An analysis of Minnesota's household and business taxes.
March 2007

MINNESOTA · REVENUE

2007 Minnesota Tax Incidence Study

Analysis of Minnesota's household and business taxes.

MINNESOTA · REVENUE
Tax Research Division

March 1, 2007

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

March 12, 2007

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

I am pleased to transmit to you the ninth Minnesota Tax Incidence Study undertaken by the Department of Revenue in response to Minnesota Statutes, Section 270C.13 (Laws of 1990, Chapter 604, Article 10, Section 9; Laws of 2005, Chapter 151, Article 1, Section 15).

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 2004. 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?"

The report also estimates tax incidence across income groups for state and local taxes for 2009. 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. The 2009 projections also reflect the impact of economic growth on the tax system. This version of the 2009 projections is based on the November 2006 economic forecast from the Department of Finance.

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 $75,000.

Sincerely,

Ward Einess
Commissioner

600 North Robert Street
St. Paul, MN 55146

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Executive Summary

This study reports the distribution of calendar year 2004 Minnesota state and local taxes in relation to taxpayer income, along with projections for calendar year 2009. 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. This is the ninth biennial tax incidence study prepared in response to the statutory requirement enacted in 1990.

The report estimates 1) how the total state and local tax burden on Minnesota households varies by income range, and 2) how the burden of each component of the overall state and local tax system is distributed across Minnesota households. Aggregating the impact of each component yields an estimate of the distribution of the total tax burden.

The estimates include taxes with an initial impact on businesses, such as the corporate franchise tax and the sales tax on business purchases, as well as taxes imposed directly on households. The initial impact of taxes imposed on Minnesota households and businesses is discussed first. The analysis then proceeds to estimate the final incidence of taxes on Minnesota households, after taxes imposed on businesses have been shifted to those who bear the ultimate burden.

The report:

- Analyzes $19.3 billion in taxes collected in 2004, a total that represents over 99 percent of all state and local taxes.
- Allocates the tax amounts among Minnesota households (64.4 percent), Minnesota businesses (32.2 percent), and nonresidents (2.3 percent).
- Estimates the extent to which the business taxes are shifted to consumers (in higher prices) or labor (in lower wages), rather than being borne by owners of capital (in lower rates of return). Also estimates the extent to which the ultimate burden is "exported" to nonresident owners of capital or nonresident consumers.
- 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 the household share of taxes initially imposed on business but shifted to households, the ultimate payers. Income is defined to include all forms of cash income, both taxable and nontaxable.

- Presents results by population decile, each decile including one-tenth of all households (the lowest-income 10 percent in decile 1 and highest-income 10 percent in decile 10).
- Projects the 2004 results forward to 2009, accounting for the effects of both law changes and economic growth on the mix and level of state and local taxes.

Conclusions of the research are:

- Of the total $19.3 billion in 2004 taxes, Minnesota residents paid 83.7 percent ($16.2 billion). The remaining $3.1 billion of tax burden was exported to nonresidents.
- In 2004, the state and local tax burden on Minnesota households averaged 11.6 percent of income, up from 11.3 percent in 2002.
- The local tax share of tax revenue rose from 24.6 percent in 2002 to 25.8 percent in 2004 and is projected to rise to 28.5 percent in 2009. The state tax share fell from 75.4 percent in 2002 to 74.2 percent in 2004 and is projected to fall to 71.5 percent in 2009.
- The share of state and local revenue derived from consumption taxes fell from 34.8 percent in 2002 to 33.7 percent in 2004 and is projected to fall to 30.8 percent in 2009. The shares of income taxes and property taxes are both rising.
- The business tax share of total tax revenue is projected to fall from 33.2 percent to 32.3 percent between 2004 and 2009.
- After allowing for the shifting of business taxes, the Minnesota tax system in 2004 was slightly regressive (and somewhat more so than in 2002). Effective tax rates were well below the 11.6 percent average for those at both ends of the income spectrum (deciles 2, 3, 4, and 10). In between, effective tax rates were above that average (deciles 5 through 9). The Suits index, a measure of the progressivity or regressivity of a tax or tax system, fell from -0.018 in 2002 to -0.024 in 2004. This change suggests an increase in overall regressivity.
- Incomes are expected to grow by over 30 percent between 2004 and 2009. Tax receipts are forecast to grow at a slightly higher rate, raising the overall effective tax rate to 11.7 percent.
- The tax system is expected to become more regressive between 2004 and 2009. Income growth is expected to outpace tax growth in the higher deciles; the reverse is true in the middle and lower deciles. The Suits index is projected to fall to -0.032 in 2009.

The nine biennial tax incidence studies cover an 18-year period. Comparison with earlier reports provides some historical context for the results of the current study. *Figures E-1* and *E-2* below show how 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 burden to total household income. For the Suits index, positive values reflect progressivity and negative values show regressivity.

Figure E-1
Effective Tax Rates, All Taxes

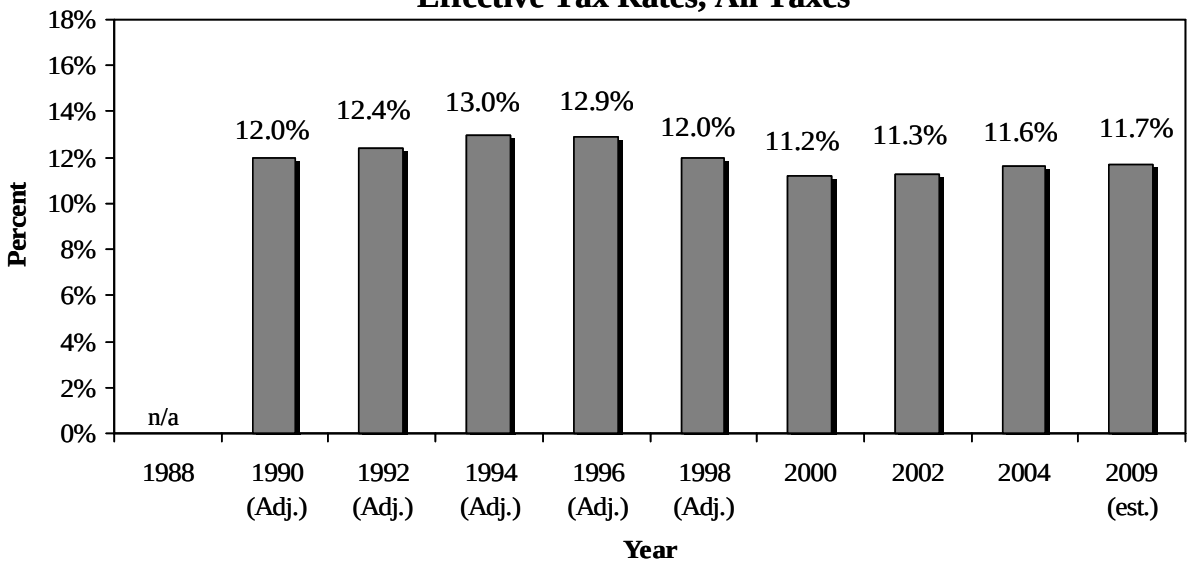
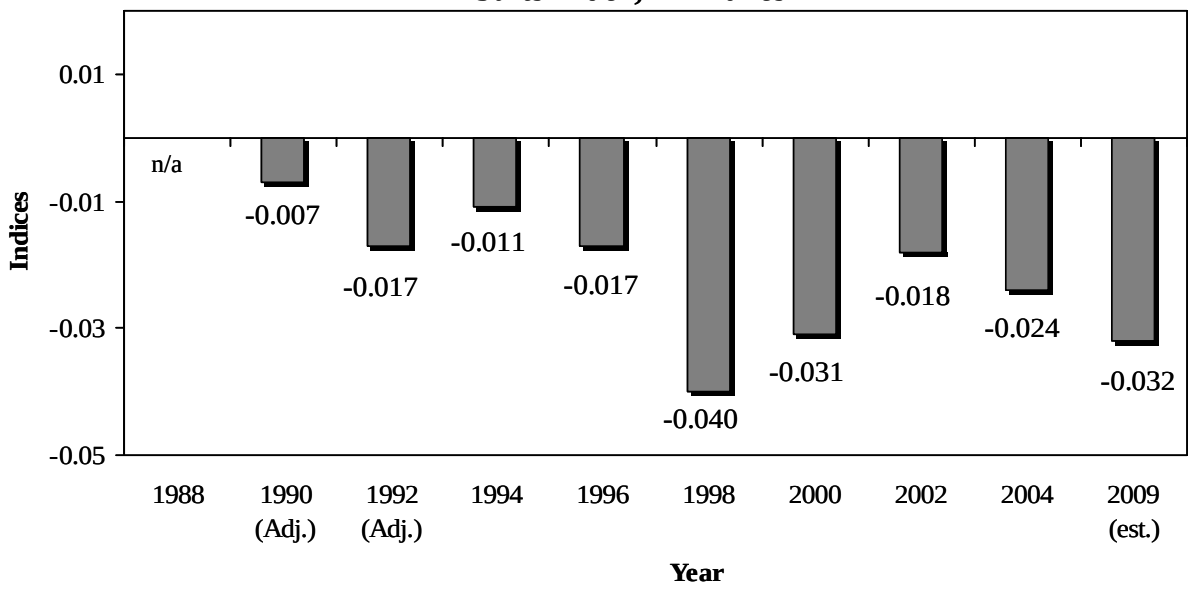


Figure E-2
Suits Index, All Taxes



Because earlier studies (before 2000) did not include all of the taxes included in more recent studies, both the effective tax rates (*Figure E-1*) and Suits indexes (*Figure E-2*) are adjusted to make them comparable. Unadjusted effective tax rates reported in the published studies were 11.8%, 12.1%, 12.9%, 12.7%, and 11.8% for 1990-1998. The unadjusted Suits index was -0.004 in 1990 and -0.013 in 1992.

Chapter 1: Overview of Study

Minnesota State and Local Tax Collections

Minnesota collected $19.3 billion in state and local taxes in 2004. By 2009, collections are expected to rise to $25.1 billion. This report estimates how much of the burden of total state and local taxes in each of those years falls on Minnesota residents and how the tax burden on Minnesota residents varies with income.

Minnesota's 2004 state and local taxes are summarized in *Table 1-1*. In 2004, almost 75 percent of the $19.3 billion of tax was collected at the state level; local governments collected the remainder, largely from property taxes. The study includes taxes paid by business as well as those paid directly by households. The 31 separate tax components included in the study account for over 99 percent of total state tax collections and over 99 percent of local tax collections. For each of the taxes, the study identifies how the burden is distributed. Combining the results for each of those components provides an estimate of the distribution of the burden of the complete state and local tax system.

The 2004 results are based on a stratified random sample of Minnesota households. The 2009 results are projected forward from 2004 based on the November 2006 economic forecast and are adjusted to account for law changes that take effect after 2004.

Table 1-1
Minnesota State and Local Tax Collections in 2004
($ Millions)

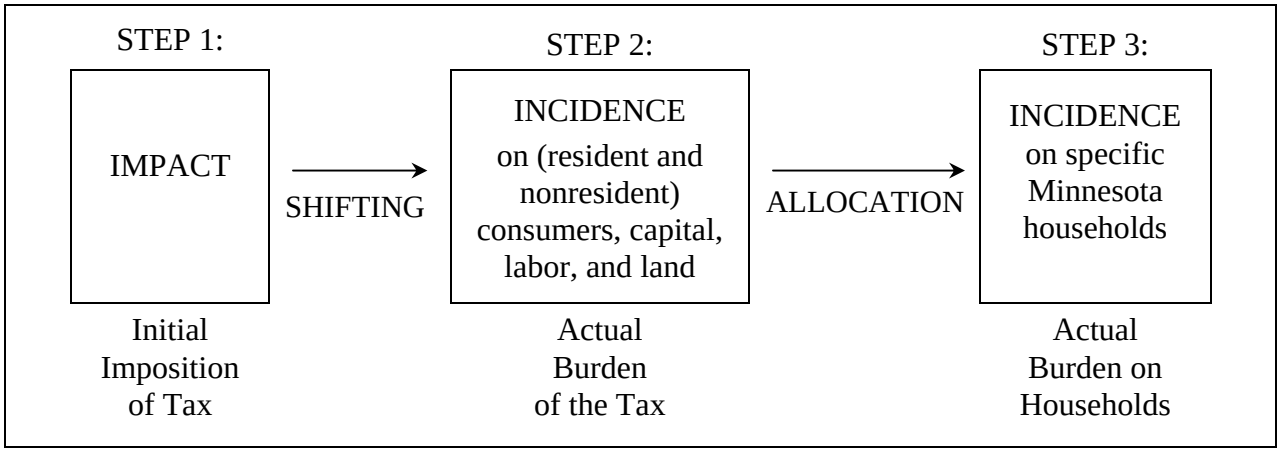
State		Local		State and Local	
Included		**Included**		**Included**	
Individual income tax	$6,025	Gross property taxes (after credits)			
Corporate franchise tax	780	Homestead property taxes	$2,485		
Estate tax	78	Property taxes on residential recreational property taxes (cabins)	97		
General sales and use tax	4,142	Rental property taxes (residential)	483		
Motor vehicle sales tax	575	Other business property taxes (including farming and taconite)	1,743		
Motor fuels excise taxes	652	Subtotal	$4,808		
Alcoholic beverage excise taxes	70				
Cigarette & tobacco excise taxes	191				
Insurance premiums tax	298				
Gambling taxes	57				
MinnesotaCare taxes	296				
Motor vehicle registration tax	494	Local sales taxes	119		
Mortgage and deed taxes	319	Gross earnings taxes	48		
Waste taxes	59				
State property tax	621				
Property tax refunds	-319				
Total	$14,338	Total	$4,974		$19,313
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	$17	Total	$2		$19
Total State Tax Collections	**$14,355**	**Total Local Tax Collections**	**$4,976**	**Total Tax Collections**	**$19,332**

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 burden 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



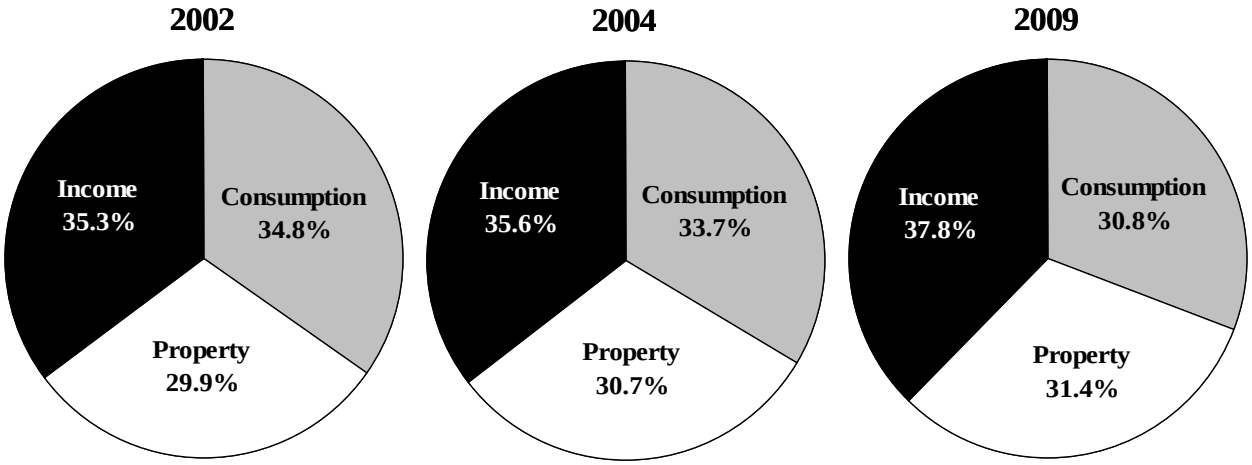
Each of the three steps shown in *Figure 1-1* are discussed separately below. The major findings from this study are reviewed in the context of that three-step estimating process.

Step 1 – Impact

Figure 1-2, derived from *Tables 1-2* and *1-3*, describes the revenues actually collected in 2002 and 2004 and expected to be collected in 2009. Taxes are divided into three general categories: Income, Consumption, and Property.[1]

[1] All taxes are assigned to one of the three categories. The motor vehicle registration tax and mortgage and deed taxes are defined as property taxes. The estate tax is defined as a tax on income.

Figure 1-2
Minnesota Tax System Impacts by Tax Area



The three graphs in *Figure 2-1* show that both the income and property tax shares are increasing, while the consumption tax share is falling. There are several reasons for that trend.

- Household income grew by 9 percent between 2002 and 2004 and is expected to grow by more than 30 percent between 2004 and 2009. As a general rule (in the absence of any law change), income tax revenue tends to grow faster than income. In contrast, taxes on consumption (sales and excise taxes) generally grow more slowly than income.
- Property taxes are levied primarily by local governments. Their rate of growth depends partly on changes in the system of state aid to schools and local governments. When state aid grows slowly, this places upward pressure on local property tax levies.

Another way of looking at this is to consider how Minnesota's tax system is split between state and local taxes. Between 2002 and 2004, the state's share fell from 75.4 percent to 74.2 percent. By 2009 it is expected to drop to 71.5 percent. Local taxes (including school taxes) rose from 24.6 percent in 2002 to 25.8 percent in 2004 and are expected to rise to 28.5 percent by 2009. Increasing local property taxes account for most of this local government revenue growth.

This study also highlights the distinction between taxes on households and taxes on business. Taxes on households include taxes paid directly by households (such as the individual income tax, homeowner property tax, vehicle registration tax on private vehicles, and the sales tax on consumer purchases). Household taxes are also defined to include taxes paid by business if the full tax is assumed to be passed on to households in higher prices. These fully-shifted taxes include excise taxes on cigarettes and alcohol, fuel taxes on fuel purchased by households, insurance taxes on homeowner insurance policies, and MinnesotaCare taxes on medical services. The term "business tax," as defined in this study, includes taxes paid by business that are not expected to be fully reflected in the price paid by consumers. Business taxes include, among others, the corporate franchise tax, business property taxes, the sales tax on business purchases, and insurance taxes on business insurance.

Table 1-2
2004 State and Local Tax Collections by Type of Tax and Taxpayer Category

Tax Type	Collections		Percentage by Taxpayer Category			
	Total ($ Millions)	Percentage Distribution	Households		Business	Total
			Resident	Nonresident		
State Taxes						
Taxes on Income and Estates						
Individual income tax	$6,025	31.2%	96.7%	3.3%		100.0%
Corporation franchise tax [1]	780	4.0%			100.0%	100.0%
Estate tax	78	0.4%	100.0%			100.0%
Total Income and Estate Taxes	$6,883	35.6%	85.8%	2.9%	11.3%	100.0%
Taxes on Consumption						
Total sales tax	$4,717	24.4%	52.9%	3.3%	43.8%	100.0%
General sales/use tax	4,142	21.4%	51.0%	3.8%	45.2%	100.0%
Sales tax on motor vehicles	575	3.0%	66.3%		33.7%	100.0%
Motor fuels excise taxes	652	3.4%	54.6%	1.4%	44.0%	100.0%
Alcoholic beverage excise taxes	70	0.4%	89.6%	10.4%	0.0%	100.0%
Cigarette and tobacco excise taxes	191	1.0%	97.0%	3.0%	0.0%	100.0%
Insurance premiums taxes	298	1.5%	57.0%		43.0%	100.0%
Gambling taxes	57	0.3%	97.0%	3.0%	0.0%	100.0%
MinnesotaCare taxes	296	1.5%	86.7%	13.3%	0.0%	100.0%
Solid waste management taxes	59	0.3%	39.8%		60.2%	100.0%
Total Consumption Taxes	$6,339	32.8%	56.8%	3.5%	39.7%	100.0%
Taxes on Property						
State property tax	$621	3.2%	5.0%	1.2%	93.7%	100.0%
Residential recreational property	39	0.2%	80.2%	19.8%		100.0%
Commercial	390	2.0%			100.0%	100.0%
Industrial	129	0.7%			100.0%	100.0%
Utility	63	0.3%			100.0%	100.0%
Motor vehicle registration tax	494	2.6%	81.0%		19.0%	100.0%
Mortgage and deed taxes	319	1.7%	63.7%		36.3%	100.0%
Total Property Taxes	$1,435	7.4%	44.3%	0.5%	55.2%	100.0%
Property Tax Refunds						
Homeowners	-$174	-0.9%	100.0%			100.0%
Renters	-145	-0.8%	100.0%			100.0%
Total Property Tax Refunds	-$319	-1.7%	100.0%			100.0%
Total State Taxes	$14,338	74.2%	68.5%	3.0%	28.5%	100.0%
Local Taxes						
Property Taxes	$4,808	24.9%	53.3%	0.4%	46.3%	100.0%
General property tax (gross - credits)	4,728	24.5%	54.2%	0.4%	45.4%	100.0%
Homeowners (before PTR)	2,485	12.9%	100.0%			100.0%
Residential recreational property	97	0.5%	80.2%	19.8%		100.0%
Commercial [2]	942	4.9%			100.0%	100.0%
Industrial	310	1.6%			100.0%	100.0%
Farm (other than residence) [3]	230	1.2%			100.0%	100.0%
Rental housing (before PTR)	483	2.5%			100.0%	100.0%
Utility	182	0.9%			100.0%	100.0%
Minerals [4]	0	0.0%			100.0%	100.0%
Mining production taxes (taconite)	79	0.4%			100.0%	100.0%
Taxes on consumption						
Local sales taxes [5]	119	0.6%	51.0%	3.8%	45.2%	100.0%
Local gross earnings taxes [6]	48	0.2%			100.0%	100.0%
Total Local Taxes	$4,974	25.8%	52.7%	0.5%	46.8%	100.0%
Total State and Local Taxes	$19,313	100.0%	64.4%	2.3%	33.2%	100.0%

[1] Includes taconite/iron ore occupation tax.
[2] Includes resorts and railroads.
[3] Farm includes timber.
[4] Minerals does not include the aggregate material production tax.
[5] Allocated to business/consumer in the same proportions as general sales tax.
[6] For cities with annual receipts greater than $500,000.

