Table B-9 (continued)

	Income class (Money income after personal taxes)									
	Under $2,000	$2,000 to 2,999	$3,000 to 3,999	$4,000 to 4,999	$5,000 to 5,999	$6,000 to 7,499	$7,500 to 9,999	$10,000 to 14,999	$15,000 and over	TOTAL
Sales, excises, and other	788	1,127	1,700	2,329	2,790	3,922	4,218	2,789	1,061	20,726
Alcoholic beverages	17	26	56	69	81	132	156	119	44	701
Tobacco	51	78	102	131	147	200	197	99	34	1,038
Auto purchase	7	16	36	66	86	105	121	86	25	550
Auto operation	98	229	427	621	747	1,066	1,083	693	214	5,178
General sales	194	245	340	456	547	765	842	567	236	4,192
Other taxes[a]	248	311	430	573	688	959	1,056	712	295	5,273
Nontax receipts	175	222	308	413	495	692	762	513	214	3,794
Property tax	929	1,094	1,478	1,929	2,349	3,246	3,532	2,353	1,026	17,938
Half on consumption	415	524	728	975	1,170	1,636	1,802	1,212	505	8,969
Half on housing expenditures	514	570	750	954	1,179	1,610	1,730	1,141	521	8,969
Social insurance	211	295	437	631	766	1,079	1,181	794	292	5,685
Personal contributions	11	43	87	162	203	292	314	211	49	1,370
Employer contributions	200	252	350	469	563	787	867	583	243	4,315
All governments, total	3,745	5,657	9,320	13,410	16,899	24,765	28,997	22,777	19,063	144,634

a. Includes minor arbitrary amounts used for convenience in programming the Federal and state-local levels in the same way.

Source: Derived from Tables B-6 and B-8.

Table B-10

Allocated Federal, State and Local Expenditure Benefits by Income Class, 1961

(Millions)

	Income class (Money income after personal taxes)									
	Under $2,000	$2,000 to 2,999	$3,000 to 3,999	$4,000 to 4,999	$5,000 to 5,999	$6,000 to 7,499	$7,500 to 9,999	$10,000 to 14,999	$15,000 and over	TOTAL
Federal										
General benefit expenditures										
National defense and international affairs	$ 4,405	$ 4,002	$ 4,689	$ 5,772	$ 6,394	$ 8,559	$ 8,964	$ 5,821	$ 2,819	$51,426
Half on number of families	3,654	2,825	2,945	3,241	3,263	3,905	3,526	1,842	511	25,713
Half on money income	751	1,177	1,744	2,531	3,131	4,654	5,438	3,979	2,308	25,713
Other general benefit expenditures(a)	794	721	845	1,040	1,152	1,543	1,616	1,049	508	9,268
Half on number of families	659	509	531	584	588	704	636	332	92	4,634
Half on money income	135	212	314	456	564	839	980	717	416	4,634
Elementary & secondary education	15	24	31	44	47	61	52	25	6	305
Higher education	3	4	7	14	21	33	44	53	31	211
Public assistance & other welfare	1,424	710	232	153	147	81	50	64	1	2,862
Labor	6	18	34	62	80	121	141	98	36	595
Veterans benefits	558	712	965	716	690	972	804	534	192	6,143
Highways	89	141	224	313	377	532	561	368	123	2,738
Half on auto operation expenditures	26	61	113	164	198	282	286	183	56	1,369
Half on total consumption	63	80	111	149	179	250	275	185	77	1,369
Agriculture	221	343	463	441	501	578	603	456	375	3,980
Net interest	307	635	637	568	527	735	1,047	945	965	6,366
Social insurance benefits(b)	2,987	2,786	2,405	1,346	1,288	1,303	1,089	658	87	13,948
Total, standard assumption	10,809	10,096	10,533	10,469	11,224	14,517	14,970	10,070	5,154	97,842
Total, all general benefits allocated on number of families	14,235	12,042	11,949	11,308	11,379	13,633	12,714	7,548	3,034	97,842
Total, excluding general benefits	5,610	5,373	4,999	3,657	3,678	4,416	4,390	3,200	1,827	37,148
Total, excluding social insurance	7,822	7,311	8,128	9,123	9,936	13,214	13,882	9,412	5,067	83,894

(continued)

Table B-10 (Continued)

