

University of Denver

**Digital Commons @ DU**

---

All Publications (Colorado Legislative Council)

Colorado Legislative Council Research  
Publications

---

1-1981

## 0261 Colorado Tax Profile Study

Colorado Legislative Council

Follow this and additional works at: [https://digitalcommons.du.edu/colc\\_all](https://digitalcommons.du.edu/colc_all)

---

### Recommended Citation

Colorado Legislative Council, "0261 Colorado Tax Profile Study" (1981). *All Publications (Colorado Legislative Council)*. 269.

[https://digitalcommons.du.edu/colc\\_all/269](https://digitalcommons.du.edu/colc_all/269)

This Article is brought to you for free and open access by the Colorado Legislative Council Research Publications at Digital Commons @ DU. It has been accepted for inclusion in All Publications (Colorado Legislative Council) by an authorized administrator of Digital Commons @ DU. For more information, please contact [jennifer.cox@du.edu](mailto:jennifer.cox@du.edu), [dig-commons@du.edu](mailto:dig-commons@du.edu).

---

## 0261 Colorado Tax Profile Study

COLORADO  
TAX PROFILE STUDY  
1980

Reuben A. Zubrow  
Dean C. Coddington  
John M. Gunyou

Colorado Legislative Council

Research Publication No. 261

January 1981

Law Lib.  
S2  
Colo.6  
no.  
261



Law Lib. S2 Colo.6 no. 261

Zubrow, Reuben A.

Colorado tax profile study,  
1980



NON-CIRCULATING

Law Lib.  
S2  
Colo. 6  
MO.  
261

COLORADO TAX PROFILE STUDY  
"  
1980

Reuben A. Zubrow  
Department of Economics, University of Colorado  
Boulder, Colorado

and

Dean C. Coddington and John M. Gunyou  
Browne, Bortz & Coddington  
Denver, Colorado

Prepared for  
Colorado Legislative Council  
State Capitol Building  
Denver, Colorado

January 1981

## ACKNOWLEDGMENTS

We wish to acknowledge the contributions of the many individuals and organizations who participated in the preparation of the study. We are particularly grateful to Lyle Kyle, Director, Colorado Legislative Council, and the Joint Committee on State and Local Finance, for their continuous support and encouragement since 1971 when these "tax profile" studies were first initiated.

It would not have been possible to complete this study in so short a time after the closing of the 1980 fiscal year without the cooperation of other state agencies which provided us with current tax information -- particularly the Colorado Department of Revenue, the Department of Local Affairs, the Division of Accounts and Control and the Division of Property Taxation. We are especially indebted to Stanley B. Schwartz and Thomas A. Dunn of the Research Division, Department of Revenue, for their helpful assistance throughout all phases of this project.

As indicated in the Analysis of the Colorado Income Tax: Inflation, Indexation and Credits, 1980, the companion report to this study, invaluable contributions were made by Dr. George E. Bardwell, Department of Mathematics, University of Denver, who designed the sample of tax returns on which this study is based, and Harry I. Zeid and Peter Johnson-Lenz who were responsible for the computer programming. Finally, we thank Susan Nygren and Julie Edwards for preparing the manuscript for publication.

## TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION . . . . .	5
SECTION I. THE STATE-LOCAL TAX BURDEN . . . . .	6
SECTION II. THE DIRECT AND INDIRECT TAX ALLOCATION . . . . .	13
Shifting Assumptions . . . . .	13
Taxes on Households and Business . . . . .	14
SECTION III. A PROFILE OF THE DISTRIBUTION OF COLORADO TAXES . . . . .	18
Income Concepts . . . . .	18
Distribution of Households, Income and Taxes . . . . .	20
Average Household Income and Taxes . . . . .	25
SECTION IV. A PROFILE OF EFFECTIVE TAX RATES AND BURDENS . . . . .	30
Effective Tax Rates Based on Adjusted Gross Income . . . . .	30
Effective Tax Rates Based on Adjusted Broad Income . . . . .	33
The CTPS Progressivity Index . . . . .	36
APPENDIX A. APPORTIONMENT OF STATE AND LOCAL TAXES BETWEEN HOUSEHOLDS AND BUSINESSES . . . . .	39
Adjustment and Classification of State Taxes . . . . .	39
Adjustment and Classification of Local Taxes . . . . .	41
APPENDIX B. DERIVATION OF HOUSEHOLD INCOME AND ALLOCATION OF TAXES BY MAJOR INCOME CLASSES . . . . .	50
Income Measures for Tax Burden Analysis . . . . .	50
The Consumer Expenditure Profile . . . . .	52
Tax Allocators Used for Burden Analysis . . . . .	53

## LIST OF TABLES

<u>Text Tables</u>		<u>Page</u>
I	Summary of State and Local Tax Liabilities, Fiscal Years 1975, 1977 and 1980 . . . . .	6
II	Summary of Major Taxes on Colorado Households and Businesses, Fiscal Year 1980 . . . . .	14
III	Distribution of Colorado Resident Taxpayers, Household Income and Major State and Local Taxes, Fiscal Year 1980 . . . . .	21
IV	Percentage Distribution of Colorado Resident Taxpayers, Household Income and Major State and Local Taxes, Fiscal Year 1980 . . . . .	23
V	Average Income and Taxes for Colorado Resident Taxpayers, Classified by Major Income Categories, Fiscal Year 1980 . . . . .	26
VI	Relative Burden of Major Taxes on Colorado Resident Taxpayers, Taxes Expressed as Percent of Adjusted Gross Income, Fiscal Year 1980 . . . . .	31
VII	Relative Burden of Major Taxes on Colorado Resident Taxpayers, Taxes Expressed as Percent of Adjusted Broad Income, Fiscal Year 1980 . . . . .	32
 <u>Appendix Tables</u>		
A-1	Summary of State and Local Taxes as Reported by State Agencies, Fiscal Years 1975-1980 . . . . .	44
A-2	Summary of Colorado State and Local Taxes, as Adjusted for Colorado Tax Profile Study, Fiscal Years 1975-1980 . . . . .	45
A-3	Summary of Colorado State Taxes Allocated Between Households and Businesses, Fiscal Years 1975-1980 . . . . .	46
A-4	Summary of Colorado Local Taxes Allocated Between Households and Businesses, Fiscal Years 1975-1980 . . . . .	47
A-5	Apportionment of Colorado State Sales and Highway User Taxes Between Households and Business, Fiscal Year 1980 . . . . .	48
A-6	Derivation of Colorado Residential Property Taxes, Fiscal Year 1980 . . . . .	49



## INTRODUCTION

The Colorado state tax system was significantly revised in the late 1970's. Colorado was one of the pioneering states to fully index its income tax structure in order to offset automatic tax increases generated by the persistent inflation of recent years. In addition, the legislature enacted a wide variety of income tax credits and other tax saving measures, such as the removal of food from the state sales tax base and the elimination of state inheritance taxes in excess of the federal credit. Notwithstanding this extensive tax reduction program, net state tax collections for fiscal year 1980 amounted to \$1.4 billion, or 40 percent more than for fiscal 1977, the year on which the previous "tax profile" study was based. Taxes collected by local governmental units in Colorado also totaled \$1.4 billion and showed only a slightly smaller growth rate than that of state taxes over the same period. These increases in taxation, coupled with changes in nominal income, have had a marked impact on the relative tax burdens borne by low, middle and high income households. In brief, this report is mainly concerned with the distribution of state and local taxes among the more than one and a quarter million households which comprised Colorado's resident taxpayers in fiscal year 1980. It attempts to answer the following basic questions:

- Who ultimately pays the Colorado tax bill?
- How much is borne by resident households? By the business community?
- How important is each of the major state and local taxes?
- Measured against income, what are the relative tax burdens of the poor, the middle class, and high income groups?
- How does the state tax burden compare with the local burden?
- Which taxes are most progressive? Most regressive?
- Overall is the tax structure progressive or regressive?
- And, finally, what changes have occurred in the patterns of tax distribution over recent years?

## SECTION I. THE STATE-LOCAL TAX BURDEN

State and local revenues, as noted, have increased significantly as a result of the rise in the nominal income and consumption expenditures of Colorado resident households. Whether measured in terms of reported net collections or on an adjusted liability basis,<sup>1</sup> the growth in taxes during the past five years closely paralleled the growth in the state's total personal income and adjusted gross income.<sup>2</sup> Table I summarizes the state and local tax liabilities of Colorado residents for fiscal years 1975, 1977 and 1980.

TABLE I. SUMMARY OF STATE AND LOCAL TAX LIABILITIES,  
FISCAL YEARS 1975, 1977 AND 1980

	Fiscal Year			Percent Increase 1975-1980
	1975	1977	1980	
(Money amounts in millions of dollars)				
<u>State Taxes</u>				
Sales and Use	\$ 255.9	\$ 333.1	\$ 495.2	93.5%
Individual Income <sup>a</sup>	257.2	332.5	437.6	70.1
Highway User	121.6	137.3	158.2	30.1
Corporate Income	49.5	57.5	99.7	101.4
Other Business Taxes <sup>b</sup>	35.2	43.9	72.0	104.5
Cigarette and Liquor	29.4	34.3	38.1	29.6
Total State Taxes	\$ 748.8	\$ 938.6	\$1,300.8	73.7%
<u>Local Taxes</u>				
Property	\$ 607.6	\$ 782.2	\$ 961.7	58.3%
Sales and Use	126.8	165.1	277.5	118.8
Specific Ownership Tax	14.3	16.2	24.5	71.3
Other Business Taxes <sup>c</sup>	34.7	34.5	56.6	63.1
Cigarette Taxes	14.8	14.8	16.1	8.8
Total Local Taxes	\$ 798.2	\$1,012.8	\$1,336.4	67.4%
<u>Total State-Local Taxes</u>	\$1,547.0	\$1,951.4	\$2,637.2	70.5%

<sup>a</sup>Includes surtax.

<sup>b</sup>Includes insurance, severance, and regulatory business taxes.

<sup>c</sup>Includes Denver occupation tax.

On an adjusted liability basis, total state-local taxes rose from \$1.5 billion in fiscal year 1975 to an all-time high of \$2.6 billion in fiscal 1980, an increase of more than 70 percent. The state tax liability alone increased by 74 percent, while the local tax total rose 67 percent. Nor were the increases uniform for the "big three" -- income, sales and property taxes. On the state level, the corporate income tax showed the largest relative growth, increasing by more than 100 percent, followed by the sales and individual income taxes which rose 94 and 70 percent, respectively. The relatively smaller increase in the latter, of course, must be attributed to indexation and the other income tax reducing measures introduced in 1978 and 1979. In marked contrast, the increase in local property taxes was the smallest -- 58 percent. Translated into average annual rates of growth, the comparative increases in prices, income and taxes for Colorado resident households during the past five years were as follows:

	<u>Percent Increases for Fiscal Years 1975-80</u>	
	<u>5 Year Period</u>	<u>Annual Annual Rate</u>
<u>Prices:</u>		
BLS Consumer Price Index	54.3	7.5
<u>Income:</u>		
Colorado Adjusted Gross Income	73.3	11.6
Colorado Personal Income	83.0	12.8
<u>Taxes:</u>		
Local Property Tax	58.3	9.6
State Individual Income Tax	70.1	11.2
State Sales and Use Tax	93.5	14.1
State Corporate Income Tax	101.4	15.0
Total Local Taxes	67.4	10.9
Total State Taxes	73.7	11.7
Total State-Local Taxes	70.5	11.3

Total net collections for all state and local government jurisdictions in Colorado for fiscal year 1980 amounted to \$2,765.9 million. State taxes on a collection basis were \$1,398.2 million or slightly less than 51 percent of the total.<sup>3</sup> Local property taxes amounted to \$977.4 million or 35 percent, and all other local taxes totaled \$390.3 million or 14 percent. When measured on the CTPS adjusted basis, which more closely corresponds to the actual tax liability borne by Colorado resident households, the total of the combined state-local tax bill amounted to \$2,637.2 million, or five percent less than the reported collections. The difference of \$128.7 million between these two measures represents adjustments for non-resident tax collections; the excess of net cash flow over tax liabilities; nonallocable and nontax revenues such as penalties, interest and audit deficiencies; and vendors discounts on retail sales and excise taxes. The dollar amounts of these adjustments were as follows:<sup>4</sup>

