

1995 Minnesota Tax Incidence Study

Who pays Minnesota's household and business taxes?
March 1995

MINNESOTA Department of Revenue

March 1, 1995

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

I am pleased to transmit to you the third 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 provides comprehensive information on the overall distribution by income level of state and local taxes in Minnesota. The study answers the important question: "Who pays Minnesota's taxes?" This report also presents representative tax burdens for typical taxpayers including elderly, single and married taxpayers at different income levels. Included in the study is a discussion of the expected impact of the 1993 and 1994 legislative session changes on the distribution of Minnesota's taxes.

The information presented herein 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 \$65,000.

Sincerely,

Matthew G. Smith
Commissioner

EXECUTIVE SUMMARY

This report presents estimates of the distribution of 1992 Minnesota state and local taxes by taxpayer income levels. It answers the question, “Who pays Minnesota’s taxes?” This is the third biennial tax incidence study prepared in response to the statutory requirement adopted by the 1990 legislature. The major objective of this report is to provide taxpayers and policymakers with important information critical to evaluating the equity or fairness of the overall distribution of Minnesota taxes. To help achieve this objective, the tax incidence study also provides estimates of the effect of law changes in the 1993 and 1994 legislative sessions on the distribution of Minnesota taxes.

Scope of the Study

Six categories of taxes are included in the incidence study:

- Individual and corporate income taxes
- Sales and use taxes, including motor vehicle taxes
- Property taxes for homeowners, renters and businesses
- Excise taxes on tobacco, alcohol and gasoline
- Insurance premiums taxes
- Motor vehicle registration taxes

This report includes taxes having 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 \$7.5 billion of state taxes, (98 percent of all state taxes) and \$3.6 billion of local taxes (95 percent of local taxes). Together, the total state and local taxes on individuals and businesses in this study, \$11.1 billion, account for over 97 percent of all Minnesota taxes collected in 1992.

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 taxpayers 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 can be used to describe the distribution of the burdens. If effective tax rates fall as income rises, the burden of a tax is *regressive*; if effective tax rates are constant, a tax is described as *proportional*. A tax is *progressive* if effective tax rates rise with income levels.

The comprehensive money income measure used in this study includes income subject to the Minnesota personal 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 or families that do not have to file tax returns.

The results of any incidence study are sensitive to the economic assumptions used to identify who ultimately pays each type of tax. The incidence of a tax identifies the final resting place of taxes. 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 legal 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 higher rents, or the corporate franchise tax may be partly absorbed by workers through lower wages.

This report describes the incidence assumptions used to distribute Minnesota taxes having an initial impact on households and businesses to major taxpayer groups: Minnesota consumers, workers, landowners and investors, and nonresident taxpayers. Taxes paid by each Minnesota group are then assigned to individual taxpayers at different income levels to determine the overall distribution of state and local taxes paid by Minnesota residents.

1992 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 combined distribution of state and local taxes in Minnesota is essentially proportional. Overall, Minnesota residents paid an estimated 12.1 percent of their 1992 total income in state and local taxes; the effective tax rate was 8.6 percent for state taxes and 3.5 percent for local property taxes. With the exception of the first decile, effective tax rates do not vary significantly with income. Based on taxes included in the study, effective tax rates are 12.0 percent in the second decile and 11.9 percent in the tenth decile. Taxpayers in the second through tenth deciles pay 98 percent of the taxes included in the study.

The highest effective tax rates (12.2 to 12.3 percent) occur in the middle deciles; the rate declines slightly in the top three deciles. 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.

Table 1
Minnesota Effective Tax Rates by Population Deciles
All Taxpayers

Deciles	Income Range	Income Tax		Consumer Sales Tax	Consumer Excise Taxes	Total State Taxes		
		Individual	Corporate			Individuals	Business	Total
First	\$5,542 & Under	-0.1%	0.7%	4.1%	2.4%	7.4%	3.5%	11.0%
Second	5,543 - \$9,092	0.2	0.5	3.0	1.5	5.4	2.6	8.0
Third	9,093 - 13,332	1.0	0.4	2.8	1.3	5.6	2.3	7.8
Fourth	13,333 - 17,879	1.7	0.4	2.6	1.1	6.1	2.0	8.1
Fifth	17,880 - 23,335	2.4	0.4	2.4	1.0	6.4	1.8	8.2
Sixth	23,336 - 30,079	3.0	0.3	2.2	0.8	6.7	1.7	8.4
Seventh	30,080 - 38,290	3.5	0.3	2.1	0.7	6.9	1.6	8.5
Eighth	38,291 - 48,819	4.1	0.3	1.9	0.6	7.2	1.5	8.7
Ninth	48,820 - 66,630	4.6	0.3	1.8	0.5	7.4	1.4	8.8
Tenth	66,631 & Over	5.8	0.2	1.2	0.2	7.5	1.2	8.7
Total		4.2%	0.3%	1.8%	0.6%	7.1%	1.5%	8.6%

Deciles	Local Property Taxes		
	Residential	Business	Total
First	2.8%	2.2%	5.1%
Second	2.1	1.8	4.0
Third	2.1	2.1	4.3
Fourth	2.2	1.7	4.1
Fifth	2.4	1.5	4.0
Sixth	2.3	1.5	3.9
Seventh	2.1	1.5	3.7
Eighth	1.9	1.3	3.3
Ninth	1.9	1.2	3.1
Tenth	1.8	1.3	3.1
Total	2.0%	1.4%	3.5%

Total State and Local Taxes		
Individuals	Business	Total
10.3%	5.7%	16.1%
7.6	4.4	12.0
7.8	4.4	12.1
8.4	3.7	12.1
8.9	3.3	12.2
9.1	3.2	12.3
9.1	3.1	12.2
9.2	2.8	12.0
9.4	2.6	11.9
9.4	2.5	11.9
9.2%	2.9%	12.1%

Note: Effective tax rates for the first decile reflect an adjustment to exclude a small number of households with negative income, primarily business losses. Residential property taxes exclude taxes on cabins which are in total property taxes. Total state taxes include taxes not shown in this table.

Figure 1
Effective Tax Rates for 1992,
State and Local Taxes by Population Deciles

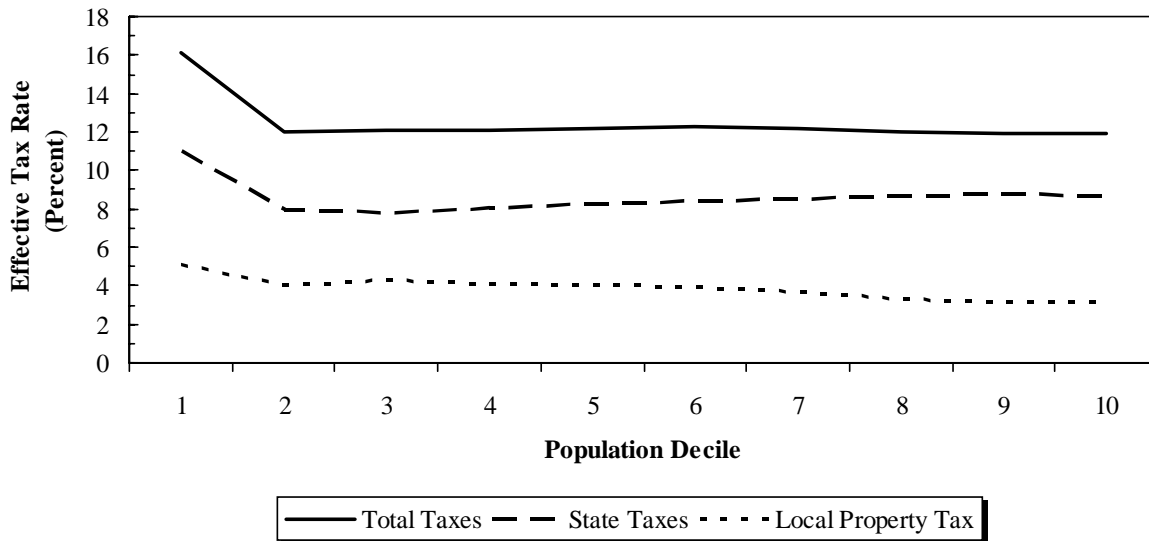
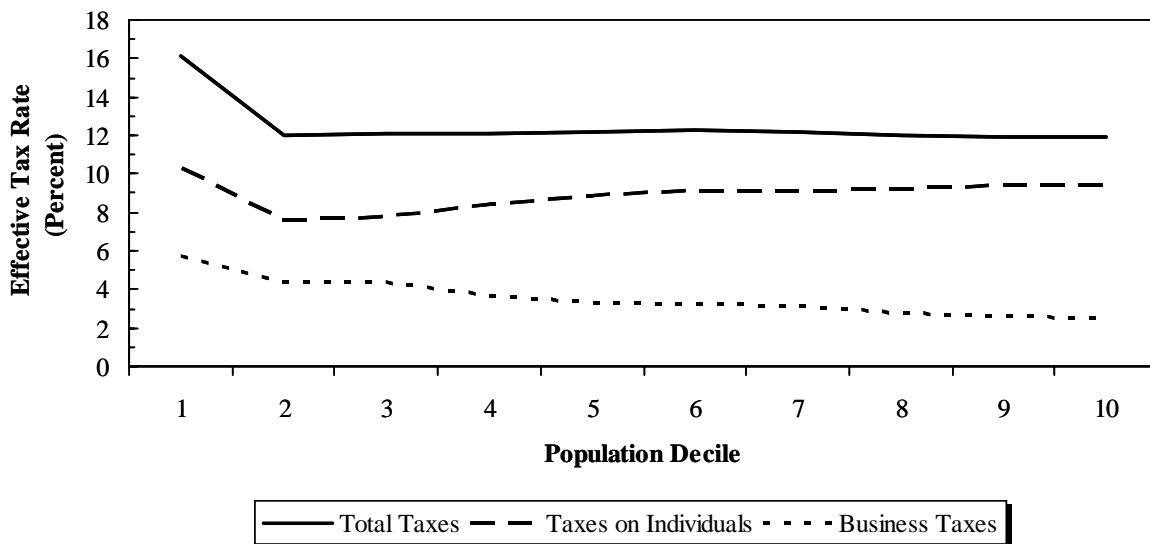
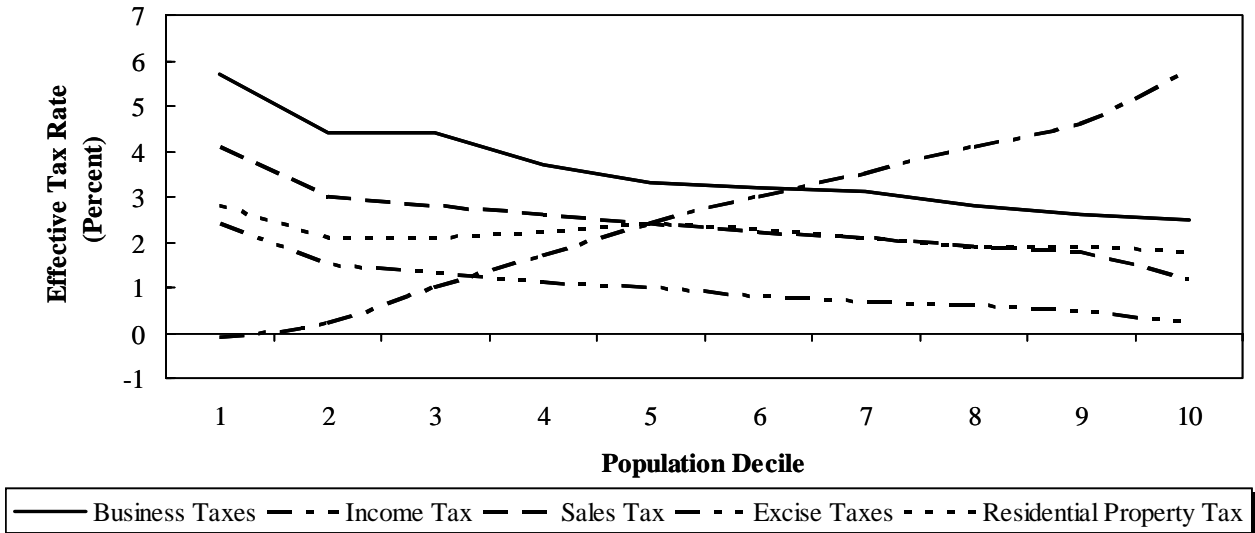


Figure 2
Effective Tax Rates for 1992,
State and Local Taxes by Population Deciles



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 3
Effective Tax Rates for 1992,
State and Local Taxes by Population Deciles



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 can also be seen in *Figure 1*, the system of state taxes in Minnesota is progressive overall. Effective tax rates rise with income from 8.0 percent in the second decile to 8.7 percent in the tenth decile. The local property tax (net of property tax refunds) distribution is regressive with effective tax rates falling from 4.0 percent in the second decile to 3.1 percent in the top decile.

Figure 2 indicates that Minnesota state and local taxes on businesses are regressive with effective tax rates falling from 4.4 to 2.5 percent between the second and tenth deciles. However, progressive taxes on individuals offset regressive business taxes, producing an almost proportional overall tax burden distribution.

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* 0.1 percent in the first decile to 5.8 percent in the tenth decile. As is discussed in this report, the regressivity of sales, excise and business taxes are offset by Minnesota's relatively heavy reliance on the progressive income tax.

The individual income tax burden distribution reported in *Table 1* shows, for the first time, the important impact the Minnesota working family credit (adopted in 1991) will have in increasing the progressivity of the income tax. The combination of the refundable working family and child and dependent care credits actually offsets the total income tax liability in the first decile; this explains the negative tax rate in the first decile.

Although limited interstate comparative information is available, it does suggest that most states have regressive state and local tax systems. While these comparisons do not indicate whether state and local taxes in Minnesota are too high or too low, the information does suggest that Minnesota's taxes are more equitably distributed than in most states.

Table 2 indicates the shares of the \$9.0 billion in total state and local taxes paid by Minnesota taxpayers in 1992 by decile; excluded from this total are \$2.1 billion of taxes exported to nonresidents. Taxpayers in the top decile pay 37.1 percent of the total tax burden and just over one-half of the individual income tax burden; these taxpayers receive 37.8 percent of money income. Taxpayers in the first two deciles pay 3.7 percent of all taxes and receive 3.0 percent of household income; almost all of their tax burden is from property taxes and taxes on consumption imposed directly on individuals or passed through from taxes imposed initially on businesses.

Table 2
Shares of 1992 Minnesota Income and Taxes

Decile	Total Household Income	Individual Income Tax	Consumer Sales Tax	Consumer Excise Tax	Residential Property Taxes	Other Taxes	Business Taxes	Total Taxes
First	0.9%	0.0%	2.1%	3.8%	2.1%	1.8%	2.8%	1.6%
Second	2.1	0.1	3.5	5.6	2.3	2.4	3.1	2.1
Third	3.2	0.7	4.9	7.0	3.4	3.5	4.7	3.2
Fourth	4.5	1.8	6.5	8.8	5.1	5.4	5.7	4.5
Fifth	5.8	3.2	8.0	9.9	6.9	7.2	6.7	5.9
Sixth	7.6	5.4	9.5	10.7	8.9	9.0	8.3	7.7
Seventh	9.7	8.0	11.3	12.3	10.5	11.7	10.1	9.8
Eighth	12.3	11.8	13.3	13.4	12.0	14.2	11.8	12.3
Ninth	16.2	17.6	16.1	13.8	15.1	18.1	14.2	16.0
Tenth	37.8	51.3	24.7	14.7	33.8	26.9	32.6	37.1
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Total Amount (\$ Millions)	\$74,410.3	\$3,158.1	\$1,330.6	\$423.3	\$1,471.9	\$433.2	\$2,174.2	\$8,991.4

Tax System Objectives

The results of this study focus attention on the issue of 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 which must be considered in evaluating the overall performance of Minnesota's tax structure. These objectives include understandability, efficiency, competitiveness and reliability. The Department of Revenue's *Model Revenue System for Minnesota* discusses each of these objectives in greater detail.

Understandability is important in achieving voluntary compliance with the tax laws; simplification of the tax structure is one method of enhancing understandability. Efficiency includes the objectives of reducing economic distortions created by taxation, maximizing clarity and accountability in terms of tax and spending decisions, and minimizing both taxpayer compliance costs and administrative costs of collecting taxes. Efficiency is enhanced by a balanced use of income, sales and property 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 desired 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 system in 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 on the basis of the multiple tax policy objectives.

Summary

This report provides important information on the level and distribution of overall tax burdens in Minnesota. A unique methodology, including matching of income data from a number of different data sources for specific individuals and a consistent framework for analyzing tax shifting, is used to estimate the tax distribution. The study includes taxes imposed on both individuals and businesses. An explanation of the various components of the analysis, including assumptions and methodology, is provided in the main sections of the report. 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. It can be used to evaluate changes in the equity of specific taxes, as well as the overall tax burden distribution. In addition to equity, the results of the study are useful for addressing other tax policy issues, including overall progressivity and the balance in the state and local tax system.

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CHAPTER 1

INTRODUCTION

This study provides estimates of the distribution of state and local taxes among Minnesota households in 1992. These estimates are based on a stratified random sample of almost 38,000 taxpayers representing over 2.1 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, as well as the overall Minnesota tax structure in 1992.

The income definition used in this study is described in Chapter 3. Chapter 4 explains how the household database was developed. The database consists of four types of data: (1) demographic information about the household (family size, housing tenure, rent payment or home value); (2) the household’s total income (by source); (3) the household’s estimated expenditures on taxable items; and (4) estimated taxes paid based 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 to 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 distribution of the tax depends on the nature of the business and the size 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 of each household is estimated by combining the information in the database (from Chapter 4) with the study's incidence assumptions (from Chapter 5). 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. The Suits index is presented as a summary measure of the regressivity (or progressivity) of tax burdens.

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 tenure vary with income. It also provides detailed results for five types of households -- senior citizens, one-person households, married couples without children, single parent families, and married couples with children.

Chapter 8 discusses the estimated impact of tax law changes in 1993 and 1994 on the distribution of state and local tax burdens in Minnesota. Using the 1992 distribution reported in this study as the starting point, tax burdens are adjusted to reflect the expected impact of the 1993 and 1994 law changes on the tax distribution. A table showing the new distribution of effective tax rates is reported in Chapter 8.

Several appendices provide more detailed information. Appendix A compares the distribution of 1992 effective state and local tax rates using two different decile concepts: population deciles and income deciles. Appendix B includes more detailed tables of the overall incidence results shown in Chapter 6; Appendix C includes detailed tables on household characteristics and tax burdens by household type. The final appendix, Appendix D, provides a detailed list of the income and tax data items for each household in the incidence study database.

CHAPTER 2

MINNESOTA STATE AND LOCAL TAXES IN 1992

Minnesota collected \$11.4 billion in state and local taxes in 1992.¹ 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 individual tax. Tax burdens are also estimated for subgroups of the population, such as senior citizens, 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 over 97 percent of total state and local tax collections (98 percent of state collections and 95 percent of local collections).²

Table 2-2 shows the distribution of 1992 total tax revenue included in this study by major type of tax. Taxes on income (individual and corporate) accounted for 33.7 percent of total collections. Taxes on consumption (sales tax, excise taxes, and insurance premiums tax) combined for 30.7 percent of total collections. Taxes on property (including second homes and the motor vehicle registration tax) accounted for about 35.6 percent of the total.

¹ Collection amounts are based on tax year 1992. Property tax collections are for taxes payable in 1992.

² Taxes omitted from this study include estate tax, gambling taxes, sales taxes imposed by local governments, gross earnings taxes on utilities, mortgage registry and deed transfer taxes, mining taxes, and state property taxes on aircraft.

Table 2-1
Minnesota State and Local Tax Collections in 1992
(\$ Millions)

State		Local		Total State and Local
Included		Included		Included
Individual income tax	\$3,271	Gross property taxes (after credits)		
Corporate franchise tax	457	Homestead property taxes	\$1,196	
General sales and use tax	2,277	Property taxes on second homes	93	
Sales tax on motor vehicles	287	Rental property taxes (residential)	499	
Motor fuels excise taxes	467	Other business property taxes		
Alcoholic beverage excise taxes	55	(including farming)	<u>1,914</u>	
Cigarette & tobacco excise taxes	174	Subtotal	\$3,702	
Insurance premiums tax	129	Property tax refunds	<u>(145)</u>	
Motor vehicle registration tax	<u>376</u>			
Total	\$7,493	Total	\$3,557	\$11,050
Omitted		Omitted		Omitted
Mortgage registration and deed transfer taxes	\$75	Local sales taxes	\$60	
Gambling taxes	57	Gross earnings taxes	31	
Gross earnings taxes	4	Mineral taxes	83	
Mining taxes	2	Other taxes	<u>2</u>	
Other taxes	<u>40</u>	Total	\$176	\$354
Total	\$178			
Total Tax Collections	\$7,671	Total Tax Collections	\$3,733	\$11,404

Note: Income tax includes \$24 million in net income tax reciprocity payments from Wisconsin..

Included in *Table 2-2* is the estimated distribution of state and local taxes by type of taxpayer, resident and nonresident households and 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).³ For example, over 50 percent of the general sales tax is paid by Minnesota residents, 3.7 percent is paid by non-residents and 45.8 percent is paid initially by businesses.

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 1992, state income tax rates ranged from 6 to 8.5 percent with the top rate beginning at taxable incomes of \$47,111 for single filers and \$83,301 for married filing jointly. In 1987, Minnesota enacted most of the major provisions of the Federal Tax Reform Act of 1986. Since then, 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. Other reforms adopted in 1987 included eliminating the 60 percent capital gains exclusion and the itemized deduction for sales taxes paid, broadening of the tax base by restricting various other deductions, and lowering state tax rates.⁴

In computing Minnesota taxable income in 1992, a small number of adjustments were made to federal taxable income. The graduated tax rates were applied to taxable income to calculate 1992 gross income tax. This gross tax was then reduced by several tax credits (dependent care credit and income tax paid to other states) to yield net income tax liability. The Minnesota refundable working family credit, adopted in 1991, is an additional credit available in 1992. It is an earned income tax credit equal to 10 percent of the federal EITC. The working family credit provided over 138,000 Minnesota low-income households with almost \$12 million in tax relief in 1992.

³ As explained in Chapter 5, the taxes initially imposed on businesses (an estimated 39.4 percent of total collections in *Table 2-2*) may ultimately be shifted to consumers, 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.

⁴ See Minnesota Department of Revenue, *Minnesota Tax Handbook*, January 1993, for specific details for each state tax and for descriptions of recent tax law changes.

Individual income tax collections totaled \$3,271 million in 1992, accounting for almost 30 percent of total state and local tax revenue.

Table 2-2
Distribution of 1992 State and Local Taxes
(\$ Millions)

Tax Category	Collections		Taxpayer Category			
	Total	Percentage Distribution	Individuals		Business	Total
			Residents	Nonresidents		
Taxes on Income						
Individual income tax	\$3,271	29.6%	96.5%	3.5%	0.0%	100.0%
Corporate franchise tax	<u>457</u>	<u>4.1</u>	0.0	0.0	100.0	100.0
Total income taxes	\$3,728	33.7%	84.7%	3.1%	12.2%	100.0%
Taxes on Consumption						
General sales and use tax	\$2,277	20.6%	50.5%	3.7%	45.8%	100.0%
Sales tax on motor vehicles	287	2.6	63.3	0.0	36.7	100.0
Motor fuels excise tax	467	4.2	43.9	16.1	40.0	100.0
Alcoholic beverage excise taxes	55	0.5	89.7	10.3	0.0	100.0
Cigarette and tobacco excise taxes	174	1.6	97.0	3.0	0.0	100.0
Insurance premiums tax	<u>129</u>	<u>1.2</u>	77.3	0.0	22.7	100.0
Total consumption taxes	\$3,389	30.7%	54.7%	4.9%	40.4%	100.0%
Taxes on Property						
<i>Local</i>						
Homeowners (gross)	\$1,196	10.8%	100.0%	0.0%	0.0%	100.0%
Rental property (gross)	499	4.5	0.0	0.0	100.0	100.0
Property tax refunds received	-145	-1.3	100.0	0.0	0.0	100.0
Residential recreational (cabins)	93	0.8	80.0	20.0	0.0	100.0
Commercial and industrial	1,310	11.9	0.0	0.0	100.0	100.0
Farms (other than residence)	224	2.0	0.0	0.0	100.0	100.0
Other business property	380	3.4	0.0	0.0	100.0	100.0
<i>State</i>						
Motor vehicle registration tax	<u>376</u>	<u>3.4</u>	69.0	0.0	31.0	100.0
Total property taxes	\$3,933	35.6%	35.2%	0.5%	64.3%	100.0%
Total Taxes	\$11,050	100.0%	57.9%	2.7%	39.4%	100.0%

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 lowered.

