

1999 Minnesota Tax Incidence Study

Who pays Minnesota's household and business taxes?
March 1999

MINNESOTA Department of Revenue

Tax Research Division

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To the Members of the Legislature of the State of Minnesota:

I am pleased to transmit to you the fifth Minnesota Tax Incidence Study undertaken by the Department of Revenue in response to Minnesota Statutes, Section 270.0682 (Laws of 1990, Chapter 604, Article 10, Section 9).

The tax incidence study estimates how the burden of state and local taxes was distributed across income groups in 1996. It includes 98 percent of Minnesota taxes paid, those paid by business as well as those paid by individuals. The study answers the important question: "Who pays Minnesota's taxes?" It reports detailed information on the household characteristics and tax burdens of Minnesota taxpayers. Results are summarized both by housing status (homeowners and renters) and by type of household (retired persons, single-parent families, two-parent families with children). The study also examines how the distribution of the tax burden changed between 1996 and 1998, reflecting both law changes and the growth of income and property values.

The information presented here can be used to evaluate the fairness of Minnesota's tax system. It should also be valuable in considering any future changes in Minnesota's tax structure.

Minnesota Statutes, Section 3.197, specifies that a report to the Legislature must include the cost of its preparation. The approximate cost of preparing this report was \$70,000.

Sincerely,

Matthew G. Smith
Commissioner

EXECUTIVE SUMMARY

This report shows the distribution of calendar year 1996 Minnesota state and local taxes in relation to taxpayer income. It answers the question, “Who pays Minnesota’s taxes?” The major objective is to provide taxpayers and policymakers with important information on the equity or fairness of the overall distribution of Minnesota taxes. The tax incidence study also estimates the effect of law changes and economic growth on the distribution of Minnesota taxes between 1996 and 1998. This is the fifth biennial tax incidence study prepared in response to the statutory requirement adopted by the 1990 legislature.

Scope of the Study

Nine categories of state taxes and the local property tax are included in the incidence study:

- Individual and corporate income taxes
- Sales and use taxes, including sales tax on motor vehicles
- Property taxes for homeowners, renters, and businesses
- Excise taxes on tobacco, alcohol, and gasoline
- Insurance premiums taxes
- Motor vehicle registration taxes
- Gambling taxes
- MinnesotaCare taxes
- Mortgage and deed taxes

This report includes taxes with an initial impact on businesses, such as the corporate franchise tax and the sales tax on business purchases, as well as taxes imposed directly on individuals. The study includes \$10.1 billion of state taxes, (99 percent of all state taxes) and \$4.4 billion of local taxes (95 percent of all local taxes). Together, the \$14.5 billion of total state and local taxes on individuals and businesses in this study accounts for 98 percent of all Minnesota taxes collected in 1996.

In this report, tax burdens are measured by effective tax rates -- the ratio of taxes paid to a taxpayer’s comprehensive money income. Effective tax rates are reported for households at different income levels. All taxpayers are ranked by income level and are then grouped by population deciles; each population decile includes 10 percent of the state’s households. For example, the first decile includes

the 10 percent of Minnesota households with the lowest incomes; the tenth decile includes the 10 percent of households with the highest incomes. The pattern of effective tax rates by income level describes the distribution of the tax burden. If effective tax rates fall as income rises, the burden of a tax is *regressive*; if effective tax rates are constant across income levels, a tax is *proportional*. A tax is *progressive* if effective tax rates rise with income levels.

The comprehensive money income measure used in this study includes both income subject to the Minnesota individual income tax and nontaxable sources of income such as public assistance payments, tax-exempt interest, and nontaxable social security and pension income. Importantly, the study covers the entire population of taxpayers in the state, including low income individuals and families who are not required to file tax returns.

The *incidence* of a tax identifies the final resting place of the tax burden. Incidence can be quite different from the initial impact of a tax, which is usually prescribed by statute in terms of who is legally required to pay the tax. Incidence differs from initial impact when the tax is ultimately shifted to others. For example, landlords may shift a significant part of the local property tax to renters in the form of higher rents, or the corporate franchise tax may be partly absorbed by workers through lower wages.

The results of an incidence study are sensitive to the economic assumptions about who ultimately pays each type of tax. This report describes the incidence assumptions used to estimate how Minnesota taxes with an initial impact on businesses are shifted to major taxpayer groups: Minnesota consumers, Minnesota workers, Minnesota landowners and investors, and nonresident taxpayers. Taxes paid by each Minnesota group are then assigned to individual taxpayers to determine the overall distribution of state and local taxes paid by Minnesota residents.

1996 Distribution of State and Local Taxes

The major findings in this study are summarized in *Table 1* and highlighted in *Figures 1* through *3*. The results show that the state and local tax system had some progressivity between the second and sixth deciles and some regressivity between the seventh and tenth deciles. Effective tax rates rose from 12.0 percent in the second decile to 13.1 percent in the sixth decile and seventh decile, declined slightly to 13.0 percent in the eighth and ninth deciles, and then fell to 12.2 percent in the tenth decile.

Table 1
Minnesota Effective Tax Rates by Population Decile
All Taxpayers

Decile	Income Range	Income Tax		Consumer	Consumer	Total State Taxes		
		Individual	Corporate	Sales Tax	Excise Taxes	Individual	Business	Total
First	\$6,817 & Under	-0.6%	0.8%	4.6%	2.2%	7.5%	4.2%	11.7%
Second	6,817 - 11,166	0.1	0.6	3.2	1.3	5.5	2.8	8.4
Third	11,166 - 15,828	0.9	0.5	2.8	1.1	5.8	2.5	8.2
Fourth	15,828 - 21,634	1.8	0.5	2.8	1.0	6.8	2.3	9.1
Fifth	21,634 - 27,866	2.6	0.4	2.5	0.9	7.2	2.1	9.3
Sixth	27,866 - 35,486	3.3	0.4	2.3	0.7	7.3	1.9	9.3
Seventh	35,486 - 45,144	3.7	0.4	2.1	0.6	7.4	1.8	9.2
Eighth	45,144 - 57,697	4.2	0.4	2.0	0.6	7.7	1.7	9.4
Ninth	57,697 - 78,618	4.8	0.4	1.9	0.4	7.9	1.6	9.6
Tenth	\$78,618 & Over	5.9	0.3	1.2	0.2	7.8	1.3	9.1
Total		4.4%	0.4%	1.8%	0.5%	7.6%	1.7%	9.2%

Decile	Net Local Property Taxes		
	Residential	Business	Total
First	3.5%	2.5%	6.1%
Second	2.0	1.6	3.7
Third	2.3	1.6	4.0
Fourth	1.9	1.4	3.4
Fifth	2.3	1.3	3.7
Sixth	2.4	1.4	3.9
Seventh	2.4	1.3	3.9
Eighth	2.3	1.2	3.6
Ninth	2.3	1.1	3.5
Tenth	1.9	1.1	3.1
Total	2.1%	1.2%	3.5%

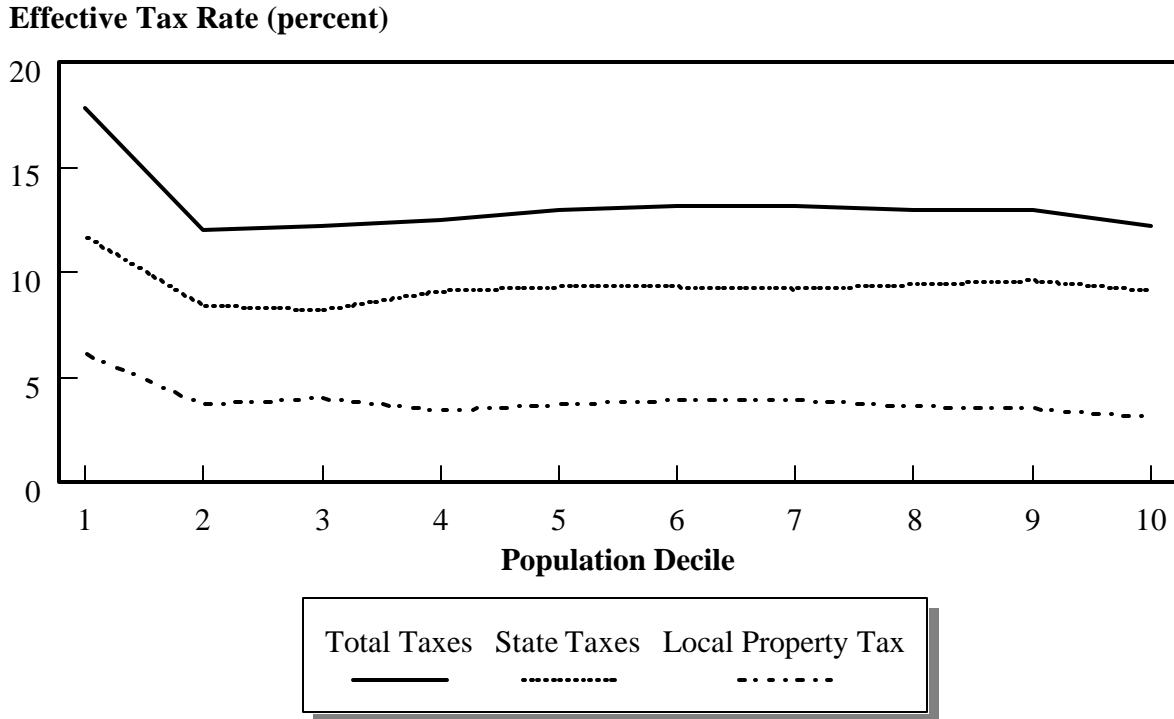
Total State and Local Taxes		
Individual	Business	Total
11.1%	6.7%	17.8%
7.7	4.4	12.0
8.1	4.1	12.2
8.8	3.8	12.5
9.6	3.3	13.0
9.8	3.3	13.1
9.9	3.1	13.1
10.1	2.9	13.0
10.3	2.7	13.0
9.8	2.4	12.2
9.8%	2.9%	12.7%

Note: Effective tax rates for the first decile reflect an adjustment to exclude a small number of households with negative income, primarily business losses. Total state taxes include taxes not shown separately.

The Suits Index, a summary measure of the average degree of progressivity or regressivity across all deciles, was -0.02. This suggests that the tax system overall was slightly regressive, with the progressivity between the second and sixth deciles largely offsetting the regressivity between the seventh and tenth deciles. However, effective tax rates showed some variation by income level. Aside from the high tax rates in the first decile (discussed below), it is the pattern of first rising and then falling tax rates that is most noticeable in *Figure 1*.

Figure 1
Effective Tax Rates for 1996

State and Local Taxes by Population Decile



NOTE: Effective tax rates for the first decile reflect an adjustment to exclude a small number of households with negative income, primarily business losses.

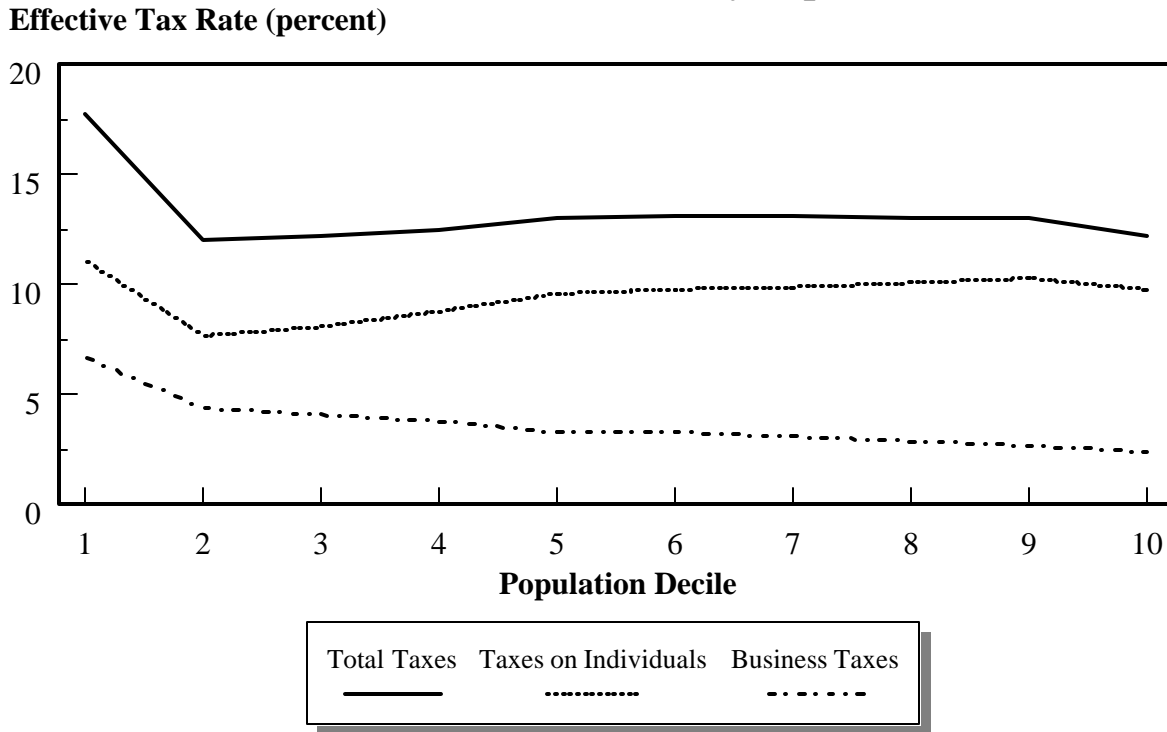
Overall, Minnesota residents paid an estimated 12.7 percent of their 1996 total income in state and local taxes; the effective tax rate was 9.2 percent for state taxes and 3.5 percent for local taxes. Taxpayers in the second through tenth deciles pay 98 percent of the taxes included in the study. Because the information for the first decile includes data anomalies and measurement limitations discussed in the study, effective tax rates for the first decile should be viewed with caution.

As shown in *Figure 1*, state tax burdens and local tax burdens were distributed quite differently. Total state taxes (individual and business combined) were slightly progressive, with effective tax rates generally rising from 8.4 percent in the second decile (and 8.2 percent in the third decile) to 9.6 percent in the ninth decile before falling to 9.1 percent in the tenth decile. Local property taxes (net of refunds), showed some variation between the second and ninth decile, and were mildly regressive overall.

Figure 2 indicates that Minnesota state and local taxes on businesses after shifting to Minnesota citizens are regressive, with effective tax rates falling from 4.4 to 2.4 percent between the second and tenth deciles. However, taxes on individuals largely offset regressive business taxes, producing a more nearly proportional overall tax burden distribution, except at the highest and lowest income levels.

Figure 2
Effective Tax Rates for 1996

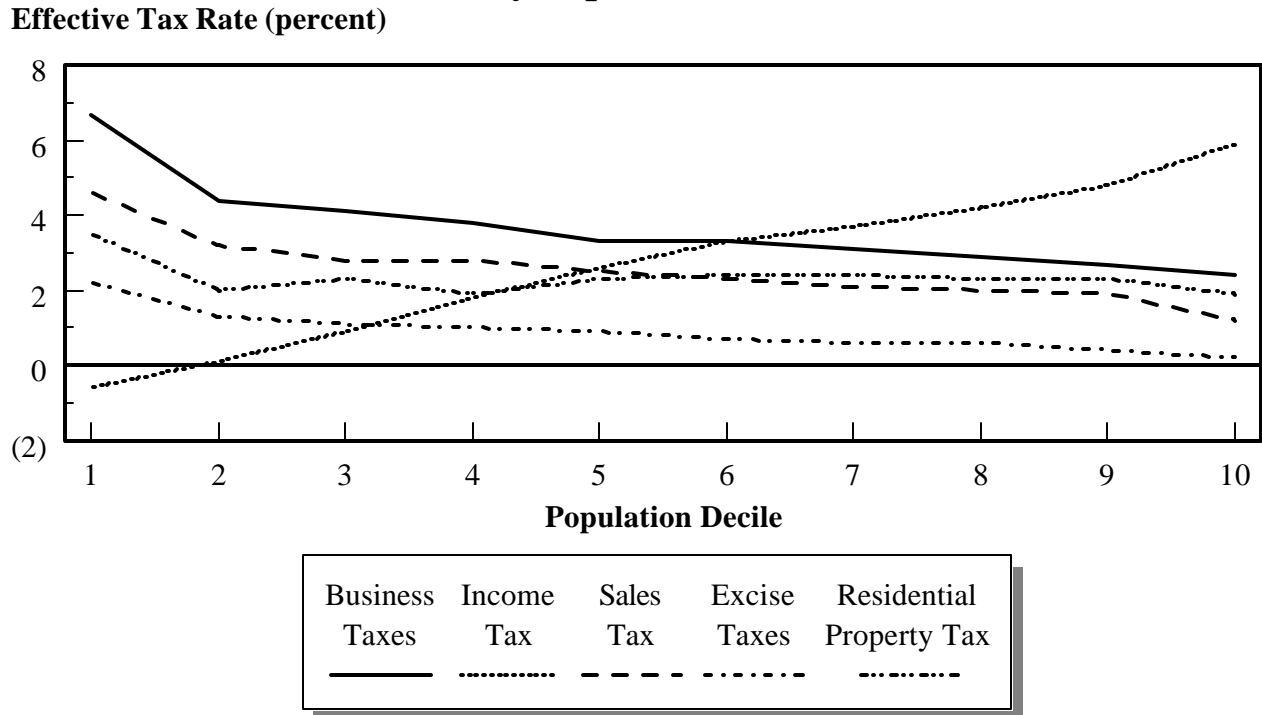
Individual and Business Taxes by Population Decile



NOTE: Effective tax rates for the first decile reflect an adjustment to exclude a small number of households with negative income, primarily business losses.

The tax distributions in Figure 3 highlight the role of the individual income tax in balancing Minnesota’s state and local tax burden distribution. The individual income tax is significantly progressive with effective tax rates steadily increasing from a *negative* 0.6 percent in the first decile to 5.9 percent in the tenth decile. As is discussed in this report, the regressivity of sales, excise and business taxes are largely offset by Minnesota’s relatively heavy reliance on the progressive income tax.

Figure 3
1996 Effective Tax Rates by Tax Type
By Population Decile



NOTE: Effective tax rates for the first decile reflect an adjustment to exclude a small number of households with negative income, primarily business losses.

The distribution of the individual income tax burden reported in *Table 1* shows the important impact the Minnesota working family credit has in increasing the progressivity of the income tax. The combination of the refundable working family and child and dependent care credits more than offsets the total income tax liability in the first decile. This explains the negative tax rates for individual income tax in the first decile.

Most states have regressive state and local tax systems. Information here suggests that Minnesota's taxes are more equitably distributed than in most states. These comparisons do not indicate, however, whether state and local taxes in Minnesota are too high or too low.

Table 2 indicates the shares of the \$11.9 billion in total state and local taxes paid by Minnesota taxpayers in 1996 by decile. Taxpayers in the top decile paid 37.3 percent of the total tax burden and 52.3 percent of the individual income tax

burden; these taxpayers received 38.9 percent of money income. Taxpayers in the first two deciles paid 3.7 percent of all taxes and received 3.1 percent of household income; almost all of their tax burden was from property taxes and taxes on consumption imposed directly on individuals or passed through from taxes imposed initially on businesses.

Table 2
Shares of 1996 Minnesota Income and Taxes
by Population Decile

Decile	Percent of Income	Individual Income Tax	Consumer Sales Tax	Consumer Excise Tax	Residential Property Taxes	Other Taxes on Individuals	Business Taxes	Total Taxes
First	1.0%	-0.1%	2.6%	4.4%	2.2%	1.7%	3.2%	1.7%
Second	2.1	0.1	3.6	5.3	2.0	2.4	3.1	2.0
Third	3.2	0.6	4.9	6.8	3.3	3.7	4.4	3.0
Fourth	4.4	1.8	6.8	8.8	3.8	6.1	5.6	4.4
Fifth	5.8	3.4	8.0	10.0	6.2	8.2	6.6	5.9
Sixth	7.4	5.5	9.3	10.5	8.2	9.4	8.3	7.6
Seventh	9.4	8.0	10.8	11.5	10.7	11.3	10.1	9.7
Eighth	12.0	11.4	13.2	13.4	12.6	14.1	12.1	12.3
Ninth	15.8	17.0	15.9	14.1	16.6	17.0	14.6	16.1
Tenth	38.9	52.3	24.9	15.2	34.4	26.1	32.0	37.3
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Amount (\$ Millions)	\$93,273	\$4,124	\$1,709	\$469	\$2,004	\$841	\$2,739	\$11,887

Effective Tax Rate Projections for 1998

This study estimates the impact of both legislative law changes and economic growth on effective tax rates between 1996 and 1998. It is impossible to replicate the full incidence study for 1998, and demographic changes were ignored in constructing these projections. Despite some serious limitations, however, these projections capture some important trends.

Between 1996 and 1998, the overall effective tax rate is estimated to decrease by 0.4 percent, from 12.7 to 12.3 percent. Including the tax rebate further reduces the overall effective tax rate to 11.8% for 1998. All deciles showed declines in effective rates for 1998, with larger percent declines in the lower deciles. The primary reason for the decrease in the overall effective rate is the reduction in local property taxes. The effective rate in the property tax area decreased by 0.5 percent due mainly to

reductions in business property and rental tax rates, along with property tax aid increases. Changes between 1996 and 1998 have resulted in the tax system becoming slightly less regressive.

Tax System Objectives

The results of this study focus attention on fairness in the distribution of Minnesota state and local tax burdens. Fairness refers to both vertical equity (how tax burdens vary with the level of income) and horizontal equity (how tax burdens vary for taxpayers with comparable ability to pay). In addition to fairness, there are other desirable tax-system objectives or characteristics to consider in evaluating the overall performance of Minnesota's tax structure. The tax system should be understandable, efficient, competitive and reliable. The Department of Revenue's *Model Revenue System for Minnesota (1992)* discusses each of these objectives in greater detail.

Understandable tax laws are important in achieving voluntary compliance; simplification of the tax structure is one method of enhancing such understanding. Efficiency includes the objectives of reducing economic distortions created by taxation, maximizing clarity and accountability in tax and spending decisions, and minimizing both taxpayer compliance costs and administrative costs of collecting taxes. Efficiency is enhanced by using taxes with broad bases and competitive tax rates. Interstate tax competition for businesses and jobs may constrain a state's ability to raise tax rates relative to neighboring states. The objective of reliability has several important dimensions, including stability and sufficiency. A balanced use of income, sales and property taxes provides greater revenue stability over the economic cycle and sufficient growth in taxes over time to finance necessary government expenditures.

A significant insight from the information and results presented in this report is the importance of considering state and local taxes as a single system when analyzing the equity of Minnesota's tax distribution. The highly progressive state income tax, for example, provides an important balance to regressive sales, excise and property taxes. Any specific policy recommendation for changing the distribution of Minnesota's state and local taxes should be evaluated in terms of the overall tax system and the multiple tax policy objectives.

Summary

This report provides important information on the level and distribution of overall tax burdens in Minnesota. Its unique methodology includes both its matching of income data for specific individuals from a number of different data sources and its consistent framework for analyzing tax shifting. The study includes 98 percent of Minnesota state and local taxes paid by individuals and businesses. Of the 98%, 83% is paid by Minnesota taxpayers after business taxes are shifted while 17% is borne by individuals outside Minnesota. An explanation of the various components of the analysis, including assumptions and methodology, is provided in the main sections of the report. A detailed analysis of the results is provided in Chapter 6.

The results presented in this report should prove valuable to policymakers considering future changes in Minnesota's state and local taxes. This information can be used to evaluate changes in the equity of specific taxes, as well as the overall distribution of the tax burden. In addition to the equity issue, the results of the study are useful for addressing other tax policy issues, including the balance between the state and local tax systems.

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CHAPTER 1

INTRODUCTION

This study provides estimates of the distribution of state and local taxes among Minnesota households in 1996. These estimates are based on a stratified random sample of almost 46,000 taxpayers representing almost 2.2 million households. The sample is “blown up” to represent the total population, and effective tax rates are reported as a percent of total household income for groups of taxpayers. In determining effective tax rates, taxes are calculated as a percentage of a household’s comprehensive money income. Chapter 2 discusses taxes included in the study, and describes the overall Minnesota tax structure in 1996.

Chapter 3 explains how income is defined in this study. It also compares this study’s definition of a household with the definition used by the Census. Chapter 4 describes how the household database was developed. The database consists of four types of data: (1) demographic information about each household (such as household size, household type, housing status, and home value); (2) the household’s total income (by source); (3) the household’s estimated expenditures on taxable items; and (4) estimated taxes paid on the household’s income, purchases, and property. In some cases this tax information was obtained directly from tax records or other reported sources; in other cases, it was estimated based on a household’s income, size, and other household characteristics.

Chapter 5 outlines how the study allocates the burden (or “incidence”) of each tax among Minnesota residents. In some cases (such as the sales tax on consumer purchases), a tax legally paid by business is assumed to be fully shifted to consumers in higher prices. In other cases (business property taxes and sales taxes on purchases by business), the extent of shifting depends on the nature of the business and the magnitude of Minnesota tax rates relative to those levied in other states. In most cases, the tax burden is shared among the industry’s owners, consumers, and workers. A full explanation of the logic used in allocating the burden of such business taxes is provided in Chapter 5.

Chapter 6 summarizes the results of the tax incidence study. The tax burden on each household is estimated by combining the information in the database (from Chapter 4) with the study's incidence assumptions (from Chapter 5). By dividing Minnesota's households into ten deciles, from lowest to highest household income, this chapter shows how the total state and local tax burden (and that of individual taxes) varies with income. Results are presented both by population decile and by income decile. The Suits index is calculated as a measure of the regressivity (or progressivity) of tax burdens. An adjustment for the federal tax offset is discussed at the end of Chapter 6. The potential effect of the federal tax offset is shown, and the absence of such an adjustment elsewhere in this study is explained.

Chapter 7 provides a more detailed look at how tax burdens vary for subgroups of taxpayers. It provides a description of the households in each decile, showing how household type and housing status vary with income. It also provides detailed results for six types of households -- single parent families, married couples with children, married couples without children (retired and not retired), and single-person households (retired and not retired).

Chapter 8 discusses how the estimated impact of economic and tax law changes between 1996 and 1998 has affected the distribution of state and local tax burdens in Minnesota. Tax burdens for 1998 are estimated for each household in the 1996 incidence study sample. The estimated 1998 tax burdens reflect both growth in household income and changes in tax law. A table showing the new distribution of effective tax rates is reported in Chapter 8.

Several appendices provide more detailed information. Appendix A provides a detailed list of the income and tax data items included in the incidence study database. Appendix B includes detailed tables on the incidence results summarized in Chapter 6. Appendix C includes detailed tables on the household characteristics and tax burdens by household type summarized in Chapter 7. Appendix D contains the legislative mandate for this study.

CHAPTER 2

MINNESOTA STATE AND LOCAL TAXES IN 1996

Minnesota collected \$14.8 billion in state and local taxes in 1996.¹ Approximately two-thirds were collected at the state level; local governments collected one-third of the total, primarily from property taxes. This study estimates how the burden of those taxes was distributed among the residents of Minnesota, with the primary emphasis on the distribution of tax burdens by income level. The study estimates the regressivity (or progressivity) of the total tax system and each separate tax. Tax burdens are also estimated for subgroups of the population, such as retired persons, single-parent families, homeowners, and renters.

The coverage of this study is summarized in *Table 2-1*. It includes taxes on individuals and businesses accounting for 98 percent of total state and local tax collections (99 percent of state collections and 95 percent of local collections).

Table 2-2 shows the distribution of 1996 total tax revenue included in this study by major type of tax. Taxes on income (individual and corporate) accounted for 35.3 percent of total collections. Taxes on consumption (sales tax, excise taxes, insurance premiums tax, gambling taxes, and MinnesotaCare taxes) combined for 30.7 percent of total collections. Taxes on property (including second homes, the motor vehicle registration tax, and mortgage registration and deed transfer taxes) accounted for 33.9 percent of the total.

Included in *Table 2-2* is the estimated distribution of state and local taxes by taxpayer category, either individual households (resident or nonresident) or businesses. This distribution indicates the initial impact of the taxes by taxpayers legally liable to pay the tax (income and property taxes) or by type of purchaser (consumer taxes).² For example, over 50 percent of the general sales tax is paid on purchases by Minnesota households, 3.8 percent on purchases by nonresidents and 45.2 percent on purchases by businesses.

¹ Collection amounts are based on calendar year 1996. Property tax collections are for taxes payable in 1996, and property tax refunds are those based on 1996 incomes.

² As explained in Chapter 5, the taxes initially imposed on businesses (an estimated 35.4 percent of total collections in *Table 2-2*) may ultimately be shifted to consumers, renters, workers or investors. The effective tax rates reported in this study are after the shifting has occurred. *Table 5-2* provides estimates of the portion of the taxes initially imposed on businesses that is ultimately borne by Minnesota residents.

Table 2-1
Minnesota State and Local Tax Collections in 1996
(\$ Millions)

State	Local		Total State and Local
Included		Included	Included
Individual income tax	\$4,451	Gross property taxes (after credits)	
Corporate franchise tax	671	Homestead property taxes	\$1,801
General sales and use tax	2,911	Property taxes on second homes	116
Sales tax on motor vehicles	387	Rental property taxes (residential)	451
Motor fuels excise taxes	526	Other business property taxes	
Alcoholic beverage excise taxes	56	(including farming)	<u>2,159</u>
Cigarette & tobacco excise taxes	193	Subtotal	\$4,527
Insurance premiums tax	166	Property tax refunds	<u>(170)</u>
Gambling taxes	67		
MinnesotaCare taxes	148		
Mortgage and deed taxes	99		
Motor vehicle registration tax	<u>463</u>		
Total	\$10,138	Total	\$4,357
			\$14,495
Omitted		Omitted	Omitted
Estate and gift taxes	\$46	Local sales taxes	\$82
Mining taxes	3	Gross earnings taxes	39
Waste Taxes	26	Mineral taxes	87
Other taxes	<u>12</u>	Other taxes	<u>3</u>
Total	\$87	Total	\$211
			\$298
Total Tax Collections	\$10,225	Total Tax Collections	\$4,568
			\$14,793

Note: Income tax includes \$32 million in net income tax reciprocity payments from Wisconsin.

Table 2-2
1996 State and Local Tax Collections
By Type of Tax and Taxpayer Category
(\$ Millions)

Tax Category	Collections		Percentage by Taxpayer Category			
	Total	Percentage Distribution ¹	Individuals		Businesses	Total
			Resident	Nonresident		
Taxes on Income						
Individual income tax	\$4,451	30.7%	96.4%	3.6%	0.0%	100.0%
Corporate franchise tax	<u>671</u>	<u>4.6</u>	0.0	0.0	100.0	100.0
Total income taxes	\$5,122	35.3%	83.8%	3.1%	13.1%	100.0%
Taxes on Consumption						
Total general sales	\$3,298	22.8%	52.8%	3.4%	43.8%	100.0%
General sales/use	2,911	20.1	51.0	3.8	45.2	100.0
Sales tax motor vehicles	387	2.7	66.3	0.0	33.7	100.0
Motor fuels excise tax	526	3.6	43.9	16.1	40.0	100.0
Alcoholic beverage excise taxes	56	0.4	89.6	10.4	0.0	100.0
Cigarette and tobacco excise taxes	193	1.3	97.0	3.0	0.0	100.0
Insurance premiums tax	166	1.1	81.7	0.0	18.3	100.0
Gambling taxes	67	0.5	97.0	3.0	0.0	100.0
MinnesotaCare taxes	<u>148</u>	<u>1.0</u>	97.0	3.0	0.0	100.0
Total consumption taxes	\$4,454	30.7%	57.3%	4.8%	37.9%	100.0%
Taxes on Property						
<i>Local</i>						
Homeowners (gross)	\$1,801	12.4%	100.0%	0.0%	0.0%	100.0%
Rental property (gross)	454	3.1	0.0	0.0	100.0	100.0
Property tax refunds received	(170)	(1.2)	100.0	0.0	0.0	100.0
Residential recreational (cabins)	116	0.8	80.0	20.0	0.0	100.0
Commercial and industrial	1,487	10.3	0.0	0.0	100.0	100.0
Farms (other than residence)	265	1.8	0.0	0.0	100.0	100.0
Other business property	404	2.8	0.0	0.0	100.0	100.0
<i>State</i>						
Motor vehicle registration tax	463	3.2	72.6	0.0	27.4	100.0
Mortgage and deed taxes	<u>99</u>	<u>0.7</u>	67.7	0.0	32.3	100.0
Total property taxes	\$4,919	33.9%	43.2%	0.5%	56.3%	100.0%
Total Taxes	\$14,495	100.0%	61.9%	2.7%	35.4%	100.0%

¹Percent of collections included in this study.

Taxes on Income

Individual Income Tax

Minnesota enacted the state income tax in 1933 with initial rates ranging from 1 percent to 5 percent. In 1996, state income tax rates ranged from 6 to 8.5 percent with the top rate beginning at taxable incomes of \$52,790 for single filers and \$93,340 for married filing jointly. Since 1987, federal taxable income has been the starting point in computing the Minnesota tax, and the Minnesota tax structure has incorporated the federal personal exemptions, standard deduction, and itemized deductions.

In computing Minnesota taxable income in 1996, a small number of adjustments were made to federal taxable income. The graduated tax rates were applied to taxable income to calculate 1996 gross income tax. This gross tax was then reduced by several tax credits (working family credit, dependent care credit, and income tax paid to other states) to yield net income tax liability.³ For 1996, the working family credit was equal to 15 percent of the federal earned income credit. The working family credit provided almost 215,000 Minnesota low-income households with over \$42 million in tax relief in 1996. The dependent care credit provided another \$12 million of tax relief to over 37,000 Minnesota low-income households.

Individual income tax collections totaled \$4,451 million in 1996, accounting for 31 percent of total state and local tax revenue.

Corporate Franchise Tax

Minnesota also enacted the state corporate income tax in 1933. As with the individual income tax, major changes in Minnesota corporate taxation followed the 1986 Federal Tax Reform Act. In 1987, the corporate income and bank excise taxes were replaced by a corporate franchise tax based on federal taxable income. In addition, the base of the tax was broadened and the tax rate reduced.

³ See Minnesota Department of Revenue, *Minnesota Tax Handbook* (1996 edition) for a more detailed description of each state tax and recent tax law changes.

In computing Minnesota taxable income in 1996, a number of adjustments were made to federal taxable income. For corporations with operations or sales in other states, only a portion of total income is taxable in Minnesota. That portion is calculated by an apportionment formula based on the Minnesota shares of the corporation's property, payroll, and sales. In apportioning corporate income to Minnesota, the sales factor is weighted 70 percent and payroll and property are each weighted 15 percent.⁴

In 1996, Minnesota taxable income was subject to a flat 9.8 percent tax rate; corporate franchise tax collections totaled \$671 million, accounting for 5 percent of total tax revenue. For tax year 1996, over 50,000 corporations filed a state tax return.