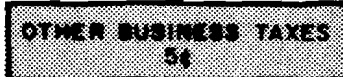
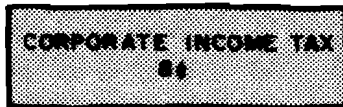
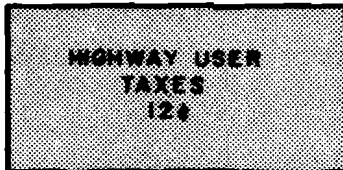
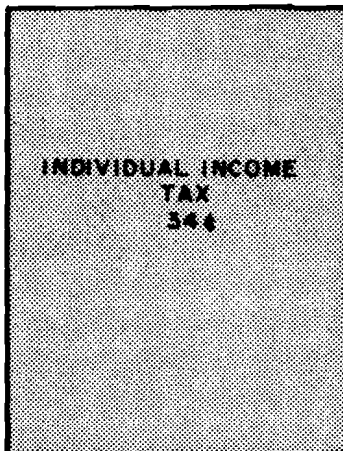
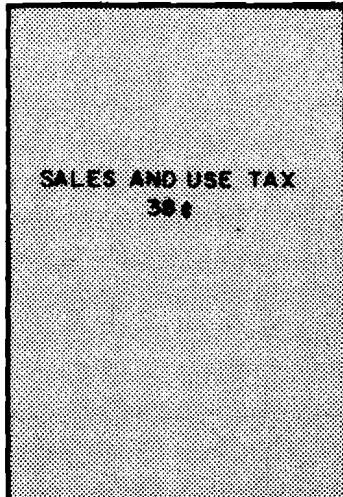
	<u>In Millions</u>
Exclusion of:	
Non-resident tax collections	\$ 63.3
Excess of tax collections over liabilities	62.3
Nonallocable and nontax revenues and credits	31.2
Inclusion of:	
Vendor discounts on tax collections	<u>-28.1</u>
Total Adjustments	\$128.7

The relative importance of each of the major tax categories on this adjusted basis is shown in Chart I and the tabulation below:

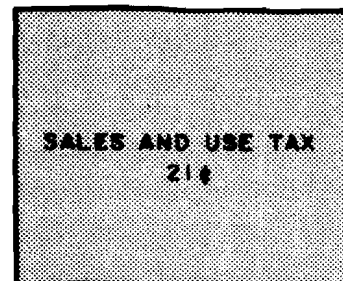
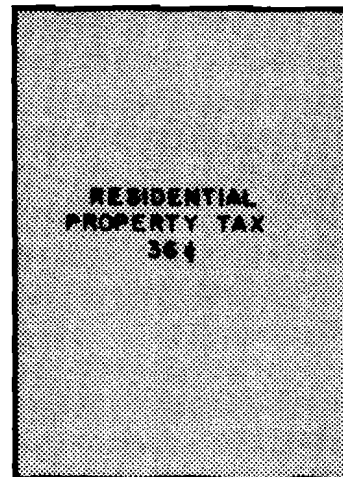
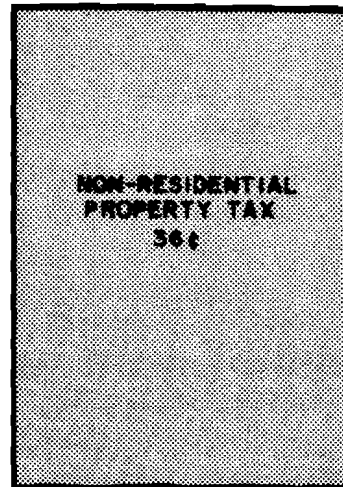
	<u>Percent Distribution</u>		
	<u>Total Taxes</u>	<u>State Taxes</u>	<u>Local Taxes</u>
Property Tax	36.4	--	72.0
Sales and Use Tax	29.3	38.1	20.8
Individual Income Tax	16.6	33.6	--
Highway User Tax	6.9	12.2	1.8
Corporate Income Tax	3.8	7.7	--
Other Business Taxes	4.9	5.5	4.2
Cigarette and Liquor Taxes	<u>2.1</u>	<u>2.9</u>	<u>1.2</u>
Total	100.0	100.0	100.0

CHART I. THE COLORADO STATE AND LOCAL TAX DOLLAR,  
FISCAL YEAR 1980

STATE TAX  
DOLLAR



LOCAL TAX  
DOLLAR



Overall, the sales, corporate income and other business tax categories represented substantially larger shares of the total state-local tax burden in 1980 than in 1975; while the general property tax, in particular, and the highway user and other excise taxes (cigarette and liquor) accounted for correspondingly smaller shares.

The local property tax liability of \$961.7 million, net of \$15.7 million of state old age property tax credits, continued to be the largest single revenue source in the state-local tax structure. In 1980, it accounted for 36 percent of the combined state-local tax liability and 72 percent of total local revenues, whereas five years earlier the respective ratios were 40 and 77 percent (and in 1972 -- 44 and 83 percent). In brief, its relative importance in the overall state-local tax structure has steadily declined throughout the past decade.

The state-local retail sales and use tax ranked next in importance. In fiscal year 1980 it amounted to \$772.7 million, net of \$27.9 million of state food tax credits. Also, food was removed from the base for half of the past fiscal year, i.e., effective January 1, 1980. Despite these reductions, the state sales tax was substantially larger than in 1975, whether measured in relative or absolute terms. In fiscal 1980 the sales and use tax accounted for almost 30 percent of the total resident tax liability and 38 percent of the state total. The comparable ratios for fiscal 1975 were 25 and 35 percent.

The state income tax represented the third of the "big three" which together make up 86 percent of the total tax bill. In fiscal year 1980, income taxes amounted to \$537.3 million on a liability basis, of which the corporate income tax represented slightly less than \$100 million and the resident individual income tax amounted to \$437.6 million -- practically the same as the 1979 liability of \$435.6 million. The non-resident portion of the individual income tax continued to be comparatively small, amounting to \$3.8 million or less than one percent of the total. The resident individual income tax alone accounted for 17 percent of the state-local tax total and about 35 percent of the state tax burden in both fiscal 1975 and 1980. On the other hand, the relative significance of the corporate income tax as a share of state taxes rose from 6.1 percent in fiscal 1975 to 7.7 percent in fiscal 1980.



The highway user tax category includes state motor fuel and ton-mile taxes and motor vehicle and operators license fees as well as the local government specific ownership tax. These levies amounted to \$182.7 million, or less than seven percent of the total state-local tax liability. On the state level, highway user taxes accounted for only 12 percent in 1980 compared with 15 and 21 percent of the state total tax liability in 1975 and 1972, respectively. The decrease in the relative importance of these levies in part reflects the motoring publics' response to steadily rising fuel prices.

Other business taxes represent all business taxes and fees, other than the corporate income tax and the portion of the sales, property and highway user taxes paid by business firms. It includes oil and gas production taxes, other severance taxes, the employer's share of the Denver occupation tax, insurance, franchise and utility taxes and miscellaneous regulatory fees. In fiscal 1980 these taxes amounted to \$128.6 million, or five percent of the total tax bill, and have been steadily increasing over the past five years.

Cigarette and alcoholic beverage taxes continue to be quantitatively the least important category in the state-local tax structure. On a combined basis they amounted to \$54.2 million and as a percentage share of the total these excises have steadily declined since 1972. The cigarette tax alone slightly exceeded one percent, and the alcohol beverage tax less than one percent of the total state-local tax burden in fiscal year 1980.

SECTION I Footnotes:

1. See Appendix A, Table A-1 for a summary of officially reported state and local net tax collections for fiscal years 1975-1980, and Table A-2 for a summary of these taxes for the same years adjusted to a CTPS resident tax liability basis for purposes of this study.
2. The companion study to this report presents a detailed analysis of the state individual income tax. See Analysis of the Colorado Income Tax: Inflation, Indexation and Credits--Combined with Colorado Statistics of Income, 1980, Colorado Legislative Council, Research Publication No. 260 (January 1981), Denver, Colorado.
3. Exclusive of state inheritance and gift taxes, hunting and fishing licenses and pari-mutuel betting taxes which totaled \$57.3 million in fiscal year 1980.
4. Reconciliation of reported tax collections with adjusted tax liabilities on the state level is shown in Appendix A, Table A-3, and on the local level, in Table A-4.

## SECTION II. THE DIRECT AND INDIRECT TAX ALLOCATION

A distinction is often made between tax "impact" and "incidence" -- the former is where the tax is legally imposed, the latter where it finally comes to rest. Theoretically, the incidence of all taxes are on individuals. However, it is useful to initially classify taxes into the two general categories of households (or direct) taxes and business (or indirect) taxes since the distribution of taxes requires specific shifting assumptions with regard to their final incidence.

### Shifting Assumptions

Household taxes are defined for purposes of this study as those directly levied or shifted to individuals comprising the household unit and generally are based on the earning of income, the purchase of consumer goods and services, or the ownership of particular forms of wealth (e.g., real estate). In this sense, direct taxes include individual income, retail sales, consumer excise and resident property taxes. The household cannot shift such direct taxes to others through the pricing system. In contrast, it is assumed that business taxes are either shifted forward to individuals as consumers or borne by the owners of resources since such taxes represent business costs which ultimately are reflected in market prices or reduced dividends or undistributed corporate earnings. The corporation income tax, highway user and sales taxes paid by business firms on their purchases, severance taxes and all other franchise and regulatory business taxes fall into the indirect category.<sup>1</sup>

It also should be noted that in deriving the resident tax burden for a particular state, it is not possible to empirically determine the amount of business taxes exported or imported by firms engaged in interstate commerce. As in the 1977 study, it is assumed that the export of Colorado business taxes has been approximately balanced by the import of taxes from jurisdictions outside Colorado.<sup>2</sup>

### Taxes on Households and Business

Based on the above assumptions, the allocation of Colorado state and local taxes between those levied on resident households and those on business for fiscal year 1980 is shown in Table II and Chart II.

TABLE II. SUMMARY OF MAJOR TAXES ON  
COLORADO HOUSEHOLDS AND BUSINESSES,  
FISCAL YEAR 1980

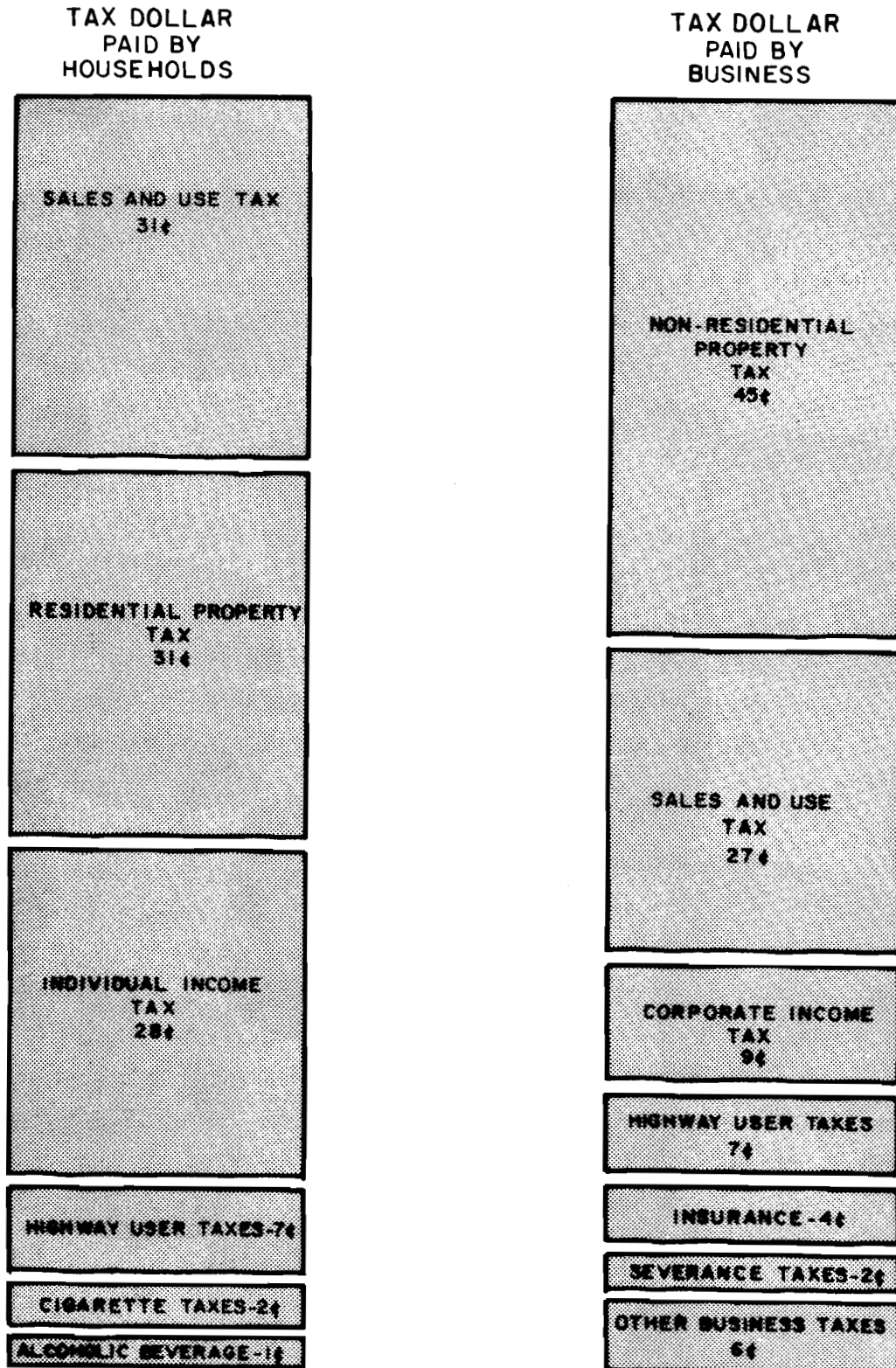
	<u>Total Taxes</u>	<u>State Taxes</u>	<u>Local Taxes</u>
(Money amounts in thousands)			
<u>Taxes on Households (Direct)</u>			
Sales and Use	\$ 481.0	\$ 304.8	\$ 176.2
Residential Property	479.8	--	479.8
Individual Income	437.6	437.5	--
Highway User <sup>a</sup>	105.0	87.8	17.2
Cigarette and Liquor	<u>54.2</u>	<u>38.1</u>	<u>16.1</u>
Total Direct Taxes	\$1,557.6	\$ 868.3	\$ 689.3
<u>Taxes on Business (Indirect)</u>			
Sales and Use	\$ 291.7	\$ 190.4	\$ 101.3
Non-Residential Property	481.9	--	481.9
Corporate Income	99.7	99.7	--
Highway User <sup>a</sup>	77.7	70.4	7.3
Other Business Taxes <sup>b</sup>	<u>128.6</u>	<u>72.0</u>	<u>56.6</u>
Total Indirect Taxes	\$1,079.6	\$ 432.5	\$ 647.1
<u>Total Resident Taxes</u>	\$2,637.2	\$1,300.8	\$1,336.4