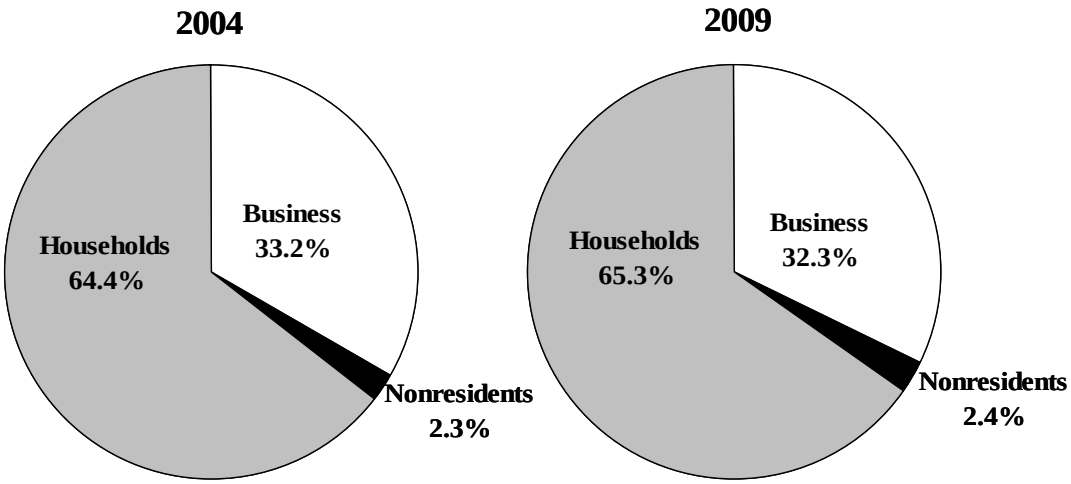
Table 1-3
2009 State and Local Tax Collections by Type of Tax and Taxpayer Category

Tax Type	Collections		Percentage by Taxpayer Category			
	Total ($ Millions)	Percentage Distribution	Households		Business	Total
			Resident	Nonresident		
State Taxes						
Taxes on Income and Estates						
Individual income tax	$8,297	33.0%	96.7%	3.3%		100.0%
Corporation franchise tax [1]	1,078	4.3%			100.0%	100.0%
Estate tax	107	0.4%	100.0%			100.0%
Total Income and Estate Taxes	$9,481	37.8%	85.7%	2.9%	11.4%	100.0%
Taxes on Consumption						
Total sales tax	$5,499	21.9%	53.1%	3.5%	43.4%	100.0%
General sales/use tax	4,963	19.8%	51.7%	3.9%	44.4%	100.0%
Sales tax on motor vehicles	536	2.1%	66.3%		33.7%	100.0%
Motor fuels excise taxes	664	2.6%	57.7%	2.3%	40.0%	100.0%
Alcoholic beverage excise taxes	78	0.3%	89.6%	10.4%	0.0%	100.0%
Cigarette and tobacco excise taxes	193	0.8%	97.0%	3.0%	0.0%	100.0%
Insurance premiums taxes	402	1.6%	58.5%		41.5%	100.0%
Gambling taxes	54	0.2%	97.0%	3.0%	0.0%	100.0%
MinnesotaCare taxes	478	1.9%	86.7%	13.3%	0.0%	100.0%
Solid waste management taxes	70	0.3%	41.4%		58.6%	100.0%
Total Consumption Taxes	$7,439	29.6%	57.7%	3.9%	38.4%	100.0%
Taxes on Property						
State property tax	$728	2.9%	3.9%	1.0%	95.2%	100.0%
Residential recreational property	35	0.1%	80.2%	19.8%		100.0%
Commercial	495	2.0%			100.0%	100.0%
Industrial	143	0.6%			100.0%	100.0%
Utility	55	0.2%			100.0%	100.0%
Motor vehicle registration tax	489	1.9%	81.0%		19.0%	100.0%
Mortgage and deed taxes	225	0.9%	54.0%		46.0%	100.0%
Total Property Taxes	$1,442	5.7%	37.8%	0.5%	61.7%	100.0%
Property Tax Refunds						
Homeowners	-$249	-1.0%	100.0%			100.0%
Renters	-157	-0.6%	100.0%			100.0%
Total Property Tax Refunds	-$407	-1.6%	100.0%			100.0%
Total State Taxes	$17,956	71.5%	69.9%	3.2%	26.9%	100.0%
Local Taxes						
Property Taxes	$6,856	27.3%	54.6%	0.5%	44.9%	100.0%
General property tax (gross - credits)	6,764	26.9%	55.3%	0.5%	44.1%	100.0%
Homeowners (before PTR)	3,596	14.3%	100.0%			100.0%
Residential recreational property	182	0.7%	80.2%	19.8%		100.0%
Commercial [2]	1,286	5.1%			100.0%	100.0%
Industrial	374	1.5%			100.0%	100.0%
Farm (other than residence) [3]	354	1.4%			100.0%	100.0%
Rental housing (before PTR)	797	3.2%			100.0%	100.0%
Utility	175	0.7%			100.0%	100.0%
Minerals [4]	0	0.0%			100.0%	100.0%
Mining production taxes (taconite)	92	0.4%			100.0%	100.0%
Taxes on consumption						
Local sales taxes [5]	183	0.7%	51.7%	3.9%	44.4%	100.0%
Local gross earnings taxes [6]	120	0.5%			100.0%	100.0%
Total Local Taxes	$7,160	28.5%	53.6%	0.6%	45.8%	100.0%
Total State and Local Taxes	$25,116	100.0%	65.3%	2.4%	32.3%	100.0%

[1] Includes taconite/iron ore occupation tax.
[2] Includes resorts and railroads.
[3] Farm includes timber, net of sustainable forest incentive program payments.
[4] Minerals does not include the aggregate material production tax.
[5] Allocated to business/consumer in the same proportions as general sales tax.
[6] For cities with annual receipts greater than $500,000.

Figure 1-3 shows that business taxes accounted for 33.2 percent of total state and local taxes in 2004, but are expected to fall to 32.3 percent in 2009.

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



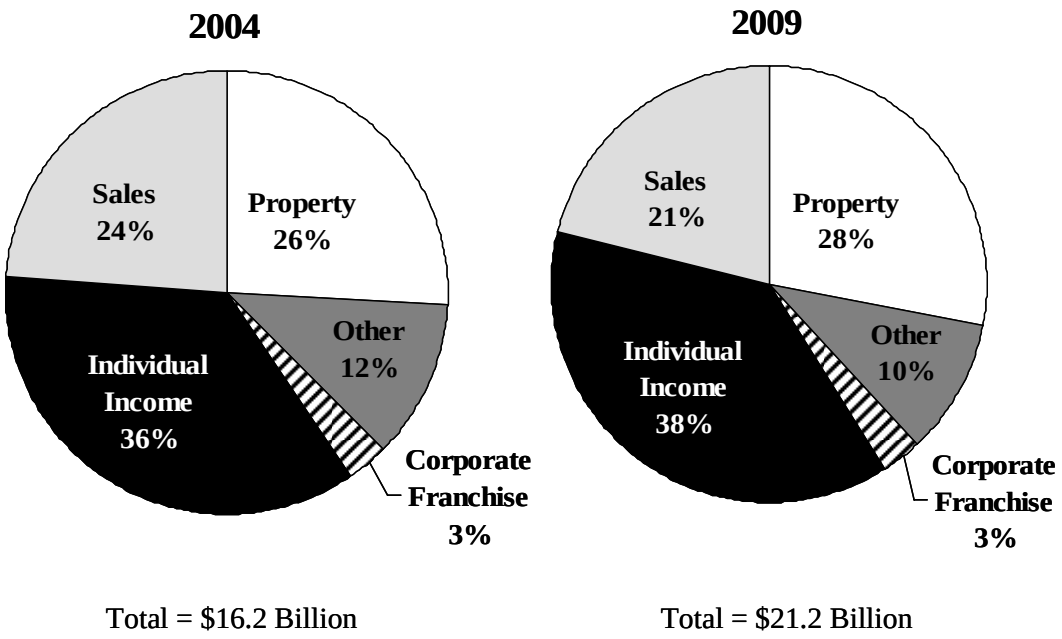
A number of factors combine to shift taxes away from business and toward households over this period. First, although both individual and corporate income taxes are forecast to grow rapidly, these fast-growing taxes represent a much smaller portion of total business taxes (at 12 percent) than of household taxes (at 47 percent). In contrast, the slower-growing sales tax is a larger portion of business taxes than of individual taxes (32 percent compared to 20 percent). Finally, homeowner taxes are expected to rise much more rapidly than business property taxes. For all three reasons, individual taxes are growing more rapidly than business taxes.

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 both on (a) how Minnesota tax rates compare to those in other states and (b) the nature of the market for the goods or services produced by the business being taxed. The Appendix explains the method used to estimate the extent to which each tax initially levied on business is shifted to consumers (in higher prices) or labor (in lower wages), and how much is borne instead by the owners of capital (in lower rates of return).

Figure 1-4 indicates that in 2004 Minnesota households paid (either directly or indirectly through shifted business tax) a total of $16.2 billion in Minnesota state and local taxes. This equals 83.7 percent of total state and local tax collections ($19.3 billion). The other $3.1 billion (16.3 percent) is "exported" to nonresidents or visitors to the state. The share exported to nonresidents is expected to fall to 15.7 percent in 2009. The total burden on Minnesotans will rise by 31 percent (to $21.2 billion), increasing slightly faster than income growth (at 30 percent).

Figure 1-4
Household Incidence After Shifting



Total = $16.2 Billion

Total = $21.2 Billion

Step 3 – Allocation to Specific Households

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 2.4 million households.[2] Each dollar of tax not exported to a nonresident is allocated to a specific Minnesota household. The result is an estimated tax burden, or tax incidence, for each separate tax. These separate taxes are aggregated to estimate the total tax burden for each household. Effective tax rates are calculated by comparing the tax burden to the household's income.

[2] This study defines a household to include a taxpayer and any spouse or dependents. A U.S. Census household may include more than one household as defined in this study. Three single persons living together will be one Census household but three households for purposes of this study. On the other hand, a Census household can consist of a single person who is a dependent for tax purposes. Because of these definitional differences, the number of households reported in this study (2,363,258 in 2004) exceeds the number of households reported by the Census (2,054,900).

Tax Progressivity and the Suits Index

Taxes may be 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 sometimes difficult to summarize the overall distribution of a tax (progressive, proportional, or regressive) from the individual effective tax rates. The Suits index is often used as a summary measure of progressivity or regressivity.

The Suits index has numerical properties that make it easy to identify 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, if the total tax burden were paid by those in the highest income bracket, the index would be 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 1-4 presents Suits indexes for selected Minnesota state and local tax groups in 2004 and 2009. The only major progressive tax is the personal income tax. Consumption taxes are the most regressive category. Taken as a whole, the system of Minnesota taxes was slightly regressive in 2004 (a Suits index of -0.024). State taxes were progressive (+0.026), and local taxes were regressive (-0.178). Between 2004 and 2009, Minnesota's tax system, as measured by the Suits index, shows a move toward regressivity, with the Suits index falling further to -0.032. Although state taxes are projected to become slightly more progressive, local taxes become noticeably more regressive.[3]

Table 1-4
Suits Indexes for Selected
Minnesota State and Local Taxes

Tax Category	2004 Suits Index	2009 Suits Index
Personal Income Tax	+0.219	+0.200
Sales Taxes (State & Local)	-0.170	-0.186
State Business Taxes	-0.161	-0.172
State Individual Taxes	+0.072	+0.072
All State Taxes	+0.026	+0.027
Local Taxes	-0.178	-0.190
Total Taxes	-0.024	-0.032

[3] *Tables 2-1* and *3-1* below show Suits indexes for each individual tax in 2004 and 2009 respectively.

Effective Tax Rates by Decile

For analytical purposes, Minnesota's households are divided into ten equal parts, or deciles. Each of these ten population deciles includes 10 percent of all households. The bottom (1^{st}) decile includes the tenth with lowest incomes; the top (10^{th}) decile includes the tenth with highest incomes. Income is defined to include all cash income, whether taxable or not. It includes nontaxable social security, interest, and pension income, as well as nontaxable workers' compensation and cash payments from the Minnesota Family Investment Program (MFIP).[4]

Because the information for the first decile includes data anomalies and measurement problems discussed in the box at the end of this section, effective tax rates for the first decile are not reliable.

As *Table 1-5* shows, Minnesota's state and local tax system is somewhat progressive between the lower and middle deciles and somewhat regressive between the middle and upper deciles. For 2004, effective tax rates rose from 10.5 percent of income in the third decile to 11.9 percent in the fifth decile, rose again to 12.3 percent in the seventh decile, and then fell significantly to 10.9 percent of income in the tenth decile.[5]

Between 2004 and 2009, effective tax rates are projected to rise in every decile except the seventh, where it will remain stable; and the tenth, where it will fall. These changes will make the overall tax system more regressive, with the Suits index falling from -0.024 to -0.032.

Table 1-5 also shows that overall, Minnesota residents paid an estimated 11.6 percent of their 2004 total income in state and local taxes; this will increase to 11.7 percent in the 2009 projections. For 2004, the effective tax rate was 8.8 percent for state taxes and 2.9 percent for local taxes. By 2009, the effective state rate is projected to fall to 8.5 percent; the effective local tax rate is projected to rise to 3.2 percent.

[4] The database captures nontaxable income reported on income tax returns and property tax refund returns, along with workers' compensation and welfare income from administrative sources. For this study, household income does not include in-kind benefits such as food stamps, housing subsidies, energy assistance, or fringe benefits provided by employers.

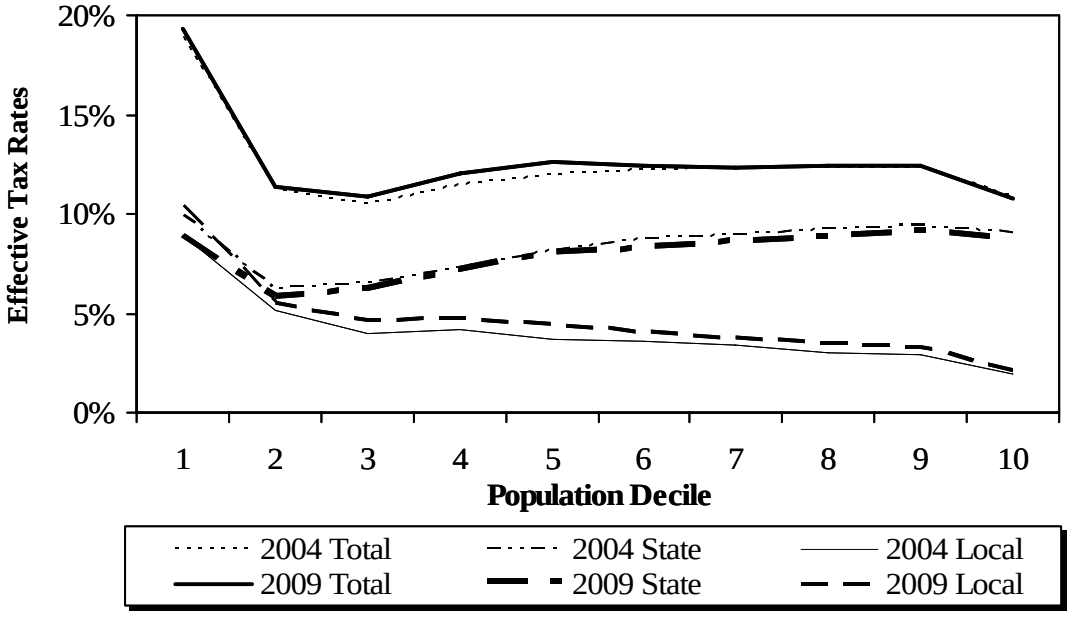
[5] The income ranges for each population decile are shown in *Table 2-2* (for 2004) and *Table 3-2* (for 2009).

Table 1-5
Minnesota Effective Tax Rates for 2004 and 2009[6]
State and Local Taxes by Population Decile

	2004			2009		
Decile	**State**	**Local**	**Total**	**State**	**Local**	**Total**
First	9.9%	8.9%	18.9%	8.9%	10.4%	19.3%
Second	6.2	5.1	11.3	5.8	5.5	11.4
Third	6.5	4.0	10.5	6.2	4.7	10.9
Fourth	7.3	4.2	11.5	7.2	4.8	12.0
Fifth	8.2	3.7	11.9	8.1	4.5	12.6
Sixth	8.7	3.6	12.2	8.3	4.1	12.4
Seventh	8.9	3.4	12.3	8.6	3.8	12.3
Eighth	9.2	3.0	12.3	8.8	3.5	12.4
Ninth	9.4	2.9	12.3	9.1	3.3	12.4
Tenth	9.0	1.9	10.9	8.7	2.1	10.8
Total	8.8%	2.9%	11.6%	8.5%	3.2%	11.7%

As shown in *Figure 1-5*, state tax burdens and local tax burdens were distributed quite differently. Total state taxes for 2004 (individual and business combined) were slightly progressive overall, with effective tax rates rising continuously from 6.2 percent in the second decile to 9.4 percent in the ninth decile before falling to 9.0 percent in the tenth decile. Effective local tax rates, essentially local property taxes (before any state property tax refunds), declined consistently over all deciles except the fourth and were regressive overall. Between 2004 and 2009, effective rates for state taxes are projected to fall across all deciles. Local taxes, in contrast, are expected to increase across the board.

Figure 1-5
Effective Tax Rates for 2004 and 2009
State and Local Taxes by Population Decile



[6] Parts may not sum to totals due to rounding.

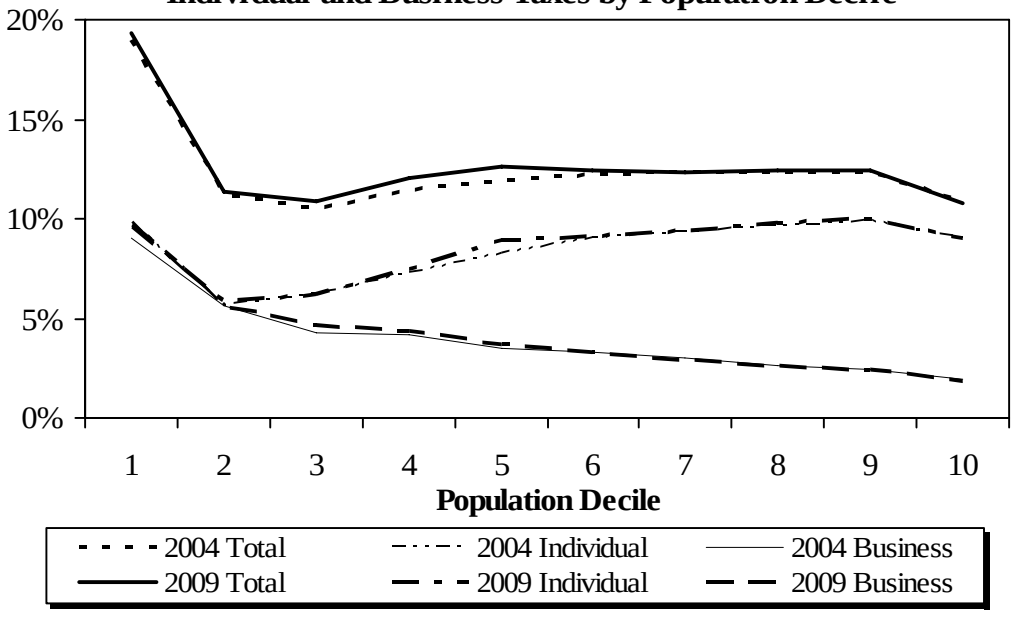
Table 1-6 and *Figure 1-6* show that the patterns of effective rates for taxes paid by individuals versus businesses are also quite different. For 2004, effective rates for taxes paid by individuals increased from 5.6 percent in the second decile to 9.9 percent in the ninth decile, and then declined to 9.0 percent in the tenth decile.

In contrast, Minnesota state and local taxes on businesses (after shifting) are regressive, with effective tax rates for 2004 falling from 5.6 to 1.9 percent between the second and tenth deciles. The overall effective rate for taxes on businesses after shifting was 2.7 percent and on individuals was 9.0 percent in 2004. For the projections to 2009, the overall effective tax rate declined to 2.6 percent on businesses and increased to 9.1 percent on individuals.

Table 1-6
Minnesota Effective Tax Rates for 2004 and 2009[7]
Individual and Business Taxes by Population Decile

	2004			2009		
Decile	**Individual**	**Business**	**Total**	**Individual**	**Business**	**Total**
First	9.8%	9.0%	18.9%	9.6%	9.7%	19.3%
Second	5.6	5.6	11.3	5.8	5.6	11.4
Third	6.2	4.3	10.5	6.2	4.7	10.9
Fourth	7.3	4.2	11.5	7.5	4.4	12.0
Fifth	8.3	3.5	11.9	8.9	3.7	12.6
Sixth	9.0	3.3	12.2	9.1	3.3	12.4
Seventh	9.3	3.0	12.3	9.4	2.9	12.3
Eighth	9.6	2.6	12.3	9.8	2.6	12.4
Ninth	9.9	2.4	12.3	10.0	2.4	12.4
Tenth	9.0	1.9	10.9	9.0	1.8	10.8
Total	9.0%	2.7%	11.6%	9.1%	2.6%	11.7%

Figure 1-6
Effective Tax Rates for 2004 and 2009
Individual and Business Taxes by Population Decile



[7] Parts may not sum to totals due to rounding.

Effective Tax Rates in the First Decile

As shown in *Table 1-5*, the total effective tax rate of 18.9 percent for taxpayers in the first decile is much higher than the rates in other deciles.

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 2004. 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 2004.

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.

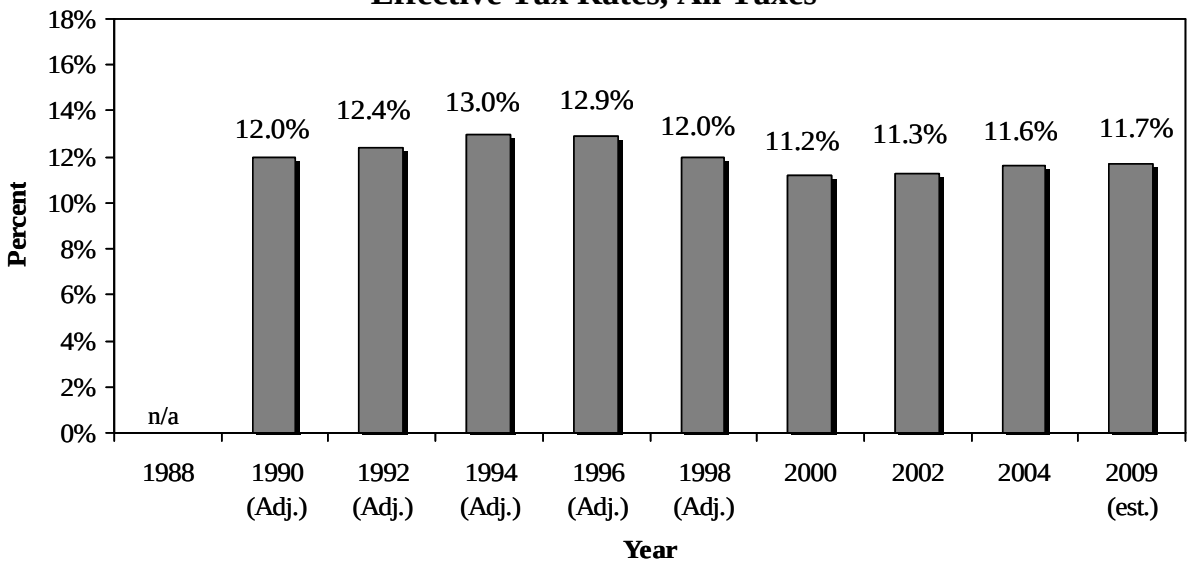
Household income is also underestimated in the *Consumer Expenditure Survey* used to estimate sales and excise tax burdens. To the extent that income was subject to relatively greater underreporting than consumption, particularly for low-income households, the taxable consumption expenditures calculated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

Historical Comparison with Earlier Studies

Incidence data has been collected and published in a series of studies, of which this is the ninth. 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 periods of very rapid growth in the mid- and late 1990's, the slowdown of the early 1990's, the contraction from 2000 to 2002, and growth since 2002, as shown in *Figure 1-7*.