Taxes on Consumption

A wide range of purchases by consumers and businesses are subject to taxation in Minnesota. The general retail sales tax is imposed on the purchase of tangible products and selected services. In addition, the purchases of specific products, such as cigarettes and gasoline, are subject to separate excise taxes. Insurance premiums taxes are applied to purchases of personal and business insurance. Taxes on some forms of gambling (pull-tabs, bingo, and horse racing) and the MinnesotaCare taxes on medical services are also taxes on consumer expenditures. In total, consumption taxes accounted for \$4,454 million of state and local collections in 1996 (30.7 percent of all taxes).

General Sales Tax and Sales Tax on Motor Vehicles

The sales tax was first enacted in 1967 at a rate of 3 percent. The rates in effect during 1996, including a 0.5 percent statewide county option tax, were as follows:

- 6.5% - General rate
- 9.0% - Liquor and beer
- 12.7% - Short-term vehicle rental
- 2.5% - Farm machinery and logging equipment
- 3.8% - Replacement capital equipment (beginning July 1, 1996)

⁴ Domestic unitary reporting is used, and federal taxes are not deductible in computing Minnesota corporate taxes. The apportionment formula weights sales more heavily than in most states, with tax incidence implications that are discussed in Chapter 5.

The tax base is the sales price of tangible personal property and taxable services sold in the state. A complementary use tax is imposed on property purchased outside the state but used or consumed in Minnesota. Major exemptions from the tax base in 1996 included food consumed at home, clothing, prescription drugs, residential heating fuels, water services, vehicle repairs, and motor fuels. While motor vehicles are also exempt from the sales tax, they are subject to a separate sales tax on motor vehicles at the general sales tax rate.

The sales tax base was significantly expanded in the late 1980s. Many services became taxable for the first time, including parking, laundry and dry cleaning, lawn and garden services, detective and security services, pet grooming, motor vehicle cleaning, building and residential cleaning, health clubs and tanning salons, interstate telephone service, club dues, and garbage collection. Most purchases by state government became taxable in 1987, and most purchases by non-school local governments became taxable in 1992.

Many purchases by businesses are subject to the sales and use tax or the sales tax on motor vehicles. A general exemption exists for purchases of materials consumed in agricultural and industrial production (such as fuels and chemical ingredients) and for products purchased for resale by wholesalers or retailers. New capital equipment purchased by industrial firms is also exempt from tax. Nevertheless, many business purchases are taxed. For example, all capital equipment purchased by non-industrial companies was generally subject to tax. Business spending on meals, entertainment, hotels and motels, motor vehicles, and office supplies were also generally subject to tax.

The general sales and use tax raised \$2,911 million in 1996. Combined with the sales tax on motor vehicles (\$387 million), they accounted for 22.8 percent of total state and local tax collections in 1996.

Excise Taxes

The state gasoline tax, first adopted in 1925 at a rate of 2 cents per gallon, has been levied at a rate of 20 cents per gallon since 1988. The cigarette tax was first levied in 1947 at 3 cents per pack. The tax rate has been 48 cents per pack since 1992. Since 1987, excise tax rates on alcoholic beverages have been \$2.40 per barrel of 3.2 percent beer and \$4.60 for strong beer, \$5.03 per gallon of liquor, and from \$0.30 (under 14 percent) to \$3.52 (over 24 percent alcohol) per gallon for wine. These three excise taxes accounted for a total of \$775 million in taxes, raising 5.3 percent of total state and local tax revenue in 1996.

Insurance Premiums Tax

Like most states, Minnesota levies a 2 percent tax on most insurance premiums written in Minnesota.⁵ All types of insurance are taxed, including both personal insurance (life, automobile, home, health and accident) and business insurance (business property and liability). In 1996, business insurance accounted for an estimated 18.3 percent of total premiums tax collections (see *Table 2-2*). The remainder was levied on personal insurance premiums paid by (or on behalf of) Minnesota residents. In 1996, insurance premiums taxes accounted for 1.1 percent of total state and local tax revenue.

Gambling Taxes

Minnesota levies a tax on gross receipts from several forms of gambling, including pull-tabs, tipboards, bingo, raffles, paddlewheels, and horse racing. These taxes raised \$67 million in 1996, or 0.5 percent of total state and local tax revenues.⁶

MinnesotaCare Taxes

Medical care in Minnesota was generally subject to a 2 percent tax in 1996. The tax is levied on the gross revenues of hospitals and health care providers. Sales of prescription drugs and medical supplies are also subject to this tax. Nursing homes and home health care services are exempt from tax, as are payments by Medicare, medical assistance, and the MinnesotaCare program.

MinnesotaCare taxes raised \$148 million in 1996, or 1.0 percent of total state and local tax revenue. All revenue is deposited in the Health Care Access Fund to finance health care subsidies for low-income uninsured households.

⁵ The rates vary from 1.0 percent on small mutual property and casualty companies to 3 percent on surplus line agents, and there is an additional fire marshal tax on some insurance. Fraternal organizations and health maintenance organizations, among others, are exempt, and no tax is paid on self-insured plans even if administered by an insurance company.

⁶ Minnesota cannot tax casino gambling on Indian reservations. The sales tax on lottery tickets (about \$20 million) is included in the sales tax totals. Other state revenue received from lottery operations is not included in this study because lottery profits are not considered to be tax revenues.

Taxes on Property

Minnesota's property tax classification system was instituted in 1913 with only four classes of property. Over time, the number of property tax classes has grown dramatically. Numerous law changes have been adopted almost yearly in recent decades to modify credits, exemptions, tax rates and brackets for different classes of property, and to provide different levels of property tax relief. Today, the Minnesota property tax system is probably the most complex in the nation.

Under a property classification system, property of the same value is legally taxed at very different rates. In 1996, property tax class rates ranged from 0.45 percent to 4.6 percent of market value, depending upon the property's classification. For example, residential homesteads had a class rate of one percent on the first \$72,000 of market value and 2 percent on the portion of the market value that exceeded \$72,000. The highest class rate (4.6 percent) applied to most commercial and industrial property. To determine the actual property tax on a specific property, market value is multiplied by the class rate to determine tax capacity, which is then multiplied by the local tax rate.

As shown in *Table 2-3*, the class rate structure for residential homesteads results in higher tax rates on higher-valued homes. The owner of a \$120,000 house, for example, paid taxes equal to 1.82 percent of market value, compared to 1.30 percent for a \$60,000 home. In 1996, the taxes paid on a \$120,000 home were 2.8 times those on a \$60,000 home; the taxes on a \$360,000 home were over 10.8 times those on a \$60,000 home. *Table 2-3* also shows how class rates varied for different types of property. Apartments and commercial and industrial property valued at \$120,000 were taxed more than 2.3 times as heavily as homes of equal value.

Public utility equipment is subject to tax in Minnesota, as in most other states. Since 1971, however, Minnesota has not levied a property tax on other business machinery, equipment, fixtures, or inventories. Some or all of these are taxed in 38 other states. Educational facilities, religious and charitable organizations, Indian lands, cemeteries, and household personal property are also exempt from taxation.

In 1996, homeowners (including farm homes and cabins) paid 42 percent of gross local property taxes; rental housing accounted for 10 percent, and other business property (including farm property) accounted for 48 percent.⁷

⁷ These are the percentages of gross property tax, before subtracting any property tax refunds received by homeowners and renters.

Table 2-3
Property Tax on Homes of Different Value
and on Different Classes of Property

Value of Home	Taxes Paid in Taxing Jurisdiction with Average Local Tax Rate		
	Percent of Market Value	Total Tax	Ratio of Tax to Tax on \$60,000 Home
\$ 60,000 home	1.30%	\$ 780	1.0
\$120,000 home	1.82	2,184	2.8
\$360,000 home	2.34	8,424	10.8

Type of Property	Percent of Market Value	Total Tax	Ratio of Tax to Tax on \$120,000 Home
\$120,000 home	1.82%	\$2,184	1.0
\$120,000 rented duplex	2.99	3,588	1.6
\$120,000 apartment building (4 units)	4.42	5,304	2.4
\$120,000 commercial or industrial building	4.25	5,096	2.3
\$120,000 public utility machinery	5.98	7,176	3.3

Property Tax Refunds

In 1996, homeowners and renters received a total of \$170 million in property tax refunds from the state. The refunds were of two types. First, the “regular” property tax refund was based on the relationship between property taxes and household income. This refund was limited to those with household incomes under \$65,450 for homeowners and under \$38,170 for renters, with larger refunds generally paid to those with lower income. The second refund was “targeted” to those whose property taxes had increased by more than 12 percent (and more than \$100) in 1996, regardless of income. Total property tax refunds equaled 8 percent of total taxes paid on residential property.

Motor Vehicle Registration Tax

Minnesota's annual motor vehicle registration tax is a tax on property. In 1996, the general tax was \$10 plus 1.25 percent of the market value of the vehicle. Vehicles over 10 years old (or worth less than \$2,000) paid a minimum fee of \$35. A total of \$463 million was collected in taxes. An estimated 27.4 percent of this tax was paid on business vehicles (including apportioned taxes on large trucks); the other 72.6 percent was paid by individual Minnesota residents.

Mortgage and Deed Taxes

Minnesota mortgages are subject to a registration tax equal to 23 cents per \$100 of principal debt. When real estate is sold, the seller pays a deed transfer tax of \$1.65 per \$500 received in payment. These taxes raised \$99 million in 1996, equal to 0.7 percent of total state and local tax revenues. Approximately 32.3 percent of the tax was paid on business properties, with 67.7 percent paid by homeowners.

CHAPTER 3

MEASUREMENT OF HOUSEHOLD INCOME

An appropriate measure of income is critical to any study of tax incidence. By definition, a tax incidence study compares taxes paid to some measure of a household's economic well-being or ability to pay. In this study, tax burdens are expressed as ratios of taxes paid to a broad measure of household money income. This comprehensive measure of money income includes not only income taxable on income tax returns but also nontaxable income, such as public assistance payments, tax-exempt interest, and nontaxable social security and pension income.

Definition of Income

The definition of income should be as consistent as possible with the public's perception of economic well-being. Households with equal incomes should be viewed as being equally well off, and those with higher incomes should be considered consistently better off than those in lower income groups. This argues for a comprehensive definition of income. An incidence study using too narrow a definition of income would overstate the ratio of taxes to income; it might also give a distorted picture of the regressivity or progressivity of the tax system.

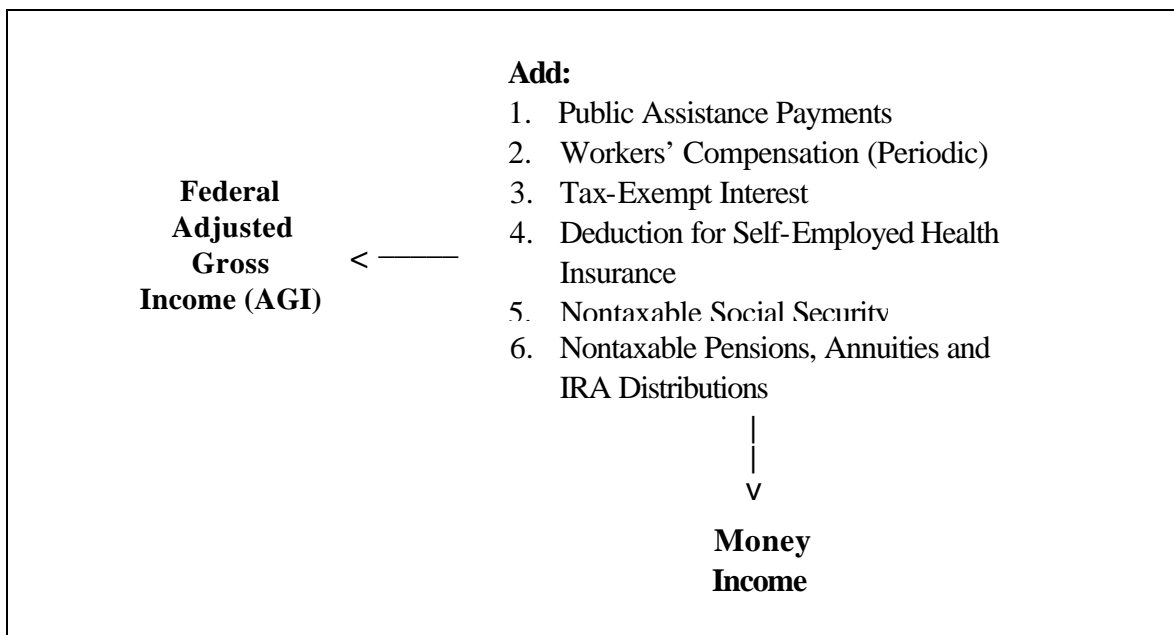
Four distinct issues must be addressed in choosing an income measure:

1. Should income be restricted to money income or should it include non-monetary income, such as employer-provided fringe benefits or in-kind government benefits (e.g., food stamps)?
2. What is the appropriate accounting period for measuring income?
3. How should households be defined?
4. Should the income distribution be adjusted for family size in measuring ability to pay?

Conceptually, the broadest measure of a household's income is referred to by economists as the Haig-Simons (H-S) definition of income. According to this definition, income is the amount that a family consumes in a year plus the net increase or decrease in the inflation-adjusted (real) value of their assets. This definition, widely accepted by economists, reflects economic well-being because it is the amount the family could consume this year without reducing its net worth or wealth. Due to formidable challenges in estimating components of this broad income concept and the public's difficulty in understanding the concept, the income measure used in this study is more narrowly defined.⁸

Comprehensive income in this study includes only monetary sources of income. Capital gains and pension benefits are included when realized, not as they accrue, with no adjustment made for the impact of inflation on asset values. As shown in *Figure 3-1*, the derivation of money income begins with federal adjusted gross income (AGI), the broadest income tax concept of income. Various forms of nontaxable income are added to AGI in deriving comprehensive money income, as discussed in the following sections.

Figure 3-1
Computation of Money Income



⁸ For a detailed discussion of alternative approaches to defining comprehensive income, see *Minnesota Tax Incidence Study*, November 1993, Chapter 3.

Adjusted Gross Income (AGI)

The federal government and many states use this measure of income as the starting point for determining individual income tax liabilities. Federal AGI is defined as total money income from all taxable sources less certain expenses incurred in earning that income. The major taxable sources of income include (but are not limited to) the following:

- Wages and salaries
- Income from business
- Gains from the sale of capital assets
- Interest, rents, royalties, and dividends
- Alimony
- Annuities and pensions
- Prizes and awards
- A portion of social security payments
- Unemployment compensation

Many sources of cash income are statutorily excluded from the federal income tax, including cash received in the form of welfare benefits, interest on most state and local bonds, and most social security benefits. In addition, federal AGI is limited as a comprehensive income measure because it excludes the income of “nonfilers”, those taxpayers whose income falls below the reporting threshold.

According to extrapolations from the incidence study database, 85.5 percent of the state’s households (as defined later in this chapter) filed state individual income tax returns. Adding those who filed for a property tax refund (but who filed no income tax return) increased household coverage to 91 percent. Almost 9 percent of households filed neither an income tax return nor a property tax refund claim. As explained below, a substantial proportion of the income of these nonfilers was obtained from other state and federal sources of income.

Additions to AGI

As shown in *Figure 3-1*, income from a number of sources is added to AGI in deriving a comprehensive measure of Minnesota money income. These include: public assistance payments, the wage replacement portion of workers’ compensation, tax exempt interest, nontaxable social security, and nontaxable pensions, annuities, and IRA distributions.

Table 3-1 summarizes the components of 1996 Minnesota total money income as measured in this study. The data source for each component of income is also identified. Federal AGI made up over 90 percent of the \$93.3 billion in total money income. Nontaxable social security benefits were the largest source of additional money income, representing 4.9 percent of the total.

Income Not Included in Money Income

Due to data limitations, this study underestimates total money income. Three particular omissions should be noted. First, only a portion of wage and salary and other income could be added to other sources of income, such as public assistance and social security benefits, for taxpayers who filed neither an income tax nor a property tax refund return.⁹ This results in an understatement of money income and an overstatement of tax burdens for the lowest income groups. Second, veterans benefits are excluded (except for those reported on property tax refund returns). Third, no adjustment is made for money income not reported on income tax returns or other administrative records (the “underground economy”).

Minnesota money income also excludes other forms of income that would be included in the broadest income measure based on the Haig-Simons definition. It excludes all non-monetary forms of income (food stamps, housing subsidies, Medicare and Medicaid benefits, employer-provided fringe benefits, and imputed rent for homeowners). It includes capital gains and pension income only when realized, not when accrued. No adjustment is made for depreciation deductions in excess of economic depreciation, nor is a deduction made for the portion of interest income that represents inflation.

The Accounting Period: Annual or Lifetime Income?

Income received in a single year can be a misleading measure of economic well-being. Individual households may have unusually high or low income in a particular year due to business losses, unemployment, or the sale of capital assets. Because of such transitory income, a snapshot of the income distribution in a single year shows more income inequality than a time exposure over several years. In addition, income varies over a household’s life cycle. For these reasons, annual income may not be an accurate measure of a household’s long-term economic well-being.

⁹ As shown in *Table 3-1*, this study does include some additional income information on the nonfiler group, including social security, dividend, pension, interest and wage income. This data was derived from income tax administration information.

Table 3-1
Components of Total Household Income
1996 Tax Incidence Study
(\$ Millions)

Group	Source of Income	Amount
Individual income tax filers (1,877,651 households)	Federal Adjusted Gross Income	\$84,255
	Nontaxable Interest	780
	Nontaxable IRA Distributions	437
	Nontaxable Pension and Annuity Payments	1,756
	Nontaxable Social Security Benefits	2,480
	Self-Employed Health Insurance Deduction	63
	Public Assistance Payments ¹	124
	Workers' Compensation Benefits	<u>102</u>
	Total Household Income	\$89,997
Property tax refund filers who do <i>not</i> file an individual income tax return (121,600 households)	Federal Adjusted Gross Income	\$281
	Nontaxable Social Security Benefits	927
	Public Assistance Payments ¹	81
	PTR Additions to Income	<u>60</u>
	Total Household Income	\$1,349
Individuals that do not file either type of return (194,720 households)	Public Assistance Payments ¹	\$147
	Workers' Compensation Benefits	32
	Unemployment Benefits	14
	Social Security Benefits	1,184
	Dividend Income	24
	Pension Income	296
	Interest Income	94
	Wages	<u>136</u>
	Total Household Income	\$1,927
Total Population (2,193,971 households)	Total Household Income	\$93,273

¹ Public Assistance includes Aid to Families with Dependent Children (AFDC), Minnesota Family Investment Plan (MFIP), Refugee Cash Assistance, Minnesota Supplemental Aid (MSA), General Assistance (GA), Family General Assistance (FGA), Emergency Assistance (EA), and Special Needs payments.

In spite of these shortcomings, there are two strong reasons why this study uses annual rather than lifetime income. First, an adequate record of the income of individual households over a longer period is rarely available. Consequently, state incidence studies have always used an annual accounting period. Second, an annual perspective may be preferred because taxes are paid out of a household's current income, not out of what might be earned in the future. If the purpose of an incidence study is to make policy decisions regarding current ability to pay taxes, then it is reasonable to use annual rather than lifetime income.

Definition of a Household

The definition of a household should be consistent with the average citizen's use of the term. As a result, this study combines dependents who file their own income tax return with the taxpayers who claim them as dependents to form a single household. Just over 11 percent of all individual income tax returns are filed by persons claimed as dependents on someone else's tax return. The most common situation is a student working part-time and claimed as a dependent on the parent's tax return. If not combined into a single household, these part-time workers would be treated as separate, low-income individuals in the study, with misleading results.

An additional adjustment was made in cases where income information for nonfilers was initially reported separately for each member of a family (e.g., spouses having separate social security payment records). Available state agency files containing name and address information were used to combine such individuals into household units wherever possible. This adjustment provides a more accurate picture of such households.

Incidence Households Compared to Census Households

By extrapolating from the incidence database, the tax incidence study estimates a total of 2,193,971 Minnesota households in 1996, with a median income of about \$27,866. In contrast, the U.S. Census reports a total of 1,763,000 Minnesota households in 1996, with a median income of over \$35,000. Census households average 2.6 persons, while the incidence study households average 2.1 persons. This section explains the differences between the numbers presented in this study and those reported by the Census.

The Census defines a household to include all persons who live together in a housing unit. The precise Census definition is:

A household includes all the persons who occupy a housing unit . . . in which the occupants live and eat separately from any other persons in the building and which has direct access from the outside of the building or through a common hall. The occupants may be a single family, one person living alone, two or more families living together, or any other group of related or unrelated persons who share living arrangements.

In contrast, the incidence study defines a household as an actual or potential income tax filer and all dependents, even if not living under the same roof.

There are three basic reasons why Census and incidence households differ. First, some Census households are not counted as incidence study households. For example, a full-time college student living in an apartment and claimed as a deduction on a parent's tax return is a Census household but would be combined with the parents in the incidence study. Second, Census households often contain two or more incidence households. For example, three single persons sharing an apartment would be counted as one Census household but might be three incidence households. Third, individuals living in "group quarters" are not part of any Census household, but some are defined as a household in the incidence study. Examples include a financially independent college student living in a college dorm, or a nursing home resident not claimed as a dependent on someone else's tax return. As a result, the incidence study reports 24 percent more households than the Census, and the median household income in the incidence study is less than 80 percent of that reported by the Census.

Detailed computer analysis of the 5 percent Minnesota sample from the 1990 Census helps explain why the incidence study has an extra 431,000 households. Using income tax rules to define dependents, 1990 Census households were reshaped into incidence study households, and the total was then adjusted for the general growth in Minnesota households between 1990 and 1996. *Table 3-2* shows how the number of households increased when the Census households were redefined as incidence study households. The 409,000 increase shown on the table explains almost all of the 431,000 additional households in this study.

Table 3-2
Additional Households Added to the Census Totals
Using the Incidence Study Definition

Adult children	162,300
Parents	8,800
Other relatives	<u>37,200</u>
Total relatives	208,300
Unmarried partner	54,100
Other unrelated persons	<u>96,800</u>
Total unrelated persons	150,900
Group quarters persons in incidence study	
Elderly (mostly in nursing homes)	48,100
Others	<u>15,600</u>
Total from group quarters	63,700
Less Census household heads who are claimed as dependents elsewhere	<u>(13,900)</u>
Net increase in households	409,000

Most of the difference in the number of households occurs because many Census households have been split into two or more incidence households. An additional 63,700 incidence households would not be included as Census households because they were living in group quarters. Most of these are elderly persons living in nursing homes. If these persons have social security, pension, or other income and are not claimed as a dependent on someone else's income tax return, they were generally counted as incidence households. These groups can account for all but 22,000 of the 431,000 extra incidence households. The remaining difference may be explained in several ways. Some of the additional households are married persons living together but filing separate tax returns. Others are college students who could have been (but were not) claimed as dependents on another's tax return. An unknown number are married couples who filed no tax returns and were counted as two single-person households due to lack of information.

In summary, the incidence study's population is consistent with the Census. The lower median income in this study occurs largely because the same total income is spread over a larger number of households. The incidence definition of a household is more appropriate than the Census definition when describing the distribution of the tax burden.

Those who are neither Renters nor Homeowners

The incidence study database divides the population into homeowners (including owners of mobilehomes), renters, farmers, and "others." The fourth category -- neither homeowners nor renters -- includes 266,000 households. Most are single persons living with relatives in a homeowner household. In such cases, the entire property tax burden was assigned to the homeowner; the second household is assumed to pay no property tax.¹⁰ Although the second incidence household might be considered to have paid part of the homeowner property tax, it is not possible to link the two households using available information (nor would it be clear how to split the tax between them).

Most of the non-renter/non-owner households were single persons in the lower income deciles, reflecting the characteristics of such persons in the Census data. Those living in group quarters (including nursing homes) were also included in this category. None of them would have been considered a separate household in the Census.

Differences in Household Size

In this study, households are divided into income classes with no adjustment for household size to reflect lower ability-to-pay for larger households with the same income. For example, all households with incomes between \$40,000 and \$50,000 are considered as a group, whether the household consists of a single person or a family of four. In the incidence study sample, low-income households are mainly single-person households, while almost all high-income households include two or more individuals.

¹⁰ If a home is owned jointly, the property tax is split equally among all owners.

Summary

The definition of income used in this study includes all identifiable forms of cash income received in a single year, including nontaxable sources of income. It is less comprehensive than the Haig-Simons definition of income because it includes no non-monetary benefits as income, measures capital gains and pensions when they are received (not when they accrue), and makes no adjustment for the impact of inflation on asset values. Nevertheless, it is a comprehensive definition of money income and is consistent with the public's perception of ability to pay.

The definition of household in this study varies from that used by the Census. There are 24 percent more households than reported by the Census, and median income is considerably lower as a result. Despite the difference in definition, the count of incidence households is consistent with Census data. The definition used here is more appropriate when describing the distribution of the tax burden.

CHAPTER 4

THE INCIDENCE STUDY DATABASE

The 1996 incidence study database includes detailed information on income and taxes for a stratified random sample of 47,923 Minnesota households. This sample is then “blown up” to represent all 2,148,820 Minnesota households. Individual income tax and property tax refund returns filed with the Department of Revenue were the primary sources of information and were supplemented with data on nontaxable income obtained from alternative sources. The additional nontaxable income information provides a more accurate measure of total income, particularly for low-income households who did not meet tax filing requirements.

The use of social security numbers to merge income data from different sources for specific individuals is a unique and important aspect of this study. Income data was matched, for example, with property tax and market value information for individual homeowners. Because of these “hard matches,” the need to impute estimated values of income and tax variables to households in the database was minimized.

This chapter describes the steps involved in building the incidence study database and how the database was used to calculate each household’s state and local tax burden.

Income Sources

The incidence study database was developed in three steps. First, data was taken from state and federal income tax returns. Second, additional data was taken from property tax refund returns. Third, additional income (social security, unemployment compensation, workers’ compensation, and public assistance) was added from other sources. Each of these steps is described more fully in this section.

Individual Income Tax

Individuals are required to file a state income tax return if they file a federal income tax return. In 1996, single persons were required to file a return if their gross income was \$6,250 or more; for married couples, the filing threshold was \$11,250. A large majority of the working population in Minnesota file income tax returns, providing a wealth of information on income and family characteristics. For tax year 1996, over 2 million individual income tax returns were filed by Minnesota residents, who paid \$3.4 billion in income tax. These income tax filers in the sample represented 84 percent of the state's households.

In addition to taxable sources of income, individual income tax returns contain information on some forms of nontaxable income. These include tax exempt interest, nontaxable individual retirement account (IRA) distributions, nontaxable pension and annuity income, and nontaxable social security benefits. As explained in the previous chapter, all of these untaxed forms of income are included in the measure of money income.

The 1996 individual income tax sample developed by the Tax Research Division was used as the initial source of data for all income tax filers. It includes approximately 23,000 returns (about 1 percent of the filer population), selected randomly based on income levels. The number of sample records in the incidence study database is fewer, however, than the full sample; nonresidents are excluded, and filers claimed as dependents on another tax return are combined with that return to form one household.

Property Tax Refund

Since 1975, Minnesota has had a property tax refund (PTR) program which reduces property taxes for both homeowners and renters. Homeowners and renters are eligible for regular property tax refunds based on the relationship of the property tax paid on a homestead or rental unit to total household income. Refunds vary depending on the actual ratio of taxes to income, but they generally decline as income increases.¹¹

¹¹ There is also a special "targeting" property tax refund for homeowners with large annual increases in property taxes, regardless of income. For 1996, a total of \$4.7 million in targeting refunds was received by 60,900 households. Both property tax refunds are included in calculating net property tax in this study, but the numbers in the following paragraph refer only to the regular refund.

In 1996, homeowners and renters were eligible for refunds if income was less than \$65,450 for homeowners and \$38,170 for renters. In that year, 495,000 regular PTR refunds were filed, 244,000 for homeowners and 251,000 for renters. A total of \$161.3 million of refunds was received, of which \$86.7 million (54 percent) was received by renters.

The regular PTR is based on total household income. In addition to federal AGI, PTR filers must report nontaxable forms of money income such as workers' compensation, untaxed social security benefits, veterans' benefits, and public assistance payments. PTR returns include nontaxable income and cover a substantial portion of the households who file no income tax return. They provide valuable information (including wage income) for many of the state's low income residents.

Information from the PTR returns was added to income tax information in two steps. First, for those in the income tax sample who also filed for a property tax refund, information from the PTR return was added to their existing income tax database record. This additional information included nontaxable income sources reported on the PTR return, as well as property tax information. Second, new database records were added for a 5 percent random sample of PTR filers who filed no income tax return. Together, PTR and income tax filers represented 90 percent of the state's households.

Other Sources of Income Data

Additional sources of information were used to identify social security payments (including Supplementary Security Income), workers' compensation, unemployment compensation, and public assistance income (Aid to Families with Dependent Children, Minnesota Family Investment Plan Refugee Cash Assistance, General Assistance, Family General Assistance, Minnesota Supplemental Aid, Emergency Assistance, and Special Needs payments).¹² In each case, social security numbers were used to match payments to specific households.

¹² Data on public assistance payments were obtained from the Minnesota Department of Human Services. Information on workers' compensation and unemployment compensation were obtained from the Department of Labor and Industry and the Department of Economic Security, respectively. Only the cash portion of workers' compensation representing wage replacement was included in income; payment for medical care and one-time indemnity payments were excluded.

A two-step approach was used to allocate this additional income households. First, payments received by individuals in either the income tax sample of the PTR sample were added to their existing database records. Second, new database records were added for a random 10 percent sample of those who received payments from one or more of these sources, but who filed neither income tax nor PTR returns. These nonfiler records represented 10 percent of all Minnesota households. Although the money income of this population is understated somewhat (as explained in Chapter 3), the database captures the largest part of their income.¹³

In its completed form, the 1996 incidence study sample has 47,923 household records. It includes a stratified random sample of 20,105 income tax filers, a five percent random sample of 6,674 PTR filers who did not file income tax return, and a ten percent random sample of 21,144 nonfiler households. All income data was matched using social security numbers to include all available information on money income, both taxable and nontaxable. This sample was then “blown up” to represent a total of 2,148,820 Minnesota households.

Tax Calculations

A variety of sources were used to determine the taxes paid by each household in the sample. In some cases, tax amounts were imputed based on income level, family size, source of income, and other household characteristics. This section describes what sources were used and how tax burdens were estimated.

Individual Income Tax

Income tax payments were available directly from the 1996 income tax sample.

Homestead Property Tax

The property tax for homeowners was derived from a unique data set that includes the market value of every residential homestead in Minnesota. Counties provide this data to the state annually, along with the social security numbers for

¹³ Detailed information is available from the Tax Research Division on the sources of income data and the composition of the household sample.

owners of homestead property, as required by law. From this information, property tax amounts were calculated for each homestead based on the local tax rate where the property is located.

These homestead property tax amounts were added to the appropriate sample records in the incidence study database by matching social security numbers. Any property tax refund received by a homeowner was taken from the household's PTR return, and the household's net property tax was calculated by subtracting the property tax refund from the gross property tax. For farms, the study estimated residential property taxes using the average tax on a farm "house, garage, and one acre" in the township; the remaining farm property tax (approximately 84 percent) was treated as a business tax. For farm homesteads, the property tax refund was also divided into residential and business components.¹⁴

Property Tax on Rental Housing

The total property tax paid on a rental unit was determined by one of two methods. First, for those filing a property tax refund, the property tax paid on the rental unit was listed on the PTR return. For PTR filers, therefore, the actual property tax on the rental unit was known.¹⁵

For renters who did not file a property tax refund return, a rental property tax amount was imputed. Detailed Minnesota data from the 1990 Census of Housing was used to estimate the total number of renters and to impute rent amounts for an additional 310,000 rental households who did not file a property tax refund. The estimated rent was based on household income, family type, age, household size, and location (metro or non-metro). The fraction of rent that landlords pay in property tax was estimated using information submitted by landlords (used in administering the property tax refund program). For the imputed renters, property taxes were estimated to range from 16 to 21 percent of rent.¹⁶ These renters represented 56 percent of all rental households in Minnesota.

¹⁴ The residential portion of the refund was estimated based on the ratio of the township's average tax on the "house, garage, and one acre" to the average tax on the first 320 acres.

¹⁵ The database includes the full amount of the tax paid on the household's rental unit. The landlord, however, is not able to shift all of the existing property tax to the renter in higher prices. Based on the incidence assumptions in Chapter 5, only part of the property tax is ultimately assigned to renters.

¹⁶ Rental data was estimated from the U.S. Census Public Use Microdata Sample for Minnesota, a 5 percent sample of Minnesota households which includes rent and detailed information about the household. MacDonald (1994) estimates that rental property taxes on unsubsidized housing units averaged 16.6 percent of rent in Minnesota in 1992.

There are a substantial number of households in the sample who are classified as neither renters nor homeowners. These include senior citizens living with relatives, adult children living at home (but not claimed as dependents on an income tax return), and some unrelated persons living with a homeowner. These households, an estimated 13 percent of all Minnesota households, are assumed to pay no property taxes.

General Sales Tax and Excise Taxes

Purchases subject to sales and excise taxes were estimated using a detailed state input-output model. The Minnesota Consumption Tax Model estimates total purchases from 112 Minnesota business sectors. Taxable purchases made by Minnesota residents are separated from taxable purchases by business and visitors. Multiplying taxable purchases by the applicable tax rate gives the total Minnesota tax paid by resident consumers on each of the 112 product categories.

The total tax paid by consumers on purchases of each type of product is distributed among individual households using consumer expenditure data from the Bureau of Labor Statistics' *1992 Consumer Expenditure Survey* (CES). Detailed information from this survey was used to estimate each household's share of taxes paid on each of 16 product groups, based on the household's size, family type, age, and income. The CES estimate of expenditures for each product category was added to each incidence study household record.

Miscellaneous Taxes

The consumer share of the motor vehicle registration tax was estimated from data provided by the Minnesota Department of Transportation. The registration tax is 1.25 percent of a vehicle's value, except for vehicles valued under \$2,000 (or over 10 years old), which pay a flat \$35 fee. This tax was allocated based on household expenditures on motor vehicle purchases (gross before trade-in), as estimated from the CES.