<sup>a</sup>Includes share of specific ownership tax.

<sup>b</sup>Includes insurance, severance, occupation, corporate franchise and miscellaneous regulatory taxes.

On the adjusted basis, direct household taxes amounted to \$1,558 million or three-fifths of the total Colorado tax liability, and indirect business taxes were \$1,080 million or two-fifths. The property tax continued to dominate both categories. The residential property tax was estimated to be \$480 million or 31 percent of the total direct burden on households. This was about the same as the ratio in fiscal year 1977. On the other hand, the non-residential property tax amounted to \$482 million or 45 percent of the total business taxes, and as such was significantly lower

CHART II. THE COLORADO HOUSEHOLD AND BUSINESS TAX DOLLAR,  
FISCAL YEAR 1980



than the 52 percent ratio estimated for 1977. The state individual income tax in 1980 amounted to \$438 million and as a ratio of the total direct tax liability it was the same as in fiscal 1977 -- 28 percent. This must be largely attributed to indexation and other income tax reduction measures which became effective in fiscal years 1979 and 1980. The state corporate income tax amounted to slightly less than \$100 million and accounted for more than nine percent of the combined state-local taxes imposed on business. Finally, state and local sales and use taxes levied on resident households were estimated to be \$481 million, or practically equal to the 31 percent ratio for the residential property tax. In short, the "big three" -- retail sales, residential property and individual income taxes -- accounted for 90 percent of the combined state-local tax burden imposed directly on Colorado resident households in fiscal year 1980.

On the state level, taxes amounting to \$868.3 million, or 67 percent of the adjusted state total, were classified as direct household taxes. Of this amount, the individual income tax (inclusive of surtax) represented 50 percent, while retail sales and highway user taxes accounted for 35 and 10 percent, respectively. And as noted above, because of energy conservation, highway user taxes were significantly below the 1972 ratio of 20 percent. The other state excise taxes levied directly on resident households were \$38 million, or four percent of the total. State taxes on business were estimated to be \$433 million, or 33 percent of the total state tax burden. Quantitatively the most important state tax levied on business was the allocated portion of the sales and use tax -- it accounted for 44 percent of the total. The corporate income tax and business highway user taxes ranked next in importance, representing 23 and 16 percent of the total, respectively. All other state business taxes, such as insurance, corporate franchise, severance and other regulatory taxes, accounted for slightly less than 17 percent of the total.

On the local level, taxes were divided more equally between households and business -- direct household taxes were estimated to be \$689 million, or 52 percent of the total, while the indirect business portion



was estimated to be \$647 million. The allocation of total local taxes between households and business essentially reflects the classification of the property tax into residential and non-residential categories. It was estimated that the actual and imputed property taxes on owner-occupied and renter-occupied residences together accounted for almost 70 percent of the total local taxes levied directly on resident households. And in the case of the non-residential property tax, the ratio was even larger -- 75 percent of the total local tax levied on the business community.

SECTION II Footnotes:

1. See Appendix A for the methodology and assumptions used for the allocations of specific taxes between households and business.
2. A similar offsetting assumption is not required for the direct taxation of non-residents. As indicated, an estimate of the Colorado taxes paid by non-residents (e.g., tourists in Colorado) has been excluded from the adjusted totals of state and local taxes. Similarly, taxes paid elsewhere by Colorado residents as out-of-state tourists are not considered part of the Colorado tax burden since they are not imposed by Colorado jurisdictions.

## SECTION III. A PROFILE OF THE DISTRIBUTION OF COLORADO TAXES

The distribution of the Colorado state and local tax liabilities of resident households, classified by major income categories, is presented in Tables III through V. In the companion study, data on the number of resident taxpayers, household income and state individual income tax liabilities were analyzed in detail.<sup>1</sup>

Income Concepts

This sub-section indicates some of the basic concepts and adjustments required for the derivation of the income measures used in the analysis of tax burdens. Because Colorado does not have a "split-income" provision for married taxpayers, one-third of all individual income tax returns filed were "married-separate" returns. For the purposes of this study, the "married-separate" returns of husband and wife were merged and treated as a single return in order to obtain a more accurate picture of the distribution of resident household income and taxes.<sup>2</sup>

On the corrected basis, the adjusted gross income reported by resident households on state tax returns filed in fiscal 1980 amounted to \$18,509 million. It represented 73.2 percent of the corresponding 1979 state personal income of \$25,285 million estimated by the U.S. Department of Commerce.<sup>3</sup> The difference of almost \$7 billion mainly reflects conceptual differences between the economic and statutory definitions of income. The latter excludes various forms of tax exempt money income and nontaxable transfer income such as payments for public welfare, social security, unemployment compensation and portions of private pension and retirement income. On the other hand, the economic concept of household income (the Department of Commerce personal income measure) includes in addition to the above money transfer payments sundry forms of imputed income such as the estimated rental value of owner-occupied residences, imputed interest and employer contributions to pension funds.

In order to obtain an alternative income measure for tax burden analysis which more closely corresponds to the conventional concept of income, an adjusted broad income measure was developed for the original 1972 Colorado Tax Profile Study. This measure is narrower than the personal income concept in that it excludes all forms of imputed income, but broader than adjusted gross income since it includes an estimate of the nontaxable money transfer payments as well as other forms of tax exempt income not reported on tax returns.<sup>4</sup> On an overall basis, total adjusted broad income for Colorado resident taxpayers was estimated to be \$22,005 million, or 19 percent larger than the corresponding adjusted gross income for fiscal year 1980. The difference between these two income measures in fiscal year 1975 was slightly less than 16 percent.<sup>5</sup>

The more rapid rate of growth in the adjusted broad income of Colorado's resident households relative to the increase in adjusted gross income reported on tax returns is primarily due to the steady rise in Colorado personal transfer income -- up 90 percent since fiscal year 1975, a rate significantly above the 73 percent growth in adjusted gross income for the same period.<sup>6</sup> Quantitatively, the total amount of transfer payments included in the 1980 adjusted broad income measure was approximately two and a half times larger than the amount included to represent tax exempt forms of non-transfer money income. Thus the largest relative adjustments required to place the resident households on a broad income basis were made for those in the lowest income categories since they were the major recipients of nontaxable money transfer income. Conversely, adjustments for excluded non-transfer money income were largest for taxpayers in the upper income strata since they were the principal beneficiaries of the preferential tax treatment accorded capital gains, interest and dividends. In the following sections of this report, the comparative tax burdens of Colorado resident households are presented in terms of both adjusted gross and adjusted broad income. It is evident, however, that the latter is the more appropriate and meaningful basis for evaluating the distributional effects of the Colorado state and local tax structure.

### Distribution of Households, Income and Taxes

Almost one and a quarter million Colorado resident households filed state income tax returns in fiscal year 1980. Of these, five out of every six were taxable returns, i.e., they had a positive net normal income tax liability. The income measures and overall tax analysis for this study are based on all resident returns, taxable and nontaxable. Households filing nontaxable returns, of course, also were subject to sales, excise and property taxes and were recipients of transfer and other forms of money income excluded from adjusted gross income.

Table III presents the total dollar amounts of state and local taxes on a resident liability basis, as well as the total dollar amounts of household income in terms of both adjusted gross and broad income, for each of the five major income classes. The relative tax burden comparisons -- the "current tax profiles" -- are developed on the basis of these data.

The largest single state tax levied on the two lowest income classes (under \$15,000), which together comprised more than three-fifths of Colorado's resident households, continued to be the state's retail sales tax which amounted to \$117.2 million. When combined with the excise taxes on motor fuels, alcoholic beverages and cigarettes, consumer expenditure taxes on the state level for these relatively low income taxpayers accounted for more than two-thirds of their total state tax burden in fiscal year 1980. For the one-fifth of the households comprising the middle income group (\$15,000 to \$25,000) the state tax liability was evenly divided between consumption and income taxes. In contrast, for the two top income strata (\$25,000 or more), representing the remaining one-fifth of the households, the state income tax, amounting to \$252.7 million for this group, was quantitatively the largest. It accounted for almost two-thirds of their total state tax burden; while expenditure taxes, particularly the excises, were correspondingly low.

On the local level, as expected, the residential property tax of \$479.8 million accounted for about 70 percent of the direct local tax burden for all income categories. The percentage distributions of the direct state and local tax burden among Colorado's relatively low, middle and high income taxpayers are summarized in the following tabulation:

TABLE III. DISTRIBUTION OF COLORADO RESIDENT TAXPAYERS,  
HOUSEHOLD INCOME AND MAJOR STATE AND LOCAL TAXES,  
FISCAL YEAR 1980

	Major Income Classes <sup>a</sup>					Total
	Under \$5,000	\$5,000 to \$15,000	\$15,000 to \$25,000	\$25,000 to \$50,000	\$50,000 and Over	
	(Money amounts in thousands of dollars)					
<u>Number of Resident Households</u>	342,783	410,121	251,610	195,069	29,695	1,229,278
<u>Household Income:</u>						
Adjusted Gross Income	\$ 705,178	\$3,885,205	\$4,941,984	\$6,443,053	\$2,533,871	\$ 18,509,291
Adjusted Broad Income	1,600,401	5,001,424	5,496,475	7,054,499	2,852,125	22,004,924
<u>Direct Taxes on Households:</u>						
<u>State Taxes</u>						
Individual Income	6,325	68,868	109,680	171,615	81,086	437,574
Sales and Use	34,292	82,880	83,307	83,124	21,215	304,818
Highway User	8,929	27,271	25,883	20,484	5,233	87,800
Cigarette	2,867	5,881	4,692	2,925	751	17,116
Alcoholic Beverage	2,469	6,282	6,361	4,707	1,196	21,015
Total	54,882	191,182	229,923	282,855	109,481	868,323
<u>Local Taxes</u>						
Residential Property	57,851	131,466	117,189	135,196	38,123	479,825
Sales and Use	19,819	47,900	48,147	48,041	12,262	176,169
Cigarette	2,704	5,547	4,425	2,759	709	16,144
Specific Ownership	1,745	5,329	5,058	4,002	1,022	17,156
Total	82,119	190,242	174,819	189,998	52,116	689,294
Total Direct Taxes	137,001	381,424	404,742	472,853	161,957	1,557,617
<u>Indirect Taxes on Households:</u>						
State Business Taxes	49,655	111,670	105,052	116,171	49,929	\$ 432,477
Local Business Taxes	79,589	177,297	170,826	174,708	44,648	647,068
Total Indirect Taxes	129,244	288,967	275,878	290,879	94,577	1,079,545
<u>Total State and Local Taxes:</u>						
State Taxes (Direct & Indirect)	104,537	302,852	334,975	399,026	159,410	1,300,800
Local Taxes (Direct & Indirect)	161,708	367,539	345,645	364,706	96,764	1,336,362
Total State-Local Taxes	<u>\$ 266,245</u>	<u>\$ 670,391</u>	<u>\$ 680,620</u>	<u>\$ 763,732</u>	<u>\$ 256,174</u>	<u>\$ 2,637,162</u>
<u>Addendum:</u>						
Federal Individual Income Tax	17,448	339,616	602,378	1,008,564	\$ 744,384	\$ 2,712,390

<sup>a</sup>Based on adjusted gross income.