Figure 1-7
Effective Tax Rates, All Taxes[8]



Effective tax rates over the period 1988–2004 at first rise, then fall, then rise again. As shown in *Table 1-7*, the effective tax rate for the tax system as a whole was 12.0 percent in 1990.[9] Effective tax rates rose to 13.0 percent just four years later in 1994, before beginning a sustained decline to 11.2 percent in 2000. The decline though 2000 was attributable partly to tax cuts and partly to income growth, especially in the late 1990's, that outstripped tax collections. As the economy emerged from recession after 2002, the effective tax rate rose to 11.6 percent in 2004, and it is projected to increase to 11.7 percent by 2009.

Changes in the Suits index are also shown in *Table 1-7* and in *Figure 1-8*. The tax system was essentially proportional in 1990, with a Suits index near zero. The Suits index fell from -0.017 in 1992 to a low of -0.040 in 1998. It rose somewhat in succeeding years to -0.018 in 2002, but has fallen again to -0.024 in 2004 and a projected -0.032 in 2009.

[8] Because earlier studies (before 2000) did not include all of the taxes included in more recent studies, effective tax rates (*Figure 1-7*) and Suits indexes *Figure 1-8*) are adjusted to make them comparable. Unadjusted effective tax rates (reported in the published studies were 11.8%, 12.1%, 12.9%, 12.7%, and 11.8% for 1990-1998.

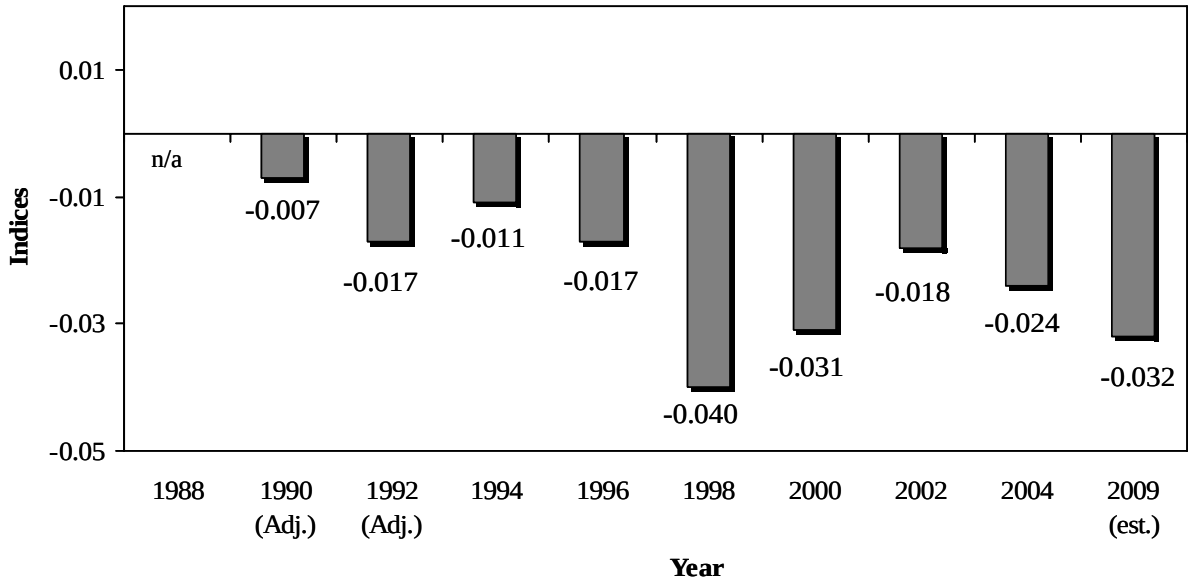
[9] The study for 1988 included only individual taxes, so its 9.1 percent average effective tax rate is not comparable.

Table 1-7
Households, Household Income, Total Taxes, Effective Tax Rates and Suits Indexes, All Taxes, 1988-2009

Year	Number of Households	Household Income ($ Thousands)	Total Taxes as Imposed ($ Thousands)	Tax Dollars Included in Study (%)	Total Taxes After Shifting ($ Thousands)	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%	-0.004
1992	2,120,967	74,410,299	11,050,000	96.9%	8,991,383	12.1%	-0.013
1994	2,148,820	80,148,374	12,539,000	98.0%	10,323,412	12.9%	-0.011
1996	2,193,971	93,272,563	14,495,000	98.0%	11,886,823	12.7%	-0.017
1998	2,232,670	114,610,957	16,137,000	97.8%	13,526,348	11.8%	-0.040
2000	2,322,380	132,094,974	17,599,000	99.8%	14,809,590	11.2%	-0.031
2002	2,340,070	127,311,429	17,174,000	99.9%	14,412,365	11.3%	-0.018
2004	2,363,258	138,824,077	19,313,000	99.9%	16,170,469	11.7%	-0.024
2009 (est)	2,475,930	180,712,494	25,116,000	n/a	21,182,131	11.7%	-0.032

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%
2002-2004	1.0%	9.0%	12.2%
2004-2009 (est)	5.8%	41.9%	47.0%

Figure 1-8
Suits Index, All Taxes[10]



[10] The unadjusted Suits index was -0.004 in 1990 and -0.013 in 1992. (Adjustment is explained in previous footnote.)

Table 1-8 shows effective tax rates by decile from each incidence study year. It is interesting to compare the pattern of effective tax rates in 1990 and 1992 with those for more recent years. *Figure 1-9* compares effective tax rates in 1992 and 2004. The 1992 effective tax rates were virtually the same for deciles 2 through 10. All were between 11.9 percent and 12.3 percent. Moreover, the tax rate was only slightly lower for the top 1 percent (at 11.6 percent of income). The pattern is quite different in more recent years, including 2004:

- The lower deciles (2 through 3) now have effective tax rates significantly lower than the overall average.
- The effective tax rates now drop significantly between the ninth and tenth deciles. The drop was largest in 1998 (a drop from 12.5 percent of income to 10.6 percent of income, or 1.9 percentage points). The difference fell to 1.0 percentage points in 2002 but has risen to 1.4 percentage points in 2004 and an expected 1.6 percentage points in 2009.

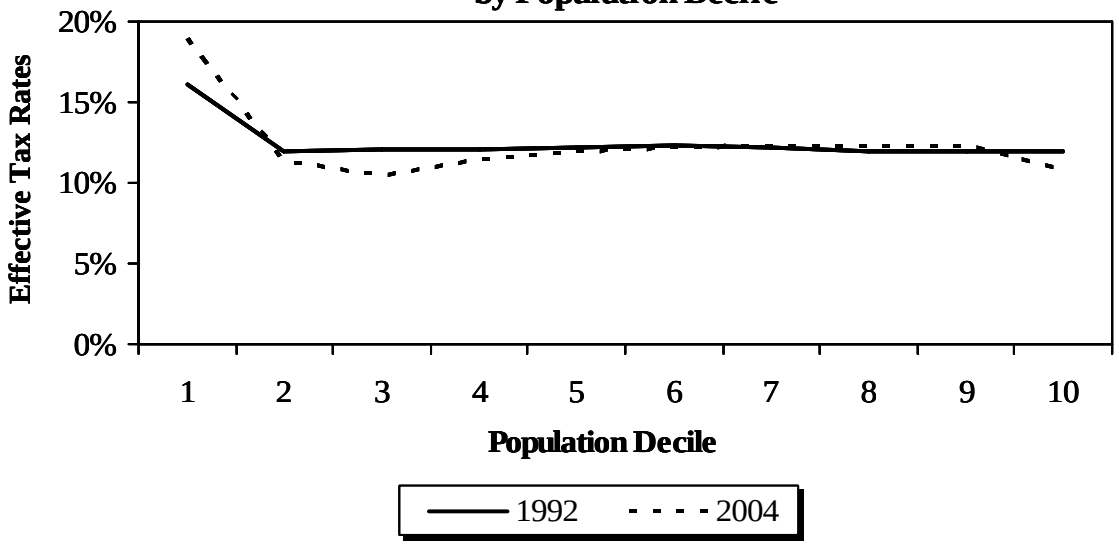
Each of these two characteristics has been found consistently in recent studies, regardless of the point in the business cycle. The first apparently reflects the increased role of refundable income tax credits and property tax refunds after 2002. The cause of the second is also likely to involve law changes.

Table 1-8
Effective Tax Rates by Population Decile
All Taxes, 1988–2004, 2009 (est.)

Decile	1988*	1990	1992	1994	1996	1998	2000	2002	2004	2009 (est.)
First	16.7%	17.9%	16.1%	17.3%	17.8%	20.2%	17.4%	18.2%	18.9%	19.3%
Second	9.1	11.1	12.0	12.3	12.0	11.3	9.8	10.5	11.3	11.4
Third	9.2	10.7	12.1	11.8	12.2	10.8	10.6	10.1	10.5	10.9
Fourth	9.2	11.3	12.1	12.8	12.5	12.0	11.1	11.0	11.5	12.0
Fifth	8.8	11.1	12.2	12.8	13.0	12.1	11.5	11.4	11.9	12.6
Sixth	9.0	11.8	12.3	13.2	13.1	13.1	12.3	11.9	12.2	12.4
Seventh	9.0	12.0	12.2	13.0	13.1	12.9	12.0	12.0	12.3	12.3
Eighth	8.9	11.9	12.0	13.0	13.0	12.9	12.0	11.8	12.3	12.4
Ninth	8.9	11.8	11.9	13.0	13.0	12.5	11.9	11.7	12.3	12.4
Tenth	9.1	11.7	11.9	12.6	12.2	10.6	10.3	10.7	10.9	10.8
Total	9.1%	11.8%	12.1%	12.9%	12.7%	11.8%	11.2%	11.3%	11.6%	11.7%
Top 5%	9.1%	11.6%	11.8%	12.3%	11.9%	10.1%	9.9%	10.5%	10.5%	10.4%
Top 1%	8.9%	11.2%	11.6%	11.8%	11.0%	8.3%	8.4%	9.0%	9.6%	9.3%

*The 1988 study did not include shifted business taxes.

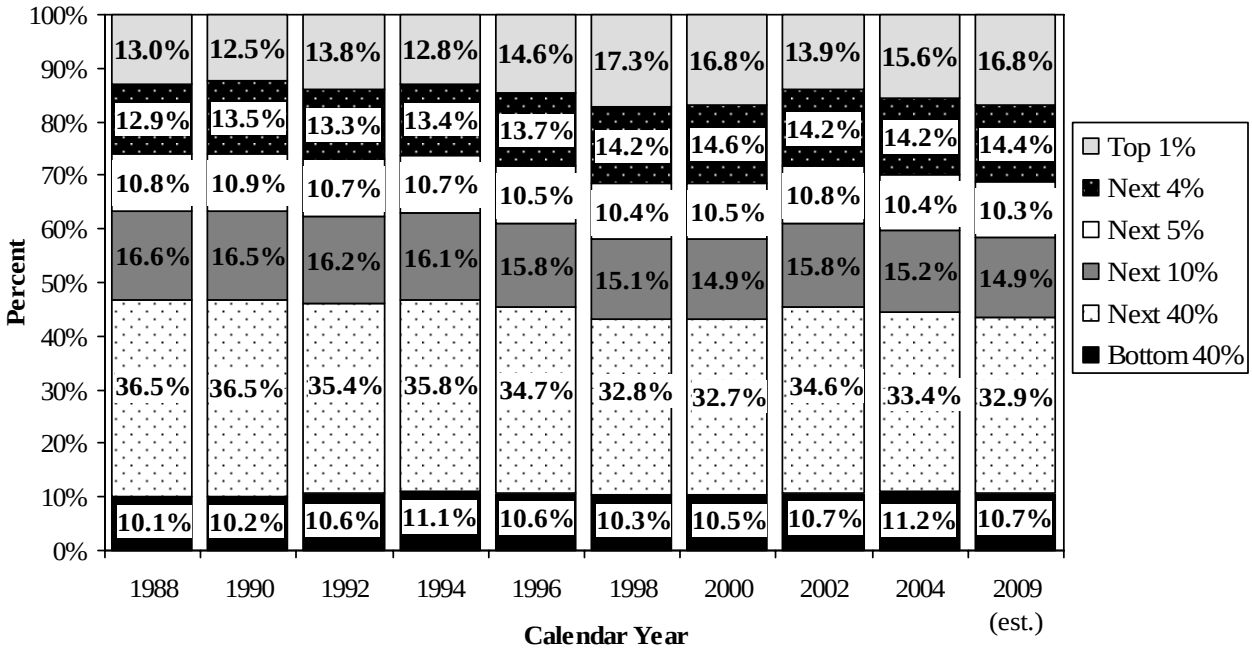
Figure 1-9
Effective Tax Rates for 1992 and 2004
by Population Decile



The historical changes in the degree of regressivity are due partly to changes in tax laws, but the role of the business cycle may be even more important. The years of greatest regressivity (1998 and 2000) were years when the distribution of income was most unequal, due at least partly to unusually high capital gains income. As shown in *Figure 1-10*, the income share of the top 5% and top 1% of Minnesota households was unusually high in those years. In 1998 and 2000 the top 5% of households accounted for 31.4 percent of total household income, up from an average of only 26.7 percent in 1988-1996. In 1998 and 2000 the top 1% received over 17 percent of total income, up from an average of 13.3 percent in the earlier study years. This concentration of income by itself, with no change in tax law, will increase the measured regressivity of the tax system. Lower regressivity in recession years (such as 2002) partly reflects the reduced share of income at the top. The increase in regressivity projected between 2004 and 2009 is at least partly the result of the expected increase in the share of income received by the richest Minnesotans.[11]

[11] A simple correlation between the Suits index and the share of income received by the top 1% of households is -0.975, suggesting that the variation in income inequality could explain almost all of the variation in the Suits index.

Figure 1-10
Shares of Household Income



Chapter 2: Principal Results, 2004

This section examines the state and local tax burdens imposed on Minnesota taxpayers in 2004. 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 2004.

Only Minnesota taxes paid by residents are included in the analysis below; Minnesota taxes paid by nonresidents and taxes Minnesota residents pay 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), shifted backward to Minnesota workers (in lower wages), or borne by owners of capital (in lower rates of return).

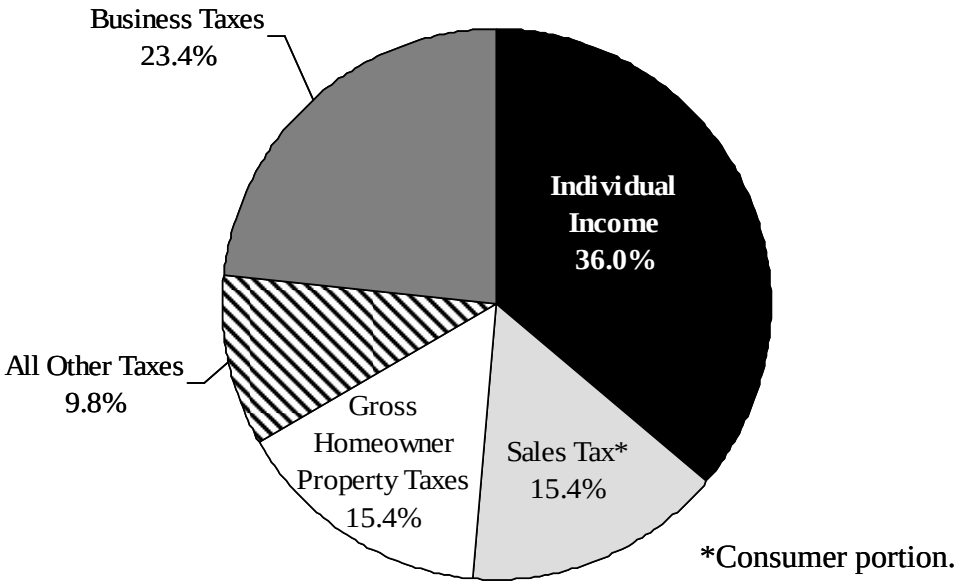
The Total Tax Burden

For 2004, Minnesota residents paid a total of $16.2 billion in taxes while receiving $138.8 billion in total money income.[12] Minnesota residents thus paid 11.6 percent of their total income in state and local taxes.

As shown in *Figure 2-1*, the individual income tax accounted for 36 percent of the total state and local tax burden on Minnesota residents. Gross homeowner property taxes and the consumer state and local sales tax (including sales tax on motor vehicles) each accounted for 15.4 percent of the total. Taxes imposed on business accounted for 23.4 percent. All other taxes comprised the remaining 9.8 percent.

[12] Total tax collections were $19.3 billion, but $3.1 billion is estimated to have been paid by nonresident consumers or nonresident owners of capital. Total money income includes all cash income, whether taxable or nontaxable. It includes nontaxable social security, interest, and retirement income, nontaxable workers' compensation payments, and cash payments from the Minnesota Family Investment Program (MFIP). Income excludes the value of fringe benefits and in-kind benefits such as food stamps, rent subsidies, and energy assistance.

Figure 2-1
2004 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 $19.3 billion in total tax collections in 2004, $16.2 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. Minnesota residents pay a smaller share of the general sales tax (81 percent). At the other end of the scale, Minnesotans are estimated to pay only 13.4 percent of the property taxes on industrial property.

Table 2-1
2004 Tax Collection Amounts

Tax Type	Total ($ Millions)	As Imposed			After shifting		Suits Index[5]
		MN HH's	NR	Business	Minnesota	Exported	
State Taxes							
Taxes on Income and Estates							
Individual income tax	$6,025	$5,827	$199		$5,827	$199	0.219
Corporation franchise tax [1]	780			$780	417	363	-0.145
Estate tax	78	78			78		0.270
Total Income and Estate Taxes	$6,883	$5,905	$199	$780	$6,322	$561	0.196
Taxes on Consumption							
Total sales tax	$4,717	$2,494	$157	$2,066	$3,848	$869	-0.170
General sales/use tax	4,142	2,112	157	1,872	3,353	789	-0.175
Sales tax on motor vehicles	575	381		194	494	80	-0.142
Motor fuels excise taxes	652	356	9	287	524	128	-0.253
Alcoholic beverage excise taxes	70	63	7		63	7	-0.083
Cigarette and tobacco excise taxes	191	185	6		185	6	-0.486
Insurance premiums taxes	298	170		128	217	81	-0.192
Gambling taxes	57	55	2		55	2	-0.477
MinnesotaCare taxes	296	257	39		257	39	-0.271
Solid waste management taxes	59	23	0	35	55	4	-0.233
Total Consumption Taxes	$6,339	$3,602	$221	$2,516	$5,203	$1,135	-0.199
Taxes on Property							
State property tax	$621	$31	$8	$582	$279	$342	-0.131
Residential recreational property	39	31	8		31	8	-0.153
Commercial	390			390	193	197	-0.135
Industrial	129			129	17	112	0.036
Utility	63			63	37	26	-0.165
Motor vehicle registration tax	494	400		94	455	39	-0.147
Mortgage and deed taxes	319	203		116	268	51	-0.130
Total Property Taxes	$1,435	$635	$8	$792	$1,003	$432	-0.138
Property Tax Refunds							
Homeowners	-$174	-$174			-$174		0.737
Renters	-145	-145			-145		0.899
Total Property Tax Refunds	-$319	-$319			-$319		0.811
Total State Taxes	$14,338	$9,823	$427	$4,088	$12,209	$2,129	0.026
Local Taxes							
Property Taxes	$4,808	$2,563	$19	$2,226	$3,837	$971	-0.178
General property tax (gross - credits)	4,728	2,563	19	2,147	3,836	892	-0.178
Homeowners (before PTR)	2,485	2,485			2,485		-0.145
Residential recreational property	97	78	19		78	19	-0.153
Commercial [2]	942			942	466	475	-0.135
Industrial	310			310	42	268	0.036
Farm (other than residence) [3]	230			230	223	6	-0.297
Rental housing (before PTR)	483			483	434	48	-0.380
Utility	182			182	108	74	-0.165
Minerals[4]	0			0	0	0	0.196
Mining production taxes (taconite)	79			79	1	79	0.249
Taxes on consumption							
Local sales taxes	119	61	5	54	96	23	-0.175
Local gross earnings taxes	48			48	28	19	-0.165
Total Local Taxes	$4,974	$2,623	$24	$2,327	$3,961	$1,013	-0.178
Total State and Local Taxes	$19,313	$12,446	$451	$6,416	$16,170	$3,142	-0.024

[1] Includes taconite/iron ore occupation tax.
[2] Includes resorts and railroads.
[3] Includes Timber.
[4] Amount less than $500,000.
[5] Suits index for estate tax based on distribution of 1999 estate tax amounts.

Of the total, $6.4 billion or 33.2 percent of Minnesota taxes are imposed on businesses. Of that amount, $2.7 billion or almost 42 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 -0.199. 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 -0.024.

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 incomes and the tenth decile includes the highest-income 10 percent of households. There were approximately 236,000 taxpaying households in each population decile. The total burden by tax type for each decile is summarized in *Table 2-2*.

Taxpayers in the top decile (incomes of $105,451 and over) bore 37.6 percent of the total tax burden while having 40.2 percent of total income. By tax type, taxpayers in the top decile paid 55.4 percent of the individual income tax, 27.1 percent of the consumer sales tax, 27.8 percent of the gross homeowner property tax, and 27.8 percent of business taxes.[13]

[13] Business taxes include the total property tax on rental housing, nonresidential local property taxes, total state business taxes, local gross earnings taxes, and local sales taxes on business purchases.