In computing Minnesota taxable income in 1992, a number of adjustments were made to federal taxable income. For corporations with operations or sales in other states, only a portion of their 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.⁵

In 1992, Minnesota taxable income was subject to a flat 9.8 percent tax rate; corporate franchise tax collections totaled \$457 million, accounting for 4.1 percent of total tax revenue. For tax year 1992, 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 also applied to purchases of personal and business insurance. In total, consumption taxes accounted for \$3,389 million of state and local collections in 1992 (30.7 percent of all taxes).

⁵ 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 many states, with tax incidence implications that are discussed in Chapter 5.

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 1992, including a 0.5 percent statewide county option tax, were as follows:

- 6.5% - General rate
- 9.0% - Liquor and beer
- 4.5% - Special tooling
- 2.5% - Farm machinery and logging equipment

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 1992 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. Also made taxable were most purchases by state government and nonprescription drugs. In 1992, purchases by non-school local governments also became taxable.

Many purchases by businesses are subject to the sales and use tax and sales tax on motor vehicles. A general exemption is made 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). Capital equipment for new and expanding industries is also exempt from tax. Nevertheless, many business purchases are taxed. For 1992, replacement capital equipment purchased by industrial firms and 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 are generally subject to tax.

The general sales and use tax raised \$2,277 million in 1992. Combined with the sales tax on motor vehicles (\$287 million), they accounted for 23.2 percent of total state and local tax collections in 1992.

Excise Taxes

The state gasoline tax, first adopted in 1925 at a rate of 2 cents per gallon, had risen to 20 cents per gallon in 1990. The cigarette tax was first levied in 1947 at 3 cents per pack. By 1992, it had risen to 48 cents per pack. Excise tax rates on alcoholic beverages in 1992 were \$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 \$696 million in taxes in 1992, almost 6.3 percent of total state and local tax revenue.

Insurance Premiums Tax

Like most states, Minnesota levies a 2 percent tax on most insurance premiums written in Minnesota.⁶ All types of insurance are taxed including personal insurance (life, automobile, home, health and accident) and business insurance (business property and liability). Business insurance accounts for 23 percent of total premiums tax collections (see *Table 2-2*). The remainder is paid on personal insurance premiums paid by (or on behalf of) Minnesota residents. In 1992, insurance premiums taxes accounted for 1.2 percent of total state and local tax revenue.

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.

⁶ 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 marshall 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.

Under a property classification system, property of the same value is legally taxed at very different rates. In 1992, property tax class rates ranged from 0.45 percent to 4.75 percent of market value, depending upon the property's classification. For example, residential homestead had a class rate of one percent on the first \$72,000 of market value, 2 percent on value between \$72,000 and \$115,000 and 2.5 percent on value over \$115,000. The highest class rate, 4.75 percent applied to most commercial and industrial property. To determine the actual property taxes on a specific property, market value is multiplied by the class rate to determine tax capacity which is then multiplied by a 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. A \$120,000 house, for example, paid taxes equal to 1.63 percent of market value, compared to 1.15 percent for a \$60,000 home. In 1992, the actual 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 12.8 times those on a \$60,000 home. *Table 2-3* also shows how class rates vary for different types of property. Apartments and commercial and industrial property valued at \$120,000 were taxed over 2.4 times as heavily as homes of equal value.

Since 1971, Minnesota has not levied a property tax on either business and agricultural machinery and equipment or business inventories. Both are taxed in some other states. The only equipment taxed in Minnesota is public utility equipment (subject to tax in most other states). Educational facilities, religious and charitable organizations, Indian lands, cemeteries, and household personal property are also exempt from taxation.

1992 property tax revenues by type of property are shown in *Table 2-2*. Homeowners (including farm homes and cabins) paid 35 percent of gross local property taxes; rental housing accounted for 13 percent, and other business property (including farm property) accounted for slightly more than half.⁷

Property Tax Refunds

In 1992, homeowners and renters received a total of \$145 million in property tax refunds from the state. The refunds were in two forms. First, the "regular" property tax refund was based on the relationship between property taxes and

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 Rates		
	Percent of Market Value	Total Tax	Ratio of Tax to Tax on \$60,000 Home
\$ 60,000 home	1.15%	\$ 690	1.0
\$120,000 home	1.63	1,961	2.8
\$360,000 home	2.46	8,862	12.8

Type of Property	Percent of Market Value	Total Tax	Ratio of Tax to Tax on \$120,000 Home
\$120,000 home	1.63%	\$1,961	1.0
\$120,000 rented duplex	3.22	3,864	2.0
\$120,000 apartment building (4 units)	4.03	4,830	2.5
\$120,000 commercial or industrial building	3.88	4,658	2.4
\$120,000 public utility machinery	5.46	6,556	3.3

household income. This refund was limited to those with household incomes under \$60,000 for homeowners and under \$35,000 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 a minimum percent and dollar amount, 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 1992, 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 \$376 million was collected in taxes. Using data on collections by different categories of vehicles, an estimated 31 percent of this tax is paid on business vehicles (including apportioned taxes on large trucks); the other 69 percent is paid by Minnesota residents.

CHAPTER 3

MEASUREMENT OF 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.

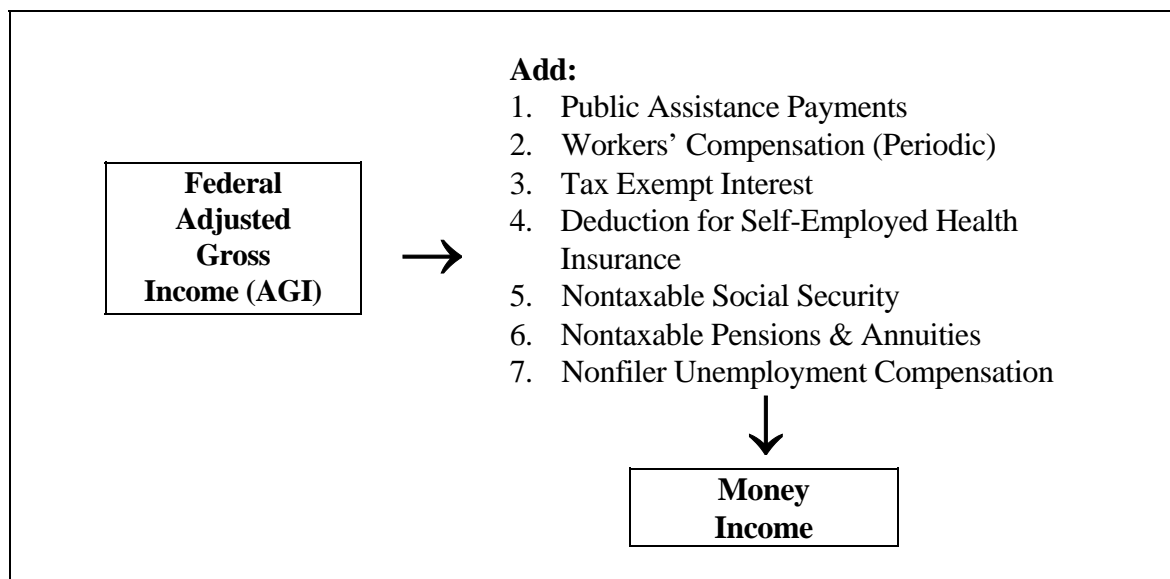
Four distinct issues must be addressed in choosing an income measure:

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 tax-paying 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. By 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, and no adjustment is made for inflation or for the impact of family size on ability-to-pay. 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 measures 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 sale of capital assets
- Interest, rent, 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, 83 percent of the state’s households (as defined later in this chapter) are accounted for on state individual income tax returns; the remaining 17 percent do not file income tax returns. Using additional information from property tax refund returns, the household coverage from all tax return filings increased to 89 percent. Only 11 percent of the 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 is 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, nontaxable pensions and annuities,

unemployment compensation received by nonfilers, and other income (including wages and salaries) received by households not filing an income tax return but reported on property tax refund returns.

Table 3-1 summarizes the components of 1992 Minnesota total money income as measured in this study. The data source for each component of income is also identified. Federal AGI makes up over 89 percent of the \$74.4 billion in total money income. Nontaxable social security benefits were the largest source of additional money income, representing 5.5 percent of the total.

Income Not Included in Money Income

Minnesota money income excludes many 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.

Due to data limitations, Minnesota money income still excludes some forms of cash income. Two 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 file 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).

The Accounting Period

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.

⁹ Compared to the 1990 incidence study, this study does include additional income information on the nonfiler group, including dividend, pension, interest and wage income. This data was derived from income tax administration information.

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 more permanent economic well-being.

Table 3-1
1992 Tax Incidence Study
Components of Total Household Income
(\$ Millions)

Group	Source of Income	Amount
Individual income tax filers	Federal Adjusted Gross Income	\$66,474
	Nontaxable Interest	704
	Nontaxable IRA Distributions	368
	Nontaxable Pension and Annuity Payments	1,164
	Nontaxable Social Security Benefits	2,248
	Self-Employed Health Insurance Deduction	37
	Minnesota Additions to Income	118
	Public Assistance Payments ¹	143
	Workers' Compensation Benefits	<u>158</u>
	Total Household Income	\$71,414
Property tax refund filers who do <i>not</i> file an individual income tax return	Federal Adjusted Gross Income	\$264
	Nontaxable Social Security Benefits	834
	Public Assistance Payments	146
	PTR Additions to Income	<u>80</u>
	Total Household Income	\$1,324
Individuals that do not file either type of return	Public Assistance Payments	\$198
	Workers' Compensation Benefits	57
	Unemployment Benefits	36
	Social Security Benefits	1,004
	Dividend Income	22
	Pension Income	179
	Interest Income	102
	Wages	<u>75</u>
Total Household Income	\$1,673	
Total Population	Total Household Income	\$74,410

¹ Public Assistance includes Aid to Families with Dependent Children (AFDC), Minnesota Supplemental Aid (MSA), and General Assistance (GA).

In spite of these shortcomings, there are two strong reasons why this study uses annual rather than permanent 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 argue that the appropriate measure should be based on annual rather than permanent 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 taxpayers claiming 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. This adjustment provided a more accurate picture of such households.¹⁰

¹⁰ Despite these adjustments, there are a substantial number of individuals treated as separate households in this study who might more accurately be considered part of another household, e.g., single people living with parents (but not claimed as dependents) or an elderly person living with children. The appropriate treatment of such individuals depends on their particular situation. Given the lack of information, such individuals are treated as separate households in this study. These individuals are neither renters nor homeowners, so they are assumed to pay no property tax. This complicates the interpretation of property tax burdens in the lowest deciles of the tax incidence study.

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 at the same income level. 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, the poorest 20 percent of households are mainly single-person households, while almost all high-income households include two or more individuals.

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.

CHAPTER 4

THE INCIDENCE STUDY DATABASE

The 1992 incidence study database includes detailed information on income and taxes for a stratified random sample of 37,769 Minnesota households. This sample is then “blown up” to represent all 2,120,967 Minnesota households. Data from tax returns filed with the Department of Revenue -- mainly individual income tax and property tax refund returns -- were used as the primary source of information. Data for nontaxable sources of income (public assistance payments and social security benefits, for example) were obtained from alternative sources. This additional information was merged with tax return data to provide a more accurate measure of total household income, especially at the low end of the income distribution for individuals 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 is minimized.

This chapter describes the steps involved in building the incidence study database and how the database is 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 data was added from non-tax sources (social security, unemployment compensation, workers’ compensation, and public assistance). 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 1992 single persons were required to file a return if their gross income was \$5,900 or more; for married couples, the filing threshold was income over \$10,600. 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 1992, approximately 2 million individual income tax returns were filed by Minnesota residents who paid \$3.18 billion in income tax. These income tax filers in the sample accounted for 83 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, total individual retirement account (IRA) distributions, total pensions and annuities received, and total 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 1992 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 22,500 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 less, 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 those with large annual increases in property taxes, regardless of income. For 1992, a total of \$14.6 million in targeting refunds was received by 119,500 households. The numbers in the text refer only to the regular PTR, excluding targeting refunds. 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 1992, homeowners and renters were eligible for refunds if income was less than \$60,000 for homeowners and \$35,000 for renters. In that year, 462,000 regular PTR returns were filed, 200,000 for homeowners and 262,000 for renters. A total of \$136.3 million of refunds was received, of which \$87.7 million (64 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. Because PTR returns include nontaxable income and cover a portion of households that do not file income tax returns, they provide valuable information (including wage income) to assist in filling in the bottom of the income distribution for the state's 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 added 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. At this step, PTR and income tax filers combined accounted for 89 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, General Assistance, and Minnesota Supplemental Aid).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. First, payments received by individuals in either the income tax sample or the PTR sample were added to their existing database records. Second, new database records were added for a random 5 percent sample of those who received payments from one or more of these sources but filed neither income tax nor PTR returns. These additional records represented 11 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

Tax Calculations

Taxes were calculated in the construction of the database from a variety of available information. In some cases, tax amounts were imputed based on income level, family size, sources of income, and other household characteristics. The following describes sources of information used and how taxes were estimated for each tax.

Individual Income Tax

Income tax payments were available directly from the 1992 income tax sample. As such, actual income tax liabilities from sample records were used to estimate income tax liabilities for the entire population of Minnesota residents.

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 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 is also on the file (taken from the household's PTR return), so the household's net property tax can be calculated by

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

subtracting the property tax refund from the gross property tax. For farms, the study estimates residential property taxes using the average tax on a farm “house, garage, and one acre” in the county; the remaining farm property tax (approximately 79 percent) was treated as a business tax. For farm homesteads, the property tax refund is divided into a residential and a business component.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 is listed on the PTR return. For PTR filers, therefore, the actual property tax on the rental unit is known.

For renters who did not file a property tax refund return and were not homeowners, a rental property tax amount was imputed. Data from the 1990 Census of Housing show how rents vary with household income. This relationship was used to impute rent amounts for each rental household, based on its income. Based on data from property tax refund returns, the property tax paid on rental units was assumed to average 16.6 percent of rent paid.¹⁵

There are a substantial number of households in the sample who are neither homeowners nor renters. These include cases such as senior citizens living with relatives, adult children living at home (but not claimed as dependents on an income tax return) and, in some cases, people living in subsidized housing. These households are assumed to pay no property taxes.

General Sales Tax and Excise Taxes

Purchases subject to sales and excise taxes are 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.

¹⁴ The residential portion of the refund is estimated based on the ratio of the county average tax on the house, garage, and one acre to the farmer’s actual total 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.

This 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 is used to obtain an estimate of 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.¹⁶

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 of 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 business, this study assumes that the tax is fully shifted to insurance buyers in higher prices. The tax paid on consumer insurance (personal auto, life, homeowner, accident and health) was estimated from collections data. The taxes on each type of insurance buyer was treated differently. Personal auto, life insurance, and homeowner insurance taxes were estimated using CES data. The tax on accident and health insurance was estimated based on a national survey of the distribution of health insurance premiums by income level, and the burden of workers' compensation insurance taxes was allocated by wage and salary income (subject to a minimum and maximum).¹⁷

¹⁶ Statistical analysis of CES public use computer tapes provided separate estimates for nine different household types. Additional information on the mechanics of this process is available from the Tax Research Division.

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 either reduces cash wages or other fringe benefits. The tax on workers' compensation premiums is allocated to all workers with wage and salary income exceeding \$2,000 per year, with a floor for those earning in the bottom fourth of the wage distribution and a cap for those in the top fourth. This reflects the structure of benefits provided by workers' compensation in Minnesota.

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.

Business Taxes

Taxes legally imposed on businesses may be ultimately 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 is then allocated among individual households using income and consumption information in the database, as explained in Chapter 5.

Summary

The incidence study database includes individual records for almost 38,000 households. The data content of each record is described in Appendix D. 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) are obtained from a special data set. Finally, an estimate of each household’s expenditures on a variety of items (including rent) is obtained from the Consumer Expenditure Survey, the Census of Housing, and other sources.

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

CHAPTER 5

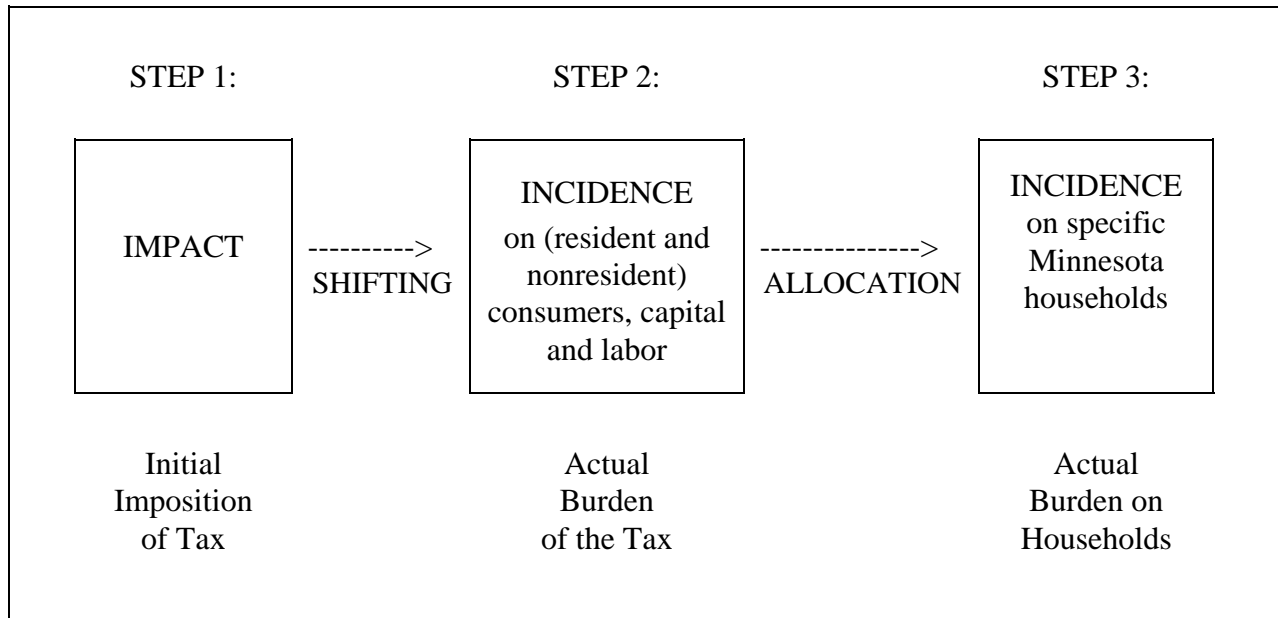
TAX INCIDENCE ANALYSIS

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 a retail sales tax is on the retail business, which is legally liable to pay the tax. However, as businesses respond to the tax, consumers may eventually pay the tax in the form of higher retail prices. In this case the incidence of the tax is on consumers, not businesses. Similarly, the impact of a 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, labor, capital, and land. 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 the 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).¹⁸ This study's incidence assumptions are summarized as follows:

¹⁸ 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, and insurance premiums 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.

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 individuals.) 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 their economic behavior because of the tax. For example, if a tax on wages reduces a worker's after-tax pay, the worker 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 as businesses adjust output and prices. The sales and excise tax burdens are 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 is assumed to raise insurance premiums by the full amount of the tax, so its burden is distributed in proportion to each household's purchase of insurance subject to the tax. For auto, life, and household insurance, the tax burden was allocated in proportion to expenditures as estimated from the Consumer Expenditure Survey.

The premiums tax on insurance provided through employers (most health and workers' compensation) is assumed borne by the employee. By raising the cost of these fringe benefits, the tax either reduces cash wages or other fringe benefits. The tax on health insurance premiums was allocated according to the distribution of total health insurance premiums. In Minnesota, workers' compensation policies are purchased from private insurers. Given the structure of wage replacement benefits, the premium per employee is assumed to be proportional to wages but subject to a minimum (for the lowest-paid quarter of wage-earners) and a maximum (for the highest-paid quarter).

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 liability on the household is equal to the total property taxes paid on the homestead, as identified in the incidence study database. Similarly, the burden of the property tax on cabins is assumed borne by the owners.

Motor Vehicle Registration Tax. The registration tax on motor vehicles owned by households is 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 uses the distribution of vehicle purchases (before subtracting trade-in) as an approximation. The tax burden is allocated in proportion to the average gross vehicle expenditures by households of the same size and income level.

Adjustment for Burdens on Nonresident Households

The proportion of the total receipts from each of these taxes that is allocated to Minnesota households is shown in *Table 2-2*. 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, property tax on cabins, and motor vehicle registration tax), the total burden on Minnesota households equals total collections minus estimates of taxes paid by business and nonresident visitors and tourists.

Some incidence studies reduce tax burdens for income and property taxes to reflect the “federal tax offset.” These state taxes are deductible in calculating federal income tax liability, so higher Minnesota taxes mean lower federal income taxes (for those who itemized deductions). This study makes no adjustment for the federal tax offset. The reason for not adjusting for the federal tax offset is explained later in this chapter in the discussion of business taxes.

Taxes on Business

Introduction

This study includes over \$4.3 billion in business taxes as summarized in *Table 5-1*. These business taxes (including rental property taxes) account for almost 40 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 estimates the incidence of each of these business taxes. While the initial impact of these taxes is on business, they are partially shifted to others - shifted forward to consumers in higher prices or shifted backward to labor in lower wages. Much of the tax is paid by nonresidents, either as consumers of Minnesota

Table 5-1
1992 Minnesota Taxes on Businesses
(\$ Millions)

Taxes on Capital	
Rental property taxes	\$ 499
Other business property taxes	1,888
Corporate franchise tax	457
Sales tax on capital equipment	442
Vehicle registration tax	117
Insurance premiums tax on business property insurance	19
Taxes on Intermediate Products	
Sales tax on non-capital purchases	\$707
Motor fuels excise tax	192
Insurance premiums tax on business non-property insurance	11
Total Business Taxes	\$4,332

goods and services or as owners of capital and land located in Minnesota. This section summarizes how this study estimates the incidence of business taxes, and how business tax burdens are allocated to Minnesota households.

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 guide 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.

There are several major features of the tax incidence approach used in this study which 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.

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 labors.

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*.

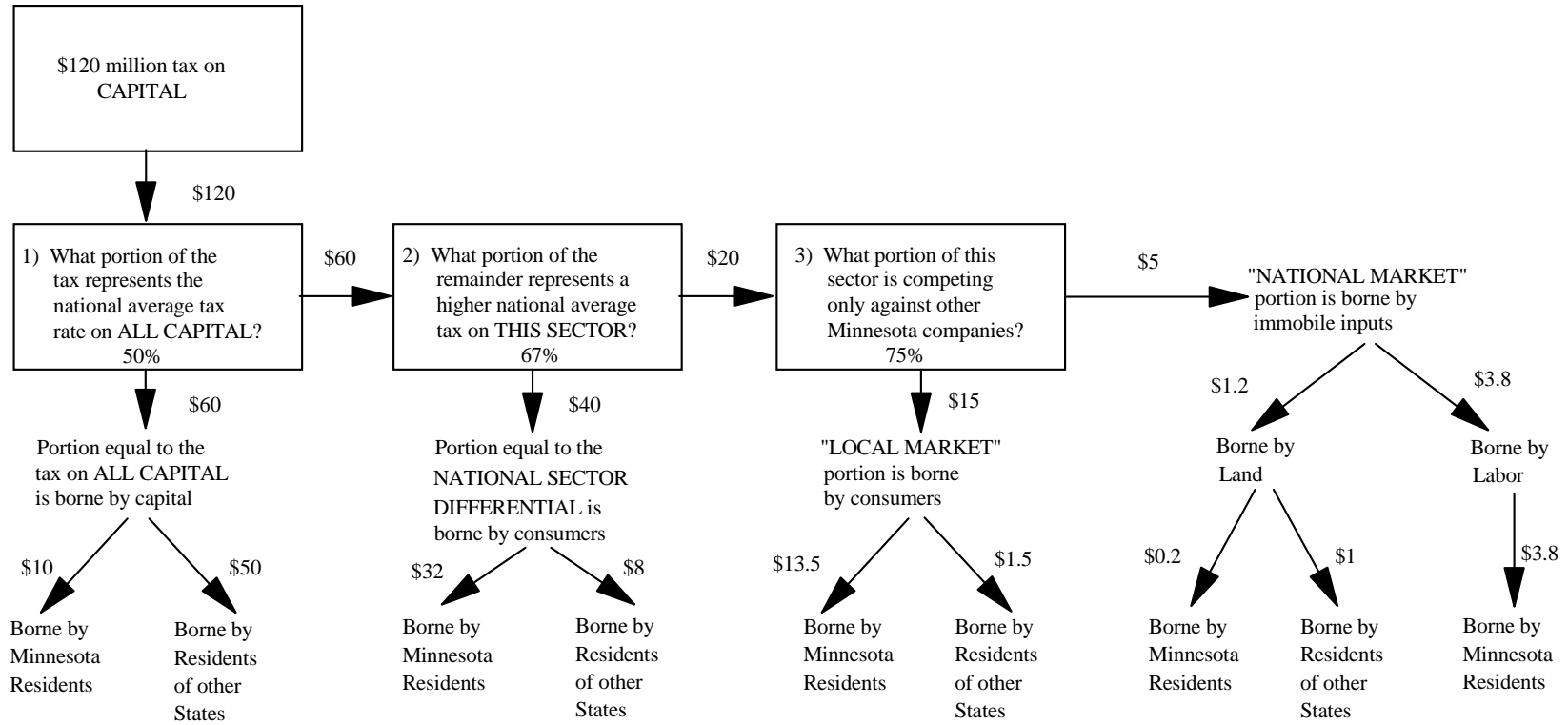
This 3-part division of the tax is based on the answers to three questions. The approach is summarized in *Figure 5-2*, using the example of a \$120 million property tax on capital in the manufacturing sector.