Percent Distribution of Direct Taxes for  
Households with Adjusted Gross Incomes:

	Below \$15,000	\$15,000 to \$25,000	\$25,000 and Over
<u>State Taxes:</u>			
Individual Income	30.6	47.7	64.4
Sales and Use	47.6	36.2	26.6
Consumer Excises	<u>21.8</u>	<u>16.1</u>	<u>9.0</u>
Total	100.0	100.0	100.0
<u>Local Taxes:</u>			
Residential Property	69.5	67.0	71.6
Sales and use	24.9	27.6	24.9
Consumer Excises	<u>5.6</u>	<u>5.4</u>	<u>3.5</u>
Total	100.0	100.0	100.0

The percentage distributions of the Colorado resident taxpayers, household income and state-local taxes, classified by the five major income categories, are shown in Table IV. A comparison of the distribution of the households and income provides an approximate measure of the degree of income inequality in the state. The taxpayers comprising the two top income groups, with adjusted gross incomes of \$25,000 or more, represented only 18 percent of the households but accounted for 49 percent of the total reported income; while the poorest households, those in the lowest stratum with adjusted gross incomes of \$5,000 or less, represented 28 percent of all households but accounted for only four percent of the adjusted gross income and seven percent of the broad income.

With regard to the allocation of the overall state tax burden (combined direct and indirect taxes), it appears that for all major income classes the respective shares of the state tax generally paralleled the distribution of adjusted broad income, as shown by the following tabulation:



TABLE IV. PERCENTAGE DISTRIBUTION OF COLORADO RESIDENT TAXPAYERS,  
HOUSEHOLD INCOME AND MAJOR STATE AND LOCAL TAXES,  
FISCAL YEAR 1980

	Major Income Classes: <sup>a</sup>					Total
	Under \$5,000	\$5,000 to \$15,000	\$15,000 to \$25,000	\$25,000 to \$50,000	\$50,000 and Over	
<u>Number of Resident Households</u>	27.9	33.3	20.5	15.9	2.4	100.0
<u>Household Income:</u>						
Adjusted Gross Income	3.8	21.0	26.7	34.8	13.7	100.0
Adjusted Gross Income	7.3	22.7	25.0	32.0	13.0	100.0
<u>Direct Taxes on Households:</u>						
State Taxes						
Individual Income	1.5	15.7	25.1	39.2	18.5	100.0
Sales/Use	11.2	27.2	27.3	27.3	7.0	100.0
Highway User	10.2	31.1	29.5	23.3	5.9	100.0
Cigarette	16.7	34.4	27.4	17.1	4.4	100.0
Alcoholic Beverage	11.7	29.9	30.3	22.4	5.7	100.0
Total	6.3	22.0	26.5	32.6	12.6	100.0
Local Taxes						
Residential Property	12.1	27.4	24.4	28.2	7.9	100.0
Sales Use	11.2	27.2	27.3	27.3	7.0	100.0
Cigarette	16.7	34.4	27.4	17.1	4.4	100.0
Specific Ownership	11.7	29.9	30.3	22.4	5.7	100.0
Total	11.9	27.6	25.4	27.6	7.6	100.0
Total Direct Taxes	8.8	24.5	26.0	30.3	10.4	100.0
<u>Indirect Taxes on Households:</u>						
State Business Taxes	11.5	25.8	24.3	26.9	11.5	100.0
Local Business Taxes	12.3	27.4	26.4	27.0	6.9	100.0
Total Indirect Taxes	12.0	26.8	25.5	26.9	8.8	100.0
<u>Total State and Local Taxes:</u>						
State Taxes (Direct & Indirect)	8.0	23.3	25.7	30.7	12.3	100.0
Local Taxes (Direct & Indirect)	12.1	27.5	25.9	27.3	7.2	100.0
Total State-Local Taxes	10.1	25.4	25.8	29.0	9.7	100.0
<u>Addendum:</u>						
Federal Individual Income Tax	.6	12.5	22.2	37.2	27.5	100.0

<sup>a</sup>Based on adjusted gross income.

Income Classes	Percent Distribution		
	Adjusted Broad Income	Total State Taxes	Total Local Taxes
Under \$5,000	7.3	8.0	12.1
\$5,000 to \$15,00	22.7	23.3	27.5
\$15,000 to \$25,000	25.0	25.7	25.9
\$25,000 to \$50,000	32.0	30.7	27.3
\$50,000 and over	<u>13.0</u>	<u>12.3</u>	<u>7.2</u>
Total	100.0	100.0	100.0

The share of the total state tax burden borne by the poorest households actually was slightly higher than their respective income share, while for the households in the highest stratum their state tax was slightly less than their income share. In brief, on this adjusted broad income basis, the distribution of the total state tax burden proved to be practically the same as the distribution of income among the five major income categories for fiscal year 1980. Previous CTPS reports show a similar pattern of approximate proportionality for fiscal years 1975 to 1979. It appears that despite the marked shift of taxpayers into higher income brackets and the increased consumption expenditures during the past five years, the state tax structure has not become significantly more progressive nor regressive.

The proportionality achieved in the distribution of the overall state tax burden reflects a balancing of the state's major taxes since similar distributions do not hold for any of the specific taxes. As noted in the 1980 Analysis of the Colorado Income Tax report, the state individual income tax continues to be highly progressive. Households in the two lowest income categories (incomes under \$15,000 and representing more than three-fifths of the households) accounted for 30 percent of the broad income but only 17 percent of the income tax liability. At the other end of the income spectrum, taxpayers in the two top categories (incomes of \$25,000 or more and comprising less than one-fifth of the households) accounted for 45 percent of the broad income but almost 60 percent of the

total state income tax liability.<sup>7</sup> And the distribution of the federal income tax paid by Colorado taxpayers, classified on the same income basis, turns out to be even more progressive -- for those with incomes of less than \$15,000 the federal tax share was only 13 percent, and for those in the top two income strata it was 65 percent. Stated more generally, the top one-fifth of Colorado's resident households accounted for about one-half of the income (regardless of which income measure is used) but almost three-fifths of the total state income tax.

Conversely, the distribution patterns of all other state taxes proved to be essentially regressive -- that is, the tax share relative to income was greatest for the lowest income group and smallest for those with the highest incomes. For example, the lowest income group's share of the state retail sales tax was approximately one and a half times as great as its share of adjusted broad income; whereas for the highest stratum it was about one-half as large as its income share. And similar relationships hold for the consumer excises and indirect state business taxes. In short, the magnitude and progressivity of the Colorado state income tax offsets the regressivity of all the other state taxes resulting in a state tax structure which is essentially proportional.

With regard to the allocation of the local tax burden, the data indicate that all of the major local taxes (direct and indirect) worked out to be highly regressive. For households in the two lowest income strata, their share of the residential property tax, expenditure taxes and indirect business taxes in every instance was significantly larger than their share of adjusted broad income; while for taxpayers in the highest income strata the tax shares were below their respective income shares. This overall regressivity of the local tax structure must be attributed primarily to the magnitude and regressivity of the local property tax.

#### Average Household Income and Taxes

The average income and taxes of Colorado resident taxpayers classified by the five major income categories are shown in Table V. In fiscal year 1980, resident taxpayers had an average income of \$17,901 (on a broad income basis) and an average combined state-local tax liability of \$2,145. This was slightly less than the average federal income tax paid by Colorado residents for the same year. All state taxes (direct and in

TABLE V. AVERAGE INCOME AND TAXES FOR COLORADO RESIDENT TAXPAYERS,  
CLASSIFIED BY MAJOR INCOME CATEGORIES,  
FISCAL YEAR 1980

	Major Income Classes: <sup>a</sup>					Total
	Under \$5,000	\$5,000 to \$15,000	\$15,000 to \$25,000	\$25,000 to \$50,000	\$50,000 and Over	
<b>Taxpayers Income:</b>						
Adjusted Gross Income	\$2,057	\$ 9,473	\$19,641	\$33,030	\$85,330	\$15,057
Adjusted Broad Income	4,669	12,195	21,845	36,164	96,047	17,901
<b>Direct Taxes on Households:</b>						
<b>State Taxes</b>						
Individual Income	18	168	436	880	2,731	356
Sales/Use	100	202	331	426	714	248
Highway User	26	67	103	105	176	71
Cigarette	8	14	18	15	25	14
Alcoholic Beverage	7	15	25	24	40	17
Total	160	466	914	1,450	3,687	706
<b>Local Taxes</b>						
Residential Property	169	321	466	693	1,284	390
Sales Use	58	117	191	246	413	143
Cigarette	8	14	18	14	24	13
Specific Ownership	5	13	20	21	34	14
Total	240	464	695	974	1,755	561
Total Direct Taxes	400	930	1,609	2,424	5,442	1,267
<b>Indirect Taxes on Households:</b>						
State Business Taxes	145	272	418	596	1,681	352
Local Business Taxes	232	432	679	896	1,504	526
Total Indirect Taxes	377	705	1,097	1,491	3,185	878
<b>Total State and Local Taxes:</b>						
State Taxes (Direct & Indirect)	305	738	1,331	2,046	5,368	1,058
Local Taxes (Direct & Indirect)	472	896	1,374	1,870	3,259	1,087
Total State-Local Taxes	<u>\$ 777</u>	<u>\$ 1,635</u>	<u>\$ 2,705</u>	<u>\$ 3,915</u>	<u>\$ 8,627</u>	<u>\$ 2,145</u>
<b>Addendum:</b>						
Federal Individual Income Taxes	\$ 51	\$ 828	\$ 2,394	\$ 5,170	\$25,068	\$ 2,207

<sup>a</sup>Based on adjusted gross income.

direct) averaged \$1,058 per resident household and as such were only three percent less than the average local tax burden of \$1,087. Average total state taxes ranged from \$305 for taxpayers in the lowest income stratum to \$5,368 for those at the other end of the scale. On the other hand, the average local tax bill was relatively higher than the state burden for the poor and relatively lower for the high income group, ranging from \$472 for those in the lowest category to \$3,259 for those in the highest.

The average dollar tax per resident household increased directly, but not proportionately, with the rise in income. Among the specific direct taxes, the residential property tax ranked first with an average of \$390. The individual income tax ranked next with an average of \$356, followed by the state sales tax which averaged only \$248.

The variances in these relationships can be readily compared by expressing as ratios the averages of households in the lowest income group to that of those in the two highest, as shown in the tabulation below:

	Average Income and Taxes for Households with AGI		Lowest Stratum as Percent of Highest
	Under \$5,000	\$25,000 or More	
<u>Adjusted Broad Income</u>	\$4,669	\$44,076	10.6
<u>State Taxes:</u>			
Individual Income Tax	18	1,124	1.6
Sales Tax on Households	100	464	21.6
Excise Taxes on Households	42	156	26.9
Total Direct Taxes	160	1,746	9.2
Indirect Business Taxes	145	739	19.6
Total State Taxes	305	2,485	12.3
<u>Local Taxes:</u>			
Residential Property Tax	169	771	21.9
Sales Tax on Households	58	268	21.6
Excise Taxes on Households	13	38	34.2
Total Direct Taxes	240	1,077	22.3
Indirect Business Taxes	232	976	23.8
Total Local Taxes	472	2,053	23.0
<u>Total State and Local Taxes</u>	<u>\$ 777</u>	<u>\$ 4,538</u>	<u>17.1</u>

On this basis, the average broad income of households comprising the lowest income stratum was less than 11 percent that of those in the two highest categories. The marked progressivity of the Colorado state income tax is indicated when the tax ratios are compared with the above income ratio. For example, the average state income tax of \$23 for all households in the "under \$5,000" class was less than two percent of the \$1,124 average income tax for households in the top categories.<sup>8</sup> In contrast, the average of all other state taxes borne by the poor represented 20 percent of that levied on the top income group, or a comparative average tax ratio which was twice as large as the income ratio. As noted, the progressivity of the income tax roughly offsets the regressivity of all the other state taxes. However, it appears that on this basis the total state tax structure (combined direct and indirect taxes) actually was slightly regressive in fiscal year 1980. The average total state tax for the lowest income class was 12.3 percent of that for the top strata in comparison to the 10.6 percent average income ratio of the poor to the rich. In fiscal year 1975, the relationships were reversed -- the average overall state tax ratio was only 9.5 percent compared with an average income ratio of 11.3 percent. In other words, during the past five years, the overall state tax structure has been transformed from one which was slightly progressive to one which is slightly regressive.