Table 2-2 2004 Population Deciles - Amounts ($ Thousands)

Population Decile	Income Range	Number of Households	Household Income	State Income Taxes: Individual Income Tax	State Income Taxes: Corporate Franchise Tax	State Sales Tax: Purchases by Individuals	State Sales Tax: Purchases by Businesses	State Sales Tax: Sales Tax Total	Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes: Taxes on Individuals	Other State Taxes: Taxes on Businesses
First	$10,175 & Under	236,326	$1,406,249	-$14,608	$11,787	$74,951	$45,013	$119,964	-$57,249	$9,322	$35,556	$28,446	$6,672
Second	$10,176 - $16,816	236,326	3,191,330	-18,891	16,318	98,238	60,155	158,394	-63,765	12,354	43,483	40,496	9,013
Third	$16,817 - $23,135	236,326	4,715,858	20,952	20,475	124,874	70,022	194,896	-54,946	13,120	50,172	51,326	9,444
Fourth	$23,136 - $29,766	236,326	6,214,575	80,584	24,833	151,705	85,956	237,661	-46,270	16,515	58,351	69,879	12,604
Fifth	$29,767 - $37,559	236,326	7,930,686	195,627	29,461	180,682	97,640	278,322	-37,281	18,554	66,090	87,565	13,363
Sixth	$37,560 - $47,192	236,326	9,959,895	300,151	34,898	216,646	114,338	330,985	-28,669	21,670	75,190	111,437	16,200
Seventh	$47,193 - $59,748	236,326	12,571,477	432,922	42,075	261,381	138,642	400,023	-19,214	27,176	85,888	135,067	20,152
Eighth	$59,749 - $76,437	236,326	15,962,401	638,783	50,752	316,559	162,850	479,409	-8,904	31,851	98,367	161,974	22,375
Ninth	$76,438 - $105,450	236,326	21,049,853	962,022	62,957	392,123	197,739	589,863	-2,258	39,958	112,157	196,993	27,495
Tenth	$105,451 & Over	236,326	55,821,754	3,229,235	123,528	676,354	381,810	1,058,163	-504	88,669	146,411	303,737	61,536
TOTALS		2,363,258	$138,824,077	$5,826,778	$417,083	$2,493,514	$1,354,166	$3,847,680	-$319,059	$279,190	$771,666	$1,186,921	$198,854
Top 5%	Over $146,809	118,195	$41,343,771	$2,510,291	$83,071	$437,840	$258,276	$696,117	-$251	$63,020	$85,931	$179,600	$43,980
Top 1%	Over $354,758	23,668	$21,655,483	$1,415,164	$35,363	$173,428	$101,860	$275,288	-$46	$27,206	$29,663	$50,210	$18,200

Population Decile	Residential Local Property Taxes: Homeowners Gross	Residential Local Property Taxes: Renters Gross	Residential Local Property Taxes: Owners of Rental Prop.	Residential Local Property Taxes: Total on Rental Prop.	Residential Local Property Taxes: Residential Total*	Nonresidential Local Property Taxes	Other Local Taxes
First	$71,436	$9,466	$10,736	$20,202	$93,936	$27,564	$4,009
Second	79,725	19,200	14,096	33,296	116,136	40,220	5,270
Third	99,655	28,344	11,415	39,759	142,651	40,044	6,475
Fourth	138,499	33,914	15,359	49,273	192,424	60,843	7,794
Fifth	170,558	33,303	15,320	48,623	224,316	56,870	9,063
Sixth	218,261	26,184	17,804	43,988	268,184	75,447	10,672
Seventh	271,950	17,790	24,117	41,907	321,585	91,382	12,845
Eighth	331,570	10,918	26,666	37,584	379,239	89,574	15,356
Ninth	413,146	7,312	31,547	38,859	467,483	113,694	18,857
Tenth	689,941	4,478	76,472	80,951	791,202	243,386	34,836
TOTALS	$2,484,741	$190,909	$243,532	$434,441	$2,997,157	$839,024	$125,177
Top 5%	$422,557	$1,658	$56,861	$58,519	$492,125	$170,713	$23,138
Top 1%	$121,773	$343	$19,239	$19,582	$144,213	$67,536	$9,397

Population Decile	Local Taxes Total	Total State Taxes: Total on Individuals	Total State Taxes: Total on Businesses	Total State Taxes: State Taxes Total	Total State and Local Taxes
First	$125,509	$62,665	$77,227	$139,891	$265,400
Second	161,627	93,492	103,910	197,402	359,029
Third	189,170	184,504	120,934	305,438	494,607
Fourth	261,061	305,209	148,948	454,157	715,218
Fifth	290,249	482,073	169,629	651,702	941,951
Sixth	354,303	662,351	199,510	861,862	1,216,164
Seventh	425,812	881,546	242,543	1,124,089	1,549,901
Eighth	484,169	1,189,948	284,660	1,474,608	1,958,777
Ninth	600,034	1,641,945	347,243	1,989,187	2,589,221
Tenth	1,069,424	4,319,153	691,623	5,010,776	6,080,201
TOTALS	$3,961,357	$9,822,886	$2,386,226	$12,209,112	$16,170,469
Top 5%	$685,976	$3,189,373	$472,385	$3,661,759	$4,347,734
Top 1%	$221,145	$1,658,977	$192,071	$1,851,048	$2,072,194

* Includes seasonal recreational residential (cabins)

In contrast, taxpayers in the bottom decile (incomes of $10,175 and below) bore 1.6 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. First decile households paid 3.0 percent of the consumer sales tax, 2.9 percent of gross homeowner property tax, and 3.4 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 2-3*. Effective tax rates by population deciles for the four major tax types included in this study are presented in *Table 2-4* 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 2-3

2004 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	$10,175 & Under	236,326	$1,406,249	- 1.0%	0.8%	5.3%	3.2%	8.5%	- 4.1%	0.7%	2.5%	2.0%	0.5%
Second	$10,176 - $16,816	236,326	3,191,330	- 0.6%	0.5%	3.1%	1.9%	5.0%	- 2.0%	0.4%	1.4%	1.3%	0.3%
Third	$16,817 - $23,135	236,326	4,715,858	0.4%	0.4%	2.6%	1.5%	4.1%	- 1.2%	0.3%	1.1%	1.1%	0.2%
Fourth	$23,136 - $29,766	236,326	6,214,575	1.3%	0.4%	2.4%	1.4%	3.8%	- 0.7%	0.3%	0.9%	1.1%	0.2%
Fifth	$29,767 - $37,559	236,326	7,930,686	2.5%	0.4%	2.3%	1.2%	3.5%	- 0.5%	0.2%	0.8%	1.1%	0.2%
Sixth	$37,560 - $47,192	236,326	9,959,895	3.0%	0.4%	2.2%	1.1%	3.3%	- 0.3%	0.2%	0.8%	1.1%	0.2%
Seventh	$47,193 - $59,748	236,326	12,571,477	3.4%	0.3%	2.1%	1.1%	3.2%	- 0.2%	0.2%	0.7%	1.1%	0.2%
Eighth	$59,749 - $76,437	236,326	15,962,401	4.0%	0.3%	2.0%	1.0%	3.0%	- 0.1%	0.2%	0.6%	1.0%	0.1%
Ninth	$76,438 - $105,450	236,326	21,049,853	4.6%	0.3%	1.9%	0.9%	2.8%	0.0%	0.2%	0.5%	0.9%	0.1%
Tenth	$105,451 & Over	236,326	55,821,754	5.8%	0.2%	1.2%	0.7%	1.9%	0.0%	0.2%	0.3%	0.5%	0.1%
TOTALS		2,363,258	$138,824,077	4.2%	0.3%	1.8%	1.0%	2.8%	- 0.2%	0.2%	0.6%	0.9%	0.1%
Top 5%	Over $146,809	118,195	$41,343,771	6.1%	0.2%	1.1%	0.6%	1.7%	0.0%	0.2%	0.2%	0.4%	0.1%
Top 1%	Over $354,758	23,668	$21,655,483	6.5%	0.2%	0.8%	0.5%	1.3%	0.0%	0.1%	0.1%	0.2%	0.1%

Population Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes	Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total*				Total on Individuals	Total on Businesses	State Taxes Total	
First	5.1%	0.7%	0.8%	1.4%	6.7%	2.0%	0.3%	8.9%	4.5%	5.5%	9.9%	18.9%
Second	2.5%	0.6%	0.4%	1.0%	3.6%	1.3%	0.2%	5.1%	2.9%	3.3%	6.2%	11.3%
Third	2.1%	0.6%	0.2%	0.8%	3.0%	0.8%	0.1%	4.0%	3.9%	2.6%	6.5%	10.5%
Fourth	2.2%	0.5%	0.2%	0.8%	3.1%	1.0%	0.1%	4.2%	4.9%	2.4%	7.3%	11.5%
Fifth	2.2%	0.4%	0.2%	0.6%	2.8%	0.7%	0.1%	3.7%	6.1%	2.1%	8.2%	11.9%
Sixth	2.2%	0.3%	0.2%	0.4%	2.7%	0.8%	0.1%	3.6%	6.7%	2.0%	8.7%	12.2%
Seventh	2.2%	0.1%	0.2%	0.3%	2.6%	0.7%	0.1%	3.4%	7.0%	1.9%	8.9%	12.3%
Eighth	2.1%	0.1%	0.2%	0.2%	2.4%	0.6%	0.1%	3.0%	7.5%	1.8%	9.2%	12.3%
Ninth	2.0%	0.0%	0.1%	0.2%	2.2%	0.5%	0.1%	2.9%	7.8%	1.6%	9.4%	12.3%
Tenth	1.2%	0.0%	0.1%	0.1%	1.4%	0.4%	0.1%	1.9%	7.7%	1.2%	9.0%	10.9%
TOTALS	1.8%	0.1%	0.2%	0.3%	2.2%	0.6%	0.1%	2.9%	7.1%	1.7%	8.8%	11.6%
Top 5%	1.0%	0.0%	0.1%	0.1%	1.2%	0.4%	0.1%	1.7%	7.7%	1.1%	8.9%	10.5%
Top 1%	0.6%	0.0%	0.1%	0.1%	0.7%	0.3%	0.0%	1.0%	7.7%	0.9%	8.5%	9.6%

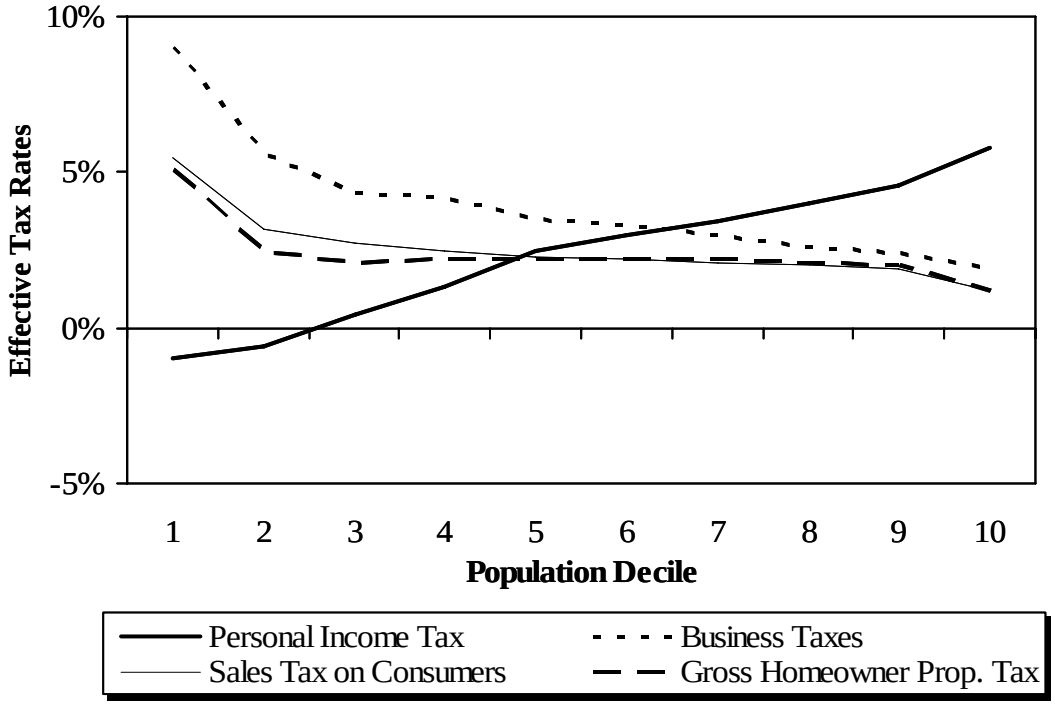
* **Includes seasonal recreational residential (cabins)**

Table 2-4
Effective Tax Rates (2004)

Population Decile	Personal Income Tax	Business Taxes	Consumer Sales Tax*	Gross Homeowner Property Tax
First	-1.0%	9.0%	5.5%	5.1%
Second	-0.6	5.6	3.2	2.5
Third	0.4	4.3	2.7	2.1
Fourth	1.3	4.2	2.5	2.2
Fifth	2.5	3.5	2.3	2.2
Sixth	3.0	3.3	2.2	2.2
Seventh	3.4	3.0	2.1	2.2
Eighth	4.0	2.6	2.0	2.1
Ninth	4.6	2.4	1.9	2.0
Tenth	5.8	1.9	1.2	1.2
Total	**4.2%**	**2.7%**	**1.8%**	**1.8%**

*Includes motor vehicle and local sales taxes.

Figure 2-2
Effective Tax Rates for 2004
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 2-3* for 2004, effective tax rates rose significantly with increases in household income. At the low end, the effective tax rate for the income tax was negative for the first and second deciles, showing the impact of refundable credits (which more than offset any income tax liabilities). It rose steadily from 0.4 percent of income for the third decile to 5.8 percent for the tenth decile. The top 5% and 1% of households have even higher effective tax rates, at 6.1 and 6.5 percent respectively.

Sales Tax on Consumer Purchases

In agreement with other 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 discussed below in the business tax category.) Higher income households spend a smaller portion of their income on items subject to the sales tax. This is partly due to their higher savings rates and partly to the mix of consumer goods and services they buy. Hence, tax burdens as a proportion of income tend to decline as one moves up the income scale.

For 2004, the effective state and local consumer sales tax rate for the bottom decile was 5.5 percent, compared to the rate for the top decile of 1.2 percent (see *Table 2-4*). Effective tax rates for the second through ninth deciles, representing 80 percent of all taxpayers, declined continuously from 3.2 to 1.9 percent.

Residential Property Taxes[14]

Homeowner Property Taxes. The gross property tax on owner-occupied homes showed little variation between the second and ninth deciles. For 2004, the effective property tax rate for homeowners tax (before property tax refunds) 5.1 percent for the first decile, fell to 2.5 percent for the second decile, 2.2 percent for the fourth through seventh deciles, and then fell to 2.0 percent in the ninth decile and 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 consumers (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 2004 gross rental property tax (60 percent) was borne by the investors who own rental housing; the remaining share (40 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 had been passed along in higher rents.

[14] The impact of property tax refunds on residential property taxes is summarized in Chapter 4 (*Table 4-10*).

Other Individual Taxes

The "other state taxes" category in *Table 2-3* 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 was shown in *Figure 2-1* above, business taxes accounted for 23.4 percent of the total tax burden on Minnesota residents. Business taxes include the following:

Business property taxes[15]
Corporate franchise tax
Sales tax paid on business purchases of capital equipment and other intermediate inputs
Motor vehicle registration tax paid on vehicles owned by business
Insurance premiums tax on business insurance
Mortgage and deed taxes on business property
Solid waste management taxes on services to business
Excise tax on motor fuels purchased and used by business
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) or in some cases 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. The degree to which taxes were shifted to consumers, labor, or nonresidents depended on two things: (a) how Minnesota's tax rates compared to those in other states and (b) the market characteristics of the business sector. 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. As shown above in *Table 2-4*, the effective tax rate fell as income increased. The effective tax rate was 5.6 percent in the second decile; it fell steadily as income rose, reaching 1.9 percent in the tenth decile.

[15] Includes the tax on rental housing.

Chapter 3: Projected Results, 2009

This section examines the state and local tax burdens imposed on Minnesota taxpayers in 2009. The taxes included are the same as those analyzed for 2004.

Tax Incidence Projections to 2009

To analyze tax incidence five years beyond 2004, the 2004 results must be projected into the future. A variety of methods were used to do this.

***Income* –** The HITS income tax model uses growth rates derived from the state economic forecast to grow each of the various categories of income: wages, interest, pensions, capital gains, social security, etc. The expected growth rates vary by type of income. These differential growth rates were applied to each type of income a sample household received in 2004, yielding an estimate of total household income in 2009. Because the various types of income are assumed to grow at different rates, some households in the model will experience faster income growth than others. Because of this, sample households may switch deciles between 2004 and 2009.

***Population* –** The number of Minnesota households is expected to grow by 4.77 percent between 2004 and 2009. Therefore, each sample household represents 4.77 percent more households in 2009.

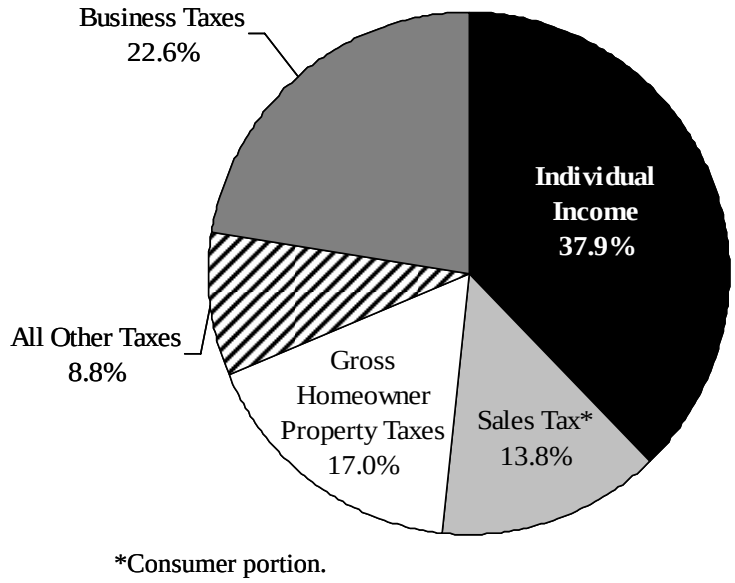
Taxes – All taxes were adjusted for tax law changes that have already gone into effect or, under current law, are scheduled to go into effect. Income tax projections are from the HITS income tax model. For the remaining taxes in the study, total collections were based on the most current Department of Finance forecast. Business taxes were assumed to be shifted in the same manner as were the corresponding 2004 business taxes. Taxes imposed directly on households were assumed to be allocated to the various households in the sample in the same way as were the 2004 taxes.

The Total Tax Burden in 2009

For 2009, Minnesota residents are expected to pay a total of $21.2 billion in taxes while earning $180.7 billion in total money income. Minnesota residents thus will pay 11.7 percent of their total income in state and local taxes.

As shown in *Figure 3-1*, the individual income tax is projected to account for 37.9 percent of the total state and local tax burden on Minnesota residents in 2009. Gross homeowner property taxes and the consumer sales tax (including sales tax on motor vehicles) are projected to be 17.0 percent and 13.8 percent of the total, respectively. Taxes on business will account for 22.6 percent. All other taxes will comprise the remaining 8.8 percent.

Figure 3-1
2009 Distribution of Minnesota
State and Local Tax Burdens by Tax



*Consumer portion.

Compared to 2004 (as shown in *Figure 2-1*, the shares of individual income tax and gross homeowner property tax are significantly higher in 2009. The sales tax, business tax, and other taxes shares are significantly lower.

Details of Minnesota tax collections before and after tax shifting are shown in *Table 3-1*. Of the $25.1 billion in total tax collections in 2009, $21.2 billion or over 84 percent is paid by Minnesotans, directly or indirectly. The rest is exported to taxpayers out of state.

As was the case in 2004, the income tax is borne almost entirely by Minnesota residents, who pay over 96 percent of total collections. Residents of Minnesota pay 81.5 percent of the general sales tax. At the other end of the scale, Minnesotans pay only 13.4 percent of the property taxes on industrial property.

Of the total, $8.1 billion or 32.3 percent of Minnesota taxes are imposed on businesses. Of that amount, $3.3 billion or almost 41 percent is exported.

The Suits index shows 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 -0.213. 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 -0.032.

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 are expected to be approximately 247,600 taxpaying households in each population decile. The total burden by tax type for each decile is summarized in *Table 3-2*.

Taxpayers in the top decile (incomes of $129,880 and over in 2009) are expected to bear 38.2 percent of the total tax burden while having 41.5 percent of total income. By tax type, taxpayers in the top decile would pay 55.6 percent of the individual income tax, 27.0 percent of the consumer sales tax, 27.5 percent of the gross homeowner property tax, and 27.9 percent of business taxes.[16]

In contrast, taxpayers in the bottom decile (incomes of $12,259 and below) are projected to bear 1.6 percent of the total tax burden while receiving only 1.0 percent of total income. The bottom decile taxpayers will have a negative individual income tax burden due to the refundable tax credits. They will pay 3.1 percent of the consumer sales tax, 2.7 percent of gross homeowner property tax, and 3.6 percent of business taxes.

[16] Business taxes include the total property tax on rental housing, nonresidential local property taxes, total state business taxes, local gross earnings taxes, and local sales taxes on business purchases.

