

2005 Minnesota Tax Incidence Study

(Using November 2004 Forecast)

An analysis of Minnesota's household and business taxes.
March 2005

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and business taxes.**

MINNESOTA • REVENUE

Tax Research Division

March 1, 2005

The *Tax Incidence Study* is available on the
Department of Revenue's Internet web site at
<http://www.taxes.state.mn.us/reports/reports.html>

MINNESOTA · REVENUE

March 1, 2005

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

I am pleased to transmit to you the eighth 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).

This version of the incidence study report builds on past studies and provides new information regarding tax incidence. Previous studies have estimated how the burden of state and local taxes was distributed across income groups from a historic perspective. This study does that by displaying the burden of state and local taxes across income groups in 2002. It includes over 99 percent of Minnesota taxes paid, those paid by business as well as those paid by individuals. The study addresses the important question: "Who pays Minnesota's taxes?" It reports detailed information on characteristics and tax burdens of Minnesota taxpayers, both at the business and household level.

The report also estimates tax incidence across income groups for state and local taxes for 2007. By forecasting incidence into the future, it is possible to give policy makers a view of the state and local tax system that reflects tax law changes enacted into law to date. Studies that concentrate only on history would not reflect the most recent changes to Minnesota's tax system. In order to provide this information, a forecast of future economic conditions was required. This version of the report contains a forecast that is consistent with the November, 2004 economic outlook from the Department of Finance. As such, we plan on updating this study to reflect changes contained in the most current economic outlook.

The study also includes estimates of effective tax rates for business sectors in Minnesota's economy. This allows the tax system to be compared across industries by the major state and local taxes. The calculations are provided for both 2002 and 2007. Updates for 2007 will follow the same update schedule.

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

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

Sincerely,



Daniel A. Salomone
Commissioner

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Executive Summary

This report shows the distribution of calendar year 2002 Minnesota state and local taxes in relation to taxpayer income, along with projections for calendar year 2007. It answers the question, “Who pays Minnesota’s taxes?” The major objective is to provide taxpayers and policymakers with important information on the equity or fairness of the overall distribution of Minnesota taxes. Knowing the distribution of taxes allows conclusions to be drawn about the relative burden of the tax system, or about specific taxes, that are borne in Minnesota and ultimately by Minnesotans. This is the eighth biennial tax incidence study prepared in response to the statutory requirement enacted in 1990.

Included in this report are taxes with an initial impact on businesses, such as the corporate franchise tax and the sales tax on business purchases, as well as those taxes imposed directly on households. The report first discusses the initial burdens of taxes imposed on Minnesota households and businesses. The taxes imposed on businesses are further analyzed by industry sector. The analysis then proceeds to the estimation of the final incidence of taxes on Minnesota households, after taxes imposed on business have been shifted to those ultimately bearing them.

The main goal of the study is to estimate the total tax burden on Minnesota households distributed by income ranges. Doing so allows conclusions to be drawn concerning the equity of the tax system.

The report:

- Analyzes \$17.2 billion in taxes collected in 2002, a total that represents over 99 percent of all state and local taxes.
- Allocates imposed tax amounts among Minnesota households (58.7 percent), Minnesota businesses (39.3 percent) and nonresidents (2.0 percent).
- Computes effective tax rates for Minnesota business sectors using gross state product estimates.
- Calculates average household tax burden by income range. That burden consists of taxes imposed directly on households, such as the income tax or consumer sales tax, plus those households’ share of taxes, initially imposed on business, but in the end shifted to households, the ultimate payers.

Conclusions of the research are that:

- For 2002, Minnesota's tax system reflected recessionary conditions. Both total tax collections and overall household income declined between 2000 and 2002.
- Another factor contributing to the fall in taxes was 2001 property tax reform.
- The share of taxes imposed directly on Minnesota households dropped slightly from 2000 to 2002, as did the share of taxes imposed on nonresidents, while the share imposed on business rose slightly.
- The industry with the highest effective tax rate is mining; that with the lowest effective rate is financial activities.
- After allowing for the shift in business taxes, the Minnesota tax system in 2002 was slightly regressive (although less so than in 2000), with lower effective tax rates for the lowest and highest income households and higher effective rates for middle income households.
- Incomes are expected to grow by almost one-third between 2002 and 2007. Tax receipts are forecast to grow by almost as much. The overall effective tax rate is expected to decline from 11.3 percent to 11.1 percent over that period.
- The tax system is expected to become slightly more regressive from 2002 to 2007, because for higher deciles income growth is expected to outpace growth in total tax liability, while the reverse is true for middle to lower deciles.

This is the eighth biennial tax incidence study. That is a sufficiently long period to provide some historical context for the results of the current study. The figure below shows how both effective tax rates and the Suits index for all taxes have changed over the past decade and a half. The effective tax rate is the ratio of tax paid to income. The Suits index is a measure of the progressivity or regressivity of a tax or tax system. Positive values reflect progressivity; negative values show regressivity. The Suits index is explained in more detail later in this report.

Figure E-1
Effective Tax Rates, All Taxes

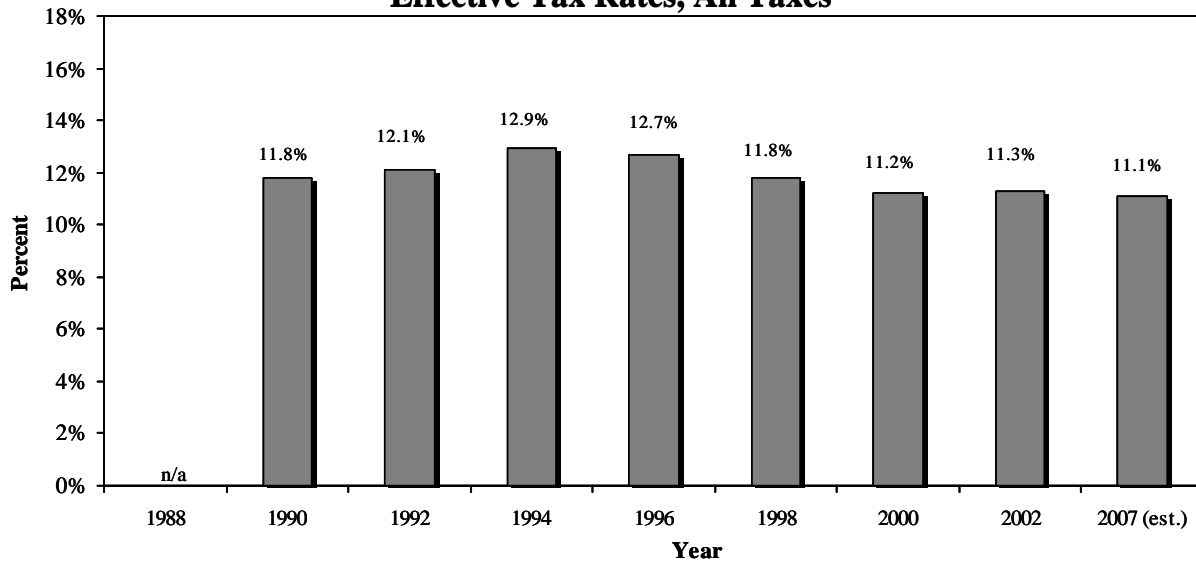
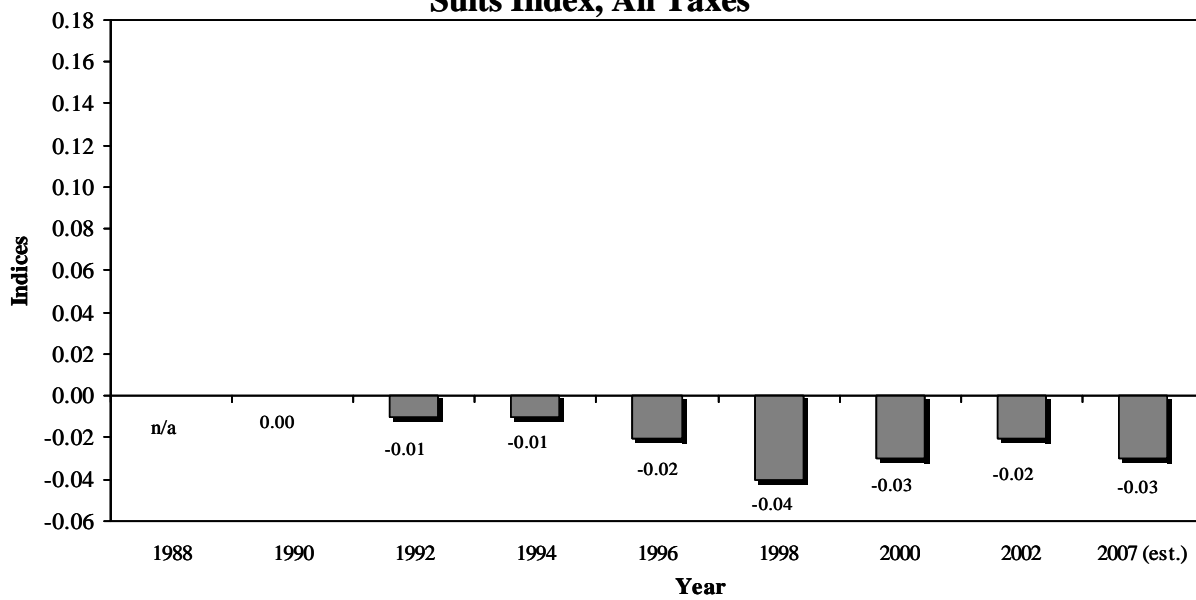


Figure E-2
Suits Index, All Taxes



Overview of Study

Minnesota State and Local Tax Collections

Minnesota collected \$17.2 billion in state and local taxes in 2002 and by 2007 collections are expected to rise to \$21.9 billion. Over 75 percent is collected at the state level; local governments collected the remainder, largely from property taxes. The primary purpose of the report is to illustrate Minnesota's tax system in total by examining the individual elements and tracing their impact through to Minnesota's households. By so doing, the total tax system and each separate tax can be estimated as to who pays the tax in relation to their income.

The coverage of this study is summarized in *Table 1-1*. The study includes taxes on households and businesses accounting for over 99 percent of total state tax collections and over 99 percent of local tax collections. The report examines 31 separate tax system components.

Table 1-1
Minnesota State and Local Tax Collections in 2002
(\$ Millions)

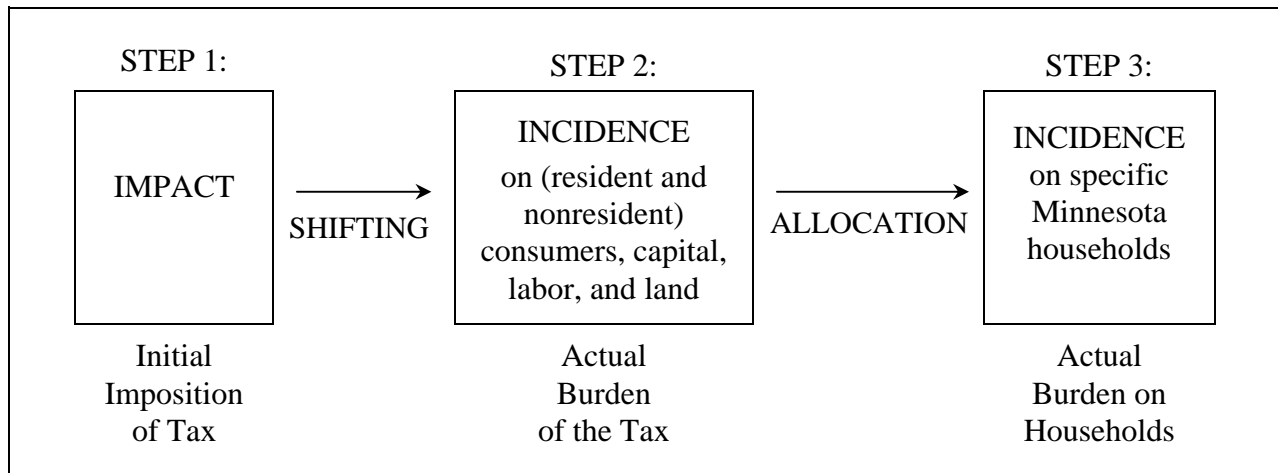
State	Local	Total State and Local
Included	Included	Included
Individual income tax \$5,408	Gross property taxes (after credits)	
Corporate franchise tax 560	Homestead property taxes \$1,936	
Estate tax 97	Property taxes on second home 84	
General sales and use tax 3,829	Rental property taxes (residential) 416	
Motor vehicle sales tax 609	Other business property taxes	
Motor fuels excise taxes 632	(including farming and taconite) <u>1,634</u>	
Alcoholic beverage excise taxes 61		
Cigarette & tobacco excise taxes 178	Subtotal \$4,071	
Insurance premiums tax 202		
Gambling taxes 57	Sales taxes 114	
MinnesotaCare taxes 191	Gross earnings taxes 45	
Motor vehicle registration tax 483		
Mortgage and deed taxes 263		
Waste taxes 56		
State property taxes 585		
Property tax refunds <u>-268</u>		
Total \$12,945	Total \$4,229	\$17,174
Omitted	Omitted	Omitted
Controlled substances tax	Tree growth tax	
Airflight property tax	Auxiliary forest tax	
Aircraft registration tax	Contamination tax	
Rural electric cooperatives tax	Severed mineral interests tax	
Metropolitan solid waste landfill fee	Unmined taconite tax	
	Local gambling tax	
Total \$19	Total \$4	\$28
Total Tax Collections \$12,964	Total Tax Collections \$4,233	Total Tax Collections \$17,197

The Concept of Tax Incidence

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 tax shifting has occurred.

Figure 1-1 illustrates the steps involved in moving from impact to tax incidence on Minnesota households.

Figure 1-1
Estimating Tax Incidence

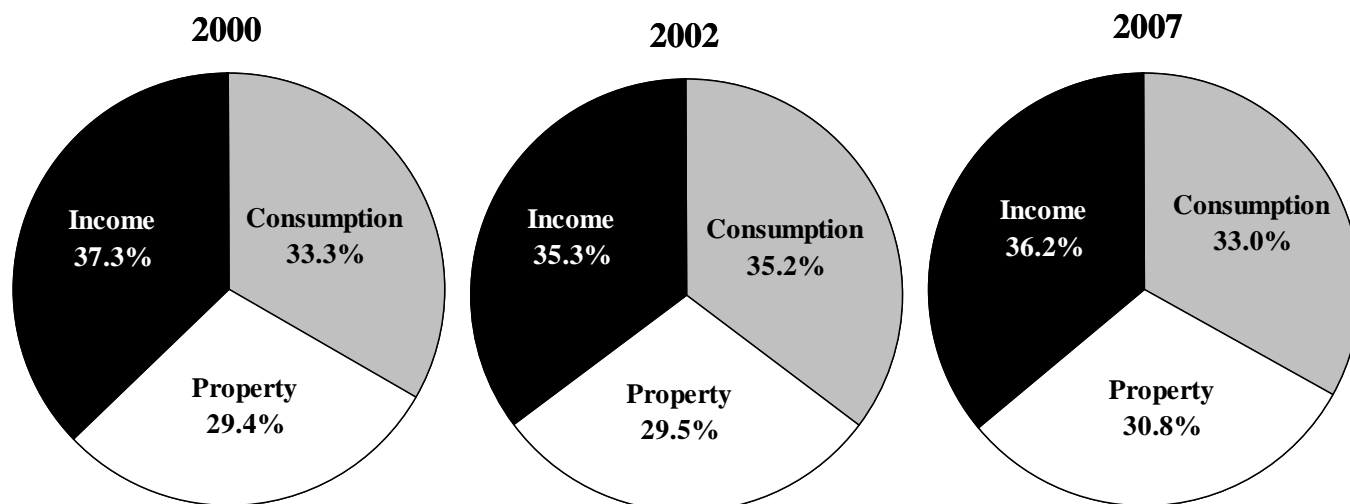


Following are the major findings of this study laid out according to each step in *Figure 1-1*.

Step 1 – Impact

Figure 1-2, derived from Tables 1-2 and 1-3, illustrates the distribution of the revenues actually collected in 2002 and expected to be collected in 2007 by three general categories: Income, Consumption, and Property.

Figure 1-2
Minnesota Tax System Impacts by Tax Area



The three graphs in the figure show the relative tax shares that exist in periods of quite different economic circumstances. There was a decline in income from 2000 to 2002; the year 2002 was at or near the bottom of a recession. But the period from 2002 to 2007 is expected to be one of growth. There are other factors at work that also affect the relative tax shares.

Income taxes – Household income is expected to grow by more than 32 percent from 2002 to 2007. As a general rule, income taxes tend to keep pace or grow as incomes rise. Taxes on consumption and on property, by contrast, often lag behind.

Consumption taxes – There are several tax law changes that affect consumption tax receipts in 2007 compared to 2002. There is a scheduled reduction in the liquor sales tax rate and the elimination of the auto rental tax. Insurance premiums and MinnesotaCare taxes, on the other hand, are projected to rise.

Property taxes – Levy limits were abolished in 2004. Limited market value for houses is phased out over 2002 to 2007. The market value for houses is expected to rise sharply compared to that for other types of property.

Table 1-2
2002 State and Local Tax Collections by
Type of Tax and Taxpayer Category (\$ Millions)

Tax Category	Collections		Percentage by Taxpayer Category			
	Total	Percentage Distribution	Households		Businesses	Total
			Resident	Nonresident		
State Taxes						
Taxes on Income						
Individual income tax	\$5,408	31.5%	96.7%	3.3%		100.0%
Corporate franchise tax ¹	560	3.3			100.0%	100.0
Estate tax	97	0.6	100.0			100.0
Total Income and Estate Taxes	\$6,064	35.3%	87.8%	2.9%	9.2%	100.0%
Taxes on Consumption						
Total sales tax	\$4,438	25.8%	53.1%	3.3%	43.6%	100.0%
General sales/use tax	3,829	22.3	51.0	3.8	45.2	100.0
Sales tax on motor vehicles	609	3.5	66.3		33.7	100.0
Motor fuels excise taxes	632	3.7			100.0	100.0
Alcoholic beverage excise taxes	61	0.4			100.0	100.0
Cigarette and tobacco excise taxes	178	1.0			100.0	100.0
Insurance premiums taxes	202	1.2			100.0	100.0
Gambling taxes	57	0.3			100.0	100.0
MinnesotaCare taxes	191	1.1			100.0	100.0
Total Consumption Taxes	\$5,760	33.5%	40.9%	2.5%	56.6%	100.0%
Taxes on Property						
Residential recreational	\$28	0.2%	80.2%	19.8%		100.0%
Commercial	369	2.1			100.0%	100.0
Industrial	125	0.7			100.0	100.0
Utility	64	0.4			100.0	100.0
Total Property Taxes	\$585	3.4%	3.8%	0.9%	95.3%	100.0%
Other Taxes						
Motor vehicle registration tax	\$483	2.8%	81.0%		19.0%	100.0%
Mortgage and deed taxes	263	1.5	63.7		36.3	100.0
Solid waste management taxes	56	0.3	39.8		60.2	100.0
Total Other Taxes	\$803	4.7%	72.4%		27.6%	100.0
Property Tax Refunds						
Homeowners	-\$131	-0.8%	100.0%			100.0%
Renters	-137	-0.8	100.0			100.0
Total Property Tax Refunds	-\$268	-1.6%	100.0%			100.0%
Total State Taxes	\$12,945	75.4%	61.9%	2.5%	35.5%	100.0%
Local Taxes						
Property taxes (Pay 2002)	\$4,071	23.7%	49.2%	0.4%	50.4%	100.0%
General property tax (gross-credits)	4,009	23.3	50.0	0.4	49.6	100.0
Homeowners (gross of PTR)	1,936	11.3	100.0			100.0
Residential recreational	84	0.5	80.2	19.8		100.0
Commercial ²	882	5.1			100.0	100.0
Industrial	296	1.7			100.0	100.0
Farm (other than residence) ³	212	1.2			100.0	100.0
Rental housing	416	2.4			100.0	100.0
Utility	181	1.1			100.0	100.0
Minerals ⁴	0	0.0			100.0	100.0
Mining production taxes (taconite)	62	0.4			100.0	100.0
Local sales taxes ⁵	114	0.7	51.0	3.8	45.2	100.0
Local gross earnings taxes ⁶	45	0.3			100.0	100.0
Total Local Taxes	\$4,229	24.6%	48.8%	0.5%	50.7%	100.0%
Total State and Local Taxes	\$17,174	100.0%	58.7%	2.0%	39.3%	100.0%

¹Includes taconite/iron ore occupation tax.

²Includes resorts and railroads.

³Farm includes timber.

⁴Minerals does not include the aggregate material production tax.

⁵Allocated to business/consumer in the same proportions as general sales tax.

⁶For cities with annual receipts greater than \$500,000.