	Income class (Money income after personal taxes)									
	Under $2,000	$2,000 to 2,999	$3,000 to 3,999	$4,000 to 4,999	$5,000 to 5,999	$6,000 to 7,499	$7,500 to 9,999	$10,000 to 14,999	$15,000 and over	TOTAL
State and Local(c)										
General benefit expenditures(a)	$ 1,515	$ 1,376	$ 1,613	$ 1,985	$ 2,199	$ 2,943	$ 3,083	$ 2,002	$ 970	$ 17,686
Half on number of families	1,257	972	1,013	1,115	1,122	1,343	1,213	634	176	8,843
Half on money income	258	404	599	871	1,077	1,600	1,870	1,368	794	8,843
Elementary & secondary education	823	1,306	1,651	2,328	2,539	3,254	2,784	1,320	317	16,321
Higher education	41	61	101	196	296	464	609	748	434	2,951
Public assistance & other welfare	1,105	551	180	118	114	63	39	49	1	2,222
Streets and highways	204	323	514	719	864	1,221	1,290	846	307	6,289
Half on auto operation expenditures	59	139	259	377	454	647	658	421	130	3,144
Half on total consumption	145	184	255	342	410	574	632	425	177	3,145
Agriculture	29	45	61	58	66	76	79	60	49	524
Net interest	37	76	77	68	63	88	126	114	116	766
Social insurance benefits(b)	909	848	732	410	392	396	331	200	27	4,244
Total, standard assumption	4,674	4,601	4,948	5,896	6,548	8,526	8,359	5,350	2,224	51,126
Total, all general benefits allocated on number of families	5,672	5,168	5,360	6,141	6,593	8,269	7,702	4,615	1,606	51,126
Total, excluding general benefits	3,159	3,225	3,335	3,911	4,349	5,583	5,276	3,348	1,254	33,440
Total, excluding social insurance	3,765	3,753	4,216	5,487	6,156	8,130	8,028	5,150	2,197	46,882
All Governments										
Total, standard assumption	15,483	14,697	15,480	16,365	17,772	23,044	23,330	15,420	7,378	148,968
Total, all general benefits allocated on number of families	19,907	17,210	17,310	17,448	17,972	21,902	20,416	12,163	4,640	148,968
Total, excluding general benefits	8,768	8,598	8,333	7,567	8,027	9,999	9,667	6,548	3,081	70,588
Total, excluding social insurance	11,587	11,064	12,344	14,609	16,091	21,344	21,910	14,562	7,264	130,776

a. Consists of general government (excluding interest), transportation (excluding highways), commerce and finance, housing and community development, health and sanitation, civilian safety, and miscellaneous.

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

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

Source: Derived from Tables B-7 and B-8.