Minnesota collects a 2 percent insurance premiums tax on almost all insurance policies written in the state. Although this tax (like other sales and excise taxes) is collected by businesses, this study assumes that the tax is fully shifted to insurance buyers in higher prices. The taxes paid on each type of consumer insurance (personal auto, life, homeowner, accident, and health) were estimated from collections data. The taxes each household paid on purchases of personal auto, life, and homeowner insurance tax were estimated using CES data. Taxes on

accident and health insurance were estimated based on a national survey that showed how health insurance premiums varied by income level. The burden of workers' compensation insurance taxes was allocated in relation to wage and salary income (subject to a minimum and maximum).¹⁷

The property tax levied on seasonal recreational property ("cabins") is not included in the homeowner property taxes discussed earlier. The relationship between property taxes on cabins and household income was estimated from special property tax refund returns filed in 1991 (the only year such property qualified for a refund). An average property tax on cabins was allocated to all homeowners, varying by income level.

The distribution of gambling taxes was estimated using a 1994 survey conducted by the Minnesota State Lottery. That survey showed that the pattern of spending on pulltabs by income level was similar to that for the lottery, for which more detailed estimates were presented.

MinnesotaCare taxes were distributed in proportion to the sum of health insurance (including the share paid by employers) and out-of-pocket medical costs. Estimates of the distribution of these costs, by decile, were adapted from Hollahan and Zedlewski (1992) and the *Consumer Expenditure Survey*. Separate estimates were made by family type (singles, couples, families with children) and age (elderly, non-elderly). This study assumes that these taxes were borne by consumers in higher costs for medical care and insurance.¹⁸

The mortgage registration tax of 23 cents per \$100 of principal was distributed in proportion to mortgage interest paid in 1996. The deed transfer tax of \$1.65 per \$5000 of value was distributed in proportion to the market value of homes.

¹⁷ Health insurance data was adapted from Hollahan and Zedlewski (1992). The tax on insurance purchased by employers as part of employee fringe benefits is assumed borne by employees. By raising the cost of these fringe benefits, the tax reduces either cash wages or other fringe benefits. The tax on workers' compensation premiums was allocated to all workers with wages exceeding \$2,000 per year, with a floor for those earning less than half the state's average wage and a cap for those earning more than 150 percent of the state's average wage. This reflects the structure of medical and wage-replacement benefits provided by workers' compensation in Minnesota.

¹⁸ The MinnesotaCare program includes cost containment measures, and it also reduces the cost of uncompensated care for uninsured patients. However, this study considers the MinnesotaCare taxes in isolation. For a more complete analysis, see Cline (1992).

Business Taxes

Taxes legally imposed on businesses may be borne by the owners, shifted to consumers in higher prices, or shifted to workers in lower wages. This study's estimates of the distribution of the tax burden among these groups are explained in the next chapter. Given an estimate of the dollar amount of tax paid by consumers, workers, or owners, that tax was then allocated among individual households using income and consumption information from the database, as explained in Chapter 5.

Summary

The incidence study database includes individual records for about 48,000 households. The data content of each record is described in Appendix A. Each record includes the household's cash income as obtained from income tax returns, property tax refund returns, and other sources, all matched by social security numbers. Household income includes all taxable income plus almost all forms of nontaxable cash income (including tax-exempt interest, public assistance, untaxed social security income, and workers' compensation). Property taxes for homeowners (again identified by social security number) were obtained from a special data set. Finally, an estimate of each household's expenditures on a variety of items (including rent) was drawn from the *Consumer Expenditure Survey*, the Census of Housing, and other sources.

This unique database make is possible to estimate income and taxes for each household. When blown up to match the total state population, it provides a detailed description of the distribution of both income and state and local tax burdens among Minnesota residents.

CHAPTER 5

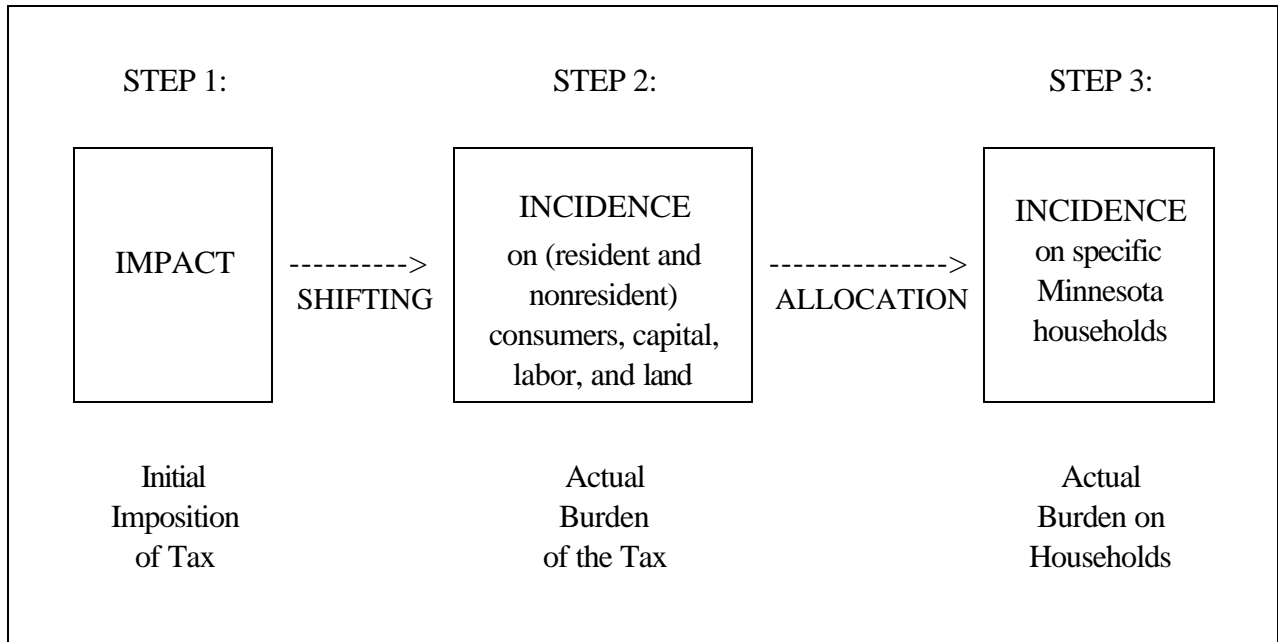
TAX INCIDENCE ANALYSIS

Introduction

Economists commonly distinguish between the initial “impact” of a tax and its “incidence.” The initial impact of a tax is on the taxpayer legally liable to pay the tax, while the incidence of a tax is the final resting place of the tax after any “shifting” has occurred. For example, the initial impact of the insurance premiums tax is on the insurance company, which is legally liable to pay the tax. Consumers may eventually pay some or all of the tax, however, in the form of higher prices for insurance. The incidence of the tax may be on consumers, not the insurance company. Similarly, the impact of the property tax on manufacturing property is on the manufacturer, but the actual incidence may fall partly on consumers (in higher prices) or on workers (in lower wages).

This study measures the distribution of tax burdens among households after any such shifting has occurred. As outlined in *Figure 5-1*, determining the distribution of household tax burdens can be viewed as a three-step process. Step 1 is the collection of data about the initial impact of Minnesota taxes. This step includes compiling information on tax collections by sector, and other estimations, such as the amount of sales tax paid by tourists or on business purchases of capital equipment. Step 2 uses economic theory to estimate how much of the burden of each tax is “shifted” from the initial taxpayer to others. For each tax, Step 2 estimates how much of the tax burden falls on consumers (in higher prices), labor (in lower wages), and capital (in lower rates of return). The portion of the tax burden shifted to nonresidents is also estimated in Step 2. Step 3 combines the incidence assumptions from Step 2 with information on the characteristics of individual households (from the study’s database described in Chapter 4) to estimate the tax burden falling on each of Minnesota’s two million households. Each dollar of tax is “allocated” either to a specific Minnesota household or to nonresidents.

Figure 5-1
Estimating Tax Incidence



For example, consider the business property tax. Step 1 obtains data on total tax collections from each business sector (such as manufacturing, farming, apartments, and public utilities). Step 2 uses economic theory and information about the nature of each business sector to estimate how much of each sector's property tax is borne by Minnesota consumers, Minnesota workers, Minnesota owners of capital, and nonresidents. Step 3 allocates the resident tax burden to specific Minnesota households, based on information about each household's total income, income sources, household size, and housing status (owner or renter).

The results of any incidence study are significantly determined by the study's incidence assumptions. This chapter explains both the incidence assumptions used in this study (Step 2) and the method of allocating tax burdens to specific households (Step 3).¹⁹ This study's incidence assumptions are summarized as follows:

¹⁹ A more detailed discussion of the incidence assumptions is provided in the *Minnesota Tax Incidence Study*, November 1993, Chapter 5 and Appendix A.

1. Incidence of Taxes on Households

- The personal income tax is paid by individual taxpayers, and the incidence is the same as the initial impact of the tax.
- Taxes on purchases by consumers (sales, excise, insurance premiums, gambling, and MinnesotaCare taxes) are borne by consumers of the taxed items.
- The property tax on homeowners is borne by the homeowner.
- The motor vehicle registration tax on vehicles owned by households is borne by the owner of the vehicle.
- Mortgage registration and deed transfer taxes on homes are borne by homeowners.

2. Incidence of Taxes on Business

Taxes on business property, business purchases, and corporate income are partially shifted to consumers and workers. (If fully shifted to consumers, the taxes are classified as taxes on households.) The amount of tax shifting varies by tax and by business sector, depending on the scope of the product market (local or national) and the magnitude of Minnesota's tax rates compared to those in other states.

The rationale for this study's incidence assumptions is discussed in the next two sections. First, taxes on households are discussed. The incidence of business taxes, which is discussed next, is much more complex. Many issues are unsettled, and a wide variety of approaches have been used in previous incidence studies. As a result, this section provides an extended discussion of the methodology underlying this study's approach to business tax incidence.

Taxes on Households

Individual Income Tax

To shift a tax, the individual or business legally liable to pay the tax must alter its economic behavior because of the tax. For example, if a tax on wages reduces after-tax pay, workers may reduce the number of hours worked. This could lead to higher before-tax wages, which would shift a part of the tax to employers or consumers. This study assumes that the burden of the individual income tax is not amenable to shifting through increases in either wages or interest rates. This assumption is correct if both total hours worked and savings rates are unresponsive

to after-tax returns and the package of public spending and taxes in Minnesota (compared to other states) does not cause significant emigration. Given this assumption, the state income tax burden equals each household's tax liability, as listed in the study's database.

Taxes on Consumer Purchases

Sales and Excise Taxes. This study, like most other incidence studies, assumes that businesses legally liable for sales and excise taxes on final products and services will be able to raise product prices by the full amount of the tax, leaving wages and the return to capital unchanged. Therefore, the tax burden is fully shifted to consumers in higher prices. The sales and excise tax burdens were allocated in proportion to each household's consumption of taxed items, as estimated in the study's database.

Insurance Premiums Taxes. The insurance premiums tax equals a flat percentage of the premium paid on selected types of insurance. This tax was assumed to raise insurance premiums by the full amount of the tax, so its burden was distributed in proportion to each household's purchase of insurance subject to the tax. For auto, life, and household insurance, the tax burden allocation was in proportion to expenditures as estimated from the *Consumer Expenditure Survey*.

The premiums tax on insurance provided through employers (most health and workers' compensation) was assumed borne by the employee. By raising the cost of these fringe benefits, the tax either reduced cash wages or other fringe benefits. The tax on health insurance premiums was assigned according to the distribution of total health insurance premiums. In Minnesota, workers' compensation policies are purchased from private insurers. Given the structure of medical and wage replacement benefits, the premium per employee was assumed to increase with wages, subject to a minimum (for workers earning less than half the average state wage) and a maximum (for those earning more than 150 percent of the average state wage).

Gambling Taxes. Gross receipts taxes on pulltabs, tipboards, bingo, raffles, and horse racing were assumed to be borne by the bettor. A recent survey by the Minnesota Lottery (1994) provided substantial information about how gambling varies by income level. The pattern of expenditures on pulltabs (the primary source of revenue) was similar to that for the lottery, so the more detailed distributional information about lottery expenditures was used to distribute these gambling taxes.

MinnesotaCare Taxes. The 2 percent gross receipts tax on most medical bills (including hospital, physician, dental, and laboratory services along with prescription drugs) was assumed to be paid by consumers in higher out-of-pocket medical costs or higher costs for insurance (except for Medicare premiums).²⁰ The higher costs of employer-provided health insurance were assumed to be borne by households in reduced wages or other fringe benefits. MinnesotaCare taxes were distributed in proportion to the sum of the cost of health insurance plus out-of-pocket costs for medical services and prescription drugs.

Property Taxes on Non-Business Property

Homeowner Property Taxes. The homeowner is both the owner and consumer of housing. As a result, the homeowner bears the full tax burden, regardless of how the burden is split between consumers and owners. The tax burden on the household was assumed to be the total property tax paid on the homestead, as identified in the incidence study database. Similarly, the property tax on cabins was assumed borne by the owners.

Motor Vehicle Registration Tax. The registration tax on motor vehicles owned by households was assumed to be fully borne by the owner. The tax is generally proportional to the market value of the vehicle. Lacking data on the distribution of vehicle stock by income level, this study used the distribution of vehicle purchases (before subtracting trade-in) as an approximation. The tax burden was allocated in proportion to the average gross vehicle expenditures by households of the same size and income level.

Mortgage Registration and Deed Transfer Taxes. The homeowner portion of these taxes was assumed to be borne by the owner of the home. Given a lack of information about the identity of those buying homes or obtaining mortgages in 1996, the burden of the mortgage registration tax was distributed over all mortgage holders (in proportion to mortgage interest paid in 1996); the deed transfer tax burden was distributed over all homeowners (in proportion to the estimated market value of the home).

²⁰ The MinnesotaCare program includes cost control measures to hold down prices, and it also reduces the cost of uncompensated care provided for uninsured patients. In this study, however, the impact of MinnesotaCare taxes is considered in isolation. For a more complete analysis of the distributional impact of the program, see Cline (1992).

Adjustment for Burdens on Nonresident Households

The proportion of the total receipts from each of these taxes that was allocated to Minnesota households is shown in *Table 2-2* (in Chapter 2). For the general sales and use tax and the excise taxes, the Minnesota household share was estimated by the Minnesota Consumption Tax Model. For the other taxes (insurance premiums tax, property tax on cabins, gambling taxes, MinnesotaCare taxes, motor vehicle registration tax, and mortgage and deed taxes), the total burden on Minnesota households was defined as total collections minus the estimated taxes paid by business and nonresident visitors and tourists.

Some incidence studies reduce state and local tax burdens to reflect the “federal tax offset.” State income taxes and homeowner property taxes are both deductible in calculating federal income tax liability, so households paying these Minnesota taxes will pay less in federal income tax (if they itemize deductions). A portion of these deductible taxes is sometimes considered to be shifted to the federal government in lower federal tax revenue. Although no such adjustment is included in this study’s general results, the impact of such an adjustment (and the arguments for and against it) are presented in Chapter 6.

Taxes on Business

Introduction

This study includes over \$5.1 billion in business taxes, as summarized in *Table 5-1*. These business taxes (including rental property taxes) account for over 35 percent of Minnesota’s state and local tax revenue. Business taxes include both taxes on capital (structures, capital equipment, and land) and taxes on business purchases of short-lived intermediate inputs (such as gasoline and restaurant meals).

This study estimated the incidence of each of these business taxes. While the initial impact of these taxes is on business, they are partially shifted forward to consumers in higher prices or backward to labor in lower wages. Much of the tax is paid by nonresidents, either as consumers of goods and services produced in Minnesota or as owners of capital and land located in Minnesota. This section summarizes how this study estimated the incidence of business taxes, and how business tax burdens were allocated to Minnesota households.

Table 5-1
1996 Minnesota Taxes on Businesses
(\$ Millions)

Taxes on Capital	
Rental property taxes	\$ 454
Other business property taxes	2,160
Corporate franchise tax	671
Sales tax on capital equipment	560
Vehicle registration tax	127
Insurance premiums tax on business property insurance	19
Mortgage and deed taxes	32
Taxes on Intermediate Products	
Sales tax on non-capital purchases	\$920
Motor fuels excise tax	215
Insurance premiums tax on business non-property insurance	11
Total Business Taxes	\$5,169

The Conceptual Structure

The following six principles define this study's approach to estimating the incidence of Minnesota's existing business taxes.

1. *Capital moves to where it earns the highest return.* If a tax on capital in a single state (or industry) reduces the after-tax rate of return, investors will move their capital to lower-tax locations (or industries). As production falls, prices will rise or costs (including wages) will fall until the after-tax rate of return is again equal to the after-tax rate of return elsewhere. Only the average tax on all forms of capital in all states -- a tax which owners of capital cannot avoid -- will be fully borne by capital so long as capital is free to move in search of the highest rate of return.
2. *Minnesota's taxes do not occur in isolation.* Every state levies business taxes. The incidence of a tax levied at the same rate in all states differs greatly from the incidence of a tax levied only in Minnesota. For example, a one percent

tax levied on business capital in only Minnesota will be largely shifted to consumers and workers; capital is unlikely to bear much of the final burden due to the ease of capital movement. In contrast, if all states impose the identical one percent tax on the value of all business capital, investors cannot escape the tax. Such a “national” tax on capital is much more likely to be borne by capital, reducing the after-tax rate of return on capital throughout the nation.

This distinction between a single-state tax and a nation-wide tax is crucial to the results of this study. The incidence of a particular Minnesota tax on business depends on how Minnesota’s tax rate compares to those of other states. If, for example, a particular Minnesota business tax rate is 10 percent above the national average, the incidence of this 10 percent “Minnesota differential” will differ greatly from the incidence of the remainder of the tax.

3. *Minnesota’s tax structure evolved over time.* In describing the incidence of existing business taxes, this study assumes that businesses, consumers, and workers have fully adjusted to tax differences across states.
4. *Some businesses, depending on their market, can shift Minnesota business taxes forward to consumers in higher prices.* Given time for full adjustment, the ability to shift taxes forward to consumers depends on the nature of the product being sold. Some producers, such as restaurants, compete only with other Minnesota companies; tax increases would affect all restaurants equally, and prices would rise to cover this higher cost. In contrast, a higher Minnesota tax on manufacturers is much harder to shift to consumers because firms compete in a national market. Therefore, Minnesota manufacturers cannot raise prices to cover higher state taxes. In this study, producers of “local market products” are assumed to pass tax differentials on to consumers but producers of “national market products” cannot.
5. *A tax that reduces the competitiveness of Minnesota businesses will be borne by immobile resources -- those either unable or unwilling to leave the state.* If capital is mobile and prices cannot be increased (due to competition), the burden of business taxes will reduce payments to inputs that are geographically tied to the state, including labor and land.

6. *An increase in taxes reflects an increase in state and local government spending.* This study assumes that workers do not move between Minnesota and other states in response to changes in state taxes, because tax changes are offset by expenditure changes, leaving the net benefits to Minnesota taxpayers unchanged. In other words, labor (along with land) is assumed to be immobile. In contrast, changes in taxes on business income are assumed not to be offset by changes in benefits from government expenditures.

In summary, these six concepts have guided this study's approach to estimating the incidence of Minnesota's existing business taxes. The study provides an answer to the question: What is the burden of Minnesota taxes on Minnesota residents, in a multistate context where Minnesota's taxes coexist with those of other states, assuming that producers and consumers have fully adjusted to existing tax rate differences?

Allocation of Business Taxes

The six concepts discussed above are used in this section to determine the allocation of business taxes among the four major taxpayer categories: Minnesota consumers, capital and labor, and nonresidents. The methodology used in this step is discussed in detail before the results are presented.

Several major features of the tax incidence approach used in this study are important to keep in mind. First, this study emphasizes the importance of Minnesota tax rates relative to those in other states. In estimating the incidence of existing business taxes, it is the relative tax rate that matters, not the absolute level of taxes. The incidence of a property tax on manufacturers, for example, depends on how heavily other states tax such property.

Second, this study emphasizes the difference between the incidence of existing business taxes and the incidence of an incremental increase in those taxes. Much of an existing business tax is matched by taxes in other states. The incidence of an increase in such a tax (unmatched by increases in other states) would be quite different. The tax incidence results in this study measure the distribution of existing taxes, not the distribution of increasing Minnesota taxes relative to other states.²¹

²¹ The distributional impact of proposals for changes in business taxes can only be determined using incremental incidence analysis. This analysis is discussed in more detail in the *Minnesota Tax Incidence Study*, November 1993, Appendix B.

Third, this study estimates the burden of business taxes after businesses, consumers, and workers have fully adjusted to them in the long run. For example, relatively high tax rates on capital may reduce wages of Minnesota workers through less capital investment. This long-term perspective is appropriate for estimating the incidence of existing taxes.

Allocation of Business Taxes: An Example

To understand the allocation approach used in this study, suppose that Minnesota levied a \$120 million tax on capital -- manufacturing equipment, for example. The owners of that capital are legally liable for the tax, but who would bear the ultimate burden? The first step in answering this question is to determine how shifting spreads the tax to capital owners, consumers and labor.

Allocating the Burden Among Capital, Consumers, and Labor

For each of the business taxes on capital, the tax paid by a particular economic sector is divided into three parts:

- The portion representing the *national average tax rate on all capital*.
- The portion representing the *national sector differential*.
- The portion representing the *Minnesota sector differential*.

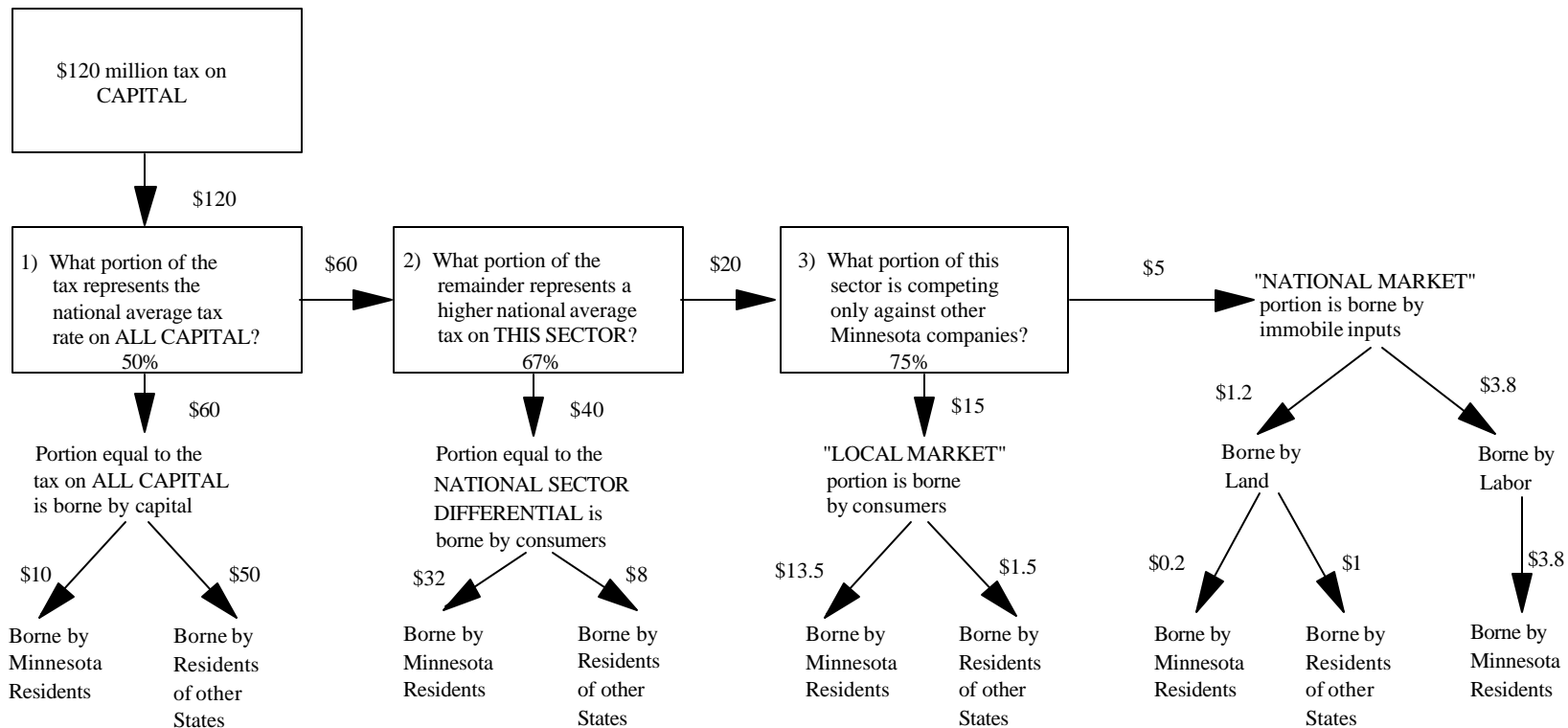
This 3-part division of the tax is based on the answers to three questions. The approach is summarized in *Figure 5-2*, using the example of a \$120 million property tax on capital in the manufacturing sector.

Question 1. What portion of this \$120 million Minnesota tax represents the national average tax on all capital? If all states levied an identical tax on *all* forms of capital, capital would be unable to shift that tax to others and the entire burden would be borne by capital.²² Given the variation in rates among the states, it is the “average national tax rate on capital” which is borne by capital owners.

²² This result follows from the assumption that national savings rates are unresponsive to changes in after-tax rates of return.

Figure 5-2

Incidence of a Hypothetical \$120 Million Tax on Capital



Summary of Tax Incidence
(\$ Millions)

<u>Taxpayer Category</u>	<u>Total</u>	<u>Minnesota Residents</u>	<u>Residents of Other States</u>
Capital*	\$61.2	\$10.2	\$51.0
Consumers	55.0	45.5	9.5
Labor	<u>3.8</u>	<u>3.8</u>	<u>0.0</u>
Total	\$120.0	\$59.5	\$60.5

*Capital includes land.

The average tax rate on all capital is measured in this study as the average state tax rate on all capital -- total tax revenue (in all states) divided by the total national stock of capital. If the Minnesota tax rate on a particular sector is equal to the national average tax rate on all capital, then the tax will be borne entirely by the owners of capital; if the Minnesota tax rate exceeds the national average tax rate the remainder of the Minnesota tax would be shifted either forward to consumers or backward to labor and other immobile inputs.²³

For each particular tax on capital, this study estimates the average national tax rate on all capital. If the Minnesota tax rate on a particular form of capital is twice the national average (as is assumed hypothetically in *Figure 5-2*), then the burden of the first half of the tax is assumed to fall on capital. What happens to the remaining half (\$60 million) depends on the answers to the next two questions.

Question 2. What portion of the remaining \$60 million in taxes on capital equipment represents a higher national average tax on this particular sector? Because capital taxes are levied at different rates on different forms of capital, some forms of capital are taxed in all states at a higher rate than all capital. For example, commercial property is taxed at a considerably higher rate than manufacturing property, and both are taxed more heavily than agriculture. In this example, suppose the national tax rate in the manufacturing sector is 1.67 times as high as the national average tax on all capital. This 67 percent higher-than-average tax rate difference for the manufacturing sector is referred to as its “national sector differential.”

Despite these heavier taxes, however, the after-tax rate of return in manufacturing cannot remain lower (with mobile capital) than the rate of return available in other sectors. As firms adjust by reducing output, the portion of a tax on capital equal to this “national sector differential” is borne entirely by consumers in the form of higher prices. For each tax on capital, this study estimates the average national tax rate on capital invested in each sector. The share of the Minnesota tax representing the “national sector differential” is allocated to consumers of products produced in Minnesota. (See *Figure 5-2*.)

²³ If the Minnesota tax is *less* than the national average tax on all capital, then the entire Minnesota tax is borne by capital. (From a national perspective, this capital bears all of the Minnesota tax plus some of the tax from other states, but we are only interested in determining who pays the Minnesota tax.)

The remaining tax (if any) is the “Minnesota sector differential” -- the amount by which Minnesota’s tax rate on capital invested in this sector exceeds the national average tax rate in this sector. To determine who bears the burden of this “Minnesota differential,” it is necessary to answer the third question.

Question 3. What portion of this sector’s producers compete only against other Minnesota producers in “local markets”? For products sold in local markets, the Minnesota differential will result in higher prices to consumers.

In contrast, prices for products that compete in national markets (including most manufactured products) are determined nationally. A “Minnesota sector differential” on producers of such national market products cannot usually be shifted to consumers, so that the burden of the tax must fall on immobile resources, land and labor. This study assumes that immobile labor and landowners share the burden of any Minnesota sector differential for national market products in proportion to their relative shares in production.²⁴

In summary, to allocate the burden of taxes among capital owners, consumers, and labor, this study divides the tax into three parts (the percentages refer to the example in *Figure 5-2*):

1. The portion representing the “national average tax on all capital” is borne by capital (50 percent).
2. The portion representing the “national sector differential” is borne by consumers (33 percent).
3. The portion representing the “Minnesota sector differential” is borne by:
 - Consumers for products sold in “local markets” (13 percent);
 - Labor and landowners for products sold in “national markets” (4 percent).

This approach requires an estimate, for each tax, of the national average tax on all capital. For each tax and each sector, it requires an estimate of the Minnesota differential -- the excess of Minnesota taxes over the national average for that sector. The study also needs to estimate, for each sector, the extent to which its products are sold in local as opposed to national markets.

²⁴ For the major sectors of the economy, this ratio is 95 percent labor and 5 percent land. We assume that the burden on land falls only on business owners of land. If labor is immobile and government expenditures rise in line with taxes, there will be no downward pressure on the value of *residential* land.

Allocating the Burden between Minnesota Residents and Nonresidents

Exported Tax Burden. A large amount of capital located in Minnesota is owned by nonresidents. For the portion of any tax borne by capital and land, much of the burden will fall on residents of other states. This study assumed that nonresidents own 90 percent of the stock in corporations subject to Minnesota tax, and 20 percent of most noncorporate businesses (but only 5 percent of non-homestead residential property). As such, in sectors which are predominantly corporate, most of the burden falling on capital was exported.

Consumers located in other states will pay some of the “national sector differential” on Minnesota firms that is shifted forward in higher prices. In addition, nonresident visitors bear some of the tax shifted to in-state consumption. For each sector, this study estimated the proportion of sales made to (1) out-of-state consumers and (2) visitors.

The burden on labor (in the form of reduced wages) was assumed to fall entirely on Minnesota residents.

Imported Tax Burden. Both Minnesota consumers and Minnesota owners of capital and land located in other states pay taxes to other states. However, taxes that Minnesota residents pay to other states are ignored here; this study estimates and analyzes the incidence of Minnesota taxes on Minnesota residents.

Federal Tax Offset. In estimating the incidence of existing Minnesota taxes, this study makes no adjustment for the “federal tax offset” due to the deductibility of Minnesota business taxes in calculating federal taxable income. Given the “multistate” approach taken in this study, the federal tax offset is most likely to be quite small. All 50 states levy business taxes. Since approximately one-third of every state’s business taxes are offset by a reduction in federal revenues, the federal government has essentially replaced this lost tax revenue through higher federal tax rates. A state’s “net” federal tax offset would be its “gross” federal tax offset minus the state’s share of those increased federal tax payments. As a result, the net offset for the average state would be zero; with above average business taxes, Minnesota’s would be positive. However, given the offset’s small and uncertain size, this study simply assumes it is zero.

The same argument also applies to the federal tax offset for non-business taxes (the individual income tax, homeowner property tax, and motor vehicle registration tax) deductible in calculating federal individual income tax liability; the net offset for the average state is again zero. Given the multistate perspective of this study, no federal tax offset for household taxes is included. For informational purposes, however, the impact of the federal tax offset for non-business taxes is presented in Chapter 6.

Taxes on Intermediate Business Inputs

The incidence of a tax on short-lived intermediate business inputs like gasoline, business meals, lodging, or liquor, is different from the incidence of a tax on capital. While a uniform national tax on all capital would be borne by capital, a uniform national tax on business purchases of gasoline, for example, would not. It would almost certainly be shifted forward to consumers in higher prices. Taxes on short-lived intermediate products raise the cost of production, but they do not raise the cost of capital.

As a result, the approach to the incidence of such taxes skips the first of the three questions asked about capital taxes. The tax on intermediate business purchases is divided into only two parts:

1. The portion representing the “average national tax rate” on this sector is shifted forward to consumers in higher prices.
2. The portion representing the “Minnesota differential” is borne by:
 - a. Consumers for products sold in “local markets;”
 - b. Labor and landowners for products sold in “national markets.”

Distribution of Business Taxes by Taxpayer Categories

A description of the incidence results for the distribution of each business tax to consumers, capital and labor (both residents and nonresidents) is provided in this section. The business tax allocators used to estimate the business tax burden for specific Minnesota households are discussed at the end of this chapter.

Business Property Taxes

The burden of the business property tax falls on property owners (“capital”), consumers, and labor. Capital’s share of the tax burden is generally equal to the

sum of two parts -- the land share plus the national tax on all capital.²⁵ The consumers' share of the tax burden equals all of the national sector differential plus the Minnesota differential for products sold in local markets. For products sold in national markets, the Minnesota differential is borne largely by labor (with capital bearing the small portion of the burden that falls on land).

Minnesota property tax rates are generally higher than the national average, but the Minnesota differential varies considerably by type of property. A Minnesota Taxpayers Association survey of business property taxes in all 50 states was used to estimate the Minnesota differential. The survey showed that, for apartments, Minnesota's total property tax was approximately 2.1 times the national average. For commercial and industrial property taxes, the Minnesota differential varied substantially depending on the type of business. Minnesota does not tax machinery and equipment, business fixtures, or inventories. In contrast, approximately 36 states tax machinery and equipment, 38 states tax business fixtures, and 10 states tax business inventories. As a result, the Minnesota differential was very high for a company with only land and buildings; it was much lower for a company with substantial personal property and inventories. For the typical Minnesota commercial business, Minnesota's property tax exceeded the national average by 64 percent. For a typical Minnesota industrial business, Minnesota's property tax exceeded the national average by only 8 percent.²⁶

As shown in the first section of *Table 5-2*, Minnesota consumers bore an estimated 33 percent of business property taxes in higher prices and rents. Minnesota capital bore 25 percent of the burden, and 2 percent was borne by Minnesota labor in lower wages. The remaining 40 percent was borne by nonresidents.

²⁵ The exception is public utilities, where the land share of the tax was assumed to be shifted to consumers. Utility prices were regulated in 1994, guaranteeing an after-tax rate of return equal to a fixed proportion of the national average return on all capital. Capital still bears the share of the tax representing the national tax rate on all capital, however, because the property tax reduces the national rate of return.

²⁶ Minnesota Taxpayers Association (1996) presented effective tax rates in the largest city, representative suburb, and representative town for all 50 states. This study uses the largest city to estimate the Minnesota differential. The property mix for a typical Minnesota company was estimated using data from the U.S. Commerce Department (adjusted for Minnesota's industrial mix). The property mix used here differs substantially from that assumed in the Minnesota Taxpayers Association study.