Table 1-3
2007 State and Local Tax Collections by
Type of Tax and Taxpayer Category (\$ Millions)

Tax Category	Collections		Percentage by Taxpayer Category			
	Total	Percentage Distribution	Households		Businesses	Total
			Resident	Nonresident		
State Taxes						
Taxes on Income						
Individual income tax	\$7,135	32.6%	96.7%	3.3%		100.0%
Corporate franchise tax ¹	696	3.2			100.0%	100.0
Estate tax	<u>92</u>	0.4	100.0			100.0
Total Income and Estate Taxes	\$7,922	36.2%	88.2%	3.0%	8.8%	100.0%
Taxes on Consumption						
Total sales tax	\$5,074	23.2%	53.4%	3.4%	43.1%	100.0%
General sales/use tax	4,456	20.4	51.7	3.9	44.4	100.0
Sales tax on motor vehicles	618	2.8	66.3		33.7	100.0
Motor fuels excise taxes	692	3.2			100.0	100.0
Alcoholic beverage excise taxes	68	0.3			100.0	100.0
Cigarette and tobacco excise taxes	176	0.8			100.0	100.0
Insurance premiums taxes	387	1.8			100.0	100.0
Gambling taxes	61	0.3			100.0	100.0
MinnesotaCare taxes	<u>428</u>	2.0			100.0	100.0
Total Consumption Taxes	\$6,886	31.5%	39.4%	2.5%	58.1%	100.0%
Taxes on Property						
Residential recreational	\$62	0.3%	80.2%	19.8%		100.0%
Commercial	421	1.9			100.0%	100.0
Industrial	124	0.6			100.0	100.0
Utility	<u>64</u>	0.3			100.0	100.0
Total Property Taxes	\$671	3.1%	7.4%	1.8%	90.8%	100.0%
Other Taxes						
Motor vehicle registration tax	\$542	2.5%	81.0%		19.0%	100.0%
Mortgage and deed taxes	242	1.1	54.0		46.0	100.0
Solid waste management taxes	<u>62</u>	0.3	41.4		58.6	100.0
Total Other Taxes	\$847	3.9%	70.4%		29.6%	100.0
Property Tax Refunds						
Homeowners	-\$207	-0.9%	100.0%			100.0%
Renters	<u>-154</u>	-0.7	100.0			100.0
Total Property Tax Refunds	-\$361	-1.6%	100.0%			100.0%
Total State Taxes	\$15,965	73.0%	62.6%	2.6%	34.8%	100.0%
Local Taxes						
Property taxes (Pay 2002)	\$5,729	26.2%	57.7%	0.5%	41.9%	100.0%
General property tax (gross-credits)	5,651	25.8	58.5	0.5	41.0	100.0
Homeowners (gross of PTR)	3,190	14.6	100.0			100.0
Residential recreational	141	0.6	80.2	19.8		100.0
Commercial ²	961	4.4			100.0	100.0
Industrial	283	1.3			100.0	100.0
Farm (other than residence) ³	272	1.2			100.0	100.0
Rental housing	629	2.9			100.0	100.0
Utility	175	0.8			100.0	100.0
Minerals ⁴	0	0.0			100.0	100.0
Mining production taxes (taconite)	78	0.4			100.0	100.0
Local sales taxes ⁵	130	0.6	51.7	3.9	44.4	100.0
Local gross earnings taxes ⁶	<u>53</u>	0.2			100.0	100.0
Total Local Taxes	\$5,913	27.0%	57.0%	0.6%	42.4%	100.0%
Total State and Local Taxes	\$21,877	100.0%	61.1%	2.1%	36.9%	100.0%

¹Includes taconite/iron ore occupation tax.

²Includes resorts and railroads.

³Farm includes timber, net of sustainable forest incentive program payments.

⁴Minerals does not include the aggregate material production tax.

⁵Allocated to business/consumer in the same proportions as general sales tax.

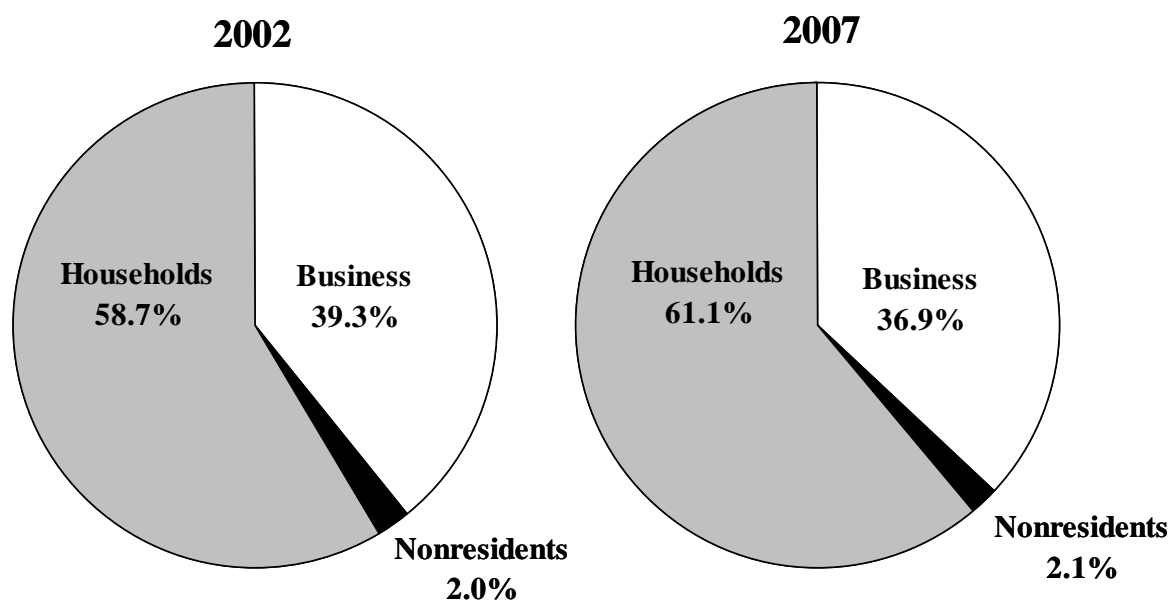
⁶For cities with annual receipts greater than \$500,000.

Together these factors imply that the relative share of income taxes rises slightly, the relative share of consumption taxes drops and the relative share of property taxes rises.

Another way of looking at this is to consider how Minnesota's tax system is split between state and local taxes. In 2002, the state's share was about 75 percent of the total; by 2007 that is expected to drop to 73 percent.

In addition, it is also possible to examine the impact of the tax system on households and businesses. *Figure 1-3* depicts the proportions of the tax system that impact the two categories with a small amount in both years expected to be paid by nonresidents of Minnesota.

Figure 1-3
Minnesota Tax System Impacts: Business vs. Households



A number of factors combine to shift taxes away from business and toward households. Market value of homes is expected to increase at a much greater rate than that for business property. The new statewide property tax, while primarily a business tax, is restricted in growth to the rate of inflation. Sales taxes imposed on businesses show a lower rate of growth than do sales taxes paid by households. The income tax grows at a faster rate than consumption taxes.

To further explore the impact of Minnesota's tax system on businesses, taxes have been allocated by industrial sector.

Effective Tax Rates by Industrial Sector

Background

The burden a tax system places on business is of interest to policymakers. While the old saying that “businesses don’t pay taxes, people do” is essentially true, the issue of tax burden on business is important in a competitive marketplace which is increasingly global in scope. In order to examine the issue in Minnesota, the following analysis has been included in the tax incidence report.

Taking the private business sector tax amounts and allocating each of the separate taxes analyzed in this study, it is possible to calculate and compare the total tax burden by the major industrial sectors in Minnesota’s economy.

The next step in calculating the effective tax rates is to select a common measure for a tax base across industry sectors so that a meaningful comparison can be made. This is necessary because of the diverse number of bases that are involved in Minnesota’s tax system. For example, property tax is computed on a value concept while sales tax is tied to a selling price and corporate income tax is computed on a measure of profit. The common base used in this analysis is gross state product (GSP) associated with each sector of the state’s economy. The source of the output figures are estimates produced by the U.S. Department of Commerce for 2002 and a forecast for 2007.

Summary of Effective Tax Rates by Industry

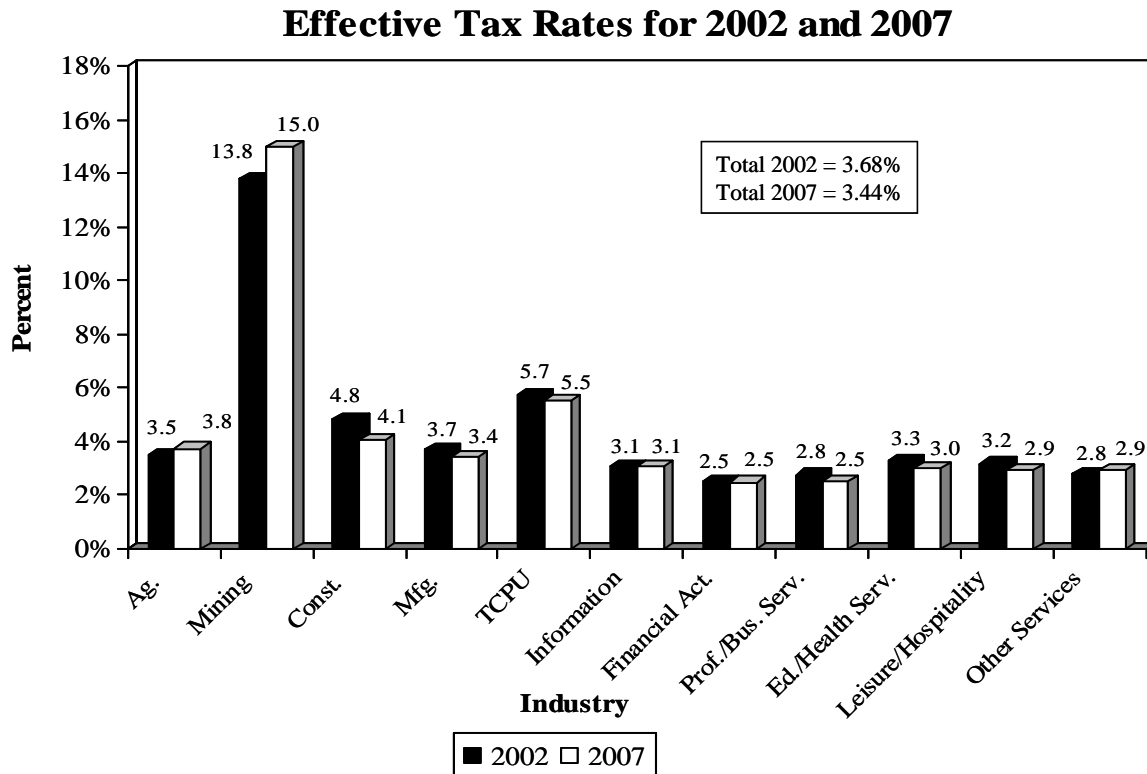
As shown in *Table 1-4*, the overall effective tax rate on Minnesota’s businesses was 3.68 percent in 2002 and is estimated to fall to 3.44 percent by 2007, a decline of over 5 percent. The decline is due to reductions associated with property tax reform and a decline in sales tax effective rates. Approximately 40 percent of all business tax burden comes from property taxes. Sales and use is second followed by corporate income tax which is a distant third.

On a sector basis in 2002 the highest effective tax rate of 13.8 percent belongs to mining. While much of the mining tax burden is destined for outside Minnesota, the taconite tax, tied directly to production, is the reason for the high rate. At the opposite end of the spectrum is the Financial Activities sector which has an effective tax rate of 2.5 percent.

**Table 1-4
Effective Rates by Tax**

Tax	Effective Rate	
	2002	2007
Corporate Franchise	0.31%	0.30%
General Sales	1.00	0.89
Motor Vehicle Sales	0.11	0.09
Motor Fuels	0.35	0.30
Insurance Premiums	0.11	0.17
Mortgage/Deed	0.05	0.05
MinnesotaCare	0.11	0.19
Other	0.21	0.17
Property Tax		
Commercial	0.70	0.61
Industrial	0.24	0.18
Farm	0.12	0.12
Utility	0.14	0.10
Rental	0.23	0.28
Minerals/Taconite	0.03	0.03
Motor Vehicle Registration	0.05	0.05
Total Private	3.68%	3.44%

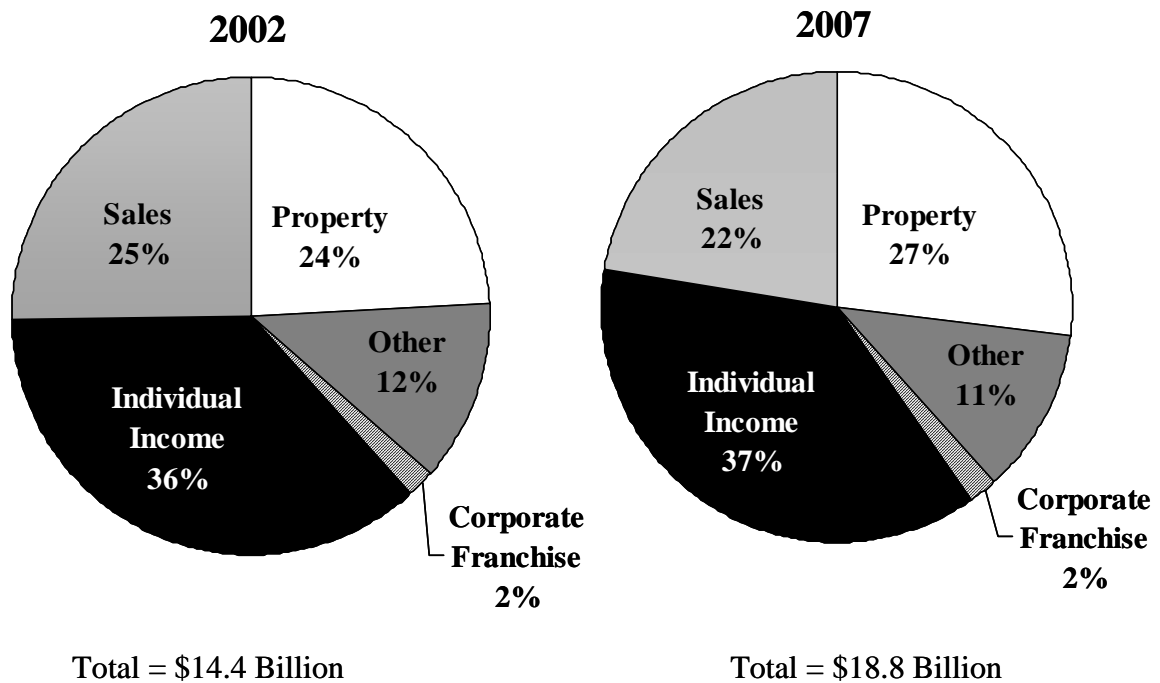
Figure 1-4 contains the eleven industrial sectors with their effective tax rates for 2002 and 2007.



Step 2 – Shifting

Step 2 relies on economic theory to estimate how much of the burden of each tax is “shifted” from the initial business taxpayer to households. Such shifting depends on Minnesota tax rates compared to those in other states, the nature of the market for the goods or services produced by the business being taxed and other factors. Step 2 estimates how much of the business tax burden is shifted onto consumers (in higher prices), labor (in lower wages), and capital (in lower rates of return). *Figure 1-5* indicates that Minnesota households will pay either directly or indirectly through shifted business tax somewhat more in property taxes in 2007 than in 2002 due to property tax reform and relative growth rates.

Figure 1-5
Household Incidence After Shifting



Step 3 – Distributional Analysis

Step 3 combines the incidence assumptions from Step 2 with information on the income and characteristics of individuals to estimate the tax burden falling on each of Minnesota's 2.3 million households. Each dollar of tax is allocated either to specific Minnesota households or exported out of state. The result is a tax burden, or tax incidence, of each separate tax. These separate taxes can be aggregated to estimate the total incidence by household. Using the estimated burden by household, effective tax rates can be computed. Effective tax rates provide insight into how the incidence of Minnesota's tax system changes as household income changes.

Tax Progressivity and the Suits Index

Taxes are often described as progressive, proportional, or regressive. The effective tax rate -- that is, the ratio of taxes paid to income -- can be used to compare tax burdens across income categories. A progressive tax is one in which the effective tax rate rises as income rises. A regressive tax is one in which the effective tax rate falls as income rises. However, it is difficult to summarize the overall distribution of a tax (progressive, proportional, or regressive) from the individual effective tax rates. The Suits Index is a summary measure of the overall distribution for a specific tax or group of taxes.

The Suits Index has numerical properties that make it easy to understand the degree of progressivity or regressivity of a tax. A proportional tax has a Suits Index equal to zero; a progressive tax has a positive index number in the range between 0 and +1. 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. For a regressive tax, the Suits Index has a negative value between 0 and -1, with -1 being the most regressive value.

Table 1-5 presents Suits indexes for selected Minnesota state and local tax groups in 2002 and 2007. The only major progressive tax is the personal income tax. Consumption taxes were the most regressive category. Taken as a whole, the system of Minnesota taxes was marginally regressive (a Suits index of -0.018). State taxes were progressive (+0.027), and local taxes were regressive (-0.173). Between 2002 and 2007, Minnesota's tax system, as measured by the Suits index, shows a noticeable move toward regressivity.

Table 1-5
Suits Indexes for Selected
Minnesota State and Local Taxes

Tax Category	2002 Suits Index	2007 Suits Index
Personal Income Tax	+0.199	+0.185
Sales Taxes (State & Local)	-0.143	-0.152
State Business Taxes	-0.179	-0.186
State Individual Taxes	+0.107	+0.106
All State Taxes	+0.027	+0.026
Local Taxes	-0.173	-0.182
Total Taxes	-0.018	-0.029

Effective Tax Rates

The major findings in this study are summarized in *Tables 1-4, 1-6, and 1-7* and highlighted in *Figures 1-4, 1-6, and 1-7*.

For analytical purposes, Minnesota's households are divided into 10 equal parts, or deciles. Each decile has an associated income value for calculating effective tax rates. The results show that the state and local tax system had some progressivity in the lower to middle deciles and some regressivity in the middle to upper deciles. For 2002, effective tax rates rose from 10.1 percent in the third decile to 12.0 percent in the seventh decile, declined to 11.7 percent in the ninth decile, and then fell to 10.7 percent in the tenth decile. This pattern was similar for the projections to 2007.

Overall, Minnesota residents paid an estimated 11.3 percent of their 2002 total income in state and local taxes; this declined to 11.1 percent for the 2007 projections. For 2002, the effective tax rate was 8.7 percent for state taxes and 2.6 percent for local taxes. Taxpayers in the second through tenth deciles pay over 98 percent of the taxes included in the study. Because the information for the first decile includes data anomalies and measurement limitations discussed in the study, effective tax rates for the first decile are not reliable.

As shown in *Figure 1-6*, state tax burdens and local tax burdens were distributed quite differently. Total state taxes for 2002 (individual and business combined) were slightly progressive overall, with effective tax rates generally rising from 5.9 percent in the second decile to 9.2 percent in the ninth decile before falling to 9.0 percent in the tenth decile. Local tax effective rates, essentially property tax, declined consistently over all deciles except the sixth and were regressive overall. By 2007, effective rates fall across all deciles at the state level. Local taxes, conversely, increase because of expected increases in property values and property tax reform.

As shown in *Figure 1-7*, the patterns of effective rates for taxes paid by individuals versus businesses were also distributed quite differently. For 2002, effective rates for taxes paid by individuals increased from 3.5 percent in the second decile to 8.6 percent in the ninth decile, and then declined to 8.4 percent in the tenth decile. *Figure 1-7* indicates that Minnesota state and local taxes on businesses after shifting to Minnesota citizens are regressive, with effective tax rates for 2002 falling from 7.0 to 2.3 percent between the second and tenth deciles. The overall effective rate for taxes on businesses after shifting was 3.4 percent in 2002. For the projections to 2007, the overall effective tax rate declined to 3.2 percent on businesses but remained at 7.9 percent on individuals.