The regressivity of the local tax structure also is revealed by these average income and tax data. The average local tax for households in the lowest income category was 23.0 percent of the average paid by those in the top classes, compared to the corresponding 10.6 percent income ratio. In the case of the property tax, the estimated average tax for households in the lowest income category was almost 22 percent of that paid by those in the highest. Similarly, for local sales taxes, consumer excises and shifted business taxes, the average tax ratios of the poor to the rich in every instance was more than twice that of the broad income ratio. On a combined basis, the overall Colorado state-local tax structure worked out to be clearly regressive with an average tax ratio of 17.1 percent compared with the broad income ratio of less than 11 percent.

SECTION III Footnotes:

1. See Analysis of the Colorado Income Tax: Inflation, Indexation and Credits, 1980.
2. Also, for purposes of this study, all non-resident tax returns and a number of resident single returns filed by persons who had been taken as exemptions on their parent's returns were excluded. The latter primarily represented students and other youngsters living at home who had filed for withholding refunds. These returns accounted for .5 percent of adjusted gross income and less than .1 percent of the income tax liability. Non-resident returns accounted for 2.1 percent of the returns, .7 percent of the reported adjusted gross income and .9 percent of the income tax liability.
3. U.S. Department of Commerce, Survey of Current Business, August 1980.
4. See Appendix B for a description of the derivation of the adjusted broad income measure.
5. See Colorado Tax Profile Studies for 1972 and 1975.
6. U.S. Department of Commerce, Survey of Current Business, August 1975 and 1980.
7. A detailed analysis of the Colorado individual income tax returns filed in fiscal year 1980, classified on the basis of 10 adjusted gross income categories ranging from "under \$3,000" to "\$100,000 and over," is presented in the Analysis of the Colorado Income Tax: Inflation, Indexation and Credits, 1980.
8. The relatively small average income tax for households in the "under \$5,000" category partly reflects the fact that more than half of the tax returns in this stratum were nontaxable returns.

## SECTION IV. A PROFILE OF EFFECTIVE TAX RATES AND BURDENS

A more conventional and simpler method of comparing relative tax burdens is to express the absolute dollar amount of tax liability as a percentage of household income before tax. Since all taxes ultimately are paid out of available income, such a measure of the tax burden actually represents an "effective tax rate" on household income. However, the degree of regressivity of progressivity of the tax structure as a whole or of any particular tax is dependent upon the income concept used. Table VI shows the relative tax burdens when the state and local levies are expressed as percentages of adjusted gross income. Table VII presents the same tax data in terms of adjusted broad income.

Effective Tax Rates Based on Adjusted Gross Income

The relative burdens or effective tax rates for fiscal year 1980, based on adjusted gross income, are shown in Table VI. On this adjusted gross income basis the combined state-local tax burden on the poor was almost four times as heavy as that on the upper income group -- a 37.8 percent effective tax rate for households reporting incomes of less than \$5,000 compared with an 10.1 percent rate for those with incomes of \$50,000 or more. This overall regressivity, however, must be mainly attributed to the local tax portion for which the relative burden on the lowest income group was more than five times larger than that on the highest -- 22.9 percent compared with 3.8 percent. All taxes on the local level, when based on adjusted gross income, show a high degree of regressivity and in the case of the residential property tax, the effective rates ranged from 8.2 percent for the lowest income group to 1.5 percent for the highest.

The state tax structure as a whole was only about one-half as regressive as the local tax structure since the regressivity of the consumer expenditure and business taxes was partially offset by the progressivity of the state's individual income tax. With regard to the state income tax, the effective rate for households in the under \$5,000 category



TABLE VI. RELATIVE BURDEN OF MAJOR TAXES ON COLORADO RESIDENT TAXPAYERS,  
TAXES EXPRESSED AS PERCENT OF ADJUSTED GROSS INCOME,  
FISCAL YEAR 1980

	Major Income Classes: <sup>a</sup>					Total
	Under \$5,000	\$5,000 to \$15,000	\$15,000 to \$25,000	\$25,000 to \$50,000	\$50,000 and Over	
<u>Direct Taxes on Households:</u>						
State Taxes						
Individual Income	.90	1.77	2.22	2.66	3.23	2.36
Sales and Use	4.86	2.13	1.69	1.29	.84	1.65
Highway User	1.27	.70	.52	.32	.20	.47
Cigarette	.41	.15	.09	.05	.03	.09
Alcoholic Beverage	.35	.16	.13	.07	.05	.11
Total	7.78	4.92	4.65	4.39	4.32	4.69
Local Taxes						
Residential Property	8.20	3.38	2.37	2.10	1.50	2.59
Sales and Use	2.81	1.23	.97	.75	.48	.95
Cigarette	.38	.14	.09	.04	.03	.09
Specific Ownership	.25	.14	.10	.06	.04	.09
Total	11.65	4.90	3.54	2.95	2.06	3.72
Total Direct Taxes	19.43	9.82	8.19	7.34	6.38	8.41
<u>Indirect Taxes on Households:</u>						
State Business Taxes	7.04	2.87	2.13	1.80	1.97	2.34
Local Business Taxes	11.29	4.56	3.46	2.71	1.76	3.49
Total Indirect Taxes	18.33	7.44	5.58	4.51	3.73	5.83
<u>Total State and Local Taxes:</u>						
State Taxes (Direct & Indirect)	14.82	7.80	6.78	6.19	6.29	7.03
Local Taxes (Direct & Indirect)	22.93	9.46	6.99	5.66	3.82	7.22
Total State-Local Taxes	37.75	17.26	13.77	11.85	10.11	14.25
<u>Addendum:</u>						
Federal Individual Income Taxes	2.47	8.74	12.19	15.65	29.38	14.65

<sup>a</sup>Based on adjusted gross income.

TABLE VII. RELATIVE BURDEN OF MAJOR TAXES ON COLORADO RESIDENT TAXPAYERS,  
TAXES EXPRESSED AS PERCENT OF ADJUSTED BROAD INCOME,  
FISCAL YEAR 1980

	Major Income Classes: <sup>a</sup>					Total
	Under \$5,000	\$5,000 to \$15,000	\$15,000 to \$25,000	\$25,000 to \$50,000	\$50,000 and Over	
<u>Direct Taxes on Households:</u>						
State Taxes						
Individual Income	.40	1.38	2.00	2.43	2.84	1.99
Sales and Use	2.14	1.66	1.52	1.18	.74	1.39
Highway User	.56	.55	.47	.29	.18	.40
Cigarette	.18	.12	.09	.04	.03	.08
Alcoholic Beverage	.15	.13	.12	.07	.04	.10
Total	3.43	3.83	4.18	4.01	3.84	3.95
Local Taxes						
Residential Property	3.61	2.63	2.13	1.92	1.34	2.18
Sales and Use	1.24	.96	.88	.68	.43	.80
Cigarette	.17	.11	.08	.04	.03	.07
Specific Ownership	.11	.11	.09	.06	.04	.08
Total	5.13	3.80	3.18	2.69	1.83	3.13
Total Direct Taxes	8.56	7.63	7.36	6.70	5.67	7.08
<u>Indirect Taxes on Households:</u>						
State Business Taxes	3.10	2.23	1.91	1.65	1.75	1.97
Local Business Taxes	4.97	3.55	3.11	2.48	1.57	2.94
Total Indirect Taxes	8.07	5.78	5.02	4.12	3.32	4.91
<u>Total State and Local Taxes:</u>						
State Taxes (Direct & Indirect)	6.53	6.06	6.09	5.66	5.59	5.91
Local Taxes (Direct & Indirect)	10.10	7.35	6.29	5.17	3.39	6.07
Total State-Local Taxes	16.63	13.40	12.38	10.83	8.98	11.98
<u>Addendum:</u>						
Federal Individual Income Taxes	1.09	6.79	10.96	14.30	26.10	12.33

<sup>a</sup>Based on adjusted gross income.

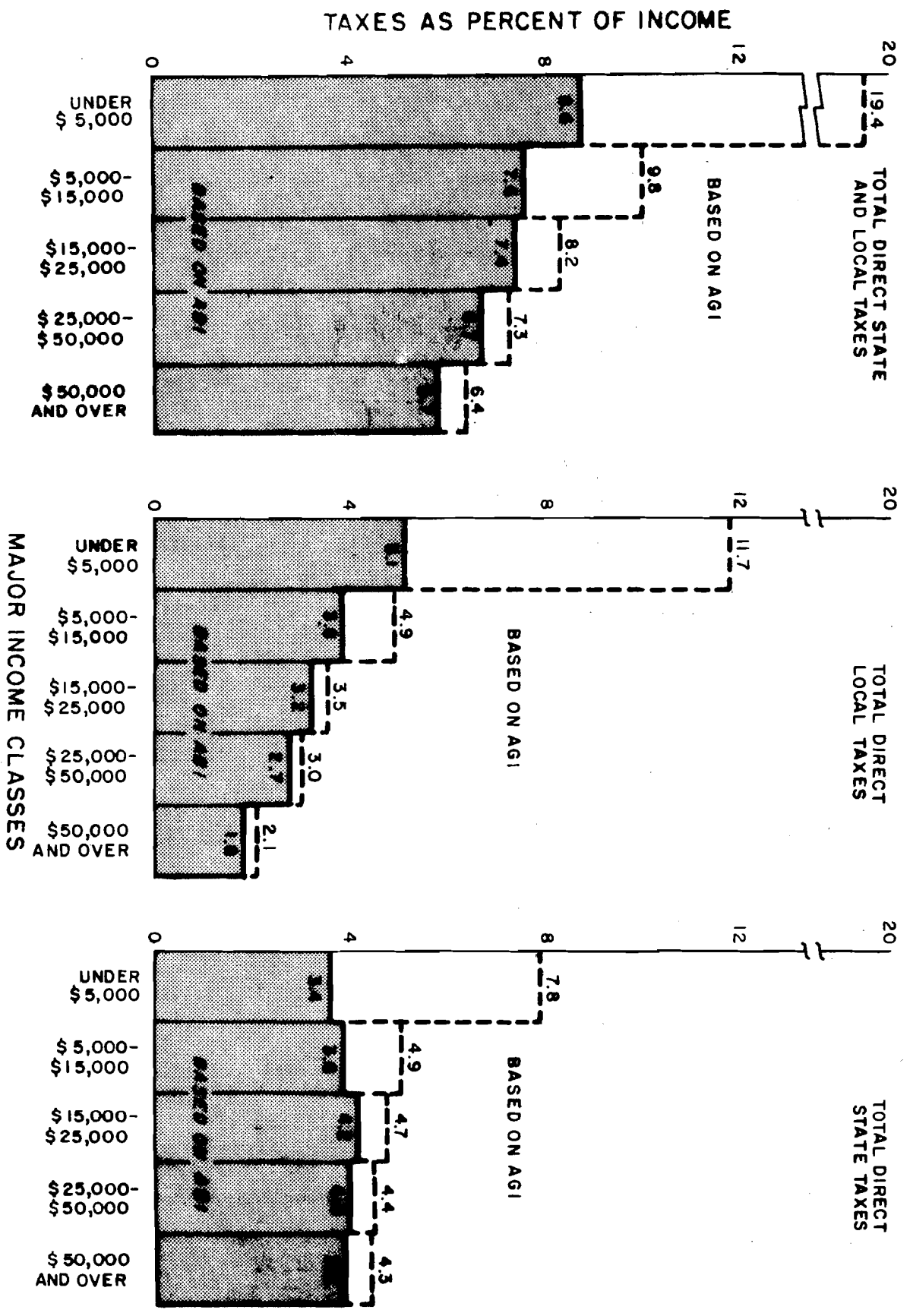
was less than one percent, or only one-third the rate for taxpayers with incomes of \$25,000 or more. For the overall state tax structure, the effective tax rates based on adjusted gross income ranged from 14.8 percent for the lowest stratum to 6.3 percent for the highest. But, as already noted, the above disparities in the relative tax burdens between the low and high income categories are misleading because the adjusted gross income measure on which they are based understates the money income of households in the lowest income stratum, and therefore overstates their tax burden relative to that of other taxpayers (see Chart III).