Table 5-2
Distribution of Business Tax Burden
by Taxpayer Category

	Percent Borne by Minnesota Taxpayers			Percent Exported
	Consumers	Labor	Capital	
Business Property Taxes				
Commercial	37%	4%	15%	44%
Rental Housing	55	0	30	15
Manufacturing	3	0	9	88
Public Utility	57	4	2	37
Farm	0	0	100	0
All Sectors	33%	2%	25%	40%
Sales Tax on Business Inputs				
Construction	80%	0%	8%	13%
Services	69	0	10	21
Retail	50	0	13	37
Manufacturing	12	11	4	74
Wholesale	52	1	5	43
Transportation and Comm.	42	7	4	47
Finance	65	3	5	27
Utilities	12	0	9	79
Mining	2	15	8	75
Agriculture	24	0	42	35
All Sectors	57%	2%	9%	32%
Corporate Franchise Tax				
Commercial	53%	8%	3%	37%
Manufacturing	12	9	3	76
Public Utility	49	8	2	40
Mining	5	17	3	75
All Sectors	39%	8%	3%	50%
Other Business Taxes				
Motor Fuels	63%	0%	0%	37%
Motor Vehicle Registration	31	9	14	46
Mortgage and deed taxes	20	0	36	44
Insurance Premium	23	0	18	59

Note: Sectors listed by amount of tax paid (highest to lowest).

The tax burden on nonresidents was highest in manufacturing (88 percent) and commercial property (44 percent). Nonresidents bore the burden either as owners of Minnesota companies or as consumers. A very high proportion of the burden on business owners was borne by nonresidents in sectors where ownership was largely corporate, because stock ownership was widely dispersed throughout the nation. Noncorporate owners (sole proprietors, partnerships, and S corporations) were more likely to be local. The tax borne by consumers was also shifted partly to nonresidents -- both to consumers who purchased Minnesota products in their home states and to those who visited Minnesota. The national sector differential was exported to nonresidents to the extent those products were sold out of state. The out-of-state proportion of sales was high for manufacturing and farms; it was negligible for rental housing and low for the commercial and public utility sectors. The visitor share of in-state sales was significant only for the commercial sector.

The burden on Minnesota capital was greatest in sectors that were capital intensive and locally owned (farming and rental housing). The Minnesota consumer share was highest in sectors where the Minnesota differential was high and the products or services were sold in local markets (public utilities, rental housing, and commercial). Labor would bear a significant burden only in sectors where the Minnesota differential was large and producers competed in a national market. The Minnesota differential was low, however, for sectors competing primarily in a national market (manufacturing and farming). As a result, labor had no more than 4 percent of the total burden in any sector.

This study treated taxes on apartments and other rental housing as business taxes. Individuals who invest their capital in rental housing, like those investing elsewhere, are assumed to respond to differences in after-tax rates of return. As with other business property taxes, part of the property tax on rental housing represents a tax on land, and part of it represents the average national tax on all capital. This study assumed that these portions of the rental property tax were borne by capital owners.

An estimated 63 percent of existing rental housing taxes were shifted to renters in higher rents, with landlords paying the remaining 37 percent. The assumption that existing rental property taxes were partially borne by landlords follows from the multistate approach used in this study. If the average national property tax rate on all capital is borne by the owners of capital, this will be the case for rental property the same as for manufacturing or commercial property.²⁷

²⁷ In sharp contrast, an increase in rental property taxes, unmatched by increases in other states, would be expected to be borne almost completely by renters through the Minnesota differential.

Farm property taxes are levied almost entirely on land. Nationally, property tax rates on non-land capital in the farming sector are below the average taxes on all capital. As a result, the national sector differential is negative. Given the lack of a positive national sector differential and the fact that farm product prices are set in a national market, none of the property tax can be shifted to consumers. As a result, farm property taxes were assumed to be borne entirely by farm owners.

Sales Tax on Business Inputs

Two distinct kinds of business purchases are fully or partially subject to Minnesota sales tax: purchases of capital equipment (including motor vehicles) and purchases of non-capital intermediate inputs. Non-capital inputs include things such as general office supplies, business services, meals and entertainment and hotel charges. Construction materials purchased by the construction industry are also intermediate inputs, but the tax on construction materials is assumed to be fully shifted forward in higher prices for buildings, so it is treated as a tax on capital.

Total sales taxes paid by business were estimated using the Minnesota Consumption Tax Model, an input-output model of the state economy. The model estimated the dollar value of purchases of capital goods and intermediate purchases by firms in each of the 112 industries. The Minnesota sales tax was applied to the taxable portion of those purchases (based on the identity of the product and the purchasing company), yielding an estimate of total sales taxes paid by each industry. The estimated total 1996 sales tax paid by Minnesota businesses (45 percent of all sales taxes) was:

Taxes on capital	
Capital equipment	\$ 560 million
Construction materials	256 million
Taxes on other intermediate inputs	<u>664 million</u>
Total sales tax on business	\$1,480 million

The incidence of the sales tax on business inputs was estimated separately for each of the 112 industries. The sales tax on capital equipment applies only to equipment purchased in the current year, only a fraction of businesses' total equipment. Therefore, the tax rate (as a proportion of the value of a company's total capital) is higher in industries which replace equipment more rapidly. Effective tax rates on capital were calculated for each industry by dividing current year taxes by the sector's total stock of capital.

For the tax on capital inputs, the tax was divided into three parts: the national tax on all capital, the national sector differential, and the Minnesota differential. This process was essentially the same as for the property tax (discussed earlier) except that there is no land share with the sales tax. Since the tax on other intermediate inputs is not a tax on capital, it was divided into only two parts -- the average national sector tax and the Minnesota differential.

Capital's share of the tax burden is approximately equal to the national tax on all capital. The consumers' share of the tax burden equals all of the national sector differential plus the Minnesota differential for products sold in "local markets." For products sold in "national markets," the Minnesota differential is borne largely by labor (with capital bearing a small portion of the burden shifted backward to landowners).

In 1996 Minnesota consumers bore 57 percent of the business sales tax in higher prices. Minnesota capital bore 9 percent of the burden, and 2 percent was borne by Minnesota labor in lower wages. The remaining 32 percent was borne by nonresidents. (See *Table 5-2.*)

The Corporate Franchise Tax

The corporate franchise tax is a tax on the return to capital in the corporate sector. In estimating the incidence of this tax, as with other taxes levied on capital, this study divided the tax into three parts -- the average national tax rate on all capital (corporate and noncorporate), the national sector differential, and the Minnesota differential. For corporations, incidence was estimated separately for four sectors -- manufacturing, commercial, public utilities, and mining.

The national average (state) corporate tax rate in 1996 was 7 percent.²⁸ The corporate tax is levied on a relatively small share of total national capital. Corporations own only 36 percent of all privately-owned, tangible, non-land capital, so the average tax rate on all capital was only 0.36 times 7 percent, or 2.52 percent. The first 2.52 percentage points of Minnesota's corporate income tax was therefore assumed to be borne entirely by owners of capital.²⁹

²⁸ The details of how the national average rate is calculated are presented in *Minnesota Tax Incidence Study*, November 1993, Chapter 5.

²⁹ The incidence of the 7 percent average state tax on corporate income is assumed to be the same as a 7 percent national tax on corporate income. This partial tax on capital lowers the return on all capital, corporate and non-corporate, as capital moves in search of the highest rate of return. Given the assumptions of competitive markets and a national capital stock unaffected by taxes, the tax is borne by all capital.

Minnesota's 1996 corporate tax rate, at 9.8 percent, was 40 percent higher than the national average state tax rate. However, this overstates the relative magnitude of the Minnesota tax for two reasons: first, the Minnesota apportionment formula is different from that used elsewhere, reducing the effective tax rate for the average taxable corporation; and second, Minnesota has no "throwback rule," used in about half of all states to increase the size of their tax base. After both adjustments, the estimated percent by which Minnesota's effective corporate tax rate for each sector exceeded the national average in 1996 was reduced to:

Manufacturing	12%
Commercial	39
Public Utilities	37
Mining	30

As shown in *Table 5-2*, Minnesota consumers bore 39 percent of the corporate income tax in higher prices. Minnesota capital owners bore 3 percent of the burden, and 8 percent was borne by Minnesota labor. The remaining 50 percent was borne by nonresidents.

Other Business Taxes

Motor Fuels Excise Tax (Business Purchases). The tax on motor fuels is a tax on a non-capital intermediate product. As such, the average national tax rate is shifted to consumers and the Minnesota differential is shifted either to consumers (local market goods) or to labor and land (national market goods). In 1996, Minnesota fuel taxes were approximately equal to the national average. An estimated 37 percent of the tax burden fell on nonresidents, with the remaining 63 percent falling on Minnesota consumers in higher prices.

Motor Vehicle Registration Tax (Business Vehicles). Business paid an estimated 31.5 percent of annual motor vehicle registration taxes in Minnesota in 1996, including 15 percent of registration fees for automobiles, vans, and pickups, 100 percent for heavy trucks and buses, and 50 percent for utility trailers. Minnesota registration fees for automobiles and pickups were substantially above the national average. This study assumed registration fees for business (and personal) automobiles and pickups exceeded the national average by over 200 percent, while heavy truck registration fees were about 30 percent above the national average.

The \$127 million in motor vehicle registration fees paid by business were allocated among eleven sectors in proportion to each sector's share of automobile and truck purchases. For each sector, as with other taxes on capital, the tax was separated into three parts -- the national average tax on all capital, the national sector differential, and the Minnesota differential.

As shown in *Table 5-2*, Minnesota consumers were estimated to bear 31 percent of the tax in higher prices. Minnesota capital owners bore 14 percent of the burden, and 9 percent was borne by Minnesota labor. The remaining 46 percent was borne by nonresidents.

Insurance Premiums Tax (Business Insurance). The insurance premiums tax is a flat percentage tax (generally 2 percent) levied on the value of insurance premiums written in Minnesota. Tax rates vary little among states, and Minnesota's tax rate is equal to the national average. As a result, we assume the tax raises the price of insurance policies by the amount of the tax. In its impact, it is the same as a sales tax on insurance premiums.

Taxes on business insurance accounted for 22 percent of insurance premium tax revenues in 1996. Incidence was estimated in the same way as the incidence of the sales tax on business inputs. The tax base consists of two parts -- insurance on commercial property (fire, theft, auto) and other business insurance (malpractice, liability). The tax on property insurance (66 percent of the business total) was treated as a tax on capital, while the tax on other business insurance (34 percent) was considered a tax on a non-capital intermediate product. Most of the tax burden (59 percent) fell on nonresidents, with 23 percent borne by Minnesota consumers and 18 percent by Minnesota owners of capital.

Mortgage and Deed Taxes. Minnesota's mortgage and deed tax rates were below the national average rates (state and local combined), so the Minnesota differential is zero. The tax was divided into two parts -- the average tax on all capital and the national sector differential. The tax was levied primarily on commercial property, with small amounts on the rental housing and farm sectors. About 36 percent of the tax was borne by Minnesota capital owners and 20 percent by Minnesota consumers, with the remaining 44 percent borne by nonresidents.

Business Tax Allocators

After estimating the share of Minnesota business taxes borne by Minnesota owners of capital and land, consumers, and labor, the final step was to allocate those taxes to specific households based on each household's characteristics contained in the database records. In most cases, the study allocated to each household the average tax burden for households with the same characteristics. *Figure 5-3* summarizes the allocators used in this final step.

Figure 5-3
Business Tax Allocators

Allocator	Used to Distribute Tax Borne By:
Dividend income	Corporate owners
Noncorporate capital ownership	Noncorporate owners
Total consumer expenditures	Consumers
Labor income	Workers
Farm income	Farmers using their own land
Farm rents	Farmers leasing their land

Burden on Consumers. Taxes shifted forward to consumers were allocated to consumers based on their share of total consumer expenditures, as estimated from the *Consumer Expenditure Survey*. Total expenditures for a particular household were estimated based on household income and size.

Burden on Renters. Households filing for property tax refunds report the property tax paid on their housing unit (calculated by their landlord). The renter's burden was assumed to be 63 percent of this reported tax. Some other renter households reported their annual rent when they applied for a property tax rebate on their 1997 income tax return. The property tax on their rental unit was estimated as a percent of their rent, and the renter's burden was again assumed to be 63 percent of the estimated tax. The property tax for the remaining renter households was assumed equal to that of households in the first two groups with similar incomes and household characteristics.

In 1996, approximately 95,000 Minnesota households lived in subsidized housing. These renter households generally paid rent equal to 30 percent of their income. Property taxes increased the cost of the government subsidy, but they could not change the amount of rent paid by the subsidized household. As a result,

the property tax burden for these households was assumed to be zero. To adjust for the presence of households living in subsidized housing, 95,000 households matching the demographic and income characteristics of the subsidized housing population had their rental property tax burden set to zero.³⁰

Burden on Corporate Capital. The burden on corporate capital was allocated to households in proportion to taxable dividends received. This allocator was used to estimate the total income received by owners of corporate stock, both as dividends and as capital gains on appreciated stock. Although dividends received may not be a good measure of corporate ownership for particular individuals, the decile-by-decile distribution of dividend income should match the distribution of corporate capital fairly closely.

Burden on Noncorporate Capital. Noncorporate business capital includes capital owned by sole proprietors, partnerships, and S corporations. This study used a variety of information from Schedules C and E to develop a reasonable estimate of each household's ownership of noncorporate capital.³¹ The construction of this measure guaranteed that: (1) households with large business losses are assigned some capital ownership (based on either claimed depreciation or the size of claimed losses); and (2) the shares of capital ownership imputed to those with sole proprietor income, rental income, and partnership and S corporation income are roughly proportional to each income source's aggregate share of claimed depreciation.

Burden on Farmers. Rental land accounts for about one third of Minnesota farm land. Approximately half of all farm property taxes were paid on rented land, reflecting higher classification rates on non-homestead farms. Therefore about half of the farm property tax burden was allocated in proportion to farm income (reported on Schedule F), with the rest allocated in proportion to farm rents (reported on Schedule E).

Burden on Labor. The burden on labor (through lower wages) was allocated based on each household's share of earned income, defined as the sum of wages and salaries plus three-quarters of sole proprietor income.

³⁰ Most of these households lived in housing units paying reduced property taxes, while others lived in buildings paying the regular rate. Total property taxes on all 95,000 housing units were estimated at \$57 million.

³¹ See *Minnesota Tax Incidence Study*, November 1993, pp. 71-72 for a detailed discussion of the method used to measure the distribution of noncorporate capital by income level.

Estimating the Impact of a *Change* in Business Taxes

This study estimates the burden of existing business taxes at current levels. *The results presented here do not apply to changes in the level of business taxes.* As explained in this chapter, the first step in the incidence analysis was to divide existing business taxes into three parts: the national average tax on all capital, the sector differential, and the Minnesota differential. In contrast, a change in business taxes in Minnesota (unmatched by changes elsewhere) would consist of only one part: the Minnesota differential. As a result, distribution of the burden would be much different.

Compared to the results presented in this study, the incidence of an increase or decrease in Minnesota business taxes would fall:

- less on nonresidents,
- less on Minnesota owners of capital,
- more on Minnesota consumers, and
- more on Minnesota labor.

Illustrations of the magnitude of these differences were presented in the 1993 edition of this study (Appendix B).

Summary

This chapter explains the methodology for allocating tax burdens to each of the 46,000 households in the Minnesota tax incidence sample. Some tax payments (including individual income taxes, homeowner property taxes and property tax refund amounts) were taken directly from tax records. Other tax burdens were distributed based on estimated patterns of expenditures on the taxed items. For business taxes, the allocation process was more complex. The chapter explains how portions of the business tax burden were assigned to Minnesota consumers, workers, and business owners and how those estimated burdens were allocated to specific households in the database.

When the tax incidence sample is scaled to match the Minnesota population, it provides an estimate of the 1996 tax burden on Minnesota households by income level and family type. The results are presented in the following chapter.

CHAPTER 6

SUMMARY OF RESULTS

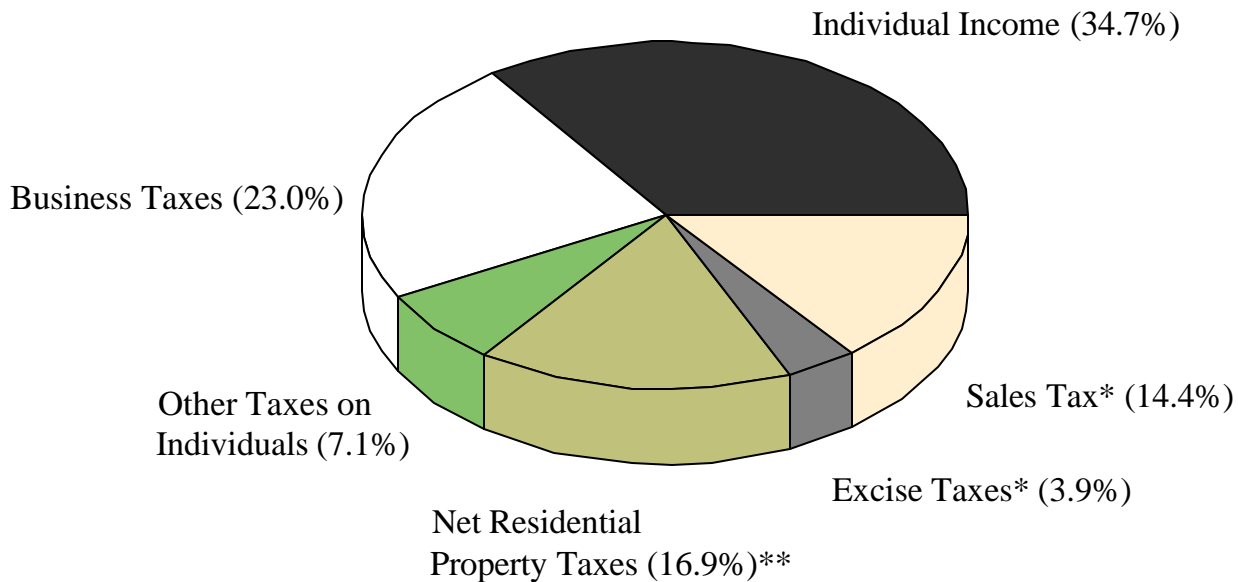
This section examines the state and local tax burdens imposed on Minnesota taxpayers in 1996. All major taxes are included, those paid by businesses as well as those paid directly by households. The taxes included account for 98 percent of Minnesota state and local tax revenue in 1996. Only Minnesota taxes paid by residents are included in these results; Minnesota taxes paid by nonresidents and taxes paid by Minnesota residents to other states are excluded. For business taxes, the study estimates the extent to which they are shifted forward to Minnesota consumers in higher prices or backward to Minnesota workers in lower wages or to owners of capital in lower returns. The incidence results for the entire system of state and local taxes in Minnesota are reported both in terms of the overall distribution of tax burdens and by tax type.

The Total Tax Burden

For 1996, Minnesota residents paid a total of \$11.89 billion in taxes while earning \$93.3 billion in total money income.³² Minnesota residents thus paid 12.7 percent of their total income in state and local taxes. As shown in *Figure 6-1*, the individual income tax accounted for over one-third of the total tax burden on Minnesota residents. Residential property taxes and the consumer sales tax (including sales tax on motor vehicles) were 16.9 percent and 14.4 percent of the total, respectively. The three consumer excise taxes (on alcohol, tobacco, and gasoline) accounted for 3.9 percent, while other taxes on individuals (insurance, motor vehicle registration, gambling, MinnesotaCare, mortgage and deed, and property tax on cabins) amounted to 7.1 percent. Business taxes made up for the remaining 23.0 percent of total state and local taxes paid by Minnesota residents.

³² Minnesota residents paid \$11.9 billion out of a total of \$14.3 billion of state and local taxes included in the study. The difference of \$2.4 billion is exported to other states, i.e., paid by nonresidents. Business taxes accounted for 81 percent of all exported taxes, almost \$2.0 billion. The amounts for other taxes exported were: individual income tax, \$160 million; consumer sales tax, \$111 million; consumer excise taxes, \$97 million; rental property tax, \$69 million; and other taxes, \$29 million.

Figure 6-1
Distribution of Minnesota
State and Local Tax Burdens by Tax



* Consumer portion.

** Excludes seasonal recreational property.

To summarize the distribution of tax burdens by income level, the population of Minnesota households was divided into ten equal-sized groups or *deciles* of households ranked by household income levels. By definition, the first decile includes the 10 percent of households with the lowest income levels and the tenth decile includes the highest-income 10 percent of households. There were approximately 219,000 taxpaying households in each population decile.

Examining the distribution of total tax burden by population decile (ranked by income level), one finds that taxpayers in the top decile (incomes of \$78,618 and over) bore 37.3 percent of the total tax burden while having 38.9 percent of total income. (See *Table 6-1*). By tax type, taxpayers in the top decile paid 52.3 percent of the individual income tax, 24.9 percent of the consumer sales tax, 15.2 percent of the consumer excise taxes, 34.4 percent of the net residential property tax, 26.1 percent of other individual taxes, and 32.0 percent of business taxes.

Table 6-1
Distribution of Households, Income and Taxes, by Population Decile
(\$ Thousands)

Population Decile	Income Range	Number Of Households	Total Household Income	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Taxes ¹	Other Taxes on Individuals ²	Business Taxes ³	Total Taxes
First	\$6,817 & Under	219,397	\$933,376	-\$5,517	\$44,717	\$20,715	\$43,268	\$14,582	\$86,941	\$204,706
Second	6,817 - 11,166	219,397	1,949,746	2,787	61,468	24,839	39,909	20,229	85,556	234,788
Third	11,166 - 15,828	219,397	2,947,022	26,190	83,134	32,122	66,333	31,425	120,371	359,575
Fourth	15,828 - 21,634	219,397	4,102,239	75,750	115,765	41,383	76,976	50,865	153,994	514,733
Fifth	21,634 - 27,866	219,397	5,396,022	141,707	137,448	46,768	124,890	69,166	180,161	700,140
Sixth	27,866 - 35,486	219,397	6,921,703	226,514	159,325	49,461	164,309	78,860	228,513	906,982
Seventh	35,486 - 45,144	219,397	8,815,120	329,399	184,720	53,899	213,619	95,135	277,275	1,154,047
Eighth	45,144 - 57,697	219,397	11,241,323	471,434	224,815	62,604	253,008	118,660	330,083	1,460,604
Ninth	57,697 - 78,618	219,397	14,693,033	700,913	272,578	66,060	332,028	143,029	399,847	1,914,455
Tenth	\$78,618 & Over	219,397	36,272,979	2,155,085	425,154	71,073	689,724	219,423	876,334	4,436,793
Total		2,193,970	\$93,272,563	\$4,124,262	\$1,709,124	\$468,924	\$2,004,064	\$841,374	\$2,739,075	\$11,886,823
Top 5%	\$106,086 & Over	109,699	\$26,448,677	\$1,639,217	\$256,861	\$37,543	\$465,565	\$130,198	\$617,652	\$3,147,036
Top 1%	\$244,679 & Over	21,941	13,658,169	904,228	85,061	9,302	178,421	38,327	289,588	1,504,927

Percentage of Households, Income, and Taxes, by Population Decile

Population Decile	Income Range	Percent of Households	Percent of Income	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Taxes ¹	Other Taxes on Individuals ²	Business Taxes ³	Total Taxes
First	\$6,817 & Under	10.0%	1.0%	-0.1%	2.6%	4.4%	2.2%	1.7%	3.2%	1.7%
Second	6,817 - 11,166	10.0	2.1	0.1	3.6	5.3	2.0	2.4	3.1	2.0
Third	11,166 - 15,828	10.0	3.2	0.6	4.9	6.8	3.3	3.7	4.4	3.0
Fourth	15,828 - 21,634	10.0	4.4	1.8	6.8	8.8	3.8	6.1	5.6	4.4
Fifth	21,634 - 27,866	10.0	5.8	3.4	8.0	10.0	6.2	8.2	6.6	5.9
Sixth	27,866 - 35,486	10.0	7.4	5.5	9.3	10.5	8.2	9.4	8.3	7.6
Seventh	35,486 - 45,144	10.0	9.4	8.0	10.8	11.5	10.7	11.3	10.1	9.7
Eighth	45,144 - 57,697	10.0	12.0	11.4	13.2	13.4	12.6	14.1	12.1	12.3
Ninth	57,697 - 78,618	10.0	15.8	17.0	15.9	14.1	16.6	17.0	14.6	16.1
Tenth	\$78,618 & Over	10.0	38.9	52.3	24.9	15.2	34.4	26.1	32.0	37.3
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Top 5%	\$106,086 & Over	5.0%	28.4%	39.7%	15.0%	8.0%	23.2%	15.5%	22.5%	26.5%
Top 1%	\$244,679 & Over	1.0%	14.6	21.9	5.0	2.0	8.9	4.6	10.6	12.7

NOTES:

¹ Net of renters' property tax refunds. Includes both the renter and landlord shares of rental property taxes, but excludes property tax on second homes (cabins).

² Other taxes include individual motor vehicle registration tax, insurance premiums tax on personal insurance, gambling taxes, MinnesotaCare taxes, mortgage and deed taxes paid by homeowners, and property tax on cabins.

³ Excludes the property tax on rental housing.

In contrast, taxpayers in the bottom decile (incomes of \$6,817 and below) bore 1.7 percent of the total tax burden and received only 1.0 percent of total income. The bottom decile taxpayers had a negative net individual income tax burden due to the refundable working family credit and the child and dependent care credit. The same households paid 2.6 percent of the consumer sales tax, 4.4 percent of the consumer excise taxes, 2.2 percent of net residential property tax, 1.7 percent of other individual taxes, and 3.2 percent of business taxes.

Table 6-2 summarizes the distribution of the total burden by tax type for each decile. Business taxes, residential property taxes, and the consumer sales tax accounted for the largest percentage of taxes paid in the lowest deciles. Because of the refundable tax credits, the income tax burden in the first decile was negative. In the top deciles, income tax contributed the largest share of taxes paid, with 48.6 percent of the total tax in the tenth decile coming from the income tax. Another fifth of the top decile's tax burden came from business taxes.

Overall Effective Tax Rates

To evaluate the fairness or equity in the distribution of tax burdens by income level, tax burdens must be compared to the underlying distribution of income. This section examines this relationship in more detail.

A key measure used to analyze tax equity is the effective tax rate, which is defined as the ratio of taxes to income. Effective tax rates measure the percentage of income paid in taxes and can be compared for different levels of income. The distribution of tax burdens is characterized as progressive if the effective tax rate rises with income, proportional if it is constant for all income levels, or regressive if it falls as income rises.

Effective tax rates by tax type are reported in *Table 6-3* and in more detail in *Appendix Tables B-1* through *B-4*. *Figure 6-2* shows overall effective tax rates for Minnesota's state and local tax system and summarizes the most important findings in this study. The effective tax rate is shown on the vertical axis of the figure; population deciles are shown on the horizontal axis (each decile containing 10 percent of total taxpayers).

Table 6-2
Percent Distribution of Burden
by Tax Type within Population Deciles

Population Decile	Number of Households	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Tax (Net of Refunds)¹	Other Taxes on Individuals²	Business Taxes³	Total Taxes
First	219,397	-2.7%	21.8%	10.1%	21.1%	7.1%	42.5%	100.0%
Second	219,397	1.2	26.2	10.6	17.0	8.6	36.4	100.0
Third	219,397	7.3	23.1	8.9	18.4	8.7	33.5	100.0
Fourth	219,397	14.7	22.5	8.0	15.0	9.9	29.9	100.0
Fifth	219,397	20.2	19.6	6.7	17.8	9.9	25.7	100.0
Sixth	219,397	25.0	17.6	5.5	18.1	8.7	25.2	100.0
Seventh	219,397	28.5	16.0	4.7	18.5	8.2	24.0	100.0
Eighth	219,397	32.3	15.4	4.3	17.3	8.1	22.6	100.0
Ninth	219,397	36.6	14.2	3.5	17.3	7.5	17.8	100.0
Tenth	219,397	48.6	9.6	1.6	15.5	4.9	19.8	100.0
Total	2,193,970	34.7%	14.4%	3.9%	16.9%	7.1%	23.0%	100.0%
Top 5%	109,699	52.1%	8.2%	1.2%	14.8%	4.1%	19.6%	100.0%
Top 1%	21,941	60.1	5.7	0.6	11.9	2.5	19.2	100.0

NOTES:

¹ Net of renters' property tax refunds. Includes both the renter and landlord shares of rental property taxes, but excludes property tax on second homes (cabins).

² Other taxes include individual motor vehicle registration tax, insurance premiums tax on personal insurance, gambling taxes, MinnesotaCare taxes, mortgage and deed taxes paid by homeowners, and property tax on cabins.

³ Excludes the property tax on rental housing.

Table 6-3
1996 Effective Tax Rates by Population Decile
(All Taxpayers)

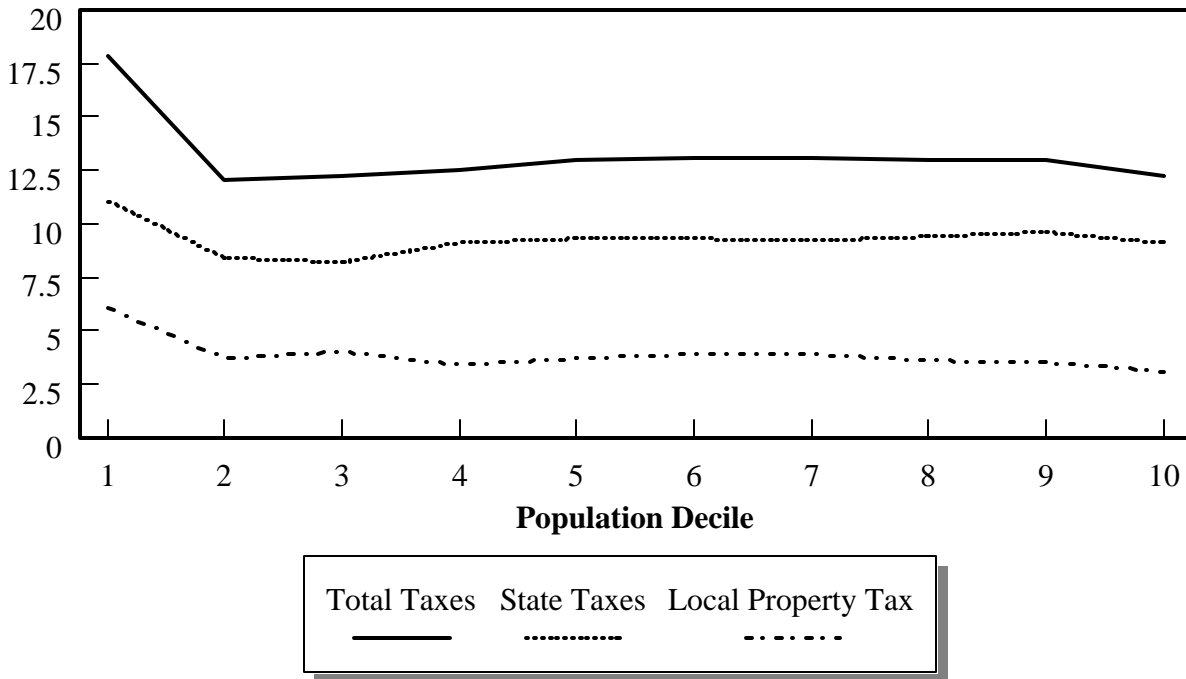
Population Decile	Number of Households	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Tax ¹	Other Taxes on Individuals ²	Total Individual Taxes	Business Taxes ³	Total Taxes
First	219,397	-0.6%	4.6%	2.2%	3.5%	1.4%	11.1%	6.7%	17.8%
Second	219,397	0.1	3.2	1.3	2.0	1.0	7.7	4.4	12.0
Third	219,397	0.9	2.8	1.1	2.3	1.1	8.1	4.1	12.2
Fourth	219,397	1.8	2.8	1.0	1.9	1.2	8.8	3.8	12.5
Fifth	219,397	2.6	2.5	0.9	2.3	1.3	9.6	3.3	13.0
Sixth	219,397	3.3	2.3	0.7	2.4	1.1	9.8	3.3	13.1
Seventh	219,397	3.7	2.1	0.6	2.4	1.1	9.9	3.1	13.1
Eighth	219,397	4.2	2.0	0.6	2.3	1.1	10.1	2.9	13.0
Ninth	219,397	4.8	1.9	0.4	2.3	1.0	10.3	2.7	13.0
Tenth	219,397	5.9	1.2	0.2	1.9	0.6	9.8	2.4	12.2
Total	2,193,970	4.4%	1.8%	0.5%	2.1%	0.9%	9.8%	2.9%	12.7%
Top 5%	109,699	6.2%	1.0%	0.1%	1.8%	0.5%	9.6%	2.3%	11.9%
Top 1%	21,941	6.6	0.6	0.1	1.3	0.3	8.9	2.1	11.0

NOTES:

- ¹ Net of renters' property tax refunds. Includes both the renter and landlord shares of rental property taxes, but excludes property tax on second homes (cabins).
- ² Other taxes include individual motor vehicle registration tax, insurance premiums tax on personal insurance, gambling taxes, MinnesotaCare taxes, mortgage and deed taxes on homes, and property tax on cabins.
- ³ Excludes the property tax on rental housing.
- ⁴ As explained later in this chapter, effective tax rates for the first decile reflect an adjustment to exclude a small number of households with negative income, primarily those with business losses. Unadjusted figures are reported in the tables in Appendix B.
- ⁵ Income reported by individuals as a result of a corporate sale was not included in the 1996 tables due to the size of the sale, and for comparison purposes with other years. Including this income would increase effective tax rates for the individual income tax from 5.9% to 6.1% in the tenth decile and from 4.4% to 4.5% overall. However, due to the large amount of income involved for a relatively small number of households, the effective tax rate in the tenth decile for total state and local taxes would decrease from 12.2% to 12.0%. The overall effective tax rate (with rounding) would remain unchanged at 12.7%, due to including this income.

Figure 6-2
Effective Tax Rates for 1996
State and Local Taxes by Population Decile

Effective Tax Rate (percent)



NOTE: Effective tax rates for the first decile reflect an adjustment to exclude a small number of households with negative income, primarily business losses.