Table 3-1
2009 Tax Collection Amounts

Tax Type	Total ($ Millions)	As Imposed			After shifting		Suits Index
		MN HH's	NR	Business	Minnesota	Exported	
State Taxes							
Taxes on Income and Estates							
Individual income tax	$8,297	$8,023	$273		$8,023	$273	0.200
Corporation franchise tax [1]	1,078			$1,078	576	501	-0.160
Estate tax	107	107			107		0.256
Total Income and Estate Taxes	$9,481	$8,130	$273	$1,078	$8,707	$775	0.177
Taxes on Consumption							
Total sales tax	$5,499	$2,919	$194	$2,386	$4,487	$1,013	-0.186
General sales/use tax	4,963	2,564	194	2,206	4,026	938	-0.189
Sales tax on motor vehicles	536	356		180	461	75	-0.159
Motor fuels excise taxes	664	384	15	266	539	125	-0.273
Alcoholic beverage excise taxes	78	70	8		70	8	-0.099
Cigarette and tobacco excise taxes	193	188	6		188	6	-0.501
Insurance premiums taxes	402	235		167	297	105	-0.205
Gambling taxes	54	52	2		52	2	-0.489
MinnesotaCare taxes	478	414	63		414	63	-0.285
Solid waste management taxes	70	29		41	66	4	-0.249
Total Consumption Taxes	$7,439	$4,291	$288	$2,860	$6,113	$1,326	-0.213
Taxes on Property							
State property tax	$728	$28	$7	$693	$325	$403	-0.136
Residential recreational property	35	28	7		28	7	-0.167
Commercial	495			495	245	250	-0.140
Industrial	143			143	19	124	0.044
Utility	55			55	33	22	-0.180
Motor vehicle registration tax	489	396		93	451	39	-0.166
Mortgage and deed taxes	225	121		103	179	45	-0.141
Total Property Taxes	$1,442	$546	$7	$890	$955	$487	-0.151
Property Tax Refunds							
Homeowners	-$249	-$249			-$249		0.745
Renters	-157	-157			-157		0.904
Total Property Tax Refunds	-$407	-$407			-$407		0.806
Total State Taxes	$17,956	$12,560	$568	$4,828	$15,368	$2,588	0.027
Local Taxes							
Property Taxes (Pay 2007)	$6,856	$3,742	$36	$3,078	$5,595	$1,262	-0.190
General property tax (gross - credits)	6,764	3,742	36	2,986	5,594	1,170	-0.190
Homeowners (before PTR)	3,596	3,596			3,596	0	-0.157
Residential recreational property	182	146	36		146	36	-0.167
Commercial [2]	1,286			1,286	637	649	-0.140
Industrial	374			374	50	324	0.044
Farm (other than residence) [3]	354			354	344	10	-0.270
Rental housing (before PTR)	797			797	717	80	-0.385
Utility	175			175	104	71	-0.180
Minerals [4]	0			0	0	0	0.222
Mining production taxes (taconite)	92			92	1	92	0.278
Taxes on consumption							
Local sales taxes	183	95	7	81	149	35	-0.189
Local gross earnings taxes	120			120	71	49	-0.180
Total Local Taxes	$7,160	$3,837	$43	$3,280	$5,815	$1,345	-0.190
Total State and Local Taxes	$25,116	$16,397	$611	$8,108	$21,182	$3,934	-0.032

[1] Includes taconite/iron ore occupation tax.
[2] Includes resorts and railroads.
[3] Includes Timber.
[4] Amount less than $500,000.

Table 3-2 2009 Population Deciles - Amounts ($ Thousands)

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	$12,259 & under	247,593	$1,774,329	-$19,676	$16,251	$89,611	$52,122	$141,733	-$69,331	$10,807	$36,583	$33,448	$7,214
Second	$12,260 - $19,736	247,593	3,958,237	-13,895	22,463	116,716	68,003	184,719	-77,814	13,789	44,566	48,912	8,680
Third	$19,737 - $27,504	247,593	5,844,485	34,341	28,468	148,410	81,838	230,249	-68,151	15,025	52,638	61,252	10,190
Fourth	$27,505 - $35,543	247,593	7,781,145	126,939	34,489	178,496	99,762	278,258	-58,490	19,390	60,445	82,278	13,137
Fifth	$35,544 - $45,581	247,593	10,033,170	286,516	40,709	212,239	113,768	326,007	-49,119	21,430	69,040	101,838	14,300
Sixth	$45,582 - $58,509	247,593	12,789,450	417,359	48,985	255,103	133,850	388,953	-39,529	25,487	78,986	127,689	17,250
Seventh	$58,510 - $73,427	247,593	16,249,760	604,974	58,297	305,630	158,593	464,224	-27,372	30,348	88,870	153,498	20,283
Eighth	$73,428 - $93,487	247,593	20,453,814	847,713	69,869	369,301	188,147	557,449	-12,748	37,001	101,054	182,956	23,873
Ninth	$93,488 - $129,879	247,593	26,904,357	1,278,805	86,733	456,009	228,823	684,831	-3,233	45,888	114,837	221,831	29,183
Tenth	$129,880 & over	247,593	74,923,747	4,460,069	170,133	787,724	442,644	1,230,368	-722	105,688	149,513	341,790	66,753
TOTALS		2,475,930	$180,712,494	$8,023,144	$576,399	$2,919,241	$1,567,549	$4,486,790	-$406,510	$324,853	$796,532	$1,355,491	$210,862
Top 5%	Over $181,754	123,859	$56,271,975	$3,502,173	$114,824	$511,762	$299,790	$811,552	-$359	$76,033	$88,033	$200,897	$47,912
Top 1%	Over $456,992	24,771	$30,306,925	$2,008,191	$48,653	$203,411	$117,318	$320,729	-$66	$32,878	$30,496	$54,304	$19,738

Population Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes	Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total*				Total on Individuals	Total on Businesses	State Taxes Total	
First	$95,834	$15,628	$17,415	$33,043	$133,178	$44,927	$7,032	$185,137	$66,459	$90,570	$157,029	$342,166
Second	107,772	31,698	20,869	52,567	166,170	43,554	9,227	218,951	112,803	118,616	231,419	450,371
Third	129,321	46,794	18,288	65,083	200,464	59,912	11,485	271,862	221,111	142,899	364,010	635,872
Fourth	190,666	55,990	25,842	81,832	281,207	78,717	13,758	373,682	381,220	175,225	556,445	930,127
Fifth	266,913	54,981	26,416	81,397	357,923	77,987	16,003	451,914	610,605	200,114	810,720	1,262,634
Sixth	320,126	43,228	30,443	73,671	404,908	100,095	18,992	523,995	827,909	237,271	1,065,181	1,589,175
Seventh	396,452	29,370	35,867	65,237	476,156	114,187	22,615	612,957	1,112,034	281,087	1,393,121	2,006,078
Eighth	491,709	18,025	44,877	62,903	573,489	120,762	27,047	721,299	1,472,590	334,577	1,807,168	2,528,467
Ninth	608,646	12,071	52,517	64,588	702,208	151,629	33,190	887,027	2,050,389	408,486	2,458,875	3,345,902
Tenth	988,659	7,394	129,521	136,914	1,163,591	342,871	61,284	1,567,746	5,704,950	818,643	6,523,592	8,091,339
TOTALS	$3,596,100	$315,179	$402,056	$717,235	$4,459,296	$1,134,640	$220,635	$5,814,571	$12,560,071	$2,807,489	$15,367,560	$21,182,131
Top 5%	$603,360	$2,736	$96,362	$99,098	$723,142	$243,154	$40,740	$1,007,037	$4,280,239	$560,825	$4,841,065	$5,848,102
Top 1%	$173,494	$566	$31,899	$32,465	$211,310	$88,926	$16,464	$316,700	$2,287,671	$227,252	$2,514,923	$2,831,623

* **Includes seasonal recreational residential (cabins)**

Overall Effective Tax Rates

In a similar fashion as was done for taxes paid in 2004, effective tax rates by tax type for 2009 are reported in *Table 3-3*. Effective tax rates by population deciles for the four major tax types included in this study are presented in *Table 3-4* and are illustrated 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 overall state and local system is expected to be only slightly regressive in 2009, with a Suits index of -0.032.

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 3-3* for 2009, effective tax rates rise significantly with increases in household income. At the low end, the effective tax rate for the income tax is negative for the first and second deciles because refundable tax credits will more than offset any income tax liability. The effective tax rate rises steadily from 0.6 percent of income for the third decile to 6.0 percent for the tenth decile. Effective tax rates for the top 5% and 1% of households are even higher, at 6.2 and 6.6 percent respectively.

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 discussed below in the business tax category.) Higher income households spend a smaller portion of their income on items subject to the sales tax. This is partly due to their higher savings rates and partly to the mix of consumer goods and services they buy. Hence, tax burdens as a proportion of income tend to decline as one moves up the income scale.

For 2009, the effective state and local consumer sales tax rate for the bottom decile will be 5.2 percent, of income compared to the rate for the top decile of 1.1 percent (see *Table 3-4*). Effective tax rates for the second through ninth deciles, representing 80 percent of all taxpayers, fell steadily from 3.0 to 1.7 percent.

Table 3-3 2009 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	$12,259 & under	247,593	$1,774,329	- 1.1%	0.9%	5.1%	2.9%	8.0%	- 3.9%	0.6%	2.1%	1.9%	0.4%
Second	$12,260 - $19,736	247,593	3,958,237	- 0.4%	0.6%	2.9%	1.7%	4.7%	- 2.0%	0.3%	1.1%	1.2%	0.2%
Third	$19,737 - $27,504	247,593	5,844,485	0.6%	0.5%	2.5%	1.4%	3.9%	- 1.2%	0.3%	0.9%	1.0%	0.2%
Fourth	$27,505 - $35,543	247,593	7,781,145	1.6%	0.4%	2.3%	1.3%	3.6%	- 0.8%	0.2%	0.8%	1.1%	0.2%
Fifth	$35,544 - $45,581	247,593	10,033,170	2.9%	0.4%	2.1%	1.1%	3.2%	- 0.5%	0.2%	0.7%	1.0%	0.1%
Sixth	$45,582 - $58,509	247,593	12,789,450	3.3%	0.4%	2.0%	1.0%	3.0%	- 0.3%	0.2%	0.6%	1.0%	0.1%
Seventh	$58,510 - $73,427	247,593	16,249,760	3.7%	0.4%	1.9%	1.0%	2.9%	- 0.2%	0.2%	0.5%	0.9%	0.1%
Eighth	$73,428 - $93,487	247,593	20,453,814	4.1%	0.3%	1.8%	0.9%	2.7%	- 0.1%	0.2%	0.5%	0.9%	0.1%
Ninth	$93,488 - $129,879	247,593	26,904,357	4.8%	0.3%	1.7%	0.9%	2.5%	0.0%	0.2%	0.4%	0.8%	0.1%
Tenth	$129,880 & over	247,593	74,923,747	6.0%	0.2%	1.1%	0.6%	1.6%	0.0%	0.1%	0.2%	0.5%	0.1%
TOTALS		2,475,930	$180,712,494	4.4%	0.3%	1.6%	0.9%	2.5%	- 0.2%	0.2%	0.4%	0.8%	0.1%
Top 5%	Over $181,754	123,859	$56,271,975	6.2%	0.2%	0.9%	0.5%	1.4%	0.0%	0.1%	0.2%	0.4%	0.1%
Top 1%	Over $456,992	24,771	$30,306,925	6.6%	0.2%	0.7%	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	5.4%	0.9%	1.0%	1.9%	7.5%	2.5%	0.4%
Second	2.7%	0.8%	0.5%	1.3%	4.2%	1.1%	0.2%
Third	2.2%	0.8%	0.3%	1.1%	3.4%	1.0%	0.2%
Fourth	2.5%	0.7%	0.3%	1.1%	3.6%	1.0%	0.2%
Fifth	2.7%	0.5%	0.3%	0.8%	3.6%	0.8%	0.2%
Sixth	2.5%	0.3%	0.2%	0.6%	3.2%	0.8%	0.1%
Seventh	2.4%	0.2%	0.2%	0.4%	2.9%	0.7%	0.1%
Eighth	2.4%	0.1%	0.2%	0.3%	2.8%	0.6%	0.1%
Ninth	2.3%	0.0%	0.2%	0.2%	2.6%	0.6%	0.1%
Tenth	1.3%	0.0%	0.2%	0.2%	1.6%	0.5%	0.1%
TOTALS	2.0%	0.2%	0.2%	0.4%	2.5%	0.6%	0.1%
Top 5%	1.1%	0.0%	0.2%	0.2%	1.3%	0.4%	0.1%
Top 1%	0.6%	0.0%	0.1%	0.1%	0.7%	0.3%	0.1%

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
10.4%	3.7%	5.1%	8.9%	19.3%
5.5%	2.8%	3.0%	5.8%	11.4%
4.7%	3.8%	2.4%	6.2%	10.9%
4.8%	4.9%	2.3%	7.2%	12.0%
4.5%	6.1%	2.0%	8.1%	12.6%
4.1%	6.5%	1.9%	8.3%	12.4%
3.8%	6.8%	1.7%	8.6%	12.3%
3.5%	7.2%	1.6%	8.8%	12.4%
3.3%	7.6%	1.5%	9.1%	12.4%
2.1%	7.6%	1.1%	8.7%	10.8%
3.2%	7.0%	1.6%	8.5%	11.7%
1.8%	7.6%	1.0%	8.6%	10.4%
1.0%	7.5%	0.7%	8.3%	9.3%

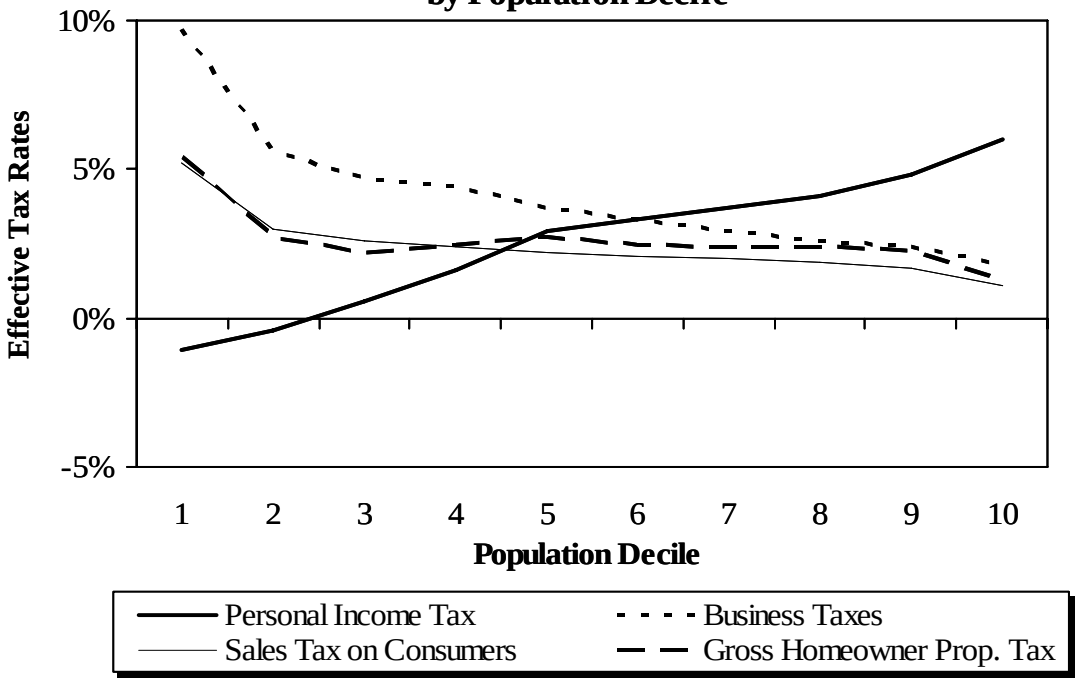
* **Includes seasonal recreational residential (cabins)**

Table 3-4
Effective Tax Rates (2009)

2009 Decile	Personal Income Tax	Business Taxes	Consumer Sales Tax*	Gross Homeowner Property Tax
1	-1.1%	9.7%	5.2%	5.4%
2	-0.4	5.6	3.0	2.7
3	0.6	4.7	2.6	2.2
4	1.6	4.4	2.4	2.5
5	2.9	3.7	2.2	2.7
6	3.3	3.3	2.1	2.5
7	3.7	2.9	2.0	2.4
8	4.1	2.6	1.9	2.4
9	4.8	2.4	1.7	2.3
10	6.0	1.8	1.1	1.3
Total	4.4%	2.6%	1.7%	2.0%

**Includes motor vehicle and local sales taxes.*

Figure 3-2
Effective Tax Rates for 2009
by Population Decile



Residential Property Taxes

Homeowner Property Taxes. For 2009, the effective gross homeowner property tax rate (before property tax refunds) is 2.7 percent for the second decile, 2.5 percent in the sixth decile, 2.3 percent in the ninth decile, and declines to 1.3 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 2009 rental property tax (60 percent) was borne by the investors who own rental housing; the remaining share (40 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 3-3* 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 22.6 percent of the total tax burden on Minnesota residents. Business taxes include the following:

Business property taxes[17]
Corporate franchise tax
Sales tax paid on business purchases of capital equipment and other intermediate inputs
Motor vehicle registration tax paid on vehicles owned by business
Insurance premiums tax on business insurance
Mortgage and deed taxes on business property
Solid waste management taxes on services to business
Excise tax on motor fuels purchased and used by business
Local gross earnings taxes

[17] Includes the tax on rental housing.

Although the legal impact of each of these taxes falls on the business entity, each is partially shifted to consumers (in higher prices) or in some cases 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. The degree to which taxes were shifted to consumers, labor, or nonresidents depended on two things: (a) how Minnesota's tax rates compared to those in other states and (b) the market characteristics of the business sector. 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 5.6 percent in the second decile; it fell steadily as income rose, reaching 1.8 percent in the tenth decile.

Chapter 4: Additional Results

An Alternative Presentation: Income Deciles

The results presented elsewhere in this study have been summarized for deciles of households. Each population decile represented ten percent of the population of households in the study. This section provides an alternative way to summarize the distribution of the 2004 and 2009 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 2-2, 2-3, 3-2,* and *3-3.* In both distributions, households are ranked by income level. Using the year 2004 for purposes of illustration in the population decile distribution, each decile of 236,000 households is 10 percent of all households; in the income decile distribution, each decile with $13.9 billion of income constitutes 10 percent of total income. Because of their relatively low incomes, it takes 888,000 households in the first income decile to account for 10 percent of total income; in contrast, there are only 7,339 high-income households in the tenth decile, who also received 10 percent of total income.

Again using the year 2004 for illustration, the first decile includes 37.6 percent of all households. Their share of total taxes (10.0 percent) was almost 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 16.5 percent of the consumer sales tax, 22.4 percent of excise taxes, and 19.1 percent of all business taxes borne by Minnesota residents.

The tenth income decile includes only 0.3 percent of all households. Their share of total taxes (7.9 percent) was lower than their share of household income (10 percent). They paid 16.1 percent of the individual income tax, 3.7 percent of the consumer sales tax, 2.0 percent of excise taxes, and 4.1 percent of business taxes borne by Minnesota residents.

Table 4 - 1

2004 Income Deciles - Amounts ($ Thousands)

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	$27,947 & under	888,164	$13,882,626	$36,230	$67,081	$410,683	$239,931	$650,614	-$210,893	$47,196	$172,754	$172,906	$34,911
Second	$27,948 - $41,675	402,348	13,883,299	351,484	51,249	314,703	169,123	483,826	-62,880	32,189	114,544	154,258	23,531
Third	$41,676 - $55,234	288,262	13,887,330	449,418	47,240	294,549	155,958	450,507	-28,421	29,933	98,941	152,135	22,534
Fourth	$55,235 - $69,473	223,763	13,883,217	533,979	45,033	279,579	145,544	425,123	-11,838	28,666	88,560	143,781	20,012
Fifth	$69,474 - $85,329	180,356	13,878,459	594,894	42,758	268,324	135,300	403,624	-3,776	26,397	80,537	137,461	18,573
Sixth	$85,330 - $10,980	146,866	13,886,240	645,936	41,066	254,581	129,119	383,700	-751	26,658	71,329	126,368	18,087
Seventh	$105,981 - $145,557	113,246	13,878,322	689,474	38,657	228,574	118,358	346,933	-245	24,531	57,917	112,424	16,854
Eighth	$145,558 - $245,315	75,842	13,889,422	753,585	35,271	195,740	114,123	309,863	-156	25,805	43,279	101,093	18,620
Ninth	$245,316 - $712,773	37,072	13,875,937	831,167	29,105	155,363	93,508	248,872	-85	22,357	28,120	66,143	15,523
Tenth	$712,774 & over	7,339	13,879,226	940,612	19,623	91,417	53,201	144,617	-13	15,458	15,685	20,351	10,208
TOTALS		2,363,258	$138,824,077	$5,826,778	$417,083	$2,493,514	$1,354,166	$3,847,680	-$319,059	$279,190	$771,666	$1,186,921	$198,854
Top 5%	Over $2,203,345	1,239	$6,942,559	$494,524	$8,581	$33,821	$21,105	$54,926	$0	$7,427	$6,870	$6,691	$4,731
Top 1%	Over $20,093,638	34	$1,388,760	$92,622	$1,391	$4,275	$2,822	$7,096	$0	$1,249	$1,215	$472	$762

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	$345,375	$81,601	$47,937	$129,538	$486,973	$158,142	$21,578
Second	303,652	57,223	26,660	83,883	396,398	104,612	15,730
Third	308,626	24,112	25,702	49,813	367,038	106,274	14,473
Fourth	295,740	11,483	24,538	36,021	340,319	77,567	13,645
Fifth	281,030	7,636	20,833	28,469	318,759	77,575	12,905
Sixth	265,995	4,431	21,760	26,191	302,720	72,552	12,264
Seventh	256,870	2,766	19,002	21,768	287,498	70,121	11,203
Eighth	229,158	1,090	26,123	27,213	262,701	76,861	10,105
Ninth	148,532	456	22,053	22,509	175,057	56,020	8,250
Tenth	49,765	112	8,925	9,036	59,693	39,298	5,025
TOTALS	$2,484,741	$190,909	$243,532	$434,441	$2,997,157	$839,024	$125,177
Top 5%	$13,130	$9	$3,308	$3,317	$16,597	$18,459	$1,983
Top 1%	$484	$0	$286	$286	$774	$3,085	$274

Income Decile	Local Taxes Total	Total State Taxes			Total State and Local Taxes
		Total on Individuals	Total on Businesses	State Taxes Total	
First	$666,693	$556,543	$414,255	$970,798	$1,637,492
Second	516,740	853,693	294,508	1,148,200	1,664,940
Third	487,785	950,132	272,153	1,222,286	1,710,071
Fourth	431,531	1,018,897	254,419	1,273,316	1,704,847
Fifth	409,239	1,063,740	236,729	1,300,469	1,709,708
Sixth	387,535	1,085,253	227,141	1,312,393	1,699,929
Seventh	368,823	1,076,607	209,939	1,286,546	1,655,369
Eighth	349,667	1,082,841	204,520	1,287,361	1,637,028
Ninth	239,328	1,071,945	169,256	1,241,202	1,480,529
Tenth	104,016	1,063,235	103,307	1,166,541	1,270,558
TOTALS	$3,961,357	$9,822,886	$2,386,226	$12,209,112	$16,170,469
Top 5%	$37,038	$540,304	$43,447	$583,750	$620,788
Top 1%	$4,133	$98,437	$6,371	$104,808	$108,941