Table 1-6
Minnesota Effective Tax Rates for 2002 and 2007
State and Local Taxes by Population Decile

Decile	2002			2007		
	State	Local	Total	State	Local	Total
First	10.0%	8.2%	18.2%	8.6%	9.3%	17.9%
Second	5.9	4.6	10.5	5.2	4.9	10.1
Third	6.0	4.1	10.1	5.6	4.8	10.4
Fourth	7.5	3.5	11.0	7.1	3.9	11.1
Fifth	8.1	3.2	11.4	7.9	3.8	11.6
Sixth	8.7	3.3	11.9	8.2	3.6	11.8
Seventh	9.1	3.0	12.0	8.4	3.4	11.8
Eighth	9.0	2.9	11.8	8.5	3.4	11.8
Ninth	9.2	2.5	11.7	8.6	2.9	11.4
Tenth	9.0	1.8	10.7	8.4	1.9	10.3
Total	8.7%	2.6%	11.3%	8.2%	2.9%	11.1%

Figure 1-6
Effective Tax Rates for 2002 and 2007
State and Local Taxes by Population Decile

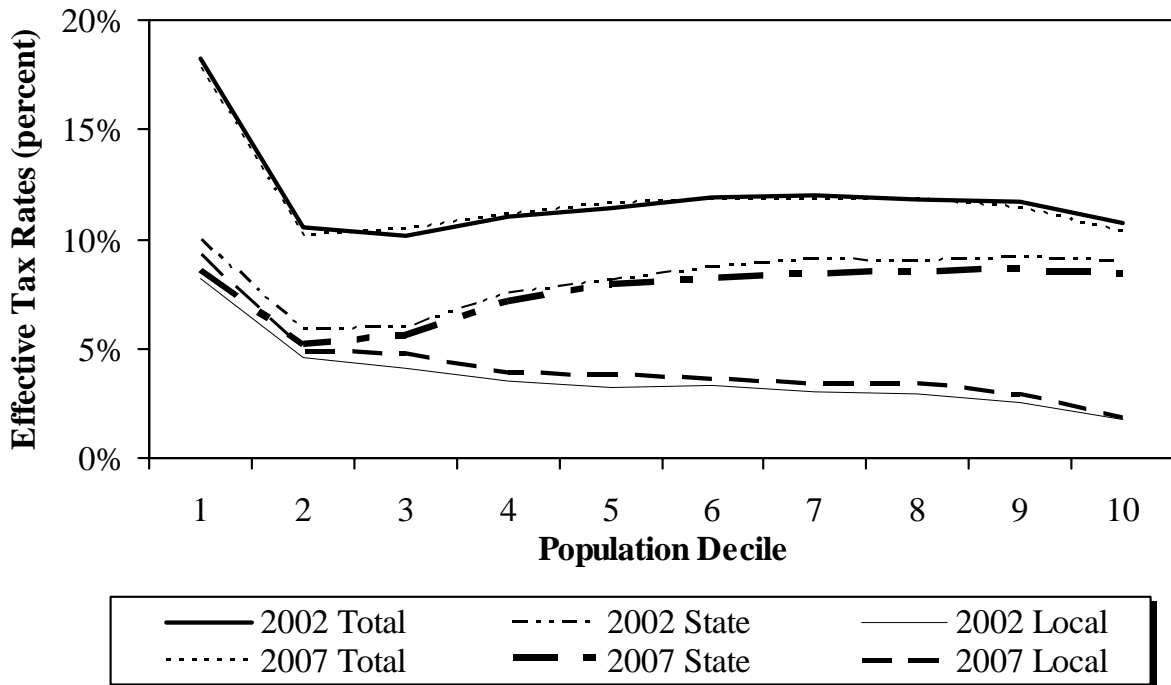
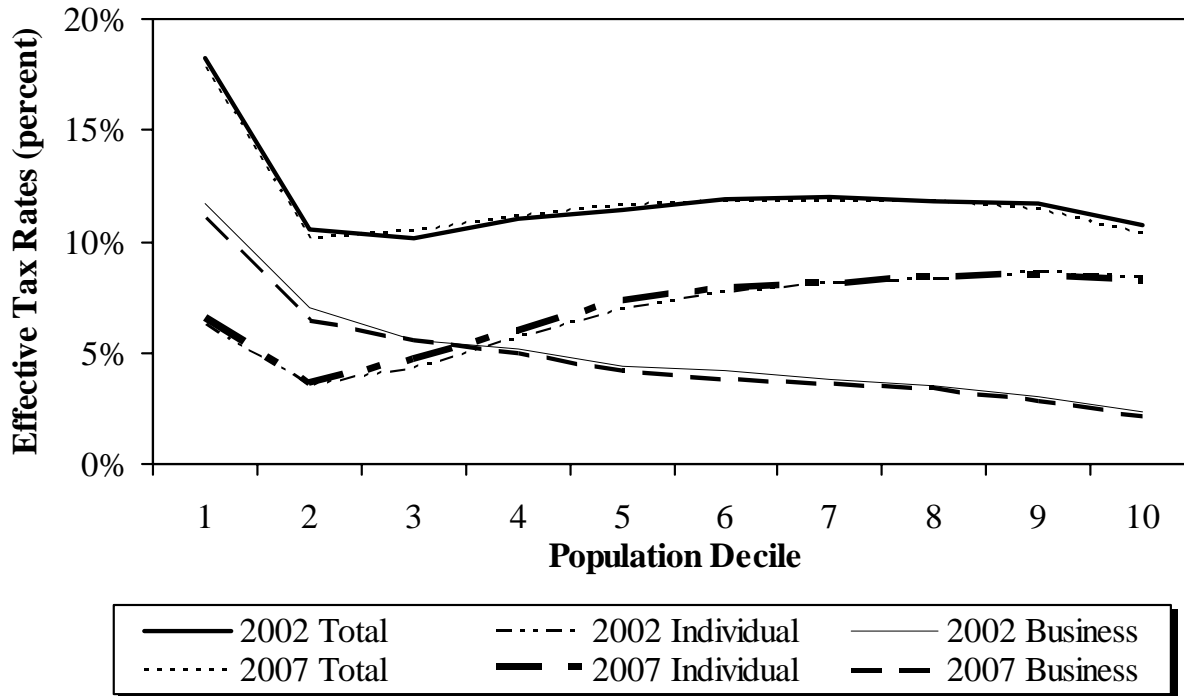


Table 1-7
Minnesota Effective Tax Rates for 2002 and 2007
Individual and Business Taxes by Population Decile

Decile	2002			2007		
	Individual	Business	Total	Individual	Business	Total
First	6.2%	11.7%	18.2%	6.5%	11.0%	17.9%
Second	3.5	7.0	10.5	3.6	6.4	10.1
Third	4.3	5.6	10.1	4.7	5.6	10.4
Fourth	5.7	5.2	11.0	6.0	5.0	11.1
Fifth	6.9	4.4	11.4	7.3	4.2	11.6
Sixth	7.7	4.2	11.9	7.9	3.8	11.8
Seventh	8.1	3.8	12.0	8.1	3.6	11.8
Eighth	8.3	3.5	11.8	8.4	3.4	11.8
Ninth	8.6	3.0	11.7	8.5	2.8	11.4
Tenth	8.4	2.3	10.7	8.2	2.1	10.3
Total	7.9%	3.4%	11.3%	7.9%	3.2%	11.1%

Figure 1-7
Effective Tax Rates for 2002 and 2007
Individual and Business Taxes by Population Decile



Historical Comparison

Incidence data has been collected and published in a series of studies, of which this is the eighth. That data extends back to 1988. It is interesting to consider the pattern of effective tax rates and Suits index numbers over that time. This period illustrates the effect of the business cycle on incomes and tax receipts. It includes both very rapid growth periods in the mid- and late 1990's, the slowdown of the early 1990's, and the contraction from 2000 to 2002.

Effective tax rates over the period 1988 – 2002 at first rise and then fall. As shown in *Table 1-8*, the effective tax rate for the tax system as a whole was 11.8 percent in 1990. (It was 9.1 percent in 1988; however, the study in that year did not include business taxes.) Effective tax rates rose to 12.9 percent just four years later in 1994, but then began a sustained decline to 11.3 percent in 2002. By 2007 it is expected that the effective tax rate will be 11.1 percent. The decline is attributable partly to tax cuts and partly to income growth, especially in the late 1990's, that outstripped tax collections.

Suits index values show a different pattern, as also shown in *Table 1-8*. The tax system is Suits-neutral in both 1988 and 1990, but then starts trending toward greater regressivity. The Suits index falls from -0.01 in 1992 and 1994 to a low of -0.04 in 1998. It rises somewhat in succeeding years but is still expected to equal -0.03 in 2007.

Table 1-8
Households, Household Income, Total Taxes,
Effective Tax Rates, and Suits Indices, All Taxes, 1988 - 2007
(Amounts in \$ 000's)

Year	Number of Households	Household Income	Total Taxes* as Imposed	Tax Dollars* Included in Study (%)	Total Taxes** After Shifting	Effective Tax Rate	Suits Index
1988	2,035,717	\$59,590,130	\$9,092,150	n/a	n/a	n/a	n/a
1990	2,072,488	65,842,600	9,575,000	97.1%	\$7,747,743	11.8%	0.00
1992	2,120,967	74,410,299	11,050,000	96.9%	8,991,383	12.1%	-0.01
1994	2,148,820	80,148,374	12,539,000	98.0%	10,323,412	12.9%	-0.01
1996	2,193,971	93,272,563	14,495,000	98.0%	11,886,823	12.7%	-0.02
1998	2,232,670	114,610,957	16,137,000	97.8%	13,526,348	11.8%	-0.04
2000	2,322,380	132,094,974	17,599,000	99.8%	14,809,590	11.2%	-0.03
2002	2,340,070	127,311,429	17,174,000	99.9%	14,412,365	11.3%	-0.02
2007 (est)	2,509,820	168,325,618	21,877,000	n/a	18,664,791	11.1%	-0.03

Interval	Household Growth	Income Growth	Post-Shifting Tax Growth**
1988-1990	1.8%	10.5%	n/a
1990-1992	2.3%	13.0%	16.1%
1992-1994	1.3%	7.7%	14.8%
1994-1996	2.1%	16.4%	15.1%
1996-1998	1.8%	22.9%	13.8%
1998-2000	4.0%	15.3%	9.5%
2000-2002	0.8%	-3.6%	-2.7%
2002-2007 (est)	7.3%	32.2%	29.5%

*Taxes not included in the study have declined in number over time.

**In 1988 business taxes, after shifting, were not included in the study.

Principal Results, 2002

This section examines the state and local tax burdens imposed on Minnesota taxpayers in 2002. Taxes paid by businesses as well as those paid directly by households are included. The taxes included account for over 99 percent of Minnesota state and local tax revenue in 2002.

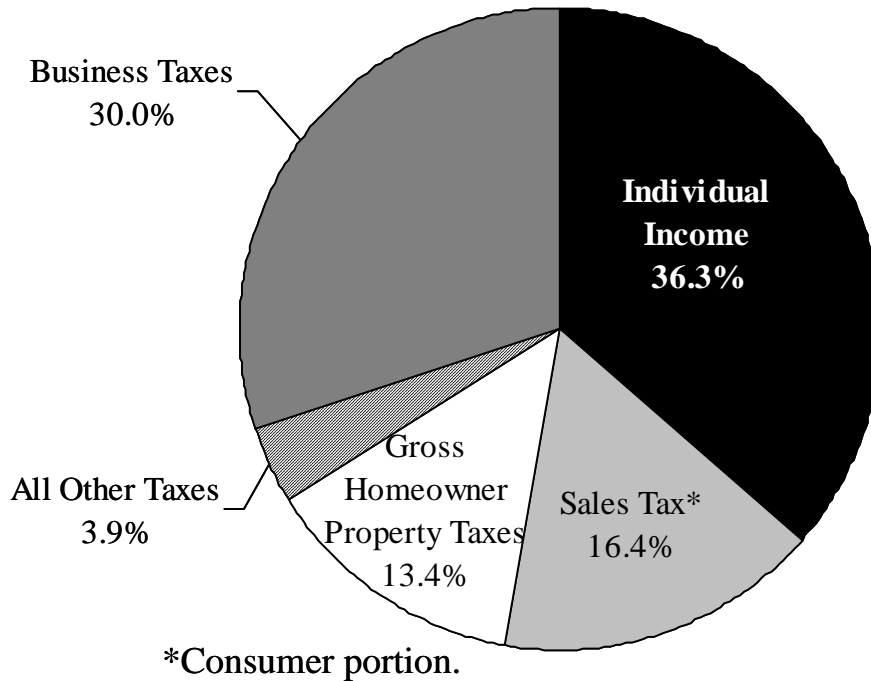
Only Minnesota taxes paid by residents are included in the analysis below; Minnesota taxes paid by nonresidents and taxes paid by Minnesota residents to other states are excluded. For business taxes, the study estimates the extent to which they are shifted forward to Minnesota consumers in higher prices or backward to Minnesota workers in lower wages or to owners of capital in lower returns. The incidence results for the entire system of state and local taxes in Minnesota are reported both in terms of the overall distribution of tax burdens and by tax type.

The Total Tax Burden

For 2002, Minnesota residents paid a total of \$14.4 billion in taxes while earning \$127.3 billion in total money income. Minnesota residents thus paid 11.3 percent of their total income in state and local taxes.

As shown in *Figure 2-1*, the individual income tax accounted for 36.3 percent of the total tax burden on Minnesota residents. Homeowner property taxes and the consumer state and local sales tax (including sales tax on motor vehicles) were 13.4 percent and 16.4 percent of the total, respectively. Taxes imposed on business accounted for 30.0 percent. All other taxes comprised the remaining 3.9 percent of total state and local taxes paid by Minnesota residents.

**Figure 2-1
2002 Distribution of Minnesota
State and Local Tax Burdens by Tax**



Details of Minnesota tax collections before and after tax shifting are shown in *Table 2-1*. Of the \$17.2 billion in total tax collections in 2002, \$14.4 billion or almost 84 percent is paid by Minnesotans, directly or indirectly. The rest is exported to taxpayers out of state.

It is apparent from the table that some taxes are borne by Minnesotans in much greater proportions than are others. Of the large state taxes, the income tax is borne almost entirely by Minnesota residents, who pay over 96 percent of total collections, but residents of Minnesota pay a lesser share, 82.4 percent, of the general sales tax. At the other end of the scale, Minnesotans pay only 10.9 percent of the property taxes on industrial property.

Table 2-1
2002 Tax Collection Amounts (\$ Millions)

Tax Type	Total	As Imposed			After Shifting		Suits Index ⁵
		MN HH's	NR	Business	Minnesota	Exported	
State Taxes							
Taxes on Income and Estates							
Individual income tax	\$5,408	\$5,229	\$178		\$5,229	\$178	0.199
Corporate franchise tax ¹	560			\$560	297	263	-0.116
Estate tax	97	97			97		0.281
Total Income and Estate Taxes	\$6,064	\$5,326	\$178	\$560	\$5,623	\$441	0.184
Taxes on Consumption							
Total sales tax	\$4,438	\$2,357	\$146	\$1,936	\$3,659	\$779	-0.143
General sales/use tax	3,829	1,953	146	1,731	3,146	683	-0.143
Sales tax on motor vehicles	609	404		205	513	96	-0.145
Motor fuels excise taxes	632			632	516	117	-0.240
Alcoholic beverage excise taxes	61			61	54	6	-0.170
Cigarette and tobacco excise taxes	178			178	173	5	-0.515
Insurance premiums taxes	202			202	150	53	-0.131
Gambling taxes	57			57	55	2	-0.350
MinnesotaCare taxes	191			191	166	25	-0.266
Total Consumption Taxes	\$5,760	\$2,357	\$146	\$3,258	\$4,773	\$987	-0.174
Taxes on Property							
Residential recreational	\$28	\$22	\$5		\$22	\$5	-0.179
Commercial	369	0	0	\$369	194	175	-0.105
Industrial	125	0	0	125	14	111	-0.120
Utility	64	0	0	64	40	24	-0.132
Total Property Taxes	\$585	\$22	\$5	\$558	\$270	\$316	-0.100
Other Taxes							
Motor vehicle registration tax	\$483	\$391		\$92	\$440	\$43	-0.107
Mortgage and deed taxes	263	168		96	221	42	-0.111
Solid waste management taxes	56	22		34	53	4	-0.170
Total Other Taxes	\$803	\$581		\$221	\$714	\$89	-0.113
Property Tax Refunds							
Homeowners	-\$131	-\$131			-\$131		0.675
Renters	-137	-137			-137		0.874
Total Property Tax Refunds	-\$268	-\$268			-\$268		0.777
Total State Taxes	\$12,945	\$8,019	\$329	\$4,597	\$11,112	\$1,833	0.027
Local Taxes							
Property taxes (Pay 2002)	\$4,073	\$2,004	\$17	\$2,050	\$3,179	\$892	-0.174
General property tax (gross-credits)	4,009	2,004	17	1,988	3,178	830	-0.175
Homeowners (gross)	1,936	1,936			1,936	0	-0.148
Residential recreational	84	68	17		68	17	-0.179
Commercial ²	882			882	463	419	-0.105
Industrial	296			296	32	264	-0.120
Farm (other than residence) ³	212			212	208	4	-0.310
Rental housing	416			416	358	59	-0.370
Utility	181			181	114	68	-0.132
Minerals ⁴	0			0	0	0	0.021
Mining production taxes (taconite)	62			62	1	62	0.149
Local sales taxes ⁵	114	58	4	52	94	20	-0.143
Local gross earnings taxes ⁶	45			45	28	17	-0.132
Total Local Taxes	\$4,229	\$2,062	\$21	\$2,146	\$3,301	\$929	-0.173
Total State and Local Taxes	\$17,174	\$10,081	\$350	\$6,743	\$14,412	\$2,762	-0.018

¹Includes taconite/iron ore occupation tax.

⁴Amount less than \$500,000.

²Includes resorts and railroads.

⁵Suits index for estate tax based on distribution of 1999 estate tax amounts.

³Includes Timber.

Of the total, \$6.7 billion or 39.3 percent of Minnesota taxes are imposed on businesses. Of that amount \$2.4 billion or nearly 36 percent is exported.

The Suits index numbers show that most taxes levied in Minnesota are regressive to some degree. Only a few taxes, and only one large tax, the personal income tax, are progressive (Suits index greater than zero). The consumption taxes as a group are the most regressive, with a Suits index of -0.17 . Nevertheless the progressive income tax and the few other progressive taxes are nearly sufficient to offset the many regressive taxes, so that the Suits index of the tax system as a whole is only slightly regressive at -0.02 .

Taxes by Sector

Table 2-2 shows the distribution of taxes imposed on business by industrial sector, as well as those taxes imposed solely on households.

There is considerable variation in the tax amounts attributed to each sector. In order to judge the relative magnitudes of these sectors, we can present them as effective tax rates, as is done in *Table 2-3*.

**Table 2-2
Minnesota Taxes Imposed by NAICS Sector CY 2002 Taxes - \$ Thousands**

Tax Type	Agriculture	Mining	Const.	Mfg.	Trade Trans. Utilities	Info.	Financial Activities	Prof. Ed. & Bus. Services	Ed. & Health Services	Leisure and Hospitality	Government		Total Business	Households	Non-Residents	Total
											Other Services	Govt.				
State Taxes																
Taxes on Income and Estates																
Individual income tax													\$559,807	\$5,229,358	\$178,234	\$5,407,593
Corporate franchise tax	\$5,395	\$1,450	\$21,509	\$128,879	\$149,990	\$28,814	\$53,786	\$150,451	\$7,739	\$7,337	\$4,457		\$559,807			559,807
Estate tax														96,989		96,989
Total Income and Estate Taxes	\$5,395	\$1,450	\$21,509	\$128,879	\$149,990	\$28,814	\$53,786	\$150,451	\$7,739	\$7,337	\$4,457		\$559,807	\$5,326,347	\$178,234	\$6,064,389
Taxes on Consumption																
Total general sales tax	\$30,186	\$6,626	\$336,661	\$196,318	\$385,262	\$130,425	\$172,802	\$194,952	\$189,471	\$72,452	\$86,027	\$134,797	\$1,935,978	\$2,356,569	\$145,504	\$4,438,050
General sales/use tax	30,001	6,100	327,410	166,905	342,110	124,604	158,953	165,805	159,305	53,902	76,402	119,256	1,730,752	1,952,817	145,504	3,829,073
Sales tax on motor vehicles	185	526	9,252	29,413	43,151	5,821	13,849	29,147	30,166	18,550	9,625	15,541	205,225	403,752		608,978
Motor fuels excise taxes					632,321								632,321			632,321
Alcoholic beverage excise taxes				10,913	49,714								60,627			60,627
Cigarette and tobacco excise taxes					178,457								178,457			178,457
Insurance premiums taxes							202,447						202,447			202,447
Gambling taxes					24,362					32,779			57,141			57,141
MinnesotaCare taxes			7	899	47,590	421	502	12,365	125,644	1,539	175	2,001	191,142			191,142
Total Consumption Taxes	\$30,186	\$6,626	\$336,668	\$208,130	\$1,317,705	\$130,846	\$375,750	\$207,316	\$315,115	\$106,769	\$86,202	\$136,797	\$3,258,111	\$2,356,569	\$145,504	\$5,760,183
Taxes on Property																
Residential recreational														\$22,215	\$5,485	\$27,700
Commercial			\$30,600		\$87,800	\$17,100	\$48,500	\$91,500	\$61,900	\$19,000	\$12,800		\$369,200			369,200
Industrial				\$124,812									124,812			124,812
Utility					63,600								63,600			63,600
Total Property Taxes			\$30,600	\$124,812	\$151,400	\$17,100	\$48,500	\$91,500	\$61,900	\$19,000	\$12,800		\$557,612	\$22,215	\$5,485	\$585,312
Other Taxes																
Motor vehicle registration tax	\$89	\$255	\$4,487	\$14,266	\$20,930	\$2,533	\$6,717	\$14,137	\$14,632	\$8,997	\$4,669		\$91,712	\$390,982		\$482,694
Mortgage and deed taxes	27,741	3	2,491	10,069	14,186	1,391	24,256	7,438	5,033	1,973	1,045		95,625	167,804		263,429
Solid waste management taxes	589	345	2,403	3,571	8,687	2,446	1,739	3,255	3,861	1,058	1,500	\$4,520	33,974	22,479		56,453
Total Other Taxes	\$28,419	\$604	\$9,382	\$27,906	\$43,803	\$6,369	\$32,711	\$24,830	\$23,526	\$12,028	\$7,213	\$4,520	\$221,311	\$581,264		\$802,575
Property Tax Refunds																
Homeowners																-\$130,686
Renters																-\$137,132
Total Property Tax Refunds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	-\$267,818	\$0	-\$267,818
Total State Taxes	\$64,000	\$8,679	\$398,159	\$489,727	\$1,662,898	\$183,129	\$510,747	\$474,097	\$408,281	\$145,134	\$110,673	\$141,317	\$4,596,840	\$8,018,577	\$329,223	\$12,944,641
Local Property Taxes																
Homeowners (gross)														\$1,936,325		\$1,936,325
Residential recreational														67,607	\$16,693	84,300
Commercial			\$71,400		\$223,200	\$39,900	\$112,500	\$212,500	\$144,100	\$48,000	\$30,200		\$881,800			881,800
Industrial				\$296,200									296,200			296,200
Farm (other than residence)	\$212,000												212,000			212,000
Utility					\$181,400								181,400			181,400
Residential rental (gross)								416,325					416,325			416,325
Minerals		\$156											156			156
Total Property Taxes	\$212,000	\$156	\$71,400	\$296,200	\$404,600	\$39,900	\$528,825	\$212,500	\$144,100	\$48,000	\$30,200	\$0	\$1,987,881	\$2,003,932	\$16,693	\$4,008,506
Other Local Taxes																
Mining production taxes (taconite)		\$62,288											\$62,288			\$62,288
Local sales taxes	\$894	182	\$9,752	\$4,971	\$10,190	\$3,711	\$4,734	\$4,938	\$4,745	\$1,605	\$2,276	\$3,552	\$15,550	\$58,164	\$4,334	\$114,049
Local gross earnings taxes					\$44,546								44,546			44,546
Total Other Taxes	\$894	\$62,470	\$9,752	\$4,971	\$54,736	\$3,711	\$4,734	\$4,938	\$4,745	\$1,605	\$2,276	\$3,552	\$158,384	\$58,164	\$4,334	\$220,883
Total Local Taxes	\$212,894	\$62,626	\$81,152	\$301,171	\$459,336	\$43,611	\$533,559	\$217,438	\$148,845	\$49,605	\$32,476	\$3,552	\$2,146,265	\$2,062,096	\$21,027	\$4,229,389
Total State and Local Taxes	\$276,894	\$71,305	\$479,311	\$790,898	\$2,122,234	\$226,740	\$1,044,306	\$691,536	\$557,126	\$194,739	\$143,148	\$144,869	\$6,743,105	\$10,080,674	\$350,250	\$17,174,029

Table 2-3
Taxes Imposed by Sector
CY 2002 Taxes
Effective Tax Rates

Tax Type	Effective Tax Rates
Agriculture	3.51%
Mining	13.82
Construction	4.81
Manufacturing	3.72
Trade, Transportation, Utilities	5.72
Information	3.07
Financial Activities	2.49
Professional and Business Services	2.77
Educational and Health Services	3.30
Leisure and Hospitality	3.18
Other Services	2.78
Overall Average	3.68%

Taxes by Decile

To summarize the distribution of tax burdens by income level, the population of Minnesota households was divided into ten equal-sized groups or *deciles* of households ranked by household income levels. By definition, the first decile includes the 10 percent of households with the lowest income levels and the tenth decile includes the highest-income 10 percent of households. There were approximately 234,000 taxpaying households in each population decile. The total burden by tax type for each decile is summarized in *Table 2-4*.