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.¹⁹ Given the variation in rates among the states, it is the “average national tax rate on capital” which is borne by capital owners.

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

¹⁹ 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



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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	3.8	3.8	0.0
Total	\$120.0	\$59.5	\$60.5

*Capital includes land.

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.²⁰

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*.)

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.

²⁰ 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.)

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.²¹

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.

²¹ 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 assumes 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 is 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 estimates the proportion of sales made to (1) out-of-state consumers and (2) visitors.

The burden on labor (in the form of reduced wages) is 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 “multi-state” 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 calculated either.

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 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.²² The

²² The exception is public utilities, where the land share of the tax is assumed to be shifted to consumers. Utility prices are regulated, 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.

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 falling on land).

As shown in the first section of *Table 5-2*, 37 percent of the burden of business property taxes for all industries is exported to nonresidents. Almost 55 percent of the tax burden on capital falls on non-residents, as does 12 percent of the burden on consumers. The tax burden shifted to nonresidents is highest for manufacturing (82 percent) and commercial property (45 percent). The tax on capital is almost entirely borne by non-Minnesotans in sectors where ownership is predominantly corporate (manufacturing and public utilities) and is spread widely throughout the nation. Sole proprietors, partnerships, and S corporations (included in the noncorporate sector) are more locally owned, so more of the burden on these noncorporate owners is borne by Minnesota residents.

The tax borne by consumers is also shifted partly to nonresidents -- both to consumers purchasing Minnesota products in their home states and partly by visitors to Minnesota. The national sector differential is exported to nonresidents to the extent those products are sold out of state. The out-of-state proportion of sales is high for manufacturing and farms; it is negligible for rental housing and low for the commercial and public utility sectors. The visitor share of in-state sales is significant only for the commercial sector.

The portion of business property taxes that are not exported are paid by Minnesota capital, labor and consumers. This study estimates that Minnesota capital bears 26 percent of the total burden of business property taxes, with consumers bearing 34 percent of the burden and labor bearing 3 percent. The burden on Minnesota capital is greatest in sectors where they are capital intensive and locally owned (farming and rental housing). The consumer share is highest in sectors where the Minnesota differential is high and the products or services are sold in local markets (public utilities, rental housing, and commercial). Labor would bear a significant burden only in sectors where the Minnesota differential is large and producers compete in a national market. For sectors competing in a national market (manufacturing and farming), the Minnesota differential is low. As a result, labor bears no more than 7 percent of the total burden in any sector.

**Table 5-2
Distribution of Business Taxes by Taxpayer Category**

	Minnesota Taxpayers			Exported Taxes
	Consumers	Labor	Capital	
Business Property Taxes				
Public Utility	57%	4%	2%	37%
Rental Housing	64	0	30	6
Commercial	35	5	16	45
Manufacturing	2	7	9	82
Farm	0	0	100	0
All Sectors	34%	3%	26%	37%
Sales Tax on Business Inputs				
Mining	3%	10%	8%	79%
Construction	79	0	8	13
Services	65	1	14	20
Wholesale	52	1	5	42
Finance	66	3	5	26
Retail	50	0	13	37
Utilities	8	0	9	83
Manufacturing	12	15	4	69
Transportation and Comm.	42	6	4	48
Agriculture	23	0	46	31
All Sectors	53%	3%	10%	34%
Corporate Franchise Tax				
Commercial	57%	3%	3%	37%
Public Utility	49	6	3	42
Manufacturing	12	3	4	81
Mining	5	12	4	79
All Sectors	40%	3%	3%	54%
Other Business Taxes				
Motor Vehicle Registration	36%	8%	12%	44%
Insurance Premium	24	0	18	58
Motor Fuels	62	4	0	34

This study treats 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 assumes that these portions of the rental property tax are borne by capital owners.

An estimated 64 percent of existing rental housing taxes are shifted to renters in higher rents, with landlords paying the remaining 36 percent. The assumption that existing rental property taxes are partially borne by landlords follows from the multistate approach used. 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.²³

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 are 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 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 are estimated using the Minnesota Consumption Tax Model, an input-output model of the state economy. The model estimates the dollar value of purchases of capital goods and intermediate purchases by firms in each of the 112 industries. The Minnesota sales tax is applied to the taxable portion of those purchases (based on the identity of the product and the

²³ 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.

purchasing company), yielding an estimate of total sales taxes paid by each industry. The estimated total 1992 sales tax paid by Minnesota businesses (45 percent of all sales taxes) is:

Taxes on capital	
Capital equipment	\$ 443 million
Construction materials	194 million
Taxes on other intermediate inputs	<u>512 million</u>
Total sales tax on business	\$1,149 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 3 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 2 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).

For all industries, 34 percent of the business sales tax tax burden falls on nonresidents. (See *Table 5-2*.) Over half of the tax burden is shifted to nonresidents in three of the sectors, including 69 percent in manufacturing and 79 percent for mining.

Minnesota consumers bear over 50 percent of the total burden in higher prices. Minnesota consumers bear at least half of the tax burden in the construction, finance, wholesale, retail, and service sectors; they bear 12 percent or less in mining, manufacturing and utilities. Minnesota capital owners bear 10 percent of the total burden, ranging from highs of 46 percent of the taxes on farming to less than 10 percent in seven sectors. Minnesota labor bears 3 percent of the total burden (but 15 percent in manufacturing).

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 divides the tax into 3 parts -- the average national tax rate on all capital (corporate and noncorporate), the national sector differential, and the Minnesota differential. For corporations, incidence is estimated separately for four sectors -- manufacturing, commercial, public utilities, and mining.

The national average (state) corporate tax rate in 1992 was 7.35 percent.²⁴ 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 is only 0.36 times 7.35 percent, or 2.65 percent. The first 2.65 percent of Minnesota's corporate income tax is therefore assumed to be borne entirely by owners of capital.²⁵

Minnesota's 1992 corporate tax rate, at 9.8 percent, was 33 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

²⁴ The details of how the national average rate is calculated are presented in *Minnesota Tax Incidence Study*, November 1993, Chapter 5.

²⁵ The incidence of the 7.35 percent average state tax on corporate income is assumed to be the same as a 7.35 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.

base. After both adjustments, the estimated percent by which Minnesota's effective corporate tax rate for each sector exceeds the national average is reduced to:

Manufacturing	3.8%
Commercial	30.0
Public Utilities	28.1
Mining	19.6

As seen in *Table 5-2*, 54 percent of the Minnesota corporate franchise tax burden is borne by nonresidents; Minnesota consumers bear 40 percent and the overall burden on labor is 3 percent.

Other Business Taxes

Motor Vehicle Registration Tax (Business Vehicles). Business pays an estimated 31 percent of annual motor vehicle registration taxes in Minnesota, 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 are substantially above the national average. This study assumes registration fees for business (and personal) automobiles and pickups exceed the national average by 150 percent, while heavy truck registration fees are only 3 percent above the national average.

The \$117 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.

Over 44 percent of the tax is borne by nonresidents (including 74 percent of the capital share and 21 percent of the consumer share). The Minnesota burden of this tax is estimated to fall 12 percent on capital, 8 percent on labor, and 36 percent on consumers.

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 make up 23 percent of insurance premium tax revenues. Incidence is 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 (62 percent of the business total) is treated as a tax on capital, while the tax on other business insurance (38 percent) is considered a tax on a non-capital intermediate product. Most of the tax burden (58 percent) falls on nonresidents, with 24 percent borne by Minnesota consumers and 18 percent by Minnesota owners of capital.

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 1992, Minnesota gasoline taxes were 8 to 16 percent above the national average, while diesel fuel taxes were 6 percent above the national average. This study assumes that Minnesota fuel taxes paid by business were 11.4 percent above the national average. An estimated 34 percent of the tax burden falls on nonresidents with Minnesota shares equal to 4 percent for labor and 62 percent for consumers.

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 is to allocate those taxes to specific households based on each household's characteristics contained in the database records. In most cases, the study allocates to each household the average tax burden for households with the same characteristics. *Figure 5-3* summarizes the allocators used in this final step.

Burden on Consumers. Taxes shifted forward to consumers are allocated to consumers based on their share of total consumer expenditures, as estimated from the *1992 Consumer Expenditure Survey*. The total expenditures for a particular household are estimated based on household income and size.

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 Renters. The portion of rental housing property tax shifted forward to renters is allocated to renters in proportion to their rent. For households filing for property tax refunds, actual rent is known. For other households, it is estimated based on household income and data from the *Census of Housing*.

Burden on Corporate Capital. The burden on corporate capital is allocated to households in proportion to taxable dividends received. This allocator is used for both forms of income received by owners of corporate stock -- dividends and capital gains on appreciated stock. Although dividends received may not always 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 uses various information from Schedules C and E to develop a reasonable estimate of each household's ownership of noncorporate capital.²⁶ The construction of this measure makes sure 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.

²⁶ 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.

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

Burden on Labor. The burden on labor (through lower wages) is allocated based on the share of wages (plus the three-quarters of sole proprietor income that is assumed to be labor income).

Given the assignment of taxes to resident and nonresident consumers, capital, labor and land, the allocators are used to assign specific tax amounts to Minnesota resident households based on their characteristics. The results of this allocation are reported in Chapter 6 by income levels.

CHAPTER 6

SUMMARY OF RESULTS

This section examines the state and local tax burdens imposed on Minnesota taxpayers in 1992. All major taxes are included, those imposed on businesses as well as those imposed directly on households. The taxes included account for 97 percent of Minnesota state and local tax revenue in 1992. 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 and 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.

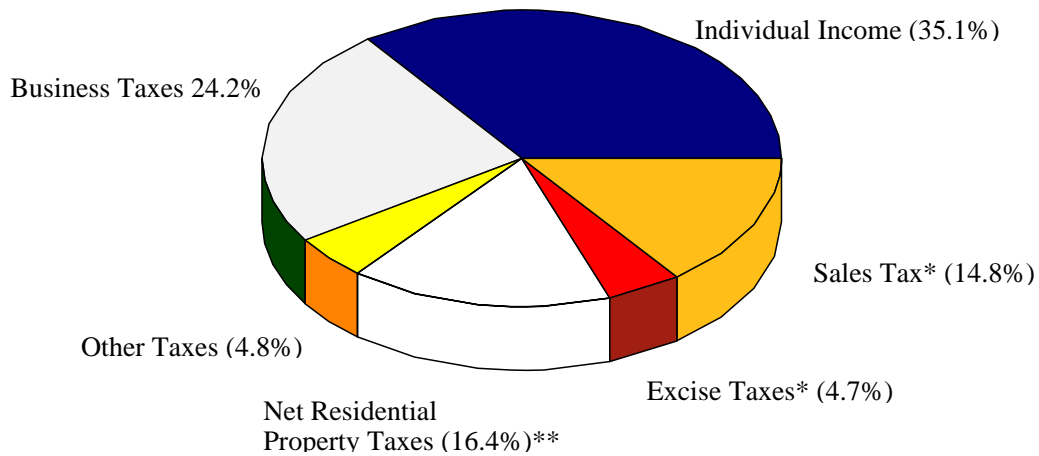
The Total Tax Burden

For 1992, Minnesota residents paid a total of \$8.99 billion in taxes while earning \$74.4 billion in total money income.²⁷ Minnesota residents thus paid 12.1 percent of their total income in state and local taxes. As shown in *Figure 6-1*, the individual income tax accounts for over one-third of the total taxes. Residential property taxes and the consumer sales tax (including sales tax on motor vehicles) account for 16.4 percent and 14.8 percent of the total, respectively. The three excise taxes (on alcohol, tobacco, and gasoline) on consumers account for 4.7 percent, while other taxes (insurance, motor vehicle registration, and property tax

²⁷ Minnesota residents paid \$9.0 billion out of a total of \$11.1 billion of state and local taxes included in the study. The difference of \$2.1 billion is exported to other states, i.e., paid by nonresidents. Business taxes account for 82 percent of all exported taxes, \$1.7 billion out of the \$2.1 billion total. The amounts for other taxes exported are: individual income tax, \$113 million; consumer sales tax, \$85 million; consumer excise taxes, \$86 million; rental property tax, \$60 million; and, other taxes, \$19 million.

on cabins) account for 4.8 percent. Business taxes account for the remaining 24.2 percent of total state and local taxes paid by Minnesota residents.²⁸

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 is divided into ten equal groups or *deciles* of households ranked by household income levels. For example, 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 are approximately 212,000 taxpaying households in each population decile.

²⁸ This distribution by tax type differs in significant ways from the distribution in the previous tax incidence study. The business tax share of the burden has risen by over 2.3 percentage points, while the combined sales and excise tax shares have fallen by an equal amount (2.2 percentage points). This shift is largely the result of an improved methodology for allocating the burden of consumption taxes. The current study uses a detailed input-output model to separate the business and consumer sections of the sales and excise taxes. The model estimates that the share of the sales tax representing purchases by business is 44.8 percent and the business share of the excise tax is 27 percent. The corresponding shares from the 1990 study were 40 and 17 percent.

Examining the distribution of total tax burden by population decile (ranked by income level), one finds that taxpayers in the top decile (incomes above \$66,630) bear about 37 percent of the total tax burden and account for 37.8 percent of total income. (See *Table 6-1*). By tax type, taxpayers in the top decile pay over half of the individual income tax, 24.7 percent of the consumer sales tax, 33.8 percent of the net residential property tax, and 32.6 percent of business taxes.

In contrast, taxpayers in the bottom decile (incomes below \$5,543) bear 1.6 percent of the total tax burden and receive only 0.9 percent of total income. With regard to each of the tax types, the bottom decile taxpayers have a negative net individual income tax burden due to the refundable working family credit and the child and dependent care credit. The same households pay 2.1 percent of the consumer sales tax, 3.8 percent of the consumer excise tax, 2.1 percent of net residential property tax, and 2.8 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 account for the largest percentage of taxes paid in the lowest deciles. As noted, the income tax burden in the first decile is negative; income tax accounts for only 1.6 percent of tax paid in the second decile. In the top deciles, income tax contributes 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 comes from business taxes.

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. The following section examines this relationship.

Overall Effective Tax Rates

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.

The actual 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

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

Decile	Income Range	Total Household Income	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Taxes ¹	Other Taxes ²	Business Taxes ³	Total Taxes
First	\$5,542 & Under	\$636,380	-\$453	\$27,493	\$15,966	\$31,351	\$7,793	\$60,177	\$142,327
Second	5,543 - 9,092	1,546,323	3,052	46,905	23,626	33,420	10,360	67,649	185,012
Third	9,093 - 13,332	2,367,747	23,034	65,309	29,844	49,720	15,021	103,221	286,149
Fourth	13,333 - 17,879	3,313,731	56,551	86,693	37,297	74,536	23,182	123,447	401,706
Fifth	17,880 - 23,335	4,334,693	101,952	106,134	41,819	101,574	31,133	145,277	527,889
Sixth	23,336 - 30,079	5,632,328	170,649	126,596	45,207	131,113	39,027	179,657	692,249
Seventh	30,080 - 38,290	7,218,796	252,551	150,780	52,157	153,835	50,485	220,061	879,869
Eighth	38,291 - 48,819	9,158,399	373,685	177,578	56,927	177,189	61,349	256,702	1,103,430
Ninth	48,820 - 66,630	12,073,769	556,740	214,532	58,432	222,067	78,452	309,315	1,439,538
Tenth	\$66,631 & Over	28,128,131	1,620,343	328,590	62,073	497,112	116,443	708,649	3,333,210
Total		\$74,410,297	\$3,158,104	\$1,330,610	\$423,348	\$1,471,917	\$433,245	\$2,174,155	\$8,991,379
Top 5%	\$86,725 & Over	\$20,147,382	\$1,218,524	\$199,692	\$32,150	\$349,076	\$69,890	\$510,323	\$2,379,655
Top 1%	\$188,099 & Over	10,266,670	681,160	63,617	7,206	154,890	21,814	257,821	1,186,508

Percentages of Taxes and Income by Population Deciles

Decile	Income Range	Total Household Income	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Taxes ¹	Other Taxes ²	Business Taxes ³	Total Taxes
First	\$5,542 & Under	0.9%	0.0%	2.1%	3.8%	2.1%	1.8%	2.8%	1.6%
Second	5,543 - 9,092	2.1	0.1	3.5	5.6	2.3	2.4	3.1	2.1
Third	9,093 - 13,332	3.2	0.7	4.9	7.0	3.4	3.5	4.7	3.2
Fourth	13,333 - 17,879	4.5	1.8	6.5	8.8	5.1	5.4	5.7	4.5
Fifth	17,880 - 23,335	5.8	3.2	8.0	9.9	6.9	7.2	6.7	5.9
Sixth	23,336 - 30,079	7.6	5.4	9.5	10.7	8.9	9.0	8.3	7.7
Seventh	30,080 - 38,290	9.7	8.0	11.3	12.3	10.5	11.7	10.1	9.8
Eighth	38,291 - 48,819	12.3	11.8	13.3	13.4	12.0	14.2	11.8	12.3
Ninth	48,820 - 66,630	16.2	17.6	16.1	13.8	15.1	18.1	14.2	16.0
Tenth	\$66,631 & Over	37.8	51.3	24.7	14.7	33.8	26.9	32.6	37.1
Total		100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Top 5%	\$86,725 & Over	27.1%	38.6%	15.0%	7.6%	23.7%	16.1%	23.5%	26.5%
Top 1%	\$188,099 & Over	13.8	21.6	4.8	1.7	10.5	5.0	11.9	13.2

NOTES:

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

²Other taxes include motor vehicle registration tax, insurance premiums tax on personal insurance, and property tax on cabins.

³Excludes the property tax on rental housing.

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

Decile	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Tax (Net of Refunds)	Other Taxes	Business Taxes	Total Taxes
First	-0.3%	19.3%	11.2%	22.0%	5.5%	42.3%	100.0%
Second	1.6	25.4	12.8	18.0	5.6	36.6	100.0
Third	8.0	22.8	10.4	17.3	5.3	36.0	100.0
Fourth	14.1	21.6	9.3	18.5	5.8	30.7	100.0
Fifth	19.3	20.1	7.9	19.3	5.9	27.5	100.0
Sixth	24.7	18.3	6.5	18.9	5.7	26.0	100.0
Seventh	28.7	17.1	5.9	17.5	5.8	25.0	100.0
Eighth	33.9	16.1	5.2	16.1	5.5	23.3	100.0
Ninth	38.7	14.9	4.1	15.4	5.5	21.5	100.0
Tenth	48.6	9.9	1.9	14.9	3.5	21.2	100.0
Total	35.1%	14.8%	4.7%	16.4%	4.8%	24.2%	100.0%
Top 5%	51.2%	8.4%	1.4%	14.7%	2.9%	21.4%	100.0%
Top 1%	57.4	5.4	0.6	13.0	1.9	21.7	100.0

Table 6-3
1992 Effective Tax Rates by Population Deciles
(All Taxpayers)

Decile	Individual Income Tax	Consumer Sales Tax	Consumer Excise Taxes	Residential Property Tax¹	Other Taxes²	Total Individual Taxes	Business Taxes³	Total Taxes
First ⁴	-0.1%	4.1%	2.4%	2.8%	1.1%	10.3%	5.7%	16.1%
Second	0.2	3.0	1.5	2.1	0.7	7.6	4.4	12.0
Third	1.0	2.8	1.3	2.1	0.7	7.8	4.4	12.1
Fourth	1.7	2.6	1.1	2.2	0.7	8.4	3.7	12.1
Fifth	2.4	2.4	1.0	2.4	0.7	8.9	3.3	12.2
Sixth	3.0	2.2	0.8	2.3	0.7	9.1	3.2	12.3
Seventh	3.5	2.1	0.7	2.1	0.7	9.1	3.1	12.2
Eighth	4.1	1.9	0.6	1.9	0.7	9.2	2.8	12.0
Ninth	4.6	1.8	0.5	1.9	0.6	9.4	2.6	11.9
Tenth	5.8	1.2	0.2	1.8	0.4	9.4	2.5	11.9
Total	4.2%	1.8%	0.6%	2.0%	0.6%	9.2%	2.9%	12.1%
Top 5%	6.0%	1.0%	0.2%	1.7%	0.4%	9.3%	2.5%	11.8%
Top 1%	6.6	0.6	0.1	1.6	0.2	9.1	2.5	11.6

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, 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 business losses. Unadjusted figures are reported in Appendix B tables.

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).

The state and local tax system, except for the first decile, is very close to proportional. Effective tax rates are 12.0 percent in the second decile and 11.9 percent in the tenth decile. With the exception of the first decile, the highest effective tax rates (12.2 to 12.3 percent) occur in the middle deciles. The effective tax rate declines slightly in the top three deciles, falling from 12.2 percent (seventh decile) to 11.9 percent (top decile). *Figure 6-2* also shows effective tax rates for state and local taxes, including both business taxes and taxes on individuals. Except for the first decile, state taxes are progressive overall with higher effective tax rates in the upper deciles. Effective tax rates for the local property tax (net of refunds) are regressive, falling from 4.0 to 3.1 percent from the second to tenth deciles. The high tax burdens in the first decile will be discussed in more detail below.

Effective Tax Rates by Type of Tax

As shown in *Figure 6-3*, taxes imposed directly on individuals (state taxes on individuals plus residential property taxes) are progressive overall, as effective tax rates increase from 7.6 to 9.4 percent from the second to the tenth decile as income increases. Business taxes, however, are somewhat regressive; that is, effective tax rates decline, from 4.4 in the second decile to 2.5 percent in the tenth decile.