*** Includes seasonal recreational residential (cabins)**

Table 4-2 2004 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	$27,947 & under	888,164	$13,882,626	0.3%	0.5%	3.0%	1.7%	4.7%	- 1.5%	0.3%	1.2%	1.2%	0.3%
Second	$27,948 - $41,675	402,348	13,883,299	2.5%	0.4%	2.3%	1.2%	3.5%	- 0.5%	0.2%	0.8%	1.1%	0.2%
Third	$41,676 - $55,234	288,262	13,887,330	3.2%	0.3%	2.1%	1.1%	3.2%	- 0.2%	0.2%	0.7%	1.1%	0.2%
Fourth	$55,235 - $69,473	223,763	13,883,217	3.8%	0.3%	2.0%	1.0%	3.1%	- 0.1%	0.2%	0.6%	1.0%	0.1%
Fifth	$69,474 - $85,329	180,356	13,878,459	4.3%	0.3%	1.9%	1.0%	2.9%	0.0%	0.2%	0.6%	1.0%	0.1%
Sixth	$85,330 - $10,980	146,866	13,886,240	4.7%	0.3%	1.8%	0.9%	2.8%	0.0%	0.2%	0.5%	0.9%	0.1%
Seventh	$105,981 - $145,557	113,246	13,878,322	5.0%	0.3%	1.6%	0.9%	2.5%	0.0%	0.2%	0.4%	0.8%	0.1%
Eighth	$145,558 - $245,315	75,842	13,889,422	5.4%	0.3%	1.4%	0.8%	2.2%	0.0%	0.2%	0.3%	0.7%	0.1%
Ninth	$245,316 - $712,773	37,072	13,875,937	6.0%	0.2%	1.1%	0.7%	1.8%	0.0%	0.2%	0.2%	0.5%	0.1%
Tenth	$712,774 & over	7,339	13,879,226	6.8%	0.1%	0.7%	0.4%	1.0%	0.0%	0.1%	0.1%	0.1%	0.1%
TOTALS		2,363,258	$138,824,077	4.2%	0.3%	1.8%	1.0%	2.8%	- 0.2%	0.2%	0.6%	0.9%	0.1%
Top 5%	Over $2,203,345	1,239	$6,942,559	7.1%	0.1%	0.5%	0.3%	0.8%	0.0%	0.1%	0.1%	0.1%	0.1%
Top 1%	Over $20,093,638	34	$1,388,760	6.7%	0.1%	0.3%	0.2%	0.5%	0.0%	0.1%	0.1%	0.0%	0.1%

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	2.5%	0.6%	0.3%	0.9%	3.5%	1.1%	0.2%
Second	2.2%	0.4%	0.2%	0.6%	2.9%	0.8%	0.1%
Third	2.2%	0.2%	0.2%	0.4%	2.6%	0.8%	0.1%
Fourth	2.1%	0.1%	0.2%	0.3%	2.5%	0.6%	0.1%
Fifth	2.0%	0.1%	0.2%	0.2%	2.3%	0.6%	0.1%
Sixth	1.9%	0.0%	0.2%	0.2%	2.2%	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%	0.6%	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%	0.4%	0.3%	0.0%
TOTALS	1.8%	0.1%	0.2%	0.3%	2.2%	0.6%	0.1%
Top 5%	0.2%	0.0%	0.0%	0.0%	0.2%	0.3%	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	
4.8%	4.0%	3.0%	7.0%	11.8%
3.7%	6.1%	2.1%	8.3%	12.0%
3.5%	6.8%	2.0%	8.8%	12.3%
3.1%	7.3%	1.8%	9.2%	12.3%
2.9%	7.7%	1.7%	9.4%	12.3%
2.8%	7.8%	1.6%	9.5%	12.2%
2.7%	7.8%	1.5%	9.3%	11.9%
2.5%	7.8%	1.5%	9.3%	11.8%
1.7%	7.7%	1.2%	8.9%	10.7%
0.7%	7.7%	0.7%	8.4%	9.2%
2.9%	7.1%	1.7%	8.8%	11.6%
0.5%	7.8%	0.6%	8.4%	8.9%
0.3%	7.1%	0.5%	7.5%	7.8%

*** Includes seasonal recreational residential (cabins)**

Table 4 - 3

2009 Income Deciles - Amounts ($ Thousands)

Income Decile	Income Range	Number of Households	Household Income	State Income Taxes: Individual Income Tax	State Income Taxes: Corporate Franchise Tax	State Sales Tax: Purchases by Individuals	State Sales Tax: Purchases by Businesses	State Sales Tax: Sales Tax Total	Property Tax Refund	State Property Tax	State Excise Taxes	Other State Taxes: Taxes on Individuals	Other State Taxes: Taxes on Businesses
First	$34,311 & under	953,600	$18,072,960	$97,691	$96,195	$504,956	$285,632	$790,589	-$259,269	$55,524	$184,880	$209,754	$37,085
Second	$34,312 - $52,252	422,842	18,076,485	535,370	72,526	377,501	202,081	579,582	-83,098	38,387	121,657	181,487	25,511
Third	$52,253 - $69,487	297,816	18,071,885	643,787	65,984	345,687	180,036	525,723	-40,003	34,528	102,352	173,536	23,210
Fourth	$69,488 - $86,313	232,908	18,064,037	726,576	62,425	329,429	168,615	498,043	-16,943	32,934	91,605	163,196	21,556
Fifth	$86,314 - $106,218	188,974	18,082,857	809,027	60,065	317,263	158,949	476,212	-5,407	30,970	83,324	156,194	20,377
Sixth	$106,219 - $135,110	152,135	18,059,817	884,130	57,130	297,254	149,849	447,103	-1,076	30,542	72,587	142,159	18,992
Seventh	$135,111 - $191,286	114,902	18,082,736	938,385	53,192	263,812	138,282	402,094	-350	28,904	58,023	125,541	18,351
Eighth	$191,287 - $350,794	73,372	18,066,784	1,038,559	47,324	219,521	129,505	349,027	-224	30,826	41,639	112,639	20,170
Ninth	$350,795 - $1,145,396	33,276	18,069,178	1,119,547	37,482	168,616	100,679	269,295	-122	25,437	25,807	71,485	15,690
Tenth	$1,145,397 & over	6,109	18,065,755	1,230,073	24,075	95,203	53,920	149,122	-19	16,800	14,659	19,500	9,921
TOTALS		2,475,934	$180,712,494	$8,023,144	$576,399	$2,919,241	$1,567,549	$4,486,790	-$406,510	$324,853	$796,532	$1,355,491	$210,862
Top 5%	Over $3,622,884	1,023	$9,036,691	$644,605	$10,715	$34,982	$21,587	$56,568	$0	$8,296	$6,616	$6,427	$4,724
Top 1%	Over $28,029,668	42	$1,829,903	$122,737	$1,462	$5,249	$2,686	$7,935	$0	$1,135	$1,345	$497	$639

Income Decile	Residential Local Property Taxes: Homeowners Gross	Residential Local Property Taxes: Renters Gross	Residential Local Property Taxes: Owners of Rental Prop.	Residential Local Property Taxes: Total on Rental Prop.	Residential Local Property Taxes: Residential Total *	Nonresidential Local Property Taxes	Other Local Taxes	Local Taxes Total	Total State Taxes: Total on Individuals	Total State Taxes: Total on Businesses	Total State Taxes: State Taxes Total	Total State and Local Taxes
First	$490,692	$134,718	$77,604	$212,322	$725,589	$216,524	$39,320	$981,433	$713,471	$498,978	$1,212,448	$2,193,881
Second	460,313	94,472	47,907	142,379	619,284	135,897	28,404	783,586	1,115,309	356,113	1,471,422	2,255,008
Third	458,441	39,807	41,169	80,976	555,513	133,900	25,623	715,036	1,209,872	319,245	1,529,117	2,244,153
Fourth	435,223	18,958	40,157	59,115	510,358	113,725	24,193	648,276	1,279,592	299,801	1,579,393	2,227,669
Fifth	423,913	12,607	34,592	47,199	488,445	114,455	23,092	625,992	1,347,405	283,355	1,630,761	2,256,753
Sixth	395,215	7,316	35,036	42,352	457,286	91,616	21,704	570,606	1,383,532	268,035	1,651,567	2,222,173
Seventh	368,310	4,566	33,654	38,220	423,116	95,556	19,733	538,405	1,374,679	249,460	1,624,139	2,162,544
Eighth	317,512	1,800	44,832	46,632	375,994	115,340	17,286	508,620	1,402,618	237,342	1,639,960	2,148,580
Ninth	188,107	752	34,544	35,296	230,922	70,981	13,500	315,402	1,377,980	186,641	1,564,622	1,880,024
Tenth	58,373	184	12,560	12,745	72,789	46,647	7,779	127,215	1,355,612	108,519	1,464,131	1,591,346
TOTALS	$3,596,100	$315,179	$402,056	$717,235	$4,459,296	$1,134,640	$220,635	$5,814,571	$12,560,071	$2,807,489	$15,367,560	$21,182,131
Top 5%	$15,470	$15	$4,696	$4,711	$20,463	$22,091	$3,081	$45,636	$691,381	$46,570	$737,951	$783,587
Top 1%	$854	$0	$488	$488	$1,349	$3,028	$426	$4,804	$129,691	$6,060	$135,750	$140,554

*** Includes seasonal recreational residential (cabins)**

Table 4-4

2009 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	$34,311 & under	953,600	$18,072,960	0.5%	0.5%	2.8%	1.6%	4.4%	- 1.4%	0.3%	1.0%	1.2%	0.2%
Second	$34,312 - $52,252	422,842	18,076,485	3.0%	0.4%	2.1%	1.1%	3.2%	- 0.5%	0.2%	0.7%	1.0%	0.1%
Third	$52,253 - $69,487	297,816	18,071,885	3.6%	0.4%	1.9%	1.0%	2.9%	- 0.2%	0.2%	0.6%	1.0%	0.1%
Fourth	$69,488 - $86,313	232,908	18,064,037	4.0%	0.3%	1.8%	0.9%	2.8%	- 0.1%	0.2%	0.5%	0.9%	0.1%
Fifth	$86,314 - $106,218	188,974	18,082,857	4.5%	0.3%	1.8%	0.9%	2.6%	0.0%	0.2%	0.5%	0.9%	0.1%
Sixth	$106,219 - $135,110	152,135	18,059,817	4.9%	0.3%	1.6%	0.8%	2.5%	0.0%	0.2%	0.4%	0.8%	0.1%
Seventh	$135,111 - $191,286	114,902	18,082,736	5.2%	0.3%	1.5%	0.8%	2.2%	0.0%	0.2%	0.3%	0.7%	0.1%
Eighth	$191,287 - $350,794	73,372	18,066,784	5.7%	0.3%	1.2%	0.7%	1.9%	0.0%	0.2%	0.2%	0.6%	0.1%
Ninth	$350,795 - $1,145,396	33,276	18,069,178	6.2%	0.2%	0.9%	0.6%	1.5%	0.0%	0.1%	0.1%	0.4%	0.1%
Tenth	$1,145,397 & over	6,109	18,065,755	6.8%	0.1%	0.5%	0.3%	0.8%	0.0%	0.1%	0.1%	0.1%	0.1%
TOTALS		2,475,934	$180,712,494	4.4%	0.3%	1.6%	0.9%	2.5%	- 0.2%	0.2%	0.4%	0.8%	0.1%
Top 5%	Over $3,622,884	1,023	$9,036,691	7.1%	0.1%	0.4%	0.2%	0.6%	0.0%	0.1%	0.1%	0.1%	0.1%
Top 1%	Over $28,029,668	42	$1,829,903	6.7%	0.1%	0.3%	0.1%	0.4%	0.0%	0.1%	0.1%	0.0%	0.0%

Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes	Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total *				Total on Individuals	Total on Businesses	State Taxes Total	
First	2.7%	0.7%	0.4%	1.2%	4.0%	1.2%	0.2%	5.4%	3.9%	2.8%	6.7%	12.1%
Second	2.5%	0.5%	0.3%	0.8%	3.4%	0.8%	0.2%	4.3%	6.2%	2.0%	8.1%	12.5%
Third	2.5%	0.2%	0.2%	0.4%	3.1%	0.7%	0.1%	4.0%	6.7%	1.8%	8.5%	12.4%
Fourth	2.4%	0.1%	0.2%	0.3%	2.8%	0.6%	0.1%	3.6%	7.1%	1.7%	8.7%	12.3%
Fifth	2.3%	0.1%	0.2%	0.3%	2.7%	0.6%	0.1%	3.5%	7.5%	1.6%	9.0%	12.5%
Sixth	2.2%	0.0%	0.2%	0.2%	2.5%	0.5%	0.1%	3.2%	7.7%	1.5%	9.1%	12.3%
Seventh	2.0%	0.0%	0.2%	0.2%	2.3%	0.5%	0.1%	3.0%	7.6%	1.4%	9.0%	12.0%
Eighth	1.8%	0.0%	0.2%	0.3%	2.1%	0.6%	0.1%	2.8%	7.8%	1.3%	9.1%	11.9%
Ninth	1.0%	0.0%	0.2%	0.2%	1.3%	0.4%	0.1%	1.7%	7.6%	1.0%	8.7%	10.4%
Tenth	0.3%	0.0%	0.1%	0.1%	0.4%	0.3%	0.0%	0.7%	7.5%	0.6%	8.1%	8.8%
TOTALS	2.0%	0.2%	0.2%	0.4%	2.5%	0.6%	0.1%	3.2%	7.0%	1.6%	8.5%	11.7%
Top 5%	0.2%	0.0%	0.1%	0.1%	0.2%	0.2%	0.0%	0.5%	7.7%	0.5%	8.2%	8.7%
Top 1%	0.0%	0.0%	0.0%	0.0%	0.1%	0.2%	0.0%	0.3%	7.1%	0.3%	7.4%	7.7%

*** Includes seasonal recreational residential (cabins)**

Tables 4-2 and *4-4* showed effective tax rates by income decile. A comparison with the effective tax rates for population deciles reveals some differences. First, the effective tax rate for the first income decile (11.8 percent) was much lower than that for the first population decile (18.9 percent), again using 2004 data. The first *income* decile included almost four times as many households as the first *population* decile. As a result, the effective tax rate for the first income decile is roughly equal to the average effective tax rate for households in the first four population deciles.

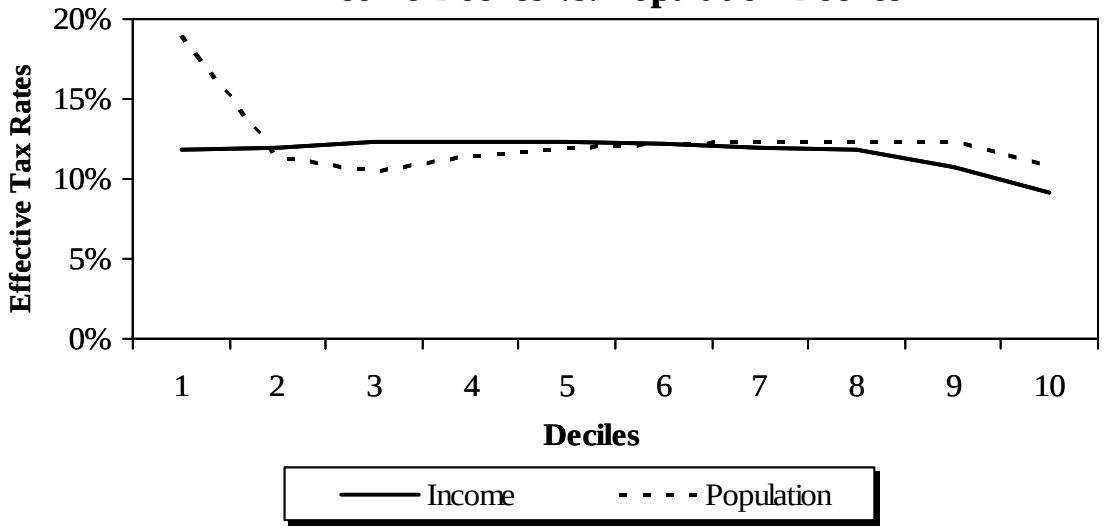
The pattern of effective tax rates also differs for the top deciles. The tenth income decile (with 7,339 households) had an effective tax rate of 9.2 percent. In contrast, the tenth population decile (with about 236,000 households) had an effective tax rate of 10.9 percent.

Figure 4-1 compares the pattern of effective tax rates by income decile to those by population decile.

- The first income decile includes roughly the same households as the first four population deciles. As a result, the line for income deciles hides the substantial variation among those first four population deciles.
- The top population decile includes roughly the same taxpayers as the top three and one-half income deciles. As a result, the line for population deciles hides the substantial variation among the top three income deciles.

The use of income deciles provides more detailed information about the burden on higher income households, but less information about the 54.6 percent of households who are combined in the first two income deciles.

Figure 4-1
State and Local Effective Tax Rates for 2004
Income Deciles vs. Population Deciles



An Alternative Methodology: Suits Indexes Using the Entire Sample

The Suits indexes reported in the earlier portions of this report are calculated based on summary data for each of the ten population deciles. The calculations are based on (a) each decile's share of total income and (b) each decile's share of the total tax burden. Only ten observations (the ten deciles) are used in the calculations.

In previous reports, Suits indexes have also been calculated based on the ten income deciles. The income decile Suits indexes were generally farther from zero than the population decile Suits indexes. A regressive tax was more regressive and a progressive tax was more progressive.

Although there is some argument for preferring the income decile Suits to the population decile Suits, both are flawed in being limited to ten observations. Increasing the number of observations increases the accuracy of the Suits index. Computers can quickly calculate a Suits index based on all 93,000 households in the tax incidence database, and that is certainly the preferred option. This "full sample" Suits index for each tax is shown in *Table 4-5*, along with the population decile and income decile Suits indexes. In almost every case the full sample Suits for an individual tax is farther from zero than either of the other two measures. For the tax system as a whole, the full sample Suits suggests a slightly greater degree of regressivity.

For example, the full sample Suits index for the income tax in 2004 is +0.235. This exceeds both the population decile Suits index (+0.219) and income decile Suits index (+0.232). The full sample Suits index shows the income tax to be more progressive. Similarly, the full sample Suits index shows the sales tax to be more regressive in 2004 (-0.190 compared to -0.170 and -0.186 for the population and income decile Suits indexes).

Despite the theoretical preference for the full-sample Suits index, the population decile Suits index is used in the body of this report so the reader can compare these results to those in previous editions of this report.

Table 4-5
Suits Indexes by Income and Population Deciles, 2004-2009

Tax Type	2004 Suits Index			2009 Suits Index		
	Pop. Decile	Inc. Decile	Full Sample	Pop. Decile	Inc. Decile	Full Sample
State Taxes						
Taxes on Income and Estates						
Individual income tax	0.219	0.232	0.235	0.200	0.212	0.216
Corporation franchise tax [1]	-0.145	-0.159	-0.162	-0.160	-0.177	-0.180
Estate tax	0.270	0.214	0.270	0.256	0.214	0.214
Total Income and Estate Taxes	0.196	0.206	0.210	0.177	0.186	0.201
Taxes on Consumption						
Total sales tax	-0.170	-0.186	-0.190	-0.186	-0.204	-0.208
General sales/use tax	-0.175	-0.189	-0.194	-0.189	-0.206	-0.211
Sales tax on motor vehicles	-0.142	-0.163	-0.166	-0.159	-0.183	-0.186
Motor fuels excise taxes	-0.253	-0.275	-0.280	-0.273	-0.297	-0.302
Alcoholic beverage excise taxes	-0.083	-0.068	-0.070	-0.099	-0.086	0.088
Cigarette and tobacco excise taxes	-0.486	-0.494	-0.505	-0.501	-0.510	-0.522
Insurance premiums taxes	-0.192	-0.210	-0.214	-0.205	-0.226	-0.230
Gambling taxes	-0.477	-0.488	-0.493	-0.489	-0.488	-0.508
MinnesotaCare taxes	-0.271	-0.299	-0.304	-0.285	-0.299	-0.328
Solid waste management taxes	-0.233	-0.251	-0.255	-0.249	-0.269	-0.274
Total Consumption Taxes	-0.199	-0.215	-0.219	-0.213	-0.231	-0.235
Taxes on Property						
State property tax	-0.131	-0.139	-0.142	-0.136	-0.145	-0.150
Residential recreational property	-0.153	-0.184	-0.189	-0.167	-0.184	-0.205
Commercial	-0.135	-0.141	-0.145	-0.140	-0.150	-0.155
Industrial	0.036	0.062	0.064	0.044	0.068	0.070
Utility	-0.165	-0.180	-0.184	-0.180	-0.197	-0.201
Motor vehicle registration tax	-0.147	-0.170	-0.173	-0.166	-0.191	-0.194
Mortgage and deed taxes	-0.130	-0.156	-0.159	-0.141	-0.155	-0.174
Total Property Taxes	-0.138	-0.158	-0.161	-0.151	-0.169	-0.176
Property Tax Refunds						
Homeowners	0.737	0.724	0.861	0.745	0.724	0.905
Renters	0.899	0.867	0.922	0.904	0.867	0.920
Total Property Tax Refunds	0.811	0.789	0.889	0.806	0.779	0.911
Total State Taxes	0.026	0.023	0.025	0.027	0.024	0.034
Local Taxes						
Property Taxes (Pay 2002)	-0.178	-0.200	-0.201	-0.190	-0.213	-0.217
General property tax (gross - credits)	-0.178	-0.200	-0.201	-0.190	-0.213	-0.217
Homeowners (before PTR)	-0.145	-0.172	-0.176	-0.157	-0.187	-0.191
Residential recreational property	-0.153	-0.184	-0.189	-0.167	-0.184	-0.205
Commercial [2]	-0.135	-0.141	-0.145	-0.140	-0.150	-0.155
Industrial	0.036	0.062	0.064	0.044	0.068	0.070
Farm (other than residence) [3]	-0.297	-0.339	-0.331	-0.270	-0.299	-0.310
Rental housing (before PTR)	-0.380	-0.385	-0.370	-0.385	-0.388	-0.384
Utility	-0.165	-0.180	-0.184	-0.180	-0.197	-0.201
Minerals [4]	0.196	0.253	0.260	0.222	0.278	0.284
Mining production taxes (taconite)	0.249	0.317	0.326	0.278	0.345	0.354
Taxes on consumption						
Local sales taxes	-0.175	-0.189	-0.190	-0.189	-0.206	-0.211
Local gross earnings taxes	-0.165	-0.180	-0.184	-0.180	-0.197	-0.201
Total Local Taxes	-0.178	-0.200	-0.201	-0.190	-0.213	-0.217
Total State and Local Taxes	**-0.024**	**-0.032**	**-0.030**	**-0.032**	**-0.041**	**-0.035**

[1] Includes taconite/iron ore occupation tax.
[2] Includes resorts and railroads.
[3] Includes Timber.
[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 use 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 is arguably 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 elsewhere 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 4-2*. For all households combined, the federal offset would reduce the effective tax rate from 11.6 percent to 10.5 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 10.9 percent to 9.0 percent. The income tax (after offset) is less progressive, with a Suits index falling from +0.219 to +0.179. The adjusted tax burden for all taxes combined is noticeably more regressive, with the Suits index falling from -0.024 to -0.062.

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.