Taxpayers in the top decile (incomes of \$102,427 and over) bore 36.8 percent of the total tax burden while having 38.8 percent of total income. By tax type, taxpayers in the top decile paid 52.2 percent of the individual income tax, 28.0 percent of the consumer sales tax, 24.5 percent of the gross residential property tax, and 26.6 percent of business taxes.

Table 2-4

2002 Population Deciles - Amounts (\$ 000's)

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes	
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total				Taxes on Individuals	Taxes on Businesses
First	\$8,354 & under	234,007	\$1,235,590	-\$14,087	\$7,607	\$63,972	\$37,331	\$101,303	-\$37,272	\$7,720	\$32,311	\$11,623	\$14,223
Second	\$8,355 - \$14,065	234,007	2,610,954	-16,966	9,307	80,560	45,022	125,582	-45,303	8,721	41,280	13,157	19,056
Third	\$14,066 - \$20,714	234,007	4,077,633	14,495	12,722	108,470	60,086	168,556	-55,789	12,113	46,981	21,063	25,216
Fourth	\$20,715 - \$27,703	234,007	5,684,091	80,626	17,591	150,025	79,120	229,146	-45,582	15,510	61,657	33,312	34,064
Fifth	\$27,704 - \$35,683	234,007	7,369,943	188,428	20,467	167,970	89,878	257,848	-32,006	17,907	65,674	41,980	40,151
Sixth	\$35,684 - \$45,436	234,007	9,435,329	304,785	24,297	201,831	109,016	310,847	-20,611	21,838	73,602	54,896	47,112
Seventh	\$45,437 - \$57,589	234,007	11,996,892	432,605	30,863	255,437	137,362	392,799	-13,345	27,308	84,747	73,890	57,262
Eighth	\$57,590 - \$74,189	234,007	15,304,686	614,973	35,924	292,737	157,199	449,936	-7,331	30,956	93,682	86,139	66,389
Ninth	\$74,190 - \$102,426	234,007	20,167,679	895,566	47,408	376,801	199,733	576,534	-5,138	39,904	105,083	113,970	76,723
Tenth	\$102,427 & over	234,007	49,428,632	2,728,934	90,440	658,766	387,807	1,046,573	-5,440	87,706	137,975	228,225	123,289
TOTALS		2,340,070	\$127,311,429	\$5,229,358	\$296,626	\$2,356,569	\$1,302,554	\$3,659,123	-\$267,818	\$269,682	\$742,992	\$678,253	\$503,487
Top 5%	Over \$139,652	117,004	\$35,715,029	\$2,058,869	\$61,674	\$439,951	\$266,228	\$706,179	-\$2,968	\$61,618	\$82,787	\$148,697	\$77,829
Top 1%	Over \$323,340	23,401	\$17,636,487	\$1,111,575	\$19,427	\$106,964	\$78,415	\$185,379	-\$538	\$22,795	\$18,908	\$35,905	\$22,495

Population Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total *		
First	\$50,027	\$13,024	\$6,276	\$19,301	\$72,164	\$25,549	\$3,486
Second	56,941	20,511	7,045	27,555	86,695	29,519	4,260
Third	84,442	26,863	9,633	36,496	124,723	34,886	5,648
Fourth	99,495	29,415	8,826	38,241	142,455	49,054	7,586
Fifth	135,751	25,623	9,464	35,087	176,078	54,473	8,598
Sixth	180,686	19,636	15,881	35,516	221,898	78,155	10,198
Seventh	216,186	13,615	19,891	33,507	255,917	85,911	12,883
Eighth	267,283	9,832	22,434	32,266	306,871	115,910	14,802
Ninth	335,657	7,729	19,753	27,483	375,018	110,633	19,194
Tenth	509,858	8,028	64,161	72,188	599,753	232,827	35,518
TOTALS	\$1,936,325	\$174,276	\$183,364	\$357,639	\$2,361,571	\$816,917	\$122,173
Top 5%	\$303,988	\$5,074	\$47,215	\$52,288	\$366,633	\$159,981	\$24,159
Top 1%	\$89,984	\$2,466	\$18,255	\$20,721	\$113,610	\$57,934	\$6,521

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
\$101,199	\$25,168	\$98,261	\$123,429	\$224,628
120,473	32,170	122,664	154,834	275,307
165,256	89,483	155,874	245,356	410,613
199,095	219,932	206,392	426,324	625,419
239,149	368,093	232,354	600,448	839,596
310,252	542,773	273,994	816,766	1,127,018
354,710	750,632	335,498	1,086,130	1,440,840
437,583	988,923	381,744	1,370,667	1,808,250
504,844	1,385,101	464,949	1,850,050	2,354,894
868,099	3,616,302	821,398	4,437,700	5,305,799
\$3,300,661	\$8,018,577	\$3,093,127	\$11,111,704	\$14,412,365
\$550,773	\$2,647,952	\$546,733	\$3,194,686	\$3,745,459
\$178,065	\$1,254,861	\$161,085	\$1,415,946	\$1,594,011

* Includes seasonal recreational residential (cabins)

In contrast, taxpayers in the bottom decile (incomes of \$8,354 and below) bore 1.5 percent of the total tax burden and received only 1.0 percent of total income. The bottom decile taxpayers had a negative net individual income tax burden due to refundable tax credits. The same households paid 2.7 percent of the consumer sales tax, 2.9 percent of gross residential property tax, and 3.2 percent of business taxes.

Overall Effective Tax Rates

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

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

Effective tax rates by tax type are reported in *Table 2-5*. Effective tax rates by population deciles for the four major tax types included in this study are presented in *Table 2-6* and are illustrated in *Figure 2-2*. As shown in *Figure 2-2*, 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 households).

The results show that the individual income tax was very progressive, while the three remaining taxes were generally regressive. Because the progressive individual income tax accounted for over one-third of the total tax burden, it offsets most of the regressivity of the other state and local taxes. Hence, as a whole, the state and local system of taxation in Minnesota was only slightly regressive overall.

Table 2-5

2002 Population Deciles - Effective Tax Rates

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes	
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total				Taxes on Individuals	Taxes on Businesses
First	\$8,354 & under	234,007	\$1,235,590	- 1.1%	0.6%	5.2%	3.0%	8.2%	- 3.0%	0.6%	2.6%	0.9%	1.2%
Second	\$8,355 - \$14,065	234,007	2,610,954	- 0.6%	0.4%	3.1%	1.7%	4.8%	- 1.7%	0.3%	1.6%	0.5%	0.7%
Third	\$14,066 - \$20,714	234,007	4,077,633	0.4%	0.3%	2.7%	1.5%	4.1%	- 1.4%	0.3%	1.2%	0.5%	0.6%
Fourth	\$20,715 - \$27,703	234,007	5,684,091	1.4%	0.3%	2.6%	1.4%	4.0%	- 0.8%	0.3%	1.1%	0.6%	0.6%
Fifth	\$27,704 - \$35,683	234,007	7,369,943	2.6%	0.3%	2.3%	1.2%	3.5%	- 0.4%	0.2%	0.9%	0.6%	0.5%
Sixth	\$35,684 - \$45,436	234,007	9,435,329	3.2%	0.3%	2.1%	1.2%	3.3%	- 0.2%	0.2%	0.8%	0.6%	0.5%
Seventh	\$45,437 - \$57,589	234,007	11,996,892	3.6%	0.3%	2.1%	1.1%	3.3%	- 0.1%	0.2%	0.7%	0.6%	0.5%
Eighth	\$57,590 - \$74,189	234,007	15,304,686	4.0%	0.2%	1.9%	1.0%	2.9%	0.0%	0.2%	0.6%	0.6%	0.4%
Ninth	\$74,190 - \$102,426	234,007	20,167,679	4.4%	0.2%	1.9%	1.0%	2.9%	0.0%	0.2%	0.5%	0.6%	0.4%
Tenth	\$102,427 & over	234,007	49,428,632	5.5%	0.2%	1.3%	0.8%	2.1%	0.0%	0.2%	0.3%	0.5%	0.2%
TOTALS		2,340,070	\$127,311,429	4.1%	0.2%	1.9%	1.0%	2.9%	- 0.2%	0.2%	0.6%	0.5%	0.4%
Top 5%	Over \$139,652	117,004	\$35,715,029	5.8%	0.2%	1.2%	0.7%	2.0%	0.0%	0.2%	0.2%	0.4%	0.2%
Top 1%	Over \$323,340	23,401	\$17,636,487	6.3%	0.1%	0.6%	0.4%	1.1%	0.0%	0.1%	0.1%	0.2%	0.1%

Population Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total *		
First	4.0%	1.1%	0.5%	1.6%	5.8%	2.1%	0.3%
Second	2.2%	0.8%	0.3%	1.1%	3.3%	1.1%	0.2%
Third	2.1%	0.7%	0.2%	0.9%	3.1%	0.9%	0.1%
Fourth	1.8%	0.5%	0.2%	0.7%	2.5%	0.9%	0.1%
Fifth	1.8%	0.3%	0.1%	0.5%	2.4%	0.7%	0.1%
Sixth	1.9%	0.2%	0.2%	0.4%	2.4%	0.8%	0.1%
Seventh	1.8%	0.1%	0.2%	0.3%	2.1%	0.7%	0.1%
Eighth	1.7%	0.1%	0.1%	0.2%	2.0%	0.8%	0.1%
Ninth	1.7%	0.0%	0.1%	0.1%	1.9%	0.5%	0.1%
Tenth	1.0%	0.0%	0.1%	0.1%	1.2%	0.5%	0.1%
TOTALS	1.5%	0.1%	0.1%	0.3%	1.9%	0.6%	0.1%
Top 5%	0.9%	0.0%	0.1%	0.1%	1.0%	0.4%	0.1%
Top 1%	0.5%	0.0%	0.1%	0.1%	0.6%	0.3%	0.0%

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
8.2%	2.0%	8.0%	10.0%	18.2%
4.6%	1.2%	4.7%	5.9%	10.5%
4.1%	2.2%	3.8%	6.0%	10.1%
3.5%	3.9%	3.6%	7.5%	11.0%
3.2%	5.0%	3.2%	8.1%	11.4%
3.3%	5.8%	2.9%	8.7%	11.9%
3.0%	6.3%	2.8%	9.1%	12.0%
2.9%	6.5%	2.5%	9.0%	11.8%
2.5%	6.9%	2.3%	9.2%	11.7%
1.8%	7.3%	1.7%	9.0%	10.7%
2.6%	6.3%	2.4%	8.7%	11.3%
1.5%	7.4%	1.5%	8.9%	10.5%
1.0%	7.1%	0.9%	8.0%	9.0%

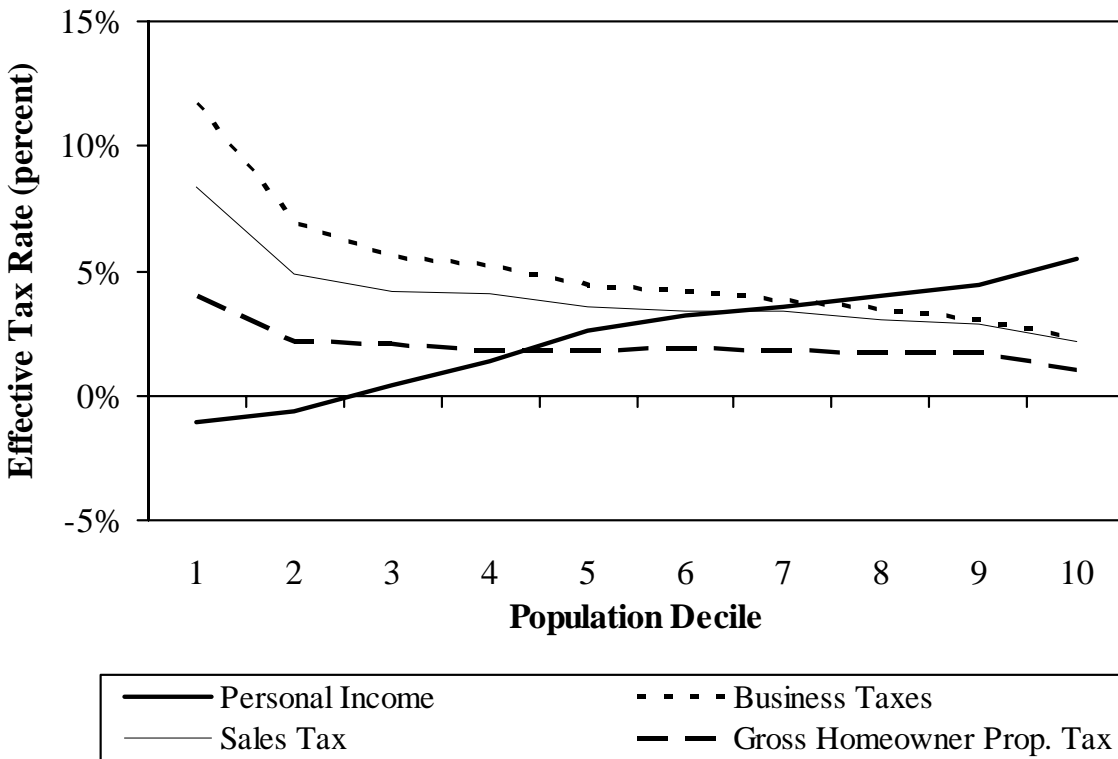
* Includes seasonal recreational residential (cabins)

**Table 2-6
Effective Tax Rates**

2002 Decile	Personal Income	Business Taxes	Sales Tax*	Gross Homeowner Property Tax
First	-1.1%	11.7%	8.4%	4.0%
Second	-0.6%	7.0%	4.9%	2.2%
Third	0.4%	5.6%	4.2%	2.1%
Fourth	1.4%	5.2%	4.1%	1.8%
Fifth	2.6%	4.4%	3.6%	1.8%
Sixth	3.2%	4.2%	3.4%	1.9%
Seventh	3.6%	3.8%	3.4%	1.8%
Eighth	4.0%	3.5%	3.0%	1.7%
Ninth	4.4%	3.0%	2.9%	1.7%
Tenth	5.5%	2.3%	2.2%	1.0%
Total	4.1%	3.4%	2.9%	1.5%

*Included local sales taxes.

**Figure 2-2
Effective Tax Rates for 2002
by Population Decile**



The Individual Income Tax

Because of its graduated tax rate structure and allowance of personal exemptions and deductions, the individual income tax is, by design, progressive. As seen in *Table 2-5* for 2002, effective tax rates rose significantly with increases in household income. At the low end, the effective tax rate for the income tax was -1.1 percent for the first decile. It rose steadily to 5.5 percent for the tenth decile. First decile households can receive refundable tax credits, which more than offset any income tax liabilities.

Sales Tax on Consumer Purchases

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

For 2002, the effective consumer sales tax rate for the bottom decile was 5.2 percent, compared to the rate for the top decile of 1.3 percent (see *Table 2-5*). Effective tax rates for the second through ninth deciles, representing 80 percent of all taxpayers, ranged from 3.1 to 1.9 percent.

Residential Property Taxes

Homeowner Property Taxes. The gross property tax on owner-occupied homes showed some variation. For 2002, the effective property tax rate for homeowners tax was 2.2 percent for the second decile, 1.8 percent for the fourth decile, rose to 1.9 percent in the sixth decile and declined to 1.0 percent in the tenth decile.

Rental Property Taxes. This study's estimates of the property tax burden on renters are consistent with the approach used for business taxes more generally. Taxes on rental property, like taxes on other business property, are partly shifted to renters in higher rents and partly paid by property owners in lower returns. Using the methodology applied to business taxes more generally, this study estimates that a sizable portion of the 2002 gross rental property tax (58 percent) was borne by the investors who own rental housing; the remaining share (42 percent) was assumed to be shifted to renters in higher rents. The effective tax rate on renters was, therefore, lower than it would have been if all of the tax were passed along in higher rents.

Other Individual Taxes

The "other state taxes" category in *Table 3-5* includes the motor vehicle registration tax, estate taxes, solid waste management taxes, mortgage and deed taxes, insurance premiums taxes, gambling taxes, and MinnesotaCare Taxes.

Business Taxes

As shown in *Figure 2-1* previously, business taxes were 30.0 percent of the total tax burden on Minnesota residents. Business taxes include the following:

- Business property taxes
- Corporate franchise tax
- Sales tax paid on purchases of capital equipment and other intermediate inputs
- Motor vehicle registration tax paid by business
- Insurance premiums tax
- Mortgage and deed taxes on business property
- Solid waste management taxes paid by business
- Excise taxes on motor fuels, tobacco, and alcohol
- Gambling taxes
- MinnesotaCare taxes
- Local gross earnings taxes

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

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

Overall, the burden of Minnesota business taxes on Minnesota households was regressive. The effective tax rate generally fell as income increased. The effective tax rate was 7.0 percent in the second decile; it fell steadily as income rose, reaching 2.3 percent in the tenth decile.

Effective Tax Rates in the First Decile

As shown in *Table 2-5*, low-income taxpayers in the first decile had significantly higher sales, excise, property, and business tax burdens than taxpayers with higher incomes. The total effective tax rate of 18.2 percent for taxpayers in the first decile was much higher than the rates in other deciles. This 18.2 percent effective tax rate includes an adjustment to exclude negative incomes.

The effective tax rate for the first decile is overstated for several reasons. First, the lowest decile includes households who have temporarily low incomes or have better overall economic well-being than was indicated by their money income in 2002. 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. A small portion of all first-decile households were in this decile only because they reported business losses or large capital losses for income tax purposes in 2002.

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

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

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

Projected Results, 2007

This section examines the state and local tax burdens imposed on Minnesota taxpayers in 2007. The taxes included are the same as those analyzed for 2002.

Tax Incidence Projections to 2007

To analyze tax incidence for years beyond 2002 various methods were used to project 2002 data into the future. These projections were accomplished in several ways.

Income – The HITS income tax model contains assumptions, derived from the state economic forecast, about expected growth in each of the various categories of income: wages, interest, pensions etc. These expected growth rates were applied to the amount of each type of income that each household received in 2002. Adding up these components provides an estimate of total income in 2007 for the household. Because the various types of income are assumed to grow at different rates, some households in the model will experience faster income growth than will others. Therefore, the assignment of a given household to a decile ranking may change.

Population – Estimates are that the number of Minnesota households will grow by over 7.25 percent between 2002 and 2007. Therefore, we increase the number of households assumed to be represented by each household in the incidence sample by that percentage.

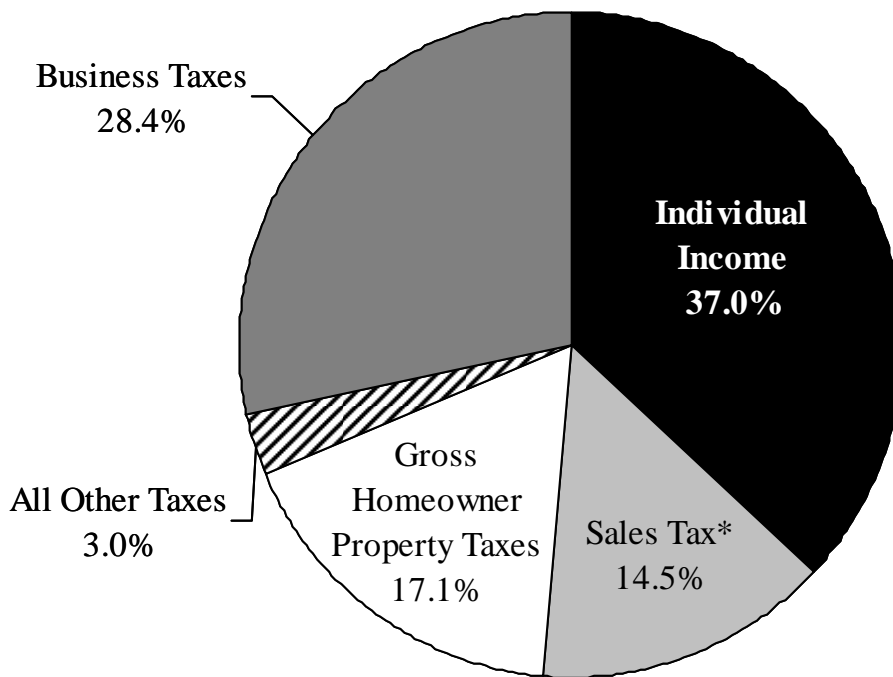
Taxes – All taxes were adjusted for tax law change that had either gone into effect or, under current law, are scheduled to go into effect. The major change is the 6-year phaseout of limited market value in property taxation. Income tax projections were from the HITS income tax model projections. For the remaining taxes in the study, estimates were produced of total collections based on the most current Department of Finance forecast, and also divided into tax liabilities imposed directly on Minnesota households, amounts imposed on nonresident households and amounts imposed on business. The business estimates were further disaggregated by economic sector. The business taxes were assumed to be shifted in the same manner as were the corresponding 2002 business taxes. Those taxes imposed directly on households were assumed to be allocated to the various households in the sample in the same way as were the 2002 taxes.

