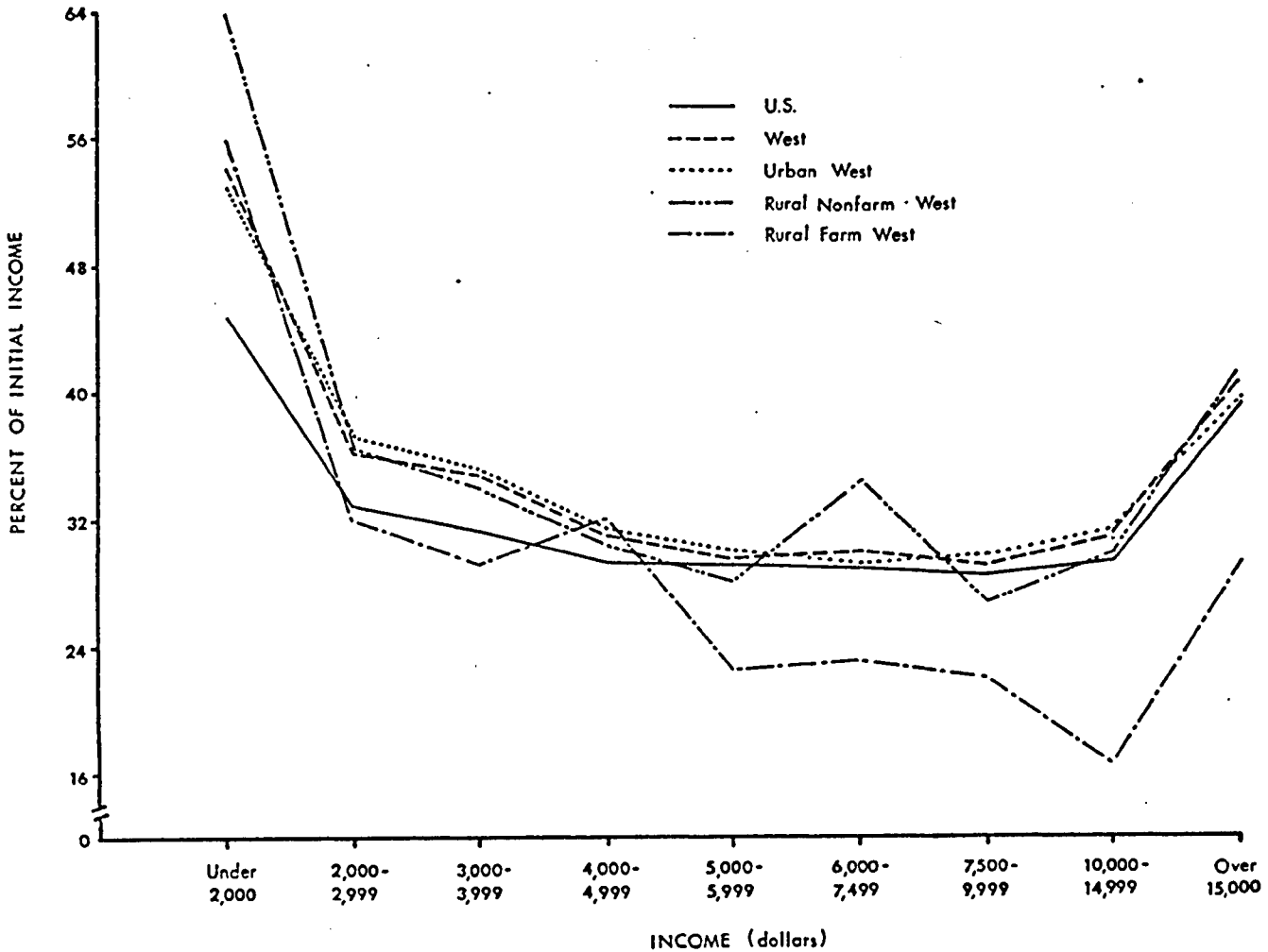


Figure 12. Federal and State-Local Taxes as Percent of Initial Family Income, by Income Class, United States and Western Region, 1961.

Source: Table 12.

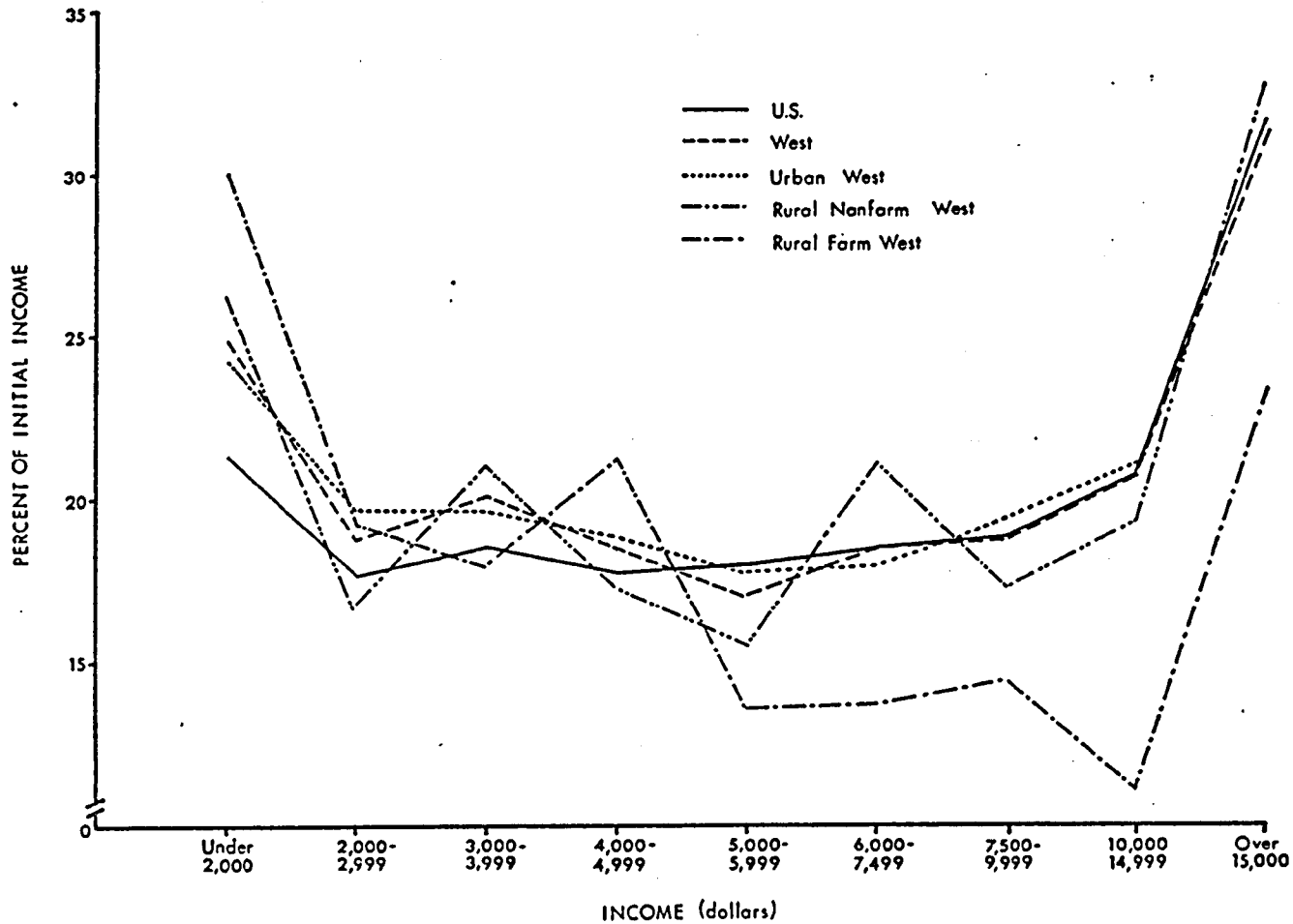


Figure 13. Federal Taxes as Percent of Initial Family Income by Income Class, United States and Western Region, 1961.

Source: Table 12.

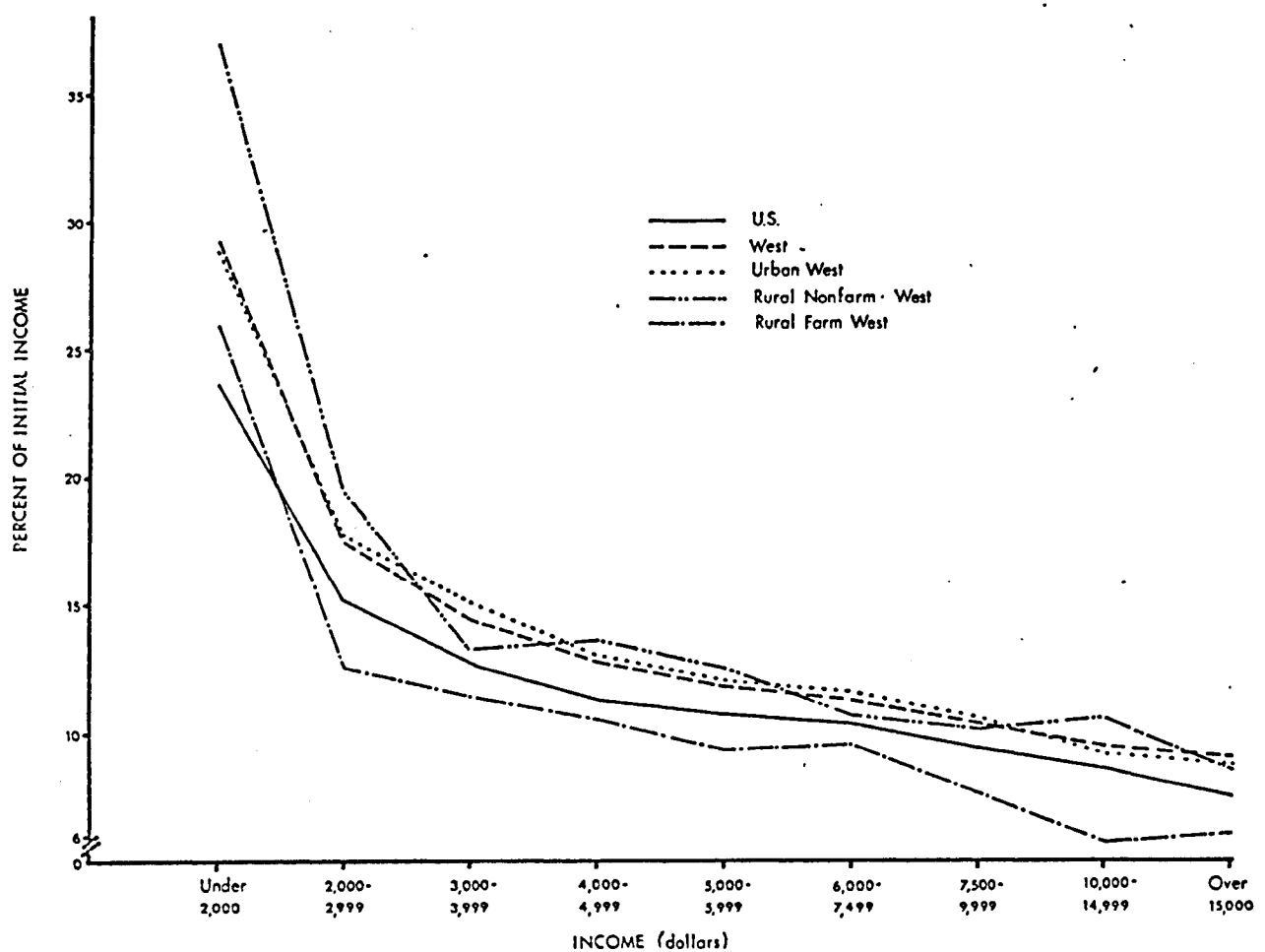


Figure 14. State-Local Taxes as Percent of Initial Family Income, by Income Class, United States and Western Region, 1961.

Source: Table 12.

region's tax burden. The rural nonfarm population paid some of the highest tax rates, especially in the lowest and highest income classes.

For the rural farm population, both the federal and state-local tax burdens were generally distributed regressively, with mid and high income classes paying lower rates than any of the other groups. This regressiveness was primarily due to the relatively low income taxes paid by the mid and high income classes. Also, compared to the other sectors, incomes were on the average higher for the lower income classes and lower for the higher income classes (Table 10).

Distribution of Government Expenditure Benefits

Government expenditure benefits are classified as either specific (private) or public depending upon the nature of the good or service which is provided. Also, the expenditure items which comprise the specific and public benefit categories have been divided between the categories in two ways: the "Low Total Quantity of Public Goods" (Alternative A) employs a limited definition of what constitutes a public good, while the "High Total Quantity of Public Goods" (Alternative B) employs a broader definition. The distribution of benefits under Alternatives A and B are discussed repeatedly.

Alternative A

Total government expenditures in 1961, federal and state-local, are itemized by type of expenditure in Table 13 (the actual allocation of these amounts appear in Appendix Tables B.4.a. to B.4.d.). Of the total federal government expenditures, 62.03 percent went for public goods, while 90.72 percent of federal expenditures in the West went for

Table 13. Government Expenditure Amounts to be Allocated by Income Class, United States and Western Region, 1961, Alternative A (millions of dollars).

	United States	Western Region
Federal,Total:	$97,842	$71,515
General Benefit, Total	$66,279	$66,279
National defense and international affairs	51,426	51,426
Other general benefit expenditures [a]	9,268	9,268
Elementary and secondary education	214	214
Higher education	106	106
Public assistance and other welfare	859	859
Veterans benefits	1,843	1,843
Highways	1,369	1,369
Agriculture	1,194	1,194
Specific Benefit, Total	$31,563	$5,236
Elementary and secondary education	91	15
Higher education	105	17
Public assistance and other welfare	2,003	398
Labor and manpower	595	100
Veterans benefits	4,300	799
Highways	1,369	252
Half on auto operation	(685)	(131)
Half on total current consumption	(684)	(121)
Agriculture	2,786	359
Net interest	6,366	1,184
Social insurance benefits [b]	13,948	2,112
State - Local, Total	$51,136	$12,083
General Benefits, Total	$34,600	$8,302
General [a]	17,696	4,084
Elementary and secondary education	11,425	3,045
Higher education	1,476	454
Public assistance and other welfare	667	138
Veterans benefits	34	6
Highways	3,145	555
Agriculture	157	20
Specific Benefits, Total	$16,536	$3,781
Elementary and secondary school	4,896	1,305
Higher education	1,475	454
Public assistance and other welfare	1,555	321
Streets and highways	3,144	555
Half on auto operation expenditures	(1,572)	(277)
Half on total current consumption	(1,572)	(278)
Agriculture	367	47
Net interest	766	123
Social insurance benefits [b]	4,244	959
Labor	10	2
Veterans benefits	79	15
Total Federal and State - Local Expenditures	$148,978	$83,598
Total general benefit	100,879	74,581
Total specific benefit	48,099	9,017

a. Includes expenditures for general government, postal service, civilian safety, (police, fire, etc.), transportation. (excluding highways), commerce and finance, health and sanitation, natural resources, public utilities, and other and miscellaneous.

b. Unemployment insurance is classified as a state-local program.

c. After deduction of Federal grants-in-aid.

Sources: Tax Foundation (1967) and U.S. Bureau of the Census, Census of Governments,1962 (1964).

public goods (the percentage in the West is high since, by definition, all federally provided public goods enter everyone's consumption function in equal quantities, so the total figure must be used to determine how the Western Region population valued these goods). Nationally, 34.61 percent of the state-local government expenditures were used for public goods while state-local governments in the West used 33.80 percent of their total expenditures for public goods.

Figures 15-23 illustrate the distribution of both combined and separate federal and state-local government expenditure benefits from combined and separated specific and public goods. The distribution is given by income class for the United States and the Western Region, including the urban, rural nonfarm, and rural farm sectors of the region. The benefits received by each income class are shown as a percent of each class's average initial income.

Total Government Benefits. Figures 15 and 16 illustrate the distribution of benefits from combined federal and state-local spending. Benefits from specific plus public goods were distributed progressively in the United States, although there was some regressiveness in the higher income classes. The specific goods benefits were very progressively distributed in the United States, while the public goods benefits were quite regressively distributed.

In the Western Region, federal plus state-local expenditure benefits from specific plus public goods were also distributed progressively, but with the benefits representing a higher percentage of initial income than they did in the United States. Specific goods benefits

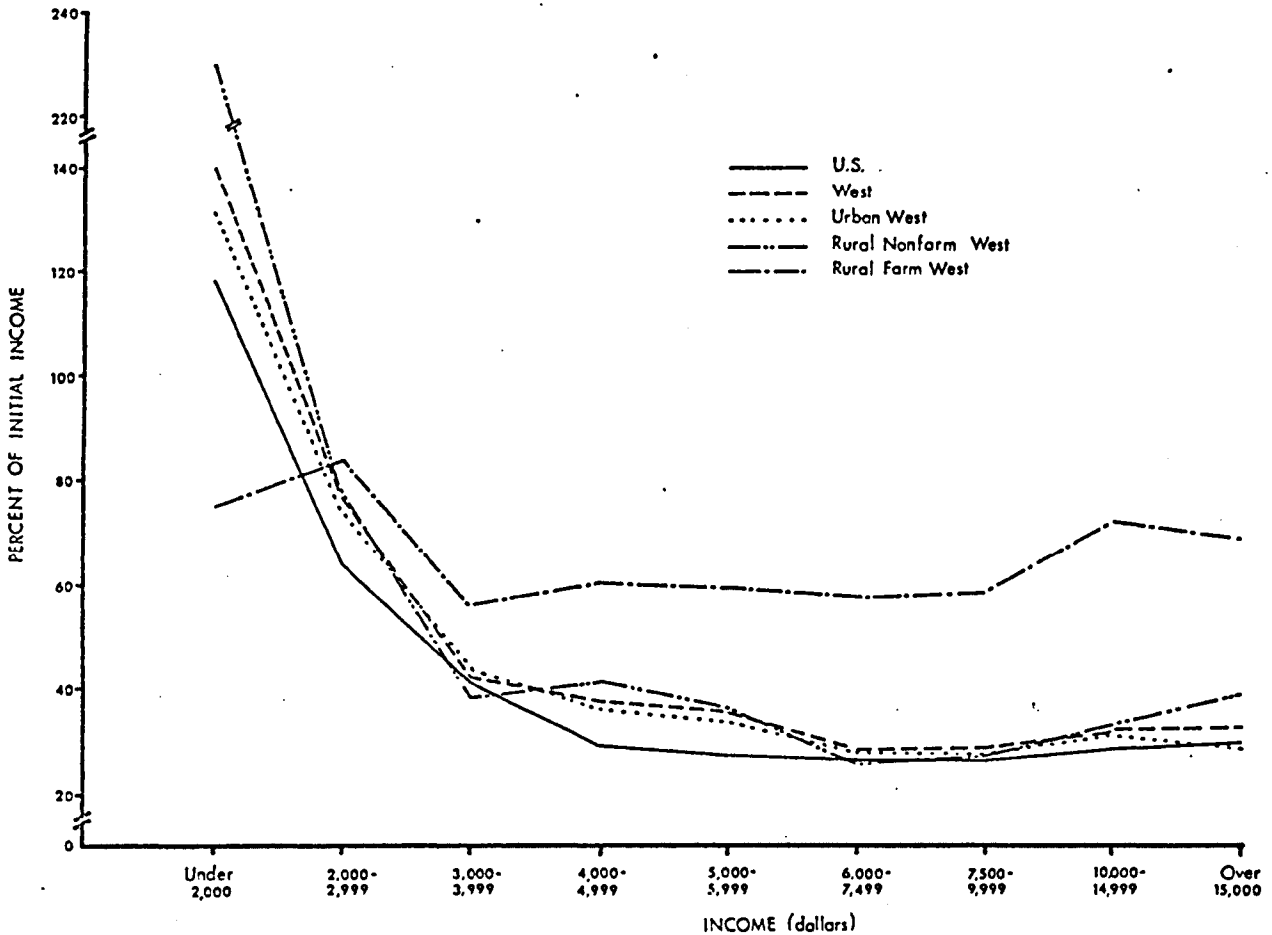


Figure 15. Distribution of Government Expenditure Benefits by Income Class, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.1.

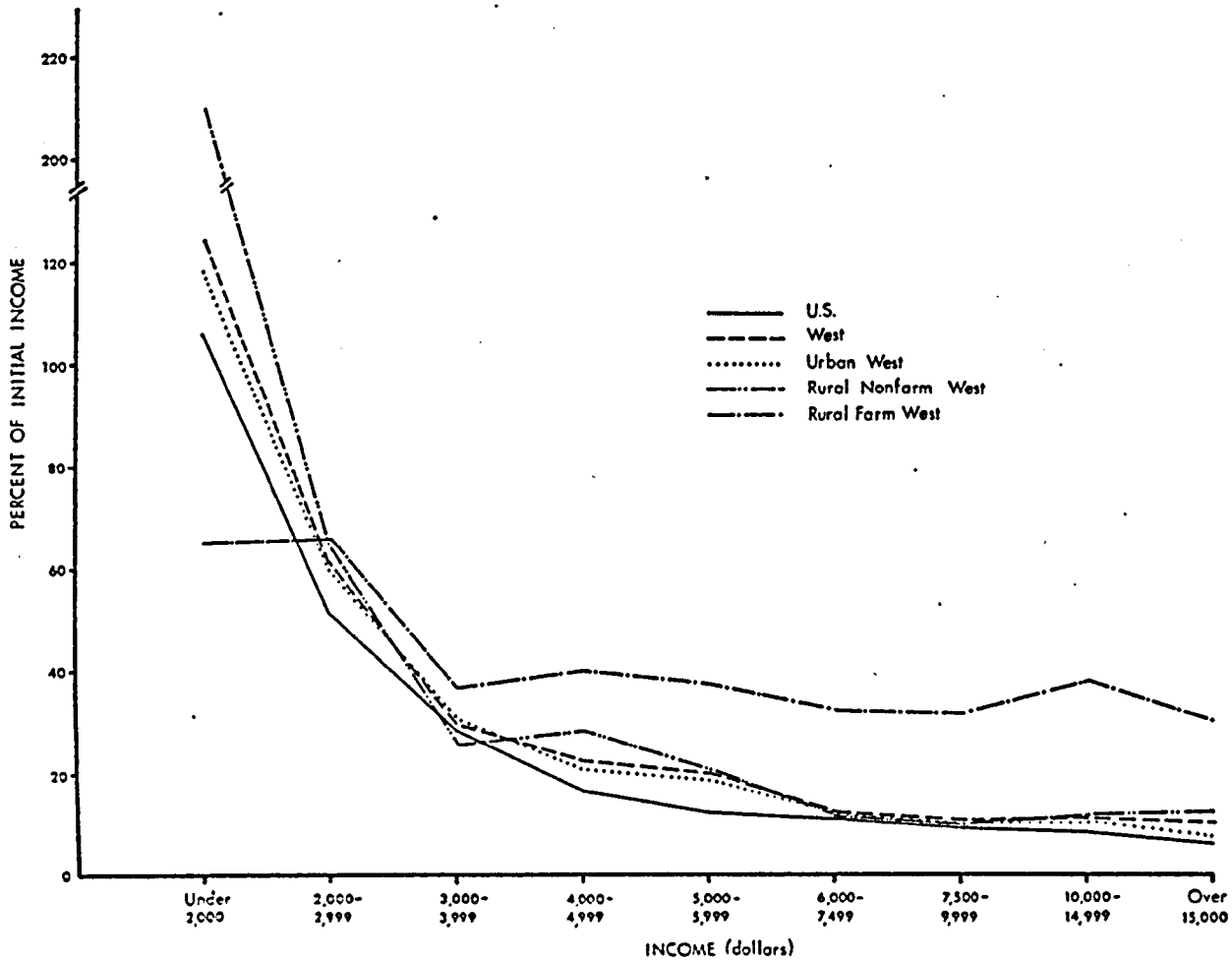


Figure 16. Distribution of Government Expenditure Benefits from Specific Goods by Income Class, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.2.

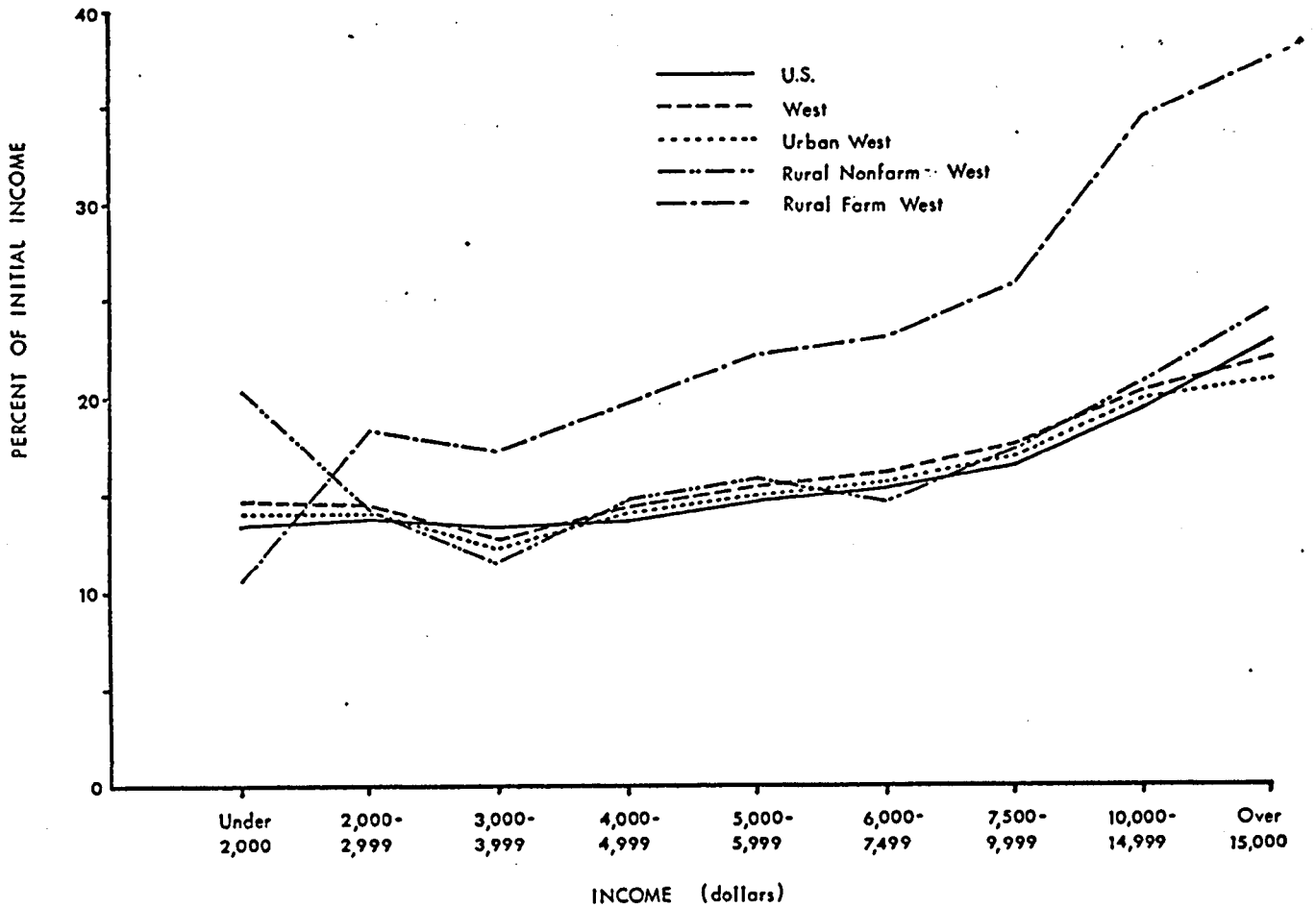


Figure 17. Distribution of Government Expenditure Benefits from Public Goods by Income Class, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.3.

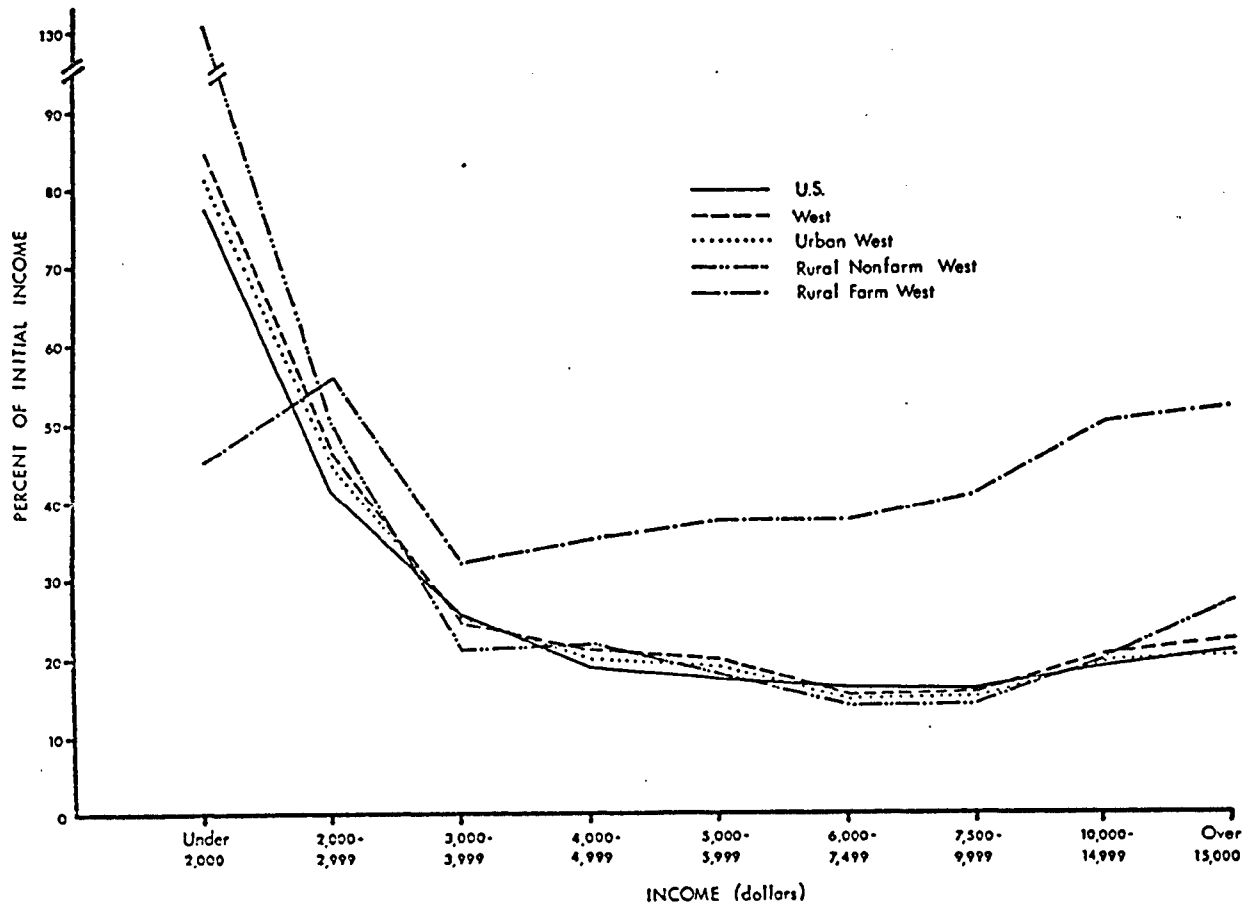


Figure 18. Distribution of Federal Government Expenditure Benefits by Income Class, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.1.

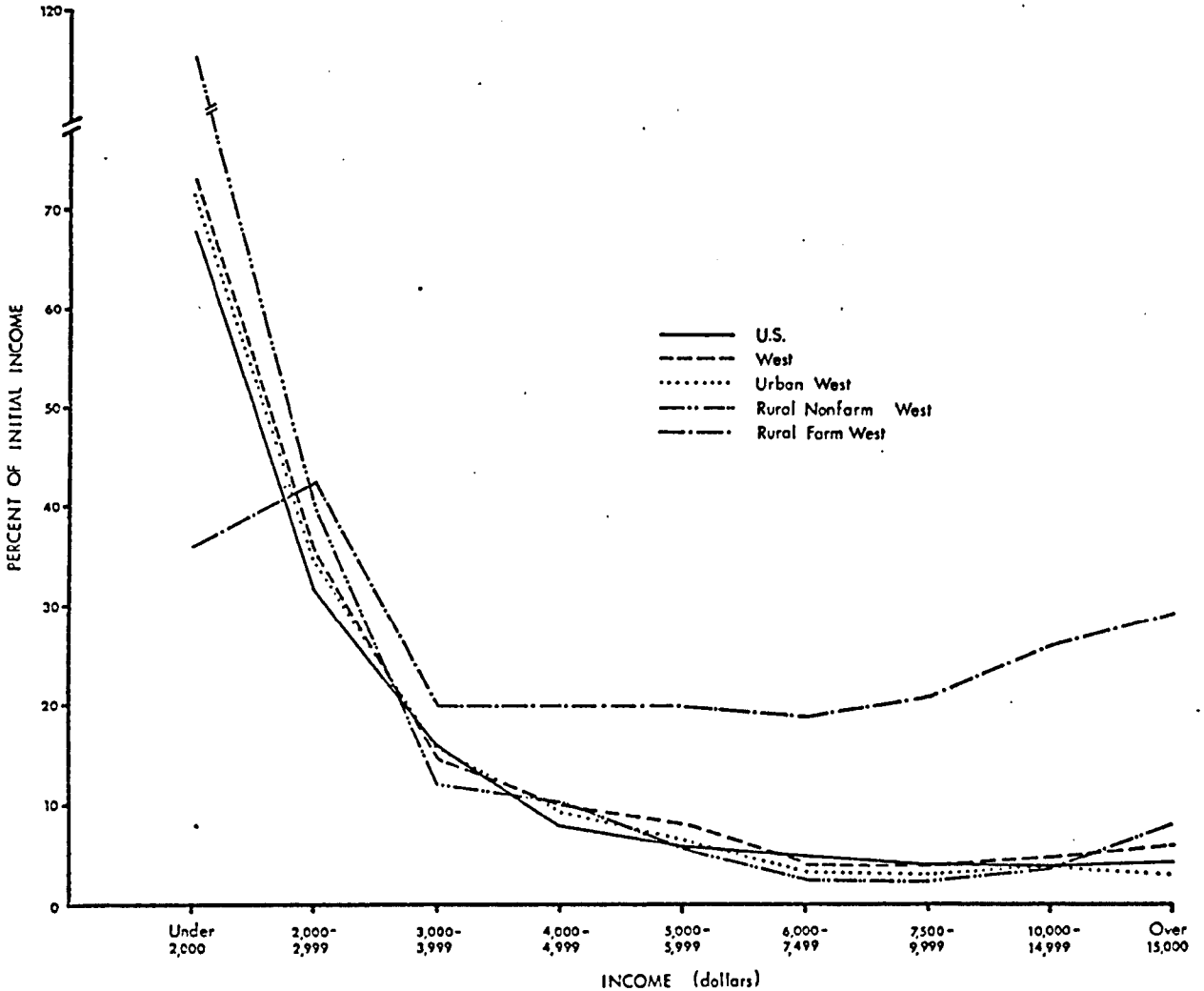


Figure 19. Distribution of Federal Government Expenditure Benefits from Specific Goods by Income Class, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.2.