Table B-11

Allocated Income and Output by Income Class, 1961

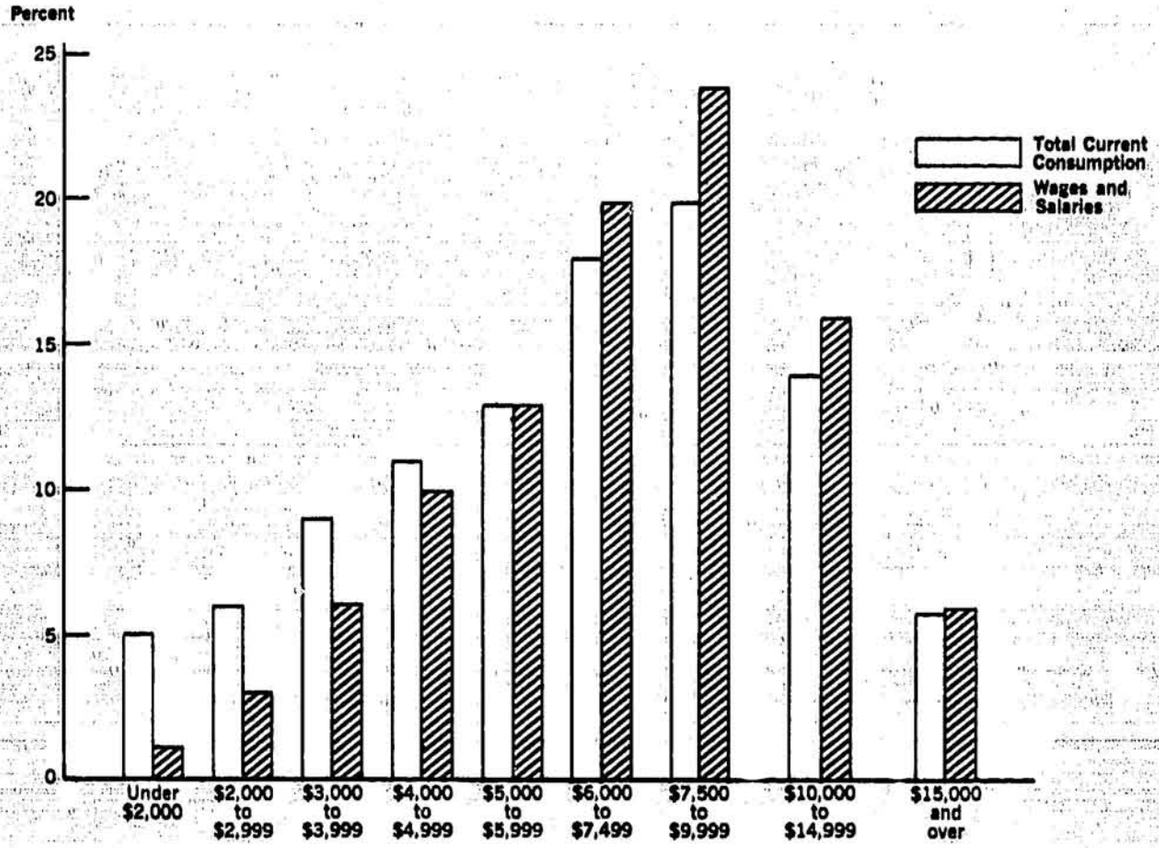
(Millions)

	Income class (Money income after personal taxes)									
	Under $2,000	$2,000 to 2,999	$3,000 to 3,999	$4,000 to 4,999	$5,000 to 5,999	$6,000 to 7,499	$7,500 to 9,999	$10,000 to 14,999	$15,000 and over	TOTAL
BLS money income before personal taxes	$10,170	$15,928	$23,613	$34,260	$42,389	$63,001	$ 73,620	$53,863	$31,239	$348,083
Net national product, factor income distribution	8,223	17,022	29,607	45,746	58,450	87,504	102,263	77,076	48,973	474,865
Net national product, product side	24,743	29,081	38,802	51.380	60,905	84,981	93,106	63,016	28,851	474,865
Personal income	12,062	18,862	27,805	40,491	50,470	75,902	88,575	64,704	37,942	416,814
Personal income adjusted to NNP level	13,742	21,489	31,678	46,131	57,499	86,474	100,911	73,715	43,226	474,865

Source: Derived from Tables B-4, B-5, and B-8.

Chart B-1

PERCENTAGE DISTRIBUTION OF WAGES AND SALARIES AND TOTAL CURRENT CONSUMPTION BY INCOME CLASS 1961



Source: U.S. Department of Labor, Bureau of Labor Statistics, Survey of Consumer Expenditures 1960-61.

Appendix C

Readjustment of Income Class Distribution for Changes in the Definition of Income

The basic data used in this study (from BLS Survey of Consumer Expenditures) are published only in the form of income distributions with families grouped by size of money income after personal taxes. A size distribution in terms of income before personal income taxes would be more appropriate for most purposes and more understandable by the general public.

However, short of going back to the original BLS questionnaire returns, there is no accurate way to transform the assorted data on types of expenditures and kinds of income from a money-income-after-tax-size classification to a money-income-before-tax classification.

This appendix will illustrate how the results of the study might be affected by such a reclassification. A general problem is involved because several definitions of income are used in this study. How would the estimates in the study be affected if the classifications of families by income size classes were altered for every change in the definition of income? If the original return data were available, a computer program could be written to reclassify families for every change in the definition of income. However, it appears that this would be an expensive job for a small gain in results.

The effect of such a reclassification can be set out in general terms and illustrated by certain BLS data which have been reclassified by the Treasury Department. The Treasury reclassification grouped BLS Survey data by adjusted gross income classes. This is roughly equivalent to a shift to a before-tax income class basis although other differences between family money income and adjusted gross income were also taken into account.