The Total Tax Burden

For 2007, Minnesota residents are expected to pay a total of \$18.7 billion in taxes while earning \$168.3 billion in total money income. Minnesota residents thus will pay 11.1 percent of their total income in state and local taxes.

As shown in *Figure 3-1*, the individual income tax accounts for 37.0 percent of the total tax burden on Minnesota residents. Homeowner property taxes and the consumer sales tax (including sales tax on motor vehicles) were 17.1 percent and 14.5 percent of the total, respectively. Taxes on business accounted for 28.4 percent. All other taxes make up the remaining 3.0 percent of total state and local taxes paid by Minnesota residents.

Figure 3-1
2007 Distribution of Minnesota
State and Local Tax Burdens by Tax



*Consumer portion.

Details of Minnesota tax collections before and after tax shifting are shown in *Table 3-1*. Of the \$21.9 billion in total tax collections in 2007, \$18.7 billion or over 85 percent is paid by Minnesotans, directly or indirectly. The rest is exported to taxpayers out of state.

As was the case in 2002, the income tax is borne almost entirely by Minnesota residents, who pay over 96 percent of total collections. Residents of Minnesota pay 82.3 percent of the general sales tax. At the other end of the scale Minnesotans pay only 11.0 percent of the property taxes on industrial property.

Of the total, \$8.1 billion or 36.9 percent of Minnesota taxes are imposed on businesses. Of that amount \$2.8 billion or nearly 35 percent is exported.

The Suits index numbers show that most taxes levied in Minnesota are regressive to some degree. Only a few taxes, and only one large tax, the personal income tax, are progressive (Suits index greater than zero). The consumption taxes as a group are the most regressive, with a Suits index of -0.183 . Nevertheless the progressive income tax and the few other progressive taxes are nearly sufficient to offset the many regressive taxes, so that the Suits index of the tax system as a whole is only slightly regressive at -0.029 .

Taxes by Sector

Table 3-2 shows the distribution of taxes imposed on business by industrial sector, as well as those taxes imposed solely on households.

There is considerable variation in the tax amounts attributed to each sector, with trade, transportation and utilities, and financial activities, accounting for large amounts and agriculture and mining having much smaller amounts. In order to judge the relative magnitudes of these by sector, we can present them as effective tax rates, as is done in *Table 3-3*.

Table 3-1
2007 Tax Collection Amounts (\$ Millions)

Tax Type	Total	As Imposed			After Shifting		Suite Index Decile
		MN HH's	NR	Business	Minnesota	Exported	
State Taxes							
Taxes on Income and Estates							
Individual income tax	\$7,135	\$6,900	\$235		\$6,900	\$235	0.185
Corporate franchise tax ¹	696			\$696	369	327	-0.126
Estate tax	92	92			92		0.271
Total Income and Estate Taxes	\$7,922	\$6,991	\$235	\$696	\$7,360	\$562	0.170
Taxes on Consumption							
Total sales tax	\$5,074	\$2,712	\$174	\$2,188	\$4,188	\$886	-0.152
General sales/use tax	4,456	2,302	174	1,980	3,667	789	-0.152
Sales tax on motor vehicles	618	410		208	521	97	-0.155
Motor fuels excise taxes	692			692	564	128	-0.251
Alcoholic beverage excise taxes	68			68	61	7	-0.182
Cigarette and tobacco excise taxes	176			176	170	5	-0.523
Insurance premiums taxes	387			387	286	101	-0.138
Gambling taxes	61			61	59	2	-0.359
MinnesotaCare taxes	428			428	371	57	-0.276
Total Consumption Taxes	\$6,886	\$2,712	\$174	\$4,000	\$5,699	\$1,186	-0.183
Taxes on Property							
Residential recreational	\$62	\$50	\$12		\$50	\$12	-0.189
Commercial	421			\$421	221	200	-0.106
Industrial	124			124	14	110	-0.145
Utility	64			64	40	24	-0.142
Total Property Taxes	\$671	\$50	\$12	\$609	\$325	\$346	-0.110
Other Taxes							
Motor vehicle registration tax	\$542	\$439		\$103	\$494	\$48	-0.119
Mortgage and deed taxes	242	131		111	193	49	-0.118
Solid waste management taxes	62	26		36	58	4	-0.180
Total Other Taxes	\$847	\$596		\$251	\$746	\$101	-0.123
Property Tax Refunds							
Homeowners	-\$207	-\$207			-\$207		0.681
Renters	-154	-154			-154		0.878
Total Property Tax Refunds	-\$361	-\$361			-\$361		0.775
Total State Taxes	\$15,965	\$9,987	\$421	\$5,556	\$13,769	\$2,196	0.026
Local Taxes							
Property taxes (Pay 2007)	\$5,729	\$3,303	\$28	\$2,398	\$4,756	\$974	-0.183
General property tax (gross-credits)	5,651	3,303	28	2,320	4,755	896	-0.183
Homeowners (gross)	3,190	3,190			3,190	0	-0.160
Residential recreational	141	113	28		113	28	-0.189
Commercial ²	961			961	505	456	-0.106
Industrial	283			283	31	252	-0.145
Farm (other than residence) ³	272			272	266	6	-0.289
Rental housing	629			629	540	89	-0.363
Utility	175			175	110	65	-0.142
Minerals ⁴	0			0	0	0	0.036
Mining production taxes (taconite)	78			78	1	78	0.176
Local sales taxes ⁵	130	67	5	58	107	23	-0.152
Local gross earnings taxes ⁶	53			53	33	20	-0.142
Total Local Taxes	\$5,913	\$3,371	\$33	\$2,509	\$4,896	\$1,017	-0.182
Total State and Local Taxes	\$21,877	\$13,358	\$454	\$8,065	\$18,665	\$3,213	-0.029

¹Includes taconite/iron ore occupation tax.

²Includes resorts and railroads.

³Includes Timber, net of sustainable forest incentive payments.

⁴Amount less than \$500,000.

**Table 3-2
Minnesota Taxes Imposed by NAICS Sector CY 2007 Taxes - \$ Thousands**

Tax Type	Agriculture	Mining	Const.	Mfg.	Trade Trans. Utilities	Info.	Financial Activities	Prof. Ed. & Bus. Services	Ed. & Health Services	Leisure and Hospitality	Government		Total Business	Households	Non- Residents	Total
											Other Services	Govt.				
State Taxes																
Taxes on Income and Estates																
Individual income tax													\$696,125	\$6,899,540	\$235,160	\$7,134,700
Corporate franchise tax	\$6,692	\$3,668	\$26,675	\$159,831	\$186,013	\$35,734	\$66,703	\$186,585	\$9,598	\$9,098	\$5,527		\$696,125			696,125
Estate tax														91,500		91,500
Total Income and Estate Taxes	\$6,692	\$3,668	\$26,675	\$159,831	\$186,013	\$35,734	\$66,703	\$186,585	\$9,598	\$9,098	\$5,527		\$696,125	\$6,991,040	\$235,160	\$7,922,325
Taxes on Consumption																
Total general sales tax	\$33,587	\$7,419	\$387,403	\$219,074	\$436,530	\$148,087	\$197,267	\$215,647	\$207,507	\$82,759	\$98,904	\$154,282	\$2,188,466	\$2,711,748	\$174,015	\$5,074,229
General sales/use tax	33,382	6,957	377,056	189,428	390,179	142,458	181,287	184,490	182,131	61,625	86,712	144,645	1,980,351	2,301,513	174,015	4,455,879
Sales tax on motor vehicles	205	461	10,346	29,646	46,351	5,629	15,981	31,157	25,375	21,134	12,192	9,637	208,114	410,236		618,350
Motor fuels excise taxes					692,276								692,276			692,276
Alcoholic beverage excise taxes				12,246	55,786								68,032			68,032
Cigarette and tobacco excise taxes					175,762								175,762			175,762
Insurance premiums taxes							386,949						386,949			386,949
Gambling taxes					25,939					34,900			60,839			60,839
MinnesotaCare taxes			14	1,791	94,822	839	1,000	24,637	250,345	3,066	349	50,669	427,533			427,533
Total Consumption Taxes	\$33,587	\$7,419	\$387,417	\$233,110	\$1,481,115	\$148,926	\$585,216	\$240,283	\$457,852	\$120,726	\$99,253	\$204,951	\$3,999,855	\$2,711,748	\$174,015	\$6,885,618
Taxes on Property																
Residential recreational														\$49,723	\$12,277	\$62,000
Commercial			\$34,900		\$100,100	\$19,500	\$55,300	\$104,200	\$70,500	\$21,900	\$14,600		\$421,000			\$421,000
Industrial				\$124,000									124,000			124,000
Utility					64,000								64,000			64,000
Total Property Taxes			\$34,900	\$124,000	\$164,100	\$19,500	\$55,300	\$104,200	\$70,500	\$21,900	\$14,600		\$609,000	\$49,723	\$12,277	\$671,000
Other Taxes																
Motor vehicle registration tax	\$100	\$287	\$5,041	\$16,028	\$23,515	\$2,845	\$7,546	\$15,883	\$16,439	\$10,108	\$5,245		\$103,038	\$439,266		\$542,304
Mortgage and deed taxes	32,344	3	2,905	11,740	16,539	1,621	28,280	8,672	5,868	2,300	1,218		111,492	130,758		242,250
Solid waste management taxes	631	370	2,575	3,826	9,309	2,621	1,863	3,488	4,138	1,134	1,607	\$4,844	36,407	25,770		62,177
Total Other Taxes	\$33,075	\$660	\$10,521	\$31,594	\$49,364	\$7,088	\$37,690	\$28,043	\$26,445	\$13,542	\$8,071	\$4,844	\$250,937	\$595,794		\$846,731
Property Tax Refunds																
Homeowners																-\$206,560
Renters																-\$154,300
Total Property Tax Refunds	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	-\$360,860
Total State Taxes	\$73,354	\$11,747	\$459,513	\$548,536	\$1,880,591	\$211,248	\$744,909	\$559,111	\$564,395	\$165,266	\$127,451	\$209,795	\$5,555,917	\$9,987,445	\$421,451	\$15,964,814
Local Property Taxes																
Homeowners (gross)														\$3,190,400		\$3,190,400
Residential recreational														113,079	\$27,921	141,000
Commercial			\$78,100		\$237,900	\$43,500	\$123,700	\$231,800	\$157,500	\$56,100	\$32,400		\$961,000			\$961,000
Industrial				\$283,000									283,000			283,000
Farm (other than residence)	\$271,668												271,668			271,668
Utility					\$175,000								175,000			175,000
Residential rental (gross)							628,700						628,700			628,700
Minerals		\$156											156			156
Total Property Taxes	\$271,668	\$156	\$78,100	\$283,000	\$412,900	\$43,500	\$752,400	\$231,800	\$157,500	\$56,100	\$32,400	\$0	\$2,319,524	\$3,303,479	\$27,921	\$5,650,924
Other Local Taxes																
Mining production taxes (taconite)		\$78,429											\$78,429			\$78,429
Local sales taxes	\$976	203	\$11,021	\$5,537	\$11,404	\$4,164	\$5,299	\$5,392	\$5,323	\$1,801	\$2,534	\$4,228	\$7,882	\$67,269	\$5,086	\$130,238
Local gross earnings taxes					\$53,042								\$53,042			\$53,042
Total Other Taxes	\$976	\$78,632	\$11,021	\$5,537	\$64,446	\$4,164	\$5,299	\$5,392	\$5,323	\$1,801	\$2,534	\$4,228	\$189,353	\$67,269	\$5,086	\$261,708
Total Local Taxes	\$272,644	\$78,788	\$89,121	\$288,537	\$477,346	\$47,664	\$757,699	\$237,192	\$162,823	\$57,901	\$34,934	\$4,228	\$2,508,877	\$3,370,748	\$33,007	\$5,912,632
Total State and Local Taxes	\$345,998	\$90,535	\$548,634	\$837,073	\$2,357,937	\$258,911	\$1,502,608	\$796,304	\$727,219	\$223,167	\$163,386	\$214,023	\$8,064,794	\$13,358,193	\$454,458	\$21,877,446

Table 3-3
Taxes Imposed by Sector
CY 2007 Taxes
Effective Tax Rates

Tax Type	Effective Tax Rates
Agriculture	3.90%
Mining	15.02
Construction	4.09
Manufacturing	3.47
Trade, Transportation, Utilities	5.57
Information	3.10
Financial Activities	2.52
Professional and Business Services	2.51
Educational and Health Services	3.02
Leisure and Hospitality	2.94
Other Services	2.95
Overall Average	3.47%

Taxes by Decile

To summarize the distribution of tax burdens by income level, the population of Minnesota households was divided into ten equal-sized groups or *deciles* of households ranked by household income levels. By definition, the first decile includes the 10 percent of households with the lowest income levels and the tenth decile includes the highest-income 10 percent of households. There were approximately 251,000 taxpaying households in each population decile. The total burden by tax type for each decile is summarized in *Table 3-4*.

Taxpayers in the top decile (incomes of \$124,564 and over) bore 36.9 percent of the total tax burden while having 39.8 percent of total income. By tax type, taxpayers in the top decile paid 52.4 percent of the individual income tax, 28.0 percent of the consumer sales tax, 24.4 percent of the gross residential property tax, and 26.6 percent of business taxes.

Table 3-4

2007 Population Deciles - Amounts (\$ 000's)

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes	
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total				Taxes on Individuals	Taxes on Businesses
First	\$10,053 & under	250,982	\$1,563,187	-\$21,007	\$9,297	\$73,418	\$41,289	\$114,707	-\$47,344	\$9,311	\$33,546	\$11,583	\$24,075
Second	\$10,054 - \$16,799	250,982	3,359,834	-21,690	11,516	92,437	49,790	142,228	-57,985	10,121	42,927	13,678	32,544
Third	\$16,800 - \$24,825	250,982	5,226,612	23,799	15,967	126,519	68,351	194,870	-72,884	14,856	50,365	22,323	43,494
Fourth	\$24,826 - \$33,259	250,982	7,307,147	122,006	21,715	172,579	88,561	261,140	-59,874	18,412	65,691	35,049	57,910
Fifth	\$33,260 - \$43,196	250,982	9,564,042	269,996	25,363	195,037	102,394	297,431	-44,037	21,593	70,546	43,623	69,104
Sixth	\$43,197 - \$55,645	250,982	12,343,303	410,875	30,344	231,770	122,790	354,560	-30,346	25,961	79,052	55,682	80,499
Seventh	\$55,646 - \$70,318	250,982	15,716,606	566,977	38,256	291,207	154,206	445,413	-20,639	32,117	90,676	73,963	98,828
Eighth	\$70,319 - \$90,052	250,982	19,989,490	793,202	45,398	340,307	181,807	522,114	-11,503	38,589	100,456	88,293	117,213
Ninth	\$90,053 - \$124,563	250,982	26,316,386	1,140,704	58,266	428,795	224,122	652,916	-8,023	48,121	112,616	113,927	134,177
Tenth	\$124,564 & over	250,982	66,939,010	3,614,677	112,737	759,679	442,875	1,202,554	-8,225	105,470	150,022	229,173	207,617
TOTALS		2,509,820	\$168,325,618	\$6,899,540	\$368,858	\$2,711,748	\$1,476,185	\$4,187,933	-\$360,860	\$324,552	\$795,898	\$687,294	\$865,461
Top 5%	Over \$171,906	125,527	\$48,961,013	\$2,757,171	\$76,287	\$501,439	\$301,855	\$803,294	-\$4,534	\$73,333	\$89,569	\$149,221	\$128,182
Top 1%	Over \$407,522	25,108	\$24,873,250	\$1,512,388	\$24,054	\$122,498	\$89,048	\$211,545	-\$851	\$26,626	\$20,563	\$35,922	\$35,737

Population Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total *		
First	\$81,520	\$19,668	\$8,457	\$28,125	\$114,390	\$27,130	\$3,962
Second	91,111	30,973	8,654	39,628	134,416	26,919	4,861
Third	141,012	40,566	14,076	54,642	201,986	41,888	6,572
Fourth	162,621	44,420	12,011	56,432	226,945	52,376	8,714
Fifth	226,299	38,694	15,448	54,142	289,205	61,056	9,973
Sixth	297,142	29,652	22,124	51,776	358,444	80,003	11,780
Seventh	355,198	20,561	27,822	48,383	413,991	101,202	14,788
Eighth	457,251	14,847	36,536	51,383	520,882	136,621	17,330
Ninth	546,306	11,672	29,263	40,936	607,110	124,954	21,947
Tenth	831,940	12,122	102,508	114,631	976,188	259,305	41,182
TOTALS	\$3,190,400	\$263,177	\$276,901	\$540,078	\$3,843,557	\$911,453	\$141,109
Top 5%	\$495,093	\$7,662	\$76,497	\$84,159	\$596,575	\$176,786	\$27,716
Top 1%	\$146,217	\$3,725	\$29,209	\$32,933	\$184,008	\$64,017	\$7,522

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
\$145,482	\$18,737	\$115,430	\$134,168	\$279,650
166,195	28,057	145,282	173,340	339,535
250,446	102,541	190,249	292,790	543,236
288,035	273,231	248,819	522,050	810,085
360,233	468,472	285,146	753,618	1,113,851
450,227	672,170	334,457	1,006,627	1,456,854
529,982	916,085	409,505	1,325,590	1,855,572
674,832	1,215,685	478,078	1,693,763	2,368,595
754,011	1,684,139	568,565	2,252,704	3,006,714
1,276,674	4,608,327	1,005,698	5,614,025	6,890,699
\$4,896,116	\$9,987,445	\$3,781,229	\$13,768,674	\$18,664,791
\$801,077	\$3,410,914	\$661,609	\$4,072,523	\$4,873,600
\$255,547	\$1,672,093	\$193,891	\$1,865,984	\$2,121,531

* Includes seasonal recreational residential (cabins).

In contrast, taxpayers in the bottom decile (incomes of \$10,053 and below) bore 1.5 percent of the total tax burden and received only 0.9 percent of total income. The bottom decile taxpayers had a negative net individual income tax burden due to the refundable tax credits. The same households paid 2.7 percent of the consumer sales tax, 2.6 percent of gross residential property tax, and 3.1 percent of business taxes.

Overall Effective Tax Rates

In a similar fashion as was done for taxes paid in 2002, effective tax rates by tax type for 2007 are reported in *Table 3-5*. Effective tax rates by population deciles for the four major tax types included in this study are presented in *Table 3-6* and are illustrated in *Figure 3-2*. As shown in *Figure 3-2*, 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 results show that the individual income tax is progressive, while the three remaining taxes are generally regressive. Because the progressive individual income tax accounts for over one-third of the total tax burden, it offsets most of the regressivity of the other state and local taxes. Hence, as a whole, the state and local system of taxation in Minnesota is only slightly regressive overall.

The Individual Income Tax

Because of its graduated tax rate structure and allowance of personal exemptions and deductions, the individual income tax is, by design, progressive. As seen in *Table 3-5* for 2007, effective tax rates rise significantly with increases in household income. At the low end, the effective tax rate for the income tax is -1.3 percent for the first decile. It rises steadily to 5.4 percent for the tenth decile. First decile households can receive refundable tax credits, which more than offset any income tax liabilities.