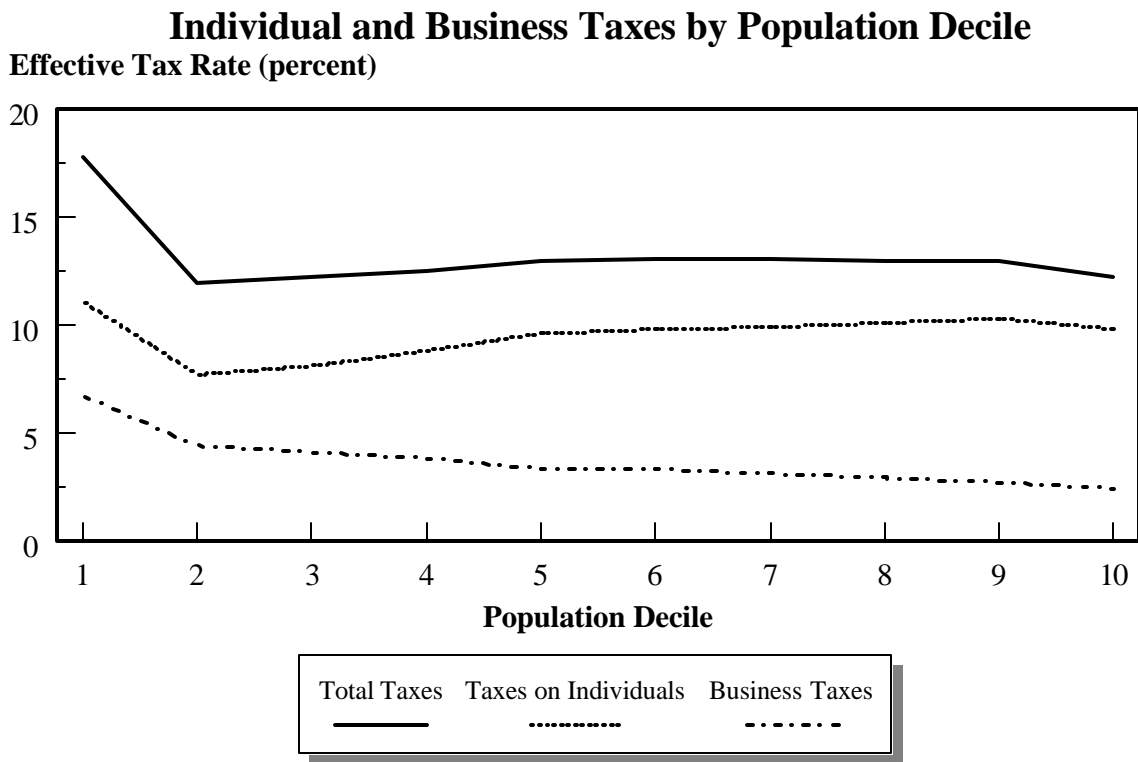
As shown in *Table 6-3* and *Figure 6-2*, the state and local tax system showed some progressivity between the second and sixth deciles and some regressivity between the seventh and tenth deciles. Effective tax rates rose from 12.0 percent in the second decile to 13.1 percent in the sixth decile and the seventh decile, declined slightly to 13.0 percent in the eighth and ninth deciles, and then fell to 12.2 percent in the tenth decile. The Suits Index (described later in this chapter) is a measure of the average degree of progressivity or regressivity across all deciles. The Suits Index of -0.02 suggests that the tax system overall was very slightly regressive, with the progressivity between the second and sixth deciles largely offsetting the regressivity between the seventh and tenth deciles. However, effective tax rates showed some variation by income level. Aside from the high tax rates in the first decile (discussed in more detail later in this chapter), it is the pattern of first rising and then falling tax rates that is most noticeable in *Figure 6-2*.

As shown in *Figure 6-2*, state tax burdens and local tax burdens were distributed quite differently. Total state taxes (individual and business combined) were slightly progressive, with effective tax rates generally rising from 8.4 percent in the second decile (and 8.2 percent in the third decile) to 9.6 percent in the ninth decile before falling to 9.1 percent in the tenth decile. Local property taxes (net of refunds), showed some variation between the second and ninth deciles, and were mildly regressive overall. (See *Appendix Table B-1*.)

Effective Tax Rates by Type of Tax

As shown in *Table 6-3* and *Figure 6-3*, taxes imposed directly on individuals (state taxes on individuals plus residential property taxes) were progressive overall, effective tax rates increasing from 7.7 to 10.3 percent from the second to the ninth decile as income increased. Business taxes, however, were regressive; effective tax rates declined from 4.4 in the second decile to 2.4 percent in the tenth decile.

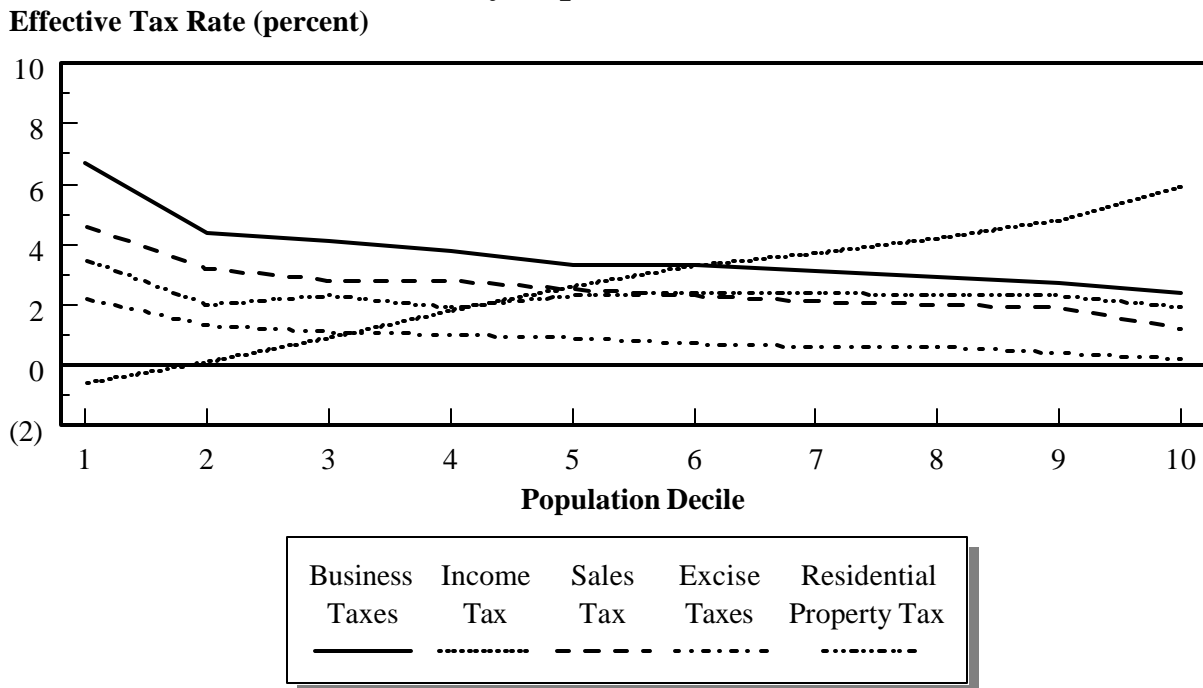
Figure 6-3
Effective Tax Rates for 1996



NOTE: Effective tax rates for the first decile reflect an adjustment to exclude a small number of households with negative income, primarily business losses.

Effective tax rates by population deciles for the five major tax types included in this study are presented in *Table 6-3* and are illustrated in *Figure 6-4*. The results show that the individual income tax was very progressive, while the five remaining taxes were generally regressive. Because the progressive individual income tax accounted for almost one-third of the total tax burden, it offset the regressivity of all the other state and local taxes combined. Hence, as a whole, the state and local system of taxation in Minnesota was close to proportional.

Figure 6-4
1996 Effective Tax Rates by Tax Type
By Population Decile



NOTE: Effective tax rates for the first decile reflect an adjustment to exclude a small number of households with negative income, primarily business losses.

The Individual Income Tax

Because of its graduated structure and allowance of personal exemptions and deductions, the individual income tax is, by design, progressive. As seen in *Table 6-3*, effective tax rates rose significantly with increases in household income. At the low end, the effective tax rate for the income tax was -0.6 percent and, 0.1 and 0.9 percent for the first and second deciles, respectively. It rose steadily to 5.9 percent for the tenth decile. First decile households can receive refundable working family

credits and refundable child and dependent care credits, which more than offset the positive income tax liabilities. The net effect was a \$5,517,000 refund or negative tax for these households in 1996.

As shown above in *Table 6-1*, over 80 percent of the entire individual income tax burden was borne by the top three deciles (incomes of \$45,144 and over), and these taxpayers accounted for 66 percent of money income. The middle four deciles accounted for most of the remaining tax, 18.7 percent, while receiving 27 percent of total income.

Sales Tax on Consumer Purchases

In agreement with most incidence studies, this analysis finds the consumer portion of the sales tax to be regressive, especially at low income levels. (The sales tax on business purchases is included with the business tax category.) This is because the share of income represented by taxable consumption tends to be smaller for high income households than for low income ones. Hence, tax burdens as a proportion of income tend to decline as one moves up the income scale.

The effective consumer sales tax rate for the bottom decile was 4.6 percent, compared to the rate for the top decile of 1.2 percent (see *Table 6-3*). Therefore, households in the bottom decile paid an effective tax rate about 4 times as large as the effective tax rate on households in the top decile. Effective tax rates for the second through ninth deciles, representing 80 percent of all taxpayers, ranged from 3.2 to 1.9 percent.

Excise Taxes on Consumer Purchases

Three excise taxes were included in this study: gasoline, tobacco, and alcohol taxes. Because each is relatively small individually, the three were combined to arrive at one aggregate measure for this analysis. Like the sales tax, the excise taxes were regressive. This is predictable, since lower income households spend a greater proportion of their income on consumer goods subject to the excise taxes. As a result, effective excise tax rates are higher for low income households than for higher income ones. As shown in *Table 6-3*, the effective tax rate for the bottom decile was 2.2 percent. It declined from 1.3 percent in the second decile to 0.4 percent in the ninth decile and 0.2 percent for the tenth decile.

Residential Property Taxes

Residential property taxes include the portion of the property tax on rental housing assumed to be borne by the landlord as well as taxes paid by both homeowners and renters. As shown in *Table 6-3*, net effective residential property tax rates, after property tax refunds, showed some variation. Effective property tax rates on residential property were 2 percent in the second decile, 2.4 percent in the sixth decile, and 1.9 percent in the tenth decile. The tax burdens on homeowners and renters are shown separately in Appendix B.

Homeowner Property Taxes. The property tax on owned homes, net of property tax refunds, was regressive. (See *Appendix Table B-2* for homeowner effective tax rates.) Generally, burdens declined as taxpayers moved up the income scale. The net effective property tax rate for homeowners was 4.9 percent for the second decile and gradually declined to 1.7 percent in the tenth decile.

The regressivity of homeowner property taxes was reduced by the property tax refund (PTR) program, which provides targeted relief for taxpayers whose property taxes are high relative to income. Comparing gross effective property tax rates (before refunds) to net effective rates (after refunds) shows that effective tax rates were reduced for low to moderate income taxpayers. (See *Appendix Table B-2*.) For example, the effective property tax rate for homeowners in the second decile was reduced by 1.6 percentage points (from 6.5 to 4.9 percent of income). The PTR reduction fell to 0.3 percentage points in the fifth decile.

Rental Property Taxes. This study's estimates of the property tax burden on renters are consistent with the approach used for business taxes more generally. Taxes on rental property, like taxes on other business property, are partly shifted to renters in higher rents and partly paid by property owners in lower returns. Using the methodology applied to business taxes more generally, this study estimates that a sizable portion of the 1996 rental property tax (37 percent) was borne by the investors who own rental housing; the remaining share (63 percent) was assumed to be shifted to renters in higher rents. The effective tax rate on renters was, therefore, lower than it would have been if all of the tax were passed along in higher rents.

As shown in *Appendix Table B-3*, the gross property tax burden on renters (\$240 million) was regressive. Gross effective property tax rates gradually declined from 2.8 percent for renters in the second decile to 0.7 percent in the tenth decile.

The pattern of net effective property tax rates (after PTR) was, however, very different. In this study, the entire amount of property tax refunds received by renter households was subtracted from the portion of the tax estimated to be borne by renters. This offset significantly reduced effective tax rates in the lower deciles. The net effective property tax rate for renters (after PTR) was 1.1 percent in the second decile and increased to 1.9 percent in the sixth decile, then fell to 0.7 percent in the top decile.

The large difference between gross and net property tax burdens on renters can be better understood by comparing the incidence assumption in this study to the incidence assumption implicit in the renter property tax refund program. In this study, renters are assumed to bear 63 percent of rental property taxes in the form of higher rents. However, the property tax refund program assumes that the entire property tax on rental property is borne by renters. For lower income renters, actual property tax refunds offset a significant portion of the property tax burden assigned to renters in this study.

As shown in *Appendix Tables B-2 and B-3*, in every decile the net property tax burden on renters was less than the net property tax burden on homeowners after adjusting for the impact of the PTR. Only two-thirds of the rental tax was shifted forward to renters; the other third of the burden fell on the property owners. In contrast, homeowners bore the entire burden of homeowner property taxes since they were both the housing consumer and property owner.³³

Other Individual Taxes

The “other taxes” category in *Table 6-3* includes the motor vehicle registration tax paid directly by households, the insurance premiums tax paid on personal insurance (homeowner, motor vehicle, life, health, and accident), gambling taxes, MinnesotaCare taxes, mortgage and deed taxes paid by homeowners, and the property tax on cabins. The combined burden for these six taxes showed some variation by income level.

³³ A simple comparison of net homeowner and net renter property tax burdens is misleading. The net renter property tax burden includes only the burden on renters as consumers of housing. The net homeowner burden includes the total burden, both the burden on the housing consumer and the burden on the property owner. If property tax rates on homes and rental property were identical the share of the homeowner tax burden falling on the owner of the property would be the same as the share of the rental property tax falling on the owner of the rental property (here estimated to be 37 percent). Under Minnesota's class rate system, however, property tax rates on rental housing exceed those on homes. As shown in Chapter 5, the portion of a state or local tax on capital shifted forward to consumers increases with the tax rate. As a result, the consumer share of the property tax on renters is much higher than the consumer share of the property tax on homeowners.

Business Taxes

As shown in *Figure 6-1* above, business taxes were 23.0 percent of the total tax burden on Minnesota residents. Business taxes include the following:

- Business property taxes (other than rental housing)
- Corporate franchise tax
- Sales tax paid on purchases of capital equipment and other intermediate inputs
- Motor vehicle registration tax paid by business
- Excise taxes paid by business (motor fuels)
- Insurance premiums tax on business insurance
- Mortgage and deed taxes on business property

Although the legal impact of each of these taxes falls on the business entity, each is partially shifted to consumers (in higher prices) and to labor (in lower wages). Only a portion of business taxes are borne by capital owners as a lower rate of return on their investment. Part of the burden of each of these taxes is also shifted to nonresidents. This study estimates the degree to which such shifting occurs and then allocates the estimated burden to Minnesota households based on each household's sources of income and patterns of spending. (An explanation of tax shifting and the method of estimating the incidence of business taxes for this study is found in Chapter 5.)

To determine the incidence of each business tax, the study first estimated tax payments made by the different business sectors (manufacturing, mining, retail trade, etc.). Market characteristics of each business sector were used to estimate the degree to which taxes were shifted to consumers, labor, and nonresidents. Finally, taxes paid by each of these taxpayer categories (factors) were distributed to individual households in the sample.

Table 6-4 summarizes the estimated incidence of business taxes. The overall burden of business taxes was shared almost equally by consumers (53.5 percent) and owners of capital (43.3 percent); labor bore the remaining 3 percent. Capital ownership is concentrated among high income households, so it might be expected that business taxes, borne in substantial part by capital owners, would be progressive. However, most of the burden on owners of capital falls on nonresidents who own stock in Minnesota companies. Of the burden falling on

Minnesota residents, almost 75 percent falls on consumers (in higher prices) or labor (in reduced wages). As a result, the burden of Minnesota business taxes on Minnesota households was regressive. The effective tax rate generally fell as income increased. The effective tax rate was 4.4 percent in the second decile; it fell steadily as income rose, reaching 2.4 percent in the tenth decile. (See *Table 6-3* and *Figure 6-4*.)

Table 6-4
Incidence of Minnesota Business Taxes*
by Taxpayer Category
(\$ Millions)

Taxpayer Category	Total Tax Burden		Exported to Nonresidents		Paid by Minnesota Residents	
	Amount	Percent	Amount	Percent	Amount	Percent
Capital:	\$2,043	43.3%	\$1,340	68.2%	\$703	25.6%
Corporate	1,418	30.1	1,276	64.9	142	5.2
Noncorporate	625	13.3	64	3.3	561	20.4
Labor	148	3.1	-	0.0	148	5.4
Consumers	2,523	53.5	625	31.8	1,898	69.0
Total	\$4,719	100.0%	\$1,965	100.0%	\$2,749	100.0%

*Excluding rental property taxes.

Warning: Existing Business Taxes Versus a Change in Business Taxes.

This study estimates the burden of existing business taxes at current levels. *The results presented here do not apply to changes in the level of business taxes.* As explained in Chapter 5, the incidence of a change in business taxes (including taxes on rental housing) will differ greatly from the incidence of existing taxes. Much less of the incidence of a change in business tax (increase or decrease) will fall on capital owners and nonresidents; much more will fall on Minnesota consumers and workers. The distributional results presented in this study should never be applied to proposals to raise or lower taxes on business.

Effective Tax Rates in the First Decile

As shown in *Table 6-3*, low income taxpayers in the first decile had significantly higher sales, excise, net property, and business tax burdens than taxpayers with higher incomes. The total effective tax rate of 17.8 percent for taxpayers in the first decile was much higher than the rates in other deciles. This 17.8 percent effective tax rate includes an adjustment to exclude households with negative incomes, as discussed below. Without this adjustment, the effective tax rate for the first decile was even higher, at 21.9 percent, as shown in *Appendix Table B-1*.

The unadjusted effective tax rate for the first decile is overstated for several reasons. First, the lowest decile includes households who have temporarily low incomes or have better overall economic well-being than was indicated by their money income in 1996. A portion of retirees, for example, may be living primarily on savings or other assets but report small amounts of annual money income received. Due to unemployment or business fluctuations, some households who normally have higher incomes are also included in the first decile.

One identifiable group of first-decile households is particularly noteworthy. About 5 percent of all first-decile households were in this decile only because they reported business losses or large capital losses for income tax purposes in 1996. Although their average income was negative (-\$37,500), their average tax burden was estimated to be \$3,510.³⁴ Few of these households were actually poor for any length of time. Approximately 60 percent were homeowners, with homes valued over \$67,000, on average. Most had significant amounts of business activity as sole proprietors or partners, and the reported losses were probably temporary. Of the total households with *negative* household income (11,000 households), 32 percent were farmers. *Excluding the small group of households with either negative income or business losses from the first decile reduces the effective tax rate from 21.9 percent to 17.8 percent.*

³⁴ In this study, households with large business losses and negative income (due perhaps to large depreciation deductions) were assumed to still bear large amounts of business taxes. In addition, all households were assumed to bear a minimum amount of sales and excise taxes, MinnesotaCare taxes, insurance premiums taxes, motor vehicle registration tax, and (for homeowners) mortgage and deed taxes.

Second, effective tax rates for the first decile are overstated because income is understated. The incidence sample was unable to identify all sources of income. Almost 34.6 percent of first-decile households filed neither an income tax nor a property tax refund return. The incidence study identified some wage and capital income for these nonfilers, but many had other sources of income that were not identified. An underestimate of household income generally causes effective tax rates to be overestimated.

Household income is also underestimated in the *Consumer Expenditure Survey* used to estimate sales and excise tax burdens. To the extent that income was subject to relatively greater underreporting than consumption, particularly for low-income households, the taxable consumption expenditures calculated from CES will be overstated. As a result, consumption tax burdens would be overestimated.³⁵

While this study does adjust for negative incomes for a small number of households, no attempt has been made to adjust for possible underreported or unidentified sources of income or for other differences between transitory and long-run measures of income. By including only money income, the substantial amounts of food stamps and housing subsidies received by the poor are ignored in this study. Consequently, money income at the low end of the income distribution does not provide an accurate measure of overall economic well-being. For all of these reasons, effective tax rates in the first decile are overstated by an unknown but significant amount.

The Suits Index

The previous sections looked at effective tax rates for each of the six categories of taxes examined in this study. The effective tax rate -- that is, the ratio of taxes paid to income -- can be used to compare tax burdens across income categories. However, it is difficult to summarize the overall distribution of a tax (progressive, proportional, or regressive) from the individual effective tax rates. This section uses the Suits Index as a summary measure of the overall distribution for a specific tax.

³⁵ To partly adjust for the unreliability of the CES data, the ratio of consumption to income was adjusted downward for the lowest deciles. This adjustment was largely offset, however, by another adjustment for those with low or negative incomes. In computing sales, excise, and rental property tax burdens, those with incomes below \$2,000 were assumed to spend as if they had incomes of \$2,000. Even those with zero income were assumed to have some taxable purchases.

The Suits Index measures the relationship between the cumulative percentage of taxes and the cumulative percentage of total income for taxpayers ranked by income. A proportional tax has a Suits Index equal to zero; a progressive tax has a positive index. In the extreme case, when the total tax burden is paid by those in the highest income bracket, the index has a value of +1.00. For a regressive tax, the Suits Index has a negative value between 0 and -1.00, the most regressive value.

Table 6-5 presents Suits indexes for Minnesota state and local taxes in 1996. The only progressive tax was the personal income tax with a positive Suits index of +0.19. The consumer excise taxes were the most regressive, followed by the consumer sales tax. Taken as a whole, the system of Minnesota taxes was slightly regressive (a Suits index of -0.02). State taxes were proportional (+0.00), but local property taxes were regressive (-0.06).

Table 6-5
Suits Indexes for Minnesota State and Local Taxes

Tax Category	1996 Suits Index
Personal Income Tax	+0.19
Residential Property Tax	
Gross	-0.12
Net (after PTR)	-0.07
Business Property Tax	-0.08
State Business Taxes	-0.13
Other Individual Taxes	-0.15
Consumer Sales Tax	-0.19
Consumer Excise Taxes	-0.34
State Taxes	+0.00
Local Taxes (after PTR)	-0.06
Total Taxes	-0.02

An Alternative Presentation: Income Deciles

The results presented earlier in this chapter have been summarized for deciles of households. Each population decile represents ten percent of the population of households in the study. This section provides an alternative way to summarize the distribution of the 1996 tax burden. *Table 6-6* distributes taxes and calculates effective tax rates for all taxpayers organized by income deciles (rather than population deciles). To derive income deciles, households are ranked from lowest to highest income and divided into groups representing equal amounts of total *income*.

The distribution of tax by income deciles in *Table 6-6* can be compared to the distribution by population deciles in *Table 6-1*. In both distributions households are ranked by income level. In the population decile distribution (*Table 6-1*), each decile of 219,000 represents 10 percent of all households; in the income decile distribution (*Table 6-6*), each decile with \$9.3 billion of income represents 10 percent of total income. Because of their relatively low incomes, it took 849,000 households in the first income decile to account for 10 percent of total income; in contrast, there were only 8,248 high income households in the tenth decile, who also received 10 percent of total income.

The bottom half of *Table 6-6* shows the distribution of taxes by income decile. The first decile included 38.7 percent of all households. Their share of total taxes (10.4 percent) was slightly above their share of household income (10 percent). First income decile households (with 10 percent of total income) paid only 2.1 percent of the individual income tax and 10.7 percent of all residential property taxes, but they paid 16.9 percent of the consumer sales tax, 24.2 percent of consumer excise taxes, and 15.6 percent of all business taxes borne by Minnesota residents.

The tenth income decile included only 0.4 percent of all households. Their share of total taxes (8.1 percent) was lower than their share of household income (10 percent). They paid 15.3 percent of the individual income tax, 1.9 percent of the consumer sales tax, 0.7 percent of consumer excise taxes, 5.2 percent of residential property taxes, and 6.6 percent of business taxes borne by Minnesota residents.

Table 6-7 shows effective tax rates by income decile. The same information for population deciles is shown in *Table 6-3*. A comparison of the effective tax rate for all taxes (the last column in each table) reveals some differences. First, the

Table 6-6
Distribution of Households, Income, and Taxes, by Income Decile
(\$ Thousands)

Income Decile	Income Range	Number of Households	Total Household Income	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Taxes ¹	Other Tax on Individuals ²	Business Taxes ³	Total Taxes
First	\$20,086 & Under	849,121	\$9,328,162	\$86,535	\$289,829	\$113,653	\$213,859	\$110,143	\$427,330	\$1,241,350
Second	20,087 - 31,749	359,944	9,327,166	260,399	233,293	76,572	220,756	114,687	320,994	1,226,701
Third	31,750 - 41,853	255,620	9,322,724	335,393	202,850	61,338	220,859	103,527	286,832	1,210,799
Fourth	41,854 - 52,259	199,381	9,330,929	372,800	190,923	53,881	214,083	99,686	278,372	1,209,746
Fifth	52,260 - 63,181	162,948	9,329,888	413,746	183,456	47,741	210,204	95,830	273,214	1,224,191
Sixth	63,182 - 76,690	134,188	9,322,212	447,905	166,984	40,595	211,607	88,731	252,460	1,208,282
Seventh	76,691 - 99,952	108,166	9,329,444	485,140	162,050	33,075	211,436	86,274	247,675	1,225,650
Eighth	99,953 - 157,695	76,490	9,326,551	515,793	143,198	24,295	220,835	75,722	252,119	1,231,961
Ninth	157,696 - 436,305	39,864	9,327,271	576,878	104,559	14,275	176,789	51,897	219,133	1,143,532
Tenth	\$436,306 & Over	8,248	9,328,215	629,674	31,980	3,497	103,633	14,878	180,943	964,605
Total		2,193,970	\$93,272,562	\$4,124,263	\$1,709,122	\$468,922	\$2,004,061	\$841,375	\$2,739,072	\$11,886,817
Top 5%	\$1,318,905 & Over	1,372	\$4,665,463	\$326,412	\$5,320	\$582	\$43,957	\$2,686	\$86,996	\$465,952
Top 1%	\$13,335,342 & Over	33	937,704	64,765	129	14	7,909	75	17,826	90,718

Percentage of Households, Income, and Taxes, by Income Decile

Income Decile	Income Range	Percent of Households	Percent of Income	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Taxes ¹	Other Taxes on Individuals ²	Business Taxes ³	Total Taxes
First	\$20,086 & Under	38.7%	10.0%	2.1%	16.9%	24.2%	10.7%	13.1%	15.6%	10.4%
Second	20,087 - 31,749	16.4	10.0	6.3	13.6	16.3	11.0	13.6	11.8	10.3
Third	31,750 - 41,853	11.7	10.0	8.1	11.9	13.1	11.0	12.3	10.5	10.2
Fourth	41,854 - 52,259	9.1	10.0	9.0	11.2	11.5	10.7	11.9	10.2	10.2
Fifth	52,260 - 63,181	7.4	10.0	10.0	10.7	10.2	10.5	11.4	10.0	10.3
Sixth	63,182 - 76,690	6.1	10.0	10.9	9.8	8.7	10.6	10.5	9.2	10.2
Seventh	76,691 - 99,952	4.9	10.0	11.8	9.5	7.1	10.5	10.2	9.1	10.3
Eighth	99,953 - 157,695	3.5	10.0	12.5	8.4	5.2	11.0	9.0	9.0	10.4
Ninth	157,696 - 436,305	1.8	10.0	14.0	6.1	3.0	8.8	6.2	8.0	9.6
Tenth	\$436,306 & Over	0.4	10.0	15.3	1.9	.7	5.2	1.8	6.6	8.1
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Top 5%	\$1,318,905 & Over	0.1%	5.0%	7.9%	0.3%	0.1%	2.2%	0.3%	3.2%	3.9%
Top 1%	\$13,335,342 & Over	0.0%	1.0	1.6	0.0	0.0	0.4	0.0	0.7	0.8

NOTES:

- ¹ Net of renters' property tax refunds. Includes both the renter and landlord share of rental property taxes, but excludes property tax on second homes (cabins).
- ² Other taxes include motor vehicle registration tax, insurance premiums tax on personal insurance, gambling taxes, MinnesotaCare taxes, mortgage and deed taxes paid by homeowners, and property tax on cabins.
- ³ Excludes the property tax on rental housing.

Table 6-7
1996 Effective Tax Rates by Income Decile
(All Taxpayers)

Income Decile	Income Range	Number Of Households	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Tax ¹	Other Taxes on Individuals ²	Total Individual Taxes	Business Taxes ³	Total Taxes
First	\$20,086 & Under	849,121	0.9%	3.1%	1.2%	2.3%	1.2%	8.7%	4.6%	13.3%
Second	20,087 - 31,749	359,944	2.8	2.5	0.8	2.4	1.2	9.7	3.4	13.2
Third	31,750 - 41,853	255,620	3.6	2.2	0.7	2.4	1.1	9.9	3.1	13.0
Fourth	41,854 - 52,259	199,381	4.0	2.0	0.6	2.3	1.1	10.0	3.0	13.0
Fifth	52,260 - 63,181	162,948	4.4	2.0	0.5	2.3	1.0	10.2	2.9	13.1
Sixth	63,182 - 76,690	134,188	4.8	1.8	0.4	2.3	1.0	10.3	2.7	13.0
Seventh	76,691 - 99,952	108,166	5.2	1.7	0.4	2.3	0.9	10.5	2.7	13.1
Eighth	99,953 - 157,695	76,490	5.5	1.5	0.3	2.4	0.8	10.5	2.7	13.2
Ninth	157,696 - 436,305	39,864	6.2	1.1	0.2	1.9	0.6	9.9	2.3	12.3
Tenth	\$436,306 & Over	8,248	6.8	0.3	0.0	1.1	0.2	8.4	1.9	10.3
Total		2,193,970	4.4%	1.8%	0.5%	2.1%	0.9%	9.8%	2.9%	12.7%
Top 5%	\$1,318,905 & Over	1,372	7.0%	0.1%	0.0%	0.9%	0.1%	8.1%	1.9%	10.0%
Top 1%	\$13,335,342&Over	33	6.9	0.0	0.0	0.8	0.0	7.8	1.9	9.7

NOTES:

¹ Net of renters' property tax refunds. Includes both the renter and landlord share of rental property taxes, but excludes property tax on second homes (cabins).

² Other taxes include individual motor vehicle registration tax, insurance premiums tax on personal insurance, gambling taxes, MinnesotaCare taxes, mortgage and deed taxes on homes and property tax on cabins.

³ Excludes the property tax on rental housing.

effective tax rate for the first income decile (13.3 percent) was much lower than that for the first population decile (17.3 percent). The first income decile included almost four times as many households as the first population decile. As a result, the tax rate for the first income decile is an average for households in the first *four* population deciles.

The pattern of effective tax rates also differs for the top deciles. The tenth income decile (with 8,248 households) had an effective tax rate of 10.3 percent. In contrast, the tenth population decile (with 219,397 households) had an effective tax rate of 12.2 percent. With income deciles, effective tax rates fell in the top two deciles (from 13.2 percent to 10.3 percent), rather than only in the tenth decile. This is because the top two income deciles included only 2.2 percent of all households.

Analyzing the tax burden by income deciles provides additional insights into the distribution of the burden. It provides more detailed information about the burden on higher income households, but less information about the 55 percent of households who are combined in the first two income deciles.³⁶

An Alternative Methodology: Adjusting for the Federal Tax Offset

In estimating the incidence of existing Minnesota taxes, this study has made no adjustment for the “federal tax offset” due to the deductibility of Minnesota taxes in calculating the federal income tax. Individuals can generally deduct what they pay in state income tax and homeowner property taxes (and a portion of their motor vehicle registration tax) as itemized deductions. Those who itemize deductions pay less federal income tax as a result. For a taxpayer in the 28 percent federal tax bracket, each additional dollar of itemized deductions lowers federal income tax by 28 cents. As a result, 28 percent of deductible state and local taxes would be borne by the federal government in lower tax revenue. If no adjustment is made for this federal tax offset, the Minnesota tax burden would be overstated. Because itemizing deductions is more common for higher income households (and because they face higher federal tax rates), the federal tax offset will reduce taxes by much more in the upper deciles. A tax system that looks proportional in the absence of such an adjustment might look quite regressive after such an adjustment is made.

³⁶ A more detailed table for income deciles, similar to *Appendix Table B-1*, is available upon request.

This same reasoning applies to business taxes. If an additional dollar in business taxes lowers business income (rather than being passed forward to consumers in higher prices), this reduces the federal income tax paid by the corporation, partnership, or sole proprietor. A portion of the burden on Minnesota business owners would be borne by the federal government in lower tax revenue.

There is a strong argument, however, against making such an adjustment in this study. As discussed in Chapter 5, this study estimates the burden of Minnesota taxes in a multistate context. The incidence of Minnesota taxes depends on the level of taxes in other states. If all states levy deductible taxes, then the federal government presumably makes up for the lost revenue by raising the federal tax rate. It is unlikely that the deductibility of state and local taxes actually lowers the total federal tax burden on Minnesota residents. Minnesota's share of itemized deductions is roughly equal to its share of federal income tax payments. Whether the combination of deductible taxes and higher tax rates reduces a particular decile's tax burden is unknown; it depends on how the federal tax structure has been adjusted to make up for the lost tax revenue. For this reason, no federal tax offset was included in the previous editions of this study.³⁷

The results presented in this study include no adjustment for the federal tax offset. The impact of such an adjustment is shown only in this section. The federal tax offset is calculated separately for each household in the sample who itemized deductions in 1996.

The impact of the federal tax offset is shown in *Table 6-8* and *Figure 6-5*. For all households combined, the federal offset would reduce the effective tax rate from 12.7 percent to 11.4 percent of income. There would be little change in the lowest deciles, which include few who itemize deductions. As expected, the impact of the federal tax offset rises with income. Despite the limitation on itemized deductions for high-income taxpayers, the effective tax rate in the tenth decile would fall from 12.2 percent to 9.9 percent. The adjusted tax burden is noticeably more regressive. With the federal tax offset, the Suits index would fall from -0.02 to -0.06.

³⁷ See Mutti and Morgan (1983). The argument against making an adjustment for the federal tax offset does not apply to proposals to *change* Minnesota's state and local tax system. For example, higher Minnesota individual income taxes would result in higher itemized deductions by Minnesotans. If the federal government makes up for the lost revenue by raising the tax rate (or other taxes), Minnesotans would pay only about 2 percent of any additional federal tax; residents of other states would pay the other 98 percent. The federal tax offset is a necessary component of *incremental* tax incidence, where one state alone is changing the level of deductible taxes.