This regrouping of families by adjusted gross income classes, as shown by Table C-1,

Table C-1

Effective Rates of Personal Taxes to Family Money Income By Money-Income-After-Tax Classes and By Adjusted Gross Income Classes—1961

Income class (Money income after personal taxes) (Thousands)	Money income before taxes	Personal taxes(a)	Effective tax rate	Adjusted gross income class (Thousands)	Money income before taxes	Personal taxes(a)	Effective tax rate
	(Millions)				(Millions)		
Under $2	$ 10,170	$ 251	2.5%	Under $2	$ 21,699(b)	$ 264	1.2%
$ 2 - 3	15,928	662	4.2	$ 2 - 3	13,464	485	3.6
3 - 4	23,613	1,412	6 0	3 - 4	19,284	1,096	5.7
4 - 5	34,260	2,928	8.5	4 - 5	25,504	2,001	7.8
5 - 6	42,389	3,895	9.2	5 - 6	32,373	2,996	9.3
6 - 7.5	63,001	6,585	10.5	6 - 7.5	52,188	5,261	10.1
7.5 - 10	73,620	8,730	11.9	7.5 - 10	73,000	8,436	11.6
10 - 15	53,863	7,266	13.5	10 - 15	64,181	8,631	13.4
15 & over	31,239	6,880	22.0	15 & over	46,330	9,442	20.4
Total	348,083	38,609	11.1	Total	348,022	38,613	11.1

a. Federal, state and local income taxes, poll taxes, and taxes on personal property.

b. The amount of money income in this class is substantially greater in an adjusted gross income classification than in a money income classification because more than half of money income at this level consists of social security benefits and other kinds of money income not included in adjusted gross income. As a result, many more families have adjusted gross incomes of less than $2,000 than have money incomes of less than $2,000.

Source: Appendix Table B-8 and unpublished Treasury Department data.

produced a slight increase in the extent of progression in effective rates of personal taxes to money income before personal taxes over most of the range of income. On a money-income-after-personal-taxes distribution, effective rates of personal taxes (largely income taxes) ranged from 2.5 percent for families with incomes below $2,000 to 22.0 percent for families with incomes of $15,000 and over. On an adjusted gross income class distribution, the effective rates for the same basic data and family units ranged from 1.2 percent for those with adjusted gross incomes under $2,000 to 20.4 percent for those with adjusted gross incomes of $15,000 and over. The largest changes were in the lowest and the highest income classes.

The changes in the data resulting from such a reclassification can be broken down into three parts as follows:

(1) A change in the topmost income class limit from $15,000 after tax to $15,000 before tax enlarges the numbers of families in this class because more families have incomes before tax of $15,000 or more than have incomes after tax of this amount. For this reason the average effective rate in this class is significantly lowered.

(2) Fewer people have incomes before tax of $2,000 than have incomes after tax of $2,000. A reclassification to a before-tax basis would narrow the lowest income class and tend to reduce the average effective rate.

(3) For all other income classes, a shift from an after-tax to a before-tax classification narrows the range of the class because of the progressive character of the tax. Thus, the difference between the upper class limit on a before- and an after-tax basis would be greater than the difference between the lower class limit on the two bases. In addition, a shift to a before-tax classification results in taking a piece of the income distribution slightly further down the income scale. Thus the effective rates in each class with the same nominal class limits would be lowered.

However, the Treasury Department reclassification to an adjusted gross income class basis shows that except for the lowest and the highest income classes, the effective rates of personal taxes to money income in the BLS Survey showed very little change.

Larger changes in effective rate patterns might result for other changes in the definition of income, but such changes would still probably be small in comparison with those resulting from changes in the assumptions of incidence or in the definition of the income basis.

Appendix D

The Tax Burden: A Comparison with Gillespie's Study[1]

A comparison with a recently published Brookings study is presented here to illustrate further some of the problems in estimating tax burdens by income class. Estimates of expenditure benefits are not compared as the points to be made are amply shown by the differences in the tax burden estimates.

Although the tax allocations developed here are similar to those in Gillespie's study, his effective tax rates showed less progression, or more regression, in various elements of the tax system than indicated by the present study (Table D-1). In order to explain these differences, three major factors must be considered: assumptions of incidence, bases of allocation, and the income base.