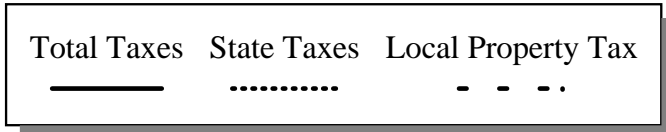
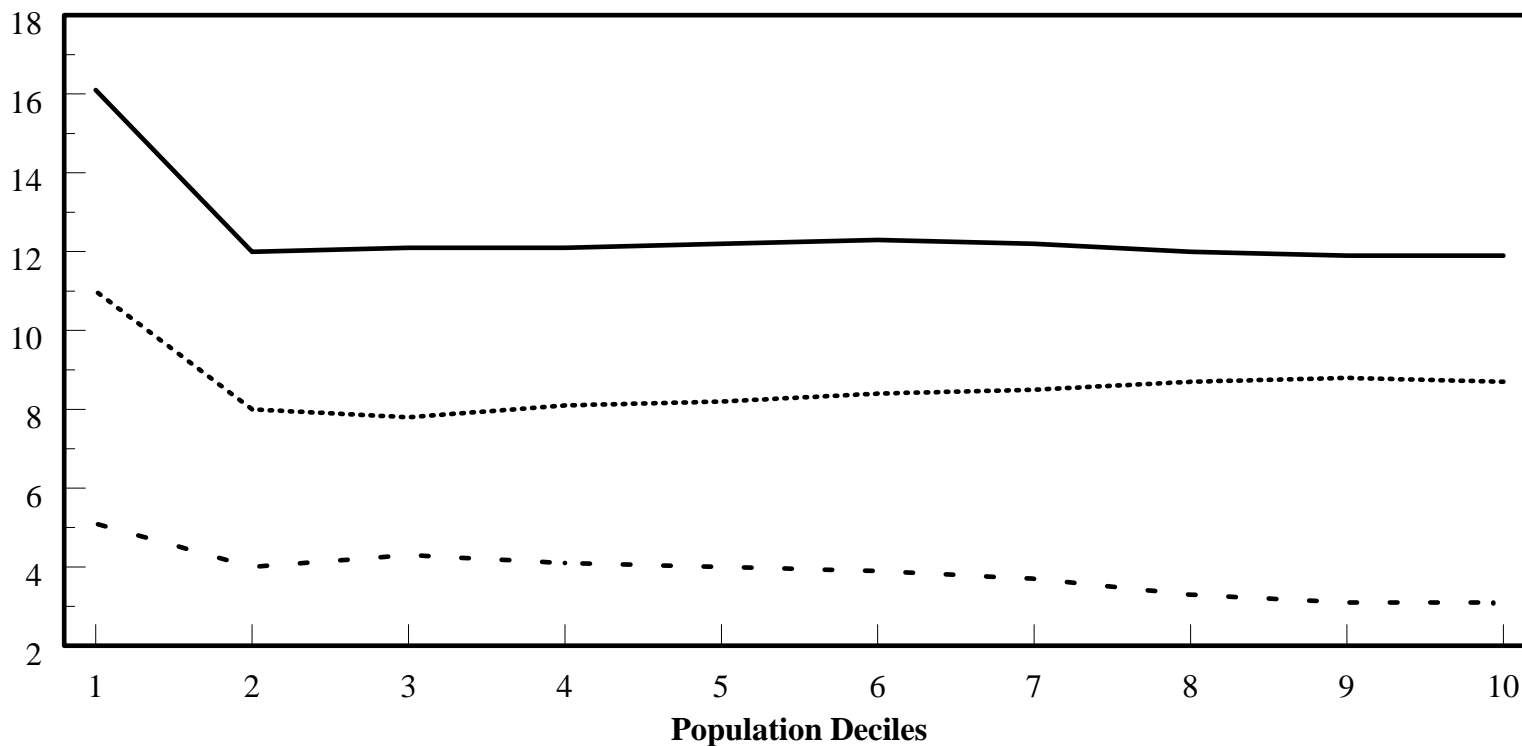
Effective tax rates by population deciles for the six major categories of taxes in this study are presented in *Table 6-3* and are illustrated in *Figure 6-4*. The results show that the individual income tax is very progressive, while the five remaining taxes are all regressive. Because the progressive individual income tax accounts for over 35 percent of the total tax burden, it offsets the regressivity of the other state and local taxes combined. Hence, as a whole, the state and local system of taxation in Minnesota is close to proportional, as shown in *Figure 6-2*.

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 shown in *Table 6-3*, effective tax rates do increase significantly as incomes increase. At the

Figure 6-2
Effective Tax Rates for 1992,
State and Local Taxes by Population Deciles

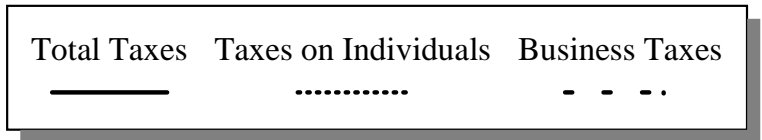
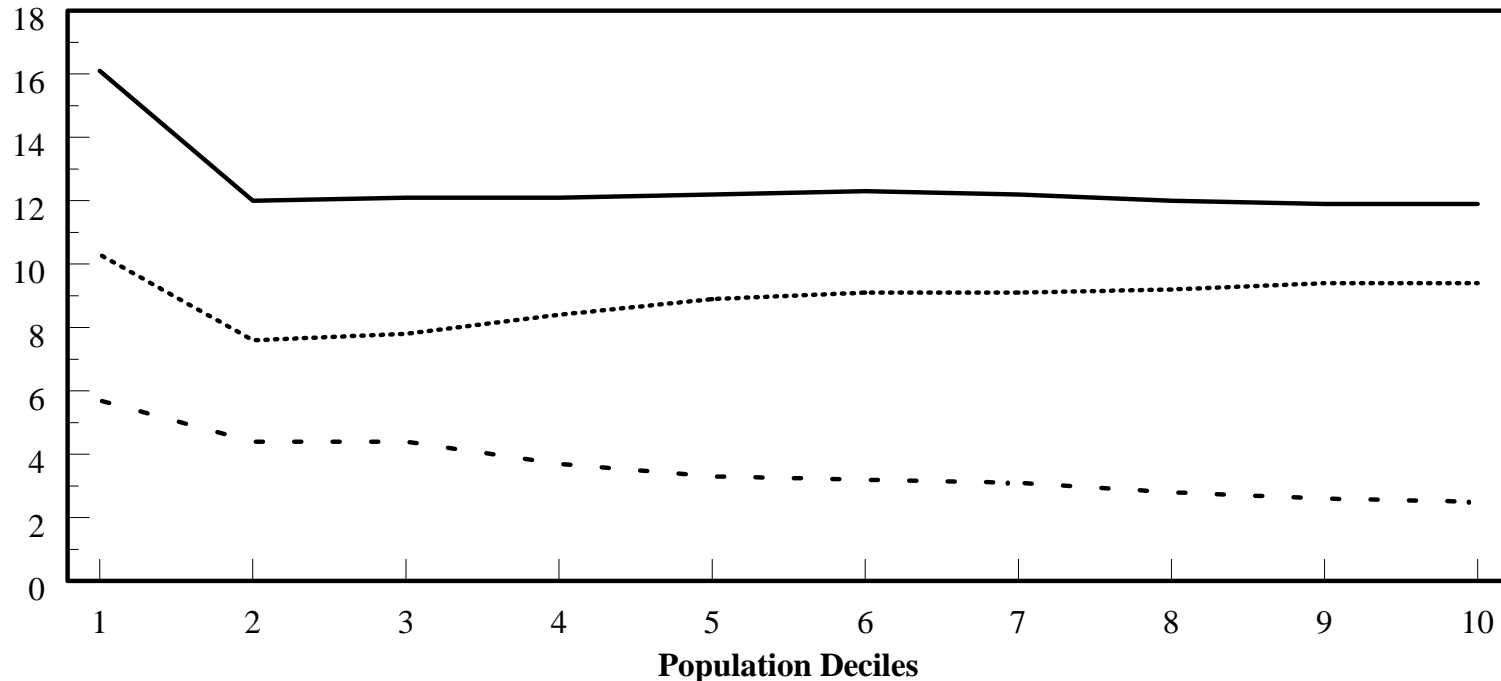
Effective Tax Rate (percent)



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

Figure 6-3
Effective Tax Rates for 1992,
Individual and Business Taxes by Population Deciles

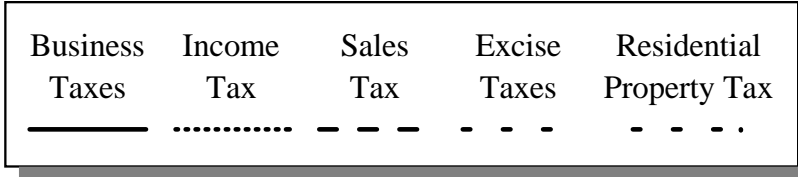
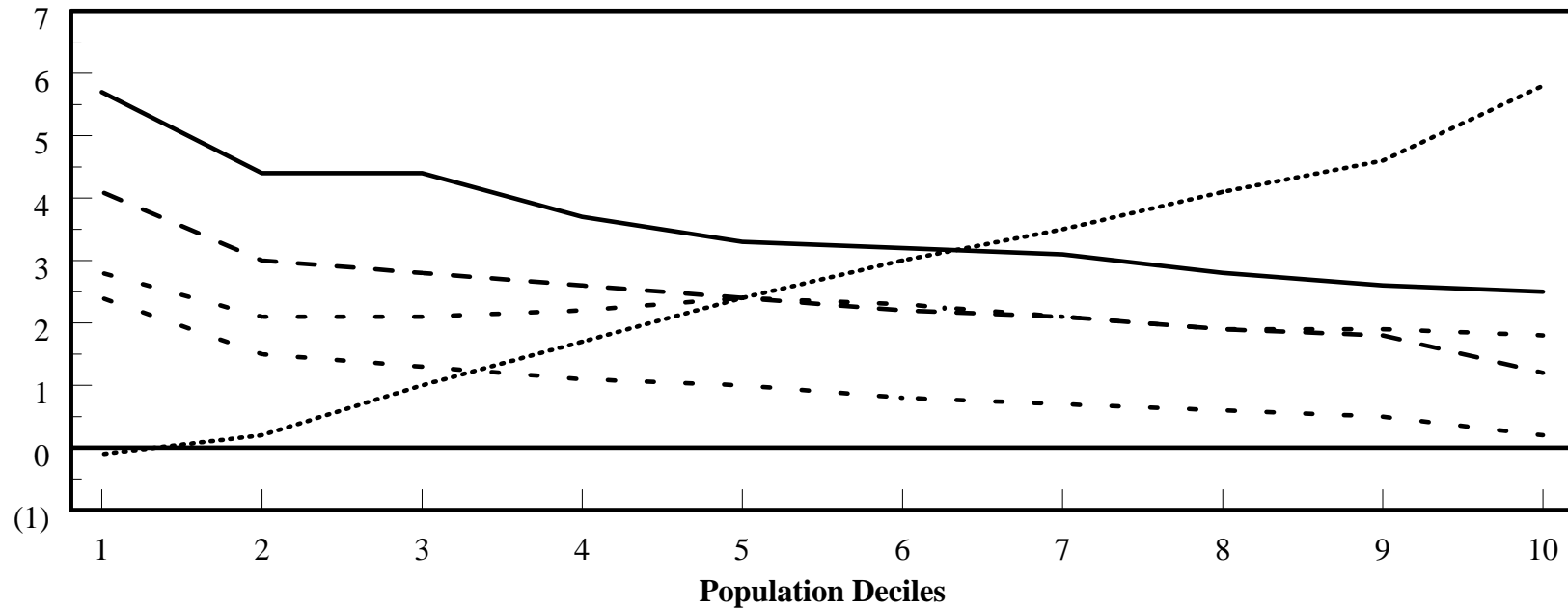
Effective Tax Rate (percent)



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

Figure 6-4
1992 Effective Tax Rates by Tax Type
By Population Deciles

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.

low end, the effective tax rate for the income tax equals -0.1 percent and 0.2 percent for the first and second deciles, respectively, and rises steadily to 5.8 percent for the tenth decile. A total working family credit of \$415,000 and a refundable child and dependent care credit of \$331,000 in the first decile more than offsets the \$293,000 in positive income tax liabilities in the first decile; the net effect is a \$453,000 refund or negative tax for these households.

As shown above in *Table 6-1*, nearly 81 percent of the entire individual income tax burden is borne by the top three deciles (incomes above \$38,290), and these taxpayers account for 66 percent of money income. The middle four deciles account for most of the remaining tax, 18.4 percent, while accounting for 28 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 the low end of the scale. (The sales tax on business purchases is included with the business tax category.) This is due to the fact that 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 is 4.1 percent, compared to the rate for the top decile of 1.2 percent (see *Table 6-3*). Households in the bottom decile thus pay an effective tax rate almost 3.5 times as large as the effective tax rate on households in the top decile. However, the effective tax rates for the third through ninth deciles, which represent 70 percent of all taxpayers, range from 2.8 to 1.8 percent.

Excise Taxes on Consumer Purchases

Three excise taxes are 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 are regressive. This is predictable since lower income households spend a greater proportion of their income on consumer goods subject to the excise taxes than higher income households. 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 is 2.4 percent. It ranges from 1.5 percent to 0.6 percent from the second to the eighth deciles; it declines to 0.2 percent for the tenth decile.

Residential Property Taxes

The tax incidence study provides information on the distribution of property taxes by decile which is important for property tax policy discussions. The incidence data base can be used to calculate effective property tax rates on all forms of residential property, as well as for renters and homeowners.

Net Residential Property Taxes. As shown in *Table 6-3*, net effective residential property tax rates, after property tax refunds, are regressive. 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 homeowners and renters. Effective property tax rates on residential property decrease from 2.8 percent in the first decile to 1.8 percent in the tenth decile.

Homeowner Property Taxes. The property tax on owned homes, net of property tax refunds, is regressive. (See *Table B-2* for homeowner effective tax rates.) Generally, burdens decline as taxpayers move up the income scale. The net effective property tax rate for homeowners is 6.1 percent for the second decile and gradually declines to 1.5 percent in the tenth decile.

The regressivity of homeowner property taxes is reduced by the impact of the property tax refund (PTR) program which targets relief on taxpayers with high property taxes relative to income. Comparing gross property tax rates (before refunds) to net effective rates (after refunds) shows that effective tax rates are reduced for low to moderate income taxpayers in the lower deciles. (See *Table B-2*.) For example, the effective property tax rate for homeowners in the second decile is reduced by 1.8 percentage points, with the PTR reduction falling to 0.3 percentage points in the fifth decile.

Rental Property Taxes. This study's estimates of the property tax burden on renters is consistent with the approach used for business taxes more generally. Taxes on rental property, like taxes on other business property, are shifted to renters in higher prices and to property owners in lower returns. Using the methodology applied to business taxes more generally, this study estimates that a sizeable portion of the 1992 level of rental property tax (36 percent) is borne by

the investors who's own rental housing; the remaining share (64 percent) is assumed to be paid by renters in higher prices. The effective tax rate on renters is, therefore, lower than it would be if all of the tax were passed along in higher rents.

As shown in *Appendix Table B-3*, the gross property tax burden borne by renters (\$298 million) is regressive. Gross effective property tax rates gradually decline from 4.2 percent in the second decile to 1.0 percent in the tenth decile.

The pattern of net effective property tax rates (after PTR) is, however, very different. In this study, the entire amount of property tax refunds received by renter households is subtracted from the portion of the tax estimated to be borne by renters. This offset significantly reduces effective tax rates in the lower deciles. The net effective property tax rate for renters increases from 1.3 percent in the second decile to 2.1 percent in the seventh decile, then falls to 1.0 percent in the top decile.

The rather unexpected relationship between gross and net property taxes 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 64 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 *Table B-2* and *Table B-3*, in every decile, the net property tax burden on renters is less than the net property tax burden on homeowners after adjusting for the impact of the PTR. While almost two-thirds of the rental tax is shifted forward to renters, some of the burden falls on the property owners. In contrast, homeowners bear the entire burden of homeowner property taxes since they are both the housing consumer and property owner.²⁹

²⁹ 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, then 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 36 percent). Under Minnesota's class rate system, however, property taxes 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 account for 24.2 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 fees paid by business
- Excise taxes paid by business (motor fuels)
- Insurance premiums tax on business insurance

Although the legal impact of each of these taxes falls on the business entity, each is partially shifted to consumers (in higher prices), to labor (in lower wages), or borne by capital owners as a lower rate of return. Part 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 estimates tax payments made by the different business sectors (manufacturing, mining, retail trade, etc.). Then market characteristics of each business sector are used to estimate the degree to which taxes are shifted to consumers, labor, and nonresidents³⁰. Finally, taxes paid by each of these taxpayer categories (factors) are distributed to individual households in the sample.

Table 6-4 summarizes the estimated incidence of business taxes. The overall burden of business taxes is shared almost equally by consumers (50 percent) and owners of capital (46 percent); labor bears the remaining 4 percent. Since capital ownership is concentrated among high income households, it is possible that business taxes are progressive.

³⁰ A separate appendix explaining the details of the shifting analysis is available from the Tax Research Division.

However, the proportion of the business tax burden that falls on nonresidents is much higher for owners of capital than for consumers. Of the tax burden on capital, 67 percent is paid by nonresidents compared to 24 percent of the tax borne by consumers. As a result, *Table 6-3* and *Figure 6-4* show that the burden of Minnesota business taxes on Minnesota households is regressive. The effective tax rate generally falls as income increases. The effective tax rate is 4.4 percent in the second and third deciles; it falls to 2.5 percent in the tenth decile.

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

Taxpayer Category	Total Tax Burden		Exported to Nonresidents		Paid by Minnesota Residents	
	Percent	Amount	Percent	Amount	Percent	Amount
Capital:	46.0%	\$1,764	71.7%	\$1,188	26.5%	\$576
Corporate	31.6	1,211	67.7	1,122	4.1	89
Noncorporate	14.4	553	4.0	66	22.4	487
Labor	3.6	139	0.0	0	6.4	139
Consumers	50.3	1,929	28.3	470	67.1	1,459
Total	100.0%	\$3,832	100.0%	\$1,658	100.0%	\$2,174

Other Taxes

Other taxes in *Table 6-3* include the motor vehicle registration tax paid directly by households, the insurance premiums tax paid on personal insurance (homeowner, motor vehicle, life, health, and accident), and the property tax on cabins; the sum of these three taxes is regressive.

Effective Tax Rates in the First Decile

As shown in *Table 6-3*, low income taxpayers in the first decile have significantly higher sales, excise, net property, and business tax burdens than taxpayers with higher incomes. The total effective tax rate of 16.1 percent for taxpayers in the first decile is much higher than the rate in other deciles. This 16.1

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 is even higher, 22.4 percent, as shown in Appendix *Table B-1*). These higher effective tax rates require further discussion and explanation.

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 is indicated by money income in 1992. 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 8 percent of all first-decile households are in this decile only because they reported business losses or large capital losses for income tax purposes in 1992. Almost all of these 16,000 households had *negative* household income; 44 percent were farmers. Although their average business loss was \$21,000, their average tax burden was estimated to be \$2,655.³¹ Few of these households are actually poor for any length of time. Over 75 percent are homeowners, with homes valued over \$55,000, on average. Most had significant amounts of business activity as sole proprietors or partners, and the reported losses are probably temporary. *Excluding the small group of households with either negative income or business losses from the first decile reduces the effective tax rate from 22.4 percent to 16.1 percent.*

Another reason why effective tax rates for the first decile are overstated concerns the measurement of income. The incidence sample does not identify all sources of income. Almost 50 percent of first-decile households filed neither an income tax nor a property tax refund return. The incidence study has identified some wage and capital income for these nonfilers, but they may have sources of income which were not identified in this study. An underestimate of household income generally causes effective tax rates to be overestimated.

³¹ 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.

Household income is also underestimated in the Consumer Expenditure Survey used to estimate sales and excise tax burdens. To the extent that income is subject to relatively greater underreporting than consumption, particularly for low-income households, the taxable consumption expenditures calculated from CES will be overstated, again resulting in effective tax rates being overestimated.³²

A final reason why the effective tax rates for the lowest decile may be overstated concerns the definition of a household. An unknown but significant number of low-income households might more accurately be considered members of another household. Almost half of these households are single adults living with family members. They also include a significant number of elderly parents living with children.

While this study does adjust for negative incomes for a small number of households, no attempt has been made to adjust for possible underreported income or for other differences between transitory and long-run measures of income. Consequently, money income at the low end of the income distribution does not provide an accurate measure of overall economic well-being in the first decile. As such, 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.

³² To partly adjust for the unreliability of the CES data, the ratio of consumption to income is adjusted downward for the lowest deciles. This adjustment is 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 +1.0. For a regressive tax, the Suits Index has a negative value of between 0 and -1.0, the most regressive value.

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

Tax Category	1992 Suits Index
Residential Property Tax	
Gross	-0.13
Net (after PTR)	-0.07
Excise Taxes	-0.30
Sales Tax	
Consumers	-0.18
Business	-0.11
Total	-0.15
Other Taxes	-0.12
Business Taxes	-0.10
Personal Income Tax	+0.20
<hr/>	
State Taxes	+0.01
Local Taxes	-0.07
Total Taxes	-0.01

Table 6-5 presents Suits indexes for Minnesota state and local taxes in 1992.³³ The only progressive tax is the personal income tax with a positive Suits index of +0.20. The excise tax is the most regressive, followed by the sales tax. Taken as a whole, the system of Minnesota taxes is slightly regressive (a Suits index of -0.01). If one excludes the local property tax, however, the system becomes slightly progressive (+0.01).

³³ Due to changes in methodology, the Suits indexes, especially for sales and excise taxes, are not directly comparable to those reported in the 1990 study.

CHAPTER 7

DETAILED RESULTS FOR DIFFERENT HOUSEHOLD TYPES

Introduction

This chapter provides additional information on the demographic characteristics of households which vary greatly by decile. The lower deciles are much more likely to be single-person households 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. These detailed characteristics provide further information that can be used to analyze and interpret the results of this study.

Demographic Characteristics of Each Decile

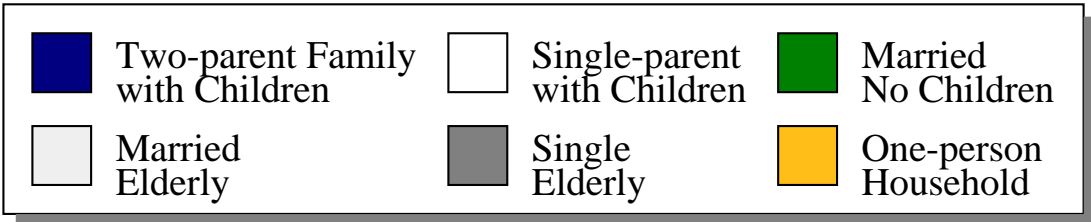
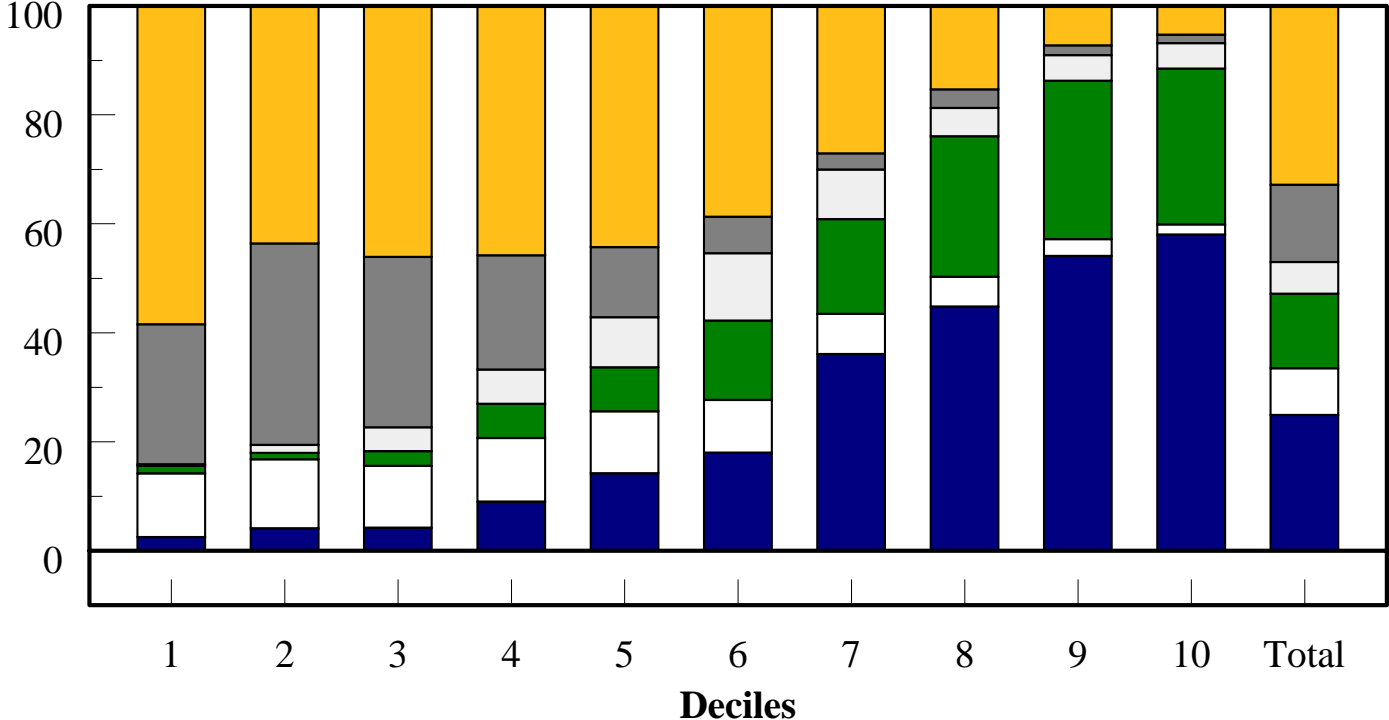
The demographic characteristics of the incidence sample vary greatly across the ten deciles. (See Appendix *Tables C-1 to C-5*.) As shown in *Figure 7-1*, 83 percent of households in the first two deciles are single-person households. Only about 14 percent of the households in the first decile and 16 percent of the households in the second and third deciles include children. In contrast, only 8 percent of households in the top two deciles are single-person households, while 59 percent include children.