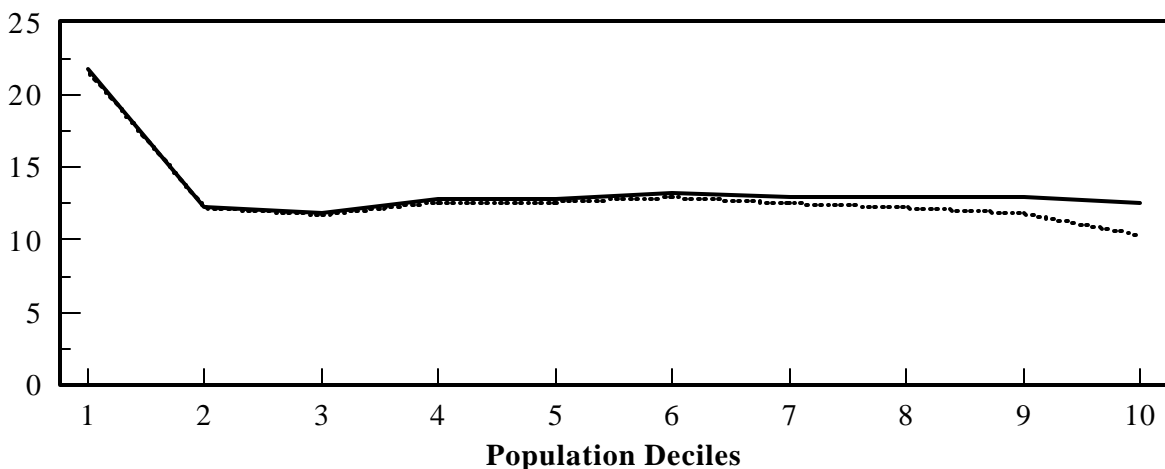
Table 6-8
Impact of Federal Tax Offset on Effective
State and Local Tax Rates by Population Decile
(Minnesota Residents, 1996)

Population Decile	Income Range	Effective Tax Rate		
		No Federal Tax Offset	Change Due to Federal Tax Offset	Adjusted for Federal Tax Offset
First	\$6,817 & Under	17.8%	0.1%	17.7%
Second	6,817 - 11,166	12.0	0.0	12.0
Third	11,166 - 15,828	12.2	-0.1	12.1
Fourth	15,828 - 21,634	12.5	-0.1	12.4
Fifth	21,634 - 27,866	13.0	-0.2	12.8
Sixth	27,866 - 35,486	13.1	-0.4	12.7
Seventh	35,486 - 45,144	13.1	-0.6	12.5
Eighth	45,144 - 57,697	13.0	-0.8	12.2
Ninth	57,697 - 78,618	13.0	-1.5	11.5
Tenth	\$78,618 & Over	12.2	-2.3	9.9
Total		12.7%	-1.3%	11.4%
Top 5%	\$106,086 & Over	11.9%	-2.5%	9.4%
Top 1%	\$244,679 & Over	11.0%	-2.6%	8.4%

Note: Effective tax rates for the first decile reflect an adjustment to exclude a small number of households with negative income, primarily business losses.

Figure 6-5
Effective Tax Rates in 1996
With and Without Federal Tax Offset

Effective Tax Rate (percent)



Total Taxes (no offset)	Total Taxes (with offset)
—————	- - - - -

In summary, the federal tax offset (even if limited to individual taxes) would have a significant impact on the distribution of the Minnesota tax burden. Because a strong argument can be made against such an adjustment in a study of this kind, however, no federal tax offset is included in the results presented elsewhere in this study.

CHAPTER 7

DETAILED RESULTS FOR SIX DIFFERENT HOUSEHOLD TYPES

Introduction

This chapter provides additional information on the demographic characteristics of households in each population decile. Households in the lower deciles are much more likely to be single-person and elderly households. Only a small proportion of the households in the lowest deciles include children. In contrast, most of the upper decile households are married couples with or without children. This chapter shows effective tax rates for representative households of each of six household types. More detailed results, by population decile, are found in Appendix C.

Demographic Characteristics of Each Decile

The demographic characteristics of the incidence sample varied greatly across the ten population deciles. As shown in *Figure 7-1*, more than 40 percent of households in each of the first three deciles were single-person households; fewer than 10 percent of each of these deciles included children. In contrast, fewer than 10 percent of households in the top two deciles were single-person households, while over 50 percent included children.

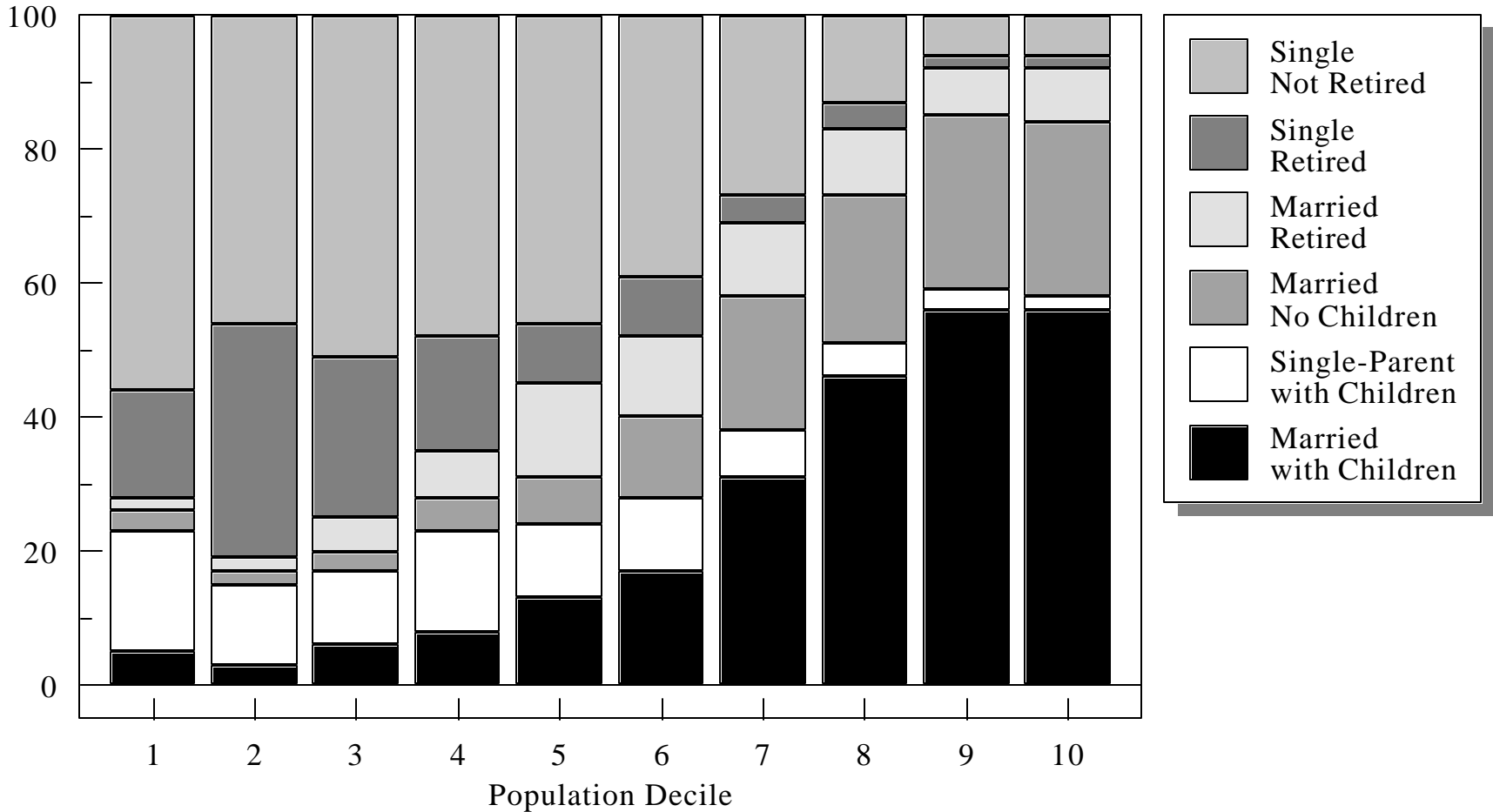
Figure 7-1 also shows that retired-persons households (both married and single) accounted for approximately 40 percent of all second and third decile households. In the lower five deciles, single retirees far outnumbered retired couples; in the top deciles, retired couples were far more common than single-person retired households.³⁸

³⁸ For most households, the incidence sample includes no breakdown by age. Here retired households are defined as all households where the sum of pension and social security income is at least twice as large as earned income. This category therefore excludes some over age 65 (who have no retired) and includes some under age 65 (those retiring earlier plus some who are disabled).

Figure 7-1
Family Type by Population Decile

Percent of all Households

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In the first three deciles, households with children were primarily single-parent households. The proportion of households with children that included two parents increased fairly steadily with income. About 90 percent of households in the top two deciles were married couples, with or without children.

Figure 7-2 shows how housing status varied with income. As expected, home ownership rates (including farmers) rose steadily with income, from 20 percent in the first decile to 90 percent in the tenth decile. For all households, 61 percent were homeowners. The first two deciles contained two renter households for every homeowner household; the tenth decile contained 18 homeowner households for every renter household. Farm homesteads were spread fairly evenly among all deciles.³⁹

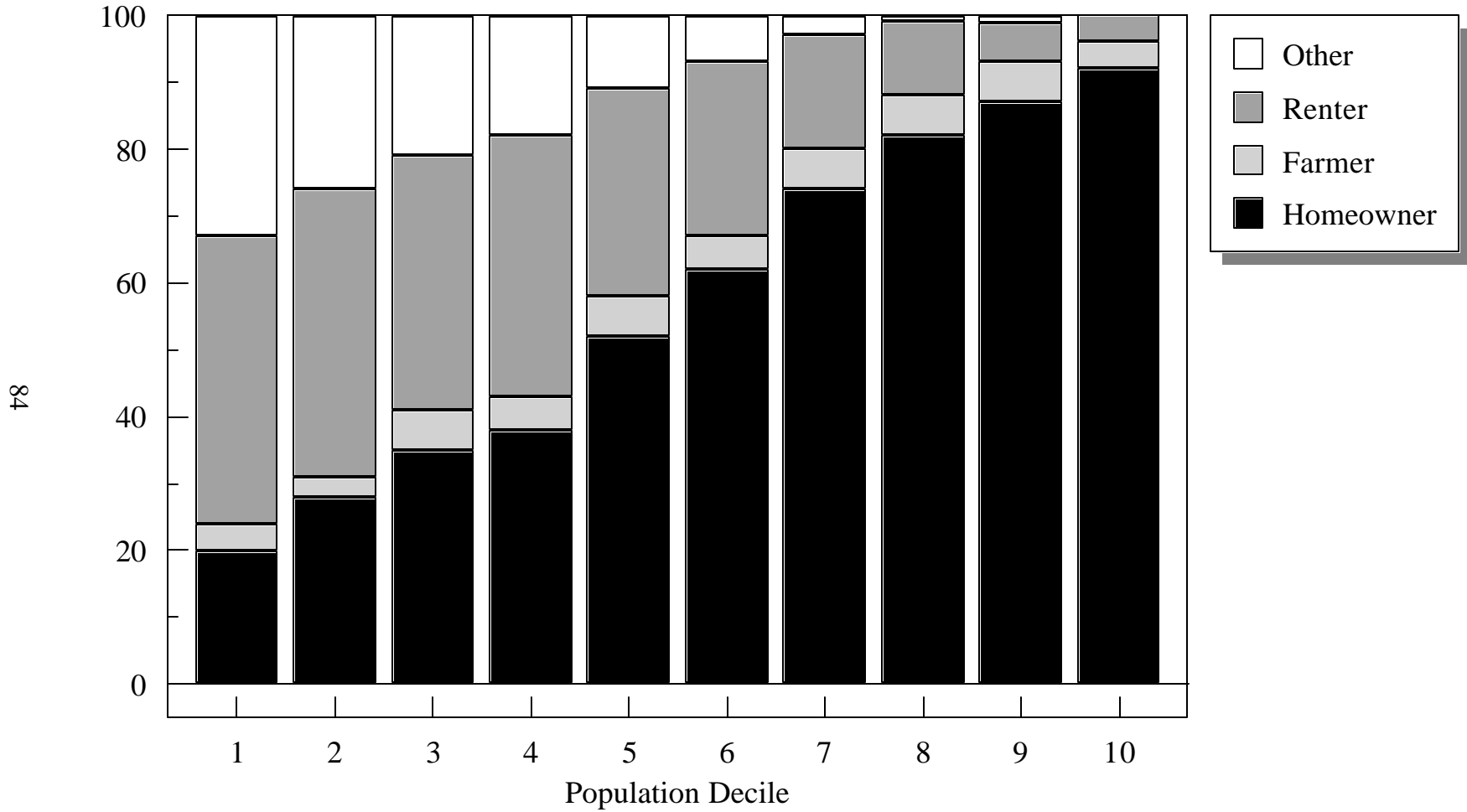
A significant proportion of the households in the first five deciles were classified as neither homeowners nor renters. (See *Figure 7-2*.) This “other” category is the result of this study’s definition of a household. While the Census defines a household to include all individuals living in a particular housing unit, this study (like other tax incidence studies) defines a household as a taxpayer, a taxpayer’s spouse, and all others claimed as dependents for income tax purposes.

In this study, a secondary household living with a primary household is assumed to pay no property tax. Such households include older children living with parents (but not claimed as dependents) and elderly parents living with their children. These secondary households make up most of the group labeled “other” in *Figure 7-2*. While it might make sense to combine the primary and secondary households into one single household (as in Census data), there is no reliable way to match a secondary household with the appropriate primary household. The sizable number of these households should be kept in mind when interpreting the overall incidence results.

³⁹ In this study, farm households are defined as those living on farm homestead property, so every farmer owns a home. This definition excludes active farmers who farm only rented land or do not live on a farm homestead. In this study, the term “homeowners” generally excludes farm homesteads, but the homeownership rates cited in this chapter include both farm and non-farm homesteads.

Figure 7-2
Housing Status by Population Decile

Percent of all Households



Detailed Incidence Results for Six Different Household Types

As shown in *Figure 7-1*, the demographic characteristics of each population decile vary greatly. The typical one-person household had much lower income than the typical married couple with children. The median income for one-person households was \$18,846; the median income for married couples with children was \$55,453. The typical one-person household is therefore in the fourth decile, while the typical two-parent family with children is in the eighth decile. Because of this, it is difficult to interpret the overall incidence results, particularly in the lower deciles. *Table 7-1* clarifies the nature of the tax burden for typical households from each of six household types: single retired, retired couple, single (not retired), married couple with no children (not retired), single-parent family, and married couple with children.

For each type of household, *Table 7-1* shows the amount of tax paid at each of three levels of income, as described below.

Household	Income Level
25th Percentile	The household with income greater than 25 percent of all households of the same type.
50th Percentile (<i>Median Income</i>)	The household with income greater than half of all households of the same type. (This household's income is the <i>median income</i> .)
75th Percentile	The household with income greater than 75 percent of all households of the same type.

For example, as shown in *Table 7-1*, the median income for a two-parent family with children was \$55,453. Half of all such families had higher incomes; half had lower incomes. This household paid a total of \$7,063 in state and local taxes, for an effective tax rate of 12.7 percent. It paid \$2,239 in state income tax, \$1,114 in consumer sales tax, and \$1,233 in residential property taxes. Similar information is presented for households at the 25th and 75th percentiles of the income distribution.

More detailed descriptions of household characteristics and tax burdens, by population decile, are provided in *Appendix Tables C-1* through *C-5*. Information for each group and decile includes household size, household income, housing status, average tax burden (for each tax), and effective overall tax rates. This detailed information can be used to compare effective tax rates for different household types at similar money income levels.

Table 7-1
Average Tax Burdens by Household Type and Income Level

	Single (Retired)	Single- Parent Family	Single (Not Retired)	Married No Children (Retired)	Married No Children (Not Retired)	Married With Children
25th Percentile						
Income	\$7,281	\$9,491	\$10,419	\$22,871	\$35,245	\$38,573
Decile	2 nd	2 nd	2 nd	5 th	6 th	7 th
Net Residential Property Tax						
Homeowners	354	281	565	776	858	892
Renters	28	158	153	241	711	637
All Households ¹	120	194	192	726	834	845
State Income Tax	0	-279	179	66	1,216	1,130
Consumer Sales Tax	219	330	304	590	784	912
Consumer Excise Taxes	73	162	132	166	257	296
Other Individual Taxes	65	135	89	300	468	529
Business Taxes	<u>313</u>	<u>452</u>	<u>442</u>	<u>865</u>	<u>1,172</u>	<u>1,350</u>
Total Taxes	789	\$994	\$1,338	\$2,714	\$4,731	\$5,063
Effective Tax Rate	10.8%	10.5%	12.8%	11.9%	13.4%	13.1%
50th Percentile (median)						
Income	\$11,561	\$18,969	\$18,846	\$31,863	\$51,063	\$55,453
Decile	3 rd	4 th	4 th	6 th	8 th	8 th
Net Residential Property Tax						
Homeowners	399	629	600	1,046	1,217	1,268
Renters	10	111	308	569	827	712
All Households ¹	256	338	294	1,039	1,176	1,233
State Income Tax	4	132	671	254	2,446	2,239
Consumer Sales Tax	291	516	542	785	1,090	1,114
Consumer Excise Taxes	83	243	181	181	295	320
Other Individual Taxes	106	259	214	439	603	633
Business Taxes	<u>508</u>	<u>653</u>	<u>592</u>	<u>956</u>	<u>1,466</u>	<u>1,524</u>
Total Taxes	\$1,248	\$2,141	\$2,494	\$3,655	\$7,075	\$7,063
Effective Tax Rate	10.8%	11.3%	13.2%	11.5%	13.9%	12.7%
75th Percentile						
Income	\$19,683	\$31,508	\$29,300	\$49,157	\$72,902	\$76,488
Decile	4 th	6 th	6 th	8 th	9 th	9 th
Net Residential Property Tax						
Homeowners	666	863	834	1,372	1,591	1,715
Renters	28	603	614	968	908	910
All Households ¹	428	776	623	1,349	1,545	1,698
State Income Tax	69	960	1,392	1,297	3,998	3,674
Consumer Sales Tax	399	784	687	961	1,239	1,353
Consumer Excise Taxes	105	261	218	243	284	334
Other Individual Taxes	153	438	268	422	685	779
Business Taxes	<u>656</u>	<u>996</u>	<u>849</u>	<u>1,383</u>	<u>1,837</u>	<u>1,987</u>
Total Taxes	\$1,811	\$4,215	\$4,037	\$5,656	\$9,587	\$9,825
Effective Tax Rate	9.2%	13.4%	13.8%	11.5%	13.2%	12.8%

¹Includes households who are neither homeowners nor renters.

In Appendix C, effective tax rates are shown both for all households and separately for renters and homeowners. In some deciles, the number of households of a particular type is very small. For example, single-parent families account for only two percent of all tenth-decile households. Similarly, two-parent families who are renters account for less than one percent of the households in the first four deciles. Whenever a particular household type accounts for less than 5 percent of a decile's households, the numbers in the Appendix tables may include significant error resulting from the small sample size for that particular cell.

CHAPTER 8

EFFECTIVE TAX RATE PROJECTIONS FOR TAX YEAR 1998

Introduction

The tax incidence report includes detailed information on income and taxes paid by Minnesota residents in 1996. It is based on a comprehensive sample of the population, combining tax, expenditure, and income data from a wide variety of sources. The 1996 distribution of effective tax rates is limited in its usefulness to decision makers, however, because it is already several years old.

This chapter presents projected effective tax rates for tax year 1998 and can serve as a reference point for current tax policy discussions. The 1996 study cannot be fully replicated for 1998, because much of the necessary data for 1998 is not yet available. Despite some serious limitations, the projections shown in this chapter describe the impact of economic and legislative changes between 1996 and 1998.

To approximate the distribution of the tax burden in 1998, this study estimates the two-year change in tax burden for each household in the 1996 database. Both 1998 income and 1998 taxes are estimated for each of those 46,000 households. When scaled to the total 1996 population, the results estimate the change in effective tax rates experienced by those households.

The House Income Tax Simulation Model was used to estimate the growth in household income, based on the estimated growth rate for each component of money income. For example, each household's wage income was assumed to grow by 10.3 percent between 1996 and 1998, with dividend income rising by 11.8%, capital gains income rising by 49.7 percent and social security income rising by 4.3 percent. Income components were increased at the same rate for every household, even those not filing an income tax return. For all households combined, income rose by an average of 12.5 percent, substantially in excess of inflation.

In constructing these projections, however, no adjustment was made for demographic changes between 1996 and 1998. The projections implicitly assume that there is no change in residence, that family size remains unchanged, that those who were dependents in 1996 are still dependents in 1998, and that no one receives income from a new source. No renters become homeowners, no workers retire on social security, and no new graduates enter the work force. Although demographic changes are ignored, the results do reflect the impact of both economic growth and legislative changes in the tax system.

Legislative Changes

Some legislative changes in Minnesota's tax system were made between 1996 and 1998, most notably in the property tax area. The state's overall dependency on the property tax was reduced by increasing aid payment amounts as a result of 1997 legislative changes. In addition, the property classification system was modified to reduce high rates on businesses and rental residential properties, and also to protect homeowners from shifting property tax burdens. Between 1996 and 1998 the property tax class rate for apartments, for example, was reduced from 3.4% to 2.9% and the top tier of commercial-industrial property was reduced from 4.6% to 4.0%. The class rate for the top tier of residential homestead property was lowered to 1.85% from 2.0% and a new education homestead credit was enacted.

For individuals, the state's working family credit was enhanced between 1996 and 1998. The working family credit was increased beyond 1996 levels, decoupled from a percentage of the federal earned income tax credit, and income amounts and thresholds used to calculate the credit were adjusted for inflation. A new education credit was also enacted for families with household income less than \$33,500. The maximum credit is \$1,000 per dependent and \$2,000 per family and eligible expenses include those qualifying for the dependent education deduction (except for private school tuition) and were expanded to include tutoring, educational summer camps, and some computer hardware and software expenses. In addition, the dependent education deduction was expanded to include additional expenses, deduction limits were increased and non-itemizers now qualify.

Although numerous changes were made in the sales and use tax between 1996 and 1998, many were of smaller scope. For businesses, replacement capital equipment was exempted from tax. For purchases of farm machinery, the exemption for used farm machinery was made permanent and the phaseout of the 2.5% tax rate on new farm machinery was begun.

Tax rates on lawful gambling were reduced by 5% beginning in 1998. MinnesotaCare tax rates were also temporarily reduced from 2.0% to 1.5% beginning in 1998.

Taxpayers were also eligible for a tax rebate for 1998. The rebate is a refundable income tax credit based on 20% of the taxpayer's property taxes payable for 1998 on their principal residence or, for renters, 3.8% of rent paid. The maximum rebate for 1998 is \$1,500.

Changes in the State and Local Tax Burden

As shown in *Table 8-1*, state and local tax collections per household increased substantially between 1996 and 1998. Individual income taxes rose by an average of 15.7 percent, sales taxes per household rose by 12.1 percent and excise taxes by 3.3 percent. Other state taxes generally increased more slowly than income with some taxes, such as MinnesotaCare and gambling taxes, declining due to rate reductions.

Homeowner property taxes net of refund (for homes existing in 1996) rose only by 1.9 percent,⁴⁰ while taxes on rental property (per household) fell 14.4%. Business property taxes decreased by 2.1%.

The impact on effective tax rates, by decile, is shown in *Table 8-2*. By definition, effective tax rates increase whenever revenue (per household) grows faster than household income. Effective tax rates fall whenever revenue (per household) grows more slowly than income. Given the rates of growth shown in *Table 8-1*, it is easy to understand why the effective tax rate rose for the individual income tax while falling generally for property taxes.

⁴⁰ This underestimates the growth in homeowner property tax revenue, because it does not account for the growth in the homeowner population. Total collections rose by 7 percent, or 5 percent per Minnesota household.

Table 8-1
Estimated Increase in Tax Collections Per Household
1996 to 1998

Type of Tax	Percent Change
Individual Income Tax (without Rebate)	15.7%
(with Rebate)	6.1
Corporate Income Tax	13.3
Sales Tax	12.1
Excise Taxes	3.3
Motor Vehicle Registration Tax	4.5
Insurance Premiums Tax	-6.0
Gambling Taxes	-3.9
MinnesotaCare Taxes	-5.9
Mortgage and Deed Taxes	42.3
Total State Taxes (without Rebate)	12.6%
(with Rebate)	8.1
Gross Homestead Property Tax	1.5%
Net Homestead Property Tax	1.9
Gross Rental Property Tax	-7.3
Net Rental Property Tax	-14.4
Cabins	-12.1
Business Property Taxes	-2.1
Total Net Property Taxes	-2.0%
Total State and Local Taxes	
(without Rebate)	8.2%
(with Rebate)	5.4

Note: Increases for individual income tax, homeowner property tax, and property tax refunds were calculated directly for individuals in the 1996 tax incidence sample. For other taxes, the 2-year increase in collections is adjusted for an estimated 2 percent growth in households between 1996 and 1998.

Table 8-2
Comparison of Effective Tax Rates:
1996 Tax Incidence Study Results and 1998 Projections

1996 Population Decile	Individual Income Tax Effective Tax Rates						Consumer Sales and Excise Taxes Effective Tax Rates			Homeowner Property Tax Effective Tax Rates			Rental Property Tax Effective Tax Rates		
	1996	1998 Without Rebate	Tax Rebate	1998 With Rebate	Change		1996	1998	Change	1996	1998	Change	1996	1998	Change
					Without Rebate	With Rebate									
First	-0.6%	-1.1%	-1.3%	-2.4%	-0.5%	-1.8%	6.8%	7.1%	0.3%	2.3%	2.2%	-0.1%	1.2%	0.3%	-0.9%
Second	0.1	-0.1	-0.8	-0.8	-0.2	-0.9	4.4	4.6	0.2	1.5	1.5	0.0	0.5	0.1	-0.4
Third	0.9	0.7	-0.7	0.0	-0.2	-0.9	3.9	4.0	0.1	1.8	1.7	-0.1	0.4	0.1	-0.3
Fourth	1.8	1.6	-0.6	1.1	-0.2	-0.7	3.8	4.0	0.2	1.4	1.3	-0.1	0.5	0.2	-0.3
Fifth	2.6	2.5	-0.6	1.9	-0.1	-0.7	3.4	3.5	0.1	1.7	1.6	-0.1	0.6	0.4	-0.2
Sixth	3.3	3.3	-0.5	2.8	0.0	-0.5	3.0	3.1	0.1	1.8	1.7	-0.1	0.5	0.4	-0.1
Seventh	3.7	3.9	-0.5	3.4	0.2	-0.3	2.7	2.7	0.0	2.1	1.9	-0.2	0.4	0.3	-0.1
Eighth	4.2	4.3	-0.4	3.9	0.1	-0.3	2.6	2.6	0.0	2.0	1.9	-0.1	0.2	0.2	0.0
Ninth	4.8	4.9	-0.4	4.4	0.1	-0.4	2.3	2.4	0.1	2.1	1.9	-0.2	0.1	0.1	0.0
Tenth	5.9	6.0	-0.3	5.7	0.1	-0.2	1.4	1.4	0.0	1.6	1.4	-0.2	0.3	0.2	-0.1
Total	4.4%	4.5%	-0.4%	4.1%	0.1%	-0.3%	2.3%	2.4%	0.1%	1.8%	1.7%	-0.1%	0.3%	0.2%	-0.1%

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1996 Population Decile	Business Property Taxes Effective Tax Rates			Total Property Tax Effective Tax Rates			Total State Tax Effective Tax Rates					Total State and Local Tax Effective Tax Rates				
	1996	1998	Change	1996	1998	Change	1996	1998 Without Rebate	1998 With Rebate	Change		1996	1998 Without Rebate	1998 With Rebate	Change	
										Without Rebate	With Rebate				Without Rebate	With Rebate
First	2.5%	2.2%	-0.3%	6.1%	4.8%	-1.3%	11.7%	11.5%	10.2%	-0.2%	-1.5%	17.8%	16.4%	15.1	-1.4%	-2.7%
Second	1.6	1.4	-0.2	3.7	3.0	-0.7	8.4	8.3	7.5	-0.1	-0.9	12.0	11.3	10.5	-0.7	-1.5
Third	1.6	1.4	-0.2	4.0	3.3	-0.7	8.2	8.1	7.3	-0.1	-0.9	12.2	11.4	10.7	-0.8	-1.5
Fourth	1.4	1.2	-0.2	3.4	2.9	-0.5	9.1	8.9	8.4	-0.2	-0.7	12.5	11.8	11.2	-0.7	-1.3
Fifth	1.3	1.1	-0.2	3.7	3.2	-0.5	9.3	9.0	8.5	-0.3	-0.8	13.0	12.3	11.7	-0.7	-1.3
Sixth	1.4	1.2	-0.2	3.9	3.4	-0.5	9.3	9.2	8.7	-0.1	-0.6	13.1	12.6	12.0	-0.5	-1.1
Seventh	1.3	1.1	-0.2	3.9	3.4	-0.5	9.2	9.3	8.8	0.1	-0.4	13.1	12.6	12.2	-0.5	-0.9
Eighth	1.2	1.0	-0.2	3.6	3.2	-0.4	9.4	9.5	9.0	0.1	-0.4	13.0	12.6	12.2	-0.4	-0.8
Ninth	1.1	0.9	-0.2	3.5	3.1	-0.4	9.6	9.6	9.2	0.0	-0.4	13.0	12.7	12.2	-0.3	-0.8
Tenth	1.1	1.0	-0.1	3.1	2.7	-0.4	9.1	9.1	8.8	0.0	-0.3	12.2	11.8	11.5	-0.4	-0.7
Total	1.2%	1.1%	-0.1%	3.5%	3.0%	-0.5%	9.2%	9.2%	8.8%	0.0%	-0.4%	12.7%	12.3%	11.8	-0.4%	-0.9%

NOTE: Changes may not equal the difference between 1996 and 1998 rates due to rounding.

The effective tax rate for the individual income tax increased from 4.4% to 4.5% between 1996 and 1998. The lower effective tax rates in the bottom deciles reflect the increase in the working family credit and the new education tax credit for 1998. The effective tax rate for the consumer sales and excise taxes increased slightly, however, the total effective rate for all state taxes remained unchanged at 9.2% for 1998.

The overall effective tax rate for the local property tax decreased by 0.5 percent. As shown in *Table 8-2*, the effective rate decreased by 0.1 percent for the homeowner property tax and also for renter and business taxes. These results are due, in significant part, to the 1997 legislative changes which reduced class rates and property tax levels as discussed earlier.

Table 8-2 also includes information which shows the impact of the 1998 tax rebate on effective tax rates. As shown, the rebate reduces the overall effective tax rate by -0.4 percent. Effective tax rates are lowered by 0.8 percent in the second decile due to the 1998 rebate and by 0.3 in the tenth decile.

In summary, for state and local taxes combined, the results were lower effective tax rates which decreased from 12.7 percent for 1996 to 12.3 percent of income for 1998, primarily due to property tax changes. Including the tax rebate, the overall effective tax rate for 1998 is further reduced to 11.8%. Changes between 1996 and 1998 have resulted in the tax system becoming slightly less regressive.

APPENDICES

Appendix A provides a summary table of the data items for each sample household.

Appendix B contains detailed information on the distribution of income, taxes and tax burdens by population decile. These tables also provide separate results for homeowners, renters and other taxpayers.

Appendix C shows household characteristics and tax burdens by decile for five household types: households including retired persons, single-parent families, married couples with children, married couples without children, and single-person households.

A copy of the legislative mandate for the tax incidence study is also included in Appendix D.