Gillespie generally used the same assumptions of tax incidence as this study except for corporate income taxes and Federal social security contributions from employers. This study assumed that half the corporate income tax was paid by consumers and that the other half was paid by stockholders; Gillespie assumed that one-third was paid by consumers and two-thirds by stockholders. It was assumed in this study that the burden of all employer social insurance contributions was shifted to the consumer. Gillespie assumed that only half of the burden was shifted to the consumer; the other half he assumed was shifted back to the employee. However, the net effect of these differences in assumptions of incidence is slight.

The differences in the bases of allocation were more significant. The latest data on family expenditures by type and by income class available to Gillespie were from the *LIFE Study of Consumer Expenditures* (Time, Inc.) published in 1957 and containing data for 1955. By various methods Gillespie adjusted these data to 1960 income levels. The present study had the benefit of the more recent and detailed BLS *Survey of Consumer Expenditures 1960-61*.

The most significant statistical difference in bases of allocation was in the distribution of total current consumption expenditures. As shown by Table D-2, the distribution of consumption expenditures in relation to money income by income class in Gillespie's study was such as to give a considerably more regressive burden for portions of the tax burden allocated on the basis of consumption.

The largest differences in effective rates are due to differences in the definition of the income base. Gillespie's "broad income concept" excludes government transfer payments and consequently is relatively small at low income levels where transfer payments are an important part of family money income. It is largely for this reason that Gillespie's tax rates show less progression or more regression than the effective rates in the present study. Here the "standard case" is based in the aggregate on net national product, but on a distribution by income class that corresponds to the distribution of personal income, which includes transfer payments.

However, there are substantial differences in the distribution of income in the two studies even for approximately comparable definitions of income. This reflects both differences in assumptions concerning the appropriate imputations of non-money income and differences in the statistical sources and bases of allocation.

1. W. Irwin Gillespie, "Effect of Public Expenditures on the Distribution of Income," in R. A. Musgrave, ed., *Essays in Fiscal Federalism*, (Washington, D. C.: The Brookings Institution, 1965), pp. 122-156.

Table D-1

Effective Total Tax Rates by Income Class in Tax Foundation's and Gillespie's Studies

1960-1961[a]

	Income Class[b]							
	Under $2,000	$2,000 to 2,999	$3,000 to 3,999	$4,000 to 4,999	$5,000 to 7,499	$7,500 to 9,999	$10,000 and over	TOTAL
Total taxes as a percentage of alternative income bases								
Gillespie								
Broad income concept[c]	64%	67%	52%	46%	33%	23%	32%	34%
Adjusted income concept[d]	30	38	43	47	34	23	37	34
Tax Foundation								
NNP, personal income distribution	27	26	29	29	29	29	36	30
NNP, factor income distribution[e]	46	33	32	29	29	28	33	30
NNP, product side distribution[f]	15	19	24	26	28	31	46	30

a. Calendar year 1960 in Gillespie's study; calendar year 1961 in Tax Foundation's study.
b. Income classes in terms of money income before taxes in Gillespie's study; in money income after personal taxes in Tax Foundation's study.
c. Gillespie's "broad income concept" consists of family money income plus capital gains, retained profits, the unshifted portion of corporate profits taxes, the backward shifted portion of employers social insurance contributions, and certain other items of non-money income, less government transfer payments to persons.
d. "Adjusted broad income concept" is equal to the broad income concept less tax payments plus government expenditures.
e. The "broad income concept" is most comparable to net national product, factorincome distribution.
f. The "adjusted broad income concept" is most comparable to net national product, product side distribution.

Source: Tax Foundation Appendix Tables B-9 and B-11; W. I. Gillespie, "Effect of Public Expenditures on the Distribution of Income," in R. A. Musgrave, ed., Essays in Fiscal Federalism (Washington, D.C.: The Brookings Institution, 1965), pp. 174, 176.

Table D-2

Relative Distribution of Total Current Consumption and Family Money Income In Tax Foundation's and Gillespie's Studies

1960-1961[a]

	Income Class[a]							
	Under $2,000	$2,000 to 2,999	$3,000 to 3,999	$4,000 to 4,999	$5,000 to 7,499	$7,500 to 9,999	$10,000 and over	TOTAL
Tax Foundation allocation bases								
Consumption	4.6%	5.8%	8.1%	10.9%	31.3%	20.1%	19.2%	100%
Family money income	2.9	4.6	6.8	9.8	30.3	18.1	24.4	100
Gillespie's allocation bases								
Consumption	4.6	7.6	8.8	16.1	38.9	11.7	12.3	100
Family money income	2	4	5	8	28	20	33	100

a. Calendar year 1960 in Gillespie's study; calendar year 1961 in Tax Foundation's study.
b. Income classes in terms of money income before taxes in Gillespie's study; in money income after personal taxes in Tax Foundation's study.