Figure 7-1 also shows that elderly households (both married and single) account for over 38 percent of all second decile households and almost 36 percent of all third decile households. In the lowest deciles, single elderly far outnumber elderly couples; in the top deciles, elderly couples are more common than single-person elderly households.³⁴

³⁴ For most households the incidence sample includes no breakdown by age. Here elderly is defined as all Social Security recipients not known to be under age 62 years of age whose Social Security benefits are at least twice as large as earned income. This category therefore excludes some over age 65 (who have not retired) and includes some under age 65 (those retiring at age 62 plus some who are disabled).

Figure 7-1
Households by Family Type

Percent of all Households



Households with children are primarily single-parent households in the first three deciles. The percent of households with children that include two parents increases fairly steadily with income. About 90 percent of the total number of households in the top two deciles include married persons, with or without children.

Figure 7-2 shows how housing status varies with income. As expected, homeownership rates rise steadily with income, from 14 percent in the first decile to 90 percent in the tenth decile. For all households, 54 percent are homeowners. The first decile contains 2.9 renter households for every homeownership household; the tenth decile contains 17 homeowner households for every renter household. Farm homesteads are spread fairly evenly among all deciles.³⁵

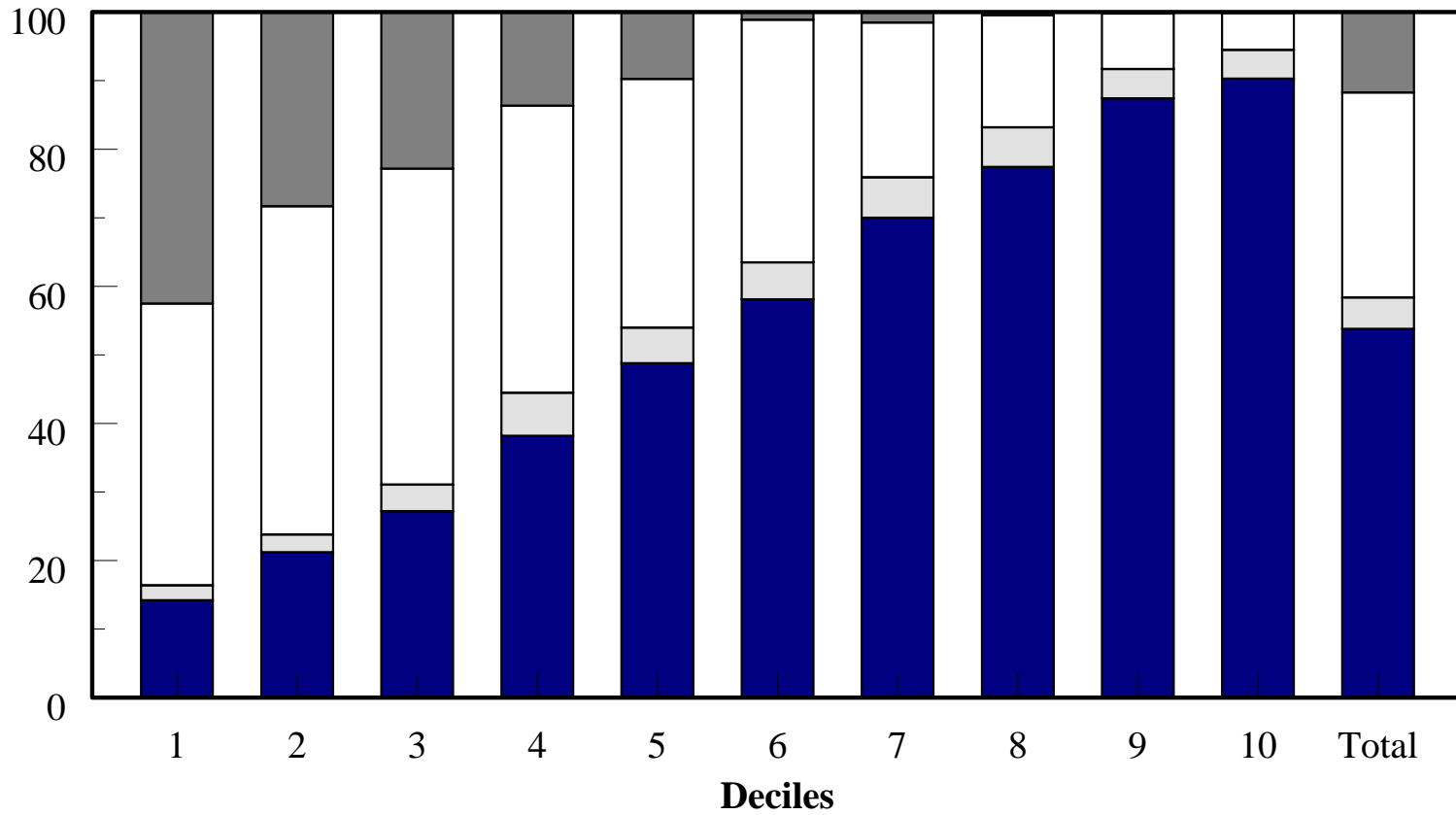
A substantial proportion of households in the first five deciles are classified as neither homeowners nor renters. (See *Figure 7-2*.) This “other” category is largely the result of this study’s definition of a household. While census data generally defines a household to include all individuals living in a particular housing unit, this study (like other tax incidence studies) generally defines a household as a taxpayer, a taxpayer’s spouse, and all others claimed as dependents for income tax purposes; these primary households are assumed to share property taxes on their housing units.

In contrast, related households, such as students and other older children living with parents (but not claimed as dependents) or elderly parents living with children, are assumed to pay no property taxes. These secondary households make up most of the group labeled “other” in *Figure 7-2*. While it might make sense to combine these households into one single household (as in Census data), the incidence sample provides no means of matching such secondary households with a primary household. As a result, a substantial number of lower-income households in the incidence sample do not fit the usual definition of a household. The sizeable number of these households should be kept in mind when interpreting the overall incidence results.

³⁵ Farm households include only those living on farm homestead property. This excludes active farmers who farm only rented land or do not live on a farm homestead. In this study, “homeowners” generally include only non-farm homesteads, but the homeownership rates in this chapter include both farm and non-farm homesteads.

Figure 7-2
Housing Tenure by Decile

Percent of all Households



Detailed Incidence Results for Five Different Household Types

As shown in *Figure 7-1*, the demographic characteristics of each population decile vary greatly. A typical one-person household has much lower income than the typical married couple with children. The median income for a one-person household is \$15,400 and falls in the 4th decile; the median income for a married couple with children is \$46,300 and falls in the 8th decile. As a result, 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 the five household types: retired elderly, single-person (non-elderly) households, single-parent families, married (non-elderly) couples with no children, and married couples with children.

The representative households are defined in terms of their position in the income distribution for each household type. The following table describes the three household definitions.

Household	Income Level
25th Percentile	The household with income greater than 25 percent of all households of the same type.
50th Percentile	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 each household type, *Table 7-1* shows the average tax burden for the population deciles that include the three representative households.³⁶

Appendix *Tables C1* through *C5* provide additional detailed information, showing how effective tax rates vary with income for each of the separate demographic groups. These detailed tables show the number and characteristics of each type of household by the population deciles for all taxpayers. Information for each group and decile includes household size, household income, housing status

³⁶ The actual population deciles (from Appendix *Tables C1-C5*) corresponding to the three different relative income levels vary by household type. The 2nd, 4th and 6th deciles were used for one-person, elderly and single parent family households; the 6th, 8th and 9th deciles were used for married with no children; and the 7th, 8th and 9th deciles were used for married with children households.

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

Household Income Level	One-Person Households	Retired Elderly	Single Parent Families	Married No Children	Married With Children
25th Percentile					
Net Property Tax:					
Homeowners	\$684	\$347	\$453	\$677	\$686
Renters	147	53	40	533	698
All Taxpayers	144	143	81	590	631
State Income Tax	63	0	-84	748	974
Sales Tax	225	189	214	652	783
Excise Taxes	119	79	140	255	295
Other Taxes	46	43	19	277	297
Business Taxes	<u>309</u>	<u>282</u>	<u>315</u>	<u>954</u>	<u>1,156</u>
Total Taxes	\$906	\$735	\$685	\$3,475	\$4,135
Effective Tax Rate	12.5%	10.0%	9.4%	12.9%	12.0%
50th Percentile (median income)					
Net Property Tax:					
Homeowners	\$511	\$580	\$453	\$872	\$856
Renters	361	181	238	604	607
All Taxpayers	324	383	250	768	771
State Income Tax	518	33	112	1,927	1,584
Sales Tax	396	358	405	823	899
Excise Taxes	189	119	181	291	305
Other Taxes	76	86	138	316	333
Business Taxes	<u>505</u>	<u>583</u>	<u>504</u>	<u>1,153</u>	<u>1,343</u>
Total Taxes	\$2,008	\$1,561	\$1,591	\$5,278	\$5,233
Effective Tax Rate	12.9%	10.0%	10.1%	12.2%	12.1%
75th Percentile					
Net Property Tax:					
Homeowners	\$690	\$724	\$730	\$1,015	\$1,085
Renters	561	526	410	685	677
All Taxpayers	601	623	581	947	1,016
State Income Tax	1,237	236	825	2,893	2,492
Sales Tax	554	568	572	983	1,055
Excise Taxes	205	162	174	274	300
Other Taxes	110	175	225	377	399
Business Taxes	<u>691</u>	<u>955</u>	<u>810</u>	<u>1,410</u>	<u>1,498</u>
Total Taxes	\$3,398	\$2,719	\$3,187	\$6,884	\$6,760
Effective Tax Rate	12.8%	10.3%	12.0%	12.1%	11.8%

(including average rent and home value), 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.

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 one percent of all tenth-decile households. Whenever a particular household type accounts for less than 5 percent of a decile's households, the numbers in the Appendix tables may include some error resulting from the small sample size for that particular cell.

CHAPTER 8

EFFECTIVE TAX RATE PROJECTIONS FOR TAX YEAR 1994

Introduction

This tax incidence report includes data on actual income and taxes for all Minnesota residents for tax year 1992. It is based on a comprehensive data set which combines actual or reported tax and income information. The 1992 distribution of effective tax rates is limited, however, in terms of its usefulness to decisionmakers because it is several years old.

This chapter presents projected effective tax rates for tax year 1994 and serves as a reference point for current tax policy discussions. Because the 1992 study could not be replicated for tax year 1994, an alternative methodology is used in this chapter to estimate the impact of tax structure changes between 1992 and 1994.³⁷ Under this alternative approach, changes in statutory tax bases or tax rates are applied to 1992 base year levels of income and market value in the tax incidence study database.³⁸ In other words, the projected effective tax rates for 1994 are calculated as if the 1994 tax structure were in effect during 1992. This method generated estimates of effective tax rate changes for 1994 that can be compared to actual 1992 tax incidence results.

The next section discusses the main tax law changes made during the 1993 and 1994 legislative sessions and changes in local property tax rates. The estimated impact of these changes on the distribution of effective tax rates is summarized by comparing the 1992 and 1994 effective tax rates.

³⁷ Actual tax return information for 1994, e.g., income tax, is not yet available and the current incidence modeling framework does not include the overall capability to project both income and taxes simultaneously.

³⁸ For example, individual income tax provisions in effect for tax year 1994 were modeled using the 1992 income levels as a base. For the property tax, gross taxes were calculated under the projection by using the 1994 class rate structure and local tax rates, but holding 1992 market values constant. This method isolates changes in effective tax rates resulting from structural tax changes only. It does not take into account changing economics, such as growth or redistribution of incomes or changes in market values from 1992 to 1994.

Recent Tax Changes

For the individual income tax, the most significant change occurring in 1993 was the increase in the working family credit (WFC) from 10 percent to 15 percent of the federal earned income tax credit (EITC). The WFC was also expanded in 1994 as a result of adopting federal changes which broadened the base of the EITC.

As part of the 1994 federal update, Minnesota conformed to individual income tax changes made at the federal level. In addition to the EITC changes, the state adopted the provisions which increased taxes on social security income for higher income taxpayers. (At higher incomes, the maximum amount of social security income included in the tax base was increased from 50 percent to 85 percent.) To offset a portion of the impact of this change, Minnesota expanded the income tax subtraction for the elderly in 1994. In addition, the state child and dependent care credit was also expanded to allow credit for up to \$2,400 of deemed expenses for married couples with a child less than one year of age.

For sales and excise taxes, only a small number of significant tax base changes were made between 1992 and 1994. Purchases made by local governments became subject to sales tax effective June 1, 1992. A 1994 legislative session change began a phase-down of the sales tax rate on replacement capital equipment for purchases after June 30, 1994. For the excise tax on cigarettes, a five cent increase in the rate became effective July 1, 1992.³⁹

Numerous state legislative changes in the property tax system were made between 1992 and 1994. For residential property, the class rate on the top tier of homestead market value was reduced from the 2.5 percent rate in effect for taxes payable in 1992 to 2.0 percent for taxes payable in 1994. Various other class rate changes, mainly reductions, also occurred during that time period. For example the class rate for commercial and industrial property market value over \$100,000 was reduced from 4.75 percent to 4.60 percent. Other changes, most notably changes in local government aid payments and local budget decisions, also affected the amount of total property tax paid through changes in local property tax rates.

³⁹ The two percent gross receipts tax on hospitals and health care providers was not in effect in 1992. Due to the lack of information, these MinnesotaCare taxes are not included in the 1994 projections.

1994 Projections

Table 8-1 compares the tax incidence study results for 1992 with the projected effective tax rates for 1994. Compared to 1992, the individual income tax changes projected through 1994 added to the progressivity of the tax. Effective tax rates in the second through the fifth deciles dropped 0.2 percentage points; the drop in the first decile was 0.1. These reductions in effective tax rates are due to low income tax relief provided since 1992, primarily changes which increased the working family credit. However, because the net reduction was relatively small, the overall effective income tax rate did not change.

The 1994 projection of overall effective tax rates for sales and excise taxes showed only small increases due to legislative changes. For total local property taxes, the overall effective tax rate for all taxpayers increased from 3.5 percent in 1992 to 3.7 percent under the 1994 projections. The property tax increases are distributed across all deciles and are due primarily to overall local tax rate increases.

As shown in *Table 8-1*, the effective rate for homeowners was 2.1 percent for 1994, an increase of 0.2 percentage points over the 1992 level. Homeowner property taxes showed the highest percentage increase for 1994, compared to other tax categories. The effective tax rate for nonresidential property taxes (business taxes) increased by 0.1 percentage points to 1.5 percent for 1994. The effective tax rate for property tax on renters declined 0.1 percentage points to 1.6 percent for 1994, as actual renter taxes decreased due to class rate changes. Together, these changes added to the regressivity of total property taxes.

The projected 1994 overall effective tax rate for total state and local taxes increased to 12.3 percent from 12.1 percent for 1992. The net impact of structural changes in the state and local tax system through 1994 on the distribution of tax burdens, as measured by the Suits index, is a slight increase in regressivity. Overall, the Suits index changed from -0.0133 to -0.0136.

In summary, the results of this exercise suggest that legislated changes at the state level and local property tax rate changes at the local level, taken in isolation from economic changes, resulted in only a small increase in the regressivity of Minnesota's state and local tax structure. The actual change in effective tax rates from 1992 to 1994 (to be reported in the next tax incidence study) will reflect both structural and economic changes.

**Table 8-1
Comparison of Effective Tax Rates:
1992 Tax Incidence Study Results and 1994 Projections**

Population Decile	Income Range	Individual Income Tax			Consumer Sales and Excise Taxes			Homeowner Property Tax			Renters Property Tax		
		1992	1994	Change	1992	1994	Change	1992	1994	Change	1992	1994	Change
First	\$5,542 & Under	-0.1%	-0.2%	-0.1%	6.5%	6.7%	0.2%	9.7%	11.7%	2.0%	2.1%	1.9%	-0.2%
Second	5,543 - 9,092	0.2	0.0	-0.2	4.5	4.7	0.2	6.1	6.4	0.3	1.3	1.1	-0.2
Third	9,093 - 13,332	1.0	0.8	-0.2	4.1	4.1	0.0	3.7	4.0	0.3	1.8	1.7	-0.1
Fourth	13,333 - 17,879	1.7	1.5	-0.2	3.7	3.9	0.2	3.2	3.4	0.2	2.0	1.9	-0.1
Fifth	17,880 - 23,335	2.4	2.2	-0.2	3.4	3.5	0.1	2.9	3.1	0.2	2.1	2.0	-0.1
Sixth	23,336 - 30,079	3.0	3.0	0.0	3.0	3.1	0.1	2.5	2.7	0.2	2.0	1.9	-0.1
Seventh	30,080 - 38,290	3.5	3.5	0.0	2.8	2.8	0.0	2.1	2.4	0.3	2.1	2.0	-0.1
Eighth	38,291 - 48,819	4.1	4.1	0.0	2.5	2.6	0.1	2.0	2.2	0.2	1.4	1.4	0.0
Ninth	48,820 - 66,630	4.6	4.6	0.0	2.3	2.3	0.0	1.9	2.1	0.2	1.2	1.2	0.0
Tenth	\$66,631 & Over	5.8	5.8	0.0	1.4	1.4	0.0	1.5	1.6	0.1	1.0	0.9	-0.1
Total		4.2%	4.2%	0.0%	2.4%	2.4%	0.0%	1.9%	2.1%	0.2%	1.7%	1.6%	-0.1%

Population Decile	Income Range	Business Property Taxes			Total Property Tax			Total State Taxes			Total State and Local Taxes		
		1992	1994	Change	1992	1994	Change	1992	1994	Change	1992	1994	Change
First	\$5,542 & Under	2.2%	2.4%	0.2%	5.1%	5.6%	0.5%	11.0%	11.0%	0.0%	16.1%	16.6%	0.5%
Second	5,543 - 9,092	1.8	1.9	0.1	4.0	4.2	0.2	8.0	7.8	-0.2	12.0	12.0	0.0
Third	9,093 - 13,332	2.1	2.3	0.2	4.3	4.5	0.2	7.8	7.7	-0.1	12.1	12.2	0.1
Fourth	13,333 - 17,879	1.7	1.9	0.2	4.1	4.3	0.2	8.1	8.0	-0.1	12.1	12.2	0.1
Fifth	17,880 - 23,335	1.5	1.6	0.1	4.0	4.2	0.2	8.2	8.1	-0.1	12.2	12.3	0.1
Sixth	23,336 - 30,079	1.5	1.6	0.1	3.9	4.2	0.3	8.4	8.4	0.0	12.3	12.6	0.3
Seventh	30,080 - 38,290	1.5	1.6	0.1	3.7	4.0	0.3	8.5	8.5	0.0	12.2	12.5	0.3
Eighth	38,291 - 48,819	1.3	1.4	0.1	3.3	3.6	0.3	8.7	8.8	0.1	12.0	12.4	0.4
Ninth	48,820 - 66,630	1.2	1.2	0.0	3.1	3.4	0.3	8.8	8.9	0.1	11.9	12.2	0.3
Tenth	\$66,631 & Over	1.3	1.3	0.0	3.1	3.3	0.2	8.7	8.8	0.1	11.9	12.0	0.1
Total		1.4%	1.5%	0.1%	3.5%	3.7%	0.2%	8.6%	8.6%	0.0%	12.1%	12.3%	0.2%

NOTE: Effective tax rates shown are for all taxpayers except for homeowner and renter property taxes.

APPENDICES

Appendix A compares the distribution of effective tax rates by population deciles used in this study to an alternative distribution by income deciles.

Appendix B includes several tables that contain detailed information on the distribution of income, taxes and tax burdens by population deciles. These tables also provide breakdowns by types of taxpayers including homeowners, renters and other taxpayers.

Appendix C includes tables showing household characteristics and representative tax burdens by household type distributed by the population deciles for all taxpayers used in the incidence study. Detailed information is shown for five household types, including single, retired elderly, single parent families, married families with children and married couples without children.

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

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

APPENDIX A

Distribution of Tax Burdens by Income Deciles

DISTRIBUTION OF TAX BURDENS BY INCOME DECILES

The results of the 1992 Minnesota Tax Incidence Study presented in Chapter 6 are summarized for deciles of households; each decile represents ten percent of the population of households in the study. This appendix provides an alternative way of summarizing the 1992 tax burden distributions. *Tables A-2(a)* and *A-2(b)* distribute taxes and calculate effective tax rates for all taxpayers organized by income deciles. To derive income deciles, households are ranked from lowest to highest income and divided into equal groups representing 10 percent of total household *income*.

The distribution by income deciles can be compared to the distribution by population deciles in Chapter 6. (Compare *Tables A-2(a)* and *A-2(b)* with Appendix *Tables B-1(a)* and *B-1(b)*.) In both distributions households are ranked by income level. In the population decile distribution, each decile represents 10 percent of the population of households (212,000 households); in the income decile distribution, each decile accounts for 10 percent of household income (\$7.4 billion). Because of their relatively low incomes, it takes over 824,000 households in the first income decile to account for 10 percent of total income; in the tenth income decile 9,185 households receive 10 percent of total income.

As shown in *Table A-1*, the distribution of effective tax rates for total state and local taxes is very similar under the two different decile concepts for the second through ninth deciles. In the first decile, the income decile distribution averages effective tax rates over almost four times as many households with the result that the relatively high tax rates in the first population decile disappear. At the top end of the distribution, however, the income decile distribution shows a more significant drop in the effective tax rate for tenth decile households, which includes less than 10,000 taxpayers.

Clearly, the two different distributions provide more detailed information about the tax burden distributions at the extreme ends of the income distribution. The population distribution of tax burdens was chosen as the focus of this study because it provides a more balanced grouping by number of households for tax policy discussions.