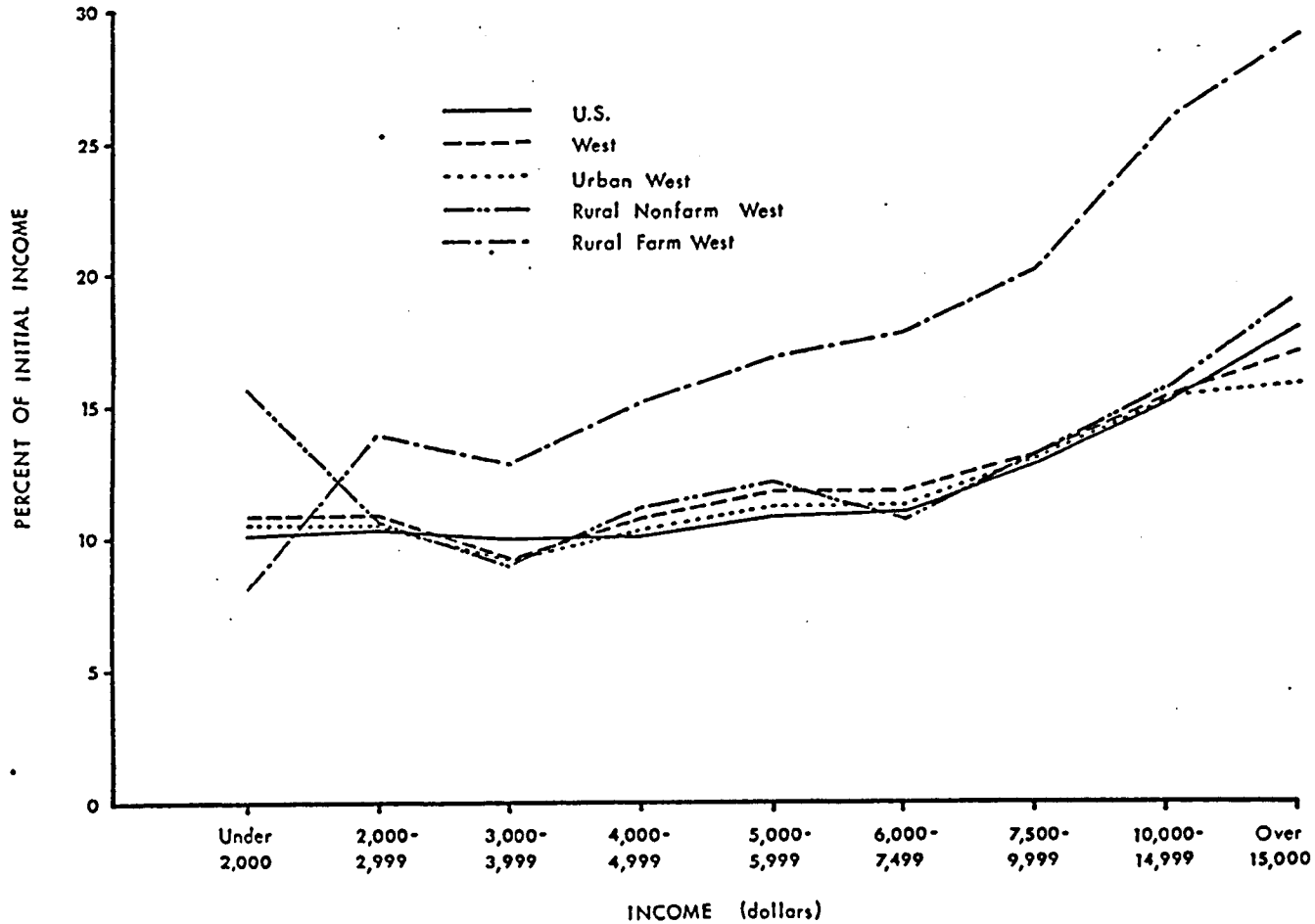


Figure 20. Distribution of Federal Government Expenditure Benefits from Public Goods by Income Class, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.3.

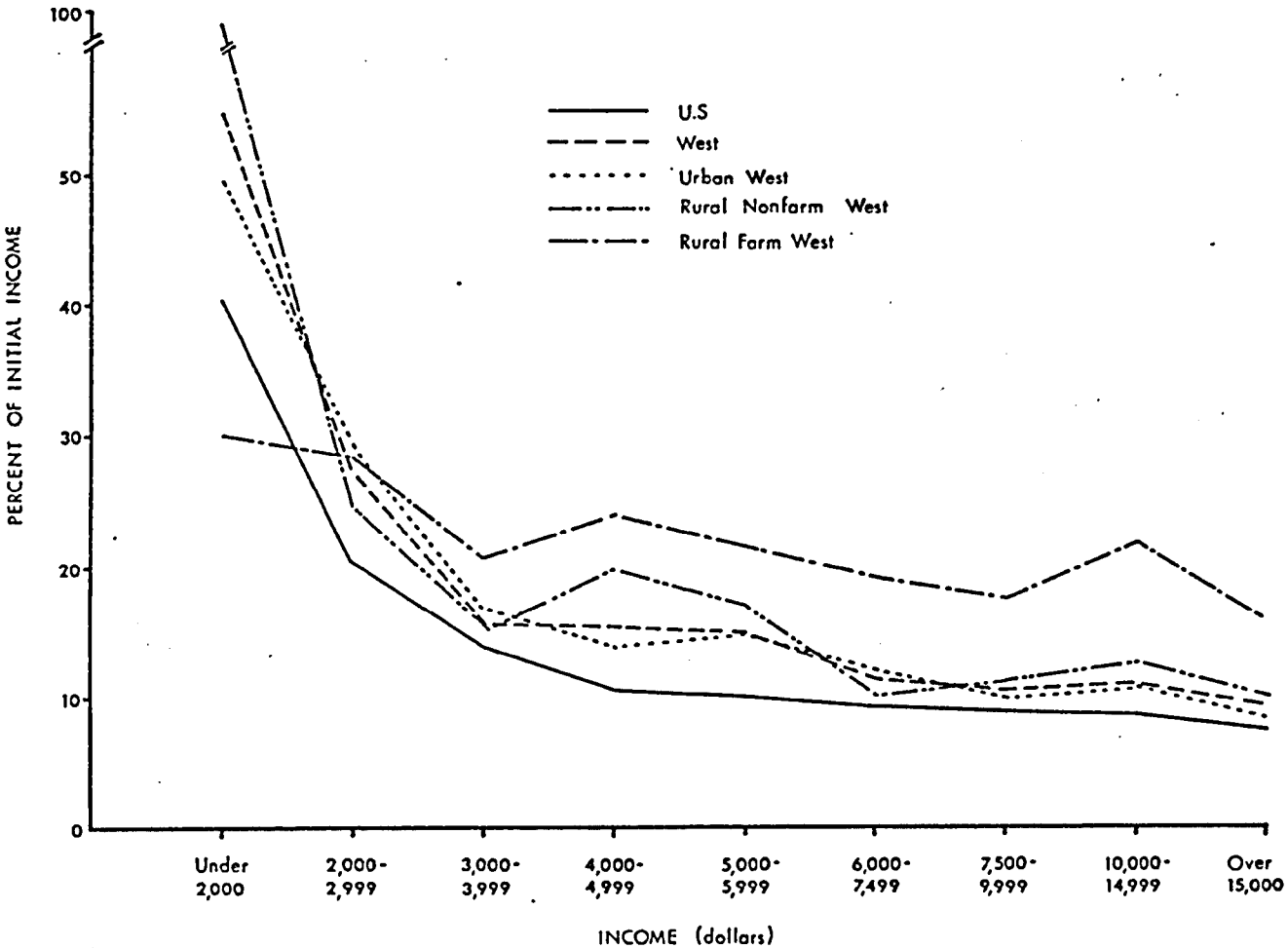


Figure 21. Distribution of State-Local Government Expenditure Benefits by Income Class, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.1.

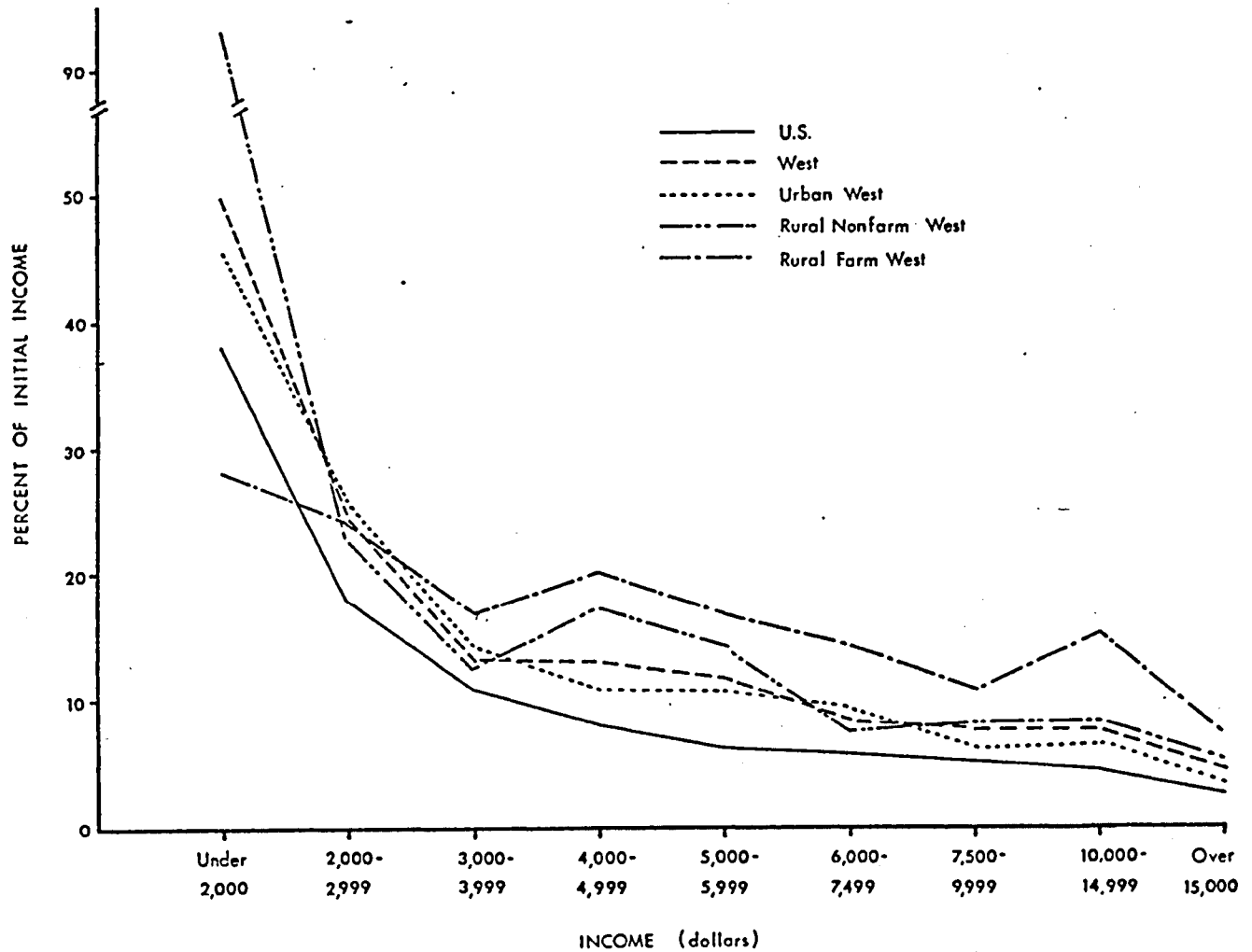


Figure 22. Distribution of State-Local Government Expenditure Benefits from Specific Goods by Income Class, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.2.

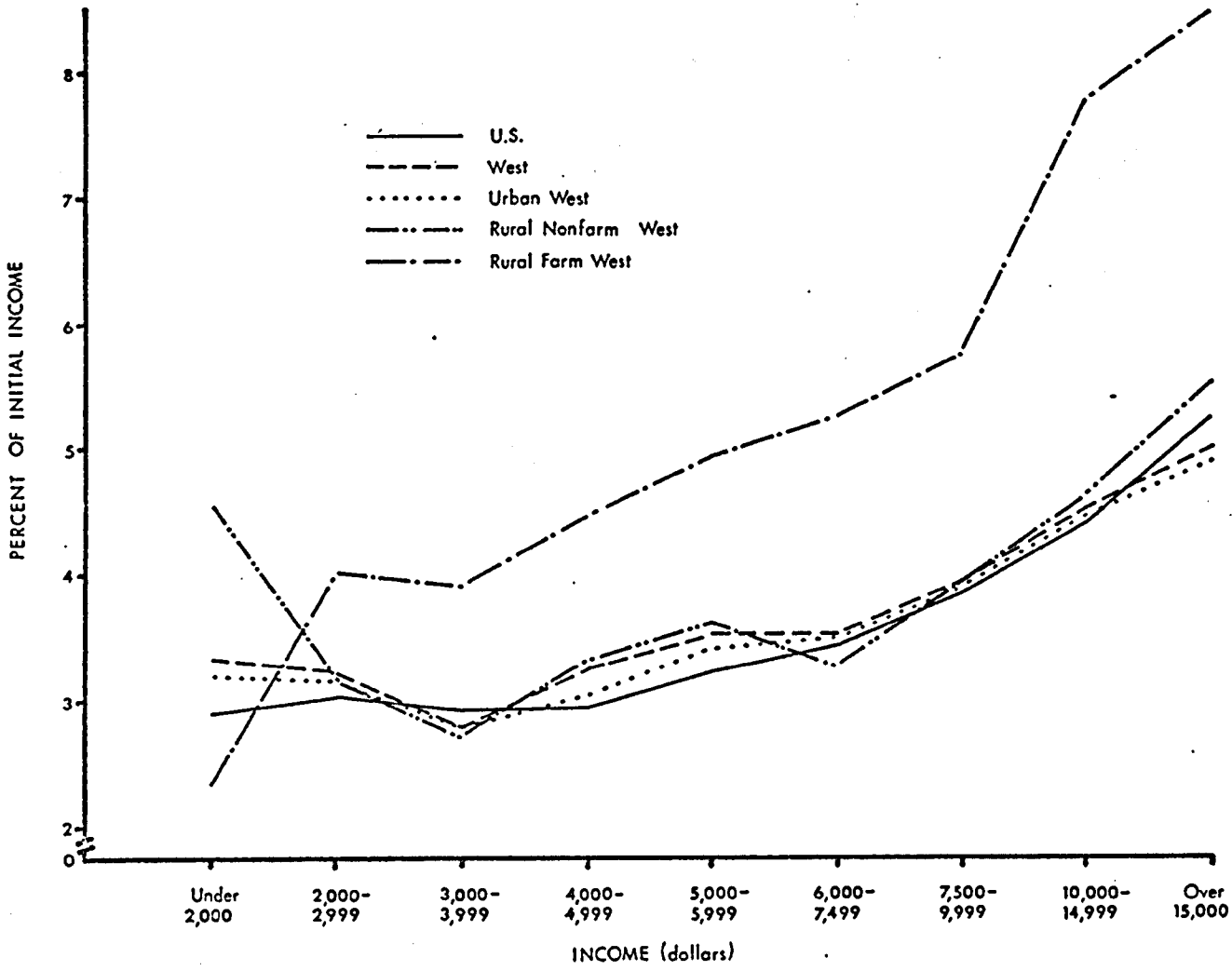


Figure 23. Distribution of State-Local Government Expenditure Benefits from Public Goods by Income Class, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.3.

were distributed progressively and public goods benefits were regressively distributed, also like the nation as a whole.

As in the case of the tax burden distribution, the distribution of the government expenditure benefits received by the rural farm population diverged most from the norm. Total specific plus public benefits were distributed only slightly progressively, with regressiveness in the higher income classes. The distribution of the specific good benefits were more progressively distributed, but again with the lowest income class receiving benefits valued at a lower percent of income than in the nonfarm sectors. As was the case of the nonfarm sectors, the public good benefits were distributed regressively. Farmers received more public goods benefits, relative to their initial incomes, than did other population groups.

The primary reason that the benefits received by the rural farm population represented a higher percent of initial income is that this sector received the full benefit of government expenditures for agriculture. Furthermore, the rural farm sector received a relatively large share of the benefits from education and net interest payments. Finally, the sector placed a relatively high value on public goods benefits given the relatively high average incomes in the sector and the proportionally large number of rural farm families in the higher income classes (see Table 10).

Federal Government Benefits. The distribution of benefits from federal expenditures are given in Figures 18-20. As shown, these benefits were distributed much the same as were combined federal and state-local government benefits.

For the United States, the combined specific and public goods benefits were progressively distributed, but with some regressiveness in the higher income classes. The specific benefits were also progressively distributed and the public good benefits were regressively distributed (although the distribution was fairly neutral in the lower income classes). The regressiveness of the public good distribution was the factor that caused the regressiveness in the higher income classes in the distribution of combined specific and public goods.

The distribution of combined specific and public goods benefits was also progressive in the Western Region, with some regressiveness in the higher income classes caused by the regressive distribution of the federal public goods benefits. Specific goods benefits were progressively distributed in the region with some regressiveness in the higher income classes. The value of the benefits, as in the case of total government benefits, was a higher percentage of initial income than they were for the nation as a whole.

Federal expenditure benefits (total, specific good, and public good) for the urban and rural nonfarm populations of the Western Region were distributed very similarly to the regional distribution. The major variance was in the distribution of public goods in the rural nonfarm population where the distribution was fairly progressive in the lowest income classes, although the general distribution was regressive.

The distribution of federal benefits in the rural farm population was again considerably different from the benefit distributions of the other groups. Again the benefit values represented a higher percentage of income for rural farm people than for the other population

groups, except in the lower income classes. Combined specific and public goods benefits were generally regressively distributed, the distribution of specific goods benefits was somewhat progressive except in the higher income classes, and the public goods benefits were distributed quite regressively.

State-Local Government Benefits. The distributions of government benefits from state-local spending are given in Figures 21-23. For the United States, the benefits of combined specific plus public goods were progressively distributed as were the benefits of specific goods. The distribution of public goods was regressive.

For the Western Region, specific plus public goods benefits were progressively distributed and represented a higher percentage of initial income than did state-local benefits at the national level. The distribution of specific goods benefits was also progressive, while the public benefits were regressively distributed.

The distributions of combined benefits and specific goods benefits provided by the state-local government expenditures were also progressively distributed for the urban, rural nonfarm, and rural farm populations of the Western Region. The public goods benefit distributions were all regressive for the same populations. As before, the benefits received by the rural farm population were valued at a higher percentage of initial income, except for the lowest income class, than they were by the other populations.

Alternative B

The "High Total Quantity of Public Goods" expands the number of government expenditures that are considered to provide public benefits. The Expenditures which are included in this classification are assumed to have important external effects (i.e., the goods and services are assumed to enter everyone's consumption function in equal amounts). Table 14 itemizes the expenditures that are classified as public goods expenditures and the amounts of the expenditures in the United States and Western Region in 1961 by the federal and state-local governments. These expenditure benefits must then be allocated to the various population groups and among income classes (the actual allocations are shown in Appendix Tables B.5.a. to B.5.d.).

Under this expanded classification, public goods expenditures increased from 62.03 to 67.74 percent of total federal government expenditures in the United States and from 90.72 to 92.68 percent of total federal expenditures in the Western Region. At the state-local level, government expenditures for public goods in the nation as a whole increased from 34.61 to 67.66 percent of total expenditures and from 33.80 to 68.71 percent of total expenditures in the Western Region. Such increased public good expenditures has a pronounced effect on the distribution of government expenditure benefits, and, as will be seen, on the post-fiscal income distributions. The distribution of government expenditure benefits under Alternative B can be seen in Appendix Tables A.4. to A.6. Figures depicting these tables are used in the following sections.

Table 14. Government Expenditure Amounts to be Allocated by Income Class, United States and Western Region, 1961, Alternative B (millions of dollars).

	United States	Western Region
Federal, Total:	$97,842	$66,902
General Benefit, Total	60,694	60,694
National defense and international affairs	51,426	51,426
Other general benefits[a]	9,268	9,268
Specific Benefit, Total	37,148	6,208
Elementary and secondary education	305	51
Higher education	211	34
Public assistance and other welfare	2,862	568
Labor and manpower	595	100
Veterans benefits	6,143	1,141
Highways	2,738	505
Half on auto operation expenditures	(1,369)	(262)
Half on total current consumption	(1,369)	(243)
Net interest	6,366	1,182
Agriculture	3,980	513
Social insurance benefits[b]	13,948	2,112
State - Local, Total[c]	$51,136	$12,083
General Benefit, Total	17,696	4,084
Specific Benefit, Total	33,440	7,999
Elementary and secondary education	16,321	4,350
Higher education	2,951	908
Public assistance and other welfare	2,222	459
Labor and manpower	10	2
Veterans benefits	113	21
Highway expenditures	6,289	1,110
Half on auto operation expenditures	(3,144)	(555)
Half on total current consumption	(3,145)	(555)
Net interest	766	67
Agriculture	524	123
Social insurance benefits[b]	4,244	959
Total Federal and State-Local Expenditures	$148,978	$78,985
Total general benefit	78,390	64,778
Total specific benefit	70,588	14,207

a. Includes expenditures for general government, postal service, civilian safety (police, fire, etc.), transportation (excluding highways), commerce and finance, health and sanitation, natural resources, public utilities, and other and miscellaneous.
b. Unemployment insurance is classified as a state-local program.
c. after deduction of Federal grants-in-aid.

Sources: Tax Foundation (1967), Table B-7, p.45; and U.S. Bureau of the Census, Census of Governments, 1962 (1964).

Total Government Benefits. The distribution of benefits from combined federal and state-local spending are depicted in Figures 24 through 26. Combined specific and public goods benefits were generally distributed progressively in the United States in 1961, but were regressively distributed in the higher income classes. Specific good benefits were also distributed progressively, while the benefits from public goods were regressively distributed. However, the value of total benefits, in relation to initial income, was higher in the low income classes and lower in the high incomes compared to Alternative A. Specific goods benefits were valued lower and the public goods benefits were valued considerably higher than in Alternative A.

In the Western Region, combined benefits were generally distributed progressively, with regressiveness in the higher income brackets. The specific goods benefits were also generally progressively distributed with the distribution becoming neutral in the high income levels. A regressive distribution was found for the public goods benefits. As was the case for the United States, the benefits in relation to initial income were lower in the lower income brackets and higher in the upper income brackets when all benefits were considered. They were generally lower for the specific goods benefits and considerably higher for public goods benefits when compared with Alternative A. This relation also holds for the urban and rural sectors of the region.

As under Alternative A, the distribution of combined and separate benefits of specific and public goods for the urban and rural nonfarm populations were quite similar to the distributions for the entire region.

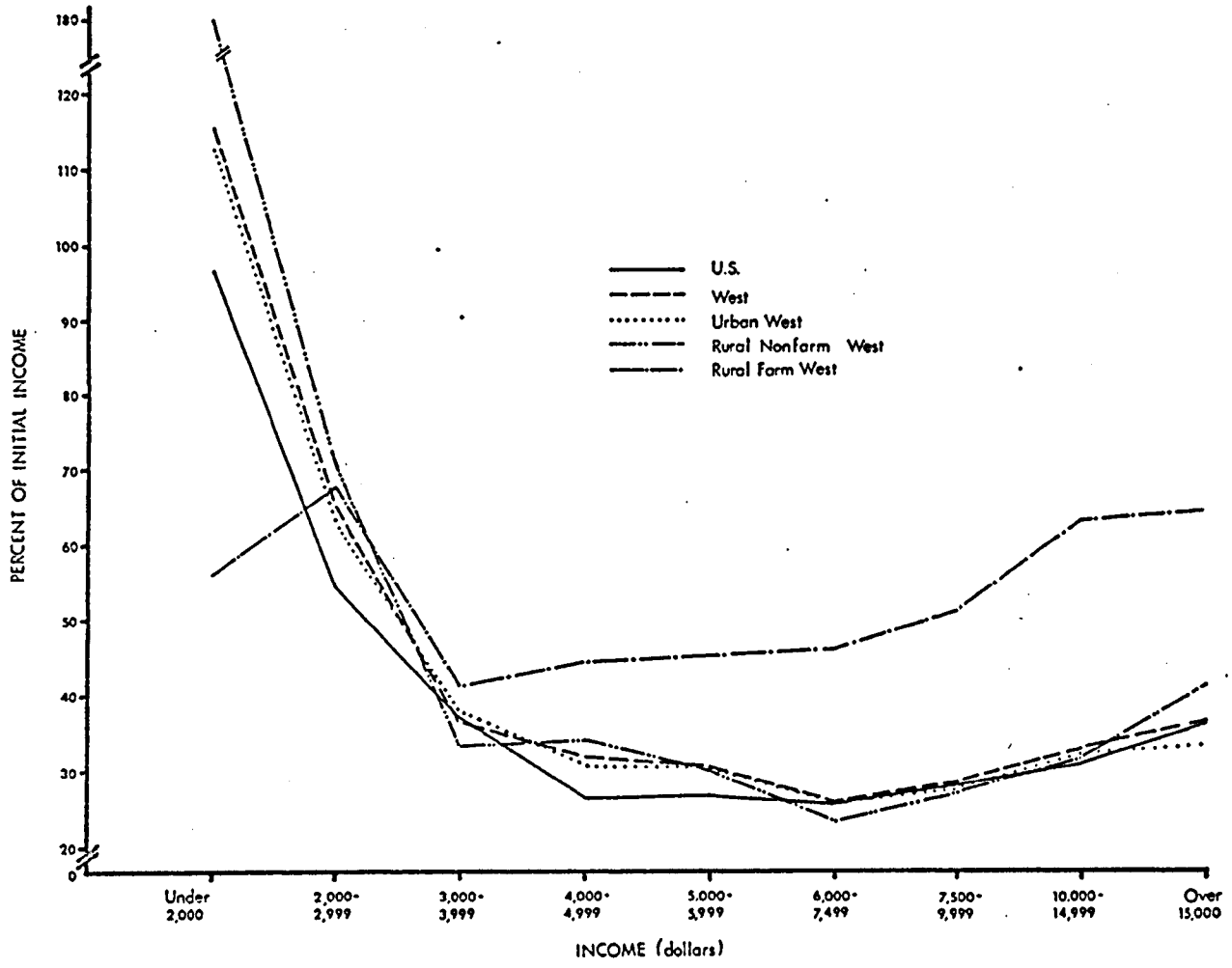


Figure 24. Distribution of All Government Expenditure Benefits by Income Class, United States and Western Region, 1961, Alternative B.

Source: Appendix Table A.4.

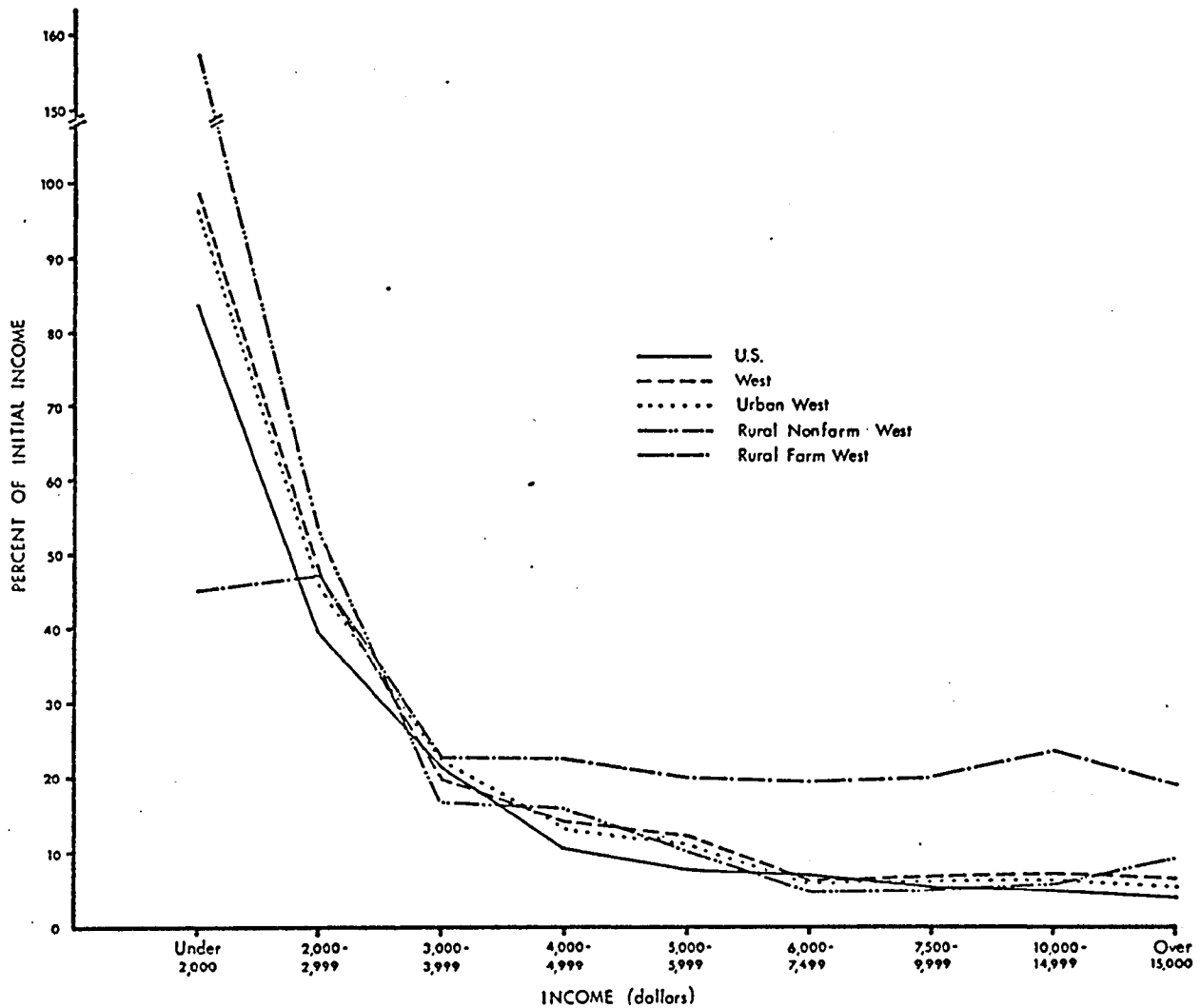


Figure 25. Distribution of Government Expenditure Benefits from Specific Goods by Income Class, United States and Western Region, 1961, Alternative B.

Source: Appendix Table A.5.

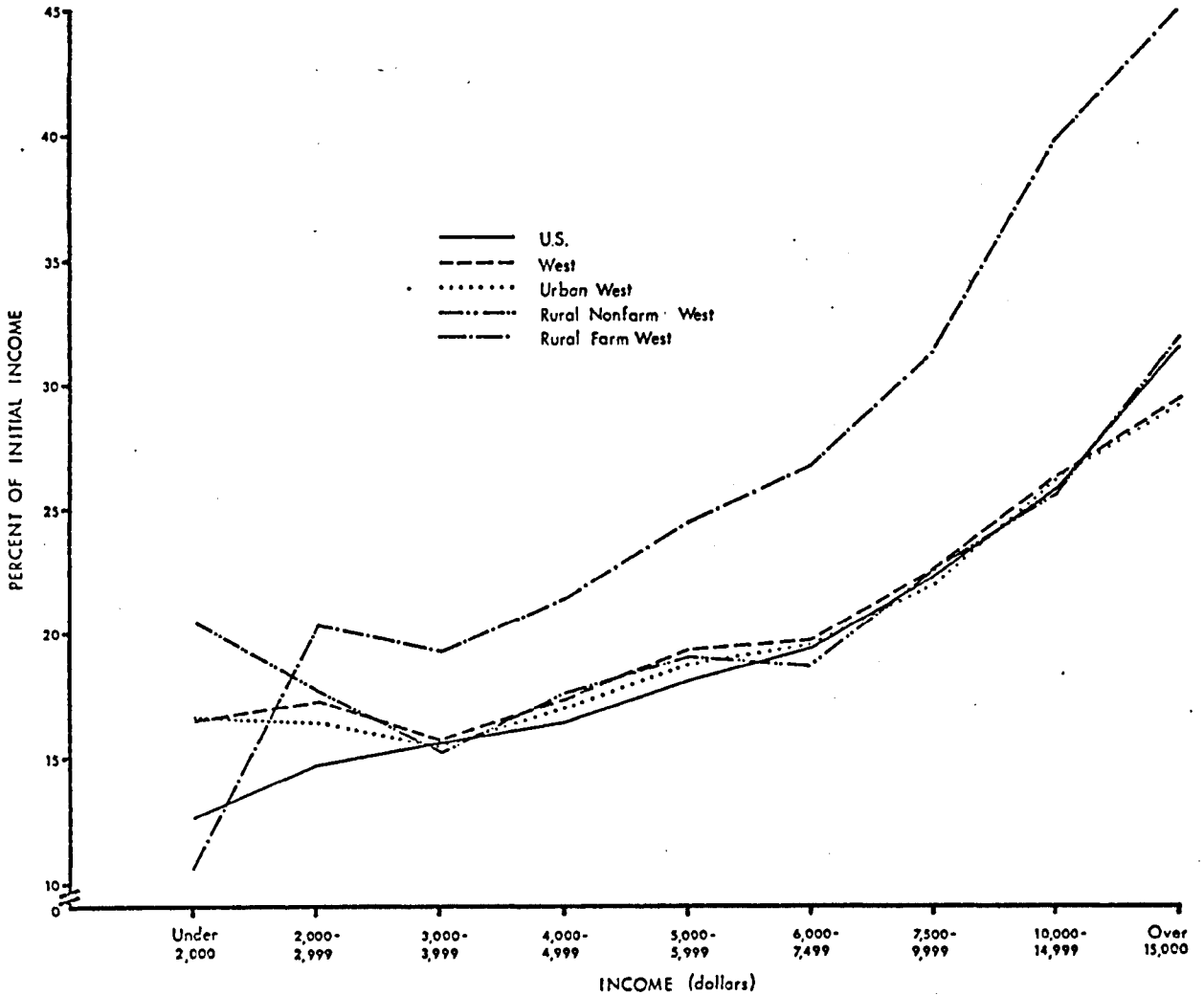


Figure 26. Distribution of Government Expenditure Benefits from Public Goods by Income Class, United States and Western Region, 1961, Alternative B.

Source: Appendix Table A.6.

For the rural farm population, benefits from federal plus state-local spending were generally distributed regressively, with some progressiveness in the two lowest income classes. The benefits from specific goods were progressive in the low income classes and regressive in the highest income classes. Public goods benefits were distributed regressively. As was the case in Alternative A, the ratios of benefits to initial income were generally higher for the rural farm population, again with the exception of the lowest income class.

Federal Government Benefits. The distribution of benefits from federal expenditures are given in Figures 27 through 29. Combined specific and public benefits were progressively distributed in the United States in 1961, with some regressiveness in the higher income classes. Federal specific goods benefits were also progressively distributed, and the public goods benefits were distributed regressively. Compared to the distributions for the United States under Alternative A, the total and specific goods benefits were lower for the low income groups and higher for the higher income groups, while the benefits from public goods expenditures were higher for all income classes.

The distributions of federal benefits were nearly the same in the Western Region, including the urban and rural nonfarm population, as they were in the United States. In the highest and lowest income classes the benefits were generally higher in relation to initial income than they were nationally. Compared to Alternative A, the total benefits and specific goods benefits were lower in the low income classes and higher for the high incomes under Alternative B. The benefits from public goods

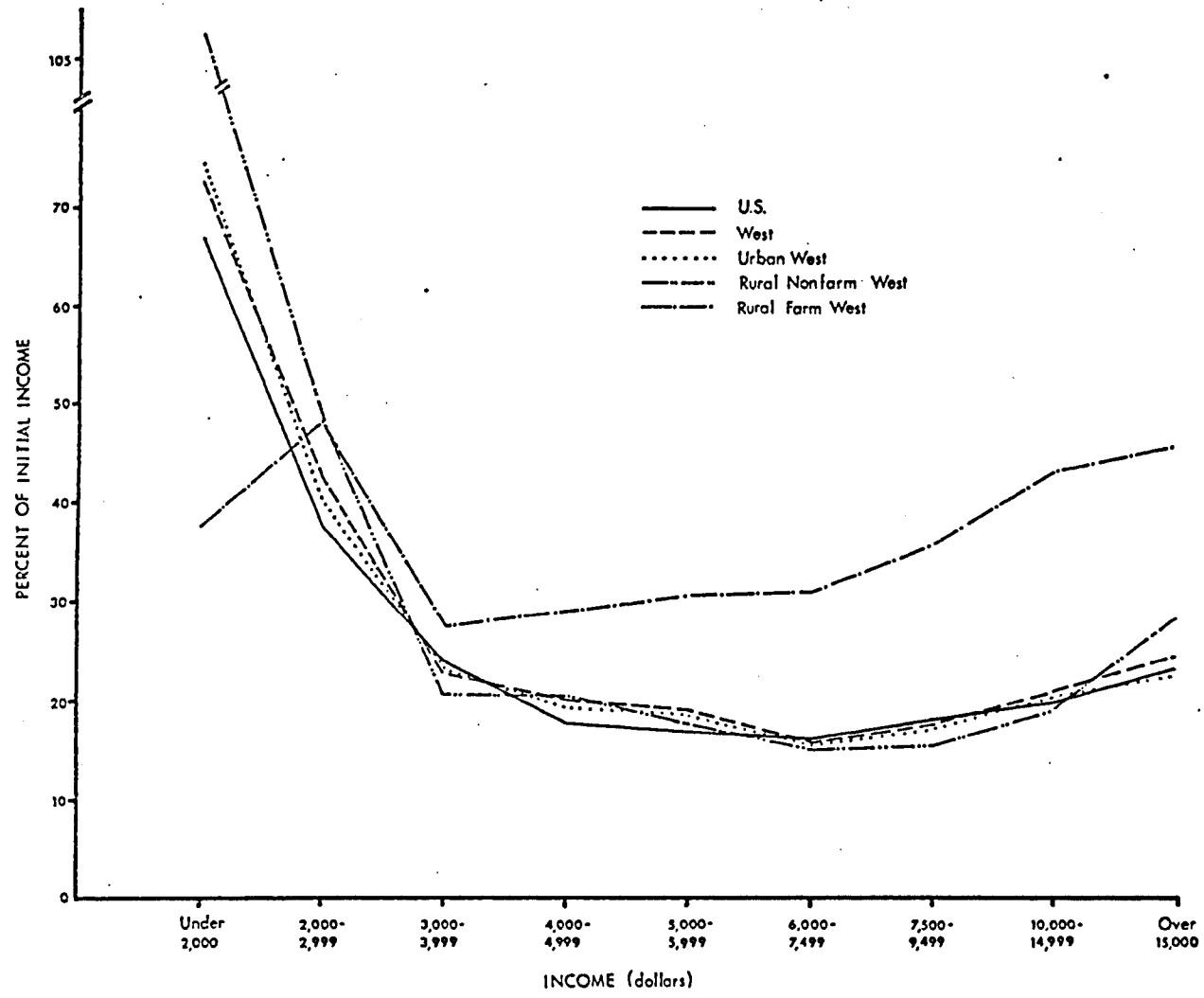


Figure 27. Distribution of Federal Government Expenditure Benefits by Income Class, United States and Western Region, 1961, Alternative B.