Source: Tax Foundation income data, Appendix Table B-8; W. I. Gillespie, "Effect of Public Expenditures on the Distribution of Income," in R. A. Musgrave, ed., Essays in Fiscal Federalism (Washington, D.C.: The Brookings Institution, 1965), pp. 174, 176.

Table D-3

Allocated Taxes and Income by Income Class in Tax Foundation's and Gillespie's Studies

1960-1961[a]
(Amounts in millions)

LINE		Income Class[b]							
		Under $2,000	$2,000 to 3,000	$3,000 to 4,000	$4,000 to 5,000	$5,000 to 7,500	$7,500 to 10,000	$10,000 and over	TOTAL
	Total taxes								
(1)	Tax Foundation, standard assumption	$ 3,745	$ 5,658	$ 9,321	$13,410	$ 41,664	$ 28,998	$ 41,840	$144,634
(2)	Gillespie	4,040	6,743	8,353	13,419	35,449	17,684	48,457	134,147
(3)	Line (2) ÷ line (1)	108%	119%	90%	100%	85%	61%	116%	93%
	Income base								
	Tax Foundation								
(4)	NNP, personal income distribution	$13,742	$21,489	$31,678	$46,131	$143,973	$100,912	$116,943	$474,868
(5)	NNP, factor income distribution	8,223	17,022	29,607	45,746	145,954	102,263	126,050	474,868
(6)	NNP, product side distribution	24,743	29,081	38,802	51,380	145,887	93,107	91,869	474,868
	Gillespie								
(7)	Broad income concept[c]	6,302	10,034	16,187	29,493	106,799	77,475	151,700	397,998
(8)	Adjusted broad income concept[d]	13,420	17,525	19,504	28,827	103,224	78,314	131,711	392,530
(9)	Line (7) ÷ line 4	46%	47%	51%	64%	74%	77%	130%	84%
(10)	Line (7) ÷ line (5)[e]	77	59	55	64	73	76	120	84
(11)	Line (8) ÷ line (6)[f]	54	60	50	56	71	84	143	83

a. Calendar year 1960 in Gillespie's study; calendar year 1961 in Tax Foundation's study.

b. Income classes in terms of money income before taxes in Gillespie's study; in money income after personal taxes in Tax Foundation's study.

c. Gillespie's "broad income concept" consists of family money income plus capital gains, retained profits, the unshifted portion of corporate profits taxes, the backward shifted portion of employers social insurance contributions, and certain other items of non-money income, less government transfer payments to persons.

d. "Adjusted broad income concept" is equal to the broad income concept less tax payments plus government expenditures.

e. The "broad income concept" is most comparable to net national product, factor income distribution.

f. The "adjusted broad income concept" is most comparable to net national product, product side distribution.

Source: Tax Foundation Appendix Tables B-9 and B-10; W. I. Gillespie, "Effect of Public Expenditures on the Distribution of Income," in R. A. Musgrave, ed., **Essays in Fiscal Federalism** (Washington, D.C. The Brookings Institution, 1965), pp. 174, 176.

Appendix E

Table E-1

Bases for the Allocation of the Benefits of Government Expenditures By Income Class in Previous Studies

ITEM	(1) Alder (1947/48) All levels of government	(2) Tucker (1948) All levels of government	(3) Musgrave (1958) State & local government	(4) Brownlee (1960) State & local government	(5) Gillespie (1960) All levels of government	(6) Tax Foundation (1961 & 1965) All levels of government
National defense and international affairs	income	income	n.a.	n.a.	number of families or money income, disposable income or capital income	number of families or money income or both.
Space research and technology	n.a.	do.	n.a.	n.a.	do.	do.
Postal service	same as National Defense	do.	n.a.	n.a.	consumption expenditures	do.
Health & hospital	inversely to income below $4,000	do.	consumption expenditures and number of families or money income or capital income or property income	per capita and inversely to income	number of families, short-stay general hospital patients, mental hospital patients and housing expenditures	do.
Police, fire & sanitation	real property holdings	do.	do. and residential property tax	per capita	consumption expenditures and number of home-owners and renters	do.