Table 3-5

2007 Population Deciles - Effective Tax Rates

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes	
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total				Taxes on Individuals	Taxes on Businesses
First	\$10,053 & under	250,982	\$1,563,187	- 1.3%	0.6%	4.7%	2.6%	7.3%	- 3.0%	0.6%	2.1%	0.7%	1.5%
Second	\$10,054 - \$16,799	250,982	3,359,834	- 0.6%	0.3%	2.8%	1.5%	4.2%	- 1.7%	0.3%	1.3%	0.4%	1.0%
Third	\$16,800 - \$24,825	250,982	5,226,612	0.5%	0.3%	2.4%	1.3%	3.7%	- 1.4%	0.3%	1.0%	0.4%	0.8%
Fourth	\$24,826 - \$33,259	250,982	7,307,147	1.7%	0.3%	2.4%	1.2%	3.6%	- 0.8%	0.3%	0.9%	0.5%	0.8%
Fifth	\$33,260 - \$43,196	250,982	9,564,042	2.8%	0.3%	2.0%	1.1%	3.1%	- 0.5%	0.2%	0.7%	0.5%	0.7%
Sixth	\$43,197 - \$55,645	250,982	12,343,303	3.3%	0.2%	1.9%	1.0%	2.9%	- 0.2%	0.2%	0.6%	0.5%	0.7%
Seventh	\$55,646 - \$70,318	250,982	15,716,606	3.6%	0.2%	1.9%	1.0%	2.8%	- 0.1%	0.2%	0.6%	0.5%	0.6%
Eighth	\$70,319 - \$90,052	250,982	19,989,490	4.0%	0.2%	1.7%	0.9%	2.6%	- 0.1%	0.2%	0.5%	0.4%	0.6%
Ninth	\$90,053 - \$124,563	250,982	26,316,386	4.3%	0.2%	1.6%	0.9%	2.5%	0.0%	0.2%	0.4%	0.4%	0.5%
Tenth	\$124,564 & over	250,982	66,939,010	5.4%	0.2%	1.1%	0.7%	1.8%	0.0%	0.2%	0.2%	0.3%	0.3%
TOTALS		2,509,820	\$168,325,618	4.1%	0.2%	1.6%	0.9%	2.5%	- 0.2%	0.2%	0.5%	0.4%	0.5%
Top 5%	Over \$171,906	125,527	\$48,961,013	5.6%	0.2%	1.0%	0.6%	1.6%	0.0%	0.1%	0.2%	0.3%	0.3%
Top 1%	Over \$407,522	25,108	\$24,873,250	6.1%	0.1%	0.5%	0.4%	0.9%	0.0%	0.1%	0.1%	0.1%	0.1%

Population Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total *		
First	5.2%	1.3%	0.5%	1.8%	7.3%	1.7%	0.3%
Second	2.7%	0.9%	0.3%	1.2%	4.0%	0.8%	0.1%
Third	2.7%	0.8%	0.3%	1.0%	3.9%	0.8%	0.1%
Fourth	2.2%	0.6%	0.2%	0.8%	3.1%	0.7%	0.1%
Fifth	2.4%	0.4%	0.2%	0.6%	3.0%	0.6%	0.1%
Sixth	2.4%	0.2%	0.2%	0.4%	2.9%	0.6%	0.1%
Seventh	2.3%	0.1%	0.2%	0.3%	2.6%	0.6%	0.1%
Eighth	2.3%	0.1%	0.2%	0.3%	2.6%	0.7%	0.1%
Ninth	2.1%	0.0%	0.1%	0.2%	2.3%	0.5%	0.1%
Tenth	1.2%	0.0%	0.2%	0.2%	1.5%	0.4%	0.1%
TOTALS	1.9%	0.2%	0.2%	0.3%	2.3%	0.5%	0.1%
Top 5%	1.0%	0.0%	0.2%	0.2%	1.2%	0.4%	0.1%
Top 1%	0.6%	0.0%	0.1%	0.1%	0.7%	0.3%	0.0%

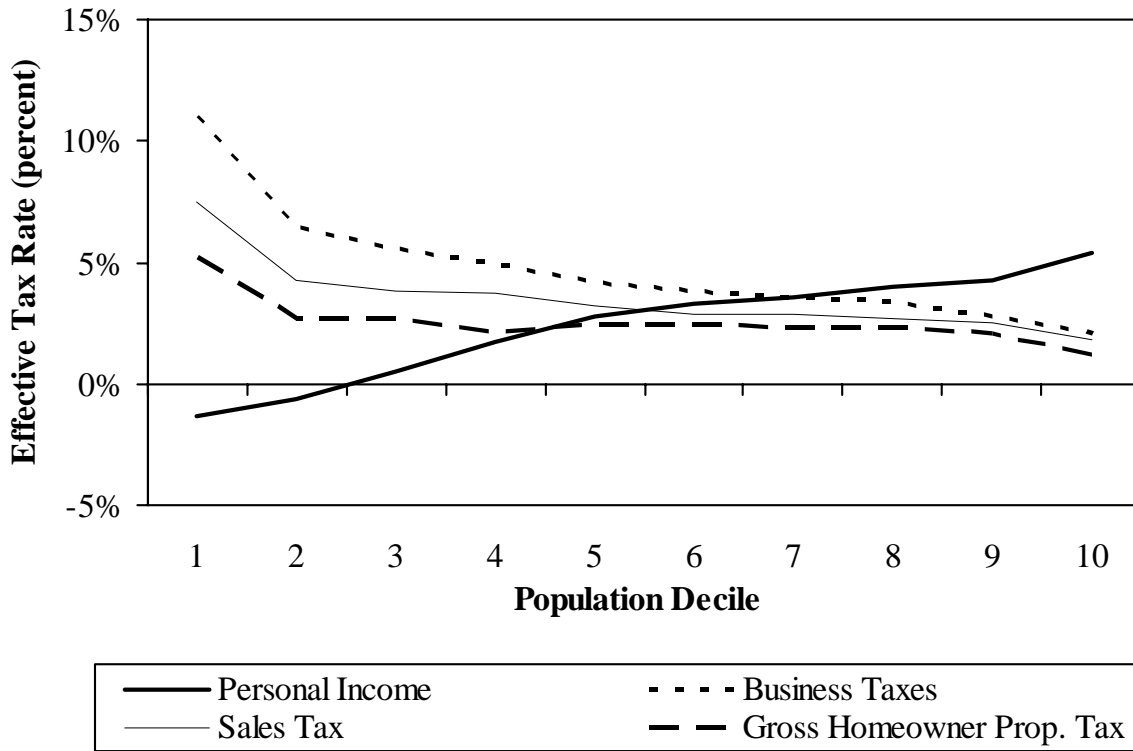
Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
9.3%	1.2%	7.4%	8.6%	17.9%
4.9%	0.8%	4.3%	5.2%	10.1%
4.8%	2.0%	3.6%	5.6%	10.4%
3.9%	3.7%	3.4%	7.1%	11.1%
3.8%	4.9%	3.0%	7.9%	11.6%
3.6%	5.4%	2.7%	8.2%	11.8%
3.4%	5.8%	2.6%	8.4%	11.8%
3.4%	6.1%	2.4%	8.5%	11.8%
2.9%	6.4%	2.2%	8.6%	11.4%
1.9%	6.9%	1.5%	8.4%	10.3%
2.9%	5.9%	2.2%	8.2%	11.1%
1.6%	7.0%	1.4%	8.3%	10.0%
1.0%	6.7%	0.8%	7.5%	8.5%

* Includes seasonal recreational residential (cabins).

**Table 3-6
Effective Tax Rates**

2005 Decile	Personal Income	Business Taxes	Sales Tax*	Gross Homeowner Property Tax
1	-1.3%	11.0%	7.5%	5.2%
2	-0.6%	6.4%	4.3%	2.7%
3	0.5%	5.6%	3.8%	2.7%
4	1.7%	5.0%	3.7%	2.2%
5	2.8%	4.2%	3.2%	2.4%
6	3.3%	3.8%	2.9%	2.4%
7	3.6%	3.6%	2.9%	2.3%
8	4.0%	3.4%	2.7%	2.3%
9	4.3%	2.8%	2.5%	2.1%
10	5.4%	2.1%	1.8%	1.2%
Total	4.1%	3.2%	2.6%	1.9%

**Figure 3-2
Effective Tax Rates for 2007
by Population Decile**



Sales Tax on Consumer Purchases

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

For 2007, the effective consumer sales tax rate for the bottom decile is 4.7 percent, compared to the rate for the top decile of 1.1 percent (see *Table 3-5*). Effective tax rates for the second through ninth deciles, representing 80 percent of all taxpayers, ranged from 2.8 to 1.6 percent.

Residential Property Taxes

Homeowner Property Taxes. For 2007, the net effective property tax rate for homeowners tax is 2.7 percent for the second decile, 2.4 percent in the fifth decile, 2.1 percent in the ninth decile, and declines to 1.2 percent in the tenth decile.

Rental Property Taxes. This study's estimates of the property tax burden on renters are consistent with the approach used for business taxes more generally. Taxes on rental property, like taxes on other business property, are partly shifted to renters in higher rents and partly paid by property owners in lower returns. Using the methodology applied to business taxes more generally, this study estimates that a sizable portion of the 2007 rental property tax (58 percent) was borne by the investors who own rental housing; the remaining share (42 percent) was assumed to be shifted to renters in higher rents. The effective tax rate on renters was, therefore, lower than it would have been if all of the tax were passed along in higher rents.

Other Individual Taxes

The "other state taxes" category in *Table 3-5* includes the motor vehicle registration tax, estate taxes, solid waste management taxes, mortgage and deed taxes, insurance premiums taxes, gambling taxes, and MinnesotaCare Taxes.

Business Taxes

As shown in *Figure 3-1* above, business taxes were 28.4 percent of the total tax burden on Minnesota residents. Business taxes include the following:

- Business property taxes
- Corporate franchise tax
- Sales tax paid on purchases of capital equipment and other intermediate inputs
- Motor vehicle registration tax paid by business
- Insurance premiums tax
- Mortgage and deed taxes on business property
- Solid waste management taxes paid by business
- Excise taxes on motor fuels, tobacco, and alcohol
- Gambling taxes
- MinnesotaCare taxes
- Local gross earnings taxes

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

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

Overall, the burden of Minnesota business taxes on Minnesota households was regressive. The effective tax rate generally fell as income increased. The effective tax rate was 6.4 percent in the second decile; it fell steadily as income rose, reaching 2.1 percent in the tenth decile.

Effective Tax Rates in the First Decile

As shown in *Table 3-5*, low income taxpayers in the first decile had significantly higher sales, excise, net property, and business tax burdens than taxpayers with higher incomes. The total effective tax rate of 17.9 percent for taxpayers in the first decile was much higher than the rates in other deciles. This 17.9 percent effective tax rate includes an adjustment to exclude negative incomes.

The effective tax rate for the first decile is overstated for several reasons which have been discussed in the previous section.

Additional Results

An Alternative Presentation: Income Deciles

The results presented earlier in this study have been summarized for deciles of households. Each population decile represents ten percent of the population of households in the study. This section provides an alternative way to summarize the distribution of the 2002 and 2007 tax burdens. *Tables 4-1* through *4-4* are organized by income deciles rather than population deciles. To derive income deciles, households are ranked from lowest to highest income and divided into groups representing equal amounts of total income.

The distribution of tax by income deciles in these tables can be compared to the distribution by population deciles in *Tables 2-4*, *2-5*, *3-4*, and *3-5*. In both distributions households are ranked by income level. Using the year 2002 for purposes of illustration, in the population decile distribution each decile of 234,000 households is 10 percent of all households; in the income decile distribution, each decile with \$12.7 billion of income constitutes 10 percent of total income. Because of their relatively low incomes, it takes 904,000 households in the first income decile to account for 10 percent of total income; in contrast, there are only 10,874 high-income households in the tenth decile, who also received 10 percent of total income.

Again using the year 2002 for illustration, the first decile includes 39 percent of all households. Their share of total taxes (10.0 percent) was equal to their share of household income (10 percent). First income decile households (with 10 percent of total income) paid less than 1 percent of the individual income tax, but paid 16.2 percent of the consumer sales tax, 23.4 percent of excise taxes, and 17.9 percent of all business taxes borne by Minnesota residents.

The tenth income decile includes only 0.5 percent of all households. Their share of total taxes (7.5 percent) was lower than their share of household income (10 percent). They paid 15.8 percent of the individual income tax, 2.1 percent of the consumer sales tax, 1.2 percent of excise taxes, and 2.9 percent of business taxes borne by Minnesota residents.

Tables 4-2 and 4-4 show effective tax rates by income decile. A comparison of the effective tax rate for all taxes reveals some differences. First, the effective tax rate for the first income decile (11.3 percent) was much lower than that for the first population decile (18.2 percent), again using 2002 data. The first income decile included almost four times as many households as the first population decile. As a result, the tax rate for the first income decile is an average for households in the first four population deciles.

The pattern of effective tax rates also differs for the top deciles. The tenth income decile (with 10,874 households) had an effective tax rate of 8.5 percent. In contrast, the tenth population decile (with about 234,000 households) had an effective tax rate of 10.7 percent.

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

Table 4-5 shows the Suits index values for each tax and for the various tax groupings. Suits values for population deciles are repeated for purposes of comparison.

Table 4-1

2002 Income Deciles - Amounts (\$ 000's)

Income Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes	
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total				Taxes on Individuals	Taxes on Businesses
First	\$26,678 & under	903,829	\$12,733,509	\$48,678	\$44,721	\$382,325	\$210,679	\$593,004	-\$177,226	\$41,881	\$173,702	\$74,490	\$87,864
Second	\$26,679 - \$40,235	384,336	12,730,381	345,310	34,911	289,051	154,650	443,701	-49,657	30,763	110,779	74,529	67,980
Third	\$40,236 - \$53,354	273,921	12,731,222	434,400	32,999	273,076	147,259	420,335	-19,997	29,565	93,681	77,479	62,272
Fourth	\$53,355 - \$66,741	213,533	12,736,036	491,969	30,906	253,574	137,151	390,725	-7,923	27,061	82,392	73,459	57,753
Fifth	\$66,742 - \$80,745	173,233	12,730,371	539,860	30,368	245,327	129,684	375,010	-3,970	25,232	73,421	74,895	52,279
Sixth	\$80,746 - \$99,767	142,509	12,734,744	568,204	29,187	230,130	122,398	352,527	-3,443	24,897	64,280	69,923	47,099
Seventh	\$99,768 - \$129,635	113,305	12,731,229	614,477	27,246	208,795	114,119	322,914	-2,369	24,020	53,269	67,928	42,924
Eighth	\$129,636 - \$202,014	80,648	12,726,548	652,901	32,138	255,851	143,108	398,959	-1,579	29,383	51,175	88,851	43,623
Ninth	\$202,015 - \$494,093	43,882	12,731,424	706,422	22,849	168,755	101,095	269,850	-1,326	22,643	31,510	62,073	29,489
Tenth	\$494,094 & over	10,874	12,725,965	827,136	11,302	49,686	42,411	92,097	-328	14,236	8,783	14,624	12,205
TOTALS		2,340,070	\$127,311,429	\$5,229,358	\$296,626	\$2,356,569	\$1,302,554	\$3,659,123	-\$267,818	\$269,682	\$742,992	\$678,253	\$503,487
Top 5%	Over \$1,271,104	1,979	\$6,366,294	\$439,742	\$3,767	\$9,043	\$12,467	\$21,510	-\$50	\$5,387	\$1,599	\$3,768	\$3,631
Top 1%	Over \$11,393,133	52	\$1,278,473	\$81,248	\$642	\$236	\$1,598	\$1,835	-\$1	\$1,013	\$42	\$77	\$468

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Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total *		
First	\$274,969	\$85,480	\$30,825	\$116,305	\$404,133	\$132,544	\$19,927
Second	244,550	40,234	18,255	58,490	311,704	98,963	14,711
Third	229,584	19,291	21,394	40,685	277,409	99,517	13,789
Fourth	225,447	10,296	20,842	31,139	262,634	98,240	12,847
Fifth	224,834	7,412	14,241	21,653	252,658	79,220	12,404
Sixth	204,513	3,343	12,189	15,532	228,213	69,069	11,739
Seventh	195,549	2,729	13,774	16,503	218,939	67,605	10,779
Eighth	167,614	1,991	21,997	23,988	197,667	74,988	13,466
Ninth	120,254	1,785	19,757	21,542	146,054	61,326	9,184
Tenth	49,012	1,714	10,089	11,803	62,161	35,444	3,326
TOTALS	\$1,936,325	\$174,276	\$183,364	\$357,639	\$2,361,571	\$816,917	\$122,173
Top 5%	\$13,250	\$846	\$3,631	\$4,477	\$17,970	\$13,252	\$832
Top 1%	\$573	\$60	\$102	\$162	\$741	\$2,156	\$92

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
\$556,605	\$332,493	\$554,621	\$887,114	\$1,443,719
425,379	662,081	396,237	1,058,317	1,483,696
390,715	767,305	363,429	1,130,734	1,521,449
373,721	813,067	333,276	1,146,343	1,520,064
344,281	858,140	308,956	1,167,096	1,511,377
309,021	867,498	285,176	1,152,674	1,461,695
297,322	891,093	259,316	1,150,409	1,447,731
286,122	998,017	297,434	1,295,451	1,581,573
216,563	937,324	206,187	1,143,511	1,360,074
100,931	891,561	88,494	980,055	1,080,986
\$3,300,661	\$8,018,577	\$3,093,127	\$11,111,704	\$14,412,365
\$32,054	\$452,584	\$26,770	\$479,354	\$511,408
\$2,989	\$81,562	\$3,761	\$85,323	\$88,312

* Includes seasonal recreational residential (cabins).

Based on Nov. 04 Forecast

Table 4-2

2002 Income Deciles - Effective Tax Rates

Income Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes	
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total				Taxes on Individuals	Taxes on Businesses
First	\$26,678 & under	903,829	12,733,509	0.4%	0.4%	3.0%	1.7%	4.7%	- 1.4%	0.3%	1.4%	0.6%	0.7%
Second	\$26,679 - \$40,235	384,336	12,730,381	2.7%	0.3%	2.3%	1.2%	3.5%	- 0.4%	0.2%	0.9%	0.6%	0.5%
Third	\$40,236 - \$53,354	273,921	12,731,222	3.4%	0.3%	2.1%	1.2%	3.3%	- 0.2%	0.2%	0.7%	0.6%	0.5%
Fourth	\$53,355 - \$66,741	213,533	12,736,036	3.9%	0.2%	2.0%	1.1%	3.1%	- 0.1%	0.2%	0.6%	0.6%	0.5%
Fifth	\$66,742 - \$80,745	173,233	12,730,371	4.2%	0.2%	1.9%	1.0%	2.9%	0.0%	0.2%	0.6%	0.6%	0.4%
Sixth	\$80,746 - \$99,767	142,509	12,734,744	4.5%	0.2%	1.8%	1.0%	2.8%	0.0%	0.2%	0.5%	0.5%	0.4%
Seventh	\$99,768 - \$129,635	113,305	12,731,229	4.8%	0.2%	1.6%	0.9%	2.5%	0.0%	0.2%	0.4%	0.5%	0.3%
Eighth	\$129,636 - \$202,014	80,648	12,726,548	5.1%	0.3%	2.0%	1.1%	3.1%	0.0%	0.2%	0.4%	0.7%	0.3%
Ninth	\$202,015 - \$494,093	43,882	12,731,424	5.5%	0.2%	1.3%	0.8%	2.1%	0.0%	0.2%	0.2%	0.5%	0.2%
Tenth	\$494,094 & over	10,874	12,725,965	6.5%	0.1%	0.4%	0.3%	0.7%	0.0%	0.1%	0.1%	0.1%	0.1%
TOTALS		2,340,070	127,311,429	4.1%	0.2%	1.9%	1.0%	2.9%	- 0.2%	0.2%	0.6%	0.5%	0.4%
Top 5%	Over \$1,271,104	1,979	6,366,294	6.9%	0.1%	0.1%	0.2%	0.3%	0.0%	0.1%	0.0%	0.1%	0.1%
Top 1%	Over \$11,393,133	52	1,278,473	6.4%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%

Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total *		
First	2.2%	0.7%	0.2%	0.9%	3.2%	1.0%	0.2%
Second	1.9%	0.3%	0.1%	0.5%	2.4%	0.8%	0.1%
Third	1.8%	0.2%	0.2%	0.3%	2.2%	0.8%	0.1%
Fourth	1.8%	0.1%	0.2%	0.2%	2.1%	0.8%	0.1%
Fifth	1.8%	0.1%	0.1%	0.2%	2.0%	0.6%	0.1%
Sixth	1.6%	0.0%	0.1%	0.1%	1.8%	0.5%	0.1%
Seventh	1.5%	0.0%	0.1%	0.1%	1.7%	0.5%	0.1%
Eighth	1.3%	0.0%	0.2%	0.2%	1.6%	0.6%	0.1%
Ninth	0.9%	0.0%	0.2%	0.2%	1.1%	5.0%	0.1%
Tenth	0.4%	0.0%	0.1%	0.1%	0.5%	0.3%	0.0%
TOTALS	1.5%	0.1%	0.1%	0.3%	1.9%	0.6%	0.1%
Top 5%	0.2%	0.0%	0.1%	0.1%	0.3%	0.2%	0.0%
Top 1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
4.4%	2.6%	4.4%	7.0%	11.3%
3.3%	5.2%	3.1%	8.3%	11.7%
3.1%	6.0%	2.9%	8.9%	12.0%
2.9%	6.4%	2.6%	9.0%	11.9%
2.7%	6.7%	2.4%	9.2%	11.9%
2.4%	6.8%	2.2%	9.1%	11.5%
2.3%	7.0%	2.0%	9.0%	11.4%
2.2%	7.8%	2.3%	10.2%	12.4%
1.7%	7.4%	1.6%	9.0%	10.7%
0.8%	7.0%	0.7%	7.7%	8.5%
2.6%	6.3%	2.4%	8.7%	11.3%
0.5%	7.1%	0.4%	7.5%	8.0%
0.2%	6.4%	0.3%	6.7%	6.9%

* Includes seasonal recreational residential (cabins).