Source: Appendix Table A.4.

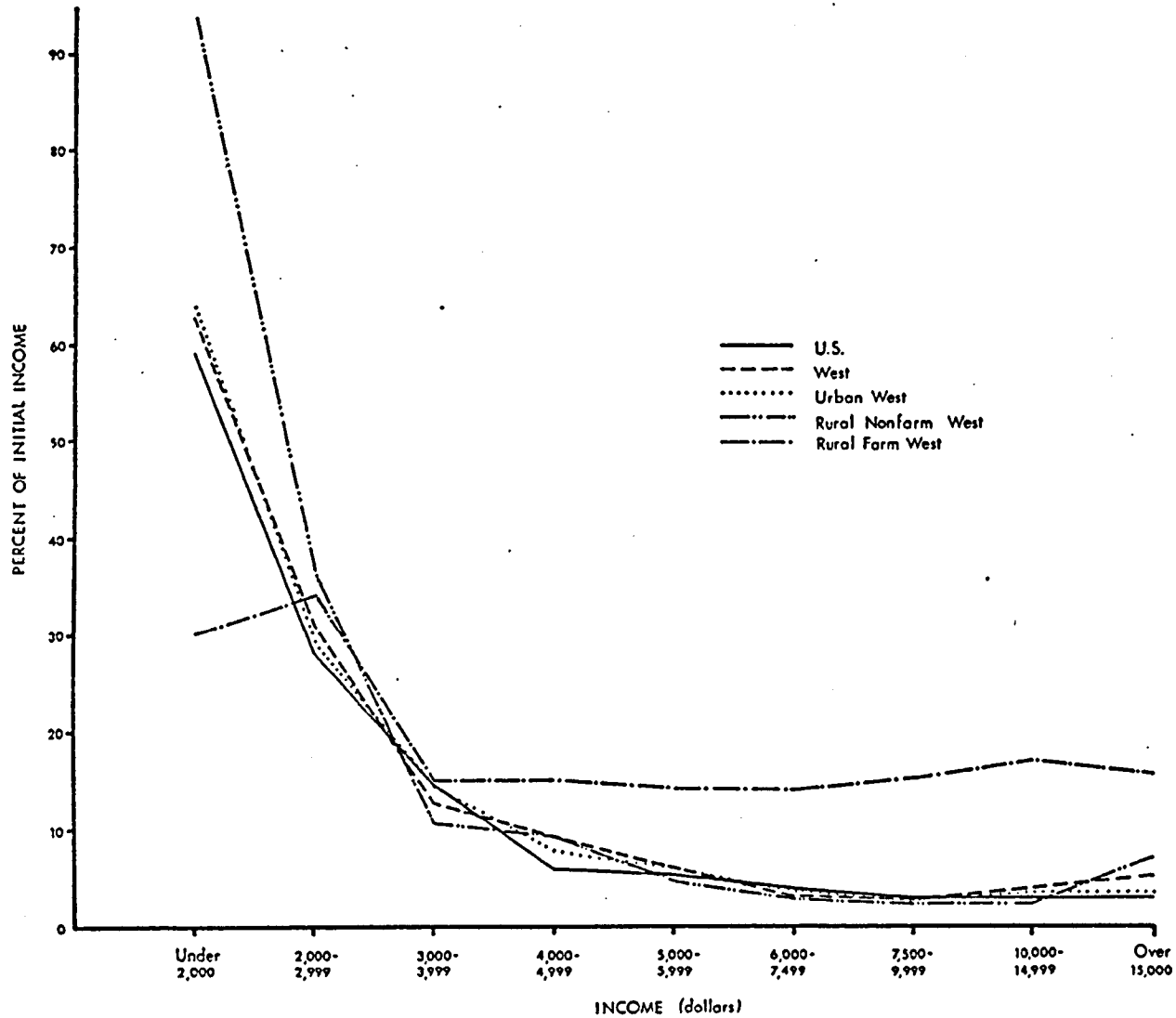


Figure 28. Distribution of Federal Government Expenditure Benefits from Specific Benefits by Income Class, United States and Western Region, 1961, Alternative B.

Source: Appendix Table A.5.

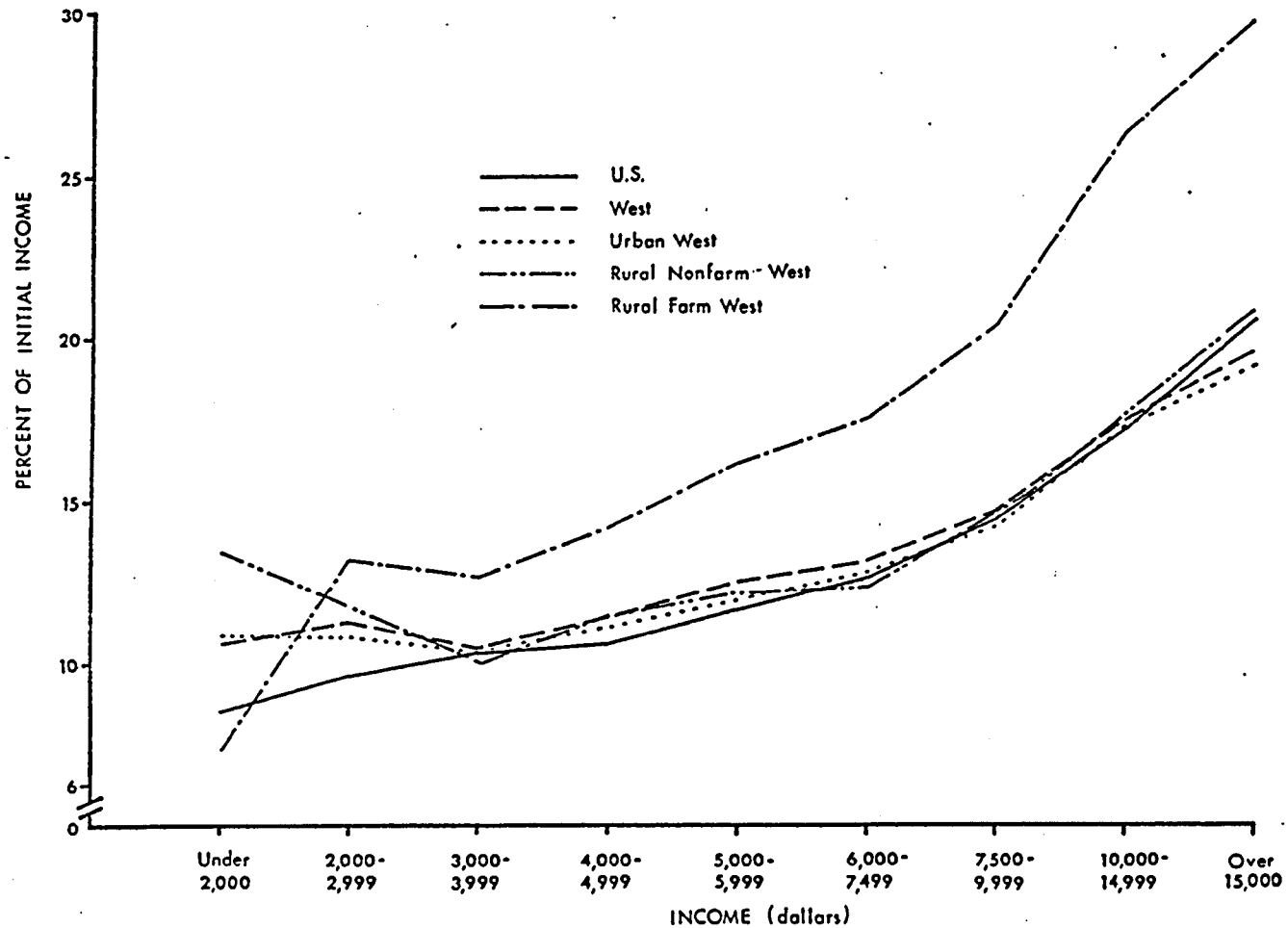


Figure 29. Distribution of Federal Government Expenditure Benefits from Public Goods by Income Class, United States and Western Region, 1961, Alternative B.

Source: Appendix Table A.6.

were generally higher in the Western Region than in the nation as a whole under Alternative B.

For the rural farm population, the combined benefits of specific and public goods were generally distributed regressively except for the lower income classes. The specific goods benefits were distributed slightly progressively, being nearly neutral for mid and upper income families. As in the United States and the region, the distribution of public goods benefits was regressive. Like Alternative A, the benefits to income ratios were higher for the rural farm population than they were for the other populations, with the exception of the lowest income class. Compared to Alternative A, the total federal benefits received by the rural farm population were lower, as were the federal specific and public goods benefits (except for the highest income classes). The total benefits were generally lower primarily because portions of government expenditures for agriculture, education, and net interest were classified as public goods. The reclassification of these expenditure items as public goods reduced isgnificantly the specific goods benefits received by the rural farm sectors, and thus lowered the value placed on public goods benefits.

State-Local Government Benefits. The distribution of benefits from state-local government expenditures are shown in Figures 30 through 32. Combined specific plus public goods benefits were distributed progressively, with some regressiveness in the higher incomes, in the United States in 1961. The specific goods benefits were also progressively distributed, but the benefits from public goods were distributed regressively causing the regressiveness in the higher incomes for total

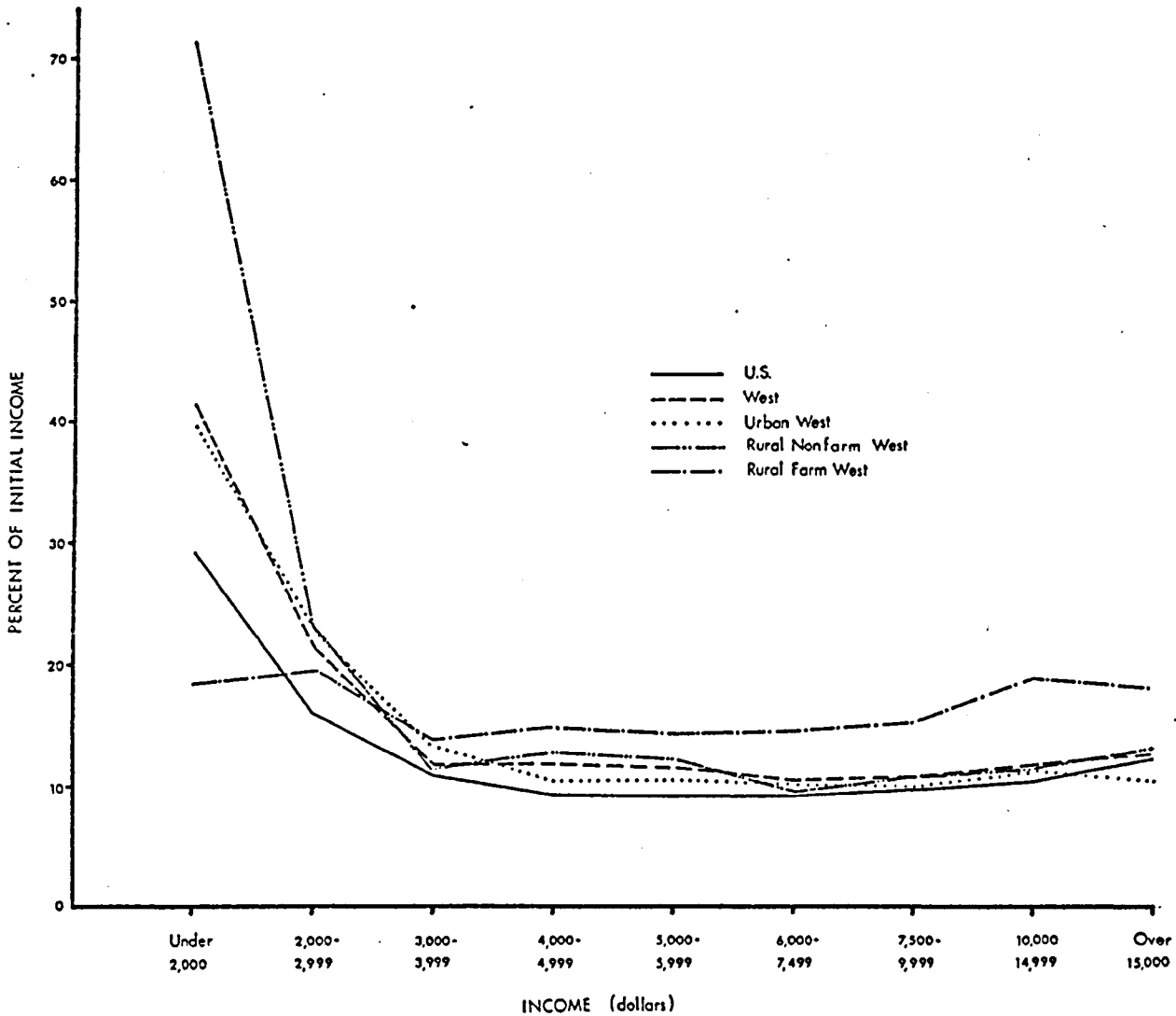


Figure 30. Distribution of State-Local Government Expenditure Benefits by Income Class, United States and Western Region, 1961, Alternative B.

Source: Appendix Table A.4.

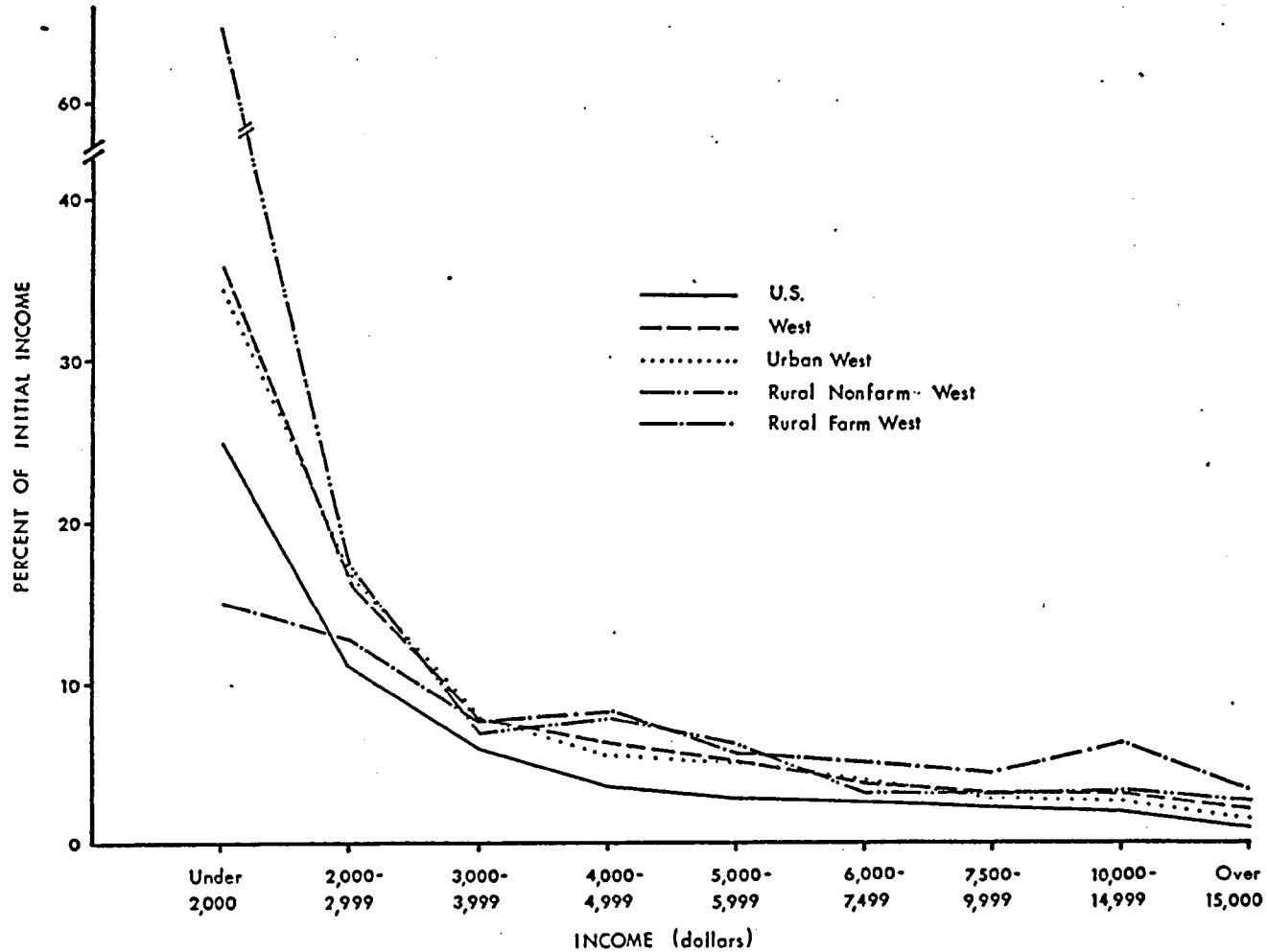


Figure 31. Distribution of State-Local Government Expenditure Benefits from Specific Goods by Income Class, United States and Western Region, 1961, Alternative B.

Source: Appendix Table A.5.

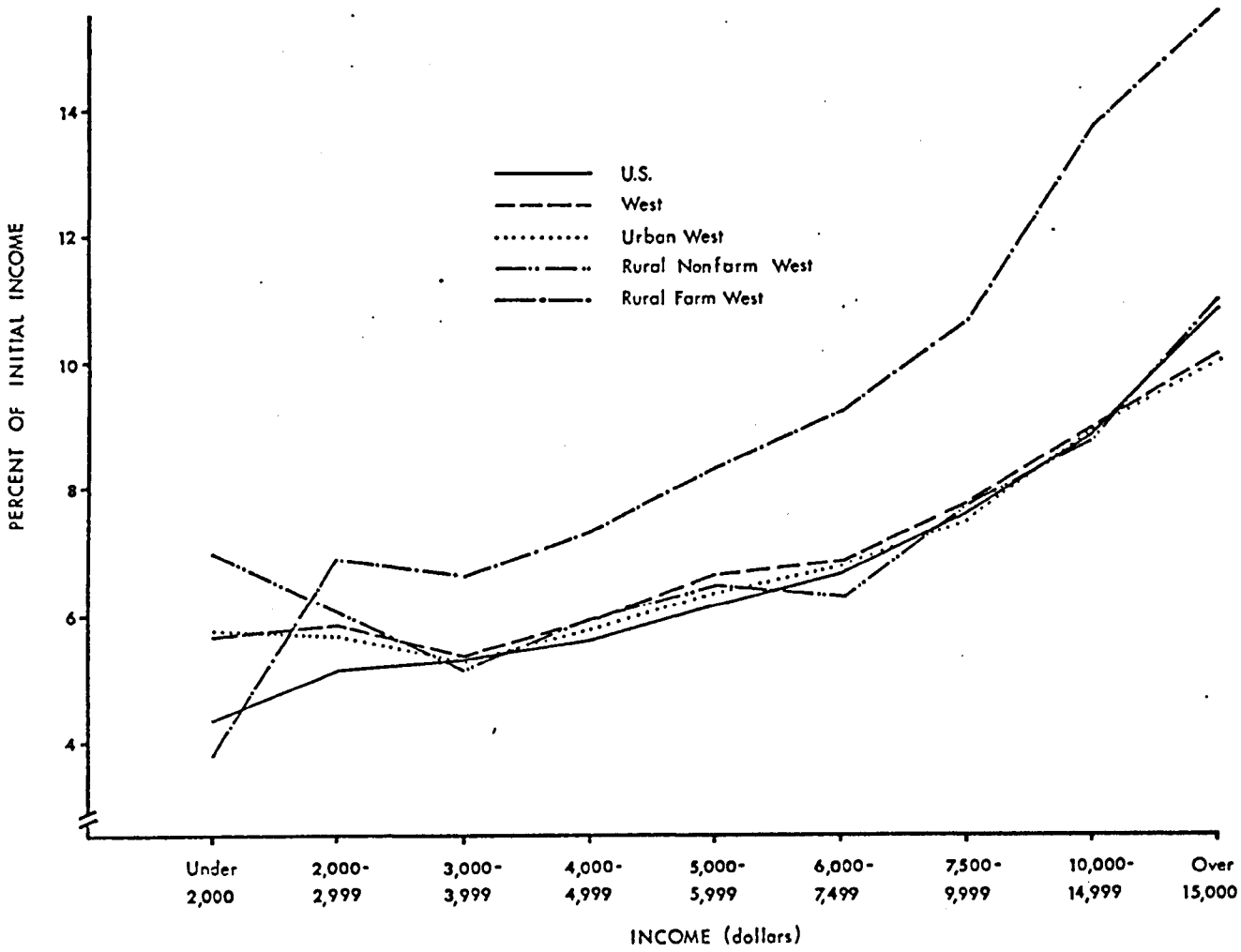


Figure 32. Distribution of State-Local Government Expenditure Benefits from Public Goods by Income Class, United States and Western Region, 1961, Alternative B.

Source: Appendix Table A.6.

benefits. The level of all types of benefits under Alternative B were lower than under Alternative A, with the exceptions of the total and public goods benefits at the higher incomes.

In the Western Region, total and specific goods benefits from state-local government expenditures were distributed much as they were in the nation as a whole, but represented a higher percent of initial income, especially in the lower income classes. Public goods benefits were regressively distributed in general, although the distribution was neutral in the lowest income classes. In the Western Region, as in the United States, specific goods benefits generally represented a lower percentage of initial income when a high quantity of public goods was provided than in the case of a low quantity of public goods provision (Alternative A). Again, the combined benefits and public goods benefits represented a higher percentage of initial income for the highest income classes under Alternative B.

Total, specific goods and public goods benefits were distributed almost identically in the urban population as they were for the region. Total and specific goods benefits were progressively distributed and the public goods benefits were distributed regressively causing some regressiveness at the higher incomes in the distribution of total benefits.

For the rural nonfarm population, the distribution of total benefits was much more progressive in the lowest incomes, but otherwise was very close to the Western Region's distribution. This was also the case for the distribution of specific goods benefits. Public goods benefits were generally regressively distributed although there was a relatively high degree of progressiveness in the lowest income classes.

Total benefits were distributed in a fairly neutral manner for the rural farm population, and the distribution of specific goods benefits was progressive but less so than for the other population groups. The distribution of public goods benefits, however, were much more progressively distributed and generally the public goods benefits represented a much higher percentage of initial income than in the other groups. Compared to Alternative A, the distribution of combined specific and public goods benefits was less progressive under Alternative B because of the higher quantity of public goods provided, which are allocated to income classes proportional to each class's marginal utility of income. Compared to Alternative A, proportionally more of the public goods benefits accrue to the higher income classes under Alternative B.

Distribution of Redistributive Taxes

Redistributive taxes are those taxes that are levied on families and persons for the sole purpose of redistributing income. The burden of this tax is determined by subtracting the income value of government expenditure benefits received from the taxes paid for the provision of benefits. The redistributive tax can be either a negative or positive sum; if negative, it indicates that the income value of the benefits received was greater than the taxes paid and that the family, person, or income class received an income transfer (redistributive tax) equal to the difference of the two amounts. If the tax is positive, it indicates that the taxes paid were greater than the value of the benefits received and that a redistributive tax was paid equal to the difference in the two

amounts, thus redistributing income from the family, person, or income class.

Alternative A

Table 15 shows the average redistributive taxes paid or received by each income class in the United States and the Western Region under Alternative A. Figures 33-35 illustrate the distribution of redistributive taxes as a percent of initial income with a breakdown for combined and separate federal and state-local spending and taxing.

All Government Redistributive Taxes. Figure illustrates the net redistributive effect of combined federal and state-local fiscal activity. Redistributive taxes were progressively distributed in the United States in 1961, with those families whose initial income was under $4,000 receiving, on average, $700 in redistributive taxes. The highest income class paid taxes for the redistribution of income valued at $4,137 or 9.3 percent of its initial income. The average family in the United States received redistributive benefits of $76, indicating that in 1961 total benefits from government expenditures were greater than the taxes collected to pay for the expenditures.

In the Western Region, the redistribution was also progressive, although the $10,000-14,999 income group received redistributive payments. Families with incomes less than $4,000 received redistributive taxes averaging $765. The average family in the region gained from government fiscal activity by $273, meaning that there was a transfer of income into the region as a result of the fiscal activity.

Table 15. Distribution of Redistributive Taxes, United States and Western Region, 1961, Alternative A.[a]

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, Total	$-777	$-861	$-451	$-29	$71	$220	$261	$288	$4,137	$-76
Percent of Initial Income	-74.28	-30.74	-9.65	-0.44	0.85	2.17	1.94	1.48	9.30	-0.89
Federal	-597	-676	-390	-17	65	175	189	308	4,334	-37
Percent of Initial Income	-57.07	-24.13	-8.34	-0.25	0.78	1.72	1.40	1.58	9.73	-0.43
State - Local	-180	-182	-59	-10	13	48	75	-17	-185	-39
Percent of Initial Income	-17.20	-6.49	-1.26	-0.15	0.15	0.47	0.55	-0.08	-0.41	-0.45
Western Region, Total	$-954	$-1,047	$-341	$-441	$-554	$117	$58	$-325	$ 2,738	$-273
Percent of Initial Income	-85.86	-39.56	-7.19	-6.81	-6.82	1.09	0.42	-1.73	7.50	-2.89
Federal	-668	-752	-241	-190	-239	235	185	92	2,867	-55
Percent of Initial Income	-60.12	-28.42	-5.08	-2.93	-2.94	2.19	1.34	0.49	7.85	-0.58
State - Local	-285	-296	-171	-250	-315	-118	-127	-415	-129	-219
Percent of Initial Income	-25.65	-11.18	-3.60	-3.86	-3.88	-1.10	-0.92	-2.22	-0.35	-2.31
Urban Sector, West, Total	$-899	$-984	$-346	$-243	$-385	$-77	$294	$-97	$3,931	$-114
Percent of Initial Income	-80.05	-37.77	-7.50	-3.75	-4.82	-0.73	2.13	-0.51	10.33	-1.17
Federal	-662	-685	-250	-110	-127	223	346	252	3,817	52
Percent of Initial Income	-58.94	-26.29	-5.42	-1.70	-1.59	2.12	2.51	1.33	10.03	0.53
State - Local	-236	-299	-96	-133	-259	-101	-51	-349	116	-165
Percent of Initial Income	-21.01	-11.47	-2.08	-2.05	-3.24	-0.96	-0.37	-1.84	0.30	-1.70
Rural Nonfarm Sector,West,Total	$-1,186	$-1,032	$-232	$-714	$-642	$894	$13	$-581	$1.007	$-364
Percent of Initial Income	-166.57	-41.83	-4.58	-11.81	-8.12	-7.71	0.09	-3.09	2.54	-4.41
Federal	-752	-857	-64	-267	-219	725	160	-85	1,711	-78
Percent of Initial Income	-105.61	-34.73	-1.26	-4.41	-2.77	6.25	1.20	-0.45	4.32	-0.94
State - Local	-433	-175	-169	-448	-423	-101	-147	-496	-704	-286
Percent of Initial Income	-60.81	-7.09	-3.34	-7.41	-5.35	-0.87	-1.10	-2.63	-1.78	-3.46
Rural Farm Sector, West, Total	$-411	$-1,746	$-1,532	$-2,205	$-2,964	$-3,449	$-4,615	$-9,245	$-13,866	$-3,503
Percent of Initial Income	-19.68	-52.86	-25.53	-28.72	-36.64	-33.81	-36.43	-56.10	-39.50	-37.44
Federal	-309	-1,218	-952	-1,118	-1,936	-2,392	-3,404	-6,437	-10,278	-2,465
Percent of Initial Income	-14.79	-36.87	-15.86	-14.56	-23.93	-23.45	-26.87	-39.06	-29.28	-26.34
State - Local	-101	-528	-579	-1,086	-1,024	-1,054	-1,207	-2,800	-3,572	-1,034
Percent of Initial Income	-4.83	-15.98	-9.65	-14.14	-12.65	-10.33	-9.52	-16.99	-10.17	-11.05

a. A negative figure indicates a redistributive transfer to that income class. A positive figure indicates a redistributive transfer from that income class.

Sources: Tax Foundation (1967), Maital (1973), and Appendix Tables B.6. a - e.

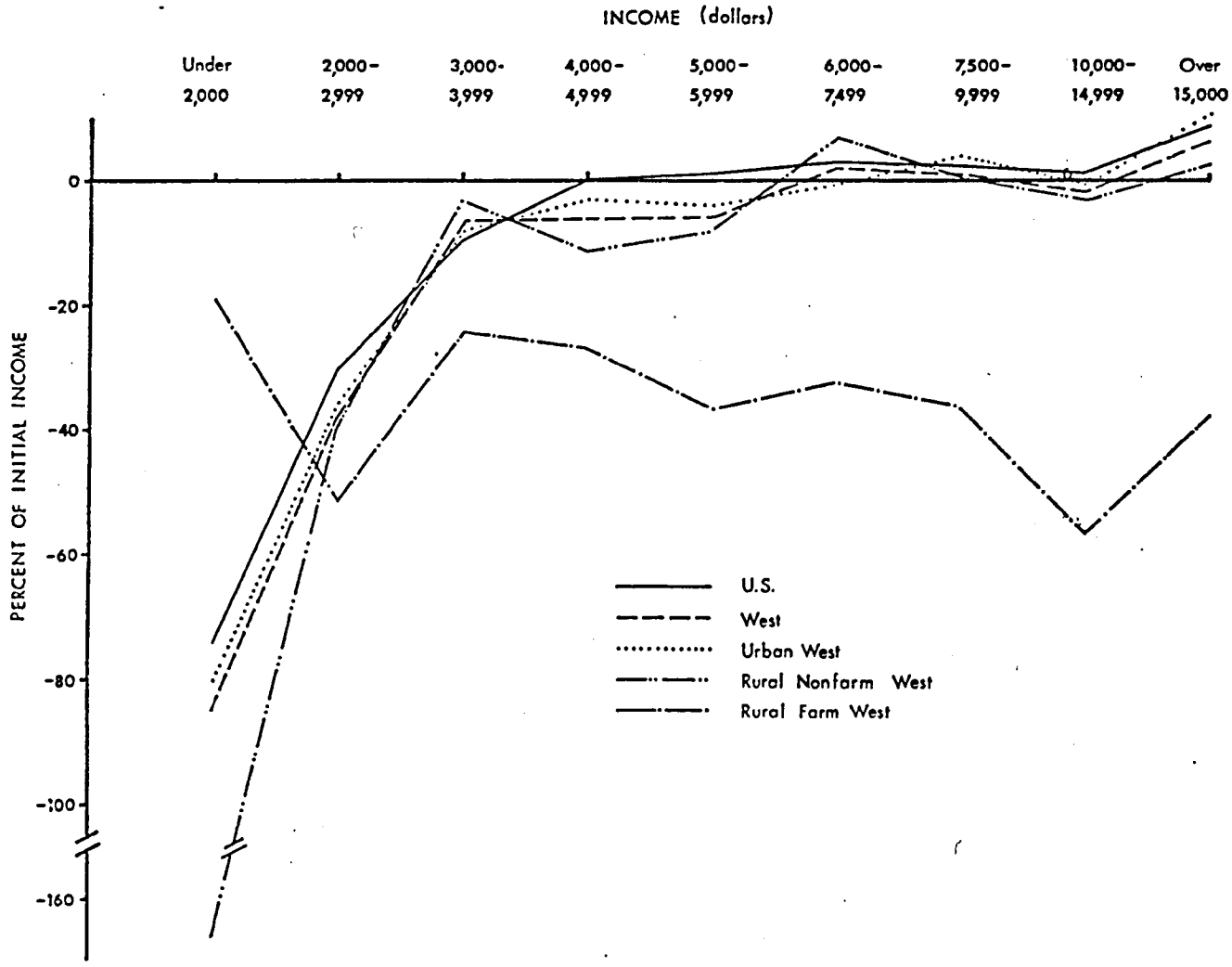


Figure 33. Government Redistributive Taxes as a Percentage of Initial Income, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.6.

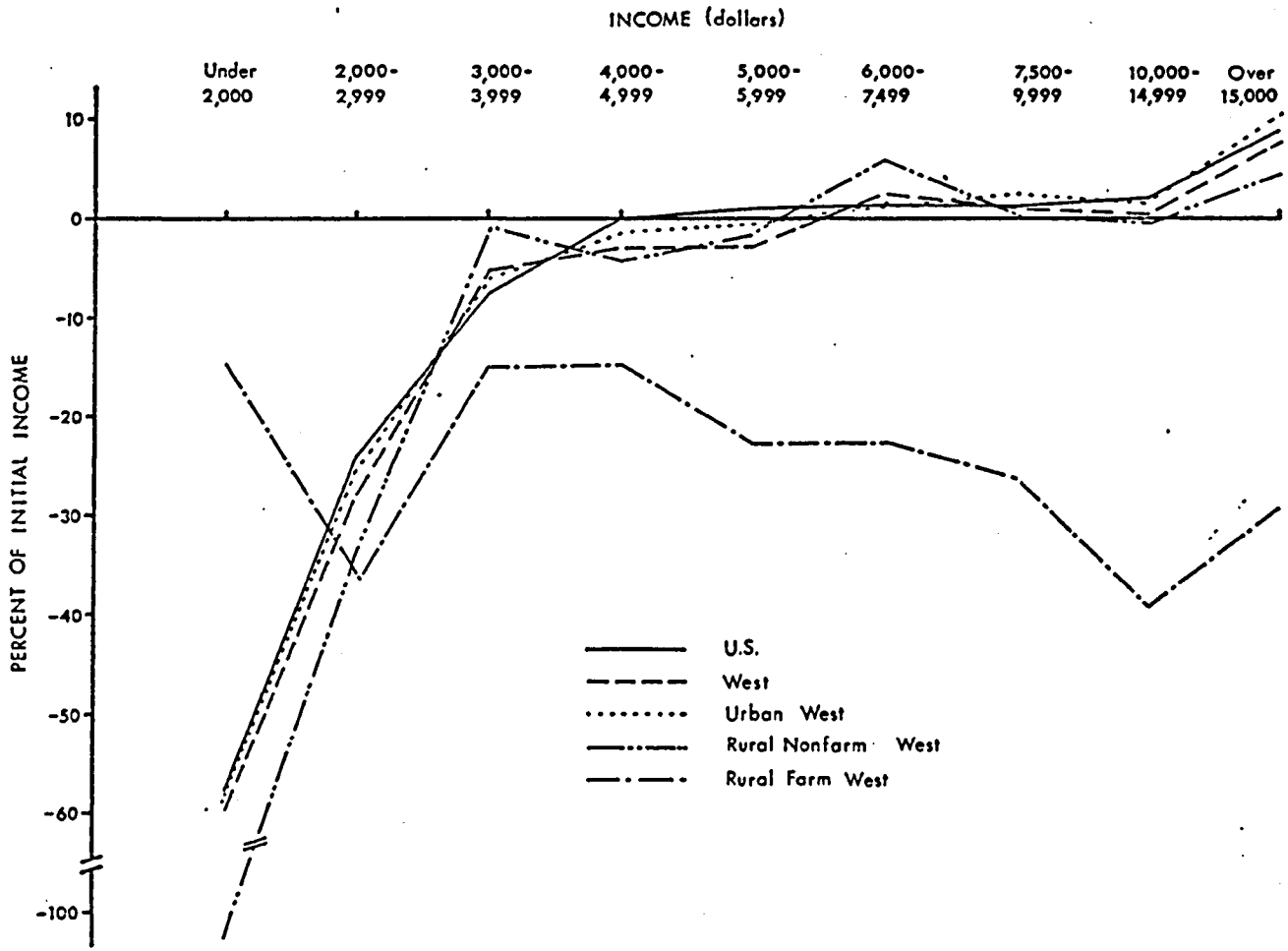


Figure 34. Federal Government Redistributive Taxes as a Percentage of Initial Income, United States and Western Region, 1961, Alternative A.

Source: Table 15.