APPENDIX A

Summary of Data Items for Each Sample Household

Household Characteristics, Income, and Taxes	
General Information	Taxpayer and spouse social security numbers Household size Number of adults in household Number of dependents in household Sample conversion rate Over age 65 indicator (taxpayer or spouse) Housing type: homeowner, renter, farmer or mobilehome owner
Minnesota Individual Income Tax	State income tax filing status State income tax liability Working family credit Dependent care credit Income additions and subtractions
Federal Individual Income Tax	Federal income tax filing status Wages, salaries and tips Taxable interest Taxable dividends Business income Capital gains and losses Rent, royalty, partnership and estate income Farm income Social security benefits Nontaxable interest Nontaxable IRA income Nontaxable pensions and annuities Nontaxable social security benefits Self-employed health insurance deduction Adjusted gross income Taxable income Net tax liability Alternative minimum tax Earned income credit Dependent care credit Elderly credit Schedule A: Real estate taxes Home mortgage interest and points State and local income tax Total itemized deductions Schedule C: depreciation Schedule E: Depreciation Rental gains and losses Passive partnership gains and losses Nonpassive partnership gains and losses Section 179 losses Estate gains and losses REMIC income Farm rent Schedule F: taxes paid, depreciation
Minnesota Property Tax Refund	Federal adjusted gross income Nontaxable social security payments Nontaxable contributions to IRA, Keogh, SEP, or other retirement plans Public assistance payments Other income (including worker's compensation, pensions, veterans' payments, nontaxable interest) Renter's property tax Real estate taxes Mobilehome property taxes and rent Regular and special property tax refunds
Miscellaneous	Public assistance payments (including AFDC, MFIP, Refugee Cash Assistance, GA, FGA, MSA, EA, and Special Needs payments) Workers' compensation benefits Unemployment benefits Social security benefits Mortgage interest Wages, salaries and tips Pension income Dividend income Interest income
Local Property Taxes	Homestead limited market value for homeowners Homestead property tax for homeowners

Estimated Expenditures and Taxes	
Consumer Expenditures	Expenditures used in calculating sales, excise, insurance, vehicle registration and other taxes: Total household expenditures Hotel and motel Food (taxable) Alcohol Tobacco Gasoline Vehicles (before trade-in) Vehicles (net of trade-in) Other vehicle expenses Furniture and equipment Household supplies Home maintenance Utilities (taxable) Miscellaneous manufactured items Entertainment Prescription drugs (taxable) Life insurance Automobile insurance Homeowners insurance Health insurance Gambling Medical
State taxes	State sales tax and motor vehicle excise tax Alcoholic beverage excise tax Motor fuels excise tax Cigarette and tobacco products excise taxes Insurance premiums tax Motor vehicle registration tax Gambling tax MinnesotaCare tax Mortgage and deed taxes
Local Property Taxes	Homestead estimated limited market value for farmers Homestead property tax for farmers Renter's property tax Seasonal/recreational property tax Property tax refund for farmers split into individual and business parts
Business Taxes	Nonrental property taxes Renter property taxes State sales tax and motor vehicle excise tax Corporate franchise tax Motor fuels excise tax Motor vehicle registration tax Insurance premiums tax Mortgage and deed taxes

APPENDIX B

Minnesota Tax Burdens by Population Decile

Table B-1 (a)

1996 Minnesota Tax Incidence Study
State and Local Tax Burden Amounts by Population Decile (dollars in thousands)
ALL TAXPAYERS

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			State Excise Taxes		Miscellaneous State Taxes		Total State Taxes		
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total	Purchases by Individuals	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,817 & Under	219,397	\$933,376	- \$5,517	\$8,142	\$44,717	\$29,748	\$74,465	\$20,715	\$3,925	\$13,044	\$3,177	\$72,959	\$44,992	\$117,951
Second	\$6,817 - \$11,166	219,397	1,949,746	\$2,787	11,229	61,468	35,527	96,995	24,839	5,434	18,944	2,602	108,038	54,792	162,830
Third	\$11,166 - \$15,828	219,397	2,947,022	26,190	14,888	83,134	46,577	129,711	32,122	6,844	29,296	3,920	170,742	72,229	242,971
Fourth	\$15,828 - \$21,634	219,397	4,102,239	75,750	20,049	115,765	60,533	176,298	41,383	9,033	47,715	5,082	280,613	94,697	375,310
Fifth	\$21,634 - \$27,866	219,397	5,396,022	141,707	23,799	137,448	70,558	208,006	46,768	10,433	63,306	5,899	389,229	110,689	499,918
Sixth	\$27,866 - \$35,486	219,397	6,921,703	226,514	29,037	159,325	84,839	244,164	49,461	12,341	71,260	7,570	506,560	133,787	640,347
Seventh	\$35,486 - \$45,144	219,397	8,815,120	329,399	34,771	184,720	101,450	286,170	53,899	14,651	85,066	9,298	653,084	160,170	813,254
Eighth	\$45,144 - \$57,697	219,397	11,241,323	471,434	42,496	224,815	121,141	345,956	62,604	17,461	107,085	11,087	865,938	192,185	1,058,123
Ninth	\$57,697 - \$78,618	219,398	14,693,033	700,913	53,310	272,578	150,326	422,904	66,060	21,377	125,348	13,899	1,164,899	238,912	1,403,811
Tenth	\$78,618 & Over	219,398	36,272,979	2,155,085	95,823	425,154	306,121	731,275	71,073	34,285	187,463	35,676	2,838,775	471,905	3,310,680
TOTALS		2,193,971	\$93,272,563	\$4,124,262	\$333,544	\$1,709,124	\$1,006,820	\$2,715,944	\$468,924	\$135,784	\$748,527	\$98,210	\$7,050,837	\$1,574,358	\$8,625,195
Top 5%	\$106,086 & Over	109,699	\$26,448,677	\$1,639,217	\$62,063	\$256,861	\$211,345	\$468,206	\$37,543	\$21,017	\$111,380	\$26,724	\$2,045,001	\$321,149	\$2,366,150
Top 1%	\$244,679 & Over	21,941	\$13,658,169	\$904,228	\$24,076	\$85,061	\$97,463	\$182,524	\$9,302	\$6,910	\$33,157	\$14,248	\$1,031,748	\$142,697	\$1,174,445

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Population Decile	Income Range	Number of Households	Household Income	Residential Local Property Taxes						Nonresidential Local Property Taxes	Local Property Taxes Total	Total State and Local Taxes
				Homeowners after PTR	Renters after PTR	Owners of Rental Prop.	Total on Rental Prop.	Seasonal/Recreational	Residential Total			
First	\$6,817 & Under	219,397	\$933,376	\$28,356	\$9,534	\$5,378	\$14,912	\$1,538	\$44,806	\$41,949	\$86,755	\$204,706
Second	\$6,817 - \$11,166	219,397	1,949,746	29,563	8,780	1,566	10,346	1,285	41,194	30,764	71,958	234,788
Third	\$11,166 - \$15,828	219,397	2,947,022	54,297	9,226	2,810	12,036	2,129	68,462	48,142	116,604	359,575
Fourth	\$15,828 - \$21,634	219,397	4,102,239	57,599	16,674	2,703	19,377	3,150	80,126	59,297	139,423	514,733
Fifth	\$21,634 - \$27,866	219,397	5,396,022	92,008	29,456	3,426	32,882	5,860	130,750	69,472	200,222	700,140
Sixth	\$27,866 - \$35,486	219,397	6,921,703	126,456	33,967	3,886	37,853	7,600	171,909	94,726	266,635	906,982
Seventh	\$35,486 - \$45,144	219,397	8,815,120	182,619	25,169	5,831	31,000	10,069	223,688	117,105	340,793	1,154,047
Eighth	\$45,144 - \$57,697	219,397	11,241,323	228,600	18,299	6,109	24,408	11,575	264,583	137,898	402,481	1,460,604
Ninth	\$57,697 - \$78,618	219,398	14,693,033	311,445	10,831	9,752	20,583	17,681	349,709	160,935	510,644	1,914,455
Tenth	\$78,618 & Over	219,398	36,272,979	589,242	7,690	92,792	100,482	31,960	721,684	404,429	1,126,113	4,436,793
TOTALS		2,193,971	\$93,272,563	\$1,700,185	\$169,626	\$134,253	\$303,879	\$92,847	\$2,096,911	\$1,164,717	\$3,261,628	\$11,886,823
Top 5%	\$106,086 & Over	109,699	\$26,448,677	\$376,538	\$3,534	\$85,493	\$89,027	\$18,818	\$484,383	\$296,503	\$780,886	\$3,147,036
Top 1%	\$244,679 & Over	21,941	\$13,658,169	\$114,620	\$749	\$63,052	\$63,801	\$5,170	\$183,591	\$146,891	\$330,482	\$1,504,927

Table B-1 (b)

1996 Minnesota Tax Incidence Study
State and Local Tax Burden Amounts by Population Decile (dollars in thousands)
ALL TAXPAYERS

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			State Excise Taxes		Miscellaneous State Taxes		Total State Taxes		
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total	Purchases by Individuals	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,817 & Under	219,397	\$933,376	- 0.6%	0.9%	4.8%	3.2%	8.0%	2.2%	0.4%	1.4%	0.3%	7.8%	4.8%	12.6%
Second	\$6,817 - \$11,166	219,397	1,949,746	0.1%	0.6%	3.2%	1.8%	5.0%	1.3%	0.3%	1.0%	0.1%	5.5%	2.8%	8.4%
Third	\$11,166 - \$15,828	219,397	2,947,022	0.9%	0.5%	2.8%	1.6%	4.4%	1.1%	0.2%	1.0%	0.1%	5.8%	2.5%	8.2%
Fourth	\$15,828 - \$21,634	219,397	4,102,239	1.8%	0.5%	2.8%	1.5%	4.3%	1.0%	0.2%	1.2%	0.1%	6.8%	2.3%	9.1%
Fifth	\$21,634 - \$27,866	219,397	5,396,022	2.6%	0.4%	2.5%	1.3%	3.9%	0.9%	0.2%	1.2%	0.1%	7.2%	2.1%	9.3%
Sixth	\$27,866 - \$35,486	219,397	6,921,703	3.3%	0.4%	2.3%	1.2%	3.5%	0.7%	0.2%	1.0%	0.1%	7.3%	1.9%	9.3%
Seventh	\$35,486 - \$45,144	219,397	8,815,120	3.7%	0.4%	2.1%	1.2%	3.2%	0.6%	0.2%	1.0%	0.1%	7.4%	1.8%	9.2%
Eighth	\$45,144 - \$57,697	219,397	11,241,323	4.2%	0.4%	2.0%	1.1%	3.1%	0.6%	0.2%	1.0%	0.1%	7.7%	1.7%	9.4%
Ninth	\$57,697 - \$78,618	219,398	14,693,033	4.8%	0.4%	1.9%	1.0%	2.9%	0.4%	0.1%	0.9%	0.1%	7.9%	1.6%	9.6%
Tenth	\$78,618 & Over	219,398	36,272,979	5.9%	0.3%	1.2%	0.8%	2.0%	0.2%	0.1%	0.5%	0.1%	7.8%	1.3%	9.1%
TOTALS		2,193,971	\$93,272,563	4.4%	0.4%	1.8%	1.1%	2.9%	0.5%	0.1%	0.8%	0.1%	7.6%	1.7%	9.2%
Top 5%	\$106,086 & Over	109,699	\$26,448,677	6.2%	0.2%	1.0%	0.8%	1.8%	0.1%	0.1%	0.4%	0.1%	7.7%	1.2%	8.9%
Top 1%	\$244,679 & Over	21,941	\$13,658,169	6.6%	0.2%	0.6%	0.7%	1.3%	0.1%	0.1%	0.2%	0.1%	7.6%	1.0%	8.6%

Population Decile	Income Range	Number of Households	Household Income	Residential Local Property Taxes						Nonresidential Local Property Taxes	Local Property Taxes Total	Total State and Local Taxes
				Homeowners after PTR	Renters after PTR	Owners of Rental Prop.	Total on Rental Prop.	Seasonal/Recreational	Residential Total			
First	\$6,817 & Under	219,397	\$933,376	3.0%	1.0%	0.6%	1.6%	0.2%	4.8%	4.5%	9.3%	21.9%
Second	\$6,817 - \$11,166	219,397	1,949,746	1.5%	0.5%	0.1%	0.5%	0.1%	2.1%	1.6%	3.7%	12.0%
Third	\$11,166 - \$15,828	219,397	2,947,022	1.8%	0.3%	0.1%	0.4%	0.1%	2.3%	1.6%	4.0%	12.2%
Fourth	\$15,828 - \$21,634	219,397	4,102,239	1.4%	0.4%	0.1%	0.5%	0.1%	2.0%	1.4%	3.4%	12.5%
Fifth	\$21,634 - \$27,866	219,397	5,396,022	1.7%	0.5%	0.1%	0.6%	0.1%	2.4%	1.3%	3.7%	13.0%
Sixth	\$27,866 - \$35,486	219,397	6,921,703	1.8%	0.5%	0.1%	0.5%	0.1%	2.5%	1.4%	3.9%	13.1%
Seventh	\$35,486 - \$45,144	219,397	8,815,120	2.1%	0.3%	0.1%	0.4%	0.1%	2.5%	1.3%	3.9%	13.1%
Eighth	\$45,144 - \$57,697	219,397	11,241,323	2.0%	0.2%	0.1%	0.2%	0.1%	2.4%	1.2%	3.6%	13.0%
Ninth	\$57,697 - \$78,618	219,398	14,693,033	2.1%	0.1%	0.1%	0.1%	0.1%	2.4%	1.1%	3.5%	13.0%
Tenth	\$78,618 & Over	219,398	36,272,979	1.6%	0.0%	0.3%	0.3%	0.1%	2.0%	1.1%	3.1%	12.2%
TOTALS		2,193,971	\$93,272,563	1.8%	0.2%	0.1%	0.3%	0.1%	2.2%	1.2%	3.5%	12.7%
Top 5%	\$106,086 & Over	109,699	\$26,448,677	1.4%	0.0%	0.3%	0.3%	0.1%	1.8%	1.1%	3.0%	11.9%
Top 1%	\$244,679 & Over	21,941	\$13,658,169	0.8%	0.0%	0.5%	0.5%	0.0%	1.3%	1.1%	2.4%	11.0%

Table B-2 (a)

1996 Minnesota Tax Incidence Study
State and Local Tax Burden Amounts by Population Decile (dollars in thousands)
HOMEOWNERS (excluding farmers)

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			State Excise Taxes		Miscellaneous State Taxes		Total State Taxes		
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total	Purchases by Individuals	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,817 & Under	43,233	\$188,642	- \$1,311	\$1,882	\$9,830	\$8,608	\$18,438	\$3,972	\$874	\$4,022	\$996	\$16,513	\$12,360	\$28,873
Second	\$6,817 - \$11,166	60,235	546,685	- \$1,495	3,375	19,279	11,216	30,495	6,684	1,692	7,466	861	31,934	17,144	49,078
Third	\$11,166 - \$15,828	75,877	1,030,701	2,602	5,237	28,887	17,010	45,897	10,050	2,502	11,257	1,463	52,796	26,212	79,008
Fourth	\$15,828 - \$21,634	82,419	1,553,949	20,680	7,636	44,579	23,295	67,874	16,379	3,494	19,658	1,779	101,296	36,204	137,500
Fifth	\$21,634 - \$27,866	112,981	2,792,028	54,812	12,206	71,169	36,876	108,045	24,068	5,457	32,582	2,892	182,631	57,431	240,062
Sixth	\$27,866 - \$35,486	136,660	4,333,624	126,369	18,381	102,880	53,244	156,124	30,430	7,854	47,375	4,400	307,054	83,879	390,933
Seventh	\$35,486 - \$45,144	162,223	6,538,471	232,017	25,866	138,693	74,969	213,662	40,019	10,942	66,501	6,445	477,230	118,222	595,452
Eighth	\$45,144 - \$57,697	179,358	9,203,090	381,013	35,173	188,473	99,390	287,863	52,357	14,520	91,891	8,462	713,734	157,545	871,279
Ninth	\$57,697 - \$78,618	191,920	12,868,127	614,595	46,766	239,438	130,118	369,556	58,251	18,749	111,382	11,263	1,023,666	206,896	1,230,562
Tenth	\$78,618 & Over	202,207	33,637,180	1,997,509	89,088	396,768	282,321	679,089	65,925	31,992	175,931	31,746	2,636,133	435,147	3,071,280
TOTALS		1,247,112	\$72,692,497	\$3,426,791	\$245,610	\$1,239,996	\$737,047	\$1,977,043	\$308,135	\$98,076	\$568,065	\$70,307	\$5,542,987	\$1,151,040	\$6,694,027
Top 5%	\$106,086 & Over	101,676	\$24,636,215	\$1,527,130	\$57,965	\$240,857	\$195,596	\$436,453	\$34,986	\$19,713	\$104,996	\$23,967	\$1,907,969	\$297,241	\$2,205,210
Top 1%	\$244,679 & Over	20,577	\$12,808,028	\$848,147	\$22,428	\$79,776	\$90,571	\$170,347	\$8,724	\$6,481	\$31,248	\$13,086	\$967,895	\$132,566	\$1,100,461

Population Decile	Income Range	Number of Households	Household Income	Residential Local Property Taxes					Nonresidential Local Property Taxes	Local Property Taxes Total	Total State and Local Taxes
				Total on Homeowners	Homeowners after PTR	Owners of Rental Prop.	Seasonal/ Recreational	Residential Total			
First	\$6,817 & Under	43,233	\$188,642	\$30,117	\$25,144	\$4,256	\$1,538	\$30,938	\$11,052	\$41,990	\$70,863
Second	\$6,817 - \$11,166	60,235	546,685	35,755	26,831	916	1,285	29,032	10,437	39,469	88,547
Third	\$11,166 - \$15,828	75,877	1,030,701	60,965	49,355	1,153	2,129	52,637	17,617	70,254	149,262
Fourth	\$15,828 - \$21,634	82,419	1,553,949	63,223	52,128	1,306	3,150	56,584	19,199	75,783	213,283
Fifth	\$21,634 - \$27,866	112,981	2,792,028	94,908	86,201	2,363	5,860	94,424	31,483	125,907	365,969
Sixth	\$27,866 - \$35,486	136,660	4,333,624	133,380	121,671	2,220	7,600	131,491	50,051	181,542	572,475
Seventh	\$35,486 - \$45,144	162,223	6,538,471	182,377	175,264	4,354	10,069	189,687	77,724	267,411	862,863
Eighth	\$45,144 - \$57,697	179,358	9,203,090	227,369	221,839	4,958	11,575	238,372	96,288	334,660	1,205,939
Ninth	\$57,697 - \$78,618	191,920	12,868,127	306,522	302,647	8,059	17,681	328,387	121,140	449,527	1,680,089
Tenth	\$78,618 & Over	<u>202,207</u>	<u>33,637,180</u>	<u>583,067</u>	<u>582,425</u>	<u>85,361</u>	<u>31,960</u>	<u>699,746</u>	<u>339,917</u>	<u>1,039,663</u>	<u>4,110,943</u>
TOTALS		1,247,112	\$72,692,497	\$1,717,683	\$1,643,505	\$114,946	\$92,847	\$1,851,298	\$774,908	\$2,626,206	\$9,320,233
Top 5%	\$106,086 & Over	101,676	\$24,636,215	\$373,161	\$372,939	\$78,797	\$18,818	\$470,554	\$253,650	\$724,204	\$2,929,414
Top 1%	\$244,679 & Over	20,577	\$12,808,028	\$113,924	\$113,891	\$58,636	\$5,170	\$177,697	\$133,288	\$310,985	\$1,411,446

Table B-2 (b)

1996 Minnesota Tax Incidence Study
Effective Tax Rates by Population Decile
HOMEOWNERS (excluding farmers)

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			State Excise Taxes		Miscellaneous State Taxes		Total State Taxes		
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total	Purchases by Individuals	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,817 & Under	43,233	\$188,642	- 0.7%	1.0%	5.2%	4.6%	9.8%	2.1%	0.5%	2.1%	0.5%	8.8%	6.6%	15.3%
Second	\$6,817 - \$11,166	60,235	546,685	- 0.3%	0.6%	3.5%	2.1%	5.6%	1.2%	0.3%	1.4%	0.2%	5.8%	3.1%	9.0%
Third	\$11,166 - \$15,828	75,877	1,030,701	0.3%	0.5%	2.8%	1.7%	4.5%	1.0%	0.2%	1.1%	0.1%	5.1%	2.5%	7.7%
Fourth	\$15,828 - \$21,634	82,419	1,553,949	1.3%	0.5%	2.9%	1.5%	4.4%	1.1%	0.2%	1.3%	0.1%	6.5%	2.3%	8.8%
Fifth	\$21,634 - \$27,866	112,981	2,792,028	2.0%	0.4%	2.5%	1.3%	3.9%	0.9%	0.2%	1.2%	0.1%	6.5%	2.1%	8.6%
Sixth	\$27,866 - \$35,486	136,660	4,333,624	2.9%	0.4%	2.4%	1.2%	3.6%	0.7%	0.2%	1.1%	0.1%	7.1%	1.9%	9.0%
Seventh	\$35,486 - \$45,144	162,223	6,538,471	3.5%	0.4%	2.1%	1.1%	3.3%	0.6%	0.2%	1.0%	0.1%	7.3%	1.8%	9.1%
Eighth	\$45,144 - \$57,697	179,358	9,203,090	4.1%	0.4%	2.0%	1.1%	3.1%	0.6%	0.2%	1.0%	0.1%	7.8%	1.7%	9.5%
Ninth	\$57,697 - \$78,618	191,920	12,868,127	4.8%	0.4%	1.9%	1.0%	2.9%	0.5%	0.1%	0.9%	0.1%	8.0%	1.6%	9.6%
Tenth	\$78,618 & Over	202,207	33,637,180	5.9%	0.3%	1.2%	0.8%	2.0%	0.2%	0.1%	0.5%	0.1%	7.8%	1.3%	9.1%
TOTALS		1,247,112	\$72,692,497	4.7%	0.3%	1.7%	1.0%	2.7%	0.4%	0.1%	0.8%	0.1%	7.6%	1.6%	9.2%
Top 5%	\$106,086 & Over	101,676	\$24,636,215	6.2%	0.2%	1.0%	0.8%	1.8%	0.1%	0.1%	0.4%	0.1%	7.7%	1.2%	9.0%
Top 1%	\$244,679 & Over	20,577	\$12,808,028	6.6%	0.2%	0.6%	0.7%	1.3%	0.1%	0.1%	0.2%	0.1%	7.6%	1.0%	8.6%

Population Decile	Income Range	Number of Households	Household Income	Residential Local Property Taxes					Nonresidential Local Property Taxes	Local Property Taxes Total	Total State and Local Taxes
				Total on Homeowners	Homeowners after PTR	Owners of Rental Prop.	Seasonal/ Recreational	Residential Total			
First	\$6,817 & Under	43,233	\$188,642	16.0%	13.3%	2.3%	0.8%	16.4%	5.9%	22.3%	37.6%
Second	\$6,817 - \$11,166	60,235	546,685	6.5%	4.9%	0.2%	0.2%	5.3%	1.9%	7.2%	16.2%
Third	\$11,166 - \$15,828	75,877	1,030,701	5.9%	4.8%	0.1%	0.2%	5.1%	1.7%	6.8%	14.5%
Fourth	\$15,828 - \$21,634	82,419	1,553,949	4.1%	3.4%	0.1%	0.2%	3.6%	1.2%	4.9%	13.7%
Fifth	\$21,634 - \$27,866	112,981	2,792,028	3.4%	3.1%	0.1%	0.2%	3.4%	1.1%	4.5%	13.1%
Sixth	\$27,866 - \$35,486	136,660	4,333,624	3.1%	2.8%	0.1%	0.2%	3.0%	1.2%	4.2%	13.2%
Seventh	\$35,486 - \$45,144	162,223	6,538,471	2.8%	2.7%	0.1%	0.2%	2.9%	1.2%	4.1%	13.2%
Eighth	\$45,144 - \$57,697	179,358	9,203,090	2.5%	2.4%	0.1%	0.1%	2.6%	1.0%	3.6%	13.1%
Ninth	\$57,697 - \$78,618	191,920	12,868,127	2.4%	2.4%	0.1%	0.1%	2.6%	0.9%	3.5%	13.1%
Tenth	\$78,618 & Over	202,207	33,637,180	1.7%	1.7%	0.3%	0.1%	2.1%	1.0%	3.1%	12.2%
TOTALS		1,247,112	\$72,692,497	2.4%	2.3%	0.2%	0.1%	2.5%	1.1%	3.6%	12.8%
Top 5%	\$106,086 & Over	101,676	\$24,636,215	1.5%	1.5%	0.3%	0.1%	1.9%	1.0%	2.9%	11.9%
Top 1%	\$244,679 & Over	20,577	\$12,808,028	0.9%	0.9%	0.5%	0.0%	1.4%	1.0%	2.4%	11.0%

Table B-3 (a)

1996 Minnesota Tax Incidence Study
State and Local Tax Burden Amounts by Population Decile (dollars in thousands)
RENTERS

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			State Excise Taxes		Miscellaneous State Taxes		Total State Taxes		
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total	Purchases by Individuals	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,817 & Under	95,141	\$417,886	-\$3,439	\$3,573	\$20,391	\$11,305	\$31,696	\$9,752	\$1,779	\$4,903	\$781	\$31,607	\$17,438	\$49,045
Second	\$6,817 - \$11,166	94,083	824,779	-\$916	4,664	24,964	14,495	39,459	10,906	2,253	6,985	983	41,939	22,395	64,334
Third	\$11,166 - \$15,828	82,454	1,106,053	9,462	5,498	30,364	16,362	46,726	12,675	2,491	10,187	1,167	62,688	25,518	88,206
Fourth	\$15,828 - \$21,634	86,059	1,602,117	31,724	7,784	43,678	22,380	66,058	15,638	3,473	17,200	1,646	108,240	35,283	143,523
Fifth	\$21,634 - \$27,866	68,328	1,680,902	56,347	7,367	41,604	20,653	62,257	14,539	3,166	19,496	1,555	131,986	32,741	164,727
Sixth	\$27,866 - \$35,486	56,187	1,755,375	68,464	7,256	37,485	20,604	58,089	12,865	3,043	15,901	1,653	134,715	32,556	167,271
Seventh	\$35,486 - \$45,144	36,987	1,467,164	65,168	5,806	29,174	16,075	45,249	9,091	2,395	11,322	1,302	114,755	25,578	140,333
Eighth	\$45,144 - \$57,697	24,798	1,264,968	57,431	4,385	20,796	11,757	32,553	6,019	1,732	8,336	980	92,582	18,854	111,436
Ninth	\$57,697 - \$78,618	12,841	842,650	42,500	3,085	15,241	8,309	23,550	3,624	1,217	6,391	702	67,756	13,313	81,069
Tenth	\$78,618 & Over	7,792	1,147,980	65,357	2,744	10,723	7,761	18,484	2,255	866	4,313	938	82,648	12,309	94,957
TOTALS		564,670	\$12,109,874	\$392,098	\$52,162	\$274,420	\$149,701	\$424,121	\$97,364	\$22,415	\$105,034	\$11,707	\$868,916	\$235,985	\$1,104,901
Top 5%	\$106,086 & Over	3,449	\$765,622	\$44,618	\$1,617	\$5,670	\$4,851	\$10,521	\$1,042	\$458	\$2,203	\$665	\$53,533	\$7,591	\$61,124
Top 1%	\$244,679 & Over	624	\$351,036	\$21,168	\$752	\$2,417	\$2,477	\$4,894	\$264	\$196	\$820	\$356	\$24,669	\$3,781	\$28,450

Population Decile	Income Range	Number of Households	Household Income	Residential Local Property Taxes				Nonresidential Local Property Taxes	Local Property Taxes Total	Total State and Local Taxes
				Total on Renters	Renters after PTR	Owners of Rental Prop.	Residential Total			
First	\$6,817 & Under	95,141	\$417,886	\$24,122	\$9,534	\$152	\$9,686	\$8,862	\$18,548	\$67,593
Second	\$6,817 - \$11,166	94,083	824,779	23,207	8,780	348	9,128	10,990	20,118	84,452
Third	\$11,166 - \$15,828	82,454	1,106,053	25,330	9,226	523	9,749	12,836	22,585	110,791
Fourth	\$15,828 - \$21,634	86,059	1,602,117	31,402	16,674	203	16,877	17,462	34,339	177,862
Fifth	\$21,634 - \$27,866	68,328	1,680,902	34,717	29,456	305	29,761	16,599	46,360	211,087
Sixth	\$27,866 - \$35,486	56,187	1,755,375	38,505	33,967	968	34,935	17,253	52,188	219,459
Seventh	\$35,486 - \$45,144	36,987	1,467,164	26,244	25,169	513	25,682	13,629	39,311	179,644
Eighth	\$45,144 - \$57,697	24,798	1,264,968	18,370	18,299	266	18,565	10,119	28,684	140,120
Ninth	\$57,697 - \$78,618	12,841	842,650	10,831	10,831	275	11,106	7,247	18,353	99,422
Tenth	\$78,618 & Over	<u>7,792</u>	<u>1,147,980</u>	<u>7,738</u>	<u>7,690</u>	<u>1,827</u>	<u>9,517</u>	<u>10,402</u>	<u>19,919</u>	<u>114,876</u>
TOTALS		564,670	\$12,109,874	\$240,466	\$169,626	\$5,380	\$175,006	\$125,399	\$300,405	\$1,405,306
Top 5%	\$106,086 & Over	3,449	\$765,622	\$3,581	\$3,534	\$1,693	\$5,227	\$7,630	\$12,857	\$73,981
Top 1%	\$244,679 & Over	624	\$351,036	\$749	\$749	\$1,174	\$1,923	\$3,639	\$5,562	\$34,012

Table B-3 (b)

1996 Minnesota Tax Incidence Study
Effective Tax Rates by Population Decile
RENTERS

Population				State Income Taxes		State Sales Tax			State Excise Taxes		Miscellaneous State Taxes		Total State Taxes		
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total	Purchases by Individuals	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
Decile	Income Range	Number of Households	Household Income												
First	\$6,817 & Under	95,141	\$417,886	- 0.8%	0.9%	4.9%	2.7%	7.6%	2.3%	0.4%	1.2%	0.2%	7.6%	4.2%	11.7%
Second	\$6,817 - \$11,166	94,083	824,779	- 0.1%	0.6%	3.0%	1.8%	4.8%	1.3%	0.3%	0.8%	0.1%	5.1%	2.7%	7.8%
Third	\$11,166 - \$15,828	82,454	1,106,053	0.9%	0.5%	2.7%	1.5%	4.2%	1.1%	0.2%	0.9%	0.1%	5.7%	2.3%	8.0%
Fourth	\$15,828 - \$21,634	86,059	1,602,117	2.0%	0.5%	2.7%	1.4%	4.1%	1.0%	0.2%	1.1%	0.1%	6.8%	2.2%	9.0%
Fifth	\$21,634 - \$27,866	68,328	1,680,902	3.4%	0.4%	2.5%	1.2%	3.7%	0.9%	0.2%	1.2%	0.1%	7.9%	1.9%	9.8%
Sixth	\$27,866 - \$35,486	56,187	1,755,375	3.9%	0.4%	2.1%	1.2%	3.3%	0.7%	0.2%	0.9%	0.1%	7.7%	1.9%	9.5%
Seventh	\$35,486 - \$45,144	36,987	1,467,164	4.4%	0.4%	2.0%	1.1%	3.1%	0.6%	0.2%	0.8%	0.1%	7.8%	1.7%	9.6%
Eighth	\$45,144 - \$57,697	24,798	1,264,968	4.5%	0.3%	1.6%	0.9%	2.6%	0.5%	0.1%	0.7%	0.1%	7.3%	1.5%	8.8%
Ninth	\$57,697 - \$78,618	12,841	842,650	5.0%	0.4%	1.8%	1.0%	2.8%	0.4%	0.1%	0.8%	0.1%	8.0%	1.6%	9.6%
Tenth	\$78,618 & Over	7,792	1,147,980	5.7%	0.2%	0.9%	0.7%	1.6%	0.2%	0.1%	0.4%	0.1%	7.2%	1.1%	8.3%
TOTALS		564,670	\$12,109,874	3.2%	0.4%	2.3%	1.2%	3.5%	0.8%	0.2%	0.9%	0.1%	7.2%	1.9%	9.1%
Top 5%	\$106,086 & Over	3,449	\$765,622	5.8%	0.2%	0.7%	0.6%	1.4%	0.1%	0.1%	0.3%	0.1%	7.0%	1.0%	8.0%
Top 1%	\$244,679 & Over	624	\$351,036	6.0%	0.2%	0.7%	0.7%	1.4%	0.1%	0.1%	0.2%	0.1%	7.0%	1.1%	8.1%

Population				Residential Local Property Taxes				Nonresidential Local Property Taxes	Local Property Taxes Total	Total State and Local Taxes
				Total on Renters	Renters after PTR	Owners of Rental Prop.	Residential Total			
Decile	Income Range	Number of Households	Household Income							
First	\$6,817 & Under	95,141	\$417,886	5.8%	2.3%	0.0%	2.3%	2.1%	4.4%	16.2%
Second	\$6,817 - \$11,166	94,083	824,779	2.8%	1.1%	0.0%	1.1%	1.3%	2.4%	10.2%
Third	\$11,166 - \$15,828	82,454	1,106,053	2.3%	0.8%	0.0%	0.9%	1.2%	2.0%	10.0%
Fourth	\$15,828 - \$21,634	86,059	1,602,117	2.0%	1.0%	0.0%	1.1%	1.1%	2.1%	11.1%
Fifth	\$21,634 - \$27,866	68,328	1,680,902	2.1%	1.8%	0.0%	1.8%	1.0%	2.8%	12.6%
Sixth	\$27,866 - \$35,486	56,187	1,755,375	2.2%	1.9%	0.1%	2.0%	1.0%	3.0%	12.5%
Seventh	\$35,486 - \$45,144	36,987	1,467,164	1.8%	1.7%	0.0%	1.8%	0.9%	2.7%	12.2%
Eighth	\$45,144 - \$57,697	24,798	1,264,968	1.5%	1.4%	0.0%	1.5%	0.8%	2.3%	11.1%
Ninth	\$57,697 - \$78,618	12,841	842,650	1.3%	1.3%	0.0%	1.3%	0.9%	2.2%	11.8%
Tenth	\$78,618 & Over	7,792	1,147,980	0.7%	0.7%	0.2%	0.8%	0.9%	1.7%	10.0%
TOTALS		564,670	\$12,109,874	2.0%	1.4%	0.0%	1.4%	1.0%	2.5%	11.6%
Top 5%	\$106,086 & Over	3,449	\$765,622	0.5%	0.5%	0.2%	0.7%	1.0%	1.7%	9.7%
Top 1%	\$244,679 & Over	624	\$351,036	0.2%	0.2%	0.3%	0.5%	1.0%	1.6%	9.7%

Table B-4 (a)

1996 Minnesota Tax Incidence Study
State and Local Tax Burden Amounts by Population Decile (dollars in thousands)
OTHERS (farmers and those with no homeowner or renter property tax)

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			State Excise Taxes		Miscellaneous State Taxes		Total State Taxes		
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total	Purchases by Individuals	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,817 & Under	81,023	\$326,848	- \$767	\$2,687	\$14,496	\$9,835	\$24,331	\$6,991	\$1,272	\$4,119	\$1,400	\$24,839	\$15,194	\$40,033
Second	\$6,817 - \$11,166	65,079	578,282	\$5,198	3,190	17,225	9,816	27,041	7,249	1,489	4,493	758	34,165	15,253	49,418
Third	\$11,166 - \$15,828	61,066	810,268	14,126	4,153	23,883	13,205	37,088	9,397	1,851	7,852	1,290	55,258	20,499	75,757
Fourth	\$15,828 - \$21,634	50,919	946,173	23,346	4,629	27,508	14,858	42,366	9,366	2,066	10,857	1,657	71,077	23,210	94,287
Fifth	\$21,634 - \$27,866	38,088	923,092	30,548	4,226	24,675	13,029	37,704	8,161	1,810	11,228	1,452	74,612	20,517	95,129
Sixth	\$27,866 - \$35,486	26,550	832,704	31,681	3,400	18,960	10,991	29,951	6,166	1,444	7,984	1,517	64,791	17,352	82,143
Seventh	\$35,486 - \$45,144	20,187	809,485	32,214	3,099	16,853	10,406	27,259	4,789	1,314	7,243	1,551	61,099	16,370	77,469
Eighth	\$45,144 - \$57,697	15,241	773,265	32,990	2,938	15,546	9,994	25,540	4,228	1,209	6,858	1,645	59,622	15,786	75,408
Ninth	\$57,697 - \$78,618	14,637	982,256	43,818	3,459	17,899	11,899	29,798	4,185	1,411	7,575	1,934	73,477	18,703	92,180
Tenth	\$78,618 & Over	9,399	1,487,819	92,219	3,991	17,663	16,039	33,702	2,893	1,427	7,219	2,992	119,994	24,449	144,443
TOTALS		382,189	\$8,470,192	\$305,373	\$35,772	\$194,708	\$120,072	\$314,780	\$63,425	\$15,293	\$75,428	\$16,196	\$638,934	\$187,333	\$826,267
Top 5%	\$106,086 & Over	4,574	\$1,046,840	\$67,469	\$2,481	\$10,334	\$10,898	\$21,232	\$1,515	\$846	\$4,181	\$2,092	\$83,499	\$16,317	\$99,816
Top 1%	\$244,679 & Over	740	\$499,105	\$34,913	\$896	\$2,868	\$4,415	\$7,283	\$314	\$233	\$1,089	\$806	\$39,184	\$6,350	\$45,534