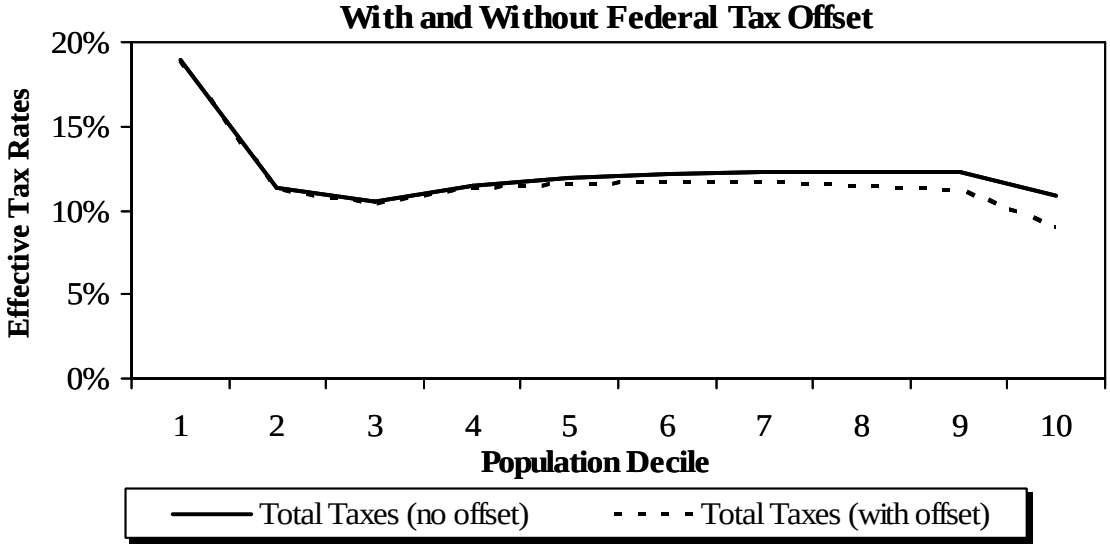
Table 4-6
Impact of Federal Tax Offset on Effective State and Local Tax Rates by Population Decile
(Minnesota Residents, 2004)

Population Decile	Income Range	Effective Tax Rate		
		No Federal Tax Offset	Change Due To Federal Tax Offset	Adjusted for Federal Tax Offset
First	$10,175 & Under	18.9%	- 0.1%	18.8%
Second	10,176 - 16,816	11.3	- 0.1	11.2
Third	16,817 - 23,135	10.5	- 0.1	10.4
Fourth	23,136 - 29,766	11.5	- 0.2	11.4
Fifth	29,767 - 37,559	11.9	- 0.3	11.6
Sixth	37,560 - 47,192	12.2	- 0.5	11.7
Seventh	47,193 - 59,748	12.3	- 0.6	11.7
Eighth	59,749 - 76,437	12.3	- 0.8	11.5
Ninth	76,438 - 105,450	12.3	- 1.1	11.2
Tenth	$105,451 & Over	10.9	- 1.9	9.0
Total		11.6%	-1.1%	10.5%
Top 5%	$146,809 & Over	10.5%	-2.0%	8.5%
Top 1%	$354,758 & Over	9.6%	-2.1%	7.5%

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

	Without Offset	With Offset
Income Tax	+0.219	+0.179
All Taxes	-0.024	-0.062

Figure 4-2
Effective Tax Rates for 2004
With and Without Federal Tax Offset



The Impact of Refundable Income Tax Credits and Property Tax Refunds

The tax burden results presented elsewhere in this report include the impact of refundable tax credits and the property tax refund. The Working Family Credit, Dependent Care Credit, and K-12 Credit are considered "negative taxes." Because these negative taxes are included, the average income tax rate in the first two population deciles is negative. Similarly, the property tax refunds for homeowners and renters are treated as "negative property taxes," offsetting the burden of the gross property tax on homes and rental housing.

Most of these payments are intended to make the tax system more progressive than it otherwise would be. To evaluate their effectiveness, it is useful to compare the current system to the tax system that would exist in their absence. *Table 4-8* shows the magnitudes of those payments in 2004. That table also shows the Suits index for each of the major categories of payments.

Table 4-8
Suits Index for Refundable Credits
and Property Tax Refund Payments in 2004

Payments	Amount ($ Thousands)	Suits Index
Income Tax Credits		
Working Family Credit	$135,901	
Dependent Care Credit	12,856	
K-12 Education Credit	15,600	
Subtotal	$164,357	0.886
Property Tax Refund		
Homeowners	$174,026	
Renters	145,033	
Subtotal	$319,059	0.811
Total	$483,417	0.836

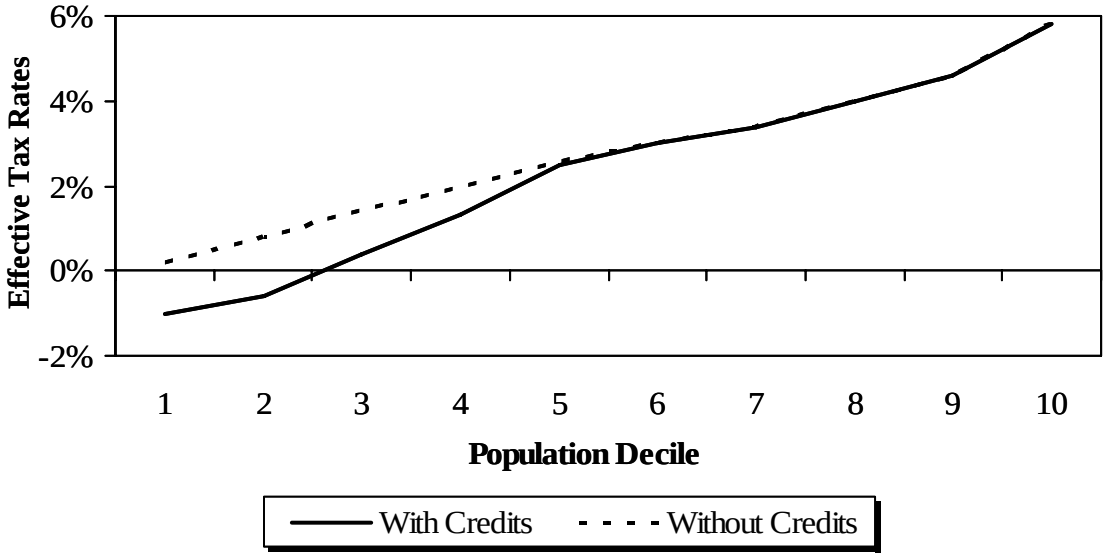
Total payments rose 18 percent between 2002 and 2004, growing faster than total tax collections (which grew 13 percent). The refundable income tax credits rose by 15 percent and property tax refunds by 19 percent. Most of the property tax refund increase went to homeowners (up 33 percent) as a result of law changes that expanded eligibility and increased refunds.

Table 4-9 and *Figure 4-3* show the impact of the refundable income tax credits on effective income tax rates by population decile in 2004. Without those credits, effective tax rates would be noticeably higher in each of the first five deciles. For example, the effective income tax rate in the second decile would rise from -0.6 percent to +0.8 percent. The refundable credits make the income tax more progressive. In their absence, the Suits index for the income tax would be +0.189 rather than the +0.219.

Table 4-9
Impact of Refundable Income Tax Credit on
Effective Income Tax Rates

Population Decile	Household Income	Effective Tax Rates (Income Tax)		
		With Credits	Change if No Credits	Without Credits
First	$10,175 & Under	-1.0%	+1.2%	0.2%
Second	10,176 - $16,816	-1.6	+1.2	0.8
Third	16,817 - 23,135	0.4	+1.0	1.4
Fourth	23,136 - 29,766	1.3	+0.7	2.0
Fifth	29,767 - 37,559	2.5	+0.1	2.6
Sixth	37,560 - 47,192	3.0	0.0	3.0
Seventh	47,193 - 59,748	3.4	0.0	3.4
Eighth	59,749 - 76,437	4.0	0.0	4.0
Ninth	76,438 - 105,450	4.6	0.0	4.6
Tenth	105,451 & Over	5.8	0.0	5.8
Total		4.2%	+0.1%	4.3%

Figure 4-3
Effective Income Tax Rates by Population Decile
With and Without Refundable Credits



In the absence of property tax refunds, residential property taxes are more regressive than the sales tax, with a Suits index of -0.180. As shown in *Figure 4-4* and the first column of *Table 4-10*, effective tax rates fall from 3.5 percent in the 2nd decile to 1.4 percent in the 10th decile. Property tax refunds reduce effective tax rates in the first seven deciles. For net residential property taxes, effective tax rates rise from 1.5 percent in the 2nd decile to 2.3 percent in deciles 4 through 8 before falling to 2.1 percent in the 9th decile and 1.4 percent in the 10th. Net residential property taxes (after PTR) are still regressive (with a Suits index of -0.103), but the burden as a percent of income is constant over a wide range of incomes.

Table 4-10
Residential Property Taxes Before and After Property Tax Refunds for 2004
(Homesteads and Rental Housing)

Population Decile	Household Income	Effective Tax Rates (All Taxes)		
		With PTR	Change if No PTR	Without PTR
1	$10,175 & Under	2.4%	+4.1%	6.5%
2	10,176 - $16,816	1.5	+2.0	3.5
3	16,817 - 23,135	1.8	+1.2	3.0
4	23,136 - 29,766	2.3	+0.7	3.0
5	29,767 - 37,559	2.3	+0.5	2.8
6	37,560 - 47,192	2.3	+0.3	2.6
7	47,193 - 59,748	2.3	+0.2	2.5
8	59,749 - 76,437	2.3	0.0	2.3
9	76,438 - 105,450	2.1	0.0	2.1
10	105,451 & Over	1.4	0.0	1.4
Total		1.9%	+0.2%	2.1%

Figure 4-4
Residential Propety Taxes
Effective Tax Rates Before and After Property Tax Refunds

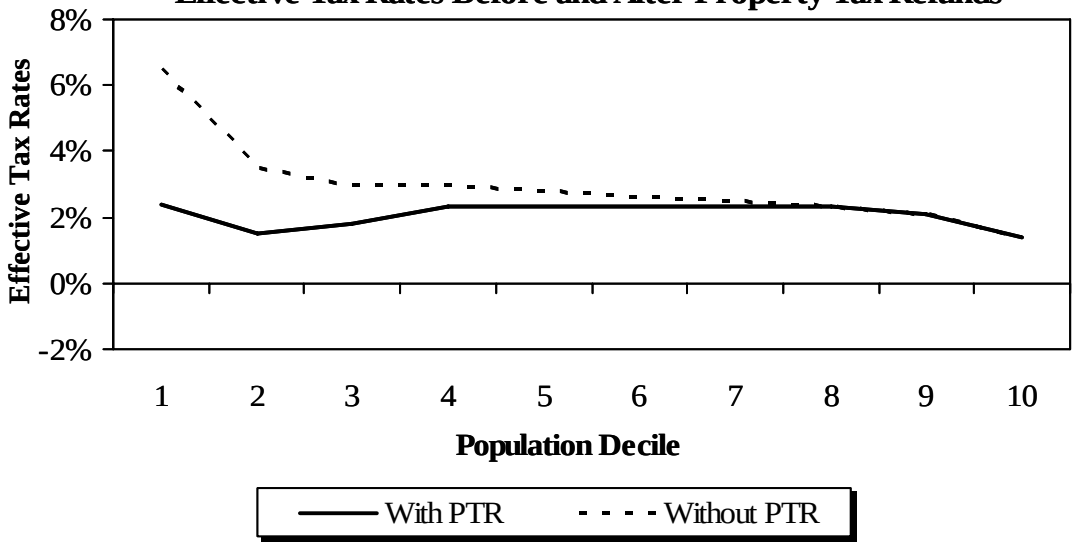
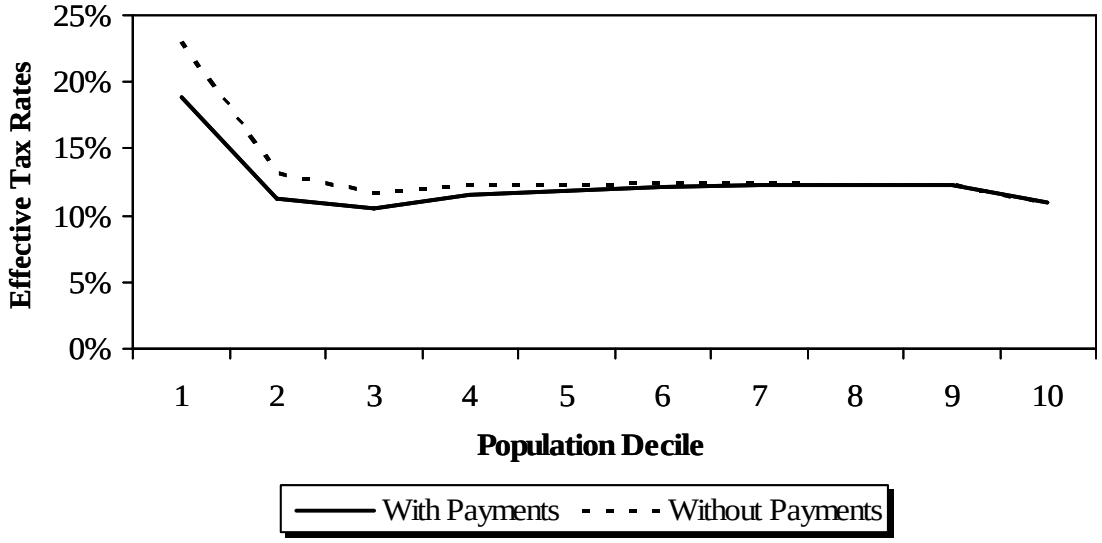


Table 4-11 and *Figure 4-5* show the combined impact of both the income tax credits and property tax refunds on the overall effective tax rates by population decile. Without the credits or property tax refunds, effective tax rates would be higher in the first seven deciles. These payments make the overall tax system less regressive. In their absence, the Suits index for all taxes would be -0.040 rather than -0.024.

Table 4-11
Combined Impact of Property Tax Refunds and Refundable Income Tax Credits on Effective State and Local Tax Rates

Population Decile	Household Income	Effective Tax Rates (All Taxes)		
		With PTR	Change if No PTR	Without PTR
First	$10,175 & Under	18.9%	+4.0%	22.9%
Second	10,176 - $16,816	11.3	+1.9	13.2
Third	16,817 - 23,135	10.5	+1.2	11.7
Fourth	23,136 - 29,766	11.5	+0.8	12.3
Fifth	29,767 - 37,559	11.9	+0.5	12.3
Sixth	37,560 - 47,192	12.2	+0.3	12.5
Seventh	47,193 - 59,748	12.3	+0.2	12.5
Eighth	59,749 - 76,437	12.3	0.0	12.3
Ninth	76,438 - 105,450	12.3	0.0	12.3
Tenth	105,451 & Over	10.9	0.0	10.9
Total		11.6%	+0.3%	11.9%

Figure 4-5
Effective State and Local Tax Rates by Population Decile With and Without Property Tax Refunds



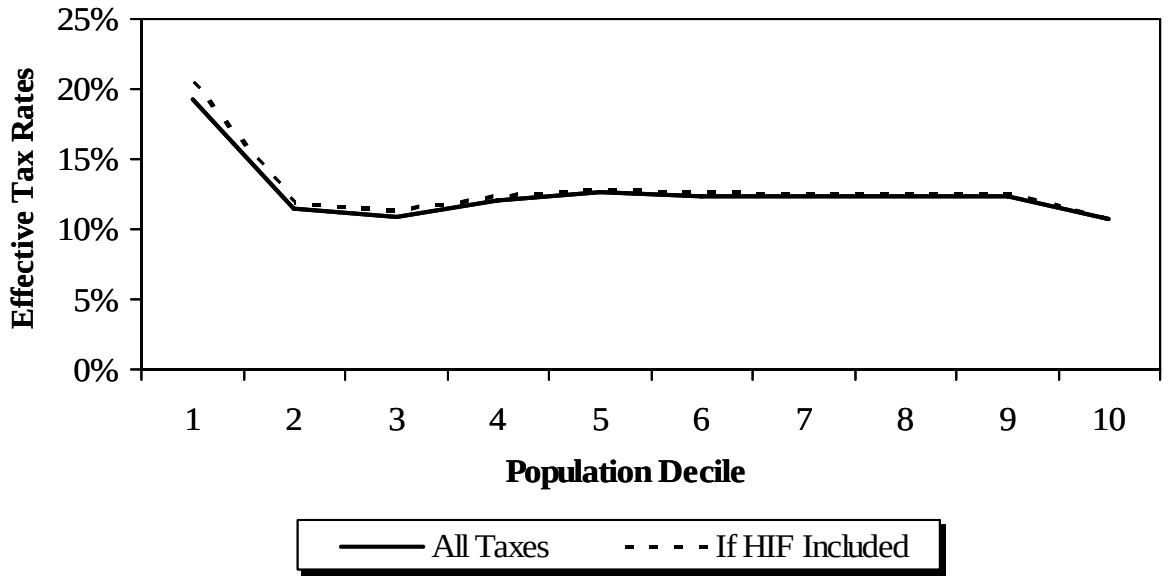
Incidence of the Health Impact Fee (2009)

This study does not include fees. As a result, the 2009 numbers do not include the $248 million in revenue from the Health Impact Fee (HIF) on cigarettes and other tobacco products. For informational purposes, the incidence of the HIF is shown in *Table 4-12* and *Figure 4-6*.

Table 4-12
Incidence of the Health Impact Fee
by Population Decile
(Minnesota Residents, 2009)

Population Decile	Percent of Income		
	All Taxes	Incidence of HIF	If HIF Were Included
First	19.3%	+1.1%	20.4%
Second	11.4	+0.5	11.9
Third	10.9	+0.4	11.3
Fourth	12.0	+0.3	12.3
Fifth	12.6	+0.2	12.8
Sixth	12.4	+0.2	12.6
Seventh	12.3	+0.2	12.5
Eighth	12.4	+0.1	12.5
Ninth	12.4	+0.1	12.5
Tenth	10.8	-	10.8
Total	11.7%	+0.1%	11.9%
Suits Index	-0.032	-0.501	-0.038

Figure 4-6
Burden as a Percent of Income
All Taxes vs. If Health Imapct Fee Included



Demographic Variation Within Population Deciles

This section provides additional information on the demographic characteristics of households in each population decile. Households in the lower deciles are much more likely to be single-person and elderly households. Only a small proportion of the households in the lower deciles include children. In contrast, most upper decile households are married couples with or without children.

The demographic makeup of individual deciles varies greatly, as shown in *Figure 4-7*. In each of the bottom three deciles, over 70 percent of the households are single-person households; only 22 percent include children. In contrast, in the top two deciles only 10 percent of all households are single-person households, and over 50 percent include children.

Figure 4-7 also shows that senior households (married and single) are distributed unevenly across deciles. Seniors account for about one-quarter of all households in deciles 2 through 4. In contrast, seniors comprise only 12 percent of all households in the top decile, and almost all of those top-decile seniors are married. Single seniors far outnumber senior couples in the first five deciles; in the top deciles, though, the number of senior couples far exceeds the number of single seniors.

In the first five deciles, most households with children are single-parent households. The proportion of all households with children that include two parents increases steadily with income. Almost 90 percent of households in the top two deciles are married couples (with or without children).

Figure 4-7
Family Type by Population Decile

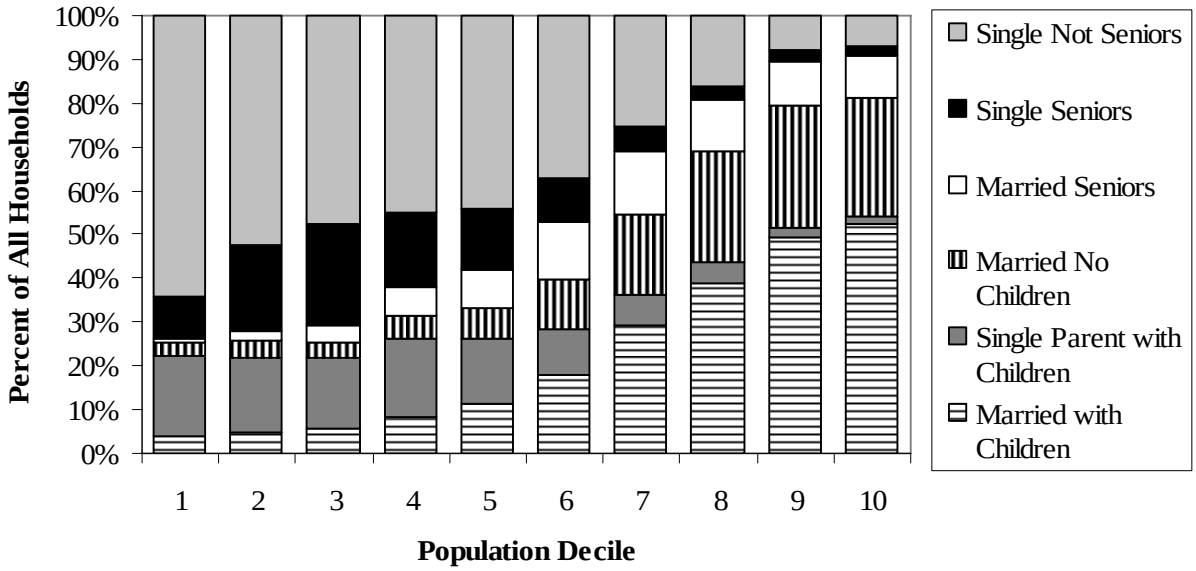
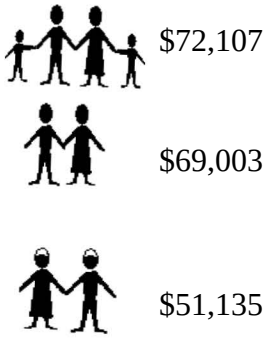


Figure 4-8 illustrates the great differences in median incomes for each of the six family types. In 2004, the median income for a single-parent family was $24,281, so the typical single-parent family was in the fourth population decile. The median income for a married couple with children was $72,107 (in the 8th decile). The median income for senior couples ($51,135) puts them in the 7th decile. In contrast, the median single senior (at $23,384) is in the 4th decile.

Figure 4-8
Median Income by Household Type (2004)

Pop. Decile	Household Income
10	$105,451 & Over
9	105,450 – 76,438
8	76,437 – 59,749
7	59,748 – 47,193
6	47,192 – 37,560
5	37,559 – 29,767
4	29,766 – 23,136
3	23,135 – 16,817
2	16,816 – 10,176
1	10,175 & Under



Effective Tax Rates for Representative Households

Table 4-13 shows effective tax rates for three representative households for each of these six household types in 2004. In each case, tax burdens are shown for:

- 25th percentile family – 25 percent of all households of this type have income that is below this level; 75 percent have higher income.
- Median income family – half of all households of this type have income that is below this level; half have higher income.
- 75th percentile family – 75 percent of all households of this type have income that is below this level; 25 percent have higher income.