Table 4-3

2007 Income Deciles - Amounts (\$ 000's)

Income Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes	
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total				Taxes on Individuals	Taxes on Businesses
First	\$32,471 & under	984,958	\$16,834,017	\$91,359	\$56,706	\$450,930	\$240,848	\$691,778	-\$229,359	\$51,037	\$187,283	\$79,368	\$151,421
Second	\$32,472 - \$49,814	412,897	16,834,595	497,991	43,714	336,380	175,458	511,837	-68,766	36,674	119,486	77,048	116,749
Third	\$49,815 - \$66,035	291,807	16,831,525	586,237	41,193	314,871	167,674	482,546	-30,211	35,204	101,262	78,542	107,582
Fourth	\$66,036 - \$82,369	228,309	16,833,767	650,638	39,195	296,025	158,336	454,361	-12,425	33,347	88,306	75,851	101,083
Fifth	\$82,370 - \$100,042	185,765	16,832,556	697,746	38,425	285,720	149,851	435,571	-6,248	31,024	79,349	76,023	93,051
Sixth	\$100,043 - \$123,955	151,967	16,829,927	741,997	36,103	262,397	138,305	400,702	-5,370	30,722	68,704	69,895	82,570
Seventh	\$123,956 - \$165,492	119,506	16,837,380	801,504	33,685	239,426	130,312	369,738	-3,529	29,585	56,898	67,612	74,838
Eighth	\$165,493 - \$269,845	82,514	16,852,152	854,488	40,828	298,813	165,339	464,152	-2,360	35,970	55,136	90,316	74,438
Ninth	\$269,846 - \$700,500	42,468	16,810,770	922,656	26,641	179,706	108,532	288,239	-2,074	26,244	31,528	59,634	46,768
Tenth	\$700,501 & over	9,634	16,828,929	1,054,925	12,366	47,479	41,529	89,009	-519	14,744	7,946	13,003	16,961
TOTALS		2,509,825	\$168,325,618	\$6,899,540	\$368,858	\$2,711,748	\$1,476,185	\$4,187,933	-\$360,860	\$324,552	\$795,898	\$687,294	\$865,461
Top 5%	Over \$2,031,373	1,620	\$8,416,329	\$560,102	\$4,071	\$7,988	\$12,024	\$20,012	-\$78	\$5,406	\$1,337	\$3,242	\$4,706
Top 1%	Over \$19,214,857	43	\$1,694,371	\$104,161	\$751	\$210	\$1,692	\$1,902	-\$2	\$1,060	\$35	\$64	\$632

Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes
	Homeowners gross	Renters gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total *		
First	\$458,891	\$129,085	\$42,595	\$171,680	\$652,078	\$142,805	\$23,402
Second	406,077	60,759	25,528	86,287	506,857	108,804	17,109
Third	387,354	29,132	31,972	61,103	460,400	112,850	16,010
Fourth	395,274	15,549	32,712	48,261	453,651	109,131	15,061
Fifth	362,434	11,193	22,497	33,690	406,444	100,157	14,574
Sixth	341,613	5,049	18,984	24,033	379,307	76,879	13,482
Seventh	316,993	4,121	24,245	28,366	356,876	76,099	12,452
Eighth	271,927	3,007	32,959	35,967	318,038	85,564	15,834
Ninth	181,169	2,695	31,945	34,640	222,932	64,855	9,894
Tenth	68,669	2,588	13,464	16,052	86,973	34,310	3,290
TOTALS	\$3,190,400	\$263,177	\$276,901	\$540,078	\$3,843,557	\$911,453	\$141,107
Top 5%	\$17,424	\$1,277	\$4,873	\$6,150	\$23,980	\$12,478	\$807
Top 1%	\$755	\$91	\$146	\$237	\$1,002	\$2,077	\$101

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
\$818,284	\$401,756	\$677,838	\$1,079,595	\$1,897,879
632,769	849,026	485,709	1,334,735	1,967,504
589,260	954,692	447,663	1,402,355	1,991,615
577,843	1,014,537	415,819	1,430,355	2,008,199
521,175	1,057,780	387,162	1,444,941	1,966,116
469,667	1,074,925	350,398	1,425,323	1,894,990
445,428	1,110,078	320,253	1,430,331	1,875,759
419,436	1,245,718	367,250	1,612,968	2,032,404
297,681	1,163,055	236,581	1,399,636	1,697,317
124,573	1,115,880	92,556	1,208,436	1,333,009
\$4,896,116	\$9,987,445	\$3,781,229	\$13,768,674	\$18,664,791
\$37,265	\$571,432	\$27,364	\$598,797	\$636,062
\$3,181	\$104,437	\$4,165	\$108,602	\$111,783

* Includes seasonal recreational residential (cabins)

Table 4-4

2007 Income Deciles - Effective Tax Rates

Income Decile	Income Range	Number of Households	Household Income	State Income Taxes		State Sales Tax			Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes	
				Individual Income Tax	Corporate Franchise Tax	Purchases by Individuals	Purchases by Businesses	Sales Tax Total				Taxes on Individuals	Taxes on Businesses
First	\$32,471 & under	984,958	\$16,834,017	0.5%	0.3%	2.7%	1.4%	4.1%	- 1.4%	0.3%	1.1%	0.5%	0.9%
Second	\$32,472 - \$49,814	412,897	16,834,595	3.0%	0.3%	2.0%	1.0%	3.0%	- 0.4%	0.2%	0.7%	0.5%	0.7%
Third	\$49,815 - \$66,035	291,807	16,831,525	3.5%	0.2%	1.9%	1.0%	2.9%	- 0.2%	0.2%	0.6%	0.5%	0.6%
Fourth	\$66,036 - \$82,369	228,309	16,833,767	3.9%	0.2%	1.8%	0.9%	2.7%	- 0.1%	0.2%	0.5%	0.5%	0.6%
Fifth	\$82,370 - \$100,042	185,765	16,832,556	4.1%	0.2%	1.7%	0.9%	2.6%	0.0%	0.2%	0.5%	0.5%	0.6%
Sixth	\$100,043 - \$123,955	151,967	16,829,927	4.4%	0.2%	1.6%	0.8%	2.4%	0.0%	0.2%	0.4%	0.4%	0.5%
Seventh	\$123,956 - \$165,492	119,506	16,837,380	4.8%	0.2%	1.4%	0.8%	2.2%	0.0%	0.2%	0.3%	0.4%	0.4%
Eighth	\$165,493 - \$269,845	82,514	16,852,152	5.1%	0.2%	1.8%	1.0%	2.8%	0.0%	0.2%	0.3%	0.5%	0.4%
Ninth	\$269,846 - \$700,500	42,468	16,810,770	5.5%	0.2%	1.1%	0.6%	1.7%	0.0%	0.2%	0.2%	0.4%	0.3%
Tenth	\$700,501 & over	9,634	16,828,929	6.3%	0.1%	0.3%	0.2%	0.5%	0.0%	0.1%	0.0%	0.1%	0.1%
TOTALS		2,509,825	\$168,325,618	4.1%	0.2%	1.6%	0.9%	2.5%	- 0.2%	0.2%	0.5%	0.4%	0.5%
Top 5%	Over \$2,031,373	1,620	\$8,416,329	6.7%	0.0%	0.1%	0.1%	0.2%	0.0%	0.1%	0.0%	0.0%	0.1%
Top 1%	Over \$19,214,857	43	\$1,694,371	6.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%

Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total *		
First	2.7%	0.8%	0.3%	1.0%	3.9%	0.8%	0.1%
Second	2.4%	0.4%	0.2%	0.5%	3.0%	0.6%	0.1%
Third	2.3%	0.2%	0.2%	0.4%	2.7%	0.7%	0.1%
Fourth	2.3%	0.1%	0.2%	0.3%	2.7%	0.6%	0.1%
Fifth	2.2%	0.1%	0.1%	0.2%	2.4%	0.6%	0.1%
Sixth	2.0%	0.0%	0.1%	0.1%	2.3%	0.5%	0.1%
Seventh	1.9%	0.0%	0.1%	0.2%	2.1%	0.5%	0.1%
Eighth	1.6%	0.0%	0.2%	0.2%	1.9%	0.5%	0.1%
Ninth	1.1%	0.0%	0.2%	0.2%	1.3%	0.4%	0.1%
Tenth	0.4%	0.0%	0.1%	0.1%	0.5%	0.2%	0.0%
TOTALS	1.9%	0.2%	0.2%	0.3%	2.3%	0.5%	0.1%
Top 5%	0.2%	0.0%	0.1%	0.1%	0.3%	0.1%	0.0%
Top 1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.0%

Local Taxes Total	Total State Taxes			Total State and Local Taxes	
	Total on Individuals	Total on Businesses	State Taxes Total		
4.9%	2.4%	4.0%	6.4%	11.3%	
3.8%	5.0%	2.9%	7.9%	11.7%	
3.5%	5.7%	2.7%	8.3%	11.8%	
3.4%	6.0%	2.5%	8.5%	11.9%	
3.1%	6.3%	2.3%	8.6%	11.7%	
2.8%	6.4%	2.1%	8.5%	11.3%	
2.6%	6.6%	1.9%	8.5%	11.1%	
2.5%	7.4%	2.2%	9.6%	12.1%	
1.8%	6.9%	1.4%	8.3%	10.1%	
0.7%	6.6%	0.5%	7.2%	7.9%	
TOTALS	2.9%	5.9%	2.2%	8.2%	11.1%
0.4%	6.8%	0.3%	7.1%	7.6%	
0.2%	6.2%	0.2%	6.4%	6.6%	

* Includes seasonal recreational residential (cabins)

Table 4-5
Suits Indices by Income and Population Deciles, 2002-2007

Tax Types	2002 Income Decile Suits Index	2007 Income Decile Suits Index	2002 Pop'n. Decile Suits Index	2007 Pop'n. Decile Suits Index
State Taxes				
Taxes on Income and Estates				
Individual income tax	0.211	0.195	0.199	0.185
Corporation franchise tax ¹	-0.135	-0.146	-0.116	-0.126
Estate tax	0.214	0.214	0.281	0.271
Total Income and Estate Taxes	0.193	0.179	0.184	0.170
Taxes on Consumption				
Total sales tax	-0.165	-0.176	-0.143	-0.152
General sales/use tax	-0.165	-0.175	-0.143	-0.152
Sales tax on motor vehicles	-0.169	-0.180	-0.145	-0.155
Motor fuels excise taxes	-0.262	-0.274	-0.240	-0.251
Alcoholic beverage excise taxes	-0.190	-0.202	-0.170	-0.182
Cigarette and tobacco excise taxes	-0.517	-0.526	-0.515	-0.523
Insurance premiums taxes	-0.151	-0.160	-0.131	-0.138
Gambling taxes	-0.369	-0.369	-0.350	-0.359
MinnesotaCare taxes	-0.290	-0.290	-0.266	-0.276
Total Consumption Taxes	-0.195	-0.205	-0.174	-0.183
Taxes on Property				
Residential recreational property tax	-0.200	-0.200	-0.179	-0.189
Commercial property tax	-0.119	-0.121	-0.105	-0.106
Industrial property tax	0.155	0.185	0.120	0.145
Utility property tax	-0.153	-0.164	-0.132	-0.142
Total Property Taxes	-0.117	-0.125	-0.104	-0.112
Other Taxes				
Motor vehicle registration tax	-0.133	-0.146	-0.107	-0.119
Mortgage and deed taxes	-0.133	-0.131	-0.111	-0.118
Solid waste management taxes	-0.192	-0.203	-0.170	-0.180
Total Other Taxes	-0.137	-0.146	-0.113	-0.123
Property Tax Refunds				
Homeowners	0.669	0.669	0.675	0.681
Renters	0.850	0.850	0.874	0.878
Total Property Tax Refunds	0.762	0.746	0.777	0.765
Total State Taxes	0.020	0.019	0.027	0.026
Local Taxes				
Property taxes (Pay 2000)	-0.193	-0.203	-0.174	-0.183
General property tax (gross - credits)	-0.194	-0.203	-0.175	-0.183
Homeowners (gross)	-0.172	-0.185	-0.148	-0.160
Residential recreational property	-0.200	-0.200	-0.179	-0.189
Commercial ²	-0.119	-0.121	-0.105	-0.106
Industrial	0.155	0.185	0.120	0.145
Farm (other than residence) ³	-0.330	-0.305	-0.310	-0.289
Rental housing	-0.373	-0.362	-0.370	-0.363
Utility	-0.153	-0.164	-0.132	-0.142
Minerals ⁴	0.034	0.053	0.021	0.036
Mining production taxes (taconite)	0.190	0.222	0.149	0.176
Local sales taxes	-0.165	-0.175	-0.143	-0.152
Local gross earnings taxes	-0.153	-0.164	-0.132	-0.142
Total Local Taxes	-0.192	-0.202	-0.173	-0.182
Total State and Local Taxes	-0.028	-0.039	-0.018	-0.029

¹ Includes taconite/iron ore occupation tax.

³ Includes timber.

² Includes resorts and railroads.

⁴ Amount less than \$500,000.

An Alternative Methodology: Adjusting for the Federal Tax Offset

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

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

There is a strong argument, however, against making such an adjustment in this study. This study estimates the burden of Minnesota taxes in a multistate context. The incidence of Minnesota taxes depends on the level of taxes in other states. If all states levy deductible taxes, then the federal government presumably makes up for the lost revenue by raising the federal tax rate. It is unlikely that the deductibility of state and local taxes actually lowers the total federal tax burden on Minnesota residents. Minnesota’s share of itemized deductions is roughly equal to its share of federal income tax payments. Whether the combination of deductible taxes and higher tax rates reduces a particular decile’s tax burden is unknown; it depends on how the federal tax structure has been adjusted to make up for the lost tax revenue.

The results presented in this study include no adjustment for the federal tax offset. The impact of such an adjustment is shown only in this section.

The impact of the federal tax offset is shown in *Tables 4-6* and *4-7*, and *Figure 4-1*. For all households combined, the federal offset would reduce the effective tax rate from 11.3 percent to 10.1 percent of income. There are small changes in the lowest deciles, which include few who itemize deductions. As expected, the impact of the federal tax offset rises with income. Despite the limitation on itemized deductions for high-income taxpayers, the effective tax rate in the tenth decile would fall from 10.7 percent to 8.7 percent. The adjusted tax burden is noticeably more regressive.

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

Table 4-6
Impact of Federal Tax Offset on Effective
State and Local Tax Rates by Population Decile
(Minnesota Residents, 2002)

Population Decile	Income Range	Effective Tax Rate		
		No Federal Tax Offset	Change Due To Federal Tax Offset	Adjusted for Federal Tax Offset
First	\$ 8,354 & Under	18.2%	0.1%	18.1%
Second	8,355 - 14,065	10.5	0.0	10.5
Third	14,066 - 20,714	10.1	0.1	10.0
Fourth	20,715 - 27,703	11.0	0.1	10.9
Fifth	27,704 - 35,683	11.4	0.3	11.1
Sixth	35,684 - 45,436	11.9	0.5	11.5
Seventh	45,437 - 57,589	12.0	0.7	11.3
Eighth	57,590 - 74,189	11.8	0.9	10.9
Ninth	74,190 - 102,426	11.7	1.4	10.3
Tenth	\$102,427 & Over	10.7	2.0	8.7
Total		11.3%	1.2%	10.1%
Top 5%	\$139,652 & Over	10.5%	2.1%	8.4%
Top 1%	\$323,340 & Over	9.0%	2.2%	6.8%

Figure 4-1
Effective Tax Rates for 2002
With and Without Federal Tax Offset

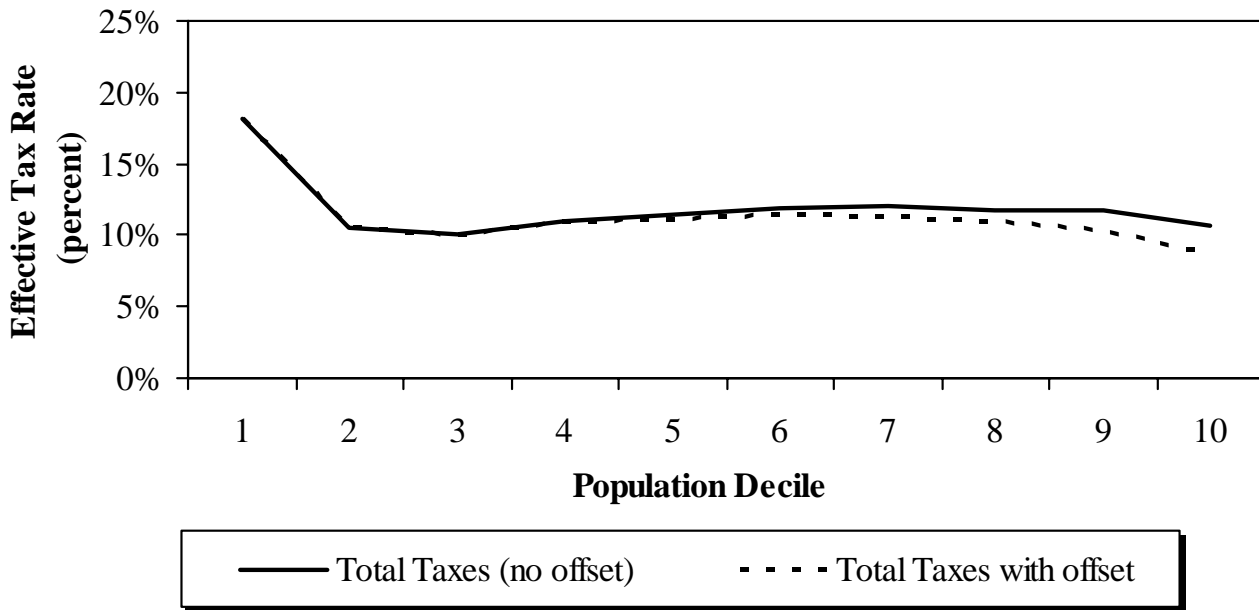


Table 4-7
Suits Index With and Without Federal Tax Offset

	Without Offset	With Offset
Income Tax	+0.199	+0.148
All Taxes	-0.018	-0.060

The Tax System Not Including Return Flow Payments

The results presented so far in this report derive from a “net” concept of the tax system; that is, tax amounts that incorporate not only dollar flows from taxpayers to governments, but also dollar flows from the state back to the taxpayers. These latter include the various refundable income tax credits: the working family credit, the dependent care credit and the K-12 education credit; property tax refunds payable to homeowners and renters; and most recently the Sustainable Forest Incentive payment program.

Most of these return flow payments are intended to make the tax system more progressive than it otherwise would be. To evaluate their effectiveness in accomplishing that, it is useful to compare the current system to the tax system that would exist without those return flow payments. Such a comparison is presented in *Tables 4-8, 4-9 and 4-10*. *Table 4-8* shows the magnitudes of the various return flow payments in 2002 and the projected amounts for 2007. That table also shows the Suits index values for each of the major categories of return flow payments. (The Suits index for the Sustainable Forest Incentive payment program is not available; however, the small size of that program compared to the other two implies that the overall Suits index for 2007 would not be much affected if the Sustainable Forest Incentive program Suits index were known and could be included in the computation.)

Table 4-8
Suits Index for Payments, 2002 - 2007

Payments	2002		2007	
	Amount \$ (000's)	Suits Index	Amount \$ (000's)	Suits Index
Income Tax Credits*				
Working Family Credit	\$117,669		\$139,365	
Dependent Care Credit	11,659		13,211	
K-12 Education Credit	<u>13,806</u>		<u>14,807</u>	
Subtotal	\$143,134	0.878	\$167,383	0.881
Property Tax Refund				
Homeowners	\$130,686		\$206,560	
Renters	<u>137,132</u>		<u>154,300</u>	
Subtotal	\$267,818	0.777	\$360,860	0.765
Sustainable Forest Incentive Program**	\$0		\$2,332	
Total	\$410,952	0.812	\$530,575	0.799

* Source: Sample (for 2002), HITS (for 2007)

** Suits index is not available.

Table 4-9 provides a comparison of effective tax rates from the current system and from a no return flow system. As expected, effective rates rise in the latter case, and rise most notably for households in the lower deciles. For example, the effective tax rate for the second decile rises from -0.6 percent to 0.4 percent for the individual income tax and from 10.5 percent to 11.6 percent for all taxes, while the effective rates for households in the tenth decile are unchanged in each case.

Table 4-9
Effective Tax Rates, Current System
Compared To One With No Return Flows

Decile	Current System			Refundable Credits		No Credits	
	Household Income	Individual Income Tax	Effective Tax Rate			Individual Income Tax	Effective Tax Rate
1	\$1,235,590	-\$14,087	-1.1%	\$15,284		\$1,197	0.1%
2	2,610,954	-16,966	-0.6%	28,031		11,065	0.4%
3	4,077,633	14,495	0.4%	42,474		56,969	1.4%
4	5,684,091	80,626	1.4%	40,652		121,278	2.1%
5	7,369,943	188,428	2.6%	14,739		203,166	2.8%
6	9,435,329	304,785	3.2%	1,115		305,900	3.2%
7	11,996,892	432,605	3.6%	200		432,804	3.6%
8	15,304,686	614,973	4.0%	638		615,611	4.0%
9	20,167,679	895,566	4.4%	2		895,567	4.4%
10	49,428,632	2,728,934	5.5%	1		2,728,934	5.5%
Total	\$127,311,429	\$5,229,358	4.1%	\$143,134		\$5,372,492	4.2%

Decile	Current System			Refundable Credits	No Credits or PTR		
	Household Income	Total State, Local Taxes	Effective Tax Rate		Property Tax Refund	Total State, Local Taxes	Effective Tax Rate
1	\$1,235,590	\$224,628	18.2%	\$15,284	\$37,272	\$239,912	19.4%
2	2,610,954	275,307	10.5%	28,031	45,303	303,338	11.6%
3	4,077,633	410,613	10.1%	42,474	55,789	453,087	11.1%
4	5,684,091	625,419	11.0%	40,652	45,582	666,071	11.7%
5	7,369,943	839,596	11.4%	14,739	32,006	854,335	11.6%
6	9,435,329	1,127,018	11.9%	1,115	20,611	1,128,133	12.0%
7	11,996,892	1,440,840	12.0%	200	13,345	1,441,040	12.0%
8	15,304,686	1,808,250	11.8%	638	7,331	1,808,888	11.8%
9	20,167,679	2,354,894	11.7%	2	5,138	2,354,896	11.7%
10	49,428,632	5,305,799	10.7%	1	5,440	5,305,800	10.7%
Total	\$127,311,429	\$14,412,365	11.3%	\$143,134	\$267,818	\$14,555,500	11.4%

Table 4-10 presents the tax system for 2002 without including refundable income tax credits or property tax refunds. (The Sustainable Forest Incentive payment program did not begin until later.) The Suits index for the individual income tax in this case declines from 0.199 to 0.169, while the Suits index for the overall tax system declines from -0.018 to -0.042.