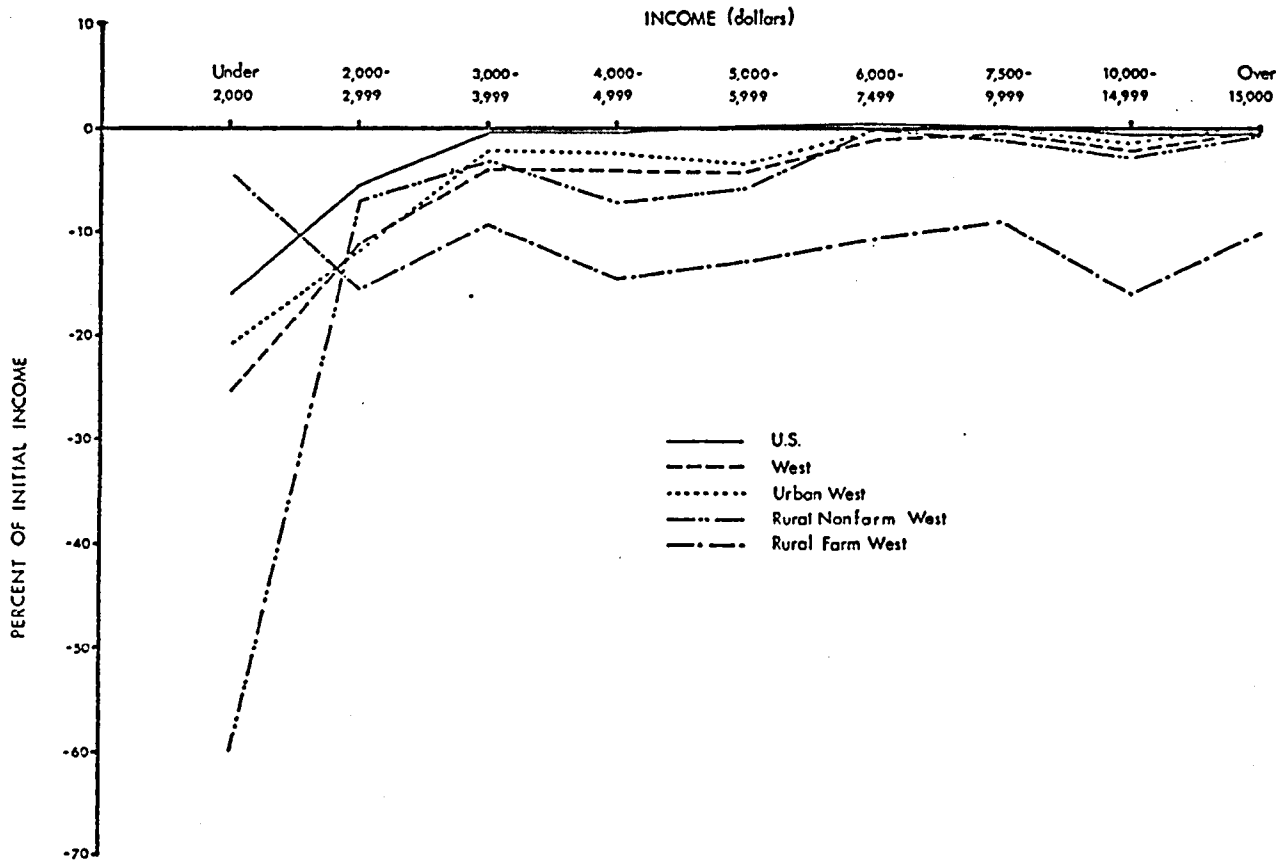


Figure 35. State-Local Government Redistributive Taxes at a Percentage of Initial Income, United States and Western Region, 1961, Alternative A.

Source: Table 15.

The urban population also gained on the average from the fiscal activity benefitting by $114. All income classes, except two, received redistributive tax benefits and the redistribution was generally progressive.

The rural nonfarm population also benefitted, and the average family received benefits valued at $364. The redistribution was generally progressive, with some regressiveness in the higher income classes. Families with incomes less than $4,000 received, on average, $847 in redistributive taxes.

All income classes of the rural farm population benefitted from fiscal activity, but the distribution among the population was slightly regressive, with the two highest classes receiving benefits valued at 56.10 and 39.50 percent of initial income. The average benefit was $3,503, although the six lowest income classes received an average of less than this amount.

Federal Government Redistributive Taxes. The redistributive effect of federal fiscal activity is shown in Figure 34. The fiscal activity of the federal government helped redistribute income in favor of the lower income classes of the United States. The value of the redistributive tax benefits averaged $37 and the distribution of the redistributive tax was progressive. Families with initial incomes less than $4,000 received $556 in redistributive taxes.

Families were generally better off in the Western Region, with the average family receiving redistributive benefits of $55. The distribution was progressive, and those with incomes of less than $4,000 received redistributive taxes averaging $542.

Redistributive taxes were progressively distributed in the urban population. Families with initial incomes of less than $4,000 received benefits of $518, and the average benefit for the population was $52.

The redistribution of income in the rural nonfarm population was generally progressive and benefitted the lower income classes with families with initial incomes of $4,000 or less receiving, on average, $567 in redistributive taxes.

Income was redistributed in favor of all income classes in the rural farm population as a result of federal government fiscal policy in 1961. However, it was the higher classes that generally benefitted the most. Thus, for example, families with initial income of $4,000 or less received on average $729 in redistributive taxes, while families with initial incomes greater than $15,000 received $10,278 in redistributive taxes.

State-Local Government Redistributive Taxes. The redistributive taxes at the state-local level were generally progressive in the United States and the Western Region, generally redistributing income in favor of the lower income classes. However, the degree of progressivity was much less than at the federal level. In the Western Region, regardless of place of residence (urban, rural nonfarm, or rural farm), all income classes benefitted as a result of the fiscal activity.

In the rural farm population, the distribution of the benefits was again slightly regressive.

Alternative B

Alternative B assumes that a larger share of total government expenditures are for public (vs. specific) goods. Under this assumption it will be shown that redistributive taxes become less progressive than under Alternative A. Table 16 shows which income classes and population groups received the benefits or bore the burden of the redistributive taxes for the various levels of government fiscal activity. Figures 36-38 illustrate the distribution of the benefits and burdens of the tax (shown as a percent of initial income). The negative figures indicate a redistributive tax benefit and the positive figures show which income classes paid redistributive taxes.

Total Government Redistributive Taxes. The distribution of the redistributive taxes of all governments in the United States was progressive. Families with incomes above $4,000 generally paid the tax, transferring income to the lower classes, with the exception of the $10,000-14,999 income class which received benefits. On the average, a family in the United States received $77 of redistributive benefits as a result of governmental fiscal activity.

Redistributive taxes in the Western Region were also progressively distributed and the distribution was moreprogressive than in the nation as a whole. Generally, families with income of less than $6,000 received redistributive benefits, again with the exception of the $10,000-14,999 income class. The average family in the region received $123 of redistributive benefits, indicating a transfer of income into the region.

Table 16. Distribution of Redistributive Taxes, United States and Western Region, 1961, Alternative B.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, Total	$-546	$-589	$-221	$154	$198	$268	$47	$-367	$1,240	$-77
Percent of Initial Income	-52.20	-21.03	-4.73	2.35	2.38	2.64	0.35	-1.89	2.79	-0.90
Federal	-486	-556	-294	31	89	172	96	79	3,354	-37
Percent of Initial Income	-46.46	-19.85	-6.29	0.47	1.06	1.69	0.71	0.40	7.53	-0.43
State - Local	-60	-29	73	-320	110	97	-48	-445	-2,118	-40
Percent of Initial Income	-5.73	-1.03	1.56	-4.87	1.32	0.95	-0.35	-2.28	-4.75	-0.46
Western Region, Total	$-683	$-766	$-74	$-77	$-178	$317	$57	$-575	$1,311	$-123
Percent of Initial Income	-61.47	-28.94	-1.56	-1.19	-2.19	2.96	0.41	-3.07	3.59	-1.30
Federal	-541	-646	-159	-118	-175	231	116	-75	2,501	-43
Percent of Initial Income	-48.69	-24.41	-3.35	-1.82	-2.15	2.15	0.84	-0.40	6.85	-0.45
State - Local	-141	-121	84	41	-3	86	-59	-499	-1,191	-79
Percent of Initial Income	-12.69	-4.57	1.77	0.63	-0.03	0.80	-0.43	-2.67	-3.26	-0.83
Urban Sector, West, Total	$-689	$-695	$-89	$16	$-52	$329	$251	$-470	$1,898	$-28
Percent of Initial Income	-61.35	-26.67	-1.92	0.24	-0.65	3.14	1.82	-2.48	4.98	-0.28
Federal	-558	-573	-174	-68	-81	216	258	25	3,016	31
Percent of Initial Income	-49.68	-21.99	-3.77	-1.05	-101	2.06	1.87	0.13	7.92	0.31
State - Local	-131	-121	86	84	28	111	-7	-495	-1,117	-58
Percent of Initial Income	-11.66	-4.64	1.86	1.29	0.35	1.05	-0.05	-2.61	-2.93	-0.59
Rural Nonfarm Sector,West,Total	$-824	$-889	$46	$-189	$-158	$1,079	$-4	$-346	$-75	$-106
Percent of Initial Income	-157.30	-36.03	0.90	-3.12	-2.00	9.31	-0.03	-1.84	-0.18	-1.28
Federal	-579	-769	1	-167	-157	698	44	-27	1,699	-39
Percent of Initial Income	-81.32	-32.26	0.01	-2.76	-1.98	6.02	0.33	-0.14	4.29	-0.47
State - Local	-245	-94	44	-24		111	-48	-320	-1,775	-67
Percent of Initial Income	-34.41	-3.81	0.86	-0.39		0.95	-0.36	-1.70	-4.48	-0.81
Rural Farm Sector,West,Total	$1	$-1,182	$-710	$ -978	$-1,814	$-2,344	$-3,767	$-7,672	$-12,389	$-2,575
Percent of Initial Income	0.04	-35.78	-11.83	-12.73	-22.42	-22.98	-29.73	-46.55	-35.29	-27.52
Federal	-149	-954	-567	-604	-1,419	-1,832	-2,772	-5,371	-8,040	-1,982
Percent of Initial Income	-7.13	-28.88	-9.45	-7,86	-17.54	-17.96	-21.88	-32.59	-22.90	-21.18
State-Local	150	-229	-143	-375	-394	-513	-995	-2,301	-4,349	-688
Percent of Initial Income	7.18	-6.93	-2.38	-4.88	-4.87	-5.02	-7.85	-13.96	-12.39	-7.35

a. A negative figure indicates a redistributive transfer to that income class.
A positive figure indicates a redistributive transfer from that income class.

Sources: Tax Foundation (1967), Maital (1973), and Appendix Tables 8.6.a - e.

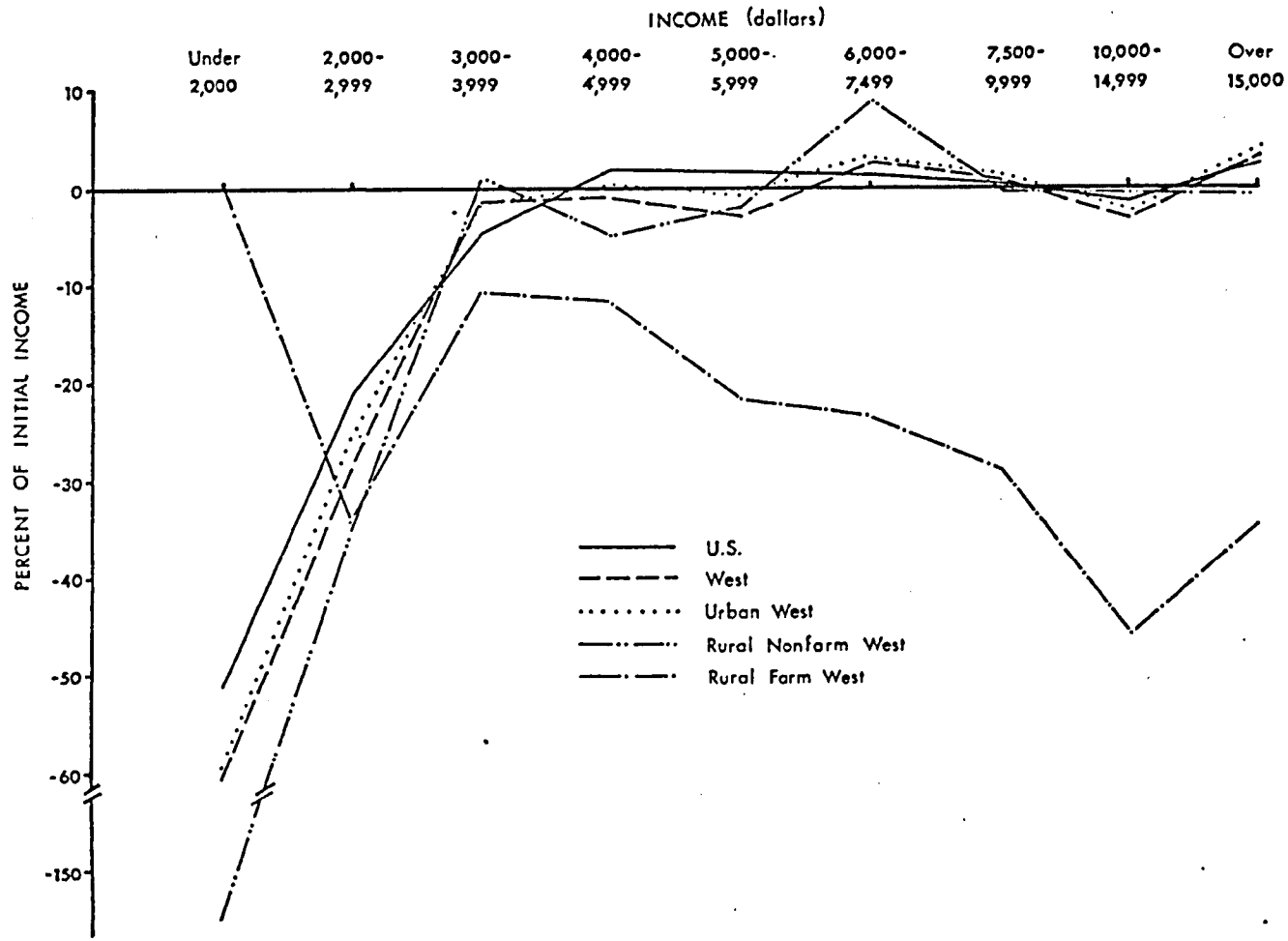


Figure 36. Government Redistributive Taxes as Percent of Initial Income, United States and Western Region, 1961, Alternative B.

Source: Table 16.

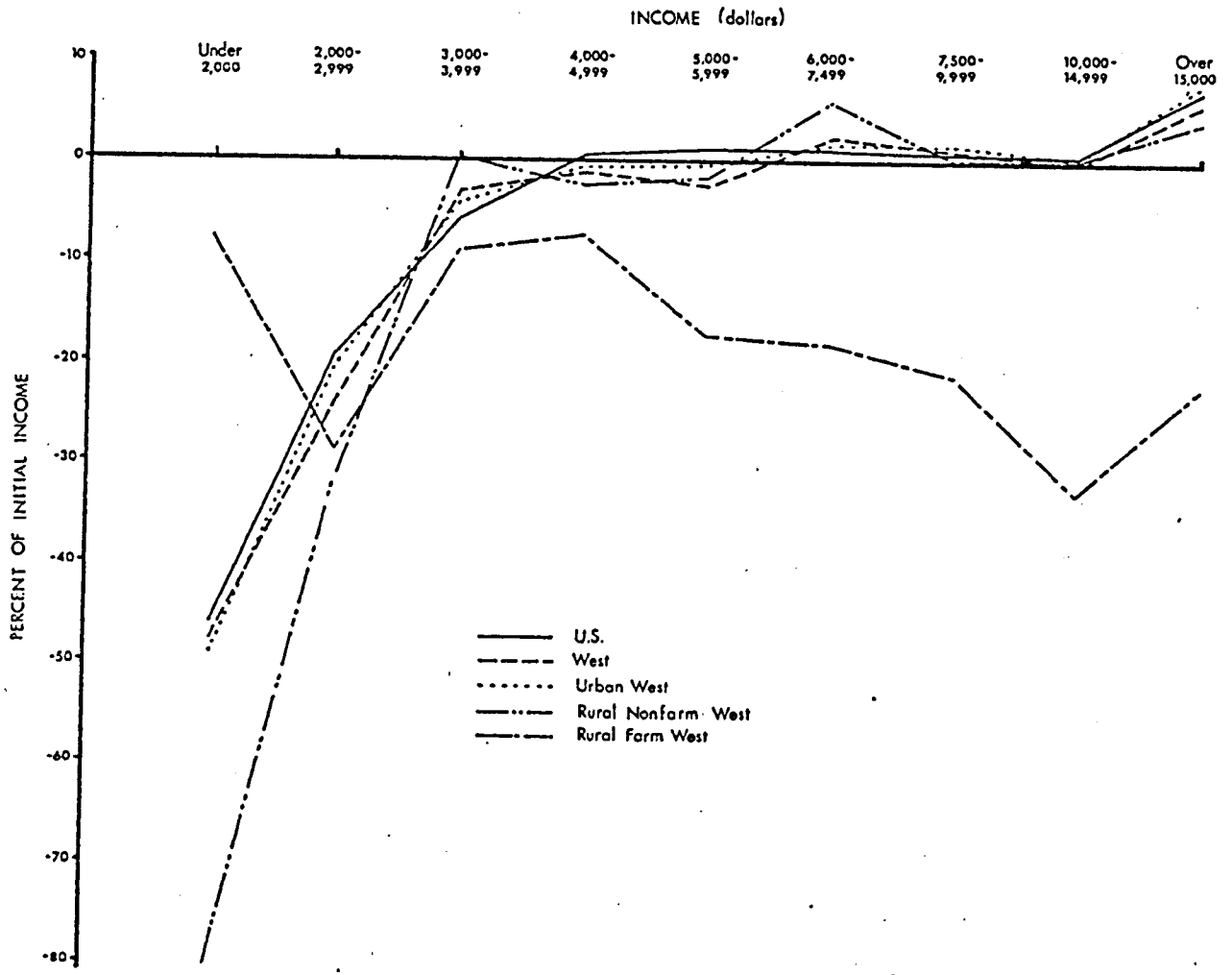


Figure 37. Federal Government Redistributive Taxes as Percent of Initial Income, United States and Western Region, 1961, Alternative B.

Source: Table 16.

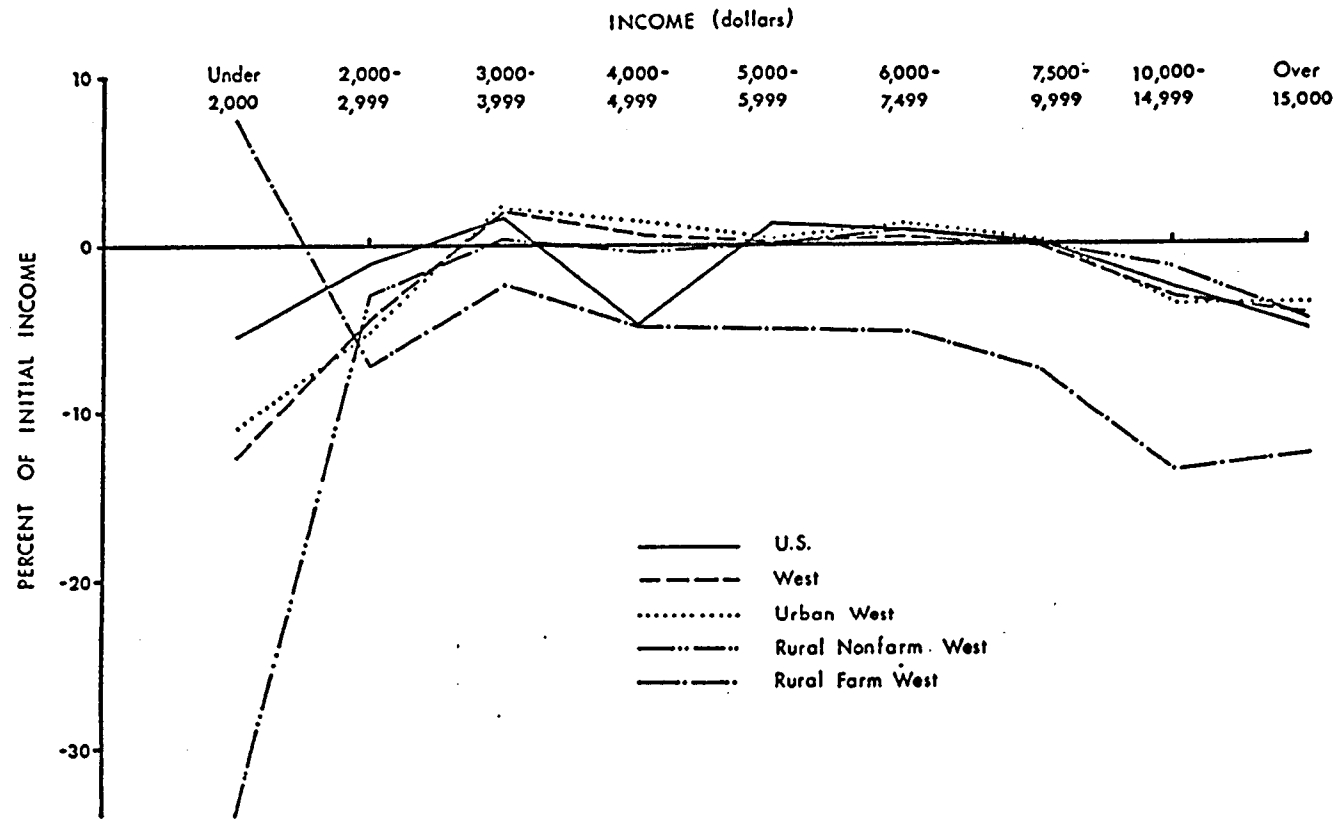


Figure 38. State-Local Government Redistributive Taxes as Percent of Initial Income, United States and Western Region, 1961, Alternative B.

Source: Table 16.

The distribution of the benefits and burdens of redistributive taxes in the urban population was almost identical to that of the region as a whole. The distribution, however, was slightly more progressive in the lower incomes and more regressive in the middle incomes.

For the rural nonfarm population, the distribution was generally progressive, with some regressiveness, particularly in the higher income brackets. On the average, a rural nonfarm family received $106 of redistributive benefits.

Redistributive tax burdens and benefits were generally regressive for the rural farm population. Although the average family received $2,575 of transfers, the lowest income class families paid an average tax of one dollar.

In comparison to Alternative A, redistributive taxes were less progressively distributed under Alternative B for all population groups. Under Alternative A, families in the West receiving less than $4,000 in initial income received $765 in redistributive taxes, while under Alternative B these families received $493 in redistributive taxes. Families with initial incomes greater than $15,000 received $2,738 in redistributive taxes under Alternative A, and $1,311 under B. For the farm population, the assumptions of Alternative B vs. A was especially significant. Farm families with initial incomes less than $4,000 received $1,077 and $510 in redistributive taxes under A and B, respectively. Farm families with initial income greater than $15,000 received redistributive taxes of $13,866 and $12,389 given Alternatives A and B, respectively.

Federal Government Redistributive Taxes. The federal redistributive taxes were generally progressively distributed in the United States, with some regressiveness in the upper income classes. The average family received benefits from federal fiscal activity of $37.

In the Western Region, the distribution was more progressive in the lower incomes than was the case for the United States, and the total distribution was generally progressive. The average family received $43 of transfers, indicating an income transfer into the region.

The urban population, on the average, transferred income to other groups as a result of federal fiscal policy. The distribution of the redistributive tax was generally progressive, with families with incomes of less than $6,000 receiving benefits.

Redistributive taxes at the federal level were generally progressively distributed among the rural nonfarm population. However, the $10,000-14,999 income class received benefits averaging $27.

Among the rural farm population, the redistributive taxes were generally regressively distributed. As a result of federal fiscal activity, the average farm family received $1,982 in benefits, ranging from $149 for the lowest income class to $8,040 for the highest income bracket.

State-Local Government Redistributive Taxes. Redistributive taxes resulting from state-local fiscal activity in the United States in 1961 were generally distributed regressively. The three highest income classes received benefits, and the middle income classes bore the burden of the tax.

This was also the case in the Western Region, where the middle income classes generally bore the net tax burden. Here again the three highest income classes received benefits so that the overall distribution was regressive, although it was progressive in the lower incomes.

The redistributive tax resulting from state-local fiscal policy was distributed among the urban population in a manner almost identical to the region as a whole. The middle incomes again bore the burden and the higher income classes received benefits.

In the rural nonfarm population, the distribution of redistributive taxes was similar to those of the United States and Western Region. The average family received benefits of $67, with the higher income classes receiving benefits. Interestingly, the $5,000-5,999 income class, on the average, paid taxes which exactly equaled the benefits received from state-local governments.

The redistributive taxes were distributed very regressively among rural farm families. The lowest income class paid taxes of $150 in excess of the benefits received while the highest income class received net benefits (after taxes) averaging $4,349.

Post-fiscal Income Distribution

The previous discussion of the redistributive tax and its distribution has provided an indication of how government fiscal activity in the United States and the Western Region redistributed income in 1961. An alternative way to view the net redistributive effect of fiscal policy is to compare the post-fiscal distribution of income with the initial income distribution. This comparison is made here using Lorenze Curves.

For brevity and illustrative purposes, only the distributions for combined federal and state-local fiscal activity is given. The distributions resulting from the separate federal and state-local fiscal activities may be found in Appendix Tables A.7 and A.8.

Alternative A

Figure 39 illustrates, by the use of Lorenz Curves, the income distributions that resulted from the fiscal activities of the federal and state-local governments under Alternative A. It can be seen that, like the initial income distribution (Figure 11), the most equal distribution occurred in the urban population of the Western Region and the most unequal income distribution occurred in the rural farm population.

Figure 40 illustrates the initial and post-fiscal distribution of income in the United States in 1961. The net result of fiscal activity was to make incomes more equally distributed. As a result of the fiscal activity, the three lowest income classes increased their share of total income from 11.54 to 14.48 percent while the three highest income classes had their share of total income reduced from 48.06 to 46.26 percent.

In the Western Region, incomes also became more equally distributed as a result of government fiscal activity (Figure 41). The lowest three income classes had their share of income increased from 8.50 to 10.53 percent while the three highest income groups had their share reduced from 50.38 to 48.47 percent.

The incomes of urban and rural nonfarm populations of the Western Region also became more evenly distributed as a result of fiscal policies (Figures 42 and 43. Among the urban population, the income shares were

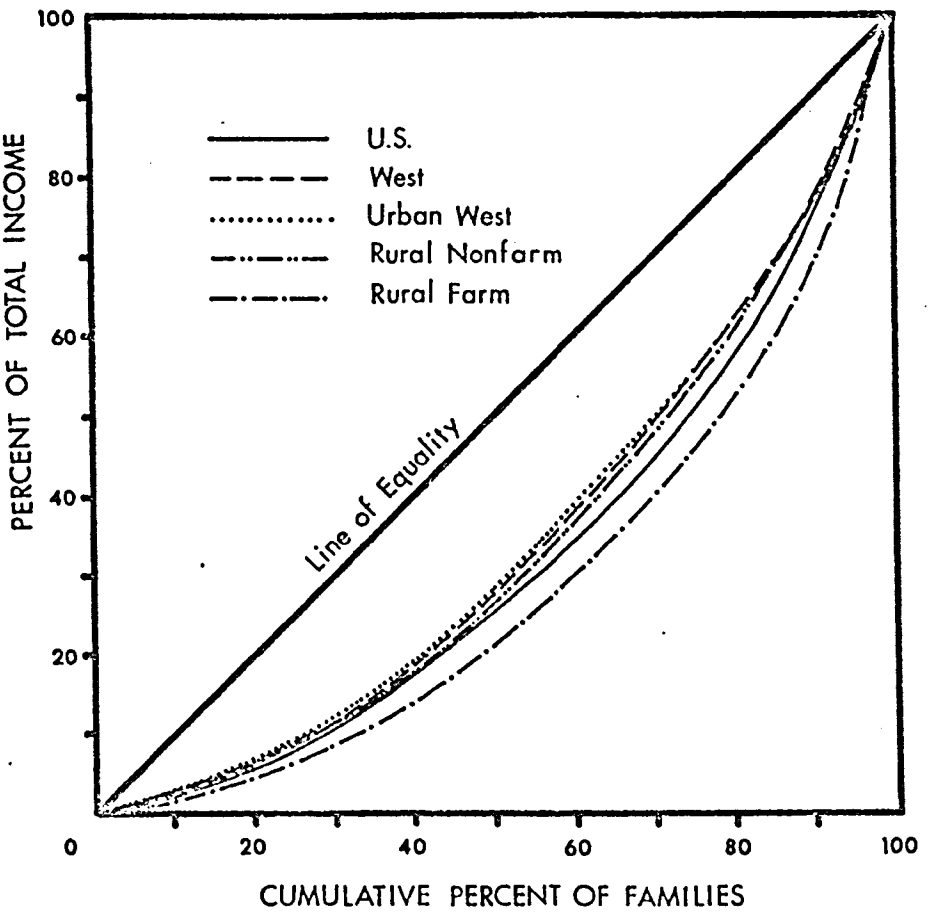


Figure 39. Post-fiscal Income Distribution, Considering All Governments, United States and Western Region, 1961, Alternative A.

Source: Appendix Table A.7.

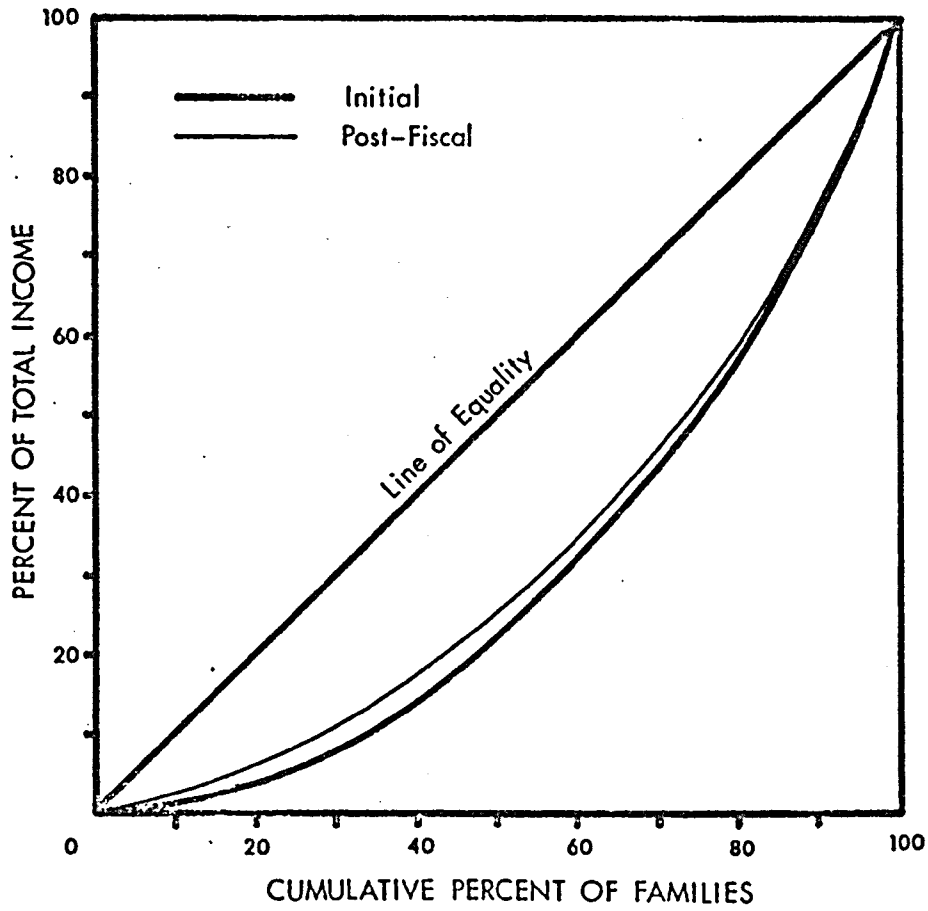


Figure 40. Initial and Post-fiscal Income Distributions, All Governments Considered, United States, 1961, Alternative A.

Source: Appendix Table A.7.

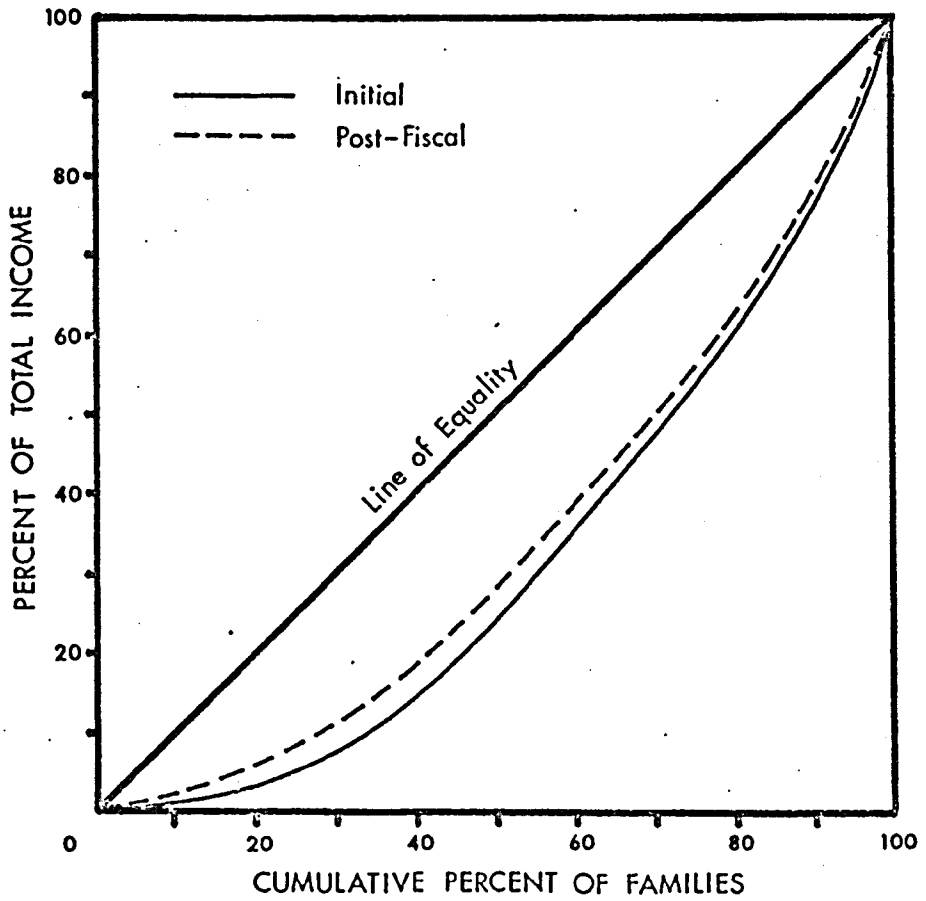


Figure 41. Initial and Post-fiscal Income Distributions, All Governments Considered, Western Region, 1961, Alternative A.

Source: Appendix Table A.7.

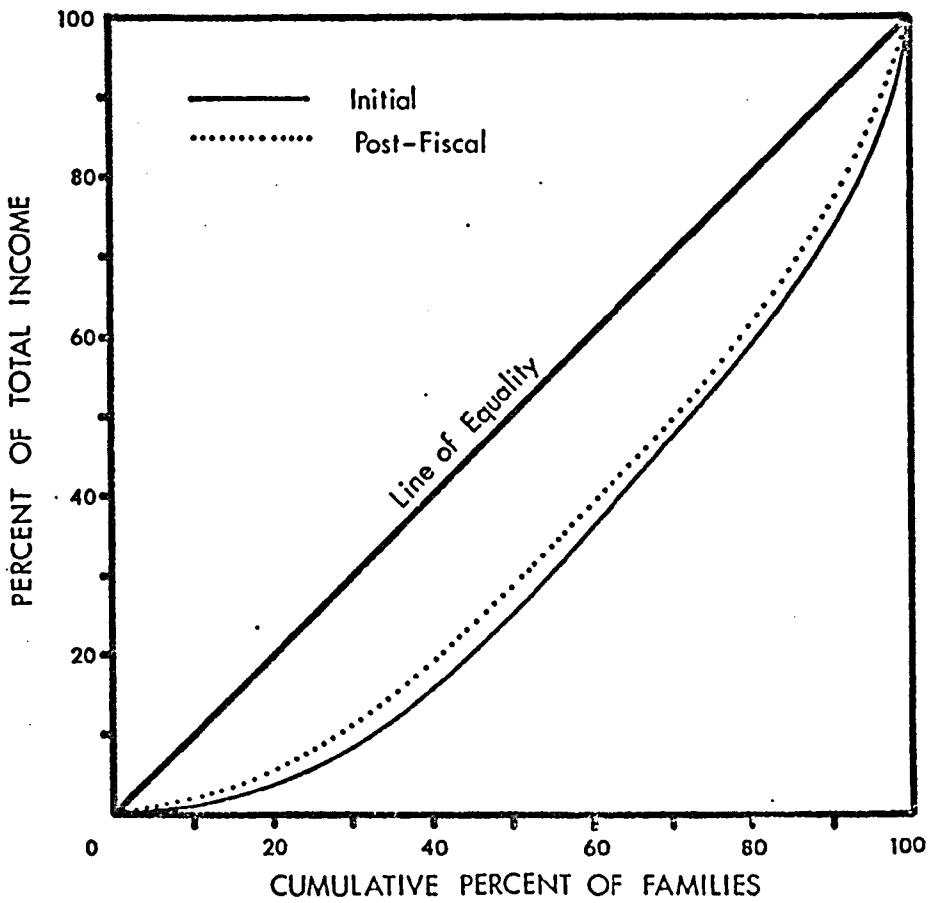


Figure 42. Initial and Post-fiscal Income Distributions, All Governments Considered, Urban Population, Western Region, 1961, Alternative A.