Table A-1
Effective 1992 Minnesota State and Local Tax Rates,
Comparison of Distributions by Population and Income Deciles

Decile Group	Effective Tax Rates	
	Population Deciles	Income Deciles
First	22.4%	12.9%
Second	12.0	12.1
Third	12.1	12.4
Fourth	12.1	12.0
Fifth	12.2	12.0
Sixth	12.3	11.9
Seventh	12.2	12.0
Eighth	12.0	12.0
Ninth	11.9	12.2
Tenth	11.9	11.2
Totals	12.1%	12.1%
Top 5%	11.8%	10.9%
Top 1%	11.6	10.5%

Table A-2 (a)

1992 Minnesota Tax Incidence Study
 State and Local Tax Burden Amounts by Income 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 Consumers	Purchases by Businesses	Sales Tax Total	Purchases by Consumers	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$17,312 & Under	824,315	\$7,440,929	\$73,121	\$34,012	\$215,560	\$113,542	\$329,102	\$102,155	\$20,592	\$46,909	\$11,573	\$437,745	\$179,719	\$617,464
Second	\$17,313 - \$26,562	343,912	7,436,922	\$185,835	25,924	178,624	83,594	262,218	68,722	15,357	44,462	8,632	477,643	133,507	611,150
Third	\$26,563 - \$35,162	241,600	7,434,106	248,526	23,608	159,701	76,519	236,220	55,779	13,806	42,823	8,445	506,829	122,378	629,207
Fourth	\$35,163 - \$43,539	190,304	7,450,784	285,792	22,446	149,096	72,145	221,241	49,957	12,968	42,968	7,742	527,813	115,301	643,114
Fifth	\$43,540 - \$52,990	155,279	7,436,633	321,275	21,132	139,691	67,641	207,332	42,349	12,265	41,638	7,268	544,953	108,306	653,259
Sixth	\$52,991 - \$64,015	128,318	7,442,220	347,052	20,266	131,529	64,949	196,478	35,400	11,693	39,304	7,042	553,285	103,950	657,235
Seventh	\$64,016 - \$80,030	104,968	7,441,105	369,179	19,342	122,721	62,413	185,134	29,410	11,154	35,944	6,923	557,254	99,832	657,086
Eighth	\$80,031 - \$118,903	79,267	7,444,149	385,637	18,371	111,142	61,471	172,613	22,680	10,177	31,469	6,921	550,928	96,940	647,868
Ninth	\$118,904 - \$311,880	43,819	7,441,727	440,309	16,341	89,295	60,194	149,489	13,592	8,472	23,965	6,877	567,161	91,884	659,045
Tenth	\$331,881 & Over	9,185	7,441,724	501,379	11,631	33,248	55,476	88,724	3,303	4,696	9,617	6,663	547,547	78,466	626,013
TOTALS		2,120,967	\$74,410,299	\$3,158,105	\$213,073	\$1,330,607	\$717,944	\$2,048,551	\$423,347	\$121,180	\$359,099	\$78,086	\$5,271,158	\$1,130,283	\$6,401,441
Top 5%	\$936,478 & Over	1,495	\$3,719,944	\$260,398	\$4,924	\$6,533	\$27,235	\$33,768	\$587	\$1,686	\$2,416	\$3,306	\$269,934	\$37,151	\$307,085
Top 1%	\$13,561,320 & Over	27	\$739,650	\$56,599	\$576	\$123	\$4,149	\$4,272	\$10	\$167	\$60	\$505	\$56,792	\$5,397	\$62,189

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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 Property Taxes
				Homeowners after PTR	Renters after PTR	Owners of Rental Prop.	Total on Rental Prop.	Seasonal/Recreational	Residential Total			
First	\$17,312 & Under	824,315	\$7,440,929	\$109,697	\$58,557	\$11,384	\$69,941	\$6,441	\$186,079	\$159,596	\$345,675	\$963,139
Second	\$17,313 - \$26,562	343,912	7,436,922	110,603	56,396	6,310	62,706	8,425	181,734	110,236	291,970	903,120
Third	\$26,563 - \$35,162	241,600	7,434,106	117,625	43,936	7,007	50,943	8,925	177,493	115,931	293,424	922,631
Fourth	\$35,163 - \$43,539	190,304	7,450,784	115,513	22,717	7,504	30,221	7,727	153,461	97,414	250,875	893,989
Fifth	\$43,540 - \$52,990	155,279	7,436,633	122,712	12,112	6,656	18,768	7,876	149,356	89,738	239,094	892,353
Sixth	\$52,991 - \$64,015	128,318	7,442,220	120,133	7,117	7,051	14,168	8,970	143,271	86,935	230,206	887,441
Seventh	\$64,016 - \$80,030	104,968	7,441,105	124,014	4,957	7,371	12,328	8,853	145,195	88,885	234,080	891,166
Eighth	\$80,031 - \$118,903	79,267	7,444,149	127,483	4,528	13,254	17,782	8,210	153,475	91,709	245,184	893,052
Ninth	\$118,904 - \$311,880	43,819	7,441,727	118,324	3,943	25,441	29,384	6,702	154,410	96,104	250,514	909,559
Tenth	\$331,881 & Over	9,185	7,441,724	49,004	1,751	48,816	50,567	2,017	101,588	107,332	208,920	834,933
TOTALS		2,120,967	\$74,410,299	\$1,115,108	\$216,014	\$140,794	\$356,808	\$74,146	\$1,546,062	\$1,043,880	\$2,589,942	\$8,991,383
Top 5%	\$936,478 & Over	1,495	\$3,719,944	\$11,724	\$356	\$29,348	\$29,704	\$337	\$41,765	\$56,060	\$97,825	\$404,910
Top 1%	\$13,561,320 & Over	27	\$739,650	\$523	\$0	\$5,440	\$5,440	\$7	\$5,970	\$9,173	\$15,143	\$77,332

Table A-2 (b)

1992 Minnesota Tax Incidence Study
 Effective Tax Rates by Income Decile
 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 Consumers	Purchases by Businesses	Sales Tax Total	Purchases by Consumers	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$17,312 & Under	824,315	\$7,440,929	1.0%	0.5%	2.9%	1.5%	4.4%	1.4%	0.3%	0.6%	0.2%	5.9%	2.4%	8.3%
Second	\$17,313 - \$26,562	343,912	7,436,922	2.5%	0.3%	2.4%	1.1%	3.5%	0.9%	0.2%	0.6%	0.1%	6.4%	1.8%	8.2%
Third	\$26,563 - \$35,162	241,600	7,434,106	3.3%	0.3%	2.1%	1.0%	3.2%	0.8%	0.2%	0.6%	0.1%	6.8%	1.6%	8.5%
Fourth	\$35,163 - \$43,539	190,304	7,450,784	3.8%	0.3%	2.0%	1.0%	3.0%	0.7%	0.2%	0.6%	0.1%	7.1%	1.5%	8.6%
Fifth	\$43,540 - \$52,990	155,279	7,436,633	4.3%	0.3%	1.9%	0.9%	2.8%	0.6%	0.2%	0.6%	0.1%	7.3%	1.5%	8.8%
Sixth	\$52,991 - \$64,015	128,318	7,442,220	4.7%	0.3%	1.8%	0.9%	2.6%	0.5%	0.2%	0.5%	0.1%	7.4%	1.4%	8.8%
Seventh	\$64,016 - \$80,030	104,968	7,441,105	5.0%	0.3%	1.6%	0.8%	2.5%	0.4%	0.1%	0.5%	0.1%	7.5%	1.3%	8.8%
Eighth	\$80,031 - \$118,903	79,267	7,444,149	5.2%	0.2%	1.5%	0.8%	2.3%	0.3%	0.1%	0.4%	0.1%	7.4%	1.3%	8.7%
Ninth	\$118,904 - \$311,880	43,819	7,441,727	5.9%	0.2%	1.2%	0.8%	2.0%	0.2%	0.1%	0.3%	0.1%	7.6%	1.2%	8.9%
Tenth	\$331,881 & Over	9,185	7,441,724	6.7%	0.2%	0.4%	0.7%	1.2%	0.0%	0.1%	0.1%	0.1%	7.4%	1.1%	8.4%
TOTALS		2,120,967	\$74,410,299	4.2%	0.3%	1.8%	1.0%	2.8%	0.6%	0.2%	0.5%	0.1%	7.1%	1.5%	8.6%
Top 5%	\$936,478 & Over	1,495	\$3,719,944	7.0%	0.1%	0.2%	0.7%	0.9%	0.0%	0.0%	0.1%	0.1%	7.3%	1.0%	8.3%
Top 1%	\$13,561,320 & Over	27	\$739,650	7.7%	0.1%	0.0%	0.6%	0.6%	0.0%	0.0%	0.0%	0.1%	7.7%	0.7%	8.4%

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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 Property Taxes
				Homeowners after PTR	Renters after PTR	Owners of Rental Prop.	Total on Rental Prop.	Seasonal/Recreational	Residential Total			
First	\$17,312 & Under	824,315	\$7,440,929	1.5%	0.8%	0.2%	0.9%	0.1%	2.5%	2.1%	4.6%	12.9%
Second	\$17,313 - \$26,562	343,912	7,436,922	1.5%	0.8%	0.1%	0.8%	0.1%	2.4%	1.5%	3.9%	12.1%
Third	\$26,563 - \$35,162	241,600	7,434,106	1.6%	0.6%	0.1%	0.7%	0.1%	2.4%	1.6%	3.9%	12.4%
Fourth	\$35,163 - \$43,539	190,304	7,450,784	1.6%	0.3%	0.1%	0.4%	0.1%	2.1%	1.3%	3.4%	12.0%
Fifth	\$43,540 - \$52,990	155,279	7,436,633	1.7%	0.2%	0.1%	0.3%	0.1%	2.0%	1.2%	3.2%	12.0%
Sixth	\$52,991 - \$64,015	128,318	7,442,220	1.6%	0.1%	0.1%	0.2%	0.1%	1.9%	1.2%	3.1%	11.9%
Seventh	\$64,016 - \$80,030	104,968	7,441,105	1.7%	0.1%	0.1%	0.2%	0.1%	2.0%	1.2%	3.1%	12.0%
Eighth	\$80,031 - \$118,903	79,267	7,444,149	1.7%	0.1%	0.2%	0.2%	0.1%	2.1%	1.2%	3.3%	12.0%
Ninth	\$118,904 - \$311,880	43,819	7,441,727	1.6%	0.1%	0.3%	0.4%	0.1%	2.1%	1.3%	3.4%	12.2%
Tenth	\$331,881 & Over	9,185	7,441,724	0.7%	0.0%	0.7%	0.7%	0.0%	1.4%	1.4%	2.8%	11.2%
TOTALS		2,120,967	\$74,410,299	1.5%	0.3%	0.2%	0.5%	0.1%	2.1%	1.4%	3.5%	12.1%
Top 5%	\$936,478 & Over	1,495	\$3,719,944	0.3%	0.0%	0.8%	0.8%	0.0%	1.1%	1.5%	2.6%	10.9%
Top 1%	\$13,561,320 & Over	27	\$739,650	0.1%	0.0%	0.7%	0.7%	0.0%	0.8%	1.2%	2.0%	10.5%

APPENDIX B

Minnesota Tax Burden Amounts by Population Decile

Table B-1 (a)

1992 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 Consumers	Purchases by Businesses	Sales Tax Total	Purchases by Consumers	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,384 & Under	212,025	\$636,380	- \$453	\$4,652	\$27,493	\$18,315	\$45,808	\$15,966	\$2,819	\$6,716	\$1,959	\$49,722	\$27,745	\$77,467
Second	\$6,384 - \$9,881	212,018	1,546,323	\$3,052	7,806	46,905	25,186	72,091	23,626	4,777	9,331	2,290	82,914	40,059	122,973
Third	\$9,881 - \$14,594	212,057	2,367,747	23,034	10,216	65,309	33,605	98,914	29,844	6,234	13,395	3,540	131,582	53,595	185,177
Fourth	\$14,594 - \$19,609	212,256	3,313,731	56,551	12,906	86,693	41,471	128,164	37,297	7,696	20,066	4,310	200,607	66,383	266,990
Fifth	\$19,609 - \$25,421	212,101	4,334,693	101,952	15,379	106,134	49,601	155,735	41,819	9,145	26,257	5,114	276,162	79,239	355,401
Sixth	\$25,421 - \$32,108	212,079	5,632,328	170,649	18,719	126,596	60,068	186,664	45,207	10,867	32,437	6,426	374,889	96,080	470,969
Seventh	\$32,108 - \$40,785	212,032	7,218,796	252,551	22,068	150,780	71,575	222,355	52,157	13,075	41,981	7,813	497,469	114,531	612,000
Eighth	\$40,785 - \$52,073	212,023	9,158,399	373,685	27,030	177,578	87,204	264,782	56,927	15,517	51,991	9,392	660,181	139,143	799,324
Ninth	\$52,073 - \$70,567	212,242	12,073,769	556,740	32,918	214,532	105,242	319,774	58,432	19,061	64,196	11,398	893,900	168,619	1,062,519
Tenth	\$70,567 & Over	212,134	28,128,131	1,620,343	61,380	328,590	225,678	554,268	62,073	31,984	92,730	25,839	2,103,736	344,881	2,448,617
TOTALS		2,120,967	\$74,410,297	\$3,158,104	\$213,074	\$1,330,610	\$717,945	\$2,048,555	\$423,348	\$121,175	\$359,100	\$78,081	\$5,271,162	\$1,130,275	\$6,401,437
Top 5%	\$92,167 & Over	106,085	\$20,147,382	\$1,218,524	\$40,854	\$199,692	\$159,192	\$358,884	\$32,150	\$20,241	\$55,344	\$18,517	\$1,505,710	\$238,804	\$1,744,514
Top 1%	\$206,869 & Over	21,218	\$10,266,670	\$681,160	\$17,512	\$63,617	\$78,299	\$141,916	\$7,206	\$7,624	\$17,472	\$9,292	\$769,455	\$112,727	\$882,182

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 Property Taxes
				Homeowners after PTR	Renters after PTR	Owners of Rental Prop.	Total on Rental Prop.	Seasonal/Recreational	Residential Total			
First	\$6,384 & Under	212,025	\$636,380	\$19,188	\$5,709	\$6,454	\$12,163	\$1,077	\$32,428	\$32,432	\$64,860	\$142,327
Second	\$6,384 - \$9,881	212,018	1,546,323	23,171	9,260	989	10,249	1,029	34,449	27,590	62,039	185,012
Third	\$9,881 - \$14,594	212,057	2,367,747	27,734	19,942	2,044	21,986	1,626	51,346	49,626	100,972	286,149
Fourth	\$14,594 - \$19,609	212,256	3,313,731	45,113	27,265	2,158	29,423	3,116	77,652	57,064	134,716	401,706
Fifth	\$19,609 - \$25,421	212,101	4,334,693	64,646	33,408	3,520	36,928	4,876	106,450	66,038	172,488	527,889
Sixth	\$25,421 - \$32,108	212,079	5,632,328	86,389	39,675	5,049	44,724	6,590	137,703	83,577	221,280	692,249
Seventh	\$32,108 - \$40,785	212,032	7,218,796	113,508	34,205	6,122	40,327	8,504	162,339	105,530	267,869	879,869
Eighth	\$40,785 - \$52,073	212,023	9,158,399	145,979	20,814	10,396	31,210	9,358	186,547	117,559	304,106	1,103,430
Ninth	\$52,073 - \$70,567	212,242	12,073,769	199,811	11,689	10,567	22,256	14,256	236,323	140,696	377,019	1,439,538
Tenth	\$70,567 & Over	212,134	28,128,131	389,570	14,046	93,496	107,542	23,713	520,825	363,768	884,593	3,333,210
TOTALS		2,120,967	\$74,410,297	\$1,115,109	\$216,013	\$140,795	\$356,808	\$74,145	\$1,546,062	\$1,043,880	\$2,589,942	\$8,991,379
Top 5%	\$92,167 & Over	106,085	\$20,147,382	\$255,704	\$8,913	\$84,459	\$93,372	\$14,546	\$363,622	\$271,519	\$635,141	\$2,379,655
Top 1%	\$206,869 & Over	21,218	\$10,266,670	\$90,803	\$3,260	\$60,827	\$64,087	\$4,342	\$159,232	\$145,094	\$304,326	\$1,186,508

Table B-1 (b)

1992 Minnesota Tax Incidence Study
 Effective Tax Rates by Population Decile
 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 Consumers	Purchases by Businesses	Sales Tax Total	Purchases by Consumers	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,384 & Under	212,025	\$636,380	- 0.1%	0.7%	4.3%	2.9%	7.2%	2.5%	0.4%	1.1%	0.3%	7.8%	4.4%	12.2%
Second	\$6,384 - \$9,881	212,018	1,546,323	0.2%	0.5%	3.0%	1.6%	4.7%	1.5%	0.3%	0.6%	0.1%	5.4%	2.6%	8.0%
Third	\$9,881 - \$14,594	212,057	2,367,747	1.0%	0.4%	2.8%	1.4%	4.2%	1.3%	0.3%	0.6%	0.1%	5.6%	2.3%	7.8%
Fourth	\$14,594 - \$19,609	212,256	3,313,731	1.7%	0.4%	2.6%	1.3%	3.9%	1.1%	0.2%	0.6%	0.1%	6.1%	2.0%	8.1%
Fifth	\$19,609 - \$25,421	212,101	4,334,693	2.4%	0.4%	2.4%	1.1%	3.6%	1.0%	0.2%	0.6%	0.1%	6.4%	1.8%	8.2%
Sixth	\$25,421 - \$32,108	212,079	5,632,328	3.0%	0.3%	2.2%	1.1%	3.3%	0.8%	0.2%	0.6%	0.1%	6.7%	1.7%	8.4%
Seventh	\$32,108 - \$40,785	212,032	7,218,796	3.5%	0.3%	2.1%	1.0%	3.1%	0.7%	0.2%	0.6%	0.1%	6.9%	1.6%	8.5%
Eighth	\$40,785 - \$52,073	212,023	9,158,399	4.1%	0.3%	1.9%	1.0%	2.9%	0.6%	0.2%	0.6%	0.1%	7.2%	1.5%	8.7%
Ninth	\$52,073 - \$70,567	212,242	12,073,769	4.6%	0.3%	1.8%	0.9%	2.6%	0.5%	0.2%	0.5%	0.1%	7.4%	1.4%	8.8%
Tenth	\$70,567 & Over	212,134	28,128,131	5.8%	0.2%	1.2%	0.8%	2.0%	0.2%	0.1%	0.3%	0.1%	7.5%	1.2%	8.7%
TOTALS		2,120,967	\$74,410,297	4.2%	0.3%	1.8%	1.0%	2.8%	0.6%	0.2%	0.5%	0.1%	7.1%	1.5%	8.6%
Top 5%	\$92,167 & Over	106,085	\$20,147,382	6.0%	0.2%	1.0%	0.8%	1.8%	0.2%	0.1%	0.3%	0.1%	7.5%	1.2%	8.7%
Top 1%	\$206,869 & Over	21,218	\$10,266,670	6.6%	0.2%	0.6%	0.8%	1.4%	0.1%	0.1%	0.2%	0.1%	7.5%	1.1%	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 Property Taxes
				Homeowners after PTR	Renters after PTR	Owners of Rental Prop.	Total on Rental Prop.	Seasonal/Recreational	Residential Total			
First	\$6,384 & Under	212,025	\$636,380	3.0%	0.9%	1.0%	1.9%	0.2%	5.1%	5.1%	10.2%	22.4%
Second	\$6,384 - \$9,881	212,018	1,546,323	1.5%	0.6%	0.1%	0.7%	0.1%	2.2%	1.8%	4.0%	12.0%
Third	\$9,881 - \$14,594	212,057	2,367,747	1.2%	0.8%	0.1%	0.9%	0.1%	2.2%	2.1%	4.3%	12.1%
Fourth	\$14,594 - \$19,609	212,256	3,313,731	1.4%	0.8%	0.1%	0.9%	0.1%	2.3%	1.7%	4.1%	12.1%
Fifth	\$19,609 - \$25,421	212,101	4,334,693	1.5%	0.8%	0.1%	0.9%	0.1%	2.5%	1.5%	4.0%	12.2%
Sixth	\$25,421 - \$32,108	212,079	5,632,328	1.5%	0.7%	0.1%	0.8%	0.1%	2.4%	1.5%	3.9%	12.3%
Seventh	\$32,108 - \$40,785	212,032	7,218,796	1.6%	0.5%	0.1%	0.6%	0.1%	2.2%	1.5%	3.7%	12.2%
Eighth	\$40,785 - \$52,073	212,023	9,158,399	1.6%	0.2%	0.1%	0.3%	0.1%	2.0%	1.3%	3.3%	12.0%
Ninth	\$52,073 - \$70,567	212,242	12,073,769	1.7%	0.1%	0.1%	0.2%	0.1%	2.0%	1.2%	3.1%	11.9%
Tenth	\$70,567 & Over	212,134	28,128,131	1.4%	0.0%	0.3%	0.4%	0.1%	1.9%	1.3%	3.1%	11.9%
TOTALS		2,120,967	\$74,410,297	1.5%	0.3%	0.2%	0.5%	0.1%	2.1%	1.4%	3.5%	12.1%
Top 5%	\$92,167 & Over	106,085	\$20,147,382	1.3%	0.0%	0.4%	0.5%	0.1%	1.8%	1.3%	3.2%	11.8%
Top 1%	\$206,869 & Over	21,218	\$10,266,670	0.9%	0.0%	0.6%	0.6%	0.0%	1.6%	1.4%	3.0%	11.6%

Table B-2 (a)

1992 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 Consumers	Purchases by Businesses	Sales Tax Total	Purchases by Consumers	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,384 & Under	32,716	\$103,326	- \$95	\$790	\$4,404	\$4,761	\$9,165	\$2,430	\$453	\$1,329	\$497	\$8,068	\$6,501	\$14,569
Second	\$6,384 - \$9,881	45,804	341,068	- \$282	1,707	10,193	5,681	15,874	4,748	1,043	2,307	495	16,966	8,926	25,892
Third	\$9,881 - \$14,594	57,202	644,577	1,687	2,724	17,137	9,105	26,242	6,988	1,658	3,723	836	29,535	14,323	43,858
Fourth	\$14,594 - \$19,609	81,002	1,267,463	11,887	5,118	33,573	16,474	50,047	13,576	2,976	8,529	1,618	67,565	26,186	93,751
Fifth	\$19,609 - \$25,421	103,628	2,127,975	38,192	7,683	52,705	24,751	77,456	20,037	4,532	13,849	2,350	124,783	39,316	164,099
Sixth	\$25,421 - \$32,108	123,195	3,285,211	85,686	11,077	74,570	35,452	110,022	26,079	6,360	20,111	3,573	206,446	56,462	262,908
Seventh	\$32,108 - \$40,785	148,441	5,066,785	164,723	15,658	107,076	50,312	157,388	37,376	9,252	31,176	5,099	340,351	80,321	420,672
Eighth	\$40,785 - \$52,073	164,179	7,115,516	284,536	20,915	138,570	67,211	205,781	44,500	12,118	41,579	6,818	509,185	107,062	616,247
Ninth	\$52,073 - \$70,567	185,568	10,561,544	486,238	28,846	188,061	90,873	278,934	51,553	16,718	56,756	9,432	782,608	145,869	928,477
Tenth	\$70,567 & Over	191,485	25,534,167	1,473,666	55,576	297,871	202,390	500,261	56,511	29,094	84,372	22,572	1,912,420	309,632	2,222,052
TOTALS		1,133,220	\$56,047,632	\$2,546,238	\$150,094	\$924,160	\$507,010	\$1,431,170	\$263,798	\$84,204	\$263,731	\$53,290	\$3,997,927	\$794,598	\$4,792,525
Top 5%	\$92,167 & Over	96,222	\$18,359,122	\$1,113,325	\$37,092	\$181,606	\$143,507	\$325,113	\$29,318	\$18,492	\$50,488	\$16,353	\$1,374,737	\$215,444	\$1,590,181
Top 1%	\$206,869 & Over	19,369	\$9,403,029	\$624,637	\$15,909	\$58,182	\$70,801	\$128,983	\$6,598	\$6,997	\$16,054	\$8,317	\$705,471	\$102,024	\$807,495

Population Decile	Income Range	Number of Households	Household Income	Residential Local Property Taxes					Nonresidential Local Property Taxes	Local Property Taxes	Total State and Local Property Taxes
				Total on Homeowners	Homeowners after PTR	Owners of Rental Prop.	Seasonal/ Recreational	Residential Total			
First	\$6,384 & Under	32,716	\$103,326	\$18,591	\$15,726	\$4,485	\$1,077	\$21,288	\$8,724	\$30,012	\$44,581
Second	\$6,384 - \$9,881	45,804	341,068	27,012	20,925	602	1,029	22,556	5,632	28,188	54,080
Third	\$9,881 - \$14,594	57,202	644,577	30,916	23,853	1,033	1,626	26,512	9,728	36,240	80,098
Fourth	\$14,594 - \$19,609	81,002	1,267,463	49,651	40,607	1,420	3,116	45,143	19,549	64,692	158,443
Fifth	\$19,609 - \$25,421	103,628	2,127,975	68,362	60,775	2,278	4,876	67,929	25,921	93,850	257,949
Sixth	\$25,421 - \$32,108	123,195	3,285,211	86,789	81,178	3,620	6,590	91,388	41,792	133,180	396,088
Seventh	\$32,108 - \$40,785	148,441	5,066,785	113,463	108,235	4,571	8,504	121,310	59,390	180,700	601,372
Eighth	\$40,785 - \$52,073	164,179	7,115,516	144,522	140,870	8,117	9,358	158,345	75,203	233,548	849,795
Ninth	\$52,073 - \$70,567	185,568	10,561,544	198,348	195,666	7,825	14,256	217,747	104,513	322,260	1,250,737
Tenth	\$70,567 & Over	191,485	25,534,167	385,435	384,539	82,121	23,713	490,373	301,464	791,837	3,013,889
TOTALS		1,133,220	\$56,047,632	\$1,123,089	\$1,072,374	\$116,072	\$74,145	\$1,262,591	\$651,916	\$1,914,507	\$6,707,032
Top 5%	\$92,167 & Over	96,222	\$18,359,122	\$253,497	\$253,027	\$75,196	\$14,546	\$342,769	\$231,010	\$573,779	\$2,163,960
Top 1%	\$206,869 & Over	19,369	\$9,403,029	\$90,363	\$90,242	\$54,514	\$4,342	\$149,098	\$127,926	\$277,024	\$1,084,519

Table B-2 (b)