Table 4-10
2002 Tax Collection Amounts (No Payments or Credits)
(\$ Millions)

Tax Type	Total	As Imposed			After Shifting		Suits Index ⁵
		MN HH's	NR	Business	Minnesota	Exported	
State Taxes							
Taxes on Income and Estates							
Individual income tax	\$5,551	\$5,368	\$183		\$5,368	\$183	0.169
Corporate franchise tax ¹	560			\$560	297	263	-0.116
Estate tax	97	97			97		0.281
Total Income and Estate Taxes	\$6,208	\$5,465	\$183	\$560	\$5,761	\$446	0.156
Taxes on Consumption							
Total sales tax	\$4,438	\$2,357	\$146	\$1,936	\$3,659	\$779	-0.143
General sales/use tax	3,829	1,953	146	1,731	3,146	683	-0.143
Sales tax on motor vehicles	609	404		205	513	96	-0.145
Motor fuels excise taxes	632			632	516	117	-0.240
Alcoholic beverage excise taxes	61			61	54	6	-0.170
Cigarette and tobacco excise taxes	178			178	173	5	-0.515
Insurance premiums taxes	202			202	150	53	-0.131
Gambling taxes	57			57	55	2	-0.350
MinnesotaCare taxes	191			191	166	25	-0.266
Total Consumption Taxes	\$5,760	\$2,357	\$146	\$3,258	\$4,773	\$987	-0.174
Taxes on Property							
Residential recreational	\$28	\$22	\$5		\$22	\$5	-0.179
Commercial	369	0	0	\$369	194	175	-0.105
Industrial	125	0	0	125	14	111	-0.120
Utility	64	0	0	64	40	24	-0.132
Total Property Taxes	\$585	\$22	\$5	\$558	\$270	\$316	-0.100
Other Taxes							
Motor vehicle registration tax	\$483	\$391		\$92	\$440	\$43	-0.107
Mortgage and deed taxes	263	168		96	221	42	-0.111
Solid waste management taxes	56	22		34	53	4	-0.170
Total Other Taxes	\$803	\$581		\$221	\$714	\$89	-0.113
Total State Taxes	\$13,365	\$8,425	\$334	\$4,597	\$11,518	\$1,838	-0.003
Local Taxes							
Property taxes (Pay 2002)	\$4,071	\$2,004	\$17	\$2,050	\$3,179	\$892	-0.174
General property tax (gross-credits)	4,009	2,004	17	1,988	3,178	830	-0.175
Homeowners (gross)	1,936	1,936			1,936	0	-0.148
Residential recreational	84	68	17		68	17	-0.179
Commercial ²	882			882	463	419	-0.105
Industrial	296			296	32	264	-0.120
Farm (other than residence) ³	212			212	208	4	-0.310
Rental housing	416			416	358	59	-0.370
Utility	181			181	114	68	-0.132
Minerals ⁴	0			0	0	0	0.021
Mining production taxes (taconite)	62			62	1	62	0.149
Local sales taxes	114	58	4	52	94	20	-0.143
Local gross earnings taxes	45			45	28	17	-0.132
Total Local Taxes	\$4,229	\$2,062	\$21	\$2,146	\$3,301	\$929	-0.173
Total State and Local Taxes	\$17,585	\$10,487	\$355	\$6,743	\$14,818	\$2,767	-0.041

¹Includes taconite/iron ore occupation tax.

³Includes Timber.

²Includes resorts and railroads.

⁴Amount less than \$500,000.

Appendix

The Incidence Study Database

The 2002 incidence study database includes detailed information on income and taxes for a stratified random sample of 63,808 Minnesota households. This sample is then “blown up” to represent over 2.3 million Minnesota households. Individual income tax returns and property tax refund returns filed with the Department of Revenue were the primary sources of information and were supplemented with data on nontaxable income obtained from various sources. The additional nontaxable income information provides a more accurate measure of total income, particularly for low-income households who did not meet tax filing requirements.

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

The incidence study database was constructed from a number of different sources. First, data were taken from state and federal income tax returns filed with Minnesota. To this was added data taken from property tax refund returns. Information concerning property taxes on homestead properties came from data supplied to the Department of Revenue by Minnesota counties. Additional income type amounts and data of other sorts were added from databases at several state agencies. Information obtained from the American Community Survey of the United States Bureau of the Census was used to calibrate a number of items, notably nontaxable income and property tax-related variables. American Community Survey data were also used to estimate annual rent expenditures for renter households. Finally, estimates of household spending patterns were obtained from United States Department of Labor Consumer Expenditure Survey data.

For further explanation regarding creation of this database and related tax calculations, please refer to the 1999 Tax Incidence Study which can be located at www.taxes.state.mn.us/reports/reports.html.

Measurement of Household Income

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

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

For a further discussion regarding definitions of households and income, please refer to the 1999 Minnesota Tax Incidence Study cited above.

Tax Incidence Analysis

Introduction

The results of any incidence study are determined by the study's incidence assumptions. This section explains both the incidence assumptions used in this study and the method of allocating tax burdens to specific households. This study's incidence assumptions are summarized as follows:

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, solid waste management) are borne by consumers of the taxed items.
- The property tax on homeowners is borne by the homeowner.
- The motor vehicle registration tax on vehicles owned by households is borne by the owner of the vehicle.
- Mortgage registration and deed transfer taxes on homes are borne by homeowners.

2. Incidence of Taxes on Business

Most taxes on business property, business purchases, and corporate income are partially shifted to consumers and workers. However, excise taxes - those on motor fuels (bought by consumers), tobacco, and alcohol – are assumed fully shifted to consumers, as are the taxes on consumer purchases of insurance, MinnesotaCare taxes, and taxes on gambling. Since these are fully shifted to consumers, the nature of the analysis for each of these taxes is discussed below under taxes on households category.

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. To shift a tax, the individual or business legally liable to pay the tax must alter its economic behavior because of the tax. For example, a property tax paid by a business firm may lead the firm to raise its prices, lower its pay to employees, or the business owner may experience reduced profits.

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 incidence studies other than Minnesota's approach. As a result, this section provides an extended discussion of the methodology underlying this study's approach to business tax incidence.

Taxes on Households

Taxes on Income or Wealth

Individual Income Tax. This study assumes that the burden of the individual income tax is not amenable to shifting through changes in either wages or interest rates. This assumption is correct if 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 migration. Given this assumption, the state income tax burden equals each household's tax liability, as listed in the study's database.

Estate Tax. Defining the incidence of the estate tax presents unique problems; the impact of the tax is on the estate, not on a currently acting economic entity (person or firm) as is true of all other taxes. There is no consensus among economists as to whether the incidence of the tax properly applies to the decedent or to the estate beneficiaries, and arguments can be made for either position. Given the information that was available for analysis, the computations reported here were carried out assuming that the incidence of the estate tax was on the decedent.

In order to eliminate the chance that decedent incomes were understated due to lack of a full year's income in the year of death, estate tax returns were matched against income tax returns for the two years prior to the year the estate tax return was filed. For this study we again used 1999 estate tax return data; resource constraints precluded developing more recent information.

The distribution of estate taxes by decile reported here should be viewed with some caution. Estimates of the estate tax Suits index for the United States as a whole range from about 0.70 to about 0.80, far greater than the 0.28 obtained in this study. A possible reason for this is that in 1999 Minnesota did not receive estate tax returns from the kind of extremely wealthy estates that would produce the national Suits index numbers mentioned above. Nationally, a number of such estate tax returns would be expected every year; in Minnesota they would appear intermittently at best.

Taxes on Consumer Purchases

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

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

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

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

MinnesotaCare Taxes. The 1.5 percent gross receipts tax on most medical bills (including hospital, physician, dental, and laboratory services along with prescription drugs) was assumed to be paid by consumers in higher out-of-pocket medical costs or higher costs for insurance (except for Medicare premiums). The higher costs of employer-provided health insurance were assumed to be borne by households in reduced wages or other fringe benefits. MinnesotaCare taxes were distributed in proportion to the sum of the cost of health insurance plus out-of-pocket costs for medical services and prescription drugs.

Property Taxes on Non-Business Property

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

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

Mortgage Registration and Deed Transfer Taxes. The homeowner portion of these taxes was assumed to be borne by the owner of the home. Given a lack of information about the identity of those buying homes or obtaining mortgages in 2002, the burden of the mortgage registration tax was distributed over all mortgage holders (in proportion to mortgage interest paid in 2002); the deed transfer tax burden was distributed over all homeowners (in proportion to the estimated market value of the home).

Adjustment for Burdens on Nonresident Households

The proportion of the total receipts from each of these taxes that was allocated to Minnesota households was given in *Table 1-2*. For the general sales and use tax and the excise taxes, the Minnesota household share was estimated by the Minnesota Consumption Tax Model. For the other taxes (insurance premiums tax, property tax on cabins, gambling taxes, MinnesotaCare taxes, motor vehicle registration tax, and mortgage and deed taxes), the total burden on Minnesota households was defined as total collections minus the estimated taxes paid by business and nonresident visitors and tourists.

Some incidence studies reduce state and local tax burdens to reflect the “federal tax offset.” State income taxes and homeowner property taxes are both deductible in calculating federal income tax liability, so households paying these Minnesota taxes will pay less in federal income tax (if they itemize deductions). A portion of these deductible taxes is sometimes considered to be shifted to the federal government in lower federal tax revenue. Although no such adjustment is included in this study’s general results, the impact of such an adjustment (and the arguments for and against it) are presented earlier. (See *Tables 4-6* and *4-7*.)

Taxes on Business

Introduction

This study includes over \$6.7 billion in business taxes, as summarized in *Table 2-1*. These business taxes (including rental property taxes) account for a significant percent of Minnesota’s state and local tax revenue. Business taxes include both taxes on capital (structures, capital equipment, and land) and taxes on business purchases of short-lived intermediate inputs (such as gasoline and restaurant meals).

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

The Conceptual Structure

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

1. *Capital moves to where it earns the highest return.* If a tax on capital in a single state (or industry) reduces the after-tax rate of return, investors will move their capital to lower-tax locations (or industries). As production falls, prices will rise or costs (including wages) will fall until the after-tax rate of return is again equal to the after-tax rate of return elsewhere. Only the average tax on all forms of capital in all states — a tax which owners of capital cannot avoid — will be fully borne by capital so long as capital is free to move in search of the highest rate of return.
2. *Minnesota's taxes do not occur in isolation.* Every state levies business taxes. The incidence of a tax levied at the same rate in all states differs greatly from the incidence of a tax levied only in Minnesota. For example, a one percent tax levied on business capital in only Minnesota will be largely shifted to consumers and workers; capital is unlikely to bear much of the final burden due to the ease of capital movement. In contrast, if all states impose the identical one percent tax on the value of all business capital, investors cannot escape the tax. Such a "national" tax on capital is much more likely to be borne by capital, reducing the after-tax rate of return on capital throughout the nation.

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

3. *Minnesota's tax structure evolved over time.* In describing the incidence of existing business taxes, this study assumes that businesses, consumers, and workers have fully adjusted to tax differences across states.

4. *Some businesses, depending on their market, can shift Minnesota business taxes forward to consumers in higher prices.* Given time for full adjustment, the ability to shift taxes forward to consumers depends on the nature of the product being sold. Some producers, such as restaurants, compete only with other Minnesota companies; tax increases would affect all restaurants equally, and prices would rise to cover this higher cost. In contrast, a higher Minnesota tax on manufacturers is much harder to shift to consumers because firms compete in a national market. Therefore, Minnesota manufacturers cannot raise prices to cover higher state taxes. In this study, producers of “local market products” are assumed to pass tax differentials on to consumers but producers of “national market products” cannot.
5. *A tax that reduces the competitiveness of Minnesota businesses will be borne by immobile resources — those either unable or unwilling to leave the state.* If capital is mobile and prices cannot be increased (due to competition), the burden of business taxes will reduce payments to inputs that are geographically tied to the state, including labor and land.
6. *An increase in taxes reflects an increase in state and local government spending.* This study assumes that workers do not move between Minnesota and other states in response to changes in state taxes, because tax changes are offset by expenditure changes, leaving the net benefits to Minnesota taxpayers unchanged. In other words, labor (along with land) is assumed to be immobile. In contrast, changes in taxes on business income are assumed not to be offset by changes in benefits from government expenditures.

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

Allocation of Business Taxes

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

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

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

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

Allocation of Business Taxes: An Example

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

Allocating the Burden Among Capital, Consumers, and Labor

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

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

This 3-part division of the tax is based on the answers to three questions. The approach is summarized in *Figure 5-1*, 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. Given the variation in rates among the states, it is the “average national tax rate on capital” which is borne by capital owners.

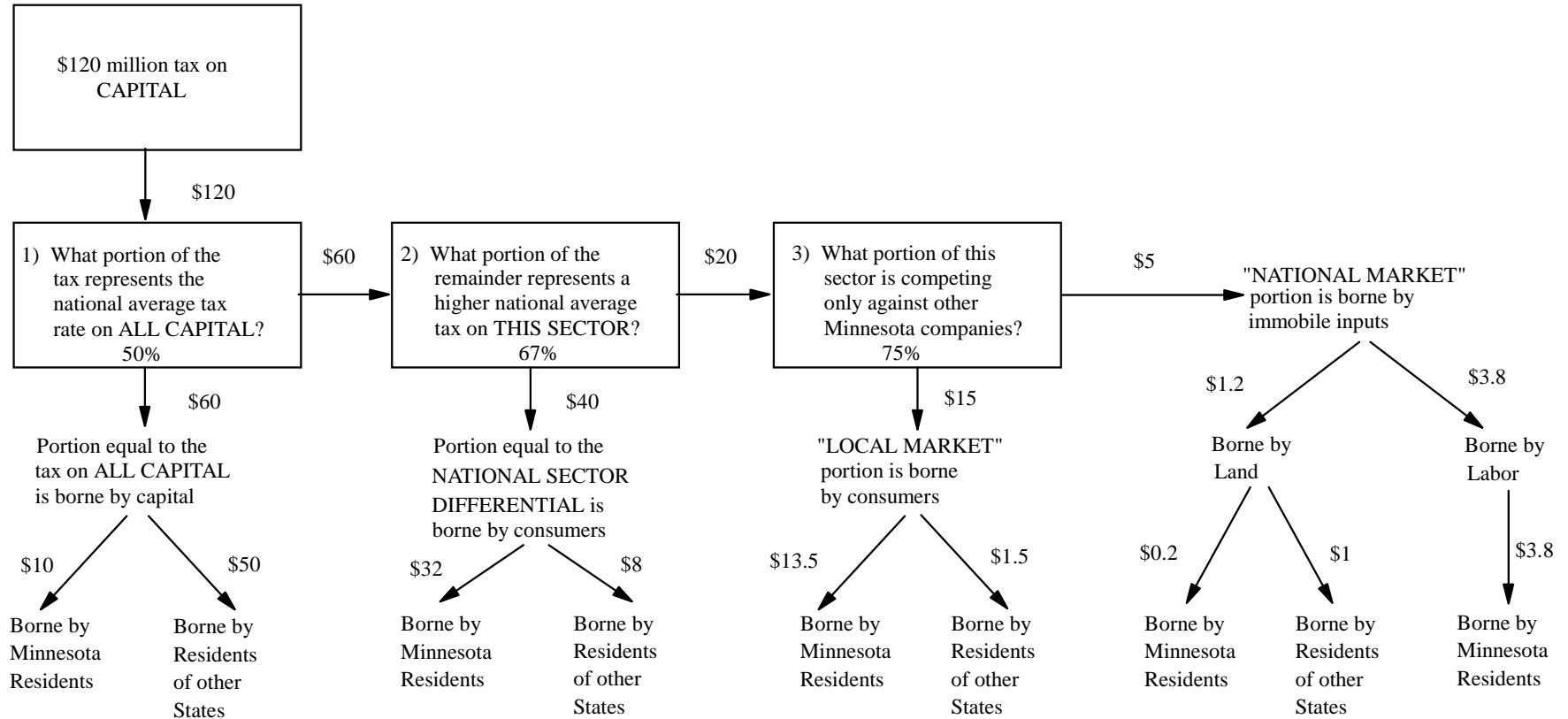
The average tax rate on all capital is measured in this study as the average state tax rate on all capital — total tax revenue (in all states) divided by the total national stock of capital. If the Minnesota tax rate on a particular sector is equal to the national average tax rate on all capital, then 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.

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 5-1*), 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 5-1*.)

Figure 5-1
Incidence of a Hypothetical \$120 Million Tax on Capital



Summary of Tax Incidence			
(\$ Millions)			
Taxpayer Category	Total	Minnesota Residents	Residents of Other States
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.

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

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

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

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 5-1*):

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.

Allocating the Burden between Minnesota Residents and Nonresidents

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

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

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

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

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

The same argument also applies to the federal tax offset for non-business taxes (the individual income tax, homeowner property tax, and motor vehicle registration tax) deductible in calculating federal individual income tax liability; the net offset for the average state is again zero. Given the multistate perspective of this study, no federal tax offset for household taxes is included. For informational purposes, however, the impact of the federal tax offset for non-business taxes is presented in *Tables 4-6 and 4-7*.

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.”

Business Tax Allocators

After estimating the share of Minnesota business taxes borne by Minnesota owners of capital and land, consumers, and labor, the final step was to allocate those taxes to specific households based on each household’s characteristics contained in the database records. In most cases, the study allocated to each household the average tax burden for households with the same characteristics. *Table 5-1* summarizes the allocators used in this final step.

Table 5-1
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
Adjusted farm property tax	Farmers using their own land
Farm rents	Farmers leasing their land

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

Burden on Renters. This is a particular case of the burden on consumers. In this case the total property tax for some renters is known directly, as it is reported on the form required to file for the property tax refund. The renter burden is calculated as a fraction of total rent (using the most recent census information) and this fraction is applied to the total property tax to obtain the renter share. For renters who do not file for the property tax refund, the property tax burden is assumed to be the same as for those renters who do file who have similar incomes and household characteristics.

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

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

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

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

A summary description of the incidence results for the distribution of each business tax to consumers, capital and labor (both residents and nonresidents) is provided in *Table 5-2*. The business tax allocators used to estimate the business tax burden for specific Minnesota households are discussed below. Further explanation of the incidence estimated for each of the business taxes can be found in the 1999 Tax Incidence Study.

Table 5-2
Distribution of Business Tax Burden by Taxpayer Category (2002)

	Percent Borne by Minnesota Taxpayers			Percent Exported
	Consumers	Labor	Capital	
Business Property Taxes				
Commercial	32%	3%	17%	47%
Industrial	0%	0%	11%	89%
Farm	0%	0%	98%	2%
Public utility	57%	4%	2%	37%
Rental housing	42%	0%	44%	14%
All Sectors	28%	2%	26%	44%
Sales Tax on Business Inputs				
Agriculture	7%	1%	49%	42%
Mining	3%	2%	9%	86%
Construction	94%	0%	2%	4%
manufacturing	12%	0%	4%	84%
Trade, transportation, utilities	50%	7%	4%	40%
Information	58%	0%	3%	39%
Financial activities	60%	0%	8%	31%
Professional and business services	81%	0%	5%	13%
Educational and health services	68%	0%	18%	14%
Leisure and hospitality	62%	0%	8%	30%
Other Services	81%	0%	5%	15%
All Sectors	60%	2%	8%	31%
Corporate Franchise Tax				
Commercial	53%	8%	3%	37%
Manufacturing	12%	9%	3%	76%
Public utility	49%	8%	3%	40%
Mining	2%	17%	0%	81%
All Sectors	42%	8%	3%	47%
Other Business Taxes				
Motor fuels	60%	0%	0%	40%
Motor vehicle registration	28%	13%	12%	47%
Mortgage and deed taxes	20%	0%	36%	44%
Insurance premium	24%	0%	13%	63%

Estimating the Impact of a Change in Business Taxes

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

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

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

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

Glossary of Tax Incidence Study Terms

Consumer Expenditure Survey – a database produced annually by the Bureau of Labor Statistics that contains information from a large nationwide sample of households on the amounts spent for a great variety of goods and services. Used to estimate consumption patterns for Minnesota households.

Decile – one tenth of an ordered list. In this study decile usually means a particular tenth of the total number of households in the state after those households have been ordered or ranked by income; sometimes referred to as a population decile. For example, the first decile means the tenth of the population ranking lowest in income; the tenth decile is the tenth of the population having the highest incomes. An alternative use of the term in this study means a tenth of the total income of the households so ranked; this is referred to as an income decile. For example, the tenth income decile refers to those households receiving the highest tenth of total income.

Effective tax rate – tax paid as a percentage of gross income. Effective tax rates can be calculated for single taxes or groups of taxes. In this study they are also calculated for business taxes by industry sector. Effective tax rates by decile are one of the main methods by which study results are presented. It should be noted that effective tax rates for the first decile are unreliable for several reasons. That decile includes households with temporarily low incomes or who consume based on wealth rather than current income (retirees, for example).

Federal offset – the reduction in federal taxes due to the reduction in federal taxable income that occurs when state taxes are included in itemized deductions. Because of this offset, the burden of state taxes would be lower than it otherwise appears, as long as federal rates are not increased to make up for the lower revenue.

Gross state product (GSP) – GSP is the value added in production by the labor and property located in the state. The value added of an industry is its gross output (sales, inventory increase, etc.) minus its intermediate inputs (goods and services purchased from other industries). GSP for a state is derived as the sum of the GSP originating in all industries in the state.

Household – for tax filers, in this study a household is defined as the one or two people entitled to file one income tax return or property tax refund return, plus any dependents. For the nonfilers in this study, a household means those people living at the same address who presumably would be entitled to file one income tax return if they were filers, plus any dependents. This definition differs from that used by the U.S. Census Bureau, which defines a household as any group of people who share living arrangements.

Impact of tax – refers to the initial burden of the tax, experienced by the person or firm legally obligated to pay the tax. The impact is distinguished from the incidence of the tax.

Incidence of tax – refers to the ultimate burden of the tax after the person or business firm legally obligated to pay the tax alters its behavior in response (if it does alter its behavior). In some cases, namely taxes imposed directly on households, both the impact and the incidence are the same. In other cases, such as taxes on businesses, the incidence is shifted from the business to others.

Income – for this study household income means all cash income received by anyone in the household, whether or not such income is taxable. Excluded from the definition is any noncash income, such as food stamps or income in kind. This is a broader measure of income than some others; for example, personal income as defined in the national income accounts does not include capital gains.

Industry sectors – in this study private production of goods and services is divided into ten sectors: agriculture; mining; construction; manufacture of durable goods; manufacture of nondurable goods; transportation, communication and public utilities (TCPU); finance, insurance and real estate (FIRE); services; retail trade; and wholesale trade.

Progressive tax – a tax for which the effective tax rate rises as income rises.

Proportional tax – a tax for which the effective rate does not change with income.

Regressive tax – a tax for which the effective tax rate falls as income rises.

Suits index – a numerical score ranging between -1 and $+1$ that indicates the extent to which a tax is progressive or regressive. Negative values indicate a regressive tax, positive values a progressive tax, and zero shows a proportional tax. The closer the Suits index is to $+1$ or -1 , the higher the degree of progressivity or regressivity.

Tax shifting – the process by which the incidence of a tax is translated from the economic entity legally obligated to pay the tax to those bearing the ultimate burden of the tax.

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.