Source: Appendix Table A.7.

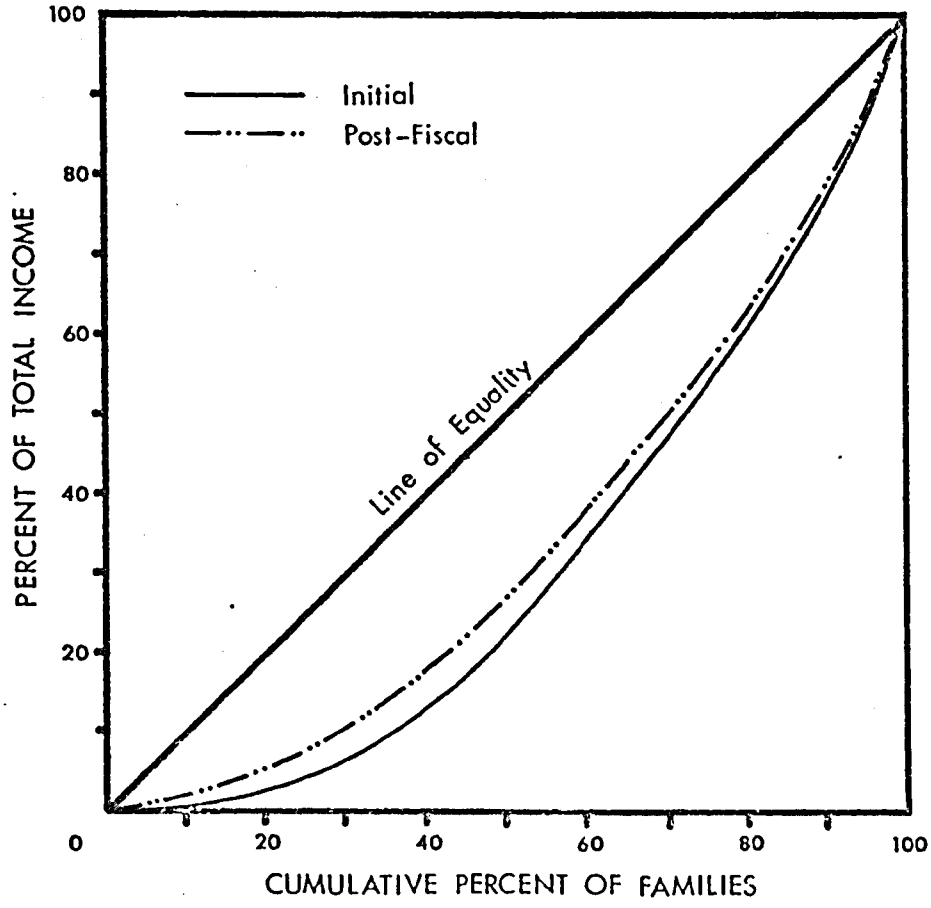


Figure 43. Initial and Post-fiscal Income Distributions, All Governments Considered, Rural Nonfarm Population, Western Region, 1961, Alternative A.

Source: Appendix Table A.7.

increased from 7.85 to 9.70 percent and reduced from 52.44 to 50.26 percent for the three lowest and three highest income classes, respectively. In the rural nonfarm population, the greatest amount of equalizing occurred in the lowest three income classes, where the income share increased from 10.31 to 13.26 percent while the highest three classes had their share reduced slightly from 41.24 to 41.14 percent.

Government fiscal activity, however, made the distribution of income more unequal in the rural farm population of the Western Region (Figure 44). Although the average income of a rural farm family increased from $9,355 to $12,858 as a result of the fiscal activities, the income share of the lowest three income classes dropped from 14.71 to 14.00 percent while the share enjoyed by the three highest income classes increased from 52.92 to 54.73 percent. Thus, while low income families may have been made better off absolutely because of governmental fiscal activity, relatively they were made worse off.

Alternative B

The distributions of income that resulted from Alternative B are shown in Figure 45. It can be seen that the most equal income distribution was enjoyed by the urban population of the Western Region while the most unequal distribution occurred in the rural farm population of the region. As was the case in Alternative A, the distributions for the Western Region and its urban and rural nonfarm populations were more equal than the income distribution for the United States as a whole.

The average incomes that resulted from government fiscal activity under Alternative B are shown in Appendix Table A.8. Average incomes for

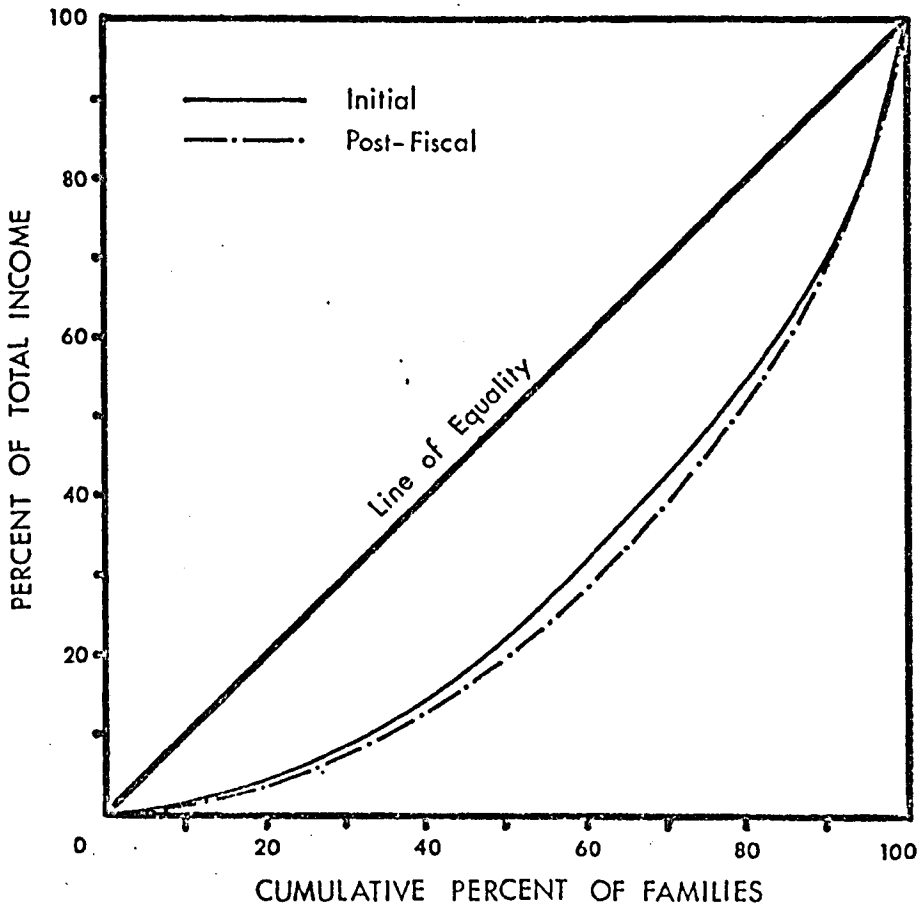


Figure 44. Initial and Post-fiscal Income Distributions, All Governments Considered, Rural Farm Population, Western Region, 1961, Alternative A.

Source: Appendix Table A.7.

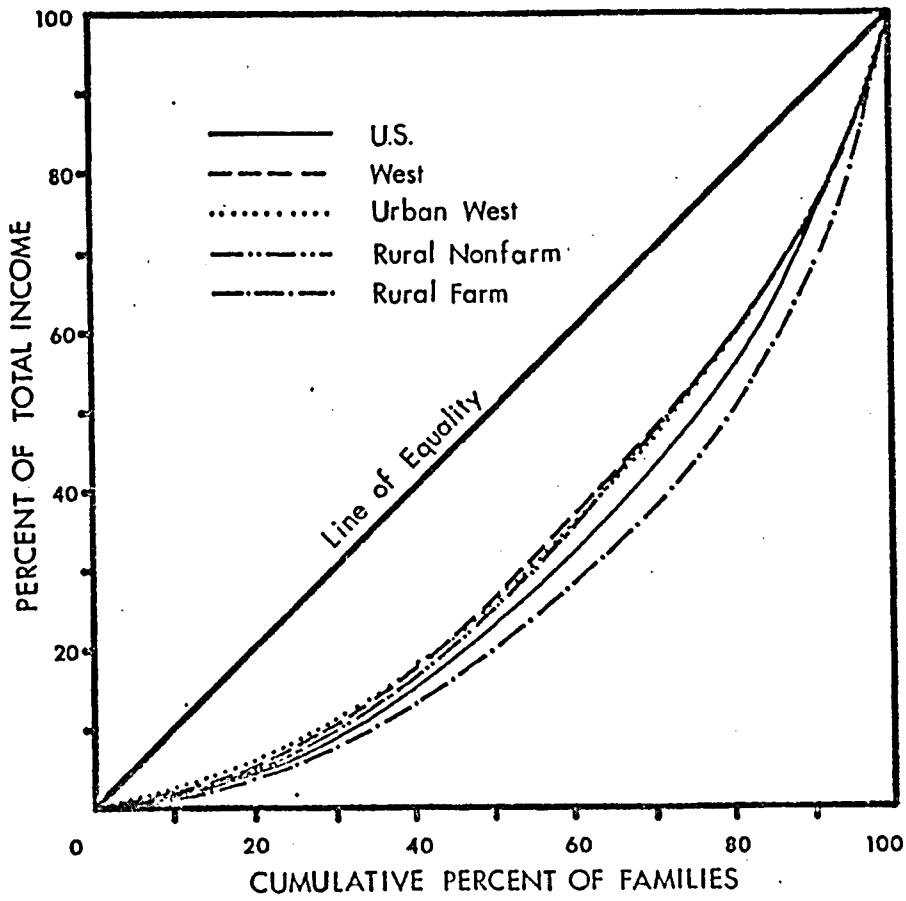


Figure 45. Post-fiscal Income Distribution, All Governments, United States and Western Region, 1961, Alternative B.

Source: Appendix Table A.8.

the United States and the Western Region were raised as a result of the fiscal policies in 1961, but by a lower amount under Alternative B than Alternative A.

Nationally, Alternative B provided a more equal distribution of income than would have occurred in the absence of the fiscal activity (Figure 46), but not as equal as was provided under Alternative A. Under Alternative B, the three lowest income classes increased their share of total income to 13.44 percent and the highest three income classes had their share reduced to only 47.82 percent (over one and a half percentage points above their share under Alternative A).

In the Western Region, incomes were also more equally distributed under Alternative B than in the case of the initial income distribution, but were less equal than Alternative A (Figure 47). The income share of the three lowest income classes increased from 8.50 to 9.88 percent and the share enjoyed by the highest three classes was reduced from 50.38 to 49.86 percent.

The urban and rural nonfarm income distributions were also more equally distributed as a result of fiscal activity (Figures 48 and 49). But as in the previous two cases, the degree of equality was less than in Alternative A. The lowest three income classes had the income shares they enjoyed raised to 9.13 and 12.56 percent, and reduced to 51.90 and 41.14 percent for the three highest income classes, respectively, for the urban and rural nonfarm populations of the region.

As was the result under Alternative A, the post-fiscal income distribution of the rural farm population under Alternative B became more unequal (Figure 50). And, in fact, the distribution of income under

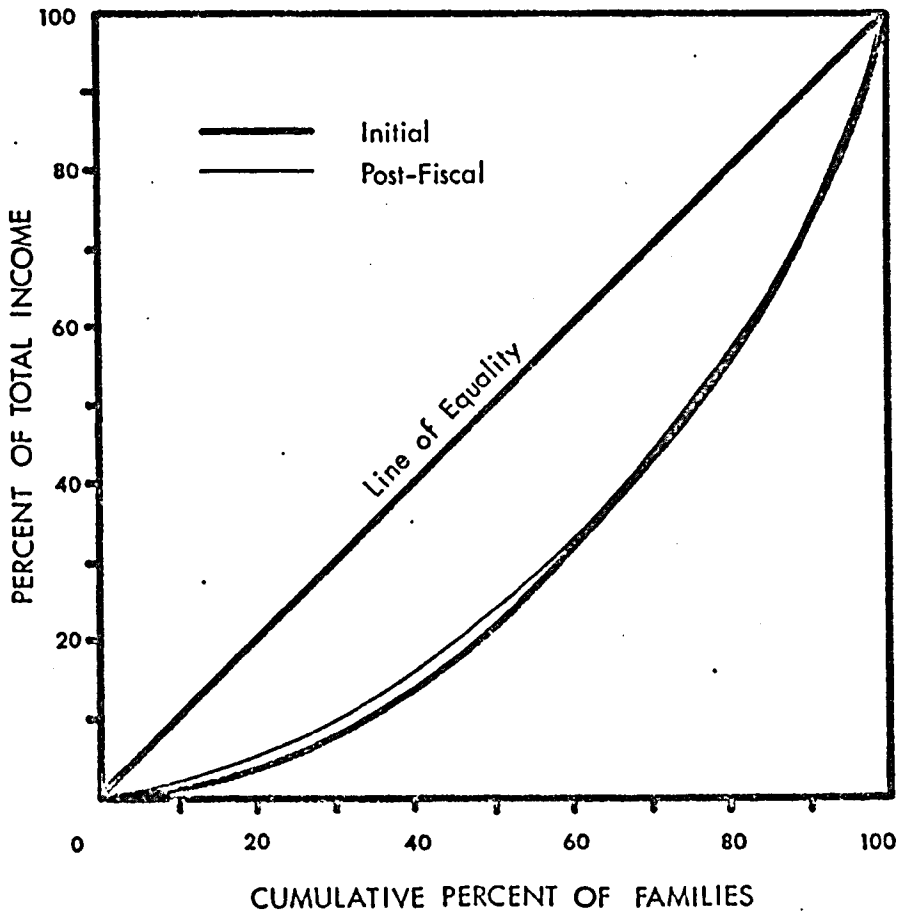


Figure 46. Initial and Post-fiscal Income Distributions, All Governments, United States, 1961, Alternative B.

Sources: Table 10 and Appendix Table A.8.

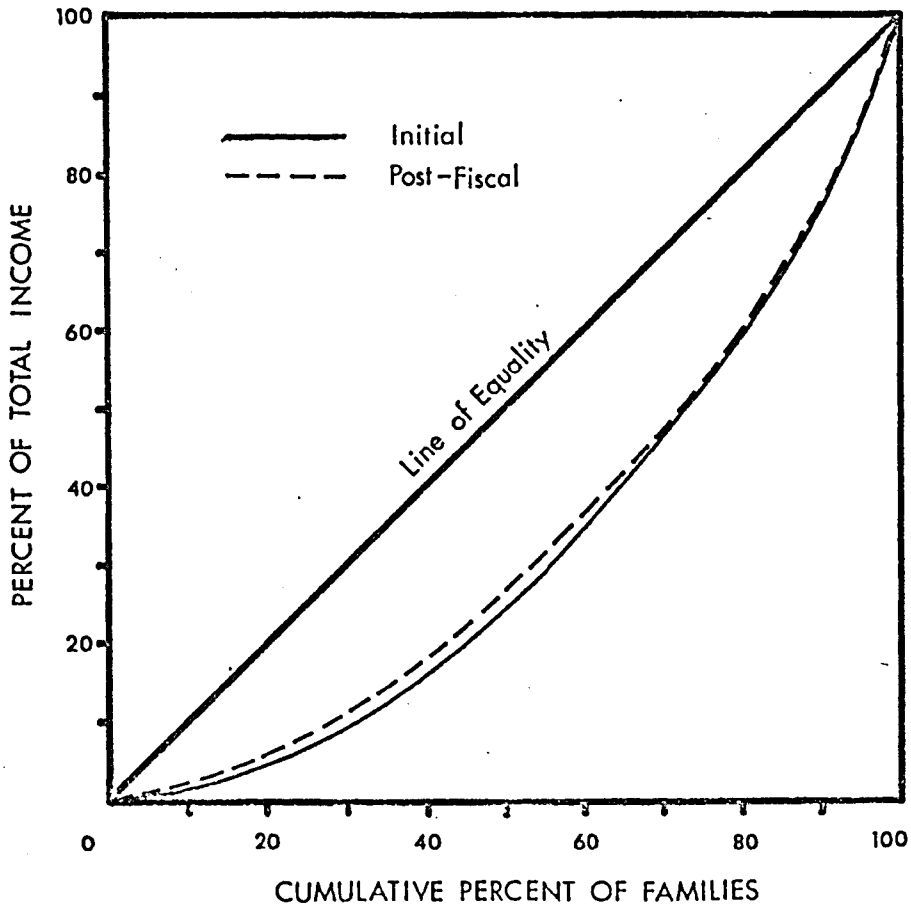


Figure 47. Initial and Post-fiscal Income Distributions, All Governments, Western Region, 1961, Alternative B.

Sources: Table 10 and Appendix Table A.8.

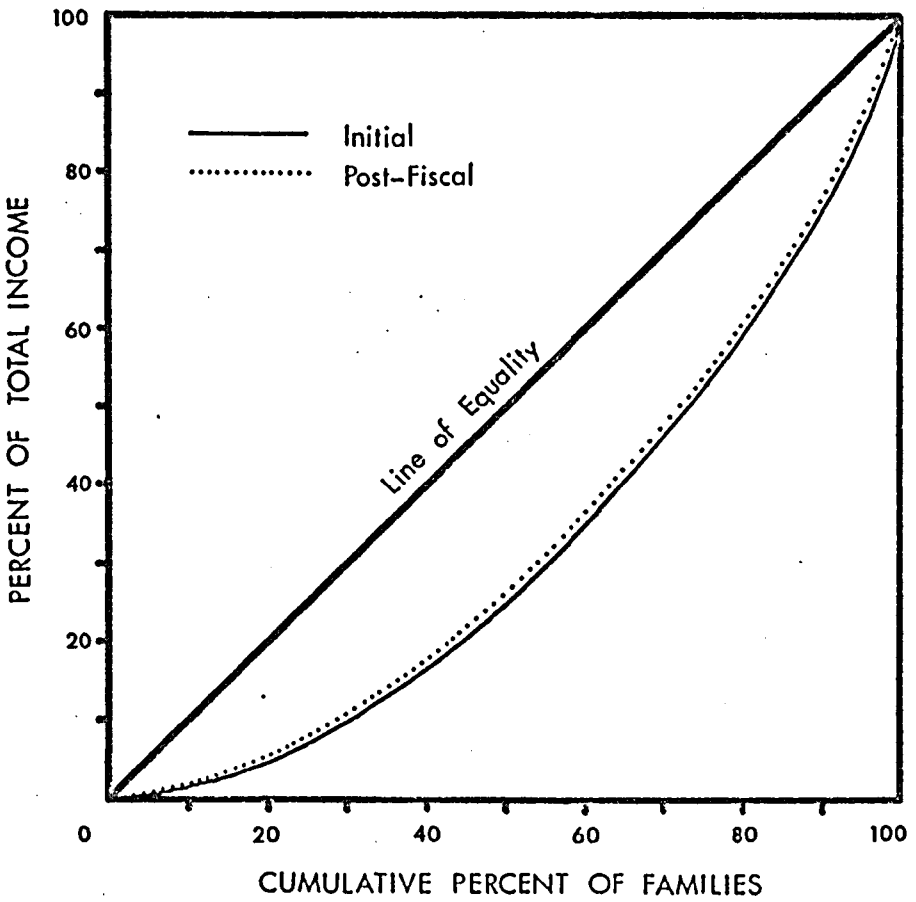


Figure 48. Initial and Post-fiscal Income Distributions, All Governments, Urban Population, Western Region, 1961, Alternative B.

Sources: Table 10 and Appendix Table A.8.

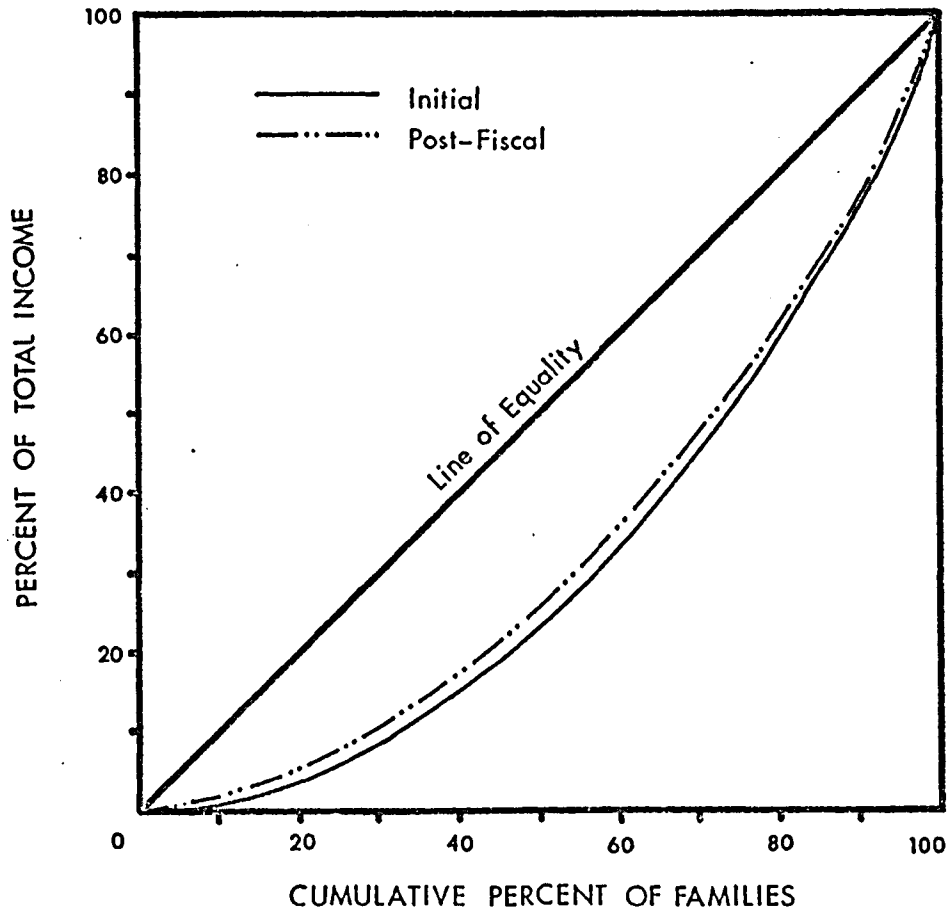


Figure 49. Initial and Post-fiscal Income Distributions, All Governments, Rural Nonfarm Population, Western Region, 1961, Alternative B.

Sources: Table 10 and Appendix Table A.8.

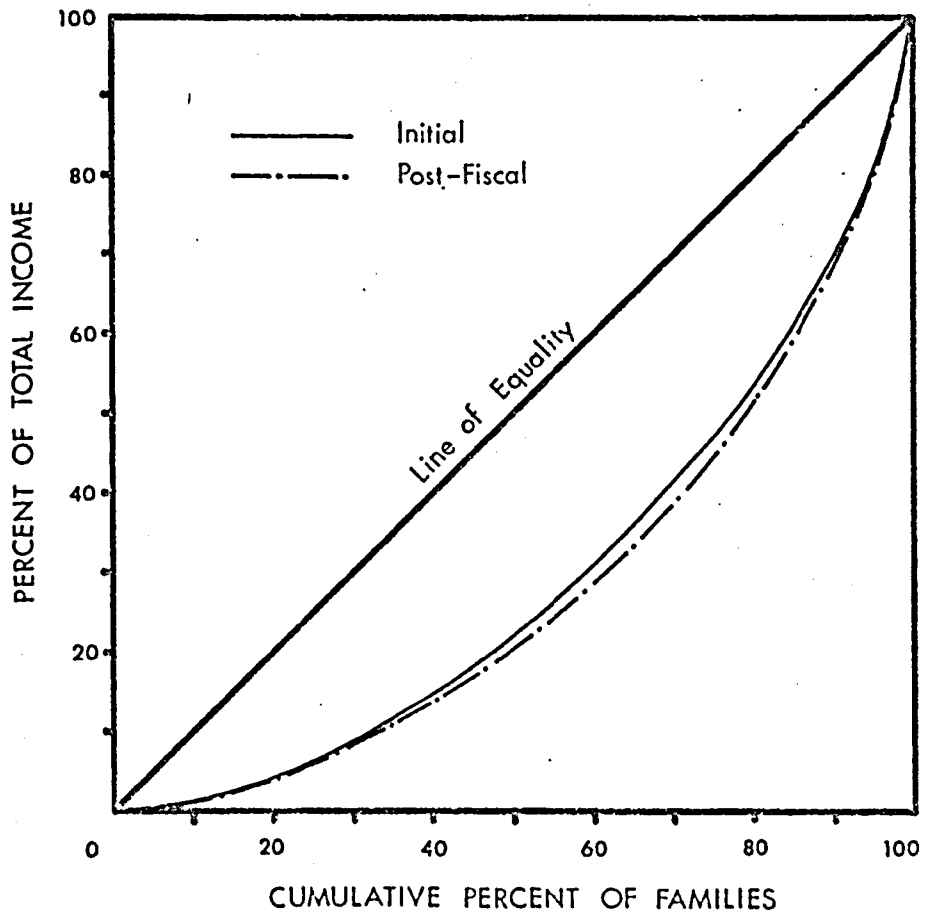


Figure 50. Initial and Post-fiscal Income Distributions, All Governments, Rural Farm Population, Western Region, 1961, Alternative B.

Sources: Table 10 and Appendix Table A.8.

Alternative B was more unequal than under the previous alternative. The three lowest income classes had their income share reduced from 14.71 to 13.20 percent while the income share was increased to 56.45 from 52.92 percent for the highest three income brackets.

CHAPTER V

CONCLUSIONS

This study has determined the distributions of the federal and state-local tax burdens and benefits of government expenditures in the United States, the Western Region, and urban, rural nonfarm, and rural farm sectors of the West in 1961. Furthermore, the net effects of these government fiscal activities on income distribution have been determined for each population group. This Chapter summarizes the theory and limitations, makes suggestions for future research, summarizes the findings, and draws policy implications from the empirical results.

Summary of the Theory

Government expenditures for goods and services are usually classified into two groups: specific (or private) goods and public (or social) goods. Specific goods are those goods which are perfectly divisible among consumers such that one person's consumption excludes the consumption of that good by another. The individual would therefore be willing to reveal his preferences for specific goods and the prices that he would be willing to pay for the goods. The researcher may assume that the value to taxpayers of the specific goods they receive from government is equal to the cost of providing the goods and the only problem is to empirically determine the recipients of government-provided specific goods.

Public goods, however, have the attribute that they are consumed equally by all regardless of individual preferences for them. The taxpayer then does not voluntarily reveal his preferences for public goods in the hope of being charged less than he would actually be willing to pay. The problem faced by researchers has been to determine the value that taxpayers place on publically provided public goods. In the past, this value to different income classes has been estimated, but these estimates were based on arbitrary assumptions and weak economic theory.

Recent additions to the theory of public finance have made it possible to empirically estimate the income value (or benefits) of public goods to income classes. McGuire and Aaron (1969) provided the theoretical foundation for making these empirical estimates in both their 1969 and 1970 articles (Aaron and McGuire, 1970). They argued that the value of the benefits of government expenditures for public goods should be imputed to income classes proportional to the reciprocal of the marginal utility of income of each class. McGuire and Aaron were unable, however, to provide a clear indication of the share of the marginal utility function. This failure was later alleviated by Maital (1973) who was able to define the shape of the marginal utility function and thus enable the precise allocation of the benefits from government provided public goods. These theoretical-empirical advances were employed in the present study.

Limitations of the Study

There are several limitations to this study which should be made explicit and will be discussed in this section. These limitations fall

into three general categories: the data used, the assumptions of the analysis, and the methods of allocation.

Data

The use of 1961 data has the disadvantage of making the study less than timely, yet it has the distinct advantage of being the only data currently available. The disadvantage of the timeliness of the data may not be that great, however. In a study of the distribution of the tax burden done for the Brookings Institution in 1974, Peckman and Okner used 1966 data and argued that, " . . . it is the authors' opinion that the general pattern of tax burdens in a more recent year would not be very different from that shown in this study for 1966" (Peckman and Okner, 1974, p. viii). So far as this holds true for the distribution of expenditure benefits, the results of this study are more relevant than might otherwise be concluded. Furthermore, this will provide a benchmark with which the results of similar studies using more recent data can be compared.

Estimates were made of the amounts that governments collected from tax revenues and spent on public and private goods in the Western Region. These estimates were used because of the unavailability of the actual amounts, in detail, that were spent and collected in the region on an urban-rural breakdown. Obviously, if this detailed data were available and tabulated in a consistent manner, its use would provide additional credence to the estimates.

Assumptions

Several assumptions were made by Aaron and McGuire (1970) in their methodology for determining the value to taxpayers, in terms of income, of the benefits they derive from government expenditures for public goods. These assumptions are necessary to simplify the method, but, unfortunately, reality is compromised. The assumptions are:

1. All utility functions are identical. This greatly simplifies the method but is of questionable validity. However, by representing all families in each income class by the average level of income and expenditure mix for that class, the assumption becomes less questionable since we are concerned with the "average" utility functions for each class. Furthermore, the research reported by Maital (1973) adds credence to the assumption since he reported three separate estimates of the inverse of the elasticity of substitution between public and private goods and the three estimates were nearly identical.

2. The marginal cost of public goods equals the average cost at the amount supplied. This assumption of constant cost of production simplifies the analysis and the determination of marginal cost per unit.

3. The actual output of public and private goods is allocatively efficient, so that the marginal cost equals the sum of the marginal rates of substitution. This assumption and that of constant costs allow the value of output at factor cost to equal the different valuations placed on the output by families, thus equating total cost and total value (or total benefits) of the output. This assumption is also used to simplify the analysis and could be dropped, but then it must be decided how to value the output: at factor cost or by the subjective valuations of the

families. However, by assuming that expenditures produce benefits of equal value implicitly assumes that the quality of the goods or services from which the benefits are derived are of equal quality. For example, it implies that equal amounts spent on goods or services in urban and rural areas provide goods or services of the same quality. In the cases of education and health services, this assumption is questionable and it seems reasonable that this assumption has led to overestimates in some cases and underestimates of the values placed on these goods or services in other cases.

Allocations

The methods of allocation were discussed in Chapter III of this study. There was mention of the reliability of the various allocation methods at that time, so only general comments will be made here.

Much research has been done on the incidence of tax burdens in the United States, and it is felt that the methods of allocation used here are quite reliable given the purpose and broad scope of the study.

Much less research has been conducted on the incidence of the benefits derived from government expenditures. Some of the assumptions made regarding the incidence are therefore arbitrary, particularly for the allocation of expenditure benefits between the urban and rural sectors. Elementary and secondary education expenditures, for example, are allocated on the basis of the number of children under eighteen years of age. This assumes that governments spend about the same amount per child in urban and rural areas which is questionable.

Furthermore, the distinction of what expenditures, or what proportions of expenditures, were for public goods is arbitrary. Unfortunately, this arbitrariness cannot altogether be eliminated without further empirical evidence. In part, however, this limitation is mitigated by a sensitivity analysis in which two different assumptions were made about the proportion of total government expenditures attributed to public goods.

Any shifting of tax burdens and expenditure benefits into and out of the Western Region have been ignored in this study. Although some estimates have been made for the exporting of state and local taxes (McLure, 1967), little has been done for the importing of taxes and virtually no research has been conducted on the transference between states of the benefits.

One of the important and influential roles of government is that of regulation; regulation of the behavior of citizens and groups of citizens and the use of resources. This regulatory activity is financed through the fiscal policy of government. In this study, expenditures for regulatory purposes fell under the heading of "general government expenditures" and were treated as a public goods expenditure. However, it is recognized that these regulations often are not strictly public goods in that they do not necessarily enter everyone's utility function and that the distribution of the benefits from regulations may be quite different from the distributions of "pure" public goods.

A further limitation of the study is that all benefits from government expenditures are assumed to accrue in the year in which the expenditures are made, i.e., it ignores the benefits which may accrue over

time. For example, the benefits from a building or highway constructed in a particular year are presumably received so long as the building or highway is in use, and not just in the year it was built. A more realistic treatment of government expenditures would recognize that some create a flow of benefits over time while for others the benefits occur at a point in time. Of course, there are also benefits in any given year resulting from government expenditures in previous years.

Related to this time element of the benefits from government expenditures is the fact that many of the expenditures have a multiplier effect. That is, government expenditures add to the incomes of a given set of individuals who in turn spend and increase the incomes of others and so forth. To fully evaluate the effect on oncimes and the distribution of incomes, these multiplier effects of government expenditures must be considered. Conversely, taxes reduce the incomes and expenditures of individuals, thus reducing the income of the taxed individual as well as the income of the person from whom the taxed individual would have purchased goods or services.

Finally, the value of final goods and services provided by government expenditures are considered in this study, but not the payments to individuals who produce these goods and services. For example, government expenditures for the construction of a building are allocated as a public goods benefit to the entire population, although the actual expenditures in the form of wages, etc., went to those individuals who constructed the building. Consequently, government expenditures often have dual benefits, the final good or service and the wages to the

individuals providing the good or service. This dual effect was not considered in this study.

Recommendations for Further Study

The limitations of this study indicate areas for further empirical research. It is important, for example, to empirically determine the validity of the assumptions of the theory developed by Aaron and McGuire (1970) which were used in this study. If these assumptions prove to be unwarranted, then the results found by Maital (1973) and this study would be questionable, as would the implications for public policy.

Substantial empirical research into which government expenditures, or proportions thereof, are for public and specific goods is also needed.

One of the implicit purposes of this study has been to provide a benchmark by which to compare the results of similar studies using more recent data. The U. S. Bureau of Labor Statistics conducted a Survey of Consumer Expenditures and Income in 1972-73. The results of this Survey are scheduled to be released in late 1975 or early 1976 and would provide the detailed data necessary for a similar study. Studies of the effects upon income distribution of government fiscal policy for a specific state would also provide supplemental and useful information to legislators and planners. Such studies are currently underway at The University of Arizona.

The transfer of tax burdens and expenditure benefits between states and regions was ignored by this study. This does not by any means imply that such transfers are felt to be insignificant. It is believed that such transfers can have a substantial impact upon the economies and

income distributions of certain states and regions. Little research has been conducted to determine the size of such transfers and would undoubtedly prove to be a fertile area for empirical analysis.

It was mentioned that government regulations could have a significant impact on local economies and income distributions. Environmental regulations, for example, could have substantial detrimental effects upon rural development plans by making them much more costly. The redistributive effects of these types of regulations were largely ignored in this study, but certainly need to be investigated.

Government expenditure benefits which extend beyond the year in which the expenditures are actually made are another area for further examination and analysis. This flow of benefits is very likely substanial and could have a significant effect upon the distribution of incomes derived from government expenditures.

Considerable research has been conducted to estimate the multiplier effects of various investments and investment policies. This research could probably be adapted quite easily to determine and analyze beyond the initial impact, the effect of government fiscal activity upon income distribution.

Finally, further consideration should be given to the dual benefits generated by government expenditures: the benefits derived by those who enjoy the final good or service provided and those who benefit in terms of wages earned for producing the good or service. The inclusion of these dual benefits would increase the level of total benefits generated by government expenditures, and would also affect the distributional pattern.

Summary of the Results

In the first chapter of this study five hypotheses were proposed:

(1) The tax burdens of the federal and state-local governments are distributed progressively for both the urban and rural sectors;

(2) The total benefits of federal and state-local government expenditures are distributed progressively for the urban and rural sectors;

(3) The benefits from government provided public goods are distributed progressively for all population sectors;

(4) The tax burdens and expenditure benefits are distributed in favor of the rural farm and nonfarm populations; and

(5) The net effect of government fiscal activities, at all levels, and for all population groups, is progressive, redistributing incomes from the higher to the lower income classes.

Each of these hypotheses has been confirmed or refuted by the findings of this study and will be discussed with the aid of Table 17, which is a general summary of the findings. The table illustrates, in a rough manner, the progressivity of regressivity of the distributions of the tax burdens and expenditure benefits as a percent of initial income on each of the population groups.

The first hypothesis was partially refuted. Tax burdens for the federal government and for combined federal and state-local governments were found to follow a "U" distribution. Although the total federal and state-local tax burdens were progressively distributed for the higher income classes, the tax rates paid by the higher income classes were lower than the rates paid by the lowest income classes. This was a result primarily of the reliance upon sales, excise, and property taxes for a

Table 17. The Incidence of Tax Burdens and Expenditure Benefits by Level of Government and Place of Residence, 1961.[a]

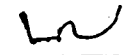
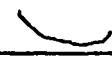
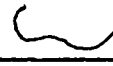
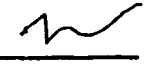
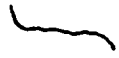
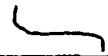
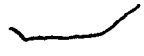
		United States	Western Region	Urban	Rural Nonfarm	Rural Farm
All Governments	Taxes					
	Total Benefits, A					
	Total Benefits, B					
	Specific Benefits, A					
	Specific Benefits, B					
	Public Benefits, A					
	Public Benefits, B					
Federal Government	Taxes					
	Total Benefits, A					
	Total Benefits, B					
	Specific Benefits, A					
	Specific Benefits, B					
	Public Benefits, A					
	Public Benefits, B					
State-local Government	Taxes					
	Total Benefits, A					
	Total Benefits, B					
	Specific Benefits, A					
	Specific Benefits, B					
	Public Benefits, A					
	Public Benefits, B					

Table 17. (continued)

a. The vertical axis of each micro-graph indicates the tax or benefit as a percent of income, and the horizontal axis indicates the level of income. "A" and "B" designations refer to Alternatives A and B indicating a low and high assumption about the quantity of public goods.

substantial proportion of total tax revenues. The federal tax burden, however, was slightly progressive, reflecting a greater reliance upon the progressive income tax. Tax burdens of state-local governments were in general regressively distributed.