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Population Decile	Income Range	Number of Households	Household Income	Residential Local Property Taxes				Nonresidential Local Property Taxes	Local Property Taxes Total	Total State and Local Taxes
				Total (HGA) on Farmers	Farmers after PTR	Owners of Rental Prop.	Residential Total			
First	\$6,817 & Under	81,023	\$326,848	\$3,929	\$3,212	\$970	\$4,182	\$22,035	\$26,217	\$66,250
Second	\$6,817 - \$11,166	65,079	578,282	3,432	2,732	302	3,034	9,337	12,371	61,789
Third	\$11,166 - \$15,828	61,066	810,268	6,189	4,942	1,134	6,076	17,689	23,765	99,522
Fourth	\$15,828 - \$21,634	50,919	946,173	6,304	5,471	1,194	6,665	22,636	29,301	123,588
Fifth	\$21,634 - \$27,866	38,088	923,092	6,810	5,807	758	6,565	21,390	27,955	123,084
Sixth	\$27,866 - \$35,486	26,550	832,704	5,435	4,785	698	5,483	27,422	32,905	115,048
Seventh	\$35,486 - \$45,144	20,187	809,485	8,058	7,355	964	8,319	25,752	34,071	111,540
Eighth	\$45,144 - \$57,697	15,241	773,265	7,013	6,761	885	7,646	31,491	39,137	114,545
Ninth	\$57,697 - \$78,618	14,637	982,256	9,277	8,798	1,418	10,216	32,548	42,764	134,944
Tenth	\$78,618 & Over	<u>9,399</u>	<u>1,487,819</u>	<u>6,891</u>	<u>6,817</u>	<u>5,604</u>	<u>12,421</u>	<u>54,110</u>	<u>66,531</u>	<u>210,974</u>
TOTALS		382,189	\$8,470,192	\$63,338	\$56,680	\$13,927	\$70,607	\$264,410	\$335,017	\$1,161,284
Top 5%	\$106,086 & Over	4,574	\$1,046,840	\$3,630	\$3,599	\$5,003	\$8,602	\$35,223	\$43,825	\$143,641
Top 1%	\$244,679 & Over	740	\$499,105	\$729	\$729	\$3,242	\$3,971	\$9,964	\$13,935	\$59,469

Table B-4 (b)

1996 Minnesota Tax Incidence Study
Effective Tax Rates by Population Decile
OTHERS (farmers and those with no homeowner or renter property tax)

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			State Excise Taxes		Miscellaneous State Taxes		Total State Taxes		
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total	Purchases by Individuals	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,817 & Under	81,023	\$326,848	- 0.2%	0.8%	4.4%	3.0%	7.4%	2.1%	0.4%	1.3%	0.4%	7.6%	4.6%	12.2%
Second	\$6,817 - \$11,166	65,079	578,282	0.9%	0.6%	3.0%	1.7%	4.7%	1.3%	0.3%	0.8%	0.1%	5.9%	2.6%	8.5%
Third	\$11,166 - \$15,828	61,066	810,268	1.7%	0.5%	2.9%	1.6%	4.6%	1.2%	0.2%	1.0%	0.2%	6.8%	2.5%	9.3%
Fourth	\$15,828 - \$21,634	50,919	946,173	2.5%	0.5%	2.9%	1.6%	4.5%	1.0%	0.2%	1.1%	0.2%	7.5%	2.5%	10.0%
Fifth	\$21,634 - \$27,866	38,088	923,092	3.3%	0.5%	2.7%	1.4%	4.1%	0.9%	0.2%	1.2%	0.2%	8.1%	2.2%	10.3%
Sixth	\$27,866 - \$35,486	26,550	832,704	3.8%	0.4%	2.3%	1.3%	3.6%	0.7%	0.2%	1.0%	0.2%	7.8%	2.1%	9.9%
Seventh	\$35,486 - \$45,144	20,187	809,485	4.0%	0.4%	2.1%	1.3%	3.4%	0.6%	0.2%	0.9%	0.2%	7.5%	2.0%	9.6%
Eighth	\$45,144 - \$57,697	15,241	773,265	4.3%	0.4%	2.0%	1.3%	3.3%	0.5%	0.2%	0.9%	0.2%	7.7%	2.0%	9.8%
Ninth	\$57,697 - \$78,618	14,637	982,256	4.5%	0.4%	1.8%	1.2%	3.0%	0.4%	0.1%	0.8%	0.2%	7.5%	1.9%	9.4%
Tenth	\$78,618 & Over	9,399	1,487,819	6.2%	0.3%	1.2%	1.1%	2.3%	0.2%	0.1%	0.5%	0.2%	8.1%	1.6%	9.7%
TOTALS		382,189	\$8,470,192	3.6%	0.4%	2.3%	1.4%	3.7%	0.7%	0.2%	0.9%	0.2%	7.5%	2.2%	9.8%
Top 5%	\$106,086 & Over	4,574	\$1,046,840	6.4%	0.2%	1.0%	1.0%	2.0%	0.1%	0.1%	0.4%	0.2%	8.0%	1.6%	9.5%
Top 1%	\$244,679 & Over	740	\$499,105	7.0%	0.2%	0.6%	0.9%	1.5%	0.1%	0.0%	0.2%	0.2%	7.9%	1.3%	9.1%

Population Decile	Income Range	Number of Households	Household Income	Residential Local Property Taxes				Nonresidential Local Property Taxes	Local Property Taxes Total	Total State and Local Taxes
				Total (HGA) on Farmers	Farmers after PTR	Owners of Rental Prop.	Residential Total			
First	\$6,817 & Under	81,023	\$326,848	1.2%	1.0%	0.3%	1.3%	6.7%	8.0%	20.3%
Second	\$6,817 - \$11,166	65,079	578,282	0.6%	0.5%	0.1%	0.5%	1.6%	2.1%	10.7%
Third	\$11,166 - \$15,828	61,066	810,268	0.8%	0.6%	0.1%	0.7%	2.2%	2.9%	12.3%
Fourth	\$15,828 - \$21,634	50,919	946,173	0.7%	0.6%	0.1%	0.7%	2.4%	3.1%	13.1%
Fifth	\$21,634 - \$27,866	38,088	923,092	0.7%	0.6%	0.1%	0.7%	2.3%	3.0%	13.3%
Sixth	\$27,866 - \$35,486	26,550	832,704	0.7%	0.6%	0.1%	0.7%	3.3%	4.0%	13.8%
Seventh	\$35,486 - \$45,144	20,187	809,485	1.0%	0.9%	0.1%	1.0%	3.2%	4.2%	13.8%
Eighth	\$45,144 - \$57,697	15,241	773,265	0.9%	0.9%	0.1%	1.0%	4.1%	5.1%	14.8%
Ninth	\$57,697 - \$78,618	14,637	982,256	0.9%	0.9%	0.1%	1.0%	3.3%	4.4%	13.7%
Tenth	\$78,618 & Over	9,399	1,487,819	0.5%	0.5%	0.4%	0.8%	3.6%	4.5%	14.2%
TOTALS		382,189	\$8,470,192	0.7%	0.7%	0.2%	0.8%	3.1%	4.0%	13.7%
Top 5%	\$106,086 & Over	4,574	\$1,046,840	0.3%	0.3%	0.5%	0.8%	3.4%	4.2%	13.7%
Top 1%	\$244,679 & Over	740	\$499,105	0.1%	0.1%	0.6%	0.8%	2.0%	2.8%	11.9%

APPENDIX C

Household Characteristics and Tax Burdens by Type of Household

Table C-1

1996 Minnesota Tax Incidence Study
Household Characteristics and Average Tax Burden Amounts by Population Decile
SINGLE (except retired)

<u>HOUSEHOLD CHARACTERISTICS</u>	<u>Population Decile</u>										<u>Total</u>
	<u>One</u>	<u>Two</u>	<u>Three</u>	<u>Four</u>	<u>Five</u>	<u>Six</u>	<u>Seven</u>	<u>Eight</u>	<u>Nine</u>	<u>Ten</u>	
<i>Number of households</i>	91,995	85,728	99,089	105,225	99,643	83,747	55,928	28,348	13,394	12,277	675,373
<i>Percent of households in given decile</i>	45%	40%	47%	48%	45%	38%	25%	13%	6%	6%	31%
<i>Average household income</i>	\$4,007	\$8,932	\$13,492	\$18,738	\$24,519	\$31,325	\$39,568	\$50,263	\$65,575	\$198,190	\$24,370
<i>Percent with earned income</i>	83%	96%	97%	99%	100%	99%	99%	98%	99%	95%	96%
<i>Average earned income</i>	\$3,962	\$8,401	\$12,681	\$18,006	\$23,413	\$29,531	\$37,717	\$46,159	\$55,005	\$108,817	\$21,917
<i>Housing Status</i>											
<i>Homeowners</i>	12%	15%	18%	26%	32%	49%	61%	67%	77%	79%	32%
<i>Renters</i>	41%	37%	41%	42%	42%	34%	26%	22%	13%	13%	37%
<i>Farmers</i>	1%	2%	2%	1%	2%	1%	2%	3%	3%	2%	2%
<i>Other</i>	45%	46%	39%	32%	23%	16%	11%	8%	8%	5%	29%
<i>Average market value of home</i>	\$40,810	\$36,965	\$52,387	\$44,270	\$52,129	\$60,594	\$73,589	\$74,086	\$86,417	\$123,116	\$61,450
<i>Average monthly rent</i>	\$252	\$252	\$312	\$361	\$454	\$591	\$610	\$680	\$719	\$885	\$396
<u>AVERAGE TAX BURDENS</u>											
<i>Local Property Tax</i>											
<i>All households</i>											
<i>Total tax</i>	\$190	\$185	\$294	\$344	\$491	\$699	\$948	\$990	\$1,276	\$2,163	\$490
<i>- Property tax refund</i>	<u>-96</u>	<u>-55</u>	<u>-85</u>	<u>-69</u>	<u>-39</u>	<u>-36</u>	<u>-19</u>	<u>-6</u>	<u>-7</u>	<u>-2</u>	<u>-55</u>
<i>Tax after PTR</i>	\$94	\$130	\$210	\$276	\$452	\$663	\$929	\$984	\$1,269	\$2,161	\$435
<i>Renters only</i>											
<i>Total tax on rental unit</i>	\$448	\$448	\$555	\$642	\$807	\$1,050	\$1,083	\$1,207	\$1,277	\$1,573	\$704
<i>Renters' total tax on unit</i>	\$283	\$283	\$350	\$405	\$509	\$663	\$684	\$762	\$806	\$993	\$444
<i>- Property tax refund</i>	-185	-116	-153	-117	-51	-38	-9	-7	0	0	-101
<i>Renters' tax after PTR</i>	\$97	\$167	\$198	\$288	\$459	\$624	\$675	\$755	\$806	\$993	\$343
<i>Homeowners only</i>											
<i>Total tax on home</i>	\$665	\$569	\$838	\$687	\$858	\$966	\$1,254	\$1,227	\$1,531	\$2,555	\$1,033
<i>- Property tax refund</i>	<u>-171</u>	<u>-76</u>	<u>-120</u>	<u>-69</u>	<u>-55</u>	<u>-47</u>	<u>-27</u>	<u>-6</u>	<u>-9</u>	<u>-2</u>	<u>-55</u>
<i>Homeowners' tax after PTR</i>	\$494	\$493	\$718	\$618	\$803	\$920	\$1,227	\$1,221	\$1,522	\$2,553	\$978
<i>State Income Tax</i>	-7	\$120	\$358	\$668	\$1,046	\$1,524	\$2,120	\$2,861	\$3,889	\$13,068	\$1,124
<i>State Sales Tax</i>	202	299	385	543	641	688	763	881	1,073	1,628	538
<i>State Excise Taxes</i>	101	132	153	181	212	218	193	215	197	248	173
<i>Other Taxes</i>	55	82	124	214	288	271	293	369	418	643	205
<i>Business Taxes</i>	263	411	467	598	740	858	1,006	1,246	1,755	5,643	738
<i>Total State and Local Tax Burden</i>	\$707	\$1,174	\$1,697	\$2,480	\$3,378	\$4,223	\$5,303	\$6,555	\$8,600	\$23,392	\$3,213
<i>Effective Tax Rate for all taxes</i>											
<i>Renters only</i>	17.4%	12.8%	12.4%	13.4%	13.9%	13.4%	12.8%	12.3%	12.7%	10.7%	13.2%
<i>Homeowners only</i>	29.1%	19.8%	15.9%	14.6%	14.7%	14.2%	14.0%	13.4%	13.3%	12.0%	13.8%

Table C-2

1996 Minnesota Tax Incidence Study
Household Characteristics and Average Tax Burden Amounts by Population Decile
RETIRED

<i>HOUSEHOLD CHARACTERISTICS</i>	<i>Population Decile</i>										<i>Total</i>
	<i>One</i>	<i>Two</i>	<i>Three</i>	<i>Four</i>	<i>Five</i>	<i>Six</i>	<i>Seven</i>	<i>Eight</i>	<i>Nine</i>	<i>Ten</i>	
<i>Number of households</i>	70,563	91,830	70,619	53,128	52,505	45,250	34,129	31,529	20,341	19,837	489,730
Percent of households in given decile	34%	43%	34%	24%	24%	21%	16%	14%	9%	9%	23%
<i>Percent that are married</i>	3%	5%	15%	31%	58%	55%	64%	70%	72%	77%	33%
<i>Average household income</i>	\$5,176	\$8,862	\$13,367	\$18,580	\$24,539	\$31,179	\$40,424	\$50,800	\$66,550	\$185,532	\$28,229
Social Security Income	4,547	7,389	8,763	10,499	10,723	11,308	12,015	12,977	13,226	13,372	9,401
SS income as % of household income	88%	83%	66%	57%	44%	36%	30%	26%	20%	7%	33%
<i>Housing Status</i>											
Homeowners	29%	36%	58%	59%	78%	76%	81%	82%	81%	86%	59%
Renters	34%	39%	27%	25%	11%	15%	8%	12%	7%	7%	23%
Farmers	4%	5%	7%	10%	9%	6%	10%	5%	11%	8%	7%
Other	33%	20%	8%	6%	2%	3%	1%	2%	1%	0%	11%
Average market value of home	\$29,806	\$39,882	\$47,909	\$55,447	\$60,316	\$68,828	\$76,865	\$81,898	\$96,324	\$129,959	\$64,047
Average monthly rent	\$266	\$327	\$395	\$480	\$594	\$759	\$790	\$780	\$791	\$824	\$454
<i>AVERAGE TAX BURDENS</i>											
<i>Local Property Tax</i>											
<i>All households</i>											
Total tax	\$199	\$318	\$515	\$623	\$837	\$977	\$1,145	\$1,247	\$1,663	\$2,482	\$740
- Property tax refund	-82	-152	-177	-198	-101	-140	-65	-35	-36	-8	-120
Tax after PTR	\$116	\$166	\$338	\$424	\$736	\$838	\$1,081	\$1,212	\$1,627	\$2,475	\$620
<i>Renters only</i>											
Total tax on rental unit	\$473	\$581	\$702	\$853	\$1,055	\$1,348	\$1,403	\$1,386	\$1,405	\$1,464	\$806
Renters' total tax on unit	\$298	\$366	\$443	\$538	\$666	\$851	\$885	\$875	\$887	\$924	\$509
- Property tax refund	-173	-189	-190	-157	-211	-253	-22	-4	0	-37	-169
Renters' tax after PTR	\$125	\$178	\$253	\$381	\$456	\$598	\$863	\$871	\$887	\$888	\$340
<i>Homeowners only</i>											
Total tax on home	\$476	\$640	\$775	\$936	\$984	\$1,117	\$1,328	\$1,404	\$1,969	\$2,823	\$1,125
- Property tax refund	-89	-185	-184	-198	-97	-133	-78	-43	-44	-6	-119
Homeowners' tax after PTR	\$387	\$456	\$591	\$738	\$887	\$984	\$1,250	\$1,361	\$1,925	\$2,817	\$1,006
<i>State Income Tax</i>	\$0	\$1	\$10	\$39	\$174	\$419	\$931	\$1,557	\$2,589	\$7,773	\$651
<i>State Sales Tax</i>	177	225	325	441	548	719	811	883	1,047	1,872	520
<i>State Excise Taxes</i>	73	72	96	130	144	163	200	218	215	254	130
<i>Other Taxes</i>	54	77	130	189	265	341	362	382	405	781	220
<i>Business Taxes</i>	250	321	482	665	841	1,349	1,439	1,915	2,478	5,595	1,006
Total State and Local Tax Burden	\$671	\$862	\$1,381	\$1,889	\$2,708	\$3,829	\$4,825	\$6,167	\$8,362	\$18,750	\$3,147
<i>Effective Tax Rate for all taxes</i>	13.0%	9.7%	10.3%	10.2%	11.0%	12.3%	11.9%	12.1%	12.6%	10.1%	11.1%
Renters only	10.5%	7.1%	6.5%	6.7%	7.6%	10.6%	11.2%	9.1%	8.8%	8.2%	8.3%
Homeowners only	19.4%	13.5%	12.2%	11.8%	11.6%	12.1%	12.1%	12.5%	12.9%	10.2%	11.7%

Table C-3

1996 Minnesota Tax Incidence Study
Household Characteristics and Average Tax Burden Amounts by Population Decile
SINGLE-PARENT FAMILIES

<i>HOUSEHOLD CHARACTERISTICS</i>	<i>Population Decile</i>										<i>Total</i>
	<i>One</i>	<i>Two</i>	<i>Three</i>	<i>Four</i>	<i>Five</i>	<i>Six</i>	<i>Seven</i>	<i>Eight</i>	<i>Nine</i>	<i>Ten</i>	
<i>Number of households</i>	33,341	25,691	24,791	31,603	23,507	24,039	14,938	11,423	5,912	4,998	200,244
<i>Percent of households in given decile</i>	16%	12%	12%	14%	11%	11%	7%	5%	3%	2%	9%
<i>Average number of children</i>	1.5	1.9	1.6	1.5	1.5	1.6	1.6	1.3	1.4	1.5	1.6
<i>Average household income</i>	\$4,309	\$8,741	\$13,287	\$18,685	\$24,769	\$31,593	\$40,163	\$50,287	\$64,263	\$150,024	\$24,640
<i>Percent with earned income</i>	60%	79%	92%	96%	100%	100%	99%	99%	100%	93%	89%
<i>Average earned income</i>	\$3,274	\$6,384	\$12,348	\$17,266	\$23,660	\$29,893	\$35,540	\$46,531	\$56,487	\$96,769	\$23,131
<i>Housing Status</i>											
<i>Homeowners</i>	11%	19%	31%	37%	64%	65%	77%	84%	85%	89%	45%
<i>Renters</i>	80%	81%	59%	53%	33%	30%	21%	10%	10%	9%	49%
<i>Farmers</i>	0%	0%	4%	3%	0%	3%	2%	4%	4%	2%	2%
<i>Other</i>	9%	0%	6%	7%	3%	2%	0%	3%	0%	0%	4%
<i>Average market value of home</i>	\$35,569	\$36,669	\$56,977	\$45,582	\$45,095	\$52,006	\$69,450	\$67,093	\$81,452	\$113,467	\$57,705
<i>Average monthly rent</i>	\$332	\$411	\$557	\$625	\$580	\$606	\$417	\$434	\$535	\$954	\$478
<i>AVERAGE TAX BURDENS</i>											
<i>Local Property Tax</i>											
<i>All households</i>											
<i>Total tax</i>	\$277	\$305	\$493	\$516	\$648	\$756	\$958	\$1,191	\$1,345	\$2,283	\$631
<i>- Property tax refund</i>	-79	-133	-200	-146	-112	-106	-30	-56	-12	0	-110
<i>Tax after PTR</i>	\$198	\$172	\$293	\$370	\$536	\$650	\$928	\$1,135	\$1,332	\$2,283	\$521
<i>Renters only</i>											
<i>Total tax on rental unit</i>	\$590	\$730	\$990	\$1,110	\$1,030	\$1,076	\$740	\$771	\$949	\$1,694	\$850
<i>Renters' total tax on unit</i>	\$372	\$460	\$625	\$701	\$650	\$679	\$467	\$487	\$599	\$1,069	\$536
<i>- Property tax refund</i>	-62	-75	-98	-125	-98	-129	-9	0	0	0	-83
<i>Renters' tax after PTR</i>	\$310	\$386	\$527	\$576	\$552	\$551	\$459	\$487	\$599	\$1,069	\$453
<i>Homeowners only</i>											
<i>Total tax on home</i>	\$555	\$567	\$1,065	\$775	\$747	\$853	\$1,122	\$1,362	\$1,506	\$2,456	\$1,021
<i>- Property tax refund</i>	-68	-182	-239	-140	-82	-105	-37	-67	-14	0	-97
<i>Homeowners' tax after PTR</i>	\$487	\$384	\$826	\$636	\$665	\$748	\$1,084	\$1,295	\$1,492	\$2,456	\$924
<i>State Income Tax</i>	-\$119	-\$209	-\$303	\$80	\$593	\$985	\$1,591	\$2,267	\$3,179	\$8,533	\$671
<i>State Sales Tax</i>	238	308	383	519	646	773	821	997	1,244	1,871	579
<i>State Excise Taxes</i>	108	146	195	240	280	260	275	317	304	374	220
<i>Other Taxes</i>	60	113	173	259	363	425	448	539	607	827	283
<i>Business Taxes</i>	311	411	586	658	753	984	1,173	1,490	1,563	3,635	797
<i>Total State and Local Tax Burden</i>	\$796	\$941	\$1,327	\$2,126	\$3,171	\$4,077	\$5,236	\$6,743	\$8,229	\$17,523	\$3,070
<i>Effective Tax Rate for all taxes</i>											
<i>Renters only</i>	17.2%	10.0%	7.7%	9.2%	12.4%	11.6%	12.3%	11.5%	10.8%	10.7%	11.0%
<i>Homeowners only</i>	27.3%	14.0%	13.9%	14.6%	13.1%	13.5%	13.2%	13.8%	13.0%	11.8%	13.2%

Table C-4

1996 Minnesota Tax Incidence Study
Household Characteristics and Average Tax Burden Amounts by Population Decile
MARRIED WITHOUT CHILDREN (except retired)

<u>HOUSEHOLD CHARACTERISTICS</u>	<u>Population Decile</u>										<u>Total</u>
	<u>One</u>	<u>Two</u>	<u>Three</u>	<u>Four</u>	<u>Five</u>	<u>Six</u>	<u>Seven</u>	<u>Eight</u>	<u>Nine</u>	<u>Ten</u>	
<i>Number of households</i>	3,084	4,078	4,546	11,123	15,487	29,329	46,309	48,402	56,989	59,040	278,388
<i>Percent of households in given decile</i>	2%	2%	2%	5%	7%	13%	21%	22%	26%	27%	13%
<i>Average household income</i>	\$4,731	\$8,828	\$13,348	\$18,732	\$24,975	\$32,038	\$40,262	\$51,326	\$66,908	\$176,886	\$72,745
<i>Percent with earned income</i>	76%	95%	86%	99%	100%	100%	100%	100%	100%	100%	99%
<i>Average earned income</i>	\$5,667	\$6,928	\$9,506	\$16,144	\$21,617	\$26,998	\$33,441	\$46,071	\$59,563	\$113,755	\$55,141
<i>Housing Status</i>											
<i>Homeowners</i>	41%	54%	62%	49%	61%	68%	76%	80%	87%	93%	79%
<i>Renters</i>	57%	35%	16%	32%	25%	20%	14%	14%	8%	3%	13%
<i>Farmers</i>	2%	11%	22%	19%	14%	12%	10%	5%	6%	4%	8%
<i>Other</i>	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<i>Average market value of home</i>	\$37,991	\$27,979	\$42,483	\$59,694	\$51,788	\$62,269	\$65,230	\$76,581	\$90,713	\$136,805	\$87,774
<i>Average monthly rent</i>	\$467	\$433	\$481	\$460	\$638	\$604	\$687	\$686	\$763	\$865	\$661
<u>AVERAGE TAX BURDENS</u>											
<i>Local Property Tax</i>											
<i>All households</i>											
<i>Total tax</i>	\$451	\$346	\$518	\$703	\$715	\$876	\$963	\$1,123	\$1,458	\$2,624	\$1,389
<i>- Property tax refund</i>	<u>-72</u>	<u>-82</u>	<u>-42</u>	<u>-132</u>	<u>-46</u>	<u>-59</u>	<u>-36</u>	<u>-14</u>	<u>-8</u>	<u>-1</u>	<u>-27</u>
<i>Tax after PTR</i>	\$379	\$264	\$476	\$571	\$669	\$817	\$927	\$1,110	\$1,449	\$2,623	\$1,362
<i>Renters only</i>											
<i>Total tax on rental unit</i>	\$829	\$769	\$854	\$817	\$1,133	\$1,072	\$1,221	\$1,219	\$1,356	\$1,537	\$1,175
<i>Renters' total tax on unit</i>	\$523	\$486	\$539	\$515	\$715	\$677	\$771	\$769	\$856	\$970	\$741
<i>- Property tax refund</i>	-118	-65	-40	-29	-16	-20	-24	0	0	0	-17
<i>Renters' tax after PTR</i>	\$405	\$420	\$499	\$486	\$699	\$657	\$747	\$769	\$856	\$970	\$724
<i>Homeowners only</i>											
<i>Total tax on home</i>	\$633	\$499	\$710	\$1,313	\$895	\$1,090	\$1,128	\$1,261	\$1,607	\$2,805	\$1,654
<i>- Property tax refund</i>	<u>-46</u>	<u>-105</u>	<u>-47</u>	<u>-222</u>	<u>-68</u>	<u>-81</u>	<u>-43</u>	<u>-17</u>	<u>-9</u>	<u>-2</u>	<u>-30</u>
<i>Homeowners' tax after PTR</i>	\$586	\$394	\$663	\$1,091	\$827	\$1,009	\$1,085	\$1,244	\$1,598	\$2,803	\$1,624
<i>State Income Tax</i>	-\$17	-\$43	\$59	\$250	\$583	\$986	\$1,515	\$2,454	\$3,583	\$11,234	\$3,941
<i>State Sales Tax</i>	385	469	477	640	649	732	858	1,082	1,236	1,961	1,158
<i>State Excise Taxes</i>	176	214	202	259	257	254	260	293	283	298	275
<i>Other Taxes</i>	166	222	241	382	401	437	509	595	655	1,015	630
<i>Business Taxes</i>	517	653	816	1,077	1,153	1,040	1,410	1,526	1,740	4,905	2,142
<i>Total State and Local Tax Burden</i>	\$1,606	\$1,779	\$2,270	\$3,179	\$3,713	\$4,267	\$5,479	\$7,060	\$8,946	\$22,036	\$9,508
<i>Effective Tax Rate for all taxes</i>											
<i>Renters only</i>	30.5%	16.1%	17.3%	13.0%	13.1%	12.1%	12.1%	11.4%	11.9%	10.3%	11.9%
<i>Homeowners only</i>	37.8%	22.2%	17.0%	18.8%	15.5%	13.6%	13.9%	14.1%	13.5%	12.5%	13.2%

Table C-5

1996 Minnesota Tax Incidence Study
Household Characteristics and Average Tax Burden Amounts by Population Decile
MARRIED WITH CHILDREN

<i>HOUSEHOLD CHARACTERISTICS</i>	<i>Population Decile</i>										<i>Total</i>
	<i>One</i>	<i>Two</i>	<i>Three</i>	<i>Four</i>	<i>Five</i>	<i>Six</i>	<i>Seven</i>	<i>Eight</i>	<i>Nine</i>	<i>Ten</i>	
<i>Number of households</i>	5,753	6,093	11,183	18,318	28,256	37,031	68,094	99,695	122,762	123,245	520,429
Percent of households in given decile	3%	3%	5%	8%	13%	17%	31%	45%	56%	56%	24%
<i>Average number of children</i>	1.9	2.5	2.2	2.2	2.4	2.0	2.1	2.1	2.1	2.1	2.1
<i>Average household income</i>	\$4,699	\$9,048	\$13,769	\$18,809	\$24,611	\$32,092	\$40,505	\$51,718	\$67,351	\$153,890	\$72,273
Percent with earned income	69%	79%	84%	98%	99%	98%	99%	100%	100%	100%	99%
<i>Average earned income</i>	\$4,720	\$7,065	\$10,688	\$17,691	\$22,979	\$30,853	\$38,667	\$49,735	\$63,646	\$117,343	\$62,420
<i>Housing Status</i>											
Homeowners	28%	38%	34%	39%	55%	70%	79%	86%	90%	94%	81%
Renters	69%	58%	52%	45%	30%	21%	14%	7%	4%	2%	12%
Farmers	3%	4%	14%	17%	15%	10%	6%	7%	6%	3%	7%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<i>Average market value of home</i>	\$55,227	\$49,402	\$66,729	\$39,340	\$51,065	\$60,740	\$64,674	\$77,225	\$92,351	\$147,273	\$94,782
<i>Average monthly rent</i>	\$490	\$448	\$480	\$435	\$594	\$588	\$657	\$602	\$773	\$918	\$608
<i>AVERAGE TAX BURDENS</i>											
<i>Local Property Tax</i>											
All households											
Total tax	\$582	\$487	\$652	\$410	\$612	\$829	\$964	\$1,177	\$1,505	\$2,885	\$1,523
- Property tax refund	-276	-62	-162	-153	-86	-89	-51	-33	-24	-4	-43
Tax after PTR	\$306	\$425	\$490	\$256	\$526	\$740	\$913	\$1,145	\$1,480	\$2,881	\$1,479
Renters only											
Total tax on rental unit	\$870	\$795	\$853	\$773	\$1,054	\$1,043	\$1,168	\$1,069	\$1,373	\$1,631	\$1,081
Renters' total tax on unit	\$549	\$502	\$539	\$488	\$665	\$659	\$737	\$675	\$867	\$1,029	\$682
- Property tax refund	-312	-32	-12	-53	0	-61	-71	-2	0	0	-52
Renters' tax after PTR	\$237	\$470	\$527	\$435	\$665	\$598	\$666	\$673	\$867	\$1,029	\$630
Homeowners only											
Total tax on home	\$957	\$718	\$1,593	\$783	\$919	\$1,000	\$1,085	\$1,310	\$1,631	\$3,032	\$1,795
- Property tax refund	-317	-57	-142	-148	-134	-101	-52	-38	-27	-4	-39
Homeowners' tax after PTR	\$641	\$661	\$1,451	\$635	\$785	\$899	\$1,033	\$1,272	\$1,604	\$3,028	\$1,756
<i>State Income Tax</i>	-\$90	-\$238	-\$377	-\$106	\$191	\$736	\$1,251	\$1,972	\$3,040	\$9,206	\$3,486
<i>State Sales Tax</i>	377	496	538	635	693	786	916	1,085	1,296	1,971	1,238
<i>State Excise Taxes</i>	176	226	239	269	265	274	295	319	335	353	316
<i>Other Taxes</i>	138	190	236	321	416	476	530	614	719	1,071	687
<i>Business Taxes</i>	982	667	880	1,401	1,068	1,224	1,394	1,501	1,851	3,904	2,063
Total State and Local Tax Burden	\$1,889	\$1,767	\$2,007	\$2,777	\$3,159	\$4,238	\$5,299	\$6,636	\$8,722	\$19,385	\$9,268
<i>Effective Tax Rate for all taxes</i>	40.2%	19.5%	14.6%	14.8%	12.8%	13.2%	13.1%	12.8%	12.9%	12.6%	12.8%
Renters only	25.0%	15.8%	8.1%	8.7%	9.6%	12.1%	11.8%	10.7%	12.4%	10.2%	11.1%
Homeowners only	77.6%	24.5%	21.6%	19.5%	14.3%	13.5%	13.3%	13.0%	13.0%	12.6%	12.9%

NOTES FOR APPENDICES B AND C

Notes for Table B-1 through B-4:

1. The negative individual income taxes and effective tax rates in the first two deciles are due to refundable credits.
2. Miscellaneous state taxes include insurance premium taxes, motor vehicle registration taxes, gambling taxes, MinnesotaCare taxes, and mortgage and deed taxes.
3. The residential property tax total is after subtracting property tax refunds (PTR).
4. Income reported by individuals as a result of a corporate sale was not included in the 1996 tables due to the size of the sale, and for comparison purposes with other years. Including this income would increase effective tax rates for the individual income tax from 5.9% to 6.1% in the tenth decile and from 4.4% to 4.5% overall. However, due to the large amount of income involved for a relatively small number of households, the effective tax rate in the tenth decile for total state and local taxes would decrease from 12.2% to 12.0%. The overall effective tax rate (with rounding) would remain unchanged at 12.7%, due to including this income.

Notes for Tables C-1 through C-5:

1. Tax rates for the first three deciles are calculated after excluding (a) households with business losses (sum of income reported on Schedules C, E, and F less than zero) and (b) households with negative total incomes. As a result, the number of households in *Tables C-1 through C-5* does not equal the number of households shown on *Table B-1*.
2. Retired households include those whose social security and pension benefits are at least twice as large as earned income and who have no dependents. Earned income is defined as the sum of wage and salary income and positive self-employment income from Schedules C (sole proprietor) and F (farms).
3. “Children” include anyone claimed as a dependent on an income tax return or public assistance file. “Single parent families” are all those with only one adult and one or more children.
4. In computing average tax burdens, homeowners include those living in farm homesteads.
5. Farmers are defined as those who own farm homestead property, not those actively farming.
6. Those who are not renters, homeowners, or farmers are classified as “other.” Examples would include a person living with parents (but not claimed as a dependent on tax forms), or senior citizens living with children.
7. Earned income is defined as the sum of wage and salary income and positive self-employment income from Schedules C (sole proprietor) and F (farms).
8. The landlord’s share of rental property taxes is included in business taxes.
9. Property tax refunds include special (targeted) refunds received regardless of income. For renters, the property tax refund can exceed the gross property tax burden, resulting in negative net tax. This can occur because renters are assumed to pay only 63 percent of the property tax on rental housing (and those in subsidized housing are assumed to pay none of the tax).
10. Negative individual income taxes in the first few deciles are due to refundable credits. Starting in 1994, the working family credit could be received by some single-person households.

APPENDIX D

LEGISLATIVE MANDATE

270.0682 Tax Incidence Reports

Subdivision 1. Biennial report. The commissioner of revenue shall report to the legislature by March 1 of each odd-numbered year on the overall incidence of the income tax, sales and excise taxes, and property tax. The report shall present information on the distribution of the tax burden (1) for the overall income distribution, using a systemwide incidence measure such as the Suits index or other appropriate measures of equality and inequality, (2) by income classes, including at a minimum deciles of the income distribution, and (3) by other appropriate taxpayer characteristics.

Subdivision 2. Bill analyses. At the request of the chair of the house tax committee or the senate committee on taxes and tax laws, the commissioner of revenue shall prepare an incidence impact analysis of a bill or a proposal to change the tax system which increases, decreases, or redistributes taxes by more than \$20,000,000. To the extent data is available on the changes in the distribution of the tax burden that are affected by the bill or proposal, the analysis shall report on the incidence effects that would result if the bill were enacted. The report may present information using systemwide measures, such as Suits or other similar indexes, by income classes, taxpayer characteristics, or other relevant categories. The report may include analyses of the effect of the bill or proposal on representative taxpayers. The analysis must include a statement of the incidence assumptions that were used in computing the burdens.

Subdivision 3. Income measure. The incidence analyses shall use the broadest measure of economic income for which reliable data is available.

History: 1990 c 604 art 10 s 9.

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