1992 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 Consumers	Purchases by Businesses	Sales Tax Total	Purchases by Consumers	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,384 & Under	32,716	\$103,326	- 0.1%	0.8%	4.3%	4.6%	8.9%	2.4%	0.4%	1.3%	0.5%	7.8%	6.3%	14.1%
Second	\$6,384 - \$9,881	45,804	341,068	- 0.1%	0.5%	3.0%	1.7%	4.7%	1.4%	0.3%	0.7%	0.1%	5.0%	2.6%	7.6%
Third	\$9,881 - \$14,594	57,202	644,577	0.3%	0.4%	2.7%	1.4%	4.1%	1.1%	0.3%	0.6%	0.1%	4.6%	2.2%	6.8%
Fourth	\$14,594 - \$19,609	81,002	1,267,463	0.9%	0.4%	2.6%	1.3%	3.9%	1.1%	0.2%	0.7%	0.1%	5.3%	2.1%	7.4%
Fifth	\$19,609 - \$25,421	103,628	2,127,975	1.8%	0.4%	2.5%	1.2%	3.6%	0.9%	0.2%	0.7%	0.1%	5.9%	1.8%	7.7%
Sixth	\$25,421 - \$32,108	123,195	3,285,211	2.6%	0.3%	2.3%	1.1%	3.3%	0.8%	0.2%	0.6%	0.1%	6.3%	1.7%	8.0%
Seventh	\$32,108 - \$40,785	148,441	5,066,785	3.3%	0.3%	2.1%	1.0%	3.1%	0.7%	0.2%	0.6%	0.1%	6.7%	1.6%	8.3%
Eighth	\$40,785 - \$52,073	164,179	7,115,516	4.0%	0.3%	1.9%	0.9%	2.9%	0.6%	0.2%	0.6%	0.1%	7.2%	1.5%	8.7%
Ninth	\$52,073 - \$70,567	185,568	10,561,544	4.6%	0.3%	1.8%	0.9%	2.6%	0.5%	0.2%	0.5%	0.1%	7.4%	1.4%	8.8%
Tenth	\$70,567 & Over	191,485	25,534,167	5.8%	0.2%	1.2%	0.8%	2.0%	0.2%	0.1%	0.3%	0.1%	7.5%	1.2%	8.7%
TOTALS		1,133,220	\$56,047,632	4.5%	0.3%	1.6%	0.9%	2.6%	0.5%	0.2%	0.5%	0.1%	7.1%	1.4%	8.6%
Top 5%	\$92,167 & Over	96,222	\$18,359,122	6.1%	0.2%	1.0%	0.8%	1.8%	0.2%	0.1%	0.3%	0.1%	7.5%	1.2%	8.7%
Top 1%	\$206,869 & Over	19,369	\$9,403,029	6.6%	0.2%	0.6%	0.8%	1.4%	0.1%	0.1%	0.2%	0.1%	7.5%	1.1%	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 Property Taxes
				Total on Homeowners	Homeowners after PTR	Owners of Rental Prop.	Seasonal/Recreational	Residential Total			
First	\$6,384 & Under	32,716	\$103,326	18.0%	15.2%	4.3%	1.0%	20.6%	8.4%	29.0%	43.1%
Second	\$6,384 - \$9,881	45,804	341,068	7.9%	6.1%	0.2%	0.3%	6.6%	1.7%	8.3%	15.9%
Third	\$9,881 - \$14,594	57,202	644,577	4.8%	3.7%	0.2%	0.3%	4.1%	1.5%	5.6%	12.4%
Fourth	\$14,594 - \$19,609	81,002	1,267,463	3.9%	3.2%	0.1%	0.2%	3.6%	1.5%	5.1%	12.5%
Fifth	\$19,609 - \$25,421	103,628	2,127,975	3.2%	2.9%	0.1%	0.2%	3.2%	1.2%	4.4%	12.1%
Sixth	\$25,421 - \$32,108	123,195	3,285,211	2.6%	2.5%	0.1%	0.2%	2.8%	1.3%	4.1%	12.1%
Seventh	\$32,108 - \$40,785	148,441	5,066,785	2.2%	2.1%	0.1%	0.2%	2.4%	1.2%	3.6%	11.9%
Eighth	\$40,785 - \$52,073	164,179	7,115,516	2.0%	2.0%	0.1%	0.1%	2.2%	1.1%	3.3%	11.9%
Ninth	\$52,073 - \$70,567	185,568	10,561,544	1.9%	1.9%	0.1%	0.1%	2.1%	1.0%	3.1%	11.8%
Tenth	\$70,567 & Over	191,485	25,534,167	1.5%	1.5%	0.3%	0.1%	1.9%	1.2%	3.1%	11.8%
TOTALS		1,133,220	\$56,047,632	2.0%	1.9%	0.2%	0.1%	2.3%	1.2%	3.4%	12.0%
Top 5%	\$92,167 & Over	96,222	\$18,359,122	1.4%	1.4%	0.4%	0.1%	1.9%	1.3%	3.1%	11.8%
Top 1%	\$206,869 & Over	19,369	\$9,403,029	1.0%	1.0%	0.6%	0.0%	1.6%	1.4%	2.9%	11.5%

Table B-3 (a)

1992 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 Consumers	Purchases by Businesses	Sales Tax Total	Purchases by Consumers	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,384 & Under	82,613	\$265,268	- \$25	\$1,829	\$11,038	\$6,103	\$17,141	\$6,465	\$1,120	\$2,366	\$538	\$19,844	\$9,590	\$29,434
Second	\$6,384 - \$9,881	100,588	729,488	\$1,327	3,678	22,115	11,616	33,731	11,408	2,248	4,030	1,002	38,880	18,544	57,424
Third	\$9,881 - \$14,594	95,528	1,078,205	14,393	4,632	29,792	14,593	44,385	14,058	2,812	5,759	1,400	64,002	23,437	87,439
Fourth	\$14,594 - \$19,609	88,878	1,389,016	33,606	5,185	35,692	16,255	51,947	16,119	3,148	7,365	1,530	92,782	26,118	118,900
Fifth	\$19,609 - \$25,421	76,917	1,569,832	47,733	5,337	37,460	16,781	54,241	15,287	3,219	8,284	1,617	108,764	26,954	135,718
Sixth	\$25,421 - \$32,108	75,111	1,982,544	76,211	6,424	43,423	19,862	63,285	15,994	3,754	9,862	1,978	145,490	32,018	177,508
Seventh	\$32,108 - \$40,785	47,902	1,620,974	70,694	4,787	32,475	14,844	47,319	10,888	2,830	7,670	1,496	121,727	23,957	145,684
Eighth	\$40,785 - \$52,073	34,723	1,484,722	66,872	4,500	27,928	13,446	41,374	8,759	2,420	7,052	1,441	110,611	21,807	132,418
Ninth	\$52,073 - \$70,567	17,145	969,363	47,006	2,613	16,840	8,375	25,215	4,316	1,482	4,568	865	72,730	13,335	86,065
Tenth	\$70,567 & Over	11,508	1,444,975	82,479	3,368	16,853	12,093	28,946	3,042	1,583	4,325	1,434	106,699	18,478	125,177
TOTALS		630,913	\$12,534,387	\$440,296	\$42,353	\$273,616	\$133,968	\$407,584	\$106,336	\$24,616	\$61,281	\$13,301	\$881,529	\$214,238	\$1,095,767
Top 5%	\$92,167 & Over	5,438	\$990,253	\$58,737	\$2,183	\$9,802	\$8,276	\$18,078	\$1,529	\$943	\$2,475	\$1,019	\$72,543	\$12,421	\$84,964
Top 1%	\$206,869 & Over	1,022	\$489,869	\$31,759	\$941	\$2,955	\$4,007	\$6,962	\$326	\$337	\$741	\$499	\$35,781	\$5,784	\$41,565

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 Property Taxes
				Total on Renters	Renters after PTR	Owners of Rental Prop.	Residential Total			
First	\$6,384 & Under	82,613	\$265,268	\$14,114	\$5,709	\$650	\$6,359	\$6,112	\$12,471	\$41,905
Second	\$6,384 - \$9,881	100,588	729,488	30,576	9,260	117	9,377	10,581	19,958	77,382
Third	\$9,881 - \$14,594	95,528	1,078,205	36,253	19,942	232	20,174	15,484	35,658	123,097
Fourth	\$14,594 - \$19,609	88,878	1,389,016	44,209	27,265	359	27,624	15,746	43,370	162,270
Fifth	\$19,609 - \$25,421	76,917	1,569,832	45,046	33,408	587	33,995	17,540	51,535	187,253
Sixth	\$25,421 - \$32,108	75,111	1,982,544	45,697	39,675	779	40,454	20,376	60,830	238,338
Seventh	\$32,108 - \$40,785	47,902	1,620,974	35,344	34,205	510	34,715	16,063	50,778	196,462
Eighth	\$40,785 - \$52,073	34,723	1,484,722	21,105	20,814	664	21,478	15,605	37,083	169,501
Ninth	\$52,073 - \$70,567	17,145	969,363	11,780	11,689	1,154	12,843	9,558	22,401	108,466
Tenth	\$70,567 & Over	11,508	1,444,975	14,056	14,046	5,338	19,384	20,424	39,808	164,985
TOTALS		630,913	\$12,534,387	\$298,180	\$216,013	\$10,390	\$226,403	\$147,489	\$373,892	\$1,469,659
Top 5%	\$92,167 & Over	5,438	\$990,253	\$8,913	\$8,913	\$4,644	\$13,557	\$15,462	\$29,019	\$113,983
Top 1%	\$206,869 & Over	1,022	\$489,869	\$3,260	\$3,260	\$3,222	\$6,482	\$7,762	\$14,244	\$55,809

Table B-3 (b)

1992 Minnesota Tax Incidence Study
 Effective Tax Rates by Population Decile
 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 Consumers	Purchases by Businesses	Sales Tax Total	Purchases by Consumers	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,384 & Under	82,613	\$265,268	0.0%	0.7%	4.2%	2.3%	6.5%	2.4%	0.4%	0.9%	0.2%	7.5%	3.6%	11.1%
Second	\$6,384 - \$9,881	100,588	729,488	0.2%	0.5%	3.0%	1.6%	4.6%	1.6%	0.3%	0.6%	0.1%	5.3%	2.5%	7.9%
Third	\$9,881 - \$14,594	95,528	1,078,205	1.3%	0.4%	2.8%	1.4%	4.1%	1.3%	0.3%	0.5%	0.1%	5.9%	2.2%	8.1%
Fourth	\$14,594 - \$19,609	88,878	1,389,016	2.4%	0.4%	2.6%	1.2%	3.7%	1.2%	0.2%	0.5%	0.1%	6.7%	1.9%	8.6%
Fifth	\$19,609 - \$25,421	76,917	1,569,832	3.0%	0.3%	2.4%	1.1%	3.5%	1.0%	0.2%	0.5%	0.1%	6.9%	1.7%	8.6%
Sixth	\$25,421 - \$32,108	75,111	1,982,544	3.8%	0.3%	2.2%	1.0%	3.2%	0.8%	0.2%	0.5%	0.1%	7.3%	1.6%	9.0%
Seventh	\$32,108 - \$40,785	47,902	1,620,974	4.4%	0.3%	2.0%	0.9%	2.9%	0.7%	0.2%	0.5%	0.1%	7.5%	1.5%	9.0%
Eighth	\$40,785 - \$52,073	34,723	1,484,722	4.5%	0.3%	1.9%	0.9%	2.8%	0.6%	0.2%	0.5%	0.1%	7.4%	1.5%	8.9%
Ninth	\$52,073 - \$70,567	17,145	969,363	4.8%	0.3%	1.7%	0.9%	2.6%	0.4%	0.2%	0.5%	0.1%	7.5%	1.4%	8.9%
Tenth	\$70,567 & Over	11,508	1,444,975	5.7%	0.2%	1.2%	0.8%	2.0%	0.2%	0.1%	0.3%	0.1%	7.4%	1.3%	8.7%
TOTALS		630,913	\$12,534,387	3.5%	0.3%	2.2%	1.1%	3.3%	0.8%	0.2%	0.5%	0.1%	7.0%	1.7%	8.7%
Top 5%	\$92,167 & Over	5,438	\$990,253	5.9%	0.2%	1.0%	0.8%	1.8%	0.2%	0.1%	0.2%	0.1%	7.3%	1.3%	8.6%
Top 1%	\$206,869 & Over	1,022	\$489,869	6.5%	0.2%	0.6%	0.8%	1.4%	0.1%	0.1%	0.2%	0.1%	7.3%	1.2%	8.5%

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 Property Taxes
				Total on Renters	Renters after PTR	Owners of Rental Prop.	Residential Total			
First	\$6,384 & Under	82,613	\$265,268	5.3%	2.2%	0.2%	2.4%	2.3%	4.7%	15.8%
Second	\$6,384 - \$9,881	100,588	729,488	4.2%	1.3%	0.0%	1.3%	1.5%	2.7%	10.6%
Third	\$9,881 - \$14,594	95,528	1,078,205	3.4%	1.8%	0.0%	1.9%	1.4%	3.3%	11.4%
Fourth	\$14,594 - \$19,609	88,878	1,389,016	3.2%	2.0%	0.0%	2.0%	1.1%	3.1%	11.7%
Fifth	\$19,609 - \$25,421	76,917	1,569,832	2.9%	2.1%	0.0%	2.2%	1.1%	3.3%	11.9%
Sixth	\$25,421 - \$32,108	75,111	1,982,544	2.3%	2.0%	0.0%	2.0%	1.0%	3.1%	12.0%
Seventh	\$32,108 - \$40,785	47,902	1,620,974	2.2%	2.1%	0.0%	2.1%	1.0%	3.1%	12.1%
Eighth	\$40,785 - \$52,073	34,723	1,484,722	1.4%	1.4%	0.0%	1.4%	1.1%	2.5%	11.4%
Ninth	\$52,073 - \$70,567	17,145	969,363	1.2%	1.2%	0.1%	1.3%	1.0%	2.3%	11.2%
Tenth	\$70,567 & Over	11,508	1,444,975	1.0%	1.0%	0.4%	1.3%	1.4%	2.8%	11.4%
TOTALS		630,913	\$12,534,387	2.4%	1.7%	0.1%	1.8%	1.2%	3.0%	11.7%
Top 5%	\$92,167 & Over	5,438	\$990,253	0.9%	0.9%	0.5%	1.4%	1.6%	2.9%	11.5%
Top 1%	\$206,869 & Over	1,022	\$489,869	0.7%	0.7%	0.7%	1.3%	1.6%	2.9%	11.4%

Table B-4 (a)

1992 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 Consumers	Purchases by Businesses	Sales Tax Total	Purchases by Consumers	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,384 & Under	96,696	\$267,786	-\$333	\$2,033	\$12,051	\$7,451	\$19,502	\$7,071	\$1,246	\$3,021	\$924	\$21,810	\$11,654	\$33,464
Second	\$6,384 - \$9,881	65,626	475,767	\$2,007	2,421	14,597	7,889	22,486	7,470	1,486	2,994	793	27,068	12,589	39,657
Third	\$9,881 - \$14,594	59,327	644,965	6,954	2,860	18,380	9,907	28,287	8,798	1,764	3,913	1,304	38,045	15,835	53,880
Fourth	\$14,594 - \$19,609	42,376	657,252	11,058	2,603	17,428	8,742	26,170	7,602	1,572	4,172	1,162	40,260	14,079	54,339
Fifth	\$19,609 - \$25,421	31,556	636,886	16,027	2,359	15,969	8,069	24,038	6,495	1,394	4,124	1,147	42,615	12,969	55,584
Sixth	\$25,421 - \$32,108	13,773	364,573	8,752	1,218	8,603	4,754	13,357	3,134	753	2,464	875	22,953	7,600	30,553
Seventh	\$32,108 - \$40,785	15,689	531,037	17,134	1,623	11,229	6,419	17,648	3,893	993	3,135	1,218	35,391	10,253	45,644
Eighth	\$40,785 - \$52,073	13,121	558,161	22,277	1,615	11,080	6,547	17,627	3,668	979	3,360	1,133	40,385	10,274	50,659
Ninth	\$52,073 - \$70,567	9,529	542,862	23,496	1,459	9,631	5,994	15,625	2,563	861	2,872	1,101	38,562	9,415	47,977
Tenth	\$70,567 & Over	9,141	1,148,989	64,198	2,436	13,866	11,195	25,061	2,520	1,307	4,033	1,833	84,617	16,771	101,388
TOTALS		356,834	\$5,828,278	\$171,570	\$20,627	\$132,834	\$76,967	\$209,801	\$53,214	\$12,355	\$34,088	\$11,490	\$391,706	\$121,439	\$513,145
Top 5%	\$92,167 & Over	4,425	\$798,007	\$46,462	\$1,579	\$8,284	\$7,409	\$15,693	\$1,303	\$806	\$2,381	\$1,145	\$58,430	\$10,939	\$69,369
Top 1%	\$206,869 & Over	827	\$373,772	\$24,764	\$662	\$2,480	\$3,491	\$5,971	\$282	\$290	\$677	\$476	\$28,203	\$4,919	\$33,122

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 Property Taxes
				Total (HGA) on Farmers	Farmers after PTR	Owners of Rental Prop.	Residential Total			
First	\$6,384 & Under	96,696	\$267,786	\$4,351	\$3,462	\$1,319	\$4,781	\$17,596	\$22,377	\$55,841
Second	\$6,384 - \$9,881	65,626	475,767	2,739	2,246	270	2,516	11,377	13,893	53,550
Third	\$9,881 - \$14,594	59,327	644,965	4,559	3,881	779	4,660	24,414	29,074	82,954
Fourth	\$14,594 - \$19,609	42,376	657,252	5,079	4,506	379	4,885	21,769	26,654	80,993
Fifth	\$19,609 - \$25,421	31,556	636,886	4,237	3,871	655	4,526	22,577	27,103	82,687
Sixth	\$25,421 - \$32,108	13,773	364,573	5,458	5,211	650	5,861	21,409	27,270	57,823
Seventh	\$32,108 - \$40,785	15,689	531,037	5,615	5,273	1,041	6,314	30,077	36,391	82,035
Eighth	\$40,785 - \$52,073	13,121	558,161	5,298	5,109	1,615	6,724	26,751	33,475	84,134
Ninth	\$52,073 - \$70,567	9,529	542,862	4,277	4,145	1,588	5,733	26,625	32,358	80,335
Tenth	\$70,567 & Over	9,141	1,148,989	5,106	5,031	6,037	11,068	41,880	52,948	154,336
TOTALS		356,834	\$5,828,278	\$46,719	\$42,735	\$14,333	\$57,068	\$244,475	\$301,543	\$814,688
Top 5%	\$92,167 & Over	4,425	\$798,007	\$2,715	\$2,677	\$4,619	\$7,296	\$25,047	\$32,343	\$101,712
Top 1%	\$206,869 & Over	827	\$373,772	\$565	\$561	\$3,091	\$3,652	\$9,406	\$13,058	\$46,180

Table B-4 (b)

1992 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 Consumers	Purchases by Businesses	Sales Tax Total	Purchases by Consumers	Purchases by Businesses	Taxes on Individuals	Taxes on Businesses	Total on Individuals	Total on Businesses	State Taxes Total
First	\$6,384 & Under	96,696	\$267,786	- 0.1%	0.8%	4.5%	2.8%	7.3%	2.6%	0.5%	1.1%	0.3%	8.1%	4.4%	12.5%
Second	\$6,384 - \$9,881	65,626	475,767	0.4%	0.5%	3.1%	1.7%	4.7%	1.6%	0.3%	0.6%	0.2%	5.7%	2.6%	8.3%
Third	\$9,881 - \$14,594	59,327	644,965	1.1%	0.4%	2.8%	1.5%	4.4%	1.4%	0.3%	0.6%	0.2%	5.9%	2.5%	8.4%
Fourth	\$14,594 - \$19,609	42,376	657,252	1.7%	0.4%	2.7%	1.3%	4.0%	1.2%	0.2%	0.6%	0.2%	6.1%	2.1%	8.3%
Fifth	\$19,609 - \$25,421	31,556	636,886	2.5%	0.4%	2.5%	1.3%	3.8%	1.0%	0.2%	0.6%	0.2%	6.7%	2.0%	8.7%
Sixth	\$25,421 - \$32,108	13,773	364,573	2.4%	0.3%	2.4%	1.3%	3.7%	0.9%	0.2%	0.7%	0.2%	6.3%	2.1%	8.4%
Seventh	\$32,108 - \$40,785	15,689	531,037	3.2%	0.3%	2.1%	1.2%	3.3%	0.7%	0.2%	0.6%	0.2%	6.7%	1.9%	8.6%
Eighth	\$40,785 - \$52,073	13,121	558,161	4.0%	0.3%	2.0%	1.2%	3.2%	0.7%	0.2%	0.6%	0.2%	7.2%	1.8%	9.1%
Ninth	\$52,073 - \$70,567	9,529	542,862	4.3%	0.3%	1.8%	1.1%	2.9%	0.5%	0.2%	0.5%	0.2%	7.1%	1.7%	8.8%
Tenth	\$70,567 & Over	9,141	1,148,989	5.6%	0.2%	1.2%	1.0%	2.2%	0.2%	0.1%	0.4%	0.2%	7.4%	1.5%	8.8%
TOTALS		356,834	\$5,828,278	2.9%	0.4%	2.3%	1.3%	3.6%	0.9%	0.2%	0.6%	0.2%	6.7%	2.1%	8.8%
Top 5%	\$92,167 & Over	4,425	\$798,007	5.8%	0.2%	1.0%	0.9%	2.0%	0.2%	0.1%	0.3%	0.1%	7.3%	1.4%	8.7%
Top 1%	\$206,869 & Over	827	\$373,772	6.6%	0.2%	0.7%	0.9%	1.6%	0.1%	0.1%	0.2%	0.1%	7.5%	1.3%	8.9%

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 Property Taxes
				Total (HGA) on Farmers	Farmers after PTR	Owners of Rental Prop.	Residential Total			
First	\$6,384 & Under	96,696	\$267,786	1.6%	1.3%	0.5%	1.8%	6.6%	8.4%	20.9%
Second	\$6,384 - \$9,881	65,626	475,767	0.6%	0.5%	0.1%	0.5%	2.4%	2.9%	11.3%
Third	\$9,881 - \$14,594	59,327	644,965	0.7%	0.6%	0.1%	0.7%	3.8%	4.5%	12.9%
Fourth	\$14,594 - \$19,609	42,376	657,252	0.8%	0.7%	0.1%	0.7%	3.3%	4.1%	12.3%
Fifth	\$19,609 - \$25,421	31,556	636,886	0.7%	0.6%	0.1%	0.7%	3.5%	4.3%	13.0%
Sixth	\$25,421 - \$32,108	13,773	364,573	1.5%	1.4%	0.2%	1.6%	5.9%	7.5%	15.9%
Seventh	\$32,108 - \$40,785	15,689	531,037	1.1%	1.0%	0.2%	1.2%	5.7%	6.9%	15.4%
Eighth	\$40,785 - \$52,073	13,121	558,161	0.9%	0.9%	0.3%	1.2%	4.8%	6.0%	15.1%
Ninth	\$52,073 - \$70,567	9,529	542,862	0.8%	0.8%	0.3%	1.1%	4.9%	6.0%	14.8%
Tenth	\$70,567 & Over	9,141	1,148,989	0.4%	0.4%	0.5%	1.0%	3.6%	4.6%	13.4%
TOTALS		356,834	\$5,828,278	0.8%	0.7%	0.2%	1.0%	4.2%	5.2%	14.0%
Top 5%	\$92,167 & Over	4,425	\$798,007	0.3%	0.3%	0.6%	0.9%	3.1%	4.1%	12.7%
Top 1%	\$206,869 & Over	827	\$373,772	0.2%	0.2%	0.8%	1.0%	2.5%	3.5%	12.4%

APPENDIX C

Household Characteristics and Tax Burdens by Population Deciles

Table C-1

1992 Minnesota Tax Incidence Study
Household Characteristics and Average Tax Burden Amounts by Population Decile
ONE-PERSON HOUSEHOLDS (except retired elderly)