The second hypothesis was also partially refuted. Benefits from government expenditures on combined specific and public goods also tended to follow a "U" distribution. Exceptions to this "U" distribution were for the urban sector where combined federal and state-local benefits tended to be progressively distributed and for the farm population for which federal and combined federal and state-local benefits tended to be regressively distributed. Also, under Alternative A, the benefits from state-local spending tended to be regressively distributed.

The benefits from specific goods tended to be progressively distributed for all levels of government and for all population groups, except the farm population. For the farm sector, specific benefits illustrated up and down over income classes with no trend being established.

The third hypothesis was refuted. Public goods benefits were regressively distributed among income classes in all sectors and under both Alternatives A and B. This is to be expected given that the values of government expenditures for public goods are imputed proportionally to the reciprocal of the marginal utility of income, and the marginal utility of income declines as income increases. Thus, the higher incomes would place a higher value on public goods given their relatively low marginal utility of income. Table 17 illustrates the regressivity of the distributions of public goods benefits. The greatest degree of

regressiveness occurred in the rural farm population, reflecting primarily the relatively large proportion of farm families in the higher income brackets.

The fourth hypothesis was confirmed. The distributions of government tax burdens and expenditure benefits were favorable to the rural population of the Western Region in 1961, particularly the rural farm population. It was found that, in the Western Region as a whole, the average family received benefits valued at $273 higher than the taxes it paid under Alternative A, representing 2.89 percent of its initial income. For the average rural nonfarm family, this difference of benefits received over taxes paid was $364 (4.41 percent of initial income) and for the average farm family the amount was $3,503 (37.44 percent of initial income). These amounts indicate that income was transferred into the Western Region as a result of government fiscal activity, and that a relatively large proportion of the transfer accrued to the rural sector. Under Alternative B, a transfer of income also went to the region, although the amount was lower. The primary reason why the rural sector benefitted so highly from the fiscal activity is that tax rates were lower for the rural population in comparison to the urban population, while the benefits from government expenditures, under both alternatives, represented a higher percentage of initial income for the rural sector.

Finally, the fifth hypothesis was confirmed for all but the rural farm population. It was found that the net effect of government fiscal activity in the Western Region in 1961 was to make the distribution of income more equal in the region as a whole and for the urban and rural nonfarm populations. The distribution of income in the rural farm

population, however, became more unequal as a result of the fiscal activity. Thus, for all levels of government and for all population groups (except rural farm) the net effect of government fiscal policy (under both Alternative A and Alternative B) was generally progressive, with some regressiveness for some income classes. For all population groups, average incomes increased because of government fiscal activity, and it was only in the rural farm population that the post-fiscal income was distributed more unequally than was initial income.

Implications for Policy

The major conclusion of this study is that, intentionally or not, governments did redistribute income in the Western Region in 1961. The net distribution effect, with the exception of the affect on the rural farm population, tended to be progressive. There were, however, both progressive and regressive distributions of particular taxes and benefits, these varying with the level of government fiscal activity and the population group affected. These results can be used to indicate policy changes to provide a greater degree of income equality if that is a policy goal.

It was found that the federal tax burden was regressive among the lowest income classes and that state-local burden was regressive at all income levels. This would indicate that some changes in tax laws could be made to improve the relative position of the lower income classes. Specifically, more reliance upon progressive income taxes rather than sales, excise, and property taxes would increase income equality, particularly at the state-local level.

A reduction in the amount of expenditures for public goods would also tend to equalize the distribution of income. This conclusion is supported by evidence indicating that public goods are generally regressively distributed and that regressivity is increased if a higher (Alternative B) instead of a lower (Alternative A) level of public goods is assumed. The findings here support those of Maital (1973).

The rural farm sector in the United States has been the recipient of numerous special programs, especially at the federal level, designed to improve the relative position of the farm family. Although the net result of fiscal activity in 1961 was to increase the average income of a rural farm family in the Western Region, the distribution of income became more unequal. State-local taxes were regressively distributed and federal taxes, while fairly neutral, were regressive in the lower income classes. Specific goods benefits were distributed only slightly progressively, but the public goods benefits were quite regressively distributed. These findings indicate that the government does indeed have an impact on the distribution of income among farm families, but the distribution is often the opposite of expressed goals. The government policymakers need to recognize this fact. To obtain a more equal distribution of incomes, state-local tax structures might be changed, or fewer funds might be spent on public goods.

One of the earlier researchers into the effect of government fiscal activities upon income distribution argued that such redistribution " . . . may be an effective weapon for increasing the national income and improving the general welfare; or it may be a dangerous device that will halt or reverse the growth of national income and bring about

economic, political, and moral deterioration" (Tucker, 1953, p. 534). The first step is to determine where we are and to what degree and in what direction public fiscal policy is redistributing income. It has been the purpose of this study to help take that first step in the Western Region of the United States.

APPENDIX A

DISTRIBUTIONS OF AVERAGE BENEFITS AND POST-FISCAL INCOMES

The following tables present the distributions of government expenditure benefits (total, specific, and public goods) among the income classes in the United States and the Western Region, and the urban, rural nonfarm, and rural farm sectors of the West under Alternatives A and B. Also shown are the distributions of post-fiscal incomes by population groups (Alternatives A and B). The amounts represent the average amount received per family in each income class. The right-hand column shows the amount received on the average by each population group and indicates the transfer of income between population groups. These tables were used to derive the figures presented in Chapter IV, and were in turn derived from the tables in Appendix B.

Table A.1. Average Government Expenditure Benefits Received per Family, by Income Class, United States and Western Region, 1961, Alternative A.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, Total Benefits	$1,253	$1,789	$1,920	$1,951	$2,330	$2,726	$3,561	$5,458	$13,180	$2,691
Percent of Initial Income	119.78	63.87	41.08	29.74	27.98	26.86	26.16	28.06	29.60	31.34
Federal Benefits	821	1,176	1,259	1,196	1,444	1,717	2,350	3,756	9,697	1,769
Percent of Initial Income	78.49	41.99	26.94	18.23	17.34	16.92	17.43	19.31	21.79	20.60
State - Local Benefits	432	613	661	755	886	1,009	1,209	1,702	3,483	922
Percent of Initial Income	41.30	21.89	14.14	11.51	10.64	9.94	8.97	8.85	7.83	10.74
Western Region, Total Benefits	$1,560	$2,013	$1,981	$2,461	$2,911	$3,069	$3,932	$6,001	$12,021	$3,249
Percent of Initial Income	140.41	76.08	41.82	38.04	35.86	28.68	28.67	32.11	32.93	34.41
Federal Benefits	947	1,250	1,189	1,385	1,635	1,751	2,391	3,795	8,597	1,919
Percent of Initial Income	85.24	47.24	25.10	21.41	20.14	16.36	17.44	20.31	23.55	20.32
State - Local Benefits	612	764	791	1,075	1,276	1,318	1,541	2,204	3,424	1,281
Percent of Initial Income	55.08	28.87	16.70	16.62	15.72	12.32	11.24	11.79	9.38	13.57
Urban Sector, West, Total Benefits	$1,501	$1,954	$1,956	$2,294	$2,783	$2,978	$3,804	$5,858	$11,114	$3,189
Percent of Initial Income	133.66	75.01	42.41	35.49	34.85	28.43	27.66	30.97	29.21	32.87
Federal Benefits	938	1,192	1,166	1,332	1,564	1,681	2,315	3,709	7,829	1,993
Percent of Initial Income	83.53	45.76	25.28	20.61	19.59	16.05	16.83	19.61	20.58	20.54
State - Local Benefits	562	763	791	962	1,219	1,297	1,488	2,149	3,283	1,256
Percent of Initial Income	50.04	29.29	17.15	14.88	15.27	12.38	10.82	11.36	8.63	12.95
Rural Nonfarm Sector,West,Total Benefits	$1,645	$1,937	$1,966	$2,596	$2,861	$3,070	$3,674	$6,185	$15,262	$2,974
Percent of Initial Income	231.04	78.52	38.87	42.94	36.22	26.51	27.58	32.91	38.60	36.04
Federal Benefits	942	1,273	1,135	1,328	1,450	1,726	2,144	3,727	11,058	1,719
Percent of Initial Income	132.30	51.60	22.44	21.97	18.36	14.90	16.09	19.83	27.97	20.83
State - Local Benefits	701	664	831	1,268	1,411	1,344	1,530	2,458	4,204	1,255
Percent of Initial Income	98.46	26.92	16.43	20.98	17.86	11.60	11.48	13.08	10.63	15.21
Rural Farm Sector,West, Total Benefits	$1,586	$2,807	$3,303	$4,657	$4,808	$5,820	$7,410	$12,028	$24,116	$6,006
Percent of Initial Income	75.96	84.98	55.05	60.66	59.44	57.06	58.50	72.99	68.71	64.20
Federal Benefits	941	1,854	2,038	2,763	3,025	3,792	5,225	8,263	18,428	4,107
Percent of Initial Income	45.07	56.13	33.97	35.99	37.40	37.18	41.25	50.15	52.50	43.90
State - Local Benefits	645	952	1,265	1,692	1,780	2,025	2,181	3,757	5,672	1,896
Percent of Initial Income	30.89	28.82	21.08	24.65	22.01	19.85	17.22	22.80	16.16	20.27

Sources: Tax Foundation (1967), Maital (1973), and Appendix Tables B.6.a - e.

Table A.2. Average Benefits Received from Government Expenditures for Specific Goods by Income Class, United States and Western Region, 1961, Alternative A.

	Income Class (Money Income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, Total Benefits	$1,115	$1,414	$1,315	$1,085	$1,143	$1,190	$1,274	$1,652	$2,801	$1,274
Percent of Initial Income	106.59	50.48	28.13	16.53	13.72	11.72	9.44	8.49	6.29	14.83
Federal Benefits	714	884	789	525	524	526	579	808	1,651	672
Percent of Initial Income	68.26	31.56	16.88	8.00	6.29	5.18	4.29	4.15	3.71	7.82
State - Local Benefits	401	528	524	559	618	662	693	842	1,137	602
Percent of Initial Income	38.33	18.85	11.21	8.52	7.42	6.52	5.14	4.32	2.55	7.01
Western Region, Total Benefits	$1,394	$1,632	$1,381	$1,535	$1,638	$1,388	$1,540	$2,234	$3,825	$1,621
Percent of Initial Income	125.47	61.67	29.15	23.72	20.17	12.97	11.23	11.95	10.50	17.16
Federal Benefits	819	955	725	668	649	450	539	879	2,259	708
Percent of Initial Income	73.71	36.09	15.30	10.32	7.99	4.20	3.93	4.70	6.18	7.49
State - Local Benefits	575	678	656	866	989	939	1,001	1,354	1,576	913
Percent of Initial Income	51.75	25.62	13.84	13.38	12.18	8.77	7.29	7.24	4.31	9.66
Urban Sector, West, Total Benefits	$1,340	$1,588	$1,376	$1,406	$1,571	$1,348	$1,459	$2,092	$2,815	$1,537
Percent of Initial Income	119.32	60.95	29.83	21.75	19.67	12.86	10.60	11.06	7.39	15.84
Federal Benefits	814	909	717	644	626	419	500	793	1,404	654
Percent of Initial Income	72.48	34.89	15.54	9.96	7.83	4.00	3.63	4.19	3.69	6.74
State - Local Benefits	526	680	660	762	945	929	959	1,299	1,410	883
Percent of Initial Income	46.83	26.10	14.31	11.78	11.83	8.86	6.97	6.86	3.70	9.10
Rural Nonfarm Sector, West, Total Benefits	$1,498	$1,584	$1,331	$1,698	$1,615	$1,366	$1,366	$2,321	$5,500	$1,594
Percent of Initial Income	210.39	64.20	26.31	28.08	20.44	11.79	10.25	12.35	13.91	19.31
Federal Benefits	829	1,000	643	623	485	407	357	736	3,500	651
Percent of Initial Income	116.43	40.53	12.71	10.47	6.14	3.51	2.67	3.91	8.85	7.88
State - Local Benefits	668	584	688	1,065	1,130	959	1,009	1,585	2,000	943
Percent of Initial Income	93.82	23.67	13.60	17.61	14.30	8.28	7.57	8.43	5.05	11.42
Rural Farm Sector, West, Total Benefits	$1,368	$2,212	$2,257	$3,129	$3,022	$3,429	$4,103	$6,348	$10,700	$3,465
Percent of Initial Income	65.51	66.96	37.61	40.75	37.35	33.61	32.39	38.52	30.48	37.03
Federal Benefits	772	1,394	1,229	1,581	1,644	1,943	2,667	3,870	8,050	2,142
Percent of Initial Income	36.97	42.20	20.48	20.59	20.32	19.04	21.05	26.65	29.56	21.00
State - Local Benefits	596	818	1,029	1,548	1,378	1,486	1,436	2,478	2,650	1,324
Percent of Initial Income	28.54	24.76	17.15	20.16	17.03	14.56	11.33	15.03	7.54	14.15

Sources: Tax Foundation (1967), Maital (1973), and Appendix Tables B.6.a - e.

Table A.3. Average Benefits Received from Government Expenditures for Public Goods by Income Class, United States and Western Region, 1961, Alternative A.

	Income Class (Money Income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, Total Benefits	$138	$377	$607	$867	$1,188	$1,538	$2,287	$3,808	$10,392	$1,417
Percent of Initial Income	13.19	13.46	12.99	13.21	14.27	15.16	16.96	19.58	23.35	16.50
Federal Benefits	107	292	470	671	920	1,191	1,771	2,948	8,046	1,097
Percent of Initial Income	10.22	10.42	10.05	10.22	11.04	11.73	13.13	15.15	18.08	12.77
State - Local Benefits	31	85	137	196	268	347	516	860	2,346	320
Percent of Initial Income	2.96	3.03	2.93	2.98	3.21	3.41	3.82	4.42	5.27	3.72
Western Region, Total Benefits	$166	$381	$600	$926	$1,273	$1,681	$2,392	$3,767	$8,186	$1,628
Percent of Initial Income	14.94	14.39	12.66	14.31	15.68	15.70	17.44	20.15	22.42	17.24
Federal Benefits	128	295	464	717	986	1,301	1,852	2,916	6,338	1,261
Percent of Initial Income	11.52	11.14	9.79	11.08	12.14	12.15	13.50	15.60	17.36	13.35
State - Local Benefits	37	86	135	209	287	379	540	850	1,848	368
Percent of Initial Income	3.33	3.25	2.84	3.23	3.53	3.54	3.93	4.54	5.06	3.89
Urban Sector, West, Total Benefits	$161	$366	$580	$888	$1,212	$1,630	$2,345	$5,766	$8,299	$1,652
Percent of Initial Income	14.33	14.04	12.57	13.73	15.17	15.56	17.04	19.91	21.81	17.02
Federal Benefits	124	283	449	688	938	1,262	1,815	2,916	6,425	1,279
Percent of Initial Income	11.04	10.86	9.73	10.64	11.74	12.04	13.19	15.41	16.88	13.18
State - Local Benefits	36	83	131	200	274	368	529	850	1,873	373
Percent of Initial Income	3.20	3.18	2.84	3.09	3.43	3.51	3.84	4.49	4.92	3.84
Rural Nonfarm Sector, West, Total Benefits	$147	$353	$635	$898	$1,246	$1,704	$2,308	$3,864	$9,762	$1,380
Percent of Initial Income	20.64	14.30	12.55	14.85	15.77	14.71	17.32	20.56	24.69	16.72
Federal Benefits	113	273	492	695	965	1,319	1,787	2,991	7,558	1,068
Percent of Initial Income	15.87	11.06	9.72	11.49	12.21	11.38	13.41	15.91	19.11	12.94
State - Local Benefits	33	80	143	203	281	385	521	873	2,204	312
Percent of Initial Income	4.63	3.24	2.82	3.35	3.55	3.32	3.91	4.64	5.57	3.78
Rural Farm Sector, West, Total Benefits	$218	$595	$1,046	$1,528	$1,786	$2,391	$3,307	$5,608	$13,416	$2,541
Percent of Initial Income	10.44	18.01	17.43	19.90	22.07	23.44	26.10	34.47	38.22	27.16
Federal Benefits	169	460	809	1,182	1,381	1,849	2,558	4,393	10,378	1,965
Percent of Initial Income	8.09	13.92	13.48	15.39	17.07	18.12	20.19	26.65	29.56	21.00
State - Local Benefits	49	134	236	344	402	539	745	1,279	3,022	572
Percent of Initial Income	2.34	4.05	3.93	4.48	4.96	5.28	5.88	7.76	8.60	6.11

Sources: Tax Foundation (1967), Maital (1973), and Appendix Tables B.6.a - e.

Table A.4. Average Benefits Received from Government Expenditures by Income Class, United States and Western Region, 1961, Alternative B.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, Total Benefits	$1,022	$1,516	$1,692	$1,769	$2,209	$2,680	$3,775	$6,115	$16,090	$2,692
Percent of Initial Income	97.71	54.12	36.20	26.96	26.52	26.41	28.00	31.43	36.16	31.35
Federal Benefits	710	1,056	1,163	1,148	1,420	1,720	2,443	3,985	10,677	1,769
Percent of Initial Income	67.88	37.70	24.88	17.50	17.05	16.95	18.12	20.49	23.99	20.60
State - Local Benefits	312	460	529	621	789	960	1,332	2,130	5,416	923
Percent of Initial Income	29.83	16.42	11.32	9.47	9.47	9.46	9.88	10.95	12.17	10.75
Western Region, Total Benefits	$1,289	$1,732	$1,714	$2,097	$2,535	$2,869	$3,933	$6,251	$13,448	$3,099
Percent of Initial Income	116.02	65.46	36.18	32.42	31.23	26.81	28.68	33.45	36.84	32.82
Federal Benefits	820	1,144	1,107	1,313	1,571	1,755	2,460	3,962	8,963	1,957
Percent of Initial Income	73.81	43.24	23.37	20.30	19.35	16.40	17.94	21.20	24.55	20.73
State - Local Benefits	468	589	608	784	964	1,114	1,473	2,288	4,486	1,141
Percent of Initial Income	42.12	22.26	12.84	12.12	11.88	10.41	10.74	12.24	12.29	12.08
Urban Sector, West, Total Benefits	$1,291	$1,665	$1,699	$2,035	$2,450	$2,772	$3,847	$6,231	$13,147	$3,103
Percent of Initial Income	114.96	63.92	36.84	31.48	30.68	26.46	27.97	32.95	34.56	31.98
Federal Benefits	834	1,080	1,090	1,290	1,518	1,688	2,403	3,936	8,630	1,954
Percent of Initial Income	74.27	41.46	23.63	19.96	19.01	16.11	17.47	20.81	22.68	20.14
State - Local Benefits	457	585	609	745	932	1,085	1,444	2,295	4,516	1,149
Percent of Initial Income	40.69	22.46	13.20	11.53	11.67	10.36	10.50	12.13	11.87	11.84
Rural Nonfarm Sector,West,Total Benefits	$1,283	$1,794	$1,688	$2,071	$2,377	$2,885	$3,691	$5,950	$16,344	$2,716
Percent of Initial Income	180.20	72.72	33.37	34.26	30.09	24.91	27.71	31.66	41.34	32.91
Federal Benefits	769	1,212	1,070	1,238	1,388	1,753	2,260	3,669	11,070	1,680
Percent of Initial Income	108.01	49.13	21.15	20.48	17.57	15.14	16.96	19.52	28.00	20.36
State - Local Benefits	513	583	618	844	988	1,132	1,431	2,282	5,275	1,036
Percent of Initial Income	72.05	23.63	12.22	13.96	12.51	9.77	10.74	12.14	13.34	12.55
Rural Farm Sector,West,Total Benefits	$1,174	$2,243	$2,481	$3,430	$3,658	$4,715	$6,562	$10,455	$22,639	$5,078
Percent of Initial Income	56.23	67.91	41.35	44.68	45.22	46.23	51.80	63.45	64.50	54.28
Federal Benefits	781	1,590	1,653	2,249	2,508	3,232	4,593	7,197	6,190	3,528
Percent of Initial Income	37.40	48.14	27.55	29.30	31.01	31.69	36.26	43.68	46.13	37.71
State - Local Benefits	394	653	829	1,181	1,150	1,484	1,969	3,258	6,449	1,550
Percent of Initial Income	18.87	19.77	13.82	15.38	14.22	14.55	15.54	19.77	18.37	16.57

Sources: Tax Foundation (1967), Maital (1973), and Appendix Tables B.6.a - e.

Table A.5. Average Benefits Received from Government Expenditures for Specific Goods, by Income Class, United States and Western Region, 1961, Alternative B.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, Total Benefits	$888	$1,099	$970	$692	$708	$715	$783	$1,071	$2,004	$868
Percent of Initial Income	84.89	39.24	20.75	10.56	8.50	7.05	5.81	5.51	4.50	10.11
Federal Benefits	622	782	689	440	434	429	477	671	1,422	571
Percent of Initial Income	59.46	27.91	14.74	6.70	5.21	4.22	3.53	3.44	3.19	6.65
State - Local Benefits	266	317	281	252	274	286	306	400	582	297
Percent of Initial Income	25.43	11.31	6.01	3.84	3.29	2.81	2.26	2.05	1.31	3.45
Western Region, Total Benefits	$1,106	$1,277	$978	$969	$972	$745	$855	$1,371	$2,661	$1,029
Percent of Initial Income	99.54	48.26	20.64	14.97	11.97	6.96	6.23	7.33	7.28	10.89
Federal Benefits	700	844	623	572	544	360	438	756	1,875	597
Percent of Initial Income	63.00	31.89	13.15	8.84	6.70	3.36	3.19	4.04	5.13	6.32
State - Local Benefits	405	433	356	397	428	385	417	614	786	431
Percent of Initial Income	35.45	16.36	7.51	6.13	5.27	3.59	3.04	3.28	2.15	4.56
Urban Sector, West, Total Benefits	$1,105	$1,231	$987	$930	$954	$714	$815	$1,310	$1,978	$984
Percent of Initial Income	98.39	47.25	21.40	14.38	11.94	6.81	5.92	6.92	5.19	10.14
Federal Benefits	712	795	622	564	535	336	411	703	1,292	562
Percent of Initial Income	63.40	30.51	13.48	8.78	6.70	3.20	2.98	3.71	3.39	5.79
State -Local Benefits	393	436	365	366	419	379	404	607	685	422
Percent of Initial Income	34.99	16.73	7.91	5.66	5.24	3.61	2.93	3.20	1.80	4.34
Rural Nonfarm Sector, West, Total Benefits	$1,137	$1,350	$909	$1,016	$876	$728	$714	$1,113	$3,769	$990
Percent of Initial Income	159.69	54.72	17.97	16.80	11.09	6.28	5.35	5.92	9.53	11.99
Federal Benefits	673	920	558	535	402	336	304	491	2,808	546
Percent of Initial Income	94.52	37.29	11.03	8.85	5.08	2.90	2.28	2.61	7.10	6.61
State - Local Benefits	463	431	351	482	473	392	410	623	962	444
Percent of Initial Income	65.02	17.47	6.93	7.97	5.98	3.38	3.07	3.31	2.43	5.38
Rural Farm Sector, West, Total Benefits	$947	$1,576	$1,314	$1,774	$1,657	$1,971	$2,615	$3,870	$6,750	$2,135
Percent of Initial Income	45.35	47.71	21.90	23.10	20.60	19.32	20.64	23.48	19.23	22.82
Federal Benefits	632	1,152	886	1,161	1,200	1,429	2,000	2,870	5,750	1,594
Percent of Initial Income	30.26	34.87	14.76	15.12	14.83	14.00	15.78	17.41	16.38	17.03
State - Local Benefits	316	424	429	613	467	543	615	1,000	1,000	541
Percent of Initial Income	15.13	12.83	7.15	7.98	5.77	5.32	4.85	6.06	2.84	5.78

Sources: Tax Foundation (1967), Maital (1973), and Appendix Tables B.6.a - e.

Table A.6. Average Benefits Received from Government Expenditures for Public Goods, United States and Western Region, 1961, Alternative B.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, Total Benefits	$134	$417	$722	$1,077	$1,501	$1,965	$2,992	$5,044	$14,086	$1,824
Percent of Initial Income	12.81	14.89	15.45	16.42	18.02	19.36	22.19	25.93	31.65	21.24
Federal Benefits	88	274	474	708	986	1,291	1,966	3,314	9,255	1,198
Percent of Initial Income	8.41	9.78	10.14	10.79	11.83	12.72	14.58	17.03	20.79	13.95
State - Local Benefits	46	143	248	369	515	674	1,026	1,730	4,831	626
Percent of Initial Income	4.39	5.10	5.30	5.62	6.18	6.64	7.61	8.89	10.85	7.29
Western Region, Total Benefits	$183	$455	$736	$1,128	$1,563	$2,124	$3,078	$4,680	$10,787	$2,070
Percent of Initial Income	16.47	17.19	15.53	17.43	19.25	19.84	22.44	26.11	29.55	21.92
Federal Benefits	120	300	484	741	1,027	1,395	2,022	3,206	7,088	1,360
Percent of Initial Income	10.80	11.33	10.21	11.45	12.65	13.03	14.74	17.15	19.41	14.40
State - Local Benefits	63	156	252	387	536	729	1,056	1,674	3,700	710
Percent of Initial Income	5.67	5.89	5.31	5.98	6.60	6.81	7.70	8.95	10.13	7.51
Urban Sector, West, Total Benefits	$186	$434	$712	$1,105	$1,496	$2,058	$3,032	$4,921	$11,169	$2,119
Percent of Initial Income	16.56	16.66	15.43	17.09	18.73	19.64	22.44	26.01	29.35	21.84
Federal Benefits	122	285	468	726	983	1,352	1,992	3,233	7,338	1,392
Percent of Initial Income	10.86	10.94	10.14	11.23	12.31	12.90	14.48	17.09	19.28	14.34
State - Local Benefits	64	149	244	379	513	706	1,040	1,688	3,831	727
Percent of Initial Income	5.69	5.71	5.29	5.86	6.42	6.73	7.56	8.92	10.06	7.49
Rural Nonfarm Sector, West, Total Benefits	$146	$444	$779	$1,055	$1,501	$2,157	$2,977	$4,837	$12,575	$1,726
Percent of Initial Income	20.50	17.99	15.40	17.45	19.00	18.62	22.34	25.73	31.80	20.91
Federal Benefits	96	292	512	693	986	1,417	1,956	3,178	8,262	1,134
Percent of Initial Income	13.48	11.83	10.12	11.46	12.48	12.23	14.68	16.91	20.89	13.74
State - Local Benefits	50	152	267	362	515	740	1,021	1,659	4,313	592
Percent of Initial Income	7.02	6.16	5.27	5.98	6.51	6.38	7.66	8.82	10.90	7.17
Rural Farm Sector, West, Total Benefits	$227	$667	$1,167	$1,656	$1,991	$2,744	$3,947	$6,585	$15,889	$2,943
Percent of Initial Income	10.87	20.19	19.45	21.57	24.61	26.90	31.15	39.96	45.26	31.45
Federal Benefits	149	438	767	1,088	1,308	1,803	2,593	4,327	10,440	1,934
Percent of Initial Income	7.13	13.26	12.78	14.17	16.17	17.67	20.47	26.25	29.74	20.64
State - Local Benefits	78	229	400	568	683	941	1,354	2,258	5,449	1,009
Percent of Initial Income	3.73	6.93	6.66	7.39	8.44	9.22	10.68	13.70	15.52	10.78

Sources: Tax Foundation (1967), Maital (1973), and Appendix Tables B.6. a -e.

Table A.7. Distribution of Average Post-fiscal Activity Incomes, by Income Class, United States and Western Region, 1961, Alternative A.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, All governments	$1,823	$3,662	$5,125	$6,590	$8,257	$9,928	$13,221	$19,165	$40,363	$8,662
Percent of Total	3.00	4.67	6.81	9.63	12.15	17.48	21.03	15.92	9.31	
Federal Government	1,643	3,477	5,064	6,578	8,263	9,973	13,293	19,145	40,166	8,623
Percent of Total	2.72	4.45.	6.76	9.66	12.22	17.65	21.24	15.98	9.31	
State - Local Government	1,226	2,983	4,733	6,571	8,315	10,100	13,407	19,470	44,685	8,625
Percent of Total	2.03	3.82	6.31	9.65	12.29	17.87	21.42	16.25	10.35	
Western Region, All Governments	$2,065	$3,693	$5,078	$6,910	$8,671	$10,584	$13,655	$19,013	$33,766	$9,715
Percent of Total	2.23	3.07	5.23	8.91	11.45	20.64	21.82	17.77	8.88	
Federal Government	1,779	3,398	4,978	6,659	8,356	10,466	13,528	18,596	33,637	9,497
Percent of Total	1.96	2.89	5.25	8.78	11.28	20.88	22.12	17.78	9.05	
State - Local Government	1,396	2,942	4,908	6,719	8,432	10,819	13,840	19,103	36,633	9,661
Percent of Total	1.51	2.45	5.08	8.71	11.18	21.21	22.23	17.94	9.68	
Urban Sector, West, All Governments	$2,022	$3,589	$4,958	$6,707	$8,370	$10,552	$13,460	$19,010	$34,114	$9,816
Percent of Total	1.93	2.80	4.97	8.04	11.10	20.89	21.47	19.94	8.85	
Federal Government	1,785	3,290	4,862	6,574	8,112	10,252	13,408	18,661	34,228	9,650
Percent of Total	1.74	2.63	4.98	8.05	10.98	20.73	21.84	19.99	9.06	
State - Local Government	1,359	2,904	4,708	6,597	8,244	10,576	13,805	19,262	37,929	9,867
Percent of Total	1.30	2.27	4.71	7.90	10.92	20.91	21.99	20.18	9.82	
Rural Nonfarm Sector, West, All Governments	$1,898	$3,499	$5,290	$6,759	$8,541	$10,688	$13,309	$19,373	$38,531	$8,616
Percent of Total	3.07	3.77	6.42	13.04	11.37	22.56	23.79	8.09	7.89	
Federal Government	1,464	3,324	5,122	6,312	8,118	10,857	13,162	18,877	37,827	8,330
Percent of Total	2.43	3.69	6.39	12.52	11.11	23.57	24.21	8.10	7.97	
State - Local Government	1,145	2,642	5,227	6,493	8,322	11,683	13,469	19,288	40,242	8,538
Percent of Total	1.86	2.86	6.36	12.57	11.11	24.74	24.16	8.08	8.27	
Rural Farm Sector, West, All Governments	$2,499	$5,049	$7,532	$9,882	$11,053	$13,649	$17,282	$25,723	$48,966	$12,858
Percent of Total	3.47	4.08	6.45	7.47	12.13	11.67	16.38	14.45	23.90	
Federal Government	2,397	4,521	6,952	8,795	10,025	12,592	16,071	22,915	45,378	11,820
Percent of Total	3.67	3.97	6.47	7.27	12.01	11.74	16.69	14.03	24.17	
State - Local Government	2,189	3,831	6,579	8,763	9,113	11,254	13,874	19,278	38,672	10,389
Percent of Total	3.77	3.80	6.94	8.21	12.37	11.89	16.32	13.37	23.33	

Sources: Tax Foundation (1967), Maital (1973), and Appendix Tables B.6. a -e.

Table A.8. Distribution of Average Post-fiscal Incomes, by Income Class, United States and Western Region, 1961, Alternative B.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000 $4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
United States, All Governments	$1,592	$3,387	$4,896	$6,407	$8,130	$9,680	$13,435	$19,820	$43,260	$8,663
Percent of Total	2.62	4.32	6.50	9.37	11.97	17.40	21.37	16.47	9.98	
Federal Government	1,532	3,357	4,968	6,530	8,239	9,976	13,386	19,374	41,146	8,623
Percent of Total	2.54	4.30	6.63	9.59	12.18	17.65	21.39	16.17	9.54	
State - Local Government	1,106	2,830	4,601	6,381	8,218	10,051	13,530	19,898	46,618	8,626
Percent of Total	1.82	3.60	6.10	10.04	12.07	17.67	21.48	16.50	10.73	
Western Region, All Governments	$1,794	$3,412	$4,811	$6,546	$8,295	$10,384	$13,656	$19,263	$35,193	$9,565
Percent of Total	1.97	2.88	5.03	8.57	11.12	20.57	22.17	18.29	9.40	
Federal Government	1,652	3,292	4,896	6,587	8,292	10,470	13,597	18,763	34,003	9,485
Percent of Total	1.82	2.80	5.16	8.70	11.21	20.92	22.26	17.96	9.16	
State - Local Government	1,252	2,767	4,653	6,428	8,120	10,615	13,772	19,187	37,695	9,521
Percent of Total	1.38	2.34	4.89	8.46	10.94	21.13	22.46	18.30	10.12	
Urban Sector, West, All Governments	$1,812	$3,300	$4,701	$6,448	$8,037	$10,146	$13,503	$19,383	$36,147	$9,730
Percent of Total	1.75	2.61	4.77	7.83	10.79	20.34	21.82	20.59	9.49	
Federal Government	1,681	3,178	4,786	6,532	8,066	10,259	13,496	18,888	35,029	9,671
Percent of Total	1.64	2.53	4.89	7.98	10.89	20.69	21.93	20.18	9.25	
State-Local Government	1,254	2,726	4,526	6,380	7,957	10,364	13,761	19,408	39,162	9,760
Percent of Total	1.21	2.15	4.58	7.72	10.65	20.72	22.16	20.55	10.25	
Rural Nonfarm Sector, West, All Governments	$1,536	$3,356	$5,012	$6,234	$8,057	$10,503	$13,326	$19,138	$39,613	$8,358
Percent of Total	2.56	3.73	6.27	12.39	11.06	22.85	24.55	8.23	8.36	
Federal Government	1,291	3,263	5,057	6,212	8,056	10,884	13,278	18,819	37,839	8,291
Percent of Total	2.17	3.64	6.34	12.39	11.08	23.74	24.53	8.11	8.01	
State - Local Government	957	2,561	5,014	6,069	7,899	11,471	13,370	19,112	41,313	8,319
Percent of Total	1.59	2.85	6.26	12.05	10.82	24.92	24.60	8.21	8.71	
Rural Farm Sector, West, All Governments	$2,087	$4,485	$6,710	$8,655	$9,903	$12,544	$16,434	$24,150	$47,489	$11,930
Percent of Total	3.13	3.89	6.18	7.05	11.73	11.55	16.86	14.60	24.99	
Federal Government	2,237	4,257	6,567	8,281	9,508	12,032	15,439	21,849	43,140	11,337
Percent of Total	3.61	3.92	6.44	7.19	11.98	11.79	16.85	14.08	24.16	
State - Local Government	1,938	3,532	6,143	8,052	8,483	10,713	13,662	18,779	39,449	10,043
Percent of Total	3.47	3.65	6.71	7.81	11.93	11.71	16.64	13.49	24.63	

Sources: Tax Foundation (1967), Maital (1973), and Appendix Tables B.6. a - e.

APPENDIX B

AGGREGATE ALLOCATIONS OF INCOME, TAXES, AND EXPENDITURES

The following tables were used to derive the tables presented in the text of this study and in Appendix A. The first four tables were taken directly from the U. S. Department of Agriculture (1965) and were used for allocating the net national product, the tax burden, and government expenditure benefits among income classes and between population sectors in the Western Region. The other tables show the aggregate distributions (in millions of dollars) of income, taxes, and expenditures and are presented in greater detail than are the tables found in the text.

Table B.1.a. Allocative Bases for the Western Region by Income Class (dollar amounts in millions).