For single parent families (in the second column of *Table 4-13*), the 25th percentile household had an income of $13,868 and paid 8.3 percent of that income in state and local taxes. The median-income single parent had an income of $24,281 and paid 8.0 percent of that income in tax. The 75th percentile single parent, with an income of $37,050, paid 11.8 percent of that income in tax.

Married couples with children have much higher incomes. At the 25th percentile income ($48,794) tax equaled 12.6 percent of income. The median household of this type (with income of $72,107) also paid 12.6 percent in tax. At the 75th percentile income ($102,718) a married couple with children paid 12.3 percent in tax.

Information about particular taxes is also shown on *Table 4-13*. Single parents paid negative income tax at the 25th percentile and median income levels, due to refundable credits. Rental property taxes (net of PTR) are also negative for some lower-income households. Property tax refunds can exceed the actual tax burden because only part of the rental property tax is assumed to be shifted to renters in higher rents.

Most of this study lumps all household types together in deciles, with no adjustment for family type or family size. These examples provide additional information about how those results differ when family types are taken into account.

Table 4-13
Average Tax Burdens by Household Type and Income Level

Household Type	Single Senior	Single-Parent Family	Single (Not Senior)	Married Senior	Married No Children (Not Senior)	Married with Children
25th Percentile						
Income	**$15,788**	**$13,868**	**$12,851**	**$35,574**	**$46,296**	**$48,794**
Decile	**2nd**	**2nd**	**2nd**	**5th**	**6th**	**7th**
Net Residential Property Tax						
Homeowner	$756	$1,106	$815	$967	$1,204	$1,126
Renter[1]	-190	-110	-58	153	426	327
All Households[2]	327	342	136	858	1,128	991
State Income Tax	0	-693	121	106	1,318	1,254
Consumer Sales Tax	412	461	392	879	1,126	1,141
Consumer Excise Taxes	92	176	150	205	326	346
Other Individual Taxes[3]	164	220	151	417	649	726
Business Taxes[4]	569	645	602	1,302	1,551	1,688
Total Taxes	**$1,565**	**$1,152**	**$1,551**	**$3,767**	**$6,098**	**$6,146**
Effective Tax Rate	**9.9%**	**8.3%**	**12.1%**	**10.6%**	**13.2%**	**12.6%**
50th Percentile (median)						
Income	**$23,384**	**$24,281**	**$24,589**	**$51,135**	**$69,003**	**$72,107**
Decile	**4th**	**4th**	**4th**	**7th**	**8th**	**8th**
Net Residential Property Tax						
Homeowner	$956	$963	$846	$1,284	$1,466	$1,586
Renter[1]	59	-56	184	458	466	451
All Households[2]	564	360	344	1,208	1,325	1,529
State Income Tax	93	-409	760	762	3,019	2,752
Consumer Sales Tax	562	644	601	1,117	1,450	1,529
Consumer Excise Taxes	113	204	199	225	357	394
Other Individual Taxes[3]	203	358	238	496	769	883
Business Taxes[4]	1,184	786	945	2,179	1,787	1,974
Total Taxes	**$2,719**	**$1,942**	**$3,087**	**$5,987**	**$8,707**	**$9,061**
Effective Tax Rate	**11.6%**	**8.0%**	**12.6%**	**11.7%**	**12.6%**	**12.6%**
75th Percentile						
Income	**$35,042**	**$37,050**	**$38,911**	**$74,674**	**$97,087**	**$102,718**
Decile	**5th**	**5th**	**6th**	**8th**	**9th**	**9th**
Net Residential Property Tax:						
Homeowner	$1,093	$1,088	$1,117	$1,884	$1,782	$2,107
Renter[1]	294	222	400	466	526	583
All Households[2]	792	812	723	1,817	1,697	2,067
State Income Tax	431	1,004	1,715	2,641	4,830	4,716
Consumer Sales Tax	710	855	831	1,425	1,772	1,958
Consumer Excise Taxes	133	231	243	245	373	416
Other Individual Taxes[3]	248	531	369	615	912	1,068
Business Taxes[4]	865	939	911	1,951	2,041	2,381
Total Taxes	**$3,179**	**$4,369**	**$4,793**	**$8,695**	**$11,623**	**$12,605**
Effective Tax Rate	**9.1%**	**11.8%**	**12.3%**	**11.6%**	**12.0%**	**12.3%**

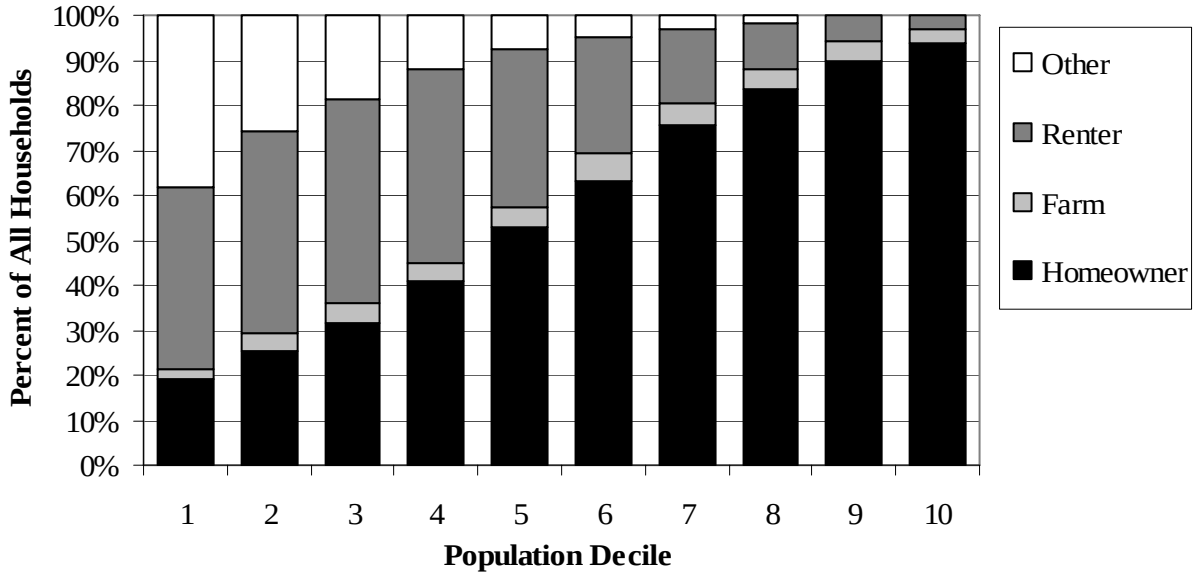
[1]Includes only the renter share of the rental property tax.
[2]Includes only the renter share of the rental property tax and excludes tax on cabins.
[3]Includes property tax on cabins.
[4]Includes only the landlord share of the rental property tax.

Housing Status by Population Decile

Figure 4-9 shows how housing status varied with income. As expected, home ownership rates (including farmers) rose steadily with income, from 22 percent in the first decile to 97 percent in the tenth decile. For all households, 62 percent were homeowners. Renter households outnumbered homeowners in each of the first three deciles; the top three deciles contained 15 homeowner households for every renter household. Farm homesteads were spread fairly evenly among all deciles.[18]

Figure 4-9 also shows that a significant proportion of the households in the first five deciles were classified as neither homeowners nor renters. This "other" category is the result of this study's definition of a household. While the Census defines a household to include all individuals living in a particular housing unit, this study (like other tax incidence studies) defines a household as a taxpayer, a taxpayer's spouse, and all others claimed as dependents for income tax purposes.

Figure 4-9
Housing Status by Population Decile



In this study, a secondary household living with a primary household is assumed to pay no property tax. For example, an older child living with parents (but not claimed as dependents) would generally be classified as neither renter nor homeowner. Other examples would include elderly parents living with their children or an unrelated single person living with a homeowner. In such cases, the entire property tax burden was assigned to the homeowner; the second household is assumed to pay no property tax.[19] Although the second incidence household might be considered to have paid part of the homeowner property tax, it is not possible to link the two households using available information (nor would it be clear how to split the tax between them).

[18] In this study, farm households are defined as those living on farm homestead property, so every farmer owns a home. This definition excludes active farmers who farm only rented land or do not live on a farm homestead. The home ownership rates cited in this chapter include both farm and non-farm homesteads.
[19] If a home is owned jointly, the property tax is split equally among all owners.

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

Incidence Households Compared to Census Households

By extrapolating from the incidence database, the tax incidence study estimates a total of 2,363,258 Minnesota households in 2004, with a median income of $37,559. In contrast, the U.S. Census reports a total of 2,054,900 Minnesota households in 1994, with a median income of $50,860. Census households average 2.4 persons, while the incidence study households average 2.1 persons. This section explains the differences between the numbers presented in this study and those reported by the Census.

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

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

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

There are three basic reasons why Census and incidence households differ. First, some Census households are not counted as incidence study households. For example, a full-time college student living in an apartment and claimed as a deduction on a parent's tax return is a Census household but would be combined with the parents in the incidence study. Second, Census households often contain two or more incidence households. For example, three single persons sharing an apartment would be counted as one Census household but might be three incidence households. Third, individuals living in "group quarters" are not part of any Census household, but some are defined as a household in the incidence study. Examples include a financially independent college student living in a college dorm, or a nursing home resident not claimed as a dependent on someone else's tax return. As a result, the incidence study reports 15 percent more households than the Census, and the median household income in the incidence study is only 74 percent of that reported by the Census.

In summary, the incidence study's population is consistent with the Census.[20] The lower median income in this study occurs largely because the same total income is spread over a larger number of households. The incidence definition of a household is more appropriate than the Census definition when describing the distribution of the tax burden.

[20] More details about the cross-walk between Census data and the data used in tax incidence studies can be found in the 1999 Tax Incidence Study, pp. 19-21.

Technical Appendix

The Incidence Study Database

The 2004 incidence study database includes detailed information on income and taxes for a stratified random sample of 96,033 Minnesota households. This sample is then "blown up" to represent over 2.35 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 derived using several years of Consumer Expenditure Survey data from the United States Department of Labor.

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.

Definition of Income

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

Comprehensive income in this study includes only monetary sources of income. Capital gains and pension benefits are included when realized, not as they accrue, and no adjustment is made for inflation or for the impact of family size on ability-to-pay.

The derivation of money income begins with federal adjusted gross income (FAGI), the broadest income tax concept of income. Various measures of nontaxable income are added to FAGI in deriving comprehensive money income.

Federal Adjusted Gross Income (FAGI)

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

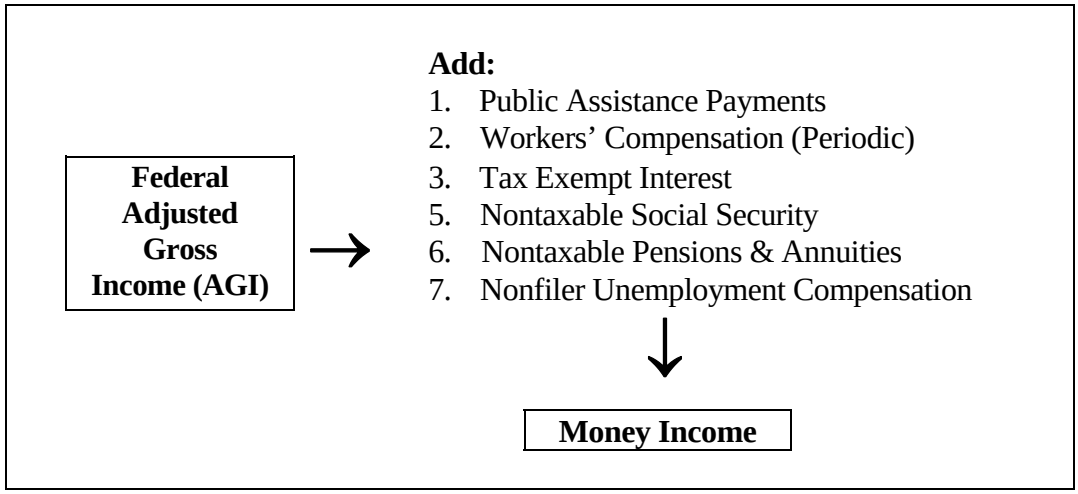
- Wages and salaries
- Income from business
- Gains from sale of capital assets
- Interest, rent, royalties, and dividends
- Alimony
- Annuities and pensions
- Prizes and awards
- A portion of social security payments
- Unemployment compensation

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

Additions to FAGI

Income from a number of sources is added to FAGI in deriving a comprehensive measure of Minnesota money income. These include:

- public assistance payments
- wage replacement workers' compensation
- tax exempt interest
- nontaxable social security
- nontaxable pensions and annuities
- unemployment compensation received by nonfilers
- other income (including wages and salaries) received by households not filing an income tax return.



Income Not Included in Money Income

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

Minnesota money income also excludes some forms of cash income. Two particular omissions should be noted. First, due to data limitations, only a portion of wage and salary and other income could be added to other sources of income, such as public assistance and social security benefits, for taxpayers who file neither an income tax nor a property tax refund return. This results in an understatement of money income and an overstatement of tax burdens for the lowest income groups. Second, veterans' benefits are excluded (except for those reported on property tax refund returns).

Comparison to Personal Income

A commonly used measure of income is the personal income statistic produced by the U.S. Department of Commerce, Bureau of Economic Analysis. That statistic differs from FAGI in a number of ways. The most important components of personal income that are not included in FAGI are nontaxable transfer payments, other exempt income, employer contributions for employee pension and insurance funds, and the investment income of life insurance carriers and pension plans. The first two of these are included in Minnesota money income as defined for this study; the latter two are not. It should also be noted that personal income does not include some significant items that are included in FAGI and hence in this study. These include capital gains, taxable pensions and social security, and Medicare taxes.

The Accounting Period

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

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

Definition of a Household

This study combines dependents who file their own income tax return with taxpayers claiming them as dependents to form a single household. The most common situation is a student working part-time and claimed as a dependent on the parent's tax return. If not combined into a single household, these part-time workers would be treated as separate, low-income individuals in the study, with misleading results.

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

Differences in Household Size

In this study, households are divided into income classes with no adjustment for household size. For example, all households with incomes between $40,000 and $50,000 are considered as a group, whether the household consists of a single person or a family of four. In the incidence study sample, the poorest 20 percent of households are mainly single-person households, while almost all high-income households include two or more individuals.

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.

- 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. For purposes of this study, these are considered taxes on households even though they are paid by businesses. The term "business taxes" in this study does not include these taxes.

2. Incidence of Taxes on Business

   Most taxes on business property, business purchases, and corporate income are partially shifted to consumers and workers. 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 1994 survey by the Minnesota Lottery[21] provided substantial information about how gambling varies by income level. That information was supplemented by data from a Wisconsin Lottery Tracking Study and from the Consumer Expenditure Survey.

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 two 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 2004, the burden of the mortgage registration tax was distributed over all mortgage holders (in proportion to mortgage interest paid in 2004); the deed transfer tax burden was distributed over all homeowners (in proportion to the estimated market value of the home).

[21] Minnesota State Lottery (1994). *Gambling in Minnesota.* St. Cloud University Survey Research, February.

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 $6.4 billion in business taxes in 2004, 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, Minnesota capital, Minnesota 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 A*, using the example of a $120 million property tax on capital in the manufacturing sector.

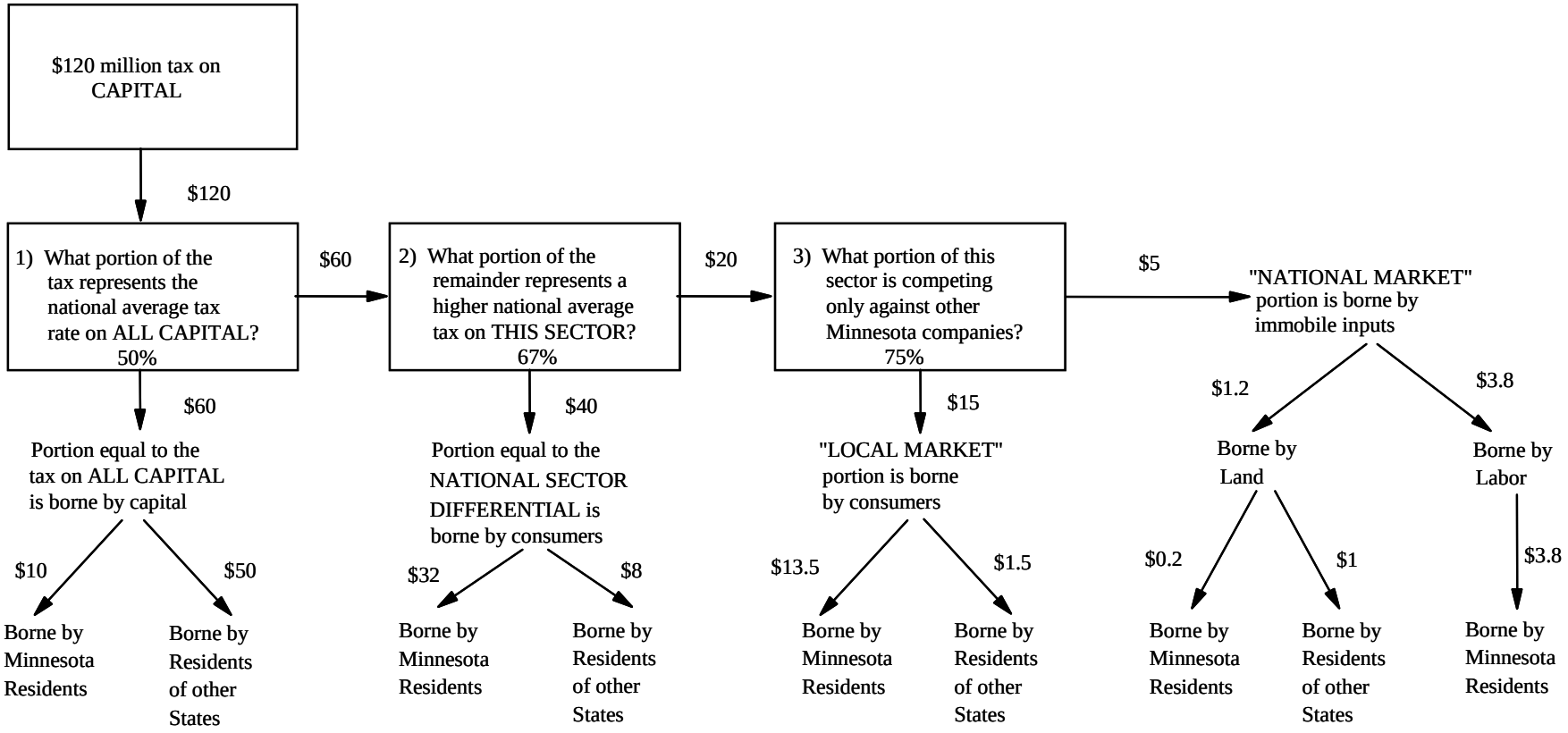
Question 1. What portion of this $120 million Minnesota tax represents the national average tax on all capital? If all states levied an identical tax on *all* forms of capital, capital would be unable to shift that tax to others and the entire burden would be borne by capital. Given the variation in 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 A-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.

Figure A-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.

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 A-1*.)

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 A-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 A-1* summarizes the allocators used in this final step.

Table A-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 A-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 A-2
Distribution of Business Tax Burden by Taxpayer Category (2004)

Tax Type	Percent Borne by Minnesota Taxpayers			Percent Exported
	Consumers	Labor	Capital	
State Taxes				
Corporation franchise tax	42%	8%	3%	47%
Sales and excise taxes				
General sales and use tax	57%	1%	8%	34%
Motor vehicle sales tax	40%	9%	10%	41%
Motor fuels excise taxes	59%			41%
Mortgage and deed taxes	20%		36%	44%
Gross earnings taxes				
Insurance premiums taxes	24%		13%	63%
In lieu of property taxes				
Motor vehicle registration tax	40%	9%	10%	41%
Solid waste management taxes	85%		4%	11%
State property tax				
Commercial	33%		17%	50%
Industrial	6%		7%	87%
Utility	53%	4%	2%	41%
Local Taxes				
Property taxes				
General property tax (gross - credits)				
Commercial	33%		17%	50%
Industrial	6%		7%	87%
Farm (other than residence)			100%	
Rental housing (before PTR)	40%		50%	10%
Utility	53%	4%	2%	41%
Minerals			11%	89%
Mining production taxes (taconite)			1%	99%
Local sales taxes	57%	1%	8%	34%
Local gross earnings taxes	53%	4%	2%	41%

Incremental vs. "Average" Incidence

The analysis in this study assumes that markets are in equilibrium, with economic factors fully adjusted to tax rates here and in other states. Analyzing the effect of a tax change poses a different problem.

The incidence of a *change* in business taxes would be different from those presented in this study. Compared to the results in this study, economic theory suggests that the long-run incidence impact of a change in Minnesota business taxes would tend to 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).

The logic of business tax incidence described in this Appendix divides a business tax on capital 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.*

The incidence of each of the three portions of the tax will generally be different. For example, the first part might be borne entirely by capital (in lower returns), the second entirely by Minnesota consumers (in higher prices), and the third primarily by Minnesota labor (in reduced wages). The "average" incidence, as presented in this study, would be a mixture of all three. In contrast, a change in the tax would change only the third portion –the *Minnesota differential*. As a result, the "incremental incidence" of a change in tax can be very different from the "average incidence" of an existing tax. This study only reports the latter. Great care should be taken in applying the results reported here to a proposed change in a tax on business.

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).

FAGI – or federal adjusted gross income, consists of total money income from all taxable sources less certain expenses incurred in earning that income. The major taxable sources of income include (but are not limited to) the following: wages and salaries, income from business, gains from sale of capital assets, interest, rent, royalties, dividends, alimony, annuities and pensions, prizes and awards, a portion of social security payments, and unemployment compensation.

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. Household income consists of federal adjusted gross income plus wage replacement workers' compensation, tax exempt interest, nontaxable social security, nontaxable pensions and annuities, unemployment compensation received by nonfilers, and other income (including wages and salaries) received by households not filing an income tax return. Excluded from the definition is any noncash income, such as food stamps or income in kind.

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. The sector definitions are those in the North American Industrial Classification System (NAICS).

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

270C.13 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 as follows: (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.

Subd. 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 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.

Subd. 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, 2005 c 151 art 1 s 15.