<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>	114,366	89,291	92,211	96,789	93,621	82,030	57,121	32,377	15,375	10,850	684,031
Percent of households in given decile	58%	43%	46%	46%	44%	39%	27%	15%	7%	5%	33%
<i>Average household income</i>	\$2,763	\$7,224	\$11,230	\$15,593	\$20,400	\$26,452	\$33,771	\$42,647	\$55,598	\$164,924	\$19,794
Percent with earned income	60%	84%	92%	95%	98%	96%	99%	95%	97%	92%	88%
Average earned income	\$3,038	\$6,523	\$10,248	\$14,394	\$18,760	\$24,824	\$32,210	\$38,152	\$48,430	\$96,893	\$18,636
<i>Housing Status</i>											
Homeowners	8%	10%	12%	22%	33%	43%	50%	62%	76%	73%	27%
Renters	43%	49%	55%	58%	52%	55%	44%	36%	23%	24%	49%
Farmers	1%	1%	1%	1%	1%	1%	2%	2%	1%	2%	1%
Other	48%	40%	32%	18%	14%	1%	4%	1%	0%	0%	23%
Average market value of home	\$38,698	\$54,309	\$41,165	\$47,543	\$55,235	\$58,446	\$66,267	\$75,635	\$89,046	\$133,937	\$62,465
Average monthly rent	\$128	\$226	\$291	\$377	\$456	\$477	\$568	\$466	\$537	\$1,035	\$357
<u>AVERAGE TAX BURDENS</u>											
<i>Local Property Tax</i>											
All households											
Total tax	\$111	\$227	\$270	\$413	\$536	\$639	\$721	\$808	\$1,051	\$2,056	\$448
- Property tax refund	<u>-50</u>	<u>-84</u>	<u>-56</u>	<u>-88</u>	<u>-77</u>	<u>-38</u>	<u>-11</u>	<u>-3</u>	<u>-11</u>	<u>-2</u>	<u>-56</u>
Tax after PTR	\$62	\$144	\$215	\$324	\$459	\$601	\$710	\$804	\$1,040	\$2,054	\$392
Renters only											
Total tax on rental unit	\$254	\$451	\$580	\$750	\$909	\$949	\$1,131	\$928	\$1,070	\$2,062	\$711
Renters' total tax on unit	\$164	\$290	\$374	\$483	\$586	\$611	\$729	\$598	\$689	\$1,328	\$458
- Property tax refund	-94	-144	-89	-122	-103	-50	-6	0	0	0	-88
Renters' tax after PTR	\$70	\$147	\$285	\$361	\$483	\$561	\$723	\$598	\$689	\$1,328	\$370
Homeowners only											
Total tax on home	\$502	\$811	\$550	\$589	\$697	\$714	\$796	\$958	\$1,176	\$2,366	\$820
- Property tax refund	<u>-115</u>	<u>-127</u>	<u>-58</u>	<u>-78</u>	<u>-70</u>	<u>-24</u>	<u>-16</u>	<u>-5</u>	<u>-15</u>	<u>-3</u>	<u>-45</u>
Homeowners' tax after PTR	\$387	\$684	\$492	\$511	\$627	\$690	\$780	\$953	\$1,162	\$2,364	\$775
<i>State Income Tax</i>	\$1	\$63	\$267	\$518	\$793	\$1,237	\$1,793	\$2,323	\$3,167	\$10,677	\$875
<i>State Sales Tax</i>	117	225	308	396	476	554	641	738	873	1,441	409
<i>State Excise Taxes</i>	66	119	154	189	206	205	204	203	204	221	162
<i>Other Taxes</i>	25	46	60	76	95	110	128	148	185	307	82
<i>Business Taxes</i>	177	309	399	505	552	691	854	1,028	1,275	4,929	580
<i>Total State and Local Tax Burden</i>	\$448	\$906	\$1,403	\$2,008	\$2,582	\$3,398	\$4,332	\$5,246	\$6,744	\$19,628	\$2,500
<i>Effective Tax Rate for all taxes</i>	16.2%	12.5%	12.5%	12.9%	12.7%	12.8%	12.8%	12.3%	12.1%	11.9%	12.6%
Renters only	15.8%	12.4%	12.9%	13.0%	12.8%	12.7%	12.8%	12.0%	11.7%	11.7%	12.7%
Homeowners only	28.9%	20.0%	14.8%	13.5%	13.2%	13.1%	13.0%	12.5%	12.3%	12.0%	12.9%

Table C-2

1992 Minnesota Tax Incidence Study

Household Characteristics and Average Tax Burden Amounts by Population Decile
RETIRED ELDERLY

<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>	50,937	79,201	71,868	57,957	46,874	40,324	25,695	18,191	13,832	13,459	418,338
Percent of households in given decile	26%	39%	36%	27%	22%	19%	12%	9%	7%	6%	20%
<i>Percent that are married</i>	1%	4%	12%	23%	41%	65%	75%	61%	72%	74%	29%
<i>Average household income</i>	\$3,936	\$7,327	\$11,001	\$15,558	\$20,352	\$26,278	\$33,913	\$42,901	\$56,900	\$130,818	\$20,764
Social Security Income	3,657	6,300	7,942	8,885	9,577	10,913	12,400	12,209	13,095	16,138	8,603
SS income as % of household income	93%	86%	72%	57%	47%	42%	37%	28%	23%	12%	41%
<i>Housing Status</i>											
Homeowners	28%	34%	48%	58%	70%	75%	80%	72%	76%	75%	54%
Renters	37%	44%	35%	26%	21%	15%	13%	22%	13%	8%	29%
Farmers	6%	4%	6%	8%	6%	9%	6%	6%	10%	17%	7%
Other	30%	18%	12%	8%	4%	1%	1%	0%	1%	0%	11%
Average market value of home	\$34,507	\$38,402	\$44,421	\$51,904	\$57,480	\$59,310	\$73,568	\$79,059	\$85,709	\$106,011	\$57,543
Average monthly rent	\$140	\$219	\$303	\$387	\$497	\$484	\$559	\$484	\$525	\$941	\$312
<u>AVERAGE TAX BURDENS</u>											
<i>Local Property Tax</i>											
All households											
Total tax	\$198	\$292	\$408	\$547	\$657	\$694	\$904	\$989	\$1,069	\$1,599	\$551
- Property tax refund	-63	-149	-170	-164	-130	-71	-51	-46	-40	-8	-116
Tax after PTR	\$136	\$143	\$238	\$383	\$527	\$623	\$853	\$943	\$1,029	\$1,591	\$435
Renters only											
Total tax on rental unit	\$279	\$436	\$605	\$771	\$989	\$964	\$1,113	\$964	\$1,046	\$1,875	\$621
Renters' total tax on unit	\$180	\$281	\$389	\$497	\$637	\$621	\$717	\$621	\$673	\$1,207	\$400
- Property tax refund	<u>-112</u>	<u>-228</u>	<u>-273</u>	<u>-316</u>	<u>-331</u>	<u>95</u>	<u>-12</u>	<u>-20</u>	<u>0</u>	<u>0</u>	<u>-213</u>
Renters' tax after PTR	\$68	\$53	\$116	\$181	\$306	\$526	\$705	\$601	\$673	\$1,207	\$187
Homeowners only											
Total tax on home	\$472	\$493	\$575	\$722	\$754	\$799	\$1,011	\$1,179	\$1,285	\$2,003	\$807
- Property tax refund	-78	-146	-159	-142	-89	-75	-62	-57	-53	-11	-102
Homeowners' tax after PTR	\$394	\$347	\$416	\$580	\$665	\$724	\$949	\$1,122	\$1,233	\$1,993	\$705
<i>State Income Tax</i>	\$0	\$0	\$0	\$33	\$125	\$236	\$450	\$1,163	\$1,861	\$5,167	\$347
<i>State Sales Tax</i>	129	189	263	358	454	568	673	774	946	1,456	405
<i>State Excise Taxes</i>	68	79	92	119	136	162	180	183	199	231	119
<i>Other Taxes</i>	55	43	58	86	125	175	222	228	304	548	119
<i>Business Taxes</i>	179	282	385	583	775	955	1,253	1,666	2,168	5,383	795
Total State and Local Tax Burden	\$567	\$735	\$1,037	\$1,561	\$2,142	\$2,719	\$3,630	\$4,957	\$6,507	\$14,376	\$2,221
<i>Effective Tax Rate for all taxes</i>	14.4%	10.0%	9.4%	10.0%	10.5%	10.3%	10.7%	11.6%	11.4%	11.0%	10.7%
Renters only	12.3%	8.6%	8.5%	7.8%	8.5%	8.9%	8.7%	10.1%	9.7%	9.7%	9.0%
Homeowners only	19.0%	12.9%	10.7%	10.9%	11.3%	10.6%	11.1%	12.0%	11.7%	11.1%	11.3%

Table C-3

1992 Minnesota Tax Incidence Study

Household Characteristics and Average Tax Burden Amounts by Population Decile
SINGLE-PARENT FAMILIES (except retired elderly)

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
<i>Number of households</i>	22,891	26,103	22,979	24,907	24,171	20,583	15,744	11,763	6,588	4,012	179,741
Percent of households in given decile	12%	13%	11%	12%	11%	10%	7%	6%	3%	2%	9%
<i>Average number of children</i>	1.4	1.8	1.6	1.5	1.6	1.6	1.6	1.6	1.3	1.5	1.6
<i>Average household income</i>	\$3,501	\$7,265	\$11,088	\$15,711	\$20,407	\$26,488	\$33,859	\$42,452	\$55,890	\$134,269	\$21,663
Percent with earned income	14%	59%	93%	99%	96%	100%	100%	98%	96%	97%	81%
Average earned income	\$2,845	\$4,816	\$9,664	\$14,210	\$18,992	\$24,861	\$31,156	\$41,088	\$51,133	\$95,862	\$22,302
<i>Housing Status</i>											
Homeowners	9%	13%	21%	30%	43%	57%	68%	80%	77%	80%	38%
Renters	45%	58%	48%	48%	42%	39%	30%	16%	21%	16%	42%
Farmers	0%	2%	3%	1%	4%	1%	2%	5%	3%	4%	2%
Other	45%	28%	27%	21%	11%	2%	0%	0%	0%	0%	18%
Average market value of home	\$33,757	\$37,162	\$41,721	\$47,275	\$39,991	\$66,322	\$70,429	\$66,943	\$77,873	\$151,912	\$61,770
Average monthly rent	\$138	\$248	\$292	\$428	\$434	\$461	\$617	\$486	\$534	\$816	\$354
<u>AVERAGE TAX BURDENS</u>											
<i>Local Property Tax</i>											
All households											
Total tax	\$113	\$259	\$298	\$444	\$459	\$686	\$865	\$737	\$953	\$2,365	\$504
- Property tax refund	-49	-178	-173	-194	-112	-105	-71	-24	-6	-32	-117
Tax after PTR	\$64	\$81	\$125	\$250	\$347	\$581	\$794	\$713	\$947	\$2,334	\$387
Renters only											
Total tax on rental unit	\$275	\$494	\$582	\$853	\$864	\$918	\$1,229	\$968	\$1,063	\$1,626	\$706
Renters' total tax on unit	\$177	\$318	\$375	\$549	\$556	\$591	\$791	\$623	\$684	\$1,047	\$455
- Property tax refund	<u>-101</u>	<u>-278</u>	<u>-292</u>	<u>-312</u>	<u>-211</u>	<u>-180</u>	<u>-89</u>	<u>-72</u>	<u>0</u>	<u>0</u>	<u>-217</u>
Renters' tax after PTR	\$76	\$40	\$83	\$238	\$345	\$410	\$702	\$551	\$684	\$1,047	\$238
Homeowners only											
Total tax on home	\$355	\$587	\$556	\$605	\$520	\$788	\$925	\$801	\$1,059	\$2,733	\$823
- Property tax refund	-31	-133	-155	-151	-53	-59	-65	-16	-8	-39	-68
Homeowners' tax after PTR	\$324	\$453	\$401	\$453	\$467	\$730	\$860	\$785	\$1,051	\$2,694	\$755
<i>State Income Tax</i>	-13	-84	-54	\$112	\$381	\$825	\$1,231	\$1,826	\$2,704	\$8,673	\$660
<i>State Sales Tax</i>	178	214	301	405	483	572	663	780	953	1,490	456
<i>State Excise Taxes</i>	137	140	170	181	177	174	169	178	184	263	167
<i>Other Taxes</i>	5	19	52	138	196	225	264	301	365	503	149
<i>Business Taxes</i>	197	315	432	504	622	810	1,057	1,097	1,731	4,152	693
Total State and Local Tax Burden	\$568	\$685	\$1,025	\$1,591	\$2,205	\$3,187	\$4,179	\$4,895	\$6,885	\$17,414	\$2,512
<i>Effective Tax Rate for all taxes</i>	16.2%	9.4%	9.2%	10.1%	10.8%	12.0%	12.3%	11.5%	12.3%	13.0%	11.6%
Renters only	16.6%	8.3%	8.6%	10.0%	10.6%	11.2%	11.9%	11.4%	11.9%	11.7%	10.7%
Homeowners only	28.0%	16.3%	11.8%	11.5%	11.3%	12.7%	12.5%	11.6%	12.4%	13.1%	12.4%

Table C-4

1992 Minnesota Tax Incidence Study

**Household Characteristics and Average Tax Burden Amounts by Population Decile
MARRIED WITHOUT CHILDREN (except retired elderly)**

<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>	2,726	2,391	5,343	13,395	17,253	30,924	36,852	54,697	61,658	60,761	286,000
Percent of households in given decile	1%	1%	3%	6%	8%	15%	17%	26%	29%	29%	14%
<i>Average household income</i>	\$2,777	\$7,910	\$11,715	\$15,797	\$20,821	\$27,013	\$34,039	\$43,372	\$56,873	\$151,137	\$62,279
Percent with earned income	44%	69%	70%	99%	88%	93%	98%	99%	99%	99%	96%
Average earned income	\$3,849	\$4,738	\$10,589	\$12,736	\$17,786	\$20,370	\$28,294	\$36,021	\$49,366	\$92,798	\$45,900
<i>Housing Status</i>											
Homeowners	22%	45%	34%	68%	60%	71%	75%	78%	89%	91%	79%
Renters	43%	36%	46%	8%	16%	20%	14%	14%	7%	6%	12%
Farmers	13%	0%	13%	21%	14%	8%	9%	7%	4%	4%	7%
Other	21%	19%	8%	3%	10%	1%	1%	0%	0%	0%	2%
Average market value of home	\$32,161	\$49,197	\$56,014	\$54,784	\$59,756	\$58,242	\$62,930	\$68,254	\$80,475	\$123,189	\$80,888
Average monthly rent	\$239	\$270	\$300	\$398	\$489	\$478	\$568	\$478	\$534	\$928	\$514
<i>AVERAGE TAX BURDENS</i>											
<i>Local Property Tax</i>											
<i>All households</i>											
Total tax	\$284	\$403	\$451	\$633	\$622	\$636	\$695	\$786	\$954	\$1,860	\$991
- Property tax refund	-158	-213	-151	-80	-58	-46	-34	-18	-7	-4	-29
Tax after PTR	\$126	\$189	\$300	\$553	\$564	\$590	\$661	\$768	\$947	\$1,856	\$963
<i>Renters only</i>											
Total tax on rental unit	\$477	\$537	\$598	\$792	\$975	\$951	\$1,132	\$953	\$1,064	\$1,849	\$1,024
Renters' total tax on unit	\$307	\$346	\$385	\$510	\$628	\$613	\$729	\$614	\$685	\$1,191	\$660
- Property tax refund	-331	-225	-208	-29	-128	-80	-12	-10	0	0	-60
Renters' tax after PTR	-\$23	\$121	\$176	\$481	\$500	\$533	\$717	\$604	\$685	\$1,191	\$599
<i>Homeowners only</i>											
Total tax on home	\$678	\$613	\$811	\$870	\$871	\$718	\$791	\$893	\$1,024	\$1,979	\$1,156
- Property tax refund	-65	-291	-164	-114	-62	-41	-43	-21	-8	-5	-27
Homeowners' tax after PTR	\$613	\$322	\$647	\$755	\$809	\$677	\$747	\$872	\$1,015	\$1,974	\$1,129
<i>State Income Tax</i>	\$0	\$0	\$39	\$202	\$416	\$748	\$1,209	\$1,927	\$2,893	\$8,937	\$3,163
<i>State Sales Tax</i>	230	491	524	559	600	652	717	823	983	1,578	946
<i>State Excise Taxes</i>	82	197	217	229	238	255	289	291	274	268	268
<i>Other Taxes</i>	159	290	271	293	274	277	286	316	377	566	368
<i>Business Taxes</i>	301	532	1,477	949	1,058	954	1,084	1,153	1,410	4,282	1,820
<i>Total State and Local Tax Burden</i>	\$898	\$1,700	\$2,828	\$2,785	\$3,150	\$3,475	\$4,247	\$5,278	\$6,884	\$17,487	\$7,528
<i>Effective Tax Rate for all taxes</i>	32.3%	21.5%	24.1%	17.6%	15.1%	12.9%	12.5%	12.2%	12.1%	11.6%	12.1%
Renters only	22.9%	19.8%	15.9%	15.4%	13.9%	12.0%	12.4%	11.7%	11.7%	11.4%	12.0%
Homeowners only	47.5%	23.9%	33.0%	18.1%	15.6%	13.1%	12.6%	12.3%	12.1%	11.6%	12.1%

Table C-5

1992 Minnesota Tax Incidence Study
 Household Characteristics and Average Tax Burden Amounts by Population Decile
 MARRIED WITH CHILDREN (except retired elderly)

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Number of households	4,931	8,466	8,411	19,208	30,182	38,218	76,621	94,994	114,790	123,052	518,873
Percent of households in given decile	3%	4%	4%	9%	14%	18%	36%	45%	54%	58%	25%
Average number of children	1.9	2.2	2.4	2.2	2.1	2.2	2.2	2.1	2.0	2.0	2.1
Average household income	\$2,850	\$7,253	\$11,535	\$15,616	\$20,487	\$26,750	\$34,336	\$43,429	\$57,122	\$120,730	\$58,362
Percent with earned income	46%	67%	88%	99%	100%	98%	99%	100%	100%	100%	98%
Average earned income	\$4,516	\$7,672	\$9,786	\$14,786	\$19,349	\$25,065	\$32,531	\$42,176	\$54,669	\$98,520	\$52,459
Housing Status											
Homeowners	27%	29%	33%	47%	64%	63%	80%	83%	90%	94%	81%
Renters	24%	50%	41%	24%	18%	25%	12%	10%	5%	3%	11%
Farmers	2%	10%	13%	25%	14%	10%	8%	7%	4%	3%	7%
Other	46%	11%	12%	4%	5%	1%	0%	0%	0%	0%	1%
Average market value of home	\$68,299	\$38,316	\$51,456	\$34,554	\$44,746	\$57,306	\$58,174	\$70,372	\$85,788	\$126,996	\$83,569
Average monthly rent	\$114	\$386	\$278	\$419	\$410	\$467	\$584	\$473	\$539	\$941	\$492
AVERAGE TAX BURDENS											
Local Property Tax											
All households											
Total tax	\$296	\$402	\$409	\$402	\$492	\$623	\$663	\$791	\$1,031	\$1,936	\$1,035
- Property tax refund	-82	-278	-171	-135	-86	-62	-32	-20	-15	-4	-35
Tax after PTR	\$214	\$124	\$238	\$267	\$407	\$561	\$631	\$771	\$1,016	\$1,933	\$1,000
Renters only											
Total tax on rental unit	\$227	\$768	\$553	\$836	\$817	\$929	\$1,163	\$943	\$1,074	\$1,875	\$980
Renters' total tax on unit	\$146	\$495	\$356	\$538	\$526	\$599	\$749	\$607	\$692	\$1,207	\$631
- Property tax refund	-63	-467	-304	-348	-167	-125	-51	0	-15	-3	-129
Renters' tax after PTR	\$83	\$27	\$53	\$190	\$360	\$474	\$698	\$607	\$677	\$1,205	\$502
Homeowners only											
Total tax on home	\$949	\$535	\$785	\$574	\$623	\$745	\$718	\$881	\$1,100	\$2,030	\$1,199
- Property tax refund	-242	-149	-139	-108	-88	-48	-32	-24	-15	-4	-26
Homeowners' tax after PTR	\$707	\$387	\$645	\$466	\$534	\$698	\$686	\$856	\$1,085	\$2,026	\$1,173
State Income Tax	-\$41	-\$58	-\$117	-\$49	\$180	\$512	\$974	\$1,584	\$2,492	\$6,966	\$2,680
State Sales Tax	172	363	454	524	603	688	783	899	1,055	1,556	1,003
State Excise Taxes	104	191	219	236	257	273	295	305	300	319	293
Other Taxes	48	101	146	183	229	255	297	333	399	563	370
Business Taxes	274	563	684	920	910	1,134	1,156	1,343	1,498	3,246	1,711
Total State and Local Tax Burden	\$770	\$1,284	\$1,624	\$2,081	\$2,586	\$3,423	\$4,135	\$5,233	\$6,760	\$14,582	\$7,057
Effective Tax Rate for all taxes	27.0%	17.7%	14.1%	13.3%	12.6%	12.8%	12.0%	12.1%	11.8%	12.1%	12.1%
Renters only	22.3%	14.6%	11.6%	11.0%	11.6%	11.5%	11.6%	11.1%	10.9%	11.7%	11.4%
Homeowners only	48.2%	22.0%	16.9%	14.3%	13.0%	13.3%	12.1%	12.2%	11.9%	12.1%	12.1%

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 decile are due to refundable credits.
2. Miscellaneous state taxes include insurance premium taxes and motor vehicle registration tax.
3. The residential property tax total is after subtracting property tax refunds (PTR).

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* do not total the number of households shown on *Table B-1*.
2. Retired elderly households includes social security recipients not known to be under 62 years of age, whose social security benefits are at least twice as large as earned income. Earned income includes wage and salary income plus self-employment income from Schedules C and F.
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. Homeowners do not 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), senior citizens living with children, or someone living in fully subsidized housing.
7. Earned income is defined as the sum of wage and salary income and positive amounts from Schedules C (sole proprietor) and F (farms).
8. The landlord’s share of rental property taxes is included in business taxes.

APPENDIX D

Summary of Data Items for Each Household

Household Characteristics, Income, and Taxes	
General Information	Taxpayer social security number Spouse social security number 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 mobile home owner County of residence
Minnesota Individual Income Tax	State income tax filing status State income tax liability Working family credit Dependent care credit Additions to income
Federal Individual Income Tax	Federal income tax filing status Wages, salaries and tips Taxable dividends Business income Rent, royalty, partnership and estate income Farm income Nontaxable interest Nontaxable IRA income Nontaxable pensions and annuities Adjusted gross income Taxable income Net tax liability Alternative minimum tax Earned income credit Dependent care credit Schedule A: Real estate taxes State and local income tax Total itemized deductions Schedule C: depreciation Schedule E: Depreciation Rental gains Rental losses Passive partnership gains Passive partnership losses Nonpassive partnership gains Nonpassive partnership losses Section 179 losses Estate gain Estate loss REMIC income Farm rent Schedule F: taxes paid, depreciation
Minnesota Property Tax Refund	Federal adjusted gross income Nontaxable social security payments IRA, Keogh, SEP or other retirement plan payments Public assistance payments Other income (including workers' comp., pensions, veterans' payments, nontaxable interest) Renter's property tax Real estate taxes Mobile home property taxes and rent Regular property tax refund Special property tax refund

Household Characteristics, Income, and Taxes (cont.)	
Public Assistance	Aid to families with dependent children General assistance Minnesota supplemental aid
Miscellaneous	Workers' compensation benefits Unemployment benefits Social security benefits A available for some nonfiler households: Wages, salaries and tips Pension income Dividend income Interest income
Local Property Taxes	Homestead market value for homeowners Homestead property tax for homeowners

Estimated Expenditures and Taxes	
Consumer Expenditure Survey	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 Miscellaneous services (taxable) Drugs (taxable) Life insurance Automobile insurance Homeowners insurance
State taxes	State sales tax and sales tax on motor vehicles Alcoholic beverage excise tax Motor fuels excise tax Cigarette and tobacco products excise taxes Insurance premiums tax Motor vehicle registration tax
Local Property Taxes	Homestead estimated market value for farmers Homestead property tax for farmers and mobile home owners Renter's property tax Seasonal/recreational property tax Property tax refund for farmers split into individual and business parts
Business Taxes	Nonrental property taxes Rental property taxes State sales tax and sales tax on motor vehicles Corporate franchise tax Motor fuels excise tax Motor vehicle registration tax Insurance premiums tax

APPENDIX E

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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⁴⁰ For a more detailed bibliography, see Minnesota Department of Revenue (1993). *Minnesota Tax Incidence Study*. Tax Research Division, November.

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