ITEM	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Money income before taxes	$1,245	$1,860	$3,319	$5,402	$6,763	$12,443	$13,189	$10,723	$5,987	$60,931
Personal taxes	22	76	237	437	582	1,270	1,539	1,418	1,288	6,869
Total current consumption	1,749	1,913	3,351	4,936	5,876	10,712	10,358	7,496	3,030	49,421
Dividends	19	16	54	46	15	122	120	172	200	764
Estate and gift (a)	50	61	80	122	178	332	294	285	211	1,613
Alcoholic beverages	20	27	41	80	114	206	179	155	51	873
Tobacco	26	30	60	92	100	180	158	74	31	751
Telephone and Telegraph	38	34	59	77	89	164	152	110	37	760
Auto purchase	24	32	238	311	338	719	667	552	144	3,025
Auto operation	81	122	294	443	530	978	912	630	190	4,180
Housing expenditures	639	628	954	1,446	1,735	3,030	2,829	1,946	821	14,028
Home owners housing expenditures	116	84	126	226	378	869	853	608	275	3,535
Higher education	22	6	24	26	42	82	93	120	59	474
Military allotments and payments	42	59	105	103	118	137	108	70	70	812
Private pensions	13	40	65	31	12	19	5	40	21	246
Public assistance	248	126	48	59	35	18	5	5		544
Value of farm consumed food	23	10	17	16	24	17	19	13	6	145
Interest	31	61	54	96	94	76	122	141	161	836
Farm money income	54	90	138	150	259	248	360	293	527	2,119
Social insurance contributions	10	28	68	145	180	338	330	277	61	1,437
Social insurance benefits	497	456	394	394	336	294	231	298	20	2,920
Wages and salaries	300	861	2,084	4,204	5,499	10,423	11,061	8,323	2,215	44,970
Personal savings (b)					57		663	760	1,146	2,626
Number of families (c) (000)	918	707	877	1,098	1,124	1,661	1,361	796	224	8,766
Number of full-time earners (000)	88	221	460	782	956	1,666	1,607	1,037	254	7,071
Number of children under 18 (000)	200	424	702	1,537	1,911	2,658	2,178	1,433	336	11,379

a. Derived from "gifts to persons not in family."
b. Based on net change in assets and liabilities in BLS survey for income classes which showed a positive amount of saving.
c. Includes single person units.

Sources: U.S.D.A., Survey of Consumer Expenditures and Income, 1960-61 (1965).

Table B.1.b. Allocative Bases for the Urban Population, Western Region, by Income Class (dollar amounts in millions).

ITEM	Income Class (Money Income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Money income before taxes	$913	$1,412	$2,600	$4,076	$5,502	$10,183	$10,703	$9,698	$4,852	$49,939
Personal taxes	12	61	185	344	494	1,058	1,306	1,311	1,115	5,886
Total current consumption	1,249	1,444	2,641	3,687	4,745	8,846	8,464	6,809	2,527	40,412
Dividends	16	12	32	39	13	35	91	164	113	515
Estate and gift (a)	40	46	48	97	149	273	241	272	146	1,312
Alcoholic beverages	17	23	35	61	107	173	153	144	42	755
Tobacco	19	24	49	66	84	145	133	62	25	607
Telephone and Telegraph	29	28	49	61	73	140	125	102	31	638
Auto purchase	8	26	172	211	245	555	576	506	120	2,419
Auto operation	44	68	222	307	411	773	730	579	162	3,296
Housing expenditures	479	498	780	1,134	1,432	2,547	2,296	1,757	700	11,623
Home owners housing expenditures	86	62	97	169	310	748	688	557	233	2,950
Higher education	17	5	17	18	36	67	81	106	44	391
Military allotments and pay	34	42	84	81	102	119	106	51	18	637
Private pensions	11	28	51	29	10	19	5	38	21	212
Public assistance	149	118	47	34	29	18	5	5		405
Value of farm consumed food										
Interest	25	47	42	86	87	56	99	130	129	701
Farm money income										
Social Insurance contribution	5	23	51	109	151	273	269	252	54	1,187
Social insurance benefits	394	311	322	289	284	244	183	291	16	2,334
Wages and salaries	210	687	1,652	3,175	4,510	8,871	9,285	7,669	1,898	37,957
Personal savings (b)					43		402	616	862	1,923
Number of families (000) (c)	656	537	688	823	910	1,359	1,095	720	178	6,966
Number of full-time earners (000)	22	161	344	576	728	1,359	1,314	936	214	5,654
Number of children under 18 (000)	88	322	550	988	1,456	2,174	1,643	1,224	267	8,712

a. Derived from "gifts to persons not in family."
b. Based on net change in assets and liabilities in BLS survey for income classes which showed a positive amount of saving.
c. Includes single person units.

Sources: Survey of Consumer Expenditures and Income, 1960-61, Supp. 3 - Part A to BLS Report #237-37.

Table B.1.c. Allocative Bases for the Rural Nonfarm Population, Western Region, by Income Class (dollar amounts in millions).

ITEM	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Money income before taxes	$279	$359	$581	$1,181	$1,003	$2,020	$2,126	$732	$608	$8,889
Personal taxes	3	6	39	79	71	199	210	93	117	817
Total current consumption	333	379	544	1,109	934	1,687	1,683	562	354	7,585
Dividends		3	22	1		81	21	1	62	191
Estate and gift (a)	5	13	28	20	24	51	47	9	16	213
Alcoholic beverages	2	4	6	18	6	33	25	10	7	111
Tobacco	5	4	8	25	14	30	24	10	3	123
Telephone and Telegraph	7	5	9	16	13	22	25	7	5	109
Auto purchases	8	1	52	87	82	155	68	44	23	520
Auto operation	23	46	59	123	99	190	163	42	21	766
Housing expenditures	111	108	136	281	246	428	484	159	88	2,041
Home owners housing expenses	18	19	21	49	59	113	151	45	36	511
Higher education			5	5	5	12	10	10	11	58
Military allotments and payments	3	14	20	22	13	18	2	18	37	147
Private pensions	2	10	14	2	2			2		32
Public assistance	98	8		25	6					137
Value of farm consumed food										
Interest	1	10	10	8	4	17	18	1	24	93
Farm money income										
Social insurance contribution	1	3	12	32	24	60	54	21	4	211
Social insurance benefits	83	125	67	97	51	47	37	5		512
Wages and salaries	62	148	352	969	836	1,511	1,708	616	322	6,524
Personal savings (b)	80					49	155	22	50	356
Number of families (000) (c)	205	137	154	245	169	268	227	53	26	1,483
Number of full-time earners (000)		27	77	172	169	268	250	69	18	1,050
Number of children under 18 (000)	52	55	154	441	355	456	409	133	55	2,110

a. Derived from "gifts to persons not in family."
b. Based on net change in assets and liabilities in BLS survey for income classes which showed a positive amount of saving.
c. Includes single person units.

Source: BLS, Consumer Expenditures and Income, Supp. 3 To BLS Report #237-87 (Feb. 1965).

Table B.1.d. Allocative Bases for the Rural Farm Population, Western Region, by Income Class (dollar amounts in millions).

ITEM	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Money income before taxes	$54	$90	$138	$150	$259	$248	$360	$293	$527	$2,119
Personal taxes	7	8	13	15	18	13	23	13	57	167
Total current consumption	166	89	166	146	198	185	211	123	152	1,436
Dividends	3	1		6	2	6	8	6	25	57
Estate and gift (a)	5	1	5	5	5	9	6	5	49	90
Alcoholic beverages	1		1	1	1		1	1	2	8
Tobacco	2	1	3	2	3	2	2	2	3	20
Telephone and Telegraph	3	2	2	1	2	2	2	1	2	17
Auto purchase	8	5	14	13	11	9	23	2	1	86
Auto operation	13	7	14	14	20	16	19	9	7	119
Housing expenditures	48	22	38	33	57	56	49	28	33	364
Home owners housing expenses	11	4	8	8	10	9	13	6	7	76
Higher education	1	1	3	3	1	2	3	4	3	21
Military allotment and payments	4	2	1	1	3				15	26
Private pensions		2								2
Public assistance	1			1						2
Value of farm consumed food	23	10	17	16	24	17	19	13	6	145
Interest	5	4	2	2	3	3	5	10	8	42
Farm money income	54	90	138	150	259	248	360	293	527	2,119
Social insurance contributions	4	2	5	4	5	5	7	4	3	39
Social insurance benefits	20	20	5	8	1	3	11	2		70
Wages and salaries	29	25	80	62	153	46	68	33	9	505
Personal savings (b)					42	38	107	124	230	541
Number of families (000) (c)	57	33	35	31	45	35	39	23	20	318
Number of full-time earners (000)	66	33	39	34	59	39	43	32	22	367
Number of children under 18 (000)	44	30	42	65	104	77	51	74	28	515

a. Derived from "gifts to persons not in family."
b. Based on net change in assets and liabilities in BLS survey for income classes which showed a positive amount of saving.
c. Includes single person units.

Source: USDA, ERS, Consumer Expenditures and Income, 1961 Report #34.

Table B.2.a. Allocation of Net National Product, Income Side, for the Western Region, 1961 (millions of dollars).

ITEM	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
BLS Money income before taxes	$1,245	$1,860	$3,319	$5,402	$6,763	$12,443	$13,189	$10,723	$5,987	$60,931
Plus: "Other labor income"	14	41	100	201	263	499	529	394	106	2,152
Net rent, owner-occupied dwelling	41	30	45	81	135	310	304	217	98	1,261
Services furnished by financial intermediaries	37	72	64	113	111	90	144	166	190	985
Food grown and consumed on farms	17	7	12	12	17	12	14	9	4	105
Food furnished employees	4	10	22	37	45	79	76	49	12	334
Difference between personal taxes in BLS survey and in national income accounts	8	27	84	155	207	452	547	504	458	2,443
Imputed items in personal saving	92	67	100	179	299	687	675	481	218	2,796
Other and unaccounted	40	60	108	175	219	403	428	348	194	1,976
Equals: Personal income	1,498	2,174	3,854	6,355	8,059	14,975	15,906	12,891	7,267	72,983
Less: Transfers to persons	1021	895	877	894	723	888	822	1,030	825	7,971
Social insurance benefits	465	426	368	368	314	275	216	279	19	2,730
Civilian government pensions	19	60	97	46	18	28	7	60	31	366
Veterans benefits	53	75	133	131	150	174	137	89	89	1,030
Relief and other	393	200	76	94	55	29	8	8		862
Net interest paid by government	51	100	89	158	154	125	201	232	265	1,375
Net interest paid by consumer	40	34	114	97	32	257	253	362	421	1,608
Plus: Non-personal taxes	543	592	1,177	1,642	1,788	3,688	3,579	3,015	1,735	(17,758)
Corporate profits tax	113	113	253	302	276	701	682	674	548	3,661
Contributions for social insurance										
Personal contribution	12	34	83	178	221	415	405	340	76	1,764
Employer contribution	74	81	142	210	250	455	440	319	129	2,101
Indirect business taxes	300	327	574	845	1,006	1,834	1,774	1,284	519	8,462
Undistributed corporate profits	44	37	125	107	35	283	278	398	463	1,770
Equals: Net national product	1,020	1,871	4,154	7,103	9,124	17,775	18,663	14,876	8,177	82,770

Sources: Derived from Table 9 and Appendix Table B.1-a.

Table B.2.b. Allocation of Net National Product, Income Side, for the Urban Population, Western Region, 1961 (millions of dollars).

ITEM	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
BLS Money income before taxes	$913	$1,412	$2,600	$4,076	$5,502	$10,183	$10,703	$9,698	$4,852	$49,939
Plus: "Other labor income"	10	33	79	152	216	425	444	367	91	1,817
Net rent, owner-occupied dwelling	31	22	35	60	111	267	245	199	83	1,052
Services furnished by financial intermediaries	29	55	49	101	103	66	117	153	152	826
Food grown and consumed on farms										
Food furnished employees	1	8	16	27	34	64	62	44	10	267
Difference between personal taxes in BLS survey and in national income accounts	4	22	66	122	176	376	464	466	396	2,093
Imputed items in personal saving	68	49	77	134	245	592	544	440	184	2,333
Other and unaccounted	30	46	84	132	179	330	347	315	157	1,620
Equals: Personal income	1,086	1,647	3,006	4,804	6,566	12,303	12,926	11,682	5,925	59,947
Less: Transfers to persons	745	697	713	731	753	816	758	837	363	6,415
Social insurance benefits	368	291	301	270	266	228	171	272	15	2,182
Civilian government pensions	16	42	76	43	15	28	7	56	31	315
Veterans benefits	43	53	107	103	129	151	134	65	23	808
Relief and other	236	187	74	54	46	29	8	8		642
Net interest paid by government	41	77	69	141	143	92	163	214	212	1,153
Net interest paid by consumers	41	47	86	120	154	288	275	222	82	1,315
Plus: Non-personal taxes	396	449	880	1247	1453	2748	2893	2772	1210	14,049
Corporate profits tax	86	85	178	235	224	441	543	628	343	2,762
Contributions for social insurance										
Personal contributions	6	28	63	134	185	335	330	309	66	1,457
Employer contributions	53	61	112	157	202	376	360	289	107	1,718
Indirect business taxes	214	247	453	631	812	1515	1449	1166	432	6,919
Undistributed corporate profits	37	28	74	90	30	81	211	380	262	1,193
Equals: Net national product	737	1,399	3,173	5,320	7,266	14,235	15,061	13,617	6,772	67,581

Sources: Derived from Table 9 and Appendix Table B.1.b.

Table B.2.c. Allocation of Net National Product, Income Side, for the Rural Nonfarm Population, Western Region, 1961 (millions of dollars).

ITEM	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
BLS money income before taxes	$279	$359	$581	$1,181	$1,003	$2,020	$2,126	$732	$608	$8,889
Plus: "Other labor income"	3	7	17	46	40	72	82	29	15	312
Net rent, owner-occupied dwelling	6	7	7	17	21	40	54	16	13	182
Services furnished by financial intermediaries	1	12	12	9	5	20	21	1	28	110
Food grown and consumed on farms										
Food furnished employees		1	4	8	8	13	12	3	1	50
Difference between personal taxes in BLS survey and in national income accounts	1	2	14	28	25	71	75	33	42	290
Imputed items in personal saving	14	15	17	39	47	89	119	36	28	404
Other and unaccounted	9	12	19	38	32	65	69	24	20	288
Equals: Personal income	313	415	671	1,366	1,181	2,390	2,558	874	755	10,525
Less: Transfers to persons	253	191	143	211	114	150	123	51	98	1330
Social insurance benefits	78	117	63	91	48	44	35	5		479
Civilian government pensions	3	15	21	3	3			3		48
Veterans benefits	4	18	25	28	16	23	3	23	47	186
Relief and other	155	13		40	10					217
Net interest paid by government	2	16	16	13	7	28	30	2	39	153
Net interest paid by consumer	11	12	18	36	30	55	55	18	12	247
Plus: Non-personal taxes	86	114	251	326	268	864	589	173	371	3,042
Corporate profits tax	14	22	69	48	39	241	114	25	146	718
Contributions for social insurance										
Personal contributions	1	4	15	39	29	74	66	26	5	259
Employer contributions	14	16	23	47	40	72	72	24	15	323
Indirect business taxes	57	65	93	190	160	289	288	96	61	1,299
Undistributed corporate profits		7	51	2		188	49	2	144	443
Equals: Net national product	146	338	779	1,481	1,335	3,104	3,024	996	1,028	12,237

Sources: Derived from Table 9 and Appendix Table B.1.c.

Table B.2.d. Allocation of Net National Product, Income Side, for the Rural Farm Population, Western Region, 1961 (millions of dollars).

ITEM	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
BLS money income before taxes	$54	$90	$138	$150	$259	$248	$360	$293	$527	$2,119
Plus: "Other labor income"	1	1	4	3	7	2	3	2		24
Net rent, owner-occupied building	4	1	3	3	4	3	5	2	2	27
Services furnished by financial intermediaries	6	5	2	2	3	3	6	12	9	49
Food grown and consumed on farms	17	7	12	12	17	12	14	9	4	105
Food furnished employees	3	2	2	2	3	2	2	1	1	17
Difference between personal taxes in BLS survey and in national income accounts	2	3	5	5	6	5	8	5	20	59
Imputed items in personal saving	9	3	6	6	8	7	10	5	6	60
Other and unaccounted	2	3	4	5	8	8	12	10	17	69
Equals: Personal income	98	115	176	188	315	290	420	339	586	2,529
Less: Transfers to persons	39	35	14	19	16	14	25	23	37	221
Social insurance benefits	19	19	5	8	1	3	10	3		66
Civilian government pensions		3								3
Veterans benefits	5	3	1	1	4				19	33
Relief and other	2			2						3
Net interest paid by government	8	7	3	3	5	5	8	16	13	69
Net interest paid by consumers	5	3	5	5	6	6	7	4	5	47
Plus: Non-personal taxes	60	29	48	69	65	81	99	63	153	667
Corporate profits tax	13	6	7	19	12	21	26	18	59	180
Contributions for social insurance										
Personal contributions	5	2	6	5	6	6	9	5	4	48
Employer contributions	7	4	7	6	8	8	9	5	6	61
Indirect business taxes	28	15	28	25	34	32	36	21	26	246
Undistributed corporate profits	7	2		14	5	14	19	14	58	132
Equals: Net national product	119	109	210	238	364	357	494	379	702	2,975

Sources: Derived from Table 9 and Appendix Table B.1.d.

Table B.3.a. Allocation of Tax Burden by Income Class, Western Region, 1961 (millions of dollars).

TAX	Income Class (Money income after personal taxes) Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal, Total	$256	$352	$831	$1,312	$1,569	$3,298	$3,506	$3,094	$2,568	$16,730
Individual Income	24	84	262	483	643	1,404	1,701	1,567	1,423	7,591
Corporate Income	106	107	238	284	259	660	642	634	515	3,444
Half on consumption	68	75	131	193	229	418	404	293	118	1,929
Half on dividends	38	32	107	91	30	242	238	341	397	1,515
Estate and gifts									348	348
Excises, customs, other	68	80	168	259	319	588	536	398	135	2,549
Alcoholic beverages	15	21	31	61	88	158	137	119	39	670
Tobacco	11	12	24	37	41	73	64	30	13	305
Telephone and Telegraph	7	6	11	14	17	31	28	21	7	142
Auto purchase	3	4	28	37	42	85	78	65	17	356
Auto operation	9	13	31	47	56	104	97	67	20	444
Other taxes	20	21	38	55	66	120	116	84	34	554
Nontax receipts	3	3	5	8	9	17	16	12	5	78
Social insurance	58	81	163	286	348	646	627	495	147	2,848
Personal contributions	11	29	72	153	189	356	347	292	65	1,512
Employer contributions	47	52	91	133	159	290	280	203	82	1,336
State and Local, Total	$300	$331	$607	$906	$1,080	$1,994	$1,925	$1,424	$738	$9,306
Individual Income	2	5	17	31	42	91	110	102	92	492
Corporate Income										382
Half on consumption	7	7	13	19	23	41	40	29	12	191
Half on dividends	5	4	14	11	4	31	30	43	50	191
Gifts and Inheritances									101	101
Sales, excise and other										3,730
Alcoholic beverages	2	3	5	9	13	23	20	17	6	97
Tobacco	4	4	9	13	15	26	23	11	5	109
Auto purchase	1	1	8	11	12	25	23	19	5	105
Auto operation	18	27	66	99	118	218	203	140	42	932
General sales	39	43	75	111	132	241	233	169	68	1,113
Other taxes	28	31	54	80	95	173	167	121	49	799
Nontax receipts	20	22	39	57	68	125	121	87	35	575
Property tax										3,584
Half on consumption	63	69	121	179	213	388	376	272	110	1,792
Half on housing expenditures	82	80	122	185	222	387	361	249	105	1,792
Social insurance										1,017
Personal contribution	2	5	12	25	32	59	58	49	11	252
Employer contribution	27	30	52	76	91	166	160	116	47	765
All governments, Total	$556	$683	$1,438	$2,218	$2,649	$5,292	$5,431	$4,518	$3,306	$26,086

Sources: Derived from Table 11 and Appendix Table B.1.a.

Table B.3.b. Allocation of Tax Burden by Income Class, Urban Population, Western Region, 1961 (millions of dollars).

TAX	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal, Total	$181	$272	$630	$1,006	$1,308	$2,588	$2,914	$2,852	$2,073	$13,825
Individual Income	13	68	204	380	546	1,169	1,443	1,449	1,232	6,505
Corporate Income	81	80	167	221	211	415	511	592	323	2,600
Half on consumption	49	56	103	144	185	345	330	266	99	1,577
Half on dividends	32	24	64	77	26	70	181	326	224	1,023
Estate and gift									282	282
Excises, customs, other	48	61	134	190	264	478	448	362	111	2,097
Alcoholic beverages	13	18	27	47	82	133	117	110	32	579
Tobacco	8	10	20	27	34	59	54	25	10	247
Telephone and Telegraph	5	5	9	11	14	26	23	19	6	119
Auto purchase	1	3	20	25	29	65	68	60	14	285
Auto operation	5	7	24	33	44	82	78	61	17	350
Other taxes	14	16	30	41	53	99	95	76	28	453
Nontax receipts	2	2	4	6	8	14	13	11	4	64
Social insurance	39	63	125	215	287	526	512	449	125	2,341
Personal contributions	5	24	54	115	159	287	283	265	57	1,249
Employer contributions	34	39	71	100	128	239	229	184	68	1,092
State and Local, Total	$214	$249	$478	$682	$874	$1,626	$1,573	$1,296	$605	$7,597
Individual Income	1	4	13	25	35	76	94	94	80	422
Corporate Income	9	9	18	24	21	43	56	67	38	285
Half on consumption	5	6	10	14	18	34	33	26	10	156
Half on dividends	4	3	8	10	3	9	23	41	28	129
Gifts and Inheritances									82	82
Sales, excises and other										
Alcoholic beverages	2	3	4	7	12	19	17	16	5	84
Tobacco	3	3	7	10	12	21	19	9	4	88
Auto purchase		1	6	7	9	19	20	18	4	84
Auto operation	10	15	50	68	92	172	163	129	36	735
General sales	28	32	60	83	107	199	191	153	57	910
Other taxes	20	23	43	60	77	143	137	110	41	653
Nontax receipts	15	17	31	43	55	103	98	79	29	470
Property tax										
Half on consumption	45	52	96	134	172	321	307	247	92	1,465
Half on housing expenditures	61	64	100	145	183	325	293	225	89	1,485
Social Insurance										
Personal contributions	1	4	9	19	26	48	47	44	9	208
Employer contributions	19	22	41	57	73	137	131	105	39	626
All Governments, Total	$395	$521	$1,108	$1,688	$2,182	$4,214	$4,487	$4,148	$2,678	$21,422

Sources: Derived from Table 11 and Appendix Table B.1.b.

Table B.3.c. Allocation of Tax Burden by Income Class, Rural Nonfarm Population, Western Region, 1961 (millions of dollars).

TAX	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal, Total	$39	$57	$165	$260	$208	$657	$523	$193	$332	$2,434
Individual income	3	7	43	87	78	220	232	103	129	903
Corporate income	13	21	65	45	36	227	108	24	137	675
Half on consumption	13	15	21	43	36	66	66	22	14	296
Half on dividends		6	44	2		161	42	2	123	379
Estate and gift									35	35
Excises, customs and other	13	16	29	64	44	101	81	29	17	394
Alcoholic beverages	2	3	5	14	5	25	19	8	5	85
Tobacco	2	2	3	10	6	12	10	4	1	50
Telephone and Telegraph	1	1	2	3	2	4	5	1	1	20
Auto purchase	1		6	10	10	18	8	5	3	61
Auto operation	2	5	6	13	10	20	17	4	2	81
Other taxes	4	4	6	12	10	19	19	6	4	85
Nontax receipts	1	1	1	2	1	3	3	1	1	12
Social insurance	10	13	28	64	50	109	102	37	14	427
Personal contribution	1	3	13	34	25	63	57	22	4	222
Employer contribution	9	10	15	30	25	46	45	15	10	205
State and Local, Total	$55	$67	$102	$201	$167	$333	$314	$104	$91	$1,437
Individual Income			3	6	5	14	15	7	8	58
Corporate Income	1	2	8	4	4	26	11	2	17	67
Half on consumption	1.	1	2	4	4	6	6	2	1	29
Half on dividends		1	6			20	5		16	48
Gifts and Inheritances									11	11
Sales, excises and othe										
Alcoholic Beverages			1	2	1	4	3	1	1	12
Tobacco	1	1	1	4	2	4	4	1		18
Auto purchase			2	3	3	5	2	2	1	18
Auto operation	5	10	13	27	22	42	36	9	5	171
General sales	8	9	12	25	21	38	38	13	8	171
Other taxes	5	6	9	18	15	27	27	9	6	123
Nontax receipts	4	4	6	13	11	20	20	7	4	88
Property tax										
Half on consumption	12	14	20	40	34	61	61	20	13	275
Half on housing expenditures	14	14	17	36	31	55	62	20	11	261
Social Insurance										
Personal contributions		1	2	6	4	11	9	4	1	37
Employer contributions	5	6	8	17	14	26	26	9	5	117
All governments, Total	$94	$124	$267	$461	$375	$990	$837	$297	$423	$3,871

Sources: Derived from Table 11 and Appendix Table B.1.c.

Table B.3.d. Allocation of Tax Burden by Income Class, Rural Farm Population, Western Region, 1961 (millions of dollars).

TAX	Income Class (Money income after personal taxes) Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal, Total	$36	$21	$38	$51	$49	$49	$71	$42	$163	$522
Individual Income	8	9	14	17	20	14	25	14	63	184
Corporate Income	12	5	6	18	12	19	24	17	56	169
Half on consumption	6	3	6	6	8	7	8	5	6	56
Half on dividends	6	2		12	4	12	16	12	50	113
Estate and gift									31	31
Excises, customs and other	7	3	8	8	7	6	9	4	6	58
Alcoholic Beverages	1		1	1	1		1	1	2	6
Tobacco	1		1	1	1	1	1	1	1	8
Telephone and Telegraph	1									3
Auto purchase	1	1	2	2	1	1	3			10
Auto operation	1	1	2	2	2	2	2	1	1	13
Other taxes	2	1	2	2	2	2	2	1	2	16
Nontax receipts										2
Social Insurance	9	4	10	8	10	10	13	7	7	80
Personal contributions	4	2	5	4	5	5	7	4	3	41
Employer contributions	5	2	5	4	5	5	6	3	4	39
State and Local, Total	$31	$14	$24	$25	$34	$34	$38	$22	$42	$274
Individual Income	1	1	1	1	1	1	2	1	4	12
Corporate Income	2		1	2	1	2	3	2	7	20
Half on consumption	1		1	1	1	1	1	1	1	6
Half on dividends	1			1		1	2	1	6	14
Gifts and Inheritances									9	9
Sales, excises and other										
Alcoholic Beverages										1
Tobacco										3
Auto Purchase							1			3
Auto Operation	3	2	3	3	5	4	4	2	2	27
General Sales	4	2	4	3	4	4	5	3	3	32
Other taxes	3	1	3	2	3	3	3	2	2	23
Nontax receipts	2	1	2	2	2	2	2	1	2	17
Property tax										
Half on consumption	6	3	6	5	7	7	8	4	6	52
Half on housing expenditures	6	3	5	4	7	7	6	4	4	46
Social Insurance										
Personal Contributions	1		1	1	1	1	1	1	1	7
Employer contributions	3	1	3	2	3	3	3	2	2	22
All governments, Total	$67	$35	$62	$76	$83	$83	$109	$64	$205	$796

Sources: Derived from Table 11 and Appendix Table B.1.d.

Table B.4.a. Allocation of Expenditure Benefits by Income Class, Western Region, 1961, Alternative A (millions of dollars).

ITEM	Income Class (Money income after personal taxes) Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal Expenditures										
General benefit	$118	$209	$407	$787	$1,108	$2,162	$2,520	$2,321	$1,420	$11,052
National defense and international affairs										
Other general benefit										
Specific benefit	$752	$675	$636	$734	$729	$747	$734	$700	$506	$6,208
Elementary and secondary education	1	2	3	7	9	12	10	6	2	51
Higher education	2		2	2	3	6	7	9	4	34
Public assistance and other welfare	259	132	50	62	37	19	5	5		568
Labor	1	2	5	9	12	23	25	18	5	100
Veterans benefits	59	83	148	145	166	192	152	98	98	1,141
Highways										
Half on auto operation	5	8	18	28	33	61	57	39	12	262
Half on total current consumption	9	9	16	24	29	53	51	37	15	243
Agriculture	13	22	33	36	63	60	87	71	128	513
Net interest	44	87	76	136	134	108	173	201	228	1,184
Social insurance benefits	359	330	285	285	243	213	167	216	14	2,112
State - Local Expenditures										
General benefit	$34	$61	$119	$230	$323	$630	$735	$677	$414	$3,222
Specific benefit	$528	$479	$575	$951	$1,112	$1,559	$1,362	$1,078	$353	$7,999
Elementary and secondary education	77	162	268	588	730	1,016	833	548	128	4,350
Higher education	42	12	46	50	80	157	178	230	113	908
Public assistance and other welfare	209	106	40	50	30	15	4	4		459
Streets and highways										
Half on auto operation	11	16	39	59	70	130	121	84	25	555
Half on total current consumption	20	21	38	55	66	120	116	84	34	555
Agriculture	3	5	8	9	15	14	21	17	31	123
Net interest	2	5	4	8	8	6	10	11	13	67
Social insurance benefits	163	150	129	129	110	97	76	98	7	959
Labor										2
Veterans benefits	1	2	3	3	3	4	3	2	2	21
Total Specific Benefits	$1,280	$1,154	$1,211	$1,685	$1,841	$2,306	$2,096	$1,778	$859	$14,207
Total General Benefits	$152	$270	$526	$1,017	$1,431	$2,792	$3,255	$2,998	$1,834	$14,274

Sources: Derived from Table 13 and Appendix Table B.1.a.

Table B.4.b. Allocation of Expenditure Benefits by Income Class, Urban Population, Western Region, 1961, Alternative A (millions of dollars).

ITEM	Income Class (Money income after personal taxes) Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal Expenditures										
General benefit	$82	$152	$309	$566	$854	$1,715	$1,988	$2,099	$1,144	$8,908
National defense and international affairs										
Other general benefit										
Specific benefit	$534	$488	$493	$530	$570	$569	$548	$571	$250	$4,556
Elementary and secondary education		1	2	4	7	10	7	5	1	39
Higher education	1		1	1	3	5	6	8	3	28
Public assistance and other welfare	156	123	49	36	30	19	5	5		423
Labor		2	4	7	10	20	21	17	4	84
Veterans benefits	48	59	118	114	143	167	149	72	25	895
Highways										
Half on auto operation	3	4	14	19	26	49	46	36	10	207
Half on total current consumption	6	7	13	18	23	44	42	34	12	199
Agriculture										
Net interest	35	67	59	122	123	79	140	184	183	993
Social insurance benefits	285	225	233	209	205	176	132	210	12	1,688
State - Local Expenditures										
General benefit	$24	$44	$90	$165	$249	$500	$580	$612	$333	$2,597
Specific benefit	$345	$365	$454	$627	$860	$1,263	$1,050	$935	$251	$6,154
Elementary and secondary education	34	123	210	378	556	831	628	468	102	3,330
Higher education	33	10	33	34	69	128	155	203	84	749
Public assistance and other welfare	126	100	40	29	24	15	4	4		342
Streets and highways										
Half on auto operation	6	9	30	41	55	103	97	77	22	438
Half on total current consumption	14	16	30	41	53	99	95	76	28	454
Agriculture										
Net interest	2	4	3	7	7	4	8	10	10	56
Social insurance benefits	129	102	106	95	93	80	60	96	5	767
Labor										2
Veterans benefits	1	1	2	2	3	3	3	1		16
Total Specific Benefits	$879	$853	$947	$1,157	$1,430	$1,832	$1,598	$1,506	$501	$10,710
Total General Benefits	$106	$197	$399	$731	$1,103	$2,215	$2,568	$2,712	$1,477	$11,505

Sources: Derived from Table 13 and Appendix Table B.1.b.

Table B.4.c. Allocation of Expenditure Benefits by Income Class, Rural Nonfarm Population, Western Region, 1961, Alternative A (millions of dollars).

ITEM	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal Expenditures										
General Benefit	$23	$37	$76	$170	$163	$353	$406	$159	$197	$1,584
National defense and international affairs										
Other general benefit										
Specific benefit	$170	$137	$99	$155	$82	$109	$81	$39	$91	$965
Elementary and secondary education			1	2	2	2	2	1		9
Higher education						1	1	1	1	4
Public assistance and other welfare	102	8		26	6					143
Labor			1	2	2	3	4	1	1	15
Veterans benefits	4	20	28	31	18	25	3	25	52	207
Highways										
Half on auto operation	1	3	4	8	6	12	10	3	1	48
Half on total current consumption	2	2	3	5	5	8	8	3	2	37
Agriculture										
Net interest	1	14	14	11	6	24	26	1	34	132
Social insurance benefits	60	90	48	70	37	34	27	4		370
State - Local Expenditures										
General benefit	$7	$11	$22	$50	$48	$103	$118	$46	$57	$462
Specific benefit	$137	$80	$106	$261	$191	$257	$229	$84	$52	$1,399
Elementary and secondary education	20	21	59	168	136	174	156	51	21	806
Higher education			10	10	10	23	19	19	21	111
Public assistance and other welfare	83	7		21	5					116
Streets and highways										
Half on auto operation	3	6	8	16	13	25	22	6	3	102
Half on total current consumption	4	4	6	12	10	19	19	6	4	85
Agriculture										
Net interest		1	1	1		1	1		2	7
Social insurance benefits	27	41	22	32	17	15	12	2		168
Labor										
Veterans benefits			1	1					1	4
Total Specific Benefits	$307	$217	$205	$416	$273	$366	$310	$123	$143	$2,364
Total General Benefits	$30	$48	$98	$220	$211	$456	$524	$205	$254	$2,046

Sources: Derived from Table 13 and Appendix Table B.1.c.

Table B.4.d. Allocation of Expenditure Benefits by Income Class, Rural Farm Population, Western Region, 1961, Alternative A (millions of dollars).

ITEM	Income Class (Money income after personal taxes) Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal Expenditures										
General Benefit	$10	$15	$28	$37	$62	$65	$100	$101	$208	$625
National defense and international affairs										
Other general benefit										
Specific Benefit	$44	$46	$43	$49	$74	$68	$104	$89	$161	$681
Elementary and secondary education										2
Higher education										2
Public assistance and other welfare	1			1						2
Labor										1
Veterans benefits	6	3	1	1	4				21	37
Highways										
Half on auto operation	1		1	1	1	1	1	1		7
Half on total current consumption	1		1	1	1	1	1	1	1	7
Agriculture	13	22	33	36	63	60	87	71	128	513
Net interest	7	6	3	3	4	4	7	14	11	59
Social insurance benefits	15	15	4	6	1	2	8	2		51
State - Local Expenditures										
General Benefit	$3	$4	$8	$11	$18	$19	$29	$29	$60	$182
Specific Benefit	$34	$27	$36	$48	$62	$52	$56	$57	$53	$421
Elementary and secondary education	17	11	16	25	40	29	20	28	11	197
Higher education	2	2	6	6	2	4	6	8	6	40
Public assistance and other welfare	1			1						2
Streets and highways										
Half on auto operation	2	1	2	2	3	2	3	1	1	16
Half on total current consumption	2	1	2	2	2	2	2	1	2	16
Agriculture	3	5	8	9	15	14	21	17	31	123
Net interest								1	1	3
Social insurance benefits	7	7	2	3		1	4	1		23
Labor										
Veterans benefits									1	1
Total Specific Benefits	$78	$73	$79	$97	$136	$120	$160	$146	$214	$1,102
Total General Benefits	$13	$19	$36	$48	$80	$84	$129	$130	$268	$807

Sources: Derived from Table 13 and Appendix Table B.1.d.

Table B.5.a. Allocation of Expenditure Benefits by Income Class, Western Region, 1961, Alternative B (millions of dollars).

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal Government										
General benefits, total	$110	$211	$424	$814	$1,154	$2,318	$2,752	$2,552	$1,588	$11,924
Specific benefits, total	$643	$597	$546	$628	$611	$598	$596	$602	$420	$5,236
Elementary and secondary education		1	1	2	3	4	3	2		15
Higher education	1		1	1	2	3	3	4	2	17
Public assistance and other welfare	181	92	35	43	26	13	4	4		398
Labor	1	2	5	9	12	23	25	18	5	100
Veterans benefits	41	58	103	101	116	135	106	69	69	799
Highways										
Half on auto operation	3	4	9	14	17	31	29	20	6	131
Half on current consumption	4	5	8	12	14	26	25	18	7	121
Agriculture	9	15	23	25	44	42	61	50	89	359
Net interest	44	87	76	136	134	108	173	201	228	1,184
Social insurance benefits	359	330	285	285	243	213	167	216	14	2,112
State - Local Government										
General benefits, total	$58	$110	$221	$425	$602	$1,210	$1,437	$1,332	$829	$6,225
Specific benefits, total	$372	$306	$312	$436	$481	$639	$567	$489	$176	$3,781
Elementary and secondary education	23	49	81	176	219	305	250	164	38	1,305
Higher education	21	6	23	25	40	79	89	115	57	454
Public assistance and other welfare	146	74	28	35	21	11	3	3		321
Streets and highways										
Half on auto operation	5	8	19	29	35	65	60	42	13	277
Half on current consumption	10	11	19	28	33	60	58	42	17	278
Agriculture	1	2	3	3	6	5	8	7	12	47
Net interest	2	5	8	9	15	14	21	17	31	123
Social insurance benefits	163	150	129	129	110	97	76	98	7	959
Labor										2
Veterans benefits	1	1	2	2	2	3	2	1	1	15
Total Specific Benefits	$1,015	$903	$858	$1,064	$1,092	$1,237	$1,163	$1,091	$596	$9,017
Total General Benefits	$168	$321	$645	$1,239	$1,756	$3,528	$4,189	$3,884	$2,417	$18,149

Sources: Derived from Table 14 and Appendix Table B.1.a.