(continued)

Table E-1 (Continued)

ITEM	(1) Alder (1947/48) All levels of government	(2) Tucker (1948) All levels of government	(3) Musgrave (1958) State & local government	(4) Brownlee (1960) State & local government	(5) Gillespie (1960) All levels of government	(6) Tax Foundation (1961 & 1965) All levels of government
Transportation and commerce	income	consumption expenditures, money income, business income, and dividend income	same as Health and Hospitals	do.	consumption expenditures and transportation expenditures	do.
General government	do.	income	do.	do.	same as National Defense	do.
Other & miscellaneous	do.	do.	do.	do.	interest received	do.
Natural resources, parks & recreation	do.	do.	do.	do.	consumption expenditures	number of families including unrelated individuals
Labor	do.	wages and salaries, and wages and salaries subject to social security	do.	do.	wages and salaries	wages and salaries
Interest on debt	holdings of liquid assets	dividend income, insurance premiums, and holdings of liquid assets	do.	do.	dividend income, and value of savings bonds	interest income

(Continued)

Bases for the Allocation of the Benefits of Government Expenditures By Income Class in Previous Studies

ITEM	(1) Alder (1947/48) All levels of government	(2) Tucker (1948) All levels of government	(3) Musgrave (1958) State & local government	(4) Brownlee (1960) State & local government	(5) Gillespie (1960) All levels of government	(6) Tax Foundation (1961 & 1965) All levels of government
Housing & urban renewal	Consumer units with income below $4,000	amount of rent paid and number of units paying rent	do.	do.	number of low rent families	number of families
Insurance trust	do.	wages and salaries, and number of beneficiaries	do.	do.	OASDI benefit payments, and unemployment compensation recipients	unemployment and social security benefits
Veterans	consumer units with income below $5,000	number of veterans 25 to 55	n.a.	n.a.	OASDI benefits and W.W. II veterans	do.
Agriculture	farm income	farm income	n.a.	n.a.	food expenditures, farm income families and federal taxes	farm income
Highways	income	consumption expenditures, auto expenditures and ownership of real estate	oil & gas expenditures and consumption expenditures	gas expenditures, consumption expenditures	gas & oil expenditures, expenditures on goods transported and real property values	auto operation expenditures & consumption expenditures

(continued)

Table E-1 (Continued)

ITEM	(1) Alder (1947/48) All levels of government	(2) Tucker (1948) All levels of government	(3) Musgrave (1958) State & local government	(4) Brownlee (1960) State & local government	(5) Gillespie (1960) All levels of government	(6) Tax Foundation (1961 & 1965) All levels of government
Public welfare	inversely to income below $4,000	welfare recipients	income below $3,000	per capita	public assistance payment	welfare payments
Education	per capita	income of families with children under 18	income of families with school age children	per capita, and income of families with children in school	number of students and wages and salaries	number of children under 18 and education expenses
Utility and liquor	income	income	n.a.	per capita	consumption expenditures, homeowners and renters, and expenditures on public transportation	fuel, light, refrigeration and water expenses

Note: The definition of income is not the same for all studies. The above descriptions are condensations in many cases of more elaborate techniques.

Sources: John H. Adler, "The Fiscal System, The Distribution of Income, and Public Welfare," in Kenyon E. Poole, ed., **Fiscal Policies and the American Economy**, (New York: Prentice-Hall, 1951), pp. 359-409; Rufus S. Tucker, "The Distribution of Government Burdens and Benefits and Discussion," **American Economic Review, Papers and Proceedings**. Vol. 48, No. 2, May, 1953, pp. 518-543; Richard A. Musgrave and Darwin W. Daicoff, "Who Pays the Michigan Taxes?" Michigan Tax Study Staff Papers, (Ann Arbor: Univ. of Mich., 1958), pp. 131-183; O. H. Brownlee, **Estimated Distribution of Minnesota Taxes and Public Expenditure Benefits**, (Minneapolis: University of Minnesota Press, 1960); Irwin W. Gillespie, "The Effect of Public Expenditures on The Distribution of Income: An Empirical Investigation," in R. A. Musgrave, ed., **Essays in Fiscal Federalism** (Washington, D. C.: The Brookings Institution, 1965).