

**Revised April 24, 2013** to correct errors for taxes projected to 2015. Changes were made to each of the following:

Executive Summary

Chapter 1

Chapter 3

Tables 4-3, 4-4, and 4-5.

Please discard earlier versions of the report.

# 2013 Minnesota Tax Incidence Study

(Using November 2012 Forecast)

An analysis of Minnesota's household and business taxes.  
March 2013

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# **2013 Minnesota Tax Incidence Study**

**Analysis of Minnesota's household  
and business taxes.**

**MINNESOTA · REVENUE  
Tax Research Division**

**March 1, 2013**

The *Tax Incidence Study* is available on the  
Department of Revenue's Internet web site at  
[www.revenue.state.mn.us/research\\_stats/Pages/Tax\\_Incidence\\_Studies.aspx](http://www.revenue.state.mn.us/research_stats/Pages/Tax_Incidence_Studies.aspx)



# MINNESOTA • REVENUE

March 1, 2013

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

I am pleased to transmit to you the twelfth 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 2010. 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 2015. By forecasting incidence into the future, it is possible to give policymakers 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 2015 projections also reflect the impact of the forecast for economic growth and expected changes in the distribution of income on the tax system. This version of the 2015 projections is based on the November 2012 economic forecast from the Department of Management and Budget.

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 \$90,000.

Sincerely,



Myron Frans  
Commissioner



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## Executive Summary

This study reports the distribution of calendar year 2010 Minnesota state and local taxes in relation to taxpayer income, along with projections for calendar year 2015. It answers the question, “Who pays Minnesota’s state and local 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 twelfth biennial tax incidence study prepared in response to the statutory requirement enacted in 1990.

The report estimates 1) how the total Minnesota 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 state and local tax burden.<sup>1</sup>

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 final burden.

The report:

- Analyzes \$24.3 billion in taxes collected in 2010, a total that represents over 99 percent of all state and local taxes.
- Identifies the shares paid initially by households (63.3 percent by Minnesota residents and 3.4 percent by nonresidents) and the share paid initially by business (33.3 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 2010 results forward to 2015, accounting for the effects of both law changes and economic growth on the mix and level of state and local taxes.

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<sup>1</sup> Throughout this study, the phrase “tax burden” refers to the burden of Minnesota’s state and local taxes on Minnesota residents. The study includes no analysis of either federal taxes or taxes imposed in other states.

Conclusions of the research are:

- Of the total \$24.3 billion in 2010 taxes, 83.1 percent of the burden ultimately falls on Minnesota residents (\$20.2 billion). The remaining \$4.1 billion of the tax burden is exported to nonresident consumers or nonresident owners of capital.
- In 2010, the state and local tax burden on Minnesota households remained unchanged from 2008 at 11.5 percent of income.
- The local tax share of tax revenue rose from 29.1 percent in 2008 to 30.8 percent in 2010 but is projected to fall to 30.0 percent in 2015. The state tax share fell from 70.9 percent in 2008 to 69.2 percent in 2010 but is projected to rise to 70.0 percent in 2015.
- The share of state and local revenue derived from income taxes fell from 35.2 percent in 2008 to 32.8 percent in 2010 but is projected to rise to 35.7 percent in 2015. The property tax share increased from 32.1 percent in 2008 to 33.9 percent in 2010 but is projected to fall to 32.2 percent in 2015. The consumption tax share rose between 2008 and 2010, from 32.7 percent to 33.3 percent, but is projected to fall substantially (to 32.0 percent) in 2015.
- The business tax share of total tax revenue rose from 32.1<sup>2</sup> percent in 2008 to 33.3 percent in 2010 but is projected to fall to 33.0 percent in 2015.
- After allowing for the shifting of business taxes, the Minnesota tax system in 2010 was somewhat regressive (as it had been in 2008). Effective tax rates again exceeded the 11.5 percent average for every decile except the tenth. The full-sample Suits index, a measure of the progressivity or regressivity of a tax or tax system, fell from -0.057 in 2008 to -0.060 in 2010<sup>3</sup>. This change suggests a slight increase in overall regressivity.
- Minnesota's refundable income tax credits and property tax refunds for homeowners and renters substantially reduce overall regressivity. In their absence, the 2010 Suits index would fall from -0.060 to -0.083.
- Total Minnesota income is expected to grow by 23 percent between 2010 and 2015. Tax receipts and tax burdens on Minnesotans are forecast to grow more slowly (at 20 percent), so the overall effective tax rate is projected to fall from 11.5 percent to 11.3 percent of income.
- The full-sample Suits index is projected to rise from -0.060 in 2010 to -0.049 in 2015. Income growth is expected to outpace tax growth in every decile.