Table B.5.b. Allocation of Expenditure Benefits by Income Class, Urban Population, Western Region, 1961, Alternative B (millions of dollars).

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal Government										
General benefits, total	$80	$153	$322	$597	$895	$1,838	$2,181	$2,328	$1,306	$9,700
Specific benefits, total	$467	$427	$428	$464	$487	$456	$450	$506	$230	$3,915
Elementary and secondary education			1	1	2	3	2	2		11
Higher education	1		1	1	1	2	3	4	2	14
Public assistance and other welfare	109	86	34	25	21	13	4	4		296
Labor		2	4	7	10	20	21	17	4	84
Veterans benefits	33	41	83	80	100	117	104	50	18	627
Highways										
Half on auto operation	1	2	7	10	13	24	23	18	5	103
Half on current consumption	3	4	6	9	12	22	21	17	6	99
Agriculture										
Net interest	35	67	59	122	123	79	140	184	183	993
Social insurance benefits	285	225	233	209	205	176	132	210	12	1,688
State - Local Government										
General benefits, total	$42	$80	$168	$312	$467	$959	$1,139	$1,215	$682	$5,064
Specific benefits, total	$258	$234	$251	$301	$381	$515	$442	$437	$122	$2,942
Elementary and secondary education	10	37	63	113	167	249	188	140	31	999
Higher education	16	5	16	17	35	64	78	102	42	375
Public assistance and other welfare	88	70	28	20	17	11	3	3		239
Streets and highways										
Half on auto operation	3	4	15	20	27	51	48	38	11	218
Half on current consumption	7	8	15	21	27	50	48	38	14	227
Agriculture										
Net interest	4	7	6	13	13	8	15	19	19	103
Social insurance benefits	129	102	106	95	93	80	60	96	5	767
Labor										2
Veterans benefits	1	1	2	2	2	2	2	1		12
Total Specific Benefits	$725	$661	$679	$765	$868	$971	$892	$943	$352	$6,857
Total General Benefits	$122	$233	$490	$909	$1,362	$2,797	$3,320	$3,543	$1,988	$14,764

Sources: Derived from Table 14 and Appendix Table B.1.b.

Table B.5.c. Allocation of Expenditure Benefits by Income Class, Rural Nonfarm Population, Western Region, 1961, Alternative B (millions of dollars).

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal Government										
General benefits, total	$20	$40	$79	$170	$167	$380	$444	$168	$215	$1,682
Specific benefits, total	$138	$126	$86	$131	$68	$90	$69	$26	$73	$810
Elementary and secondary education				1	1	1	1			3
Higher education										2
Public assistance and other welfare	72	6		18	4					100
Labor			1	2	2	3	4	1	1	15
Veterans benefits	3	14	20	22	13	18	2	18	36	145
Highways										
Half on auto operation	1	1	2	4	3	6	5	1	1	24
Half on current consumption	1	1	1	3	2	4	4	1	1	19
Agriculture										
Net interest	1	14	14	11	6	24	26	1	34	132
Social insurance benefits	60	90	48	70	37	34	27	4		370
State - Local Government										
General benefits, total	$10	$21	$41	$89	$87	$198	$232	$88	$112	$878
Specific benefits, total	$95	$59	$54	$118	$80	$105	$93	$33	$25	$658
Elementary and secondary education	6	6	18	51	41	52	47	15	6	242
Higher education			5	5	5	12	10	10	11	56
Public assistance and other welfare	58	5		15	4					81
Streets and highways										
Half on auto operation	2	3	4	8	7	13	11	3	1	51
Half on current consumption	2	2	3	6	5	10	10	3	2	43
Agriculture										
Net interest		2	2	1	1	3	3		4	14
Social insurance benefits	27	41	22	32	17	15	12	2		168
Labor										
Veterans benefits									1	3
Total Specific Benefits	$233	$185	$140	$249	$148	$195	$162	$59	$98	$1,468
Total General Benefits	$30	$61	$120	$259	$254	$578	$676	$256	$327	$2,560

Sources: Derived from Table 14 and Appendix Table B.1.c.

Table B.5.d. Allocation of Expenditure Benefits by Income Class, Rural Farm Population, Western Region, 1961, Alternative B (millions of dollars).

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Total
Federal Government										
General benefits, total	$9	$14	$27	$34	$59	$63	$101	$100	$209	$615
Specific benefits, total	$36	$38	$31	$36	$54	$50	$78	$66	$115	$507
Elementary and secondary education										1
Higher education										1
Public assistance and other welfare	1			1						1
Labor										1
Veterans benefits	4	2	1	1	3				15	26
Highways										
Half on auto operation					1	1	1			4
Half on current consumption					1	1	1			4
Agriculture	9	15	23	25	44	42	61	50	89	359
Net interest	7	6	3	3	4	4	7	14	11	59
Social insurance benefits	15	15	4	6	1	2	8	2		51
State - Local Government										
General benefits, total	$4	$8	$14	$18	$31	$33	$53	$52	$109	$321
Specific benefits, total	$18	$14	$15	$19	$21	$19	$24	$23	$20	$172
Elementary and secondary education	5	3	5	7	12	9	6	8	3	59
Higher education	1	1	3	3	1	2	3	4	3	20
Public assistance and other welfare	1			1						1
Streets and highways										
Half on auto operation	1		1	1	1	1	1	1		8
Half on current consumption	1		1	1	1	1	1	1	1	8
Agriculture	1	2	3	3	6	5	8	7	12	47
Net interest	1	1					1	1	1	6
Social insurance benefits	7	7	2	3		1	4	1		23
Labor										
Veterans benefits										
Total Specific Benefits	$54	$52	$46	$55	$75	$69	$102	$89	$135	$679
Total General Benefits	$13	$22	$41	$52	$90	$96	$154	$152	$318	$936

Sources: Derived from Table 14 and Appendix Table B.1.d.

Table B.6.a. Taxes, Benefits, Redistributive Taxes, and Post-fiscal Incomes by Income Class, United States, 1961.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
Number of families (000)	7,860	6,077	6,334	6,972	7,018	8,399	7,585	3,962	1,100	
Initial Income per family	1,046	2,801	4,674	6,561	8,328	10,148	13,482	19,453	44,500	8,586
Disposable Income	570	1,871	3,203	4,638	5,921	7,200	9,660	13,705	27,170	5,971
All Governments, A										
Taxes per family	476	930	1,471	1,923	2,407	2,948	3,822	5,748	17,330	2,615
Disposable income per family	570	1,871	3,203	4,638	5,921	7,200	9,660	13,705	27,190	5,971
Specific benefits and transfers	1,115	1,414	1,315	1,085	1,143	1,190	1,274	1,652	2,801	1,274
Taxes minus specific benefits equals "net" taxes	-639	-484	156	838	1,264	1,758	2,548	4,096	14,529	1,341
Imputed benefits from public good	138	377	607	867	1,188	1,538	2,287	3,808	10,392	1,417
Net taxes less imputed benefits equals redistributive taxes	-777	-861	-451	-29	71	220	261	288	4,137	-76
Post-fiscal income	$1,823	$3,662	$5,125	$6,590	$8,257	$9,928	$13,221	$19,165	$40,363	$8,662
Federal Governments, A										
Federal taxes per family	224	500	869	1,179	1,509	1,892	2,539	4,064	14,031	1,732
Disposable income per family	822	2,301	3,805	5,382	6,819	8,256	10,943	15,389	30,489	6,854
Specific benefits and transfers	714	884	789	525	524	526	579	808	1,651	672
Taxes minus specific benefits equals "net" taxes	-490	-384	80	654	985	1,366	1,960	3,256	12,380	1,060
Imputed benefits from public good	107	292	470	671	920	1,191	1,771	2,948	8,046	1,097
Net taxes less imputed benefits equals redistributive taxes	-597	-676	-390	-17	65	175	189	308	4,334	-37
Post-fiscal income	$1,643	$3,477	$5,064	$6,578	$8,263	$9,973	$12,293	$19,145	$40,166	$8,623
State - Local Governments, A										
State - Local taxes per family	252	431	602	745	899	1,057	1,284	1,685	3,298	883
Disposable income per family	794	2,370	4,072	5,816	7,429	9,091	12,198	17,768	41,222	7,703
Specific benefits and transfers	401	528	524	559	618	662	693	842	1,137	602
Taxes minus specific benefits equals "net" taxes	-149	-97	78	186	281	395	591	843	2,161	281
Imputed benefits from public good	31	85	137	196	268	347	516	860	2,346	320
Net taxes less imputed benefits equals redistributive taxes	-180	-182	-59	-10	13	48	75	-17	-185	-39
Post-fiscal income	$1,226	$2,983	$4,733	$6,571	$8,315	$10,100	$13,407	$19,470	$44,685	$8,625

Table B.6.a. (continued)

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
All Governments, B										
Taxes per family	476	930	1,471	1,923	2,407	2,948	3,822	5,748	17,330	2,615
Disposable income per family	570	1,871	3,203	4,638	5,921	7,200	9,660	13,705	27,190	5,971
Specific benefits and transfers	888	1,099	970	692	708	715	783	1,071	2,004	868
Taxes minus specific benefits equals "net" taxes	-412	-169	501	1,231	1,699	2,233	3,039	4,677	15,326	1,747
Imputed benefits from public good	134	417	722	1,077	1,501	1,965	2,992	5,044	14,086	1,824
Net taxes less imputed benefits equals redistributive taxes	-546	-589	-221	154	198	268	47	-367	1,240	-77
Post-fiscal income	$1,592	$3,387	$4,896	$6,407	$8,130	$9,880	$13,435	$19,820	$43,260	$8,663
Federal Governments, B										
Federal taxes per family	224	500	869	1,179	1,509	1,892	2,539	4,064	14,031	1,732
Disposable income per family	822	2,301	3,805	5,382	6,819	8,256	10,943	15,389	30,489	6,854
Specific benefits and transfers	622	782	689	440	434	429	477	671	1,422	571
Taxes minus specific benefits equals "net" taxes	-398	-282	180	739	1,075	1,463	2,062	3,393	12,609	1,161
Imputed benefits from public good	88	274	474	708	986	1,291	1,966	3,314	9,255	1,198
Net taxes less imputed benefits equals redistributive taxes	-486	-556	-294	31	89	172	96	79	3,354	-37
Post-fiscal income	$1,532	$3,357	$4,968	$6,530	$8,239	$9,976	$13,386	$19,374	$41,146	$8,623
State - Local Governments, B										
State - Local taxes per family	252	431	602	745	899	1,057	1,284	1,685	3,298	883
Disposable income per family	794	2,370	4,072	5,816	7,429	9,091	12,198	17,768	41,222	7,703
Specific benefits and transfers	266	317	281	252	274	286	306	400	585	297
Taxes minus specific benefits equals "net" taxes	-14	114	321	49	625	771	978	1,285	2,713	586
Imputed benefits from public good	46	143	248	369	515	674	1,026	1,730	4,831	626
Net taxes less imputed benefits equals redistributive taxes	-60	-29	73	-320	110	97	-48	-445	-2,118	-40
Post-fiscal income	$1,106	$2,830	$4,601	$6,881	$8,218	$10,051	$13,530	$19,898	$46,618	$8,626

Sources: Tax Foundation (1967) and Maital (1973).

Table B.6.b. Taxes, Benefits, Redistributive Taxes, and Post-fiscal Incomes by Income Class, Western Region, 1961.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
Number of families (000)	918	707	877	1,098	1,124	1,661	1,361	796	224	
Initial income per family	$1,111	$2,646	$4,737	$6,469	$8,117	$10,701	$13,713	$18,688	$36,504	$9,442
Total taxes per family	606	966	1,640	2,020	2,357	3,186	3,990	5,676	14,759	2,976
Disposable income per family	505	1,680	3,097	4,449	5,760	7,515	9,723	13,012	21,745	6,466
All Governments, A										
Specific benefits and transfers	1,394	1,632	1,381	1,535	1,638	1,388	1,540	2,234	3,835	1,621
Taxes minus specific benefits equals "net" taxes	-788	-666	259	485	719	1,798	2,450	3,442	10,924	1,355
Imputed benefits from public good	166	381	600	926	1,273	1,681	2,392	3,767	8,186	1,628
Net taxes less imputed benefits equals redistributive taxes	-954	-1,047	-341	-441	-554	117	58	325	2,738	-273
Post-fiscal income	$2,065	$3,693	$5,078	$6,910	$8,671	$10,584	$13,655	$19,013	$33,766	$9,715
Federal Government, A										
Federal taxes per family	279	498	948	1,195	1,396	1,986	2,576	3,887	11,464	1,914
Specific benefits and transfers	819	955	725	668	649	450	539	879	2,259	708
Taxes minus specific benefits equals "net" taxes	-540	-457	223	527	747	1,536	2,037	3,008	9,205	1,206
Imputed benefits from public goods	128	295	464	717	986	1,301	1,852	2,916	6,338	1,261
Net taxes less imputed benefits equals redistributive taxes	-668	-752	-241	-190	-239	235	185	92	2,867	-55
Post-fiscal income	$1,779	$3,398	$4,978	$6,659	$8,356	$10,466	$13,528	$18,596	$33,637	$9,497
State - Local Government, A										
State - Local taxes per family	327	468	692	825	961	1,200	1,414	1,789	3,295	1,062
Specific benefits and transfers	575	678	656	866	989	939	1,001	1,354	1,576	913
Taxes minus specific benefits equals "net" taxes	-248	-210	36	-41	-28	261	413	435	1,719	149
Imputed benefits from public goods	37	86	135	209	287	379	540	850	1,848	368
Net taxes less imputed benefits equals redistributive taxes	-285	-296	-171	-250	-315	-118	-127	-415	-129	-219
Post-fiscal income	$1,396	$2,942	$4,908	$6,719	$8,432	$10,819	$13,840	$19,103	$36,633	$9,661

Table B.6.b. (continued)

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
All Governments, B										
Specific benefits and transfers	1,106	1,277	978	969	972	745	855	1,371	2,661	1,029
Taxes minus specific benefits equals "net" taxes	-500	-311	662	1,051	1,385	2,441	3,135	4,305	12,098	1,947
Imputed benefits from public good	183	455	736	1,128	1,563	2,124	3,078	4,880	10,787	2,070
Net taxes less imputed benefits equals redistributive taxes	-683	-766	-74	-77	-178	317	57	-575	1,311	-123
Post-fiscal income	$1,794	$3,412	$4,811	$6,546	$8,295	$10,384	$13,656	$19,263	$35,193	$9,565
Federal Government, B										
Federal taxes per family	279	498	948	1,195	1,396	1,986	2,576	3,887	11,464	1,914
Specific benefits and transfers	700	844	623	572	544	360	438	756	1,875	597
Taxes minus specific benefits equals "net" taxes	-421	-346	325	623	852	1,626	2,138	3,131	9,589	1,317
Imputed benefits from public good	120	300	484	741	1,027	1,395	2,022	3,206	7,088	1,360
Net taxes less imputed benefits equals redistributive taxes	-541	-646	-159	-118	-175	231	116	-75	2,501	-43
Post-fiscal income	$1,652	$3,292	$4,896	$6,587	$8,292	$10,470	$13,597	$18,763	$34,003	$9,485
State - Local Government, B										
State - Local taxes per family	327	468	692	825	961	1,200	1,414	1,789	3,295	1,062
Specific benefits and transfers	405	433	356	397	428	385	417	614	786	431
Taxes minus specific benefits equals "net" taxes	-78	35	336	428	533	815	997	1,175	2,509	631
Imputed benefits from public good	63	156	252	387	536	729	1,056	1,674	3,700	710
Net taxes less imputed benefits equals redistributive taxes	-141	-121	84	41	-3	86	-59	-499	-1,191	-79
Post-fiscal income	$1,252	$2,767	$4,653	$6,428	$8,120	$10,615	$13,772	$19,187	$37,695	$9,521

Sources: Appendix Tables B.2.a., B.3.a., B.4.a., and B.5.a.

Table B.6.c. Taxes, Benefits, Redistributive Taxes, and Post-fiscal Incomes by Income Class, Urban Population, Western Region, 1961.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
Number of families (000)	656	537	688	823	910	1,359	1,095	720	178	
Initial income per family	$1,123	$2,605	$4,612	$6,464	$7,985	$10,475	$13,754	$18,913	$39,045	$9,702
Total taxes per family	602	970	1,610	2,051	2,398	3,101	4,098	5,761	15,045	3,075
Disposable income per family	521	1,635	3,002	4,413	5,587	7,374	9,656	13,152	23,000	6,627
All Governments, A										
Specific benefits and transfers	1,340	1,588	1,376	1,406	1,571	1,348	1,459	2,092	2,815	1,537
Taxes minus specific benefits equals "net" taxes	-738	-618	234	645	827	1,553	2,639	3,669	12,230	1,538
Imputed benefits from public good	161	366	580	888	1,212	1,630	2,345	3,766	8,299	1,652
Net taxes less imputed benefits equals redistributive taxes	-899	-984	-346	-243	-385	-77	294	-97	3,931	-114
Post-fiscal income	$2,022	$3,589	$4,958	$6,707	$8,370	$10,552	$13,460	$19,010	$34,114	$9,816
Federal Government, A										
Federal taxes per family	276	507	916	1,222	1,437	1,904	2,661	3,961	11,646	1,985
Specific benefits and transfers	814	909	717	644	626	419	500	793	1,404	654
Taxes minus specific benefits equals "net" taxes	-538	-402	199	578	811	1,485	2,161	3,168	10,242	1,331
Imputed benefits from public goods	124	283	449	688	938	1,262	1,815	2,916	6,425	1,279
Net taxes less imputed benefits equals redistributive taxes	-662	-685	-250	-110	-127	223	346	252	3,817	52
Post-fiscal income	$1,785	$3,290	$4,862	$6,574	$8,112	$10,252	$13,408	$18,661	$34,228	$9,650
State - Local Government, A										
State - Local taxes per family	326	464	695	829	960	1,196	1,437	1,800	3,399	1,091
Specific benefits and transfers	526	680	660	762	945	929	959	1,299	1,410	883
Taxes minus specific benefits equals "net" taxes	-200	-216	35	67	15	267	478	501	1,989	208
Imputed benefits from public goods	36	83	131	200	274	368	529	850	1,873	373
Net taxes less imputed benefits equals redistributive taxes	-236	-299	-96	-133	-259	-101	-51	-349	116	-165
Post-fiscal income	$1,359	$2,904	$4,708	$6,597	$8,244	$10,576	$13,805	$19,262	$37,929	$9,867

Table B.6.c. (continued)

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000 $14,999	Over $15,000	Average
Number of families (000)	656	537	688	823	910	1,359	1,095	720	178	
Initial income per family	$1,123	$2,605	$4,612	$6,464	$7,985	$10,475	$13,754	$18,913	$38,045	$9,702
Total taxes per family	602	970	1,610	2,051	2,398	3,101	4,098	5,761	15,045	3,075
Disposable income per family	521	1,635	3,002	4,413	5,587	7,374	9,656	13,152	23,000	6,627
All Governments, B										
Specific benefits and transfers	1,105	1,231	987	930	954	714	815	1,310	1,978	984
Taxes minus specific benefits equals "net" taxes	-503	-261	623	1,121	1,444	2,387	3,283	4,451	13,067	2,091
Imputed benefits from public good	186	434	712	1,105	1,496	2,058	3,032	4,921	11,169	2,119
Net taxes less imputed benefits equals redistributive taxes	-689	-695	-89	16	-52	329	251	-470	1,898	-28
Post-fiscal income	$1,812	$3,300	$4,701	$6,448	$8,037	$10,146	$13,503	$19,383	$36,147	$9,730
Federal Government, B										
Federal taxes per family	276	507	916	1,222	1,437	1,904	2,661	3,961	11,646	1,985
Specific benefits and transfers	712	795	622	564	535	336	411	703	1,292	562
Taxes minus specific benefits equals "net" taxes	-436	-288	294	658	902	1,568	2,250	3,258	10,354	1,423
Imputed benefits from public goods	122	285	468	726	983	1,352	1,992	3,233	7,338	1,392
Net taxes less imputed benefits equals redistributive taxes	-558	-573	-174	-68	-81	216	258	25	3,016	31
Post-fiscal income	$1,681	$3,178	$4,786	$6,532	$8,066	$10,259	$13,496	$18,888	$35,029	$9,671
State - Local Government, B										
State - Local taxes per family	326	464	695	829	960	1,196	1,437	1,800	3,399	1,091
Specific benefits and transfers	393	436	365	366	419	379	404	607	685	422
Taxes minus specific benefits equals "net" taxes	-67	28	330	463	541	817	1,033	1,193	2,714	669
Imputed benefits from public goods	64	149	244	379	513	706	1,040	1,688	3,831	727
Net taxes less imputed benefits equals redistributive taxes	-131	-121	86	84	28	111	-7	-495	-1,117	-58
Post-fiscal income	$1,254	$2,726	$4,526	$6,380	$7,957	$10,364	$13,761	$19,408	$39,162	$9,760

Sources: Appendix Tables B.2.b., B.3.b., B.4.b., and B.5.b.

Table B.6.d. Taxes, Benefits, Redistributive Taxes, and Post-fiscal Incomes by Income Class, Rural Nonfarm Population, Western Region, 1961.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
Number of families (000)	205	137	154	245	169	268	227	53	26	
Initial income per family	$712	$2,467	$5,058	$6,045	$7,899	$11,582	$13,322	$18,792	$39,538	$8,252
Total taxes per family	459	905	1,734	1,882	2,219	3,964	3,687	5,604	16,269	2,610
Disposable income per family	253	1,562	3,324	4,163	5,680	7,618	9,635	13,188	23,269	5,642
All Governments, A										
Specific benefits and transfers	1,498	1,584	1,331	1,698	1,615	1,366	1,366	2,321	5,500	1,594
Taxes minus specific benefits equals "net" taxes	-1,039	-679	403	184	604	2,598	2,321	3,283	10,769	1,016
Imputed benefits from public good	147	353	635	898	1,246	1,704	2,308	3,864	9,762	1,380
Net taxes less imputed benefits equals redistributive taxes	-1,186	-1,032	-232	-714	-642	894	13	-581	1,007	-364
Post fiscal income	$1,898	$3,499	$5,290	$6,759	$8,541	$10,688	$13,309	$19,373	$38,531	$8,616
Federal Government, A										
Federal taxes per family	190	416	1,071	1,061	1,231	2,451	2,304	3,642	12,769	1,641
Specific benefits and transfers	829	1,000	643	633	485	407	357	736	3,500	651
Taxes minus specific benefits equals "net" taxes	-639	-584	428	428	746	2,044	1,947	2,906	9,269	990
Imputed benefits from public goods	113	273	492	695	965	1,319	1,787	2,991	7,556	1,068
Net taxes less imputed benefits equals redistributive taxes	-752	-857	-64	-267	-219	725	160	-85	1,711	-78
Post-fiscal income	$1,464	$3,324	$5,122	$6,312	$8,118	$10,857	$13,162	$18,877	$37,827	$8,330
State - Local Government, A										
State - Local taxes per family	268	489	662	820	988	1,243	1,383	1,962	3,500	969
Specific benefits and transfers	668	584	688	1,065	1,130	959	1,009	1,585	2,000	943
Taxes minus specific benefits equals "net" taxes	-400	-95	-26	-245	-142	284	374	377	1,500	26
Imputed benefits from public goods	33	80	143	203	281	385	521	873	2,204	312
Net taxes less imputed benefits equals redistributive taxes	-433	-175	-169	-448	-423	-101	-147	-496	-704	-286
Post-fiscal income	$1,145	$2,642	$5,227	$6,493	$8,322	$11,683	$13,469	$19,288	$40,242	$8,538

Table B.6.d. (continued)

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
All Governments, B										
Specific benefits and transfers	1,137	1,350	909	1,016	876	728	714	1,113	3,769	990
Taxes minus specific benefits equals "net" taxes	-678	-445	825	866	1,343	3,236	2,973	4,491	12,500	1,620
Imputed benefits from public goods	146	444	779	1,055	1,501	2,157	2,977	4,837	12,575	1,726
Net taxes less imputed benefits equals redistributive taxes	-824	-889	46	-189	-158	1,079	-4	-346	-75	-106
Post-fiscal income	$1,536	$3,356	$5,012	$6,234	$8,057	$10,503	$13,326	$19,138	$39,613	$8,358
Federal Government, B										
Federal taxes per family	190.	416	1,071	1,061	1,231	2,451	2,304	3,642	12,769	1,641
Specific benefits and transfers	673	920	558	535	402	336	304	491	2,808	546
Taxes minus specific benefits equals "net" taxes	-483	-504	513	526	829	2,115	2,000	3,151	9,961	1,095
Imputed benefits from public goods	96	292	512	693	986	1,417	1,956	3,178	8,262	1,134
Net taxes less imputed benefits equals redistributive taxes	-579	-796	1	-167	-157	698	44	-27	1,699	-39
Post-fiscal income	$1,291	$3,263	$5,057	$6,212	$8,056	$10,884	$13,278	$18,819	$37,839	$8,291
State - Local Government, B										
State - Local taxes per family	268	489	662	820	988	1,243	1,383	1,962	3,500	969
Specific benefits and transfers	463	431	351	482	473	392	410	623	962	444
Taxes minus specific benefits equals "net" taxes	-195	58	311	338	515	851	973	1,339	2,538	525
Imputed benefits from public goods	50	152	267	362	515	740	1,021	1,659	4,313	592
Net taxes less imputed benefits equals redistributive taxes	-245	-94	44	-24		111	-48	-320	-1,775	-67
Post-fiscal income	$957	$2,561	$5,014	$6,069	$7,899	$11,471	$13,370	$19,112	$41,313	$8,319

Sources: Appendix Tables B.2.c., B.3.c., B.4.c., and B.5.c.

Table B.6.e. Taxes, Benefits, Redistributive Taxes, and Post-fiscal Incomes by Income Class, Rural Farm Population, Western Region, 1961.

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
Number of families (000)	57	33	35	31	45	35	39	23	20	
Initial income per family	$2,088	$3,303	$6,000	$7,677	$8,089	$10,200	$12,667	$16,478	$35,100	$9,355
Total taxes per family	1,175	1,061	1,771	2,452	1,844	2,371	2,795	2,783	10,250	2,503
Disposable income per family	913	2,242	4,229	5,225	6,245	7,829	9,872	13,695	24,850	6,852
All Governments, A										
Specific benefits and transfers	1,368	2,212	2,257	3,129	3,022	3,429	4,103	6,348	10,700	3,465
Taxes minus specific benefits equals "net" taxes	-193	-1,151	-486	-677	-1,178	-1,058	-1,308	-3,565	-450	-962
Imputed benefits from public good	218	595	1,046	1,528	1,786	2,391	3,307	5,680	13,416	2,541
Net taxes less imputed benefits equals redistributive taxes	-411	-1,746	-1,532	-2,205	-2,964	-3,449	-4,615	-9,245	-13,866	-3,503
Post-fiscal income	$2,499	$5,049	$7,532	$9,882	$11,053	$13,649	$17,282	$25,723	$48,966	$12,858
Federal Government, A										
Federal taxes per family	632	636	1,086	1,645	1,089	1,400	1,821	1,826	8,150	1,642
Specific benefits and transfers	772	1,394	1,229	1,581	1,644	1,943	2,667	3,870	8,050	2,142
Taxes minus specific benefits equals "net" taxes	-140	-758	-143	64	-555	-543	-846	-2,044	100	-500
Imputed benefits from public goods	169	460	809	1,182	1,381	1,849	2,558	4,393	10,378	1,965
Net taxes less imputed benefits equals redistributive taxes	-309	-1,218	-952	-1,118	-1,936	-2,392	-3,404	-6,437	-10,278	-2,465
Post-fiscal income	$2,397	$4,521	$6,952	$8,795	$10,025	$12,592	$16,071	$22,915	$45,378	$11,820
State - Local Government, A										
State - Local taxes per family	544	424	686	806	756	971	974	957	2,100	862
Specific benefits and transfers	596	818	1,029	1,548	1,378	1,486	1,436	2,478	2,650	1,324
Taxes minus specific benefits equals "net" taxes	-52	-394	-343	-742	-622	-515	-462	-1,521	-550	-462
Imputed benefits from public goods	49	134	236	344	402	539	745	1,279	3,022	572
Net taxes less imputed benefits equals redistributive taxes	-101	-528	-579	-1,086	-1,024	-1,054	-1,207	-2,800	-3,572	-1,034
Post-fiscal income	$2,189	$3,831	$6,579	$8,763	$9,113	$11,254	$13,874	$19,278	$38,672	$10,389

Table B.6.e. (continued)

	Income Class (Money income after personal taxes)									
	Under $2,000	$2,000-$2,999	$3,000-$3,999	$4,000-$4,999	$5,000-$5,999	$6,000-$7,499	$7,500-$9,999	$10,000-$14,999	Over $15,000	Average
All Governments, B										
Specific benefits and transfers	947	1,576	1,314	1,774	1,667	1,971	2,615	3,870	6,750	2,135
Taxes minus specific benefits equals "net" taxes	228	-515	457	678	177	400	180	-1,087	3,500	368
Imputed benefits from public good	227	667	1,167	1,656	1,991	2,744	3,947	6,585	15,889	2,943
Net taxes less imputed benefits equals redistributive taxes	1	-1,182	-710	-978	-1,814	-2,344	-3,767	-7,672	-12,389	-2,575
Post-fiscal income	$2,087	$4,485	$6,710	$8,655	$9,903	$12,544	$16,434	$24,150	$47,489	$11,930
Federal Government, B										
Federal taxes per family	632	636	1,086	1,645	1,089	1,400	1,821	1,826	8,150	1,642
Specific benefits and transfers	632	1,152	886	1,161	1,200	1,429	2,000	2,870	5,750	1,594
Taxes minus specific benefits equals "net" taxes		-516	200	484	-111	-29	-179	-1,044	2,400	48
Imputed benefits from public goods	149	438	767	1,088	1,308	1,803	2,593	4,327	10,440	1,934
Net taxes less imputed benefits equals redistributive taxes	-149	-954	-567	-604	-1,419	-1,832	-2,772	-5,371	-8,040	-1,982
Post-fiscal income	$2,237	$4,257	$6,567	$8,281	$9,508	$12,032	$15,439	$21,849	$43,140	$11,337
State - Local Government, B										
State-Local taxes per family	544	424	686	806	756	971	974	957	2,100	862
Specific benefits and transfers	316	424	429	613	467	543	615	1,000	1,000	541
Taxes minus specific benefits equals "net" taxes	228		257	193	289	428	359	-43	1,100	321
Imputed benefits from public goods	78	229	400	568	683	941	1,354	2,258	5,449	1,009
Net taxes less imputed benefits equals redistributive taxes	150	-229	-143	-375	-394	-513	-995	-2,301	-4,349	-688
Post-fiscal income	$1,938	$3,532	$6,143	$8,052	$8,483	$10,713	$13,662	$18,779	$39,449	$10,043

Sources: Appendix Tables B.2.d., B.3.d., B.4.d., and B.5.d.

LIST OF REFERENCES

Aaron, Henry and Martin McGuire, "Public Goods and Income Distribution," Econometrica, Vol. 38, No. 6 (Nov. 1970), pp. 907-920.

Adler, John H. and Eugene R. Schlesinger, "The Fiscal System, the Distribution of Income, and Public Welfare" and "Appendix" in Kenyon E. Poole (ed.), Fiscal Policies and the American Economy, New York: Prentice-Hall, Inc., 1951.

Bator, Francis M., "The Simple Analytics of Welfare Maximization," American Economic Review, Vol. 47, No. 1 (March 1957), pp. 22-59.

Bowen, Howard R., Toward Social Economy, New York: Rinehart and Co., Inc., 1948.

Brownlee, O. H., Estimated Distribution of Minnesota Taxes and Public Expenditure Benefits, Minneapolis: The University of Minnesota Press, 1960.

Burkhead, Jesse and Jerry Miner, Public Expenditures, Chicago: Adeline Publishing Co., 1971.

Eapen, A. T. and A. N. Eapen, "Income Redistributive Effects of State and Local Fiscs: Connecticut, A Case Study," Public Finance Quarterly, Vol. 1, No. 4, (Oct. 1973), pp. 372-387.

Fellner, William, "Operational Utility: The Theoretical Background and a Measurement," in Ten Economic Studies in the Tradition of Irving Fisher, New York: Wiley, 1967, pp. 39-74.

Fuglestad, Paul E., Tax Transfers Among Washington Counties in Fiscal Year 1970, Unpublished Ph.D. dissertation, Department of Economics, Washington State University, Pullman, 1970.

Gillespie, W. Irwin, "Effect of Public Expenditures on the Distribution of Income" in Richard A. Musgrove (ed.) Essays in Fiscal Federalism, Washington, D.C.: The Brookings Institution, 1965.

Hansen, Niles M., Rural Poverty and the Urban Crisis, Bloomington: Indiana University Press, 1970.

Herber, Bernard P., Modern Public Finance, Homewood: Richard D. Irwin, Inc., revised edition, 1971.

Maital, Shlomo, "Public Goods and Income Distribution: Some Further Results," Econometrica, Vol. 41, No. 3 (May 1973), pp. 561-568.

McGuire, Martin C. and Henry Aaron, "Efficiency and Equity in the Optimal Supply of a Public Good," Review of Economics and Statistics, Vol. 51, No. 1 (Feb. 1969), pp. 31-39.

McLure, Charles E., "The Interstate Exporting of State and Local Taxes: Estimates for 1962," National Tax Journal, Vol. 20, No. 1 (March 1967), pp. 49-77.

Mera, K., "Experimental Determination of Relative Marginal Utilities," Quarterly Journal of Economics, Vol. 83 (1969), pp. 464-477.

Musgrove, Richard A., The Theory of Public Finance, New York: McGraw-Hill, Inc., 1959.

Musgrove, Richard A. and Alan T. Peacock, Classics in the Theory of Public Finance, New York: McMillan Co., Inc., 1958.

Myrdal, Gunnar, The Political Element in the Development of Economic History, Cambridge: Howard University Press, 1954.

Peckman, Joseph A. and Benjamin A. Okner, Who Bears the Tax Burden? Washington, D.C.: The Brookings Institution, 1974.

Pigou, A. C., A Study in Public Finance, London: MacMillan and Co., 1928.

Powell, A. A., Tran Van Hoa, and R. H. Wilson, "A Multi-Sectoral Analysis of Consumer Demand in the Post-War Period," Southern Economic Journal, Vol. 25 (1968), pp. 109-120.

Rivlin, Alice M., "Income Distribution - Can Economists Help?, The American Economic Review, Vol. 65, No. 2 (May 1975), pp. 1-15.

Samuelson, Paul A., "The Pure Theory of Public Expenditure," Review of Economics and Statistics, Vol. 36 (Nov. 1954), pp. 387-389.

Samuelson, Paul A., "Diagrammatic Exposition of a Theory of Public Expenditure," Review of Economics and Statistics, Vol. 37 (Nov. 1955), pp. 350-356.

Samuelson, Paul A., "Pure Theory of Public Expenditure and Taxation" in J. Margolis and H. Guitton (eds.) Public Economics: An Analysis of Public Production and Consumption and Their Relations to the Private Sectors, New York: St. Martin's Press, 1969.

Smith, Adam, The Wealth of Nations, New York: Random House, Inc., 1937.

Tax Foundation, Tax Burdens and Benefits of Government Expenditures by Income Class, 1961 and 1965, New York: Tax Foundation, Inc., 1967.

Tucker, Rufus S., "The Distribution of Government Burdens and Benefits," American Economic Review, Papers and Proceedings, Vol. 43, No. 2, (May 1953), pp. 518-534.

U. S. Bureau of the Census, Census of Population, Characteristics of the Population, Vol. 1, United States Summary and State Reports, Washington: U. S. Government Printing Office, 1960.

U. S. Bureau of the Census, Census of Population, General Social and Economic Characteristics, Final Report PC(1)-C1, United States Summary, Washington: U. S. Government Printing Office, 1970.

U. S. Bureau of the Census, Census of Governments, 1962, "Compendium of Government Finances," Vol. 4, No. 4, Washington: U. S. Government Printing Office, 1964.

U. S. Bureau of the Census, Current Population Reports, Series P-60, No. 97, "Money Income in 1973 of Families and Persons in the United States, Washington: U. S. Government Printing Office, Jan. 1975.

U. S. Bureau of Labor Statistics, Survey of Consumer Expenditures and Income, 1960-61, Supplement 3, Part A to Reports 237-37, 87, and 92, Washington: U. S. Government Printing Office, 1965.

U. S. Department of Agriculture, Economic Research Service, Survey of Consumer Expenditures, Survey of Consumer Expenditures and Income, 1960-61, Report #34, Washington: U. S. Government Printing Office, 1965.

U. S. Department of Commerce, Survey of Current Business, Washington: U. S. Government Printing Office, July 1963.