#### Effective Tax Rates Based on Adjusted Broad Income

When the effective tax rates are expressed more appropriately in terms of adjusted broad income, the relative tax burdens and the measured regressivity of both the state and local tax structures are significantly reduced, as shown by the following summary of Table VII:

	Effective Tax Rates Expressed as Percentages of Adjusted Broad Income			Ratio of Lowest to Highest Rates
	Lowest Stratum	Middle Stratum	Highest Stratum	
<u>State Taxes:</u>				
Individual Income Tax	.40	2.00	2.84	.14
Sales Tax on Households	2.14	1.52	.74	2.89
Excise Taxes on Households	.89	.66	.26	3.42
Total Direct Taxes	3.43	4.18	3.84	.89
Indirect Business Taxes	3.10	1.91	1.75	1.77
Total State Taxes	6.53	6.09	5.59	1.17
<u>Local Taxes:</u>				
Residential Property Tax	3.61	2.13	1.34	2.69
Sales Tax on Households	1.24	.88	.43	2.88
Excise Taxes on Households	.28	.17	.07	4.00
Total Direct Taxes	5.13	3.18	1.83	2.80
Indirect Business Taxes	4.97	3.11	1.57	3.17
Total Local Taxes	10.10	6.29	3.39	2.98
<u>Total State-Local Taxes</u>	<u>16.63</u>	<u>12.38</u>	<u>8.98</u>	<u>1.85</u>

CHART III. COMPARISON OF TAX BURDENS BASED ON ADJUSTED GROSS AND ADJUSTED BROAD INCOME, FISCAL YEAR 1980



On this broad income basis, the measured regressivity -- the ratio of the effective rate for the lowest income class (under \$5,000) to that of the highest (\$50,000 and over) -- in all instances is reduced to less than one-half of that calculated in terms of adjusted gross income. For example, the relative burden of local taxes (direct and indirect) varied from 10.1 percent for the lowest income group to 3.4 percent for the highest, whereas when the adjusted gross income measure was used, the local burden on the poor was more than six times greater than that on the highest income group. Similarly, with regard to the residential property tax the effective rate for households in the lowest stratum was 3.6 percent compared with a rate of 1.3 percent for those in the top stratum. In other words, the average property tax burden for the lowest category was less than one-half as much as shown in Table VI.

The regressivity of the overall state tax structure was also significantly smaller on this adjusted broad income basis. The effective tax rate for the lowest income households was 6.5 percent or only about one-sixth higher than the 5.6 percent average for taxpayers in the top income stratum. Moreover, it is important to note that the direct portion of the state tax structure -- the individual income tax and consumer expenditure taxes levied on resident households -- actually proved to be progressive. The relative tax burden for households in the lowest stratum was 3.4 percent compared with a burden of 3.8 percent for those in the highest. As already indicated, this pattern is essentially due to the fact that the regressivity of the state sales tax and consumer excises is more than offset by the magnitude and progressivity of the state income tax. With regard to the income tax, the average effective rates for the income classes successively increased from a low of 0.4 percent for households in the lowest stratum to a high of 2.8 percent for taxpayers in the \$50,000 and over category. Thus, the relative income tax burden on the poor was only one-seventh as large as that on those in the top income stratum.

### The CTPS Progressivity Index

The foregoing analysis has been based on an approximate measure of the regressivity or progressivity of each tax determined by expressing the relative tax burden (effective tax rate) of the lowest income stratum as a ratio to that of the highest. This "broad income" index of progressivity/regressivity was first developed for the 1972 Colorado Tax Profile Study. If the ratio or index number is equal to 1.0, the tax should be considered proportional; if less than 1.0, the tax is progressive; and if more than 1.0, regressive.

In order to make the analysis consistent over time, the index measure for fiscal year 1980, in terms of adjusted broad income, is based on the effective rates of the lowest income group (under \$5,000) compared with those of the two highest strata combined, i.e., with the effective rate for all taxpayers with reported adjusted income of \$25,000 or more. On this basis, the index values for each of Colorado's major state and local taxes, for the fiscal years 1972, 1975, 1977 and 1980, are summarized in the following tabulation:

	CTPS Progressivity Index Based on Broad Income -- Tax Burden Ratios of Lowest to Highest Income Class			
	<u>1972</u>	<u>1975</u>	<u>1977</u>	<u>1980</u>
<u>State Taxes:</u>				
Individual Income Tax	.16	.15	.17	.16
Sales Tax on Households	1.85	1.81	2.19	2.04
Excise Taxes on Households	<u>2.21</u>	<u>2.32</u>	<u>2.68</u>	<u>2.47</u>
Total Direct Taxes	.72	.67	.85	.87
Indirect Business Taxes	<u>1.33</u>	<u>1.31</u>	<u>2.04</u>	<u>1.85</u>
Total State Taxes	.90	.84	1.12	1.16
<u>Local Taxes:</u>				
Residential Property Tax	2.13	1.87	2.08	2.06
Sales Tax on Households	2.00	1.83	2.20	2.03
Excise Taxes on Households	<u>2.52</u>	<u>2.73</u>	<u>3.33</u>	<u>3.11</u>
Total Direct Taxes	2.11	1.89	2.15	2.09
Indirect Business Taxes	<u>1.93</u>	<u>1.79</u>	<u>2.41</u>	<u>2.05</u>
Total Local Taxes	2.02	1.84	2.27	2.17
<u>Total State-Local Taxes</u>	<u>1.35</u>	<u>1.25</u>	<u>1.64</u>	<u>1.61</u>

First, the data clearly indicate that the Colorado state-local tax system remains regressive, but slightly less so in fiscal 1980 than in 1977. On a broad income basis, the 1980 CTPS index number for the combined state-local tax structure was 1.61, which indicates that the total state-local tax burden for households in the lowest income category (under \$5,000) was approximately two-thirds greater than the relative burden imposed on taxpayers in the top income strata (\$25,000 or more). However, the state tax structure has remained essentially proportional with the progressivity of the direct tax component on the state level (.87) being offset by the regressivity of the indirect business tax component (1.85). On the other hand, the local tax structure continues to be highly regressive with index numbers in excess of two for all major tax categories -- residential property, retail sales, consumer excises and indirect business taxes.

Of the three major taxes imposed on Colorado households -- income, sales and property -- the latter two have proven to be about equally regressive since 1972. The relative tax burdens of both the residential property tax and the state sales tax for low income households have been consistently twice as heavy as that imposed on high income taxpayers. In sharp contrast, the state income tax remains the only significant progressive tax in the entire array of state-local levies imposed on Colorado resident households. The CTPS progressivity index for the state income tax has remained remarkably stable and has shown the least variation of any of the major state-local taxes since 1972 when those studies were first undertaken. In other words, the relative income tax burden on low income households during this period has consistently been only one-sixth as large as that of taxpayers in the \$25,000 and over income category.

Finally, it should be noted that notwithstanding the unabated price inflation and rise in nominal income over the past three years, the state income tax structure actually proved to be slightly more progressive in fiscal year 1980 than in 1977. The CTPS index number for the tax dropped from .17 to .16, the same value which it had in 1972. This must be primarily attributed to the system of "full indexation" and a variety of

other income tax revision measures introduced in 1978 and 1979. As more fully discussed in the companion study, the 1980 Analysis of the Colorado Income Tax: Inflation, Indexation and Credits, these recently enacted income tax provisions not only resulted in significant reductions in absolute dollar tax burdens, but helped maintain the legislated progressivity and distributional equity of the state income tax by offsetting the distortions and automatic tax increases inevitably generated by inflation.



## APPENDIX A

APPORTIONMENT OF STATE AND LOCAL TAXES  
BETWEEN HOUSEHOLDS AND BUSINESS

The state and local tax liabilities of Colorado resident taxpayers for fiscal year 1980 used as the basis for the present study were developed from original data obtained from a variety of sources. The state and federal individual income tax data for Colorado households were derived from a stratified random sample of 18,859 state tax returns filed during the first six months of 1980. A detailed description of the sampling methodology and statistical reliability of the income tax data are provided in Appendix A of the 1980 Colorado Statistics of Income report. State and local revenue data on a collection basis were obtained from the Colorado State Department of Revenue, the Division of Accounts and Control, the Division of Property Taxation, the Department of Local Affairs, and the City of Denver Finance Office. These data are summarized and presented in Table A-1. In order to put the data on a resident liability basis, the reported collections were adjusted for nonallocable and nontax revenues, taxes paid by non-resident taxpayers, and vendor discounts on tax collections. The income tax data also were adjusted for the cash flow difference between collections and liabilities. A summary of the state and local taxes as adjusted for this study is presented in Table A-2.

Adjustment and Classification of State Taxes

The adjustments made in state taxes and the allocation of the adjusted taxes between those levied on households (direct taxes) and those levied on business (indirect taxes) are presented in Table A-3.

The base figures for "Reported Net Tax Collections" are exclusive of nonallocable state inheritance and gift taxes, hunting and fishing license fees and pari-mutuel betting taxes. All other nonallocable and/or nontax revenues were treated as adjustments to the reported net collec-

tions. These items represented sales tax assessments, penalties and interest, audit deficiencies, and sales and motor vehicle taxes collected by the Revenue Department for local jurisdictions. These adjustments amounted to \$8.3 million in fiscal 1980.

Income tax collections for any given year in an expanding economy will exceed the actual income tax liability incurred on the previous year's income because of tax withholding and declaration of estimated taxes. In fiscal year 1980 the reported net income tax collections were significantly larger than liabilities. There also was an excess cash flow from the severance tax. Combined, these adjustments amounted to \$62.3 million or four percent of the reported state collections.

The estimates of non-resident taxes by major source were as follows:

<u>Non-Resident Taxes</u>	<u>Dollar Amounts in Millions</u>		
	<u>1975</u>	<u>1977</u>	<u>1980</u>
Individual income taxes	\$ 2.2	\$ 2.1	\$ 3.8
Retail sales taxes	16.5	19.9	26.9
Motor fuel taxes	9.4	10.6	11.4
Cigarette taxes	1.2	1.5	1.5
Alcoholic beverage taxes	<u>1.9</u>	<u>2.4</u>	<u>2.6</u>
Total	\$31.2	\$36.5	\$46.2

The non-resident individual income tax was derived from the CTPS income tax analysis. The non-resident sales tax estimate was based on information provided by the Travel Marketing Section of the Colorado Division of Commerce and Development and the Colorado Visitors Bureau. The ratio of non-resident sales tax collections to total sales tax collections directly allocated to households was used as the basis for estimating non-resident excise taxes on motor fuel, cigarettes and alcoholic beverages.

The final adjustment for purposes of resident tax burden analysis was the addition of vendor discounts on sales, motor fuel and cigarette taxes retained by merchants as compensation for their costs of tax collection. This component of the tax burden is not included in either the gross or net taxes reported by the Department of Revenue. Vendor discounts on state tax collections for fiscal 1980 were as follows:

<u>Vendor Discounts on Resident Taxpayers</u>	<u>Dollar Amounts in Millions</u>		
	<u>1975</u>	<u>1977</u>	<u>1980</u>
Retail sales taxes	\$ 8.4	\$10.4	\$15.9
Motor fuel taxes	2.2	2.4	2.7
Cigarette taxes	<u>.6</u>	<u>.7</u>	<u>.7</u>
Total	\$11.2	\$13.5	\$19.3

On the basis of all of the above adjustments, the estimated state total tax liability averaged 93 percent of the reported net tax collections.

Table A-3 also shows the apportionment of the adjusted state taxes between resident households and business. For the purposes of this study, the individual income tax and excises on cigarettes and alcoholic beverages were treated as direct levies on Colorado resident households. The corporation income tax, insurance, severance and all other franchise and regulatory business taxes were classified as indirect or business taxes since such taxes ultimately are borne by individuals in the form of increased market prices or decreased dividends or undistributed corporate earnings. The remaining major state taxes -- the sales and use tax and the highway user taxes -- were apportioned between these two broad tax categories on the basis of information provided by the Research and Statistics Section of the Colorado Department of Revenue. The apportionment of state sales and highway user taxes between households and business firms for fiscal year 1980 are shown in Table A-5.

#### Adjustment and Classification of Local Taxes

Tax collections of local governments were treated in a manner similar to that described above for adjusting and allocating state taxes. Colorado local governments generally operate on a calendar year basis and the most recent data available on a uniform statewide basis were for calendar year 1979 which overlaps fiscal year 1980 by six months. A summary of the adjustments made to these levies and their apportionment between households and business are shown in Table A-4.

The specific adjustments made in local taxes for the CTPS study were as follows: the exclusion of the employee share of the Denver city occupation tax since these levies could not be allocated by income classes; the exclusion of estimated non-resident sales and cigarette taxes based on the method used for computing non-resident state taxes; the reduction of the residential property tax by the old age property tax credits for the year; and the addition of vendor discounts on local sales and cigarette taxes.

The adjusted local tax totals also were apportioned between households and business firms. Cigarette taxes were classified as direct levies; all utility, franchise and regulatory taxes as indirect. The specific ownership tax was allocated on the basis of motor vehicle licenses. Also, the two major sources of local tax revenues -- property and sales taxes -- were separately apportioned between households and business. The local sales tax was apportioned on the basis of the ratios described above for allocating the state sales and tax. The allocation of the residential portion of the property tax by income class is shown in Table A-6. The allocation assumed that property taxes on renter-occupied housing units were shifted forward and that such average taxes generally were smaller than those on owner-occupied units of families of comparable income and household size. The 1980 CTPS individual income tax analysis provided average household real estate tax deductions on itemized returns classified by adjusted gross income. The ratio of taxpayers reporting such deductions to the total number of taxpayers in each income stratum varied directly and significantly with the level of income.

The highway user tax category includes state motor fuel and ton-mile taxes and motor vehicle and operators license fees as well as the local government specific ownership tax. These levies amounted to \$182.7 million, or less than seven percent of the total state-local tax liability. On the state level, highway user taxes accounted for only 12 percent in 1980 compared with 15 and 21 percent of the state total tax liability in 1975 and 1972, respectively. The decrease in the relative importance of these levies in part reflects the motoring publics' response to steadily rising fuel prices.

Other business taxes represent all business taxes and fees, other than the corporate income tax and the portion of the sales, property and highway user taxes paid by business firms. It includes oil and gas production taxes, other severance taxes, the employer's share of the Denver occupation tax, insurance, franchise and utility taxes and miscellaneous regulatory fees. In fiscal 1980 these taxes amounted to \$128.6 million, or five percent of the total tax bill, and have been steadily increasing over the past five years.

Cigarette and alcoholic beverage taxes continue to be quantitatively the least important category in the state-local tax structure. On a combined basis they amounted to \$54.2 million and as a percentage share of the total these excises have steadily declined since 1972. The cigarette tax alone slightly exceeded one percent, and the alcohol beverage tax less than one percent of the total state-local tax burden in fiscal year 1980.

8.77  
 3.2  
 2.8  
 2.4  
 0.8  
 2.0  
 5.5

TABLE A-1. SUMMARY OF STATE AND LOCAL TAXES AS REPORTED  
BY STATE AGENCIES,<sup>a</sup> FISCAL YEARS 1975-1980

	Fiscal Years				
	1975	1977	1978	1979	1980
	(Money amounts in millions of dollars)				
<u>State Taxes</u>					
Income Taxes <sup>b</sup>	\$ 330.0	\$ 436.0	\$ 489.8	\$ 594.9	\$ 600.5
Sales and Use Taxes	275.0	342.9	401.8	482.7	509.4
Highway User Taxes	128.9	145.4	150.1	162.1	167.0
Insurance Tax	21.0	27.8	31.1	35.9	39.9
Cigarette Taxes	16.1	17.7	32.1	17.5	17.9
Alcohol Beverage Taxes	15.7	19.9	21.1	24.5	23.6
Severance Taxes	2.4	2.2	8.4	19.2	23.9
Other Business Taxes	17.1	17.3	18.6	20.7	16.0
Total State Taxes	\$ 806.2	\$1,009.2	\$1,153.0	\$1,357.5	\$1,398.2
<u>Local Taxes</u>					
Property Taxes	\$ 614.4	\$ 791.1	\$ 846.4	\$ 888.0	\$ 977.4
Sales and Use Taxes	131.5	170.4	206.2	243.6	285.0
Cigarette Taxes	15.4	15.6	16.1	16.2	16.9
Specific Ownership Tax	14.3	16.2	17.8	23.5	24.5
Denver Occupation Tax	10.7	11.5	11.5	12.4	13.0
Other Business Taxes	30.0	29.4	39.3	43.9	50.9
Total Local Taxes	\$ 816.3	\$1,034.2	\$1,137.3	\$1,227.6	\$1,367.7
<u>Total State and Local Taxes</u>					
Property Taxes	\$ 614.4	\$ 791.1	\$ 846.4	\$ 888.0	\$ 977.4
Sales and Use Taxes	406.5	513.3	608.0	726.3	794.4
Income Taxes	330.0	436.0	489.8	594.9	600.5
Highway User Taxes <sup>c</sup>	143.2	161.6	167.9	185.6	191.5
Other Business Taxes <sup>d</sup>	81.2	88.2	108.9	132.1	143.7
Other Excise Taxes <sup>e</sup>	47.2	53.2	69.3	58.2	58.4
Total State and Local Taxes	<u>\$1,622.5</u>	<u>\$2,043.4</u>	<u>\$2,290.3</u>	<u>\$2,585.1</u>	<u>\$2,765.9</u>

<sup>a</sup>As reported by the Colorado Department of Revenue, the Division of Accounts and Control, the Division of Property Taxation and the Department of Local Affairs.

<sup>b</sup>Includes surtax and corporate income tax.

<sup>c</sup>Includes local specific ownership tax.

<sup>d</sup>Includes insurance, severance, corporate franchise, occupation, miscellaneous regulatory business taxes.

<sup>e</sup>Cigarette and alcoholic beverage taxes.

TABLE A-2. SUMMARY OF COLORADO STATE AND LOCAL TAXES  
AS ADJUSTED FOR COLORADO TAX PROFILE STUDY,  
FISCAL YEARS 1975-1980

	Fiscal Years				
	1975	1977	1978	1979	1980
	(Money amounts in millions of dollars)				
<u>State Taxes</u>					
Income Taxes <sup>a</sup>	\$ 306.7	\$ 390.0	\$ 460.4	\$ 527.4	\$ 537.3
Sales and Use Taxes	255.9	333.1	387.5	468.7	495.2
Highway User Taxes	121.6	137.3	141.8	153.0	158.2
Insurance Tax	21.0	27.8	31.1	35.9	39.9
Cigarette Taxes	15.6	16.8	30.4	16.8	17.1
Alcohol Beverage Taxes	13.8	17.5	18.5	22.0	21.0
Severance Taxes	2.4	2.2	6.8	17.0	21.2
Other Business Taxes	11.8	13.8	11.2	12.5	10.9
Total State Taxes	\$ 748.8	\$ 938.6	\$1,087.7	\$1,253.3	\$1,300.8
<u>Local Taxes</u>					
Property Taxes	\$ 607.6	\$ 782.2	\$ 808.1	\$ 870.9	\$ 961.7
Sales and Use Taxes	126.8	165.1	199.3	237.8	277.5
Cigarette Taxes	14.8	14.8	15.3	15.6	16.1
Specific Ownership Tax	14.3	16.2	17.8	23.5	24.5
Denver Occupation Tax	4.7	5.1	5.0	5.4	5.8
Other Business Taxes	30.0	29.4	39.3	43.9	50.8
Total Local Taxes	\$ 798.2	\$1,012.8	\$1,084.8	\$1,197.1	\$1,336.4
<u>Total State and Local Taxes</u>					
Property Taxes	\$ 607.6	\$ 782.2	\$ 808.1	\$ 870.9	\$ 961.7
Sales and Use Taxes	382.7	498.2	586.8	706.5	772.7
Income Taxes <sup>a</sup>	306.7	390.0	460.4	527.4	537.3
Highway User Taxes <sup>b</sup>	135.9	153.5	159.6	176.5	182.7
Other Business Taxes <sup>c</sup>	69.9	78.4	93.4	114.7	128.6
Other Excise Taxes <sup>d</sup>	44.2	49.1	64.2	54.4	54.2
Total State and Local Taxes	<u>\$1,547.0</u>	<u>\$1,951.4</u>	<u>\$2,172.5</u>	<u>\$2,450.4</u>	<u>\$2,637.2</u>

<sup>a</sup>Includes surtax and corporate income tax.

<sup>b</sup>Includes local specific ownership tax.

<sup>c</sup>Includes insurance, severance, corporate franchise, occupation, miscellaneous regulatory business taxes.

<sup>d</sup>Cigarette and alcoholic beverage taxes.

TABLE A-3. SUMMARY OF COLORADO STATE TAXES  
ALLOCATED BETWEEN HOUSEHOLDS AND BUSINESSES,  
FISCAL YEARS 1975-1980

	Fiscal Years				
	1975	1977	1978	1979	1980
	(Money amounts in millions of dollars)				
<u>Reported Net Tax Collections</u>	\$806.2	\$1,009.2	\$1,153.0	\$1,357.5	\$1,398.2
<u>Adjustments</u>					
Non-tax Revenues	-16.3	-7.6	-9.6	-10.9	-8.2
Excess of tax collections over tax liabilities	-21.1	-40.0	-28.5	-68.2	-62.3
Non-resident tax collections	-31.2	-36.5	-43.1	-43.2	-46.2
Vendor's discounts on sales and excise taxes	<u>+11.2</u>	<u>+13.5</u>	<u>+15.9</u>	<u>+18.1</u>	<u>+19.3</u>
Total Adjustments	-57.4	-70.6	-65.3	-104.2	-97.4
<u>Total State Taxes</u>	\$748.8	\$ 938.6	\$1,087.7	\$1,253.3	\$1,300.8
<u>Taxes on Resident Households</u>					
Individual Income <sup>a</sup>	\$257.2	\$ 332.5	\$ 388.6	\$ 435.6	\$ 437.6
Sales and use	164.7	218.7	247.5	298.8	304.8
Highway User <sup>b</sup>	70.0	78.5	80.2	86.6	87.8
Cigarette	15.6	16.8	30.4	16.8	17.1
Alcohol Beverage	<u>13.8</u>	<u>17.5</u>	<u>18.5</u>	<u>22.1</u>	<u>21.0</u>
Total Household Taxes	\$521.3	\$ 664.1	\$ 765.2	\$ 859.9	\$ 868.3
<u>Taxes on Business</u>					
Corporate Income <sup>c</sup>	\$ 49.5	\$ 57.5	\$ 71.8	\$ 91.8	\$ 99.7
Sales and Use <sup>d</sup>	91.2	114.4	140.0	169.9	190.4
Highway User	51.6	58.8	61.6	66.4	70.4
Insurance	21.0	27.8	31.1	35.9	39.9
Severance	2.4	2.2	6.8	17.0	21.2
Other Business Taxes <sup>e</sup>	<u>11.8</u>	<u>13.8</u>	<u>11.2</u>	<u>12.4</u>	<u>10.9</u>
Total Business Taxes	<u>\$227.5</u>	<u>\$ 274.5</u>	<u>\$ 322.5</u>	<u>\$ 393.4</u>	<u>\$ 432.5</u>

<sup>a</sup>Includes surtax.

<sup>b</sup>Includes allocated portion of fuel taxes, motor vehicle licenses and operator's fees, and safety inspections and other motor vehicle fees.

<sup>c</sup>Includes fiduciaries.

<sup>d</sup>In addition to allocated portion of highway user taxes listed above, includes special fuel and gross ton mile taxes.

<sup>e</sup>Includes severance, franchise and all other regulatory business taxes.



TABLE A-4. SUMMARY OF COLORADO LOCAL TAXES  
ALLOCATED BETWEEN HOUSEHOLDS AND BUSINESSES,  
FISCAL YEARS 1975-1980

	Fiscal Years				
	1975	1977	1978	1979	1980
	(Money amounts in millions of dollars)				
<u>Reported Net Tax Collections</u>	\$816.3	\$1,034.2	\$1,137.3	\$1,227.6	\$1,367.7
<u>Adjustments</u>					
Nonallocable taxes <sup>a</sup>	-6.0	-6.4	-6.4	-7.0	-7.3
Non-resident Taxes	-9.4	-11.4	-14.2	-14.0	-17.1
Old age property tax credit	-6.8	-8.9	-38.3	-17.1	-15.7
Vendor's discounts on sales and excise taxes	<u>+4.1</u>	<u>+5.3</u>	<u>+6.4</u>	<u>+7.6</u>	<u>+8.8</u>
Total Adjustments	-18.1	-21.4	-52.5	-30.5	-31.3
<u>Total Local Taxes</u>	\$798.2	\$1,012.8	\$1,084.8	\$1,197.1	\$1,336.4
<u>Taxes on Resident Households</u>					
Residential Property	\$293.4	\$ 382.0	\$ 379.0	\$ 425.1	\$ 479.8
Sales and Use	84.1	110.7	131.1	154.5	176.2
Cigarette	14.8	14.8	15.3	15.6	16.1
Specific Ownership Tax	<u>10.0</u>	<u>11.3</u>	<u>12.4</u>	<u>16.4</u>	<u>17.2</u>
Total Household Taxes	\$402.3	\$ 518.9	\$ 537.8	\$ 611.6	\$ 689.3
<u>Taxes on Business</u>					
Non-Residential Property	\$314.2	\$ 400.2	\$ 429.1	\$ 445.8	\$ 481.9
Sales and Use	42.6	54.4	68.2	83.3	101.3
Other Business Taxes <sup>b</sup>	<u>39.1</u>	<u>39.3</u>	<u>49.7</u>	<u>56.4</u>	<u>63.9</u>
Total Business Taxes	<u>\$395.9</u>	<u>\$ 493.9</u>	<u>\$ 547.0</u>	<u>\$ 585.5</u>	<u>\$ 647.1</u>

<sup>a</sup>Represents employee's share of Denver Occupation Tax.

<sup>b</sup>Includes business shares of Specific Ownership Tax and Denver Occupation Tax.

TABLE A-5. APPORTIONMENT OF COLORADO STATE SALES AND  
HIGHWAY USER TAXES BETWEEN HOUSEHOLDS AND BUSINESS,  
FISCAL YEAR 1980

	Ratio of Households to Business	Dollar Amounts (Thousands)		
		Total	Households	Business
A. Sales and Use Taxes:				
Food and apparel	100/0	\$ 62,626	\$ 62,626	--
Personal services and miscellaneous retail trade	95/5	79,202	75,242	\$ 3,960
General mdse., furniture, appliances, autos, auto parts and accessories, hotels and lodgings	90/10	127,645	114,880	12,765
Eating and drinking places	85/15	41,942	35,651	6,291
Electric, gas, communications, trans- portation, utilities	55/45	39,322	21,627	17,695
Bldg. materials, hardware and farm equipment	25/75	34,389	8,597	25,792
Agr., mining, construction, manuf., whsle. trade, finance, business services, NCE	0/100	85,203	--	85,203
Net Sales Tax		\$470,329	\$318,623	\$151,706
Less: Food tax credit	100/0	-27,956	-27,956	--
Non-resident tax	100/0	-26,900	-26,900	--
Plus: Net use tax	45/55	\$ 51,349	\$ 22,902	\$ 28,447
Vendor Discounts (Res)	66/34	15,930	10,474	5,456
Total Resident Sales Tax	62/38	\$482,752	\$297,143	\$185,609
Adjusted for Timelag	62/38	12,459	7,675	4,784
Resident Sales/Use Tax		<u>\$495,211</u>	<u>\$304,818</u>	<u>\$190,393</u>
B. Highway Use Taxes				
Motor fuel taxes	75/25	\$101,451	\$ 76,088	\$ 25,363
Motor vehicle operators licenses and other fees	70/30	30,599	21,419	9,180
Special fuel and ton-mile taxes	0/100	34,918	--	34,918
Reported Highway User Taxes		\$166,968	\$ 97,507	\$ 69,461
Less: Non-resident motor fuel taxes	100/0	-11,413	-11,413	--
Plus: Vendor discounts on motor fuel	72/28 <sup>a</sup>	2,375	1,706	669
Vendor discounts on spec. fuel	0/100	309	--	309
Total Resident Highway User Taxes	56/44	<u>\$158,239</u>	<u>\$ 87,800</u>	<u>\$ 70,439</u>

<sup>a</sup>Inclusive of non-residents, the ratio was 75/25.

TABLE A-6. DERIVATION OF COLORADO RESIDENTIAL PROPERTY TAXES,  
FISCAL YEAR 1980

	Adjusted Gross Income Classes					Total
	Under \$5,000	\$5,000 to \$15,000	\$15,000 to \$25,000	\$25,000 to \$50,000	\$50,000 and Over	
Total number of resident households	342,783	410,121	251,610	195,069	29,695	1,229,278
Percent of total with real estate tax deductions on itemized returns	4.2%	20.4%	61.2%	86.5%	91.8%	36.4%
Average property tax on returns with real estate tax deductions <sup>a</sup>	--	\$ 526	\$ 550	\$ 727	\$ 1,315	--
Average property tax imputed to all other households	\$ 214	\$ 269	\$ 333	\$ 474	\$ 979	--
Weighted average property tax for all households	\$ 214	\$ 321	\$ 466	\$ 693	\$ 1,284	\$ 403
<u>Total Property Taxes (\$000):</u>						
Households with real estate tax deductions	\$ --	\$ 44,017	\$ 84,627	\$122,684	\$35,825	\$287,153
All other households	<u>73,229</u>	<u>87,795</u>	<u>32,562</u>	<u>12,512</u>	<u>2,298</u>	<u>208,396</u>
Total property tax	73,229	131,812	117,189	135,196	38,123	495,549
Less: Old age property tax credit	<u>-15,378</u>	<u>-346</u>	<u>--</u>	<u>--</u>	<u>--</u>	<u>-15,724</u>
Net property tax	<u>\$57,851</u>	<u>\$131,466</u>	<u>\$117,189</u>	<u>\$135,196</u>	<u>\$38,123</u>	<u>\$479,825</u>

<sup>a</sup>All returns in the first income stratum were treated as non-itemized returns because of the relatively small number of itemized returns with property tax deductions.

## APPENDIX B

DERIVATION OF HOUSEHOLD INCOME AND ALLOCATION  
OF TAXES BY MAJOR INCOME CLASSES

The extent to which a "tax profile" corresponds to the actual burden of state and local taxes borne by the poor, the middle class and the rich depends not only on how accurately the income and tax data are measured, but on the validity of the income concept and the reasonableness of the tax allocators developed for the analysis. This appendix describes both the income measure and tax allocations used for this study.

Income Measures for Tax Burden Analysis

It is generally recognized that the adjusted gross income reported on tax returns is not an adequate measure of income for tax burden analysis because of differences between the economic and statutory definitions of income. The latter excludes various forms of money income which are considered to be primarily transfer payments, such as public and private welfare payments, social security payments, veterans benefits, and unemployment compensation. In contrast, the economic concept of income (e.g., the personal income measure in the national income accounts), in addition to transfer payments, includes sundry forms of imputed income, such as imputed rent on owner-occupied residences and interest on insurance and savings. The magnitude of the difference between these measures for Colorado is indicated by the fact that for fiscal 1980 the total adjusted gross income reported on state income tax returns represented only 73 percent of the total personal income for Colorado as estimated by the U.S. Department of Commerce.<sup>1</sup>

Intermediate measures of money income also have been based on sample surveys conducted by government agencies. Such money income measures are generally in accord with the popular concept of income since

they exclude imputed income but include nontaxable money transfers as well as tax exempt interest, dividends and capital gains.

In order to obtain an alternative measure which would more closely correspond to the conventional concept of income and provide a broader base than the adjusted gross income reported on Colorado income tax returns, an adjusted broad income measure was developed. A recent study by the Bureau of the Census provides a detailed analysis of household money income for all families and unrelated individuals in the United States for 1978.<sup>2</sup> In this report the sources of income were classified by Census money income levels. After converting the money income into corresponding adjusted gross income classes, the Census allocation of transfer income was applied to the total money transfers received by Colorado households in 1979, as estimated by the U.S. Department of Commerce.<sup>3</sup>

In addition to the above money transfer income adjustment, the CTPS adjusted broad income measure includes an estimate of the tax exempt capital gains, dividends, interest and other money income statutorily excluded from adjusted gross income. An estimate of such income for Colorado was derived from the "tax expenditure" data presented in the U.S. Treasury, Special Budget Analysis, Fiscal Year 1979.<sup>4</sup> Non-transfer money income excluded from adjusted gross income, in turn, was allocated among the income strata on the basis of the distribution of family property income reported by the Bureau of the Census.

A summary of the final adjustments made to the CTPS 1980 adjusted gross income in order to derive the corresponding adjusted broad income used as the alternative base is shown in the following table:

TABLE B-1. DERIVATION OF ADJUSTED BROAD INCOME FOR THE  
COLORADO TAX PROFILE STUDY, FISCAL YEAR 1980

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>
<u>Income Classes</u>	Average Adjusted Gross Income	Ratio of Excluded Tax Exempt Income <sup>a</sup>	Ratio of Excluded Transfer Income	Income Expansion Factor (1+B+C)	Average Broad Income (AxD)
Under \$5,000	\$ 2,057	.0292	1.2403	2.2695	\$ 4,669
\$5,000 to \$15,000	9,473	.0341	.2532	1.2873	12,195
\$15,000 to \$25,000	19,641	.0426	.0696	1.1122	21,845
\$25,000 to \$50,000	33,030	.0558	.0391	1.0949	36,164
\$50,000 and over	<u>85,330</u>	<u>.1024</u>	<u>.0232</u>	<u>1.1256</u>	<u>96,047</u>
Totals <sup>b</sup>	\$15,057	.0531	.1358	1.1889	\$17,901

<sup>a</sup>Capital gains, dividends, interest and pension contributions.

<sup>b</sup>Weighted totals and ratios based on total dollar amounts.

#### The Consumer Expenditure Profile

In order to allocate Colorado state and local expenditure taxes on retail sales, cigarettes, liquor and gasoline as well as business taxes shifted forward to consumers, it was necessary to develop an appropriate consumer expenditure profile of Colorado household expenditures, classified by household income level. The most comprehensive data on consumer spending by American households are provided by the U.S. Bureau of Labor Statistics' consumer expenditure surveys for 1972 and 1973.<sup>5</sup> The household expenditure and income data contained in these reports were used as the basis for allocating the sales, excise and indirect business taxes among households after the income measures were made comparable and the expenditure outlays were adjusted for price inflation. In accord with the definitions of taxable commodities and services under Colorado's present statutes, the estimated average household expenditures were classified into taxable and nontaxable categories. These average data were then used to derive the total expenditures for each major category of spending, classified by income level, in order to obtain the current patterns of consumption expenditures of Colorado households.

The specific 1977 consumer expenditure-income ratios developed for the CTPS analysis are summarized below:

TABLE B-2. RATIOS OF CONSUMER EXPENDITURES TO ADJUSTED GROSS AND BROAD INCOMES USED IN THE COLORADO TAX PROFILE STUDY, FISCAL YEAR 1980

Income Classes	Colorado Consumer Expenditures as Ratios of:			
	Adjusted Gross Income		Adjusted Broad Income	
	Taxable Expenditures	Total Expenditures	Taxable Expenditures	Total Expenditures
Under \$5,000	1.841	3.102	.824	1.389
\$5,000 to \$10,000	.807	1.251	.613	.951
\$15,000 to \$25,000	.638	.948	.564	.838
\$25,000 to \$50,000	.488	.745	.437	.668
\$50,000 and over	<u>.317</u>	<u>.484</u>	<u>.274</u>	<u>.419</u>
Total	.623	.960	.515	.793

#### Tax Allocators Used for Burden Analysis

The allocations of individual state and local taxes by income class were made on the following basis:

- Individual income tax -- allocation obtained directly from the CTPS independent analysis of a stratified, random sample of 1979 Colorado individual income tax returns filed in fiscal year 1980 and prepared for the companion report, Analysis of the Colorado Income Tax, 1980. A description of the sample and its statistical reliability is presented in Appendix B of that report.
- Sales and use taxes -- the direct portions of state and local sales taxes were allocated on the basis of ratios of taxable consumer expenditures to adjusted gross income developed from U.S. Bureau of Labor Statistics, 1973 Survey of Consumer Expenditures updated for inflation. The indirect portions of these taxes were allocated by total consumer expenditure ratios since such taxes represent business costs assumed to have been shifted forward to consumers.

- Excise taxes -- the cigarette, alcoholic beverage, specific ownership and the direct portions of highway user taxes also were allocated on the basis of updated Survey of Consumer Expenditure data. Ratios of consumer expenditures for these particular items to adjusted gross income were developed and applied to the CTPS tax data. The indirect portion of the highway user taxes was allocated on the basis of total consumer expenditure ratios.
- Property taxes -- the allocations of residential property taxes by income classes were based on the CTPS individual income tax analysis which provided detailed data on the number and amount of real estate tax deductions reported on itemized returns. Non-residential property taxes were allocated on the same basis as other business taxes, i.e., the ratios of total consumer expenditures to adjusted gross income.
- Corporation income tax -- one-half of this tax was assumed to be shifted forward to consumers and allocated on the same basis as the other in direct taxes described above. The remainder was assumed to be borne by equity stockholders and allocated on the basis of the distribution of corporate dividends by adjusted gross income classes as reported on state returns.
- Other business taxes -- this category includes all taxes levied on business firms other than the corporate income tax. As in the case of all other business costs, these business taxes were assumed to be indirectly borne by households and accordingly were allocated on the basis of the ratios of total consumption expenditures to income.



APPENDIX B Footnotes:

1. U.S. Department of Commerce, Survey of Current Business, August 1980.
2. U.S. Bureau of the Census, "Money Income in 1978 of Families and Persons in the United States," Current Population Reports, Series P-60, No. 123, Washington, D.C., June 1980. Unpublished data on the components of money income received by unrelated individuals in 1978 were provided by the Census Bureau.
3. U.S. Department of Commerce, Survey of Current Business, August 1980.
4. U.S. Treasury, Special Analysis: Budget of the U.S. Government, Fiscal Year 1978, Washington, D.C., 1977.
5. U.S. Department of Labor, Bureau of Labor Statistics, Consumer Expenditure Survey: Diary Survey, July 1972-June 1979, Bulletin 1959, Washington, D.C., 1977; and Consumer Expenditure Survey Series: Interview Survey, 1972-73, Report 455-4, Washington, D.C., 1977.