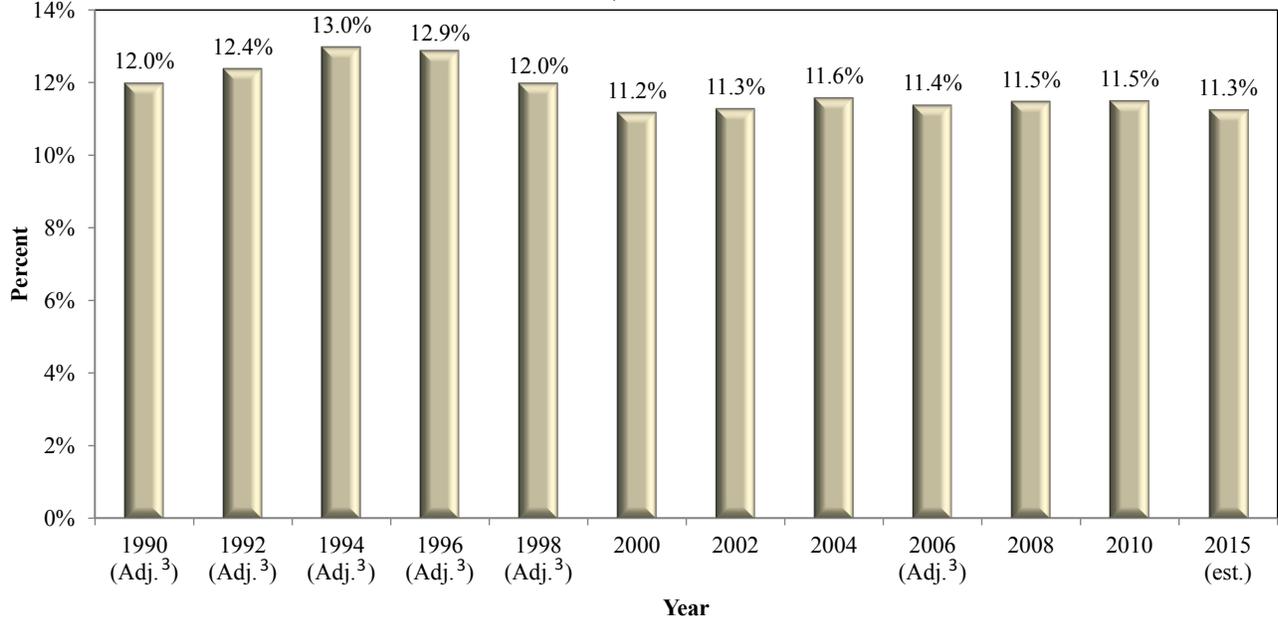
The twelve biennial tax incidence studies cover 24-year a period. Comparison with earlier reports provides some historical context for the results of the current study. *Figures E-1* and *E-2* below show how effective tax rates and Suits indexes have changed over time. The effective tax rate is the ratio of tax burden to total household income. For the Suits index, positive values reflect progressivity and negative values show regressivity. To allow comparability to earlier studies, *Figure E-2* shows population-decile Suits indexes as well as the more accurate full-sample Suits indexes, which were not reported until tax year 2004. *Chapter 1* provides further explanation for these trends.

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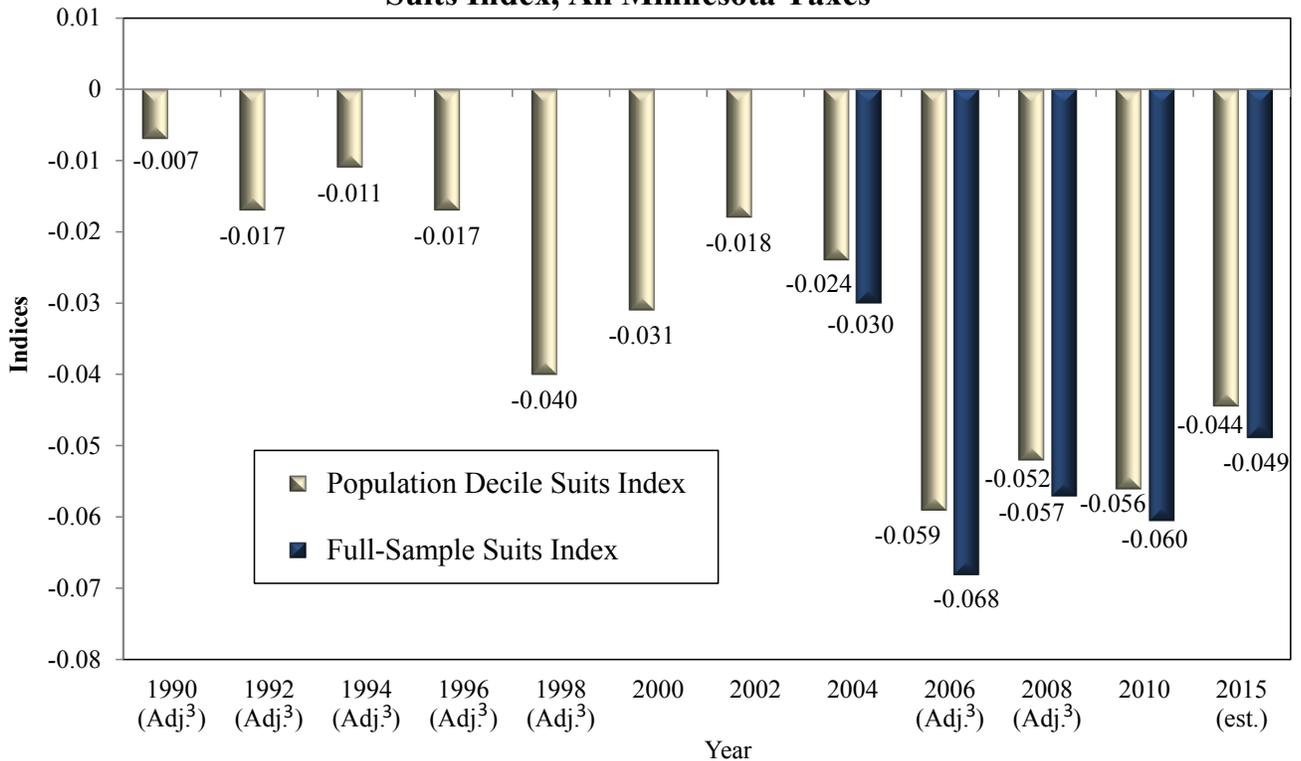
<sup>2</sup> This differs from published number due to an error in the 2008 database.

<sup>3</sup> These are "full-sample" Suits indexes. The "population-decile" Suits index fell from -0.052 in 2008 to -0.056 in 2010 and is projected to rise to -0.040 in 2015. The difference is explained in *Chapter 4, Section B*. The 2008 indexes differ from the published numbers due to an error in the 2008 database.

**Figure E-1**  
**Effective Tax Rates, All Minnesota Taxes<sup>4</sup>**



**Figure E-2**  
**Suits Index, All Minnesota Taxes<sup>5</sup>**



<sup>4</sup> Effective tax rates for 2008 and later years would have been 0.2 percentage points higher except for a methodological change that expanded the definition of income.

<sup>5</sup> The earliest studies (before 2000) did not include all of the taxes included in more recent studies, so both the effective tax rates (*Figure E-1*) and Suits indexes (*Figure E-2*) are adjusted to make them comparable. The published report for 2006 did not include the Health Impact Fees. Unadjusted effective tax rates reported in the published studies were 11.8%, 12.1%, 12.9%, 12.7%, 11.8% for 1990-1998, and 11.2% for 2006. The unadjusted Suits index was -0.004 in 1990, -0.013 in 1992, and -0.062 (full-sample Suits) in 2006. The 2008 Suits indexes are corrected for errors in the database for that year.



## Chapter 1: Overview of Study

### Minnesota State and Local Tax Collections

Minnesota collected \$24.3 billion in state and local taxes in 2010.<sup>6</sup> By 2015, collections are expected to rise to \$29.1 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.<sup>7</sup>

Minnesota's 2010 state and local taxes are summarized in *Table 1-1*. In 2010, 69 percent of the \$24.3 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 30 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 2010 results are based on a stratified random sample of over 100,000 Minnesota households. The 2015 results are projected forward from 2010 based on the November 2012 economic forecast and are adjusted to account for law changes that took effect after 2010.

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<sup>6</sup> If the \$36 million excluded from this study were added, the total would round to \$24.4 billion (as on Table 1-1).

<sup>7</sup> Throughout this study, the phrase "tax burden" refers to the burden of Minnesota's state and local taxes on Minnesota residents. The study includes no analysis of either federal taxes or taxes imposed in other states.

**Table 1-1**  
**Minnesota State and Local Tax Collections in 2010**  
**(\$ Millions)**

State		Local		State and Local
<b>Included</b>		<b>Included</b>		<b>Included</b>
Individual income tax	\$7,030	Gross property taxes (after credits)		
Corporate franchise tax	800	Homestead property taxes	\$3,595	
Estate tax	155	Property taxes on residential		
General sales and use tax	5,018	recreational property taxes (cabins)	180	
Motor vehicle sales tax	478	Rental property taxes (residential)	874	
Motor fuels excise taxes	838	Other business property taxes		
Alcoholic beverage excise taxes	77	(including farming and taconite)	2,531	
Cigarette & tobacco excise taxes <sup>1</sup>	430			
Insurance premiums tax	360	Subtotal	\$7,179	
Gambling taxes	37	Local sales taxes	214	
MinnesotaCare taxes	470	Gross earnings taxes	110	
Motor vehicle registration tax	544			
Mortgage and deed taxes	153			
Waste taxes	65			
State property tax	782			
Property tax refunds	(416)			
<b>Total</b>	<b>\$16,822</b>	<b>Total</b>	<b>\$7,502</b>	<b>Total</b>
				<b>\$24,324</b>
<b>Omitted</b>		<b>Omitted</b>		<b>Omitted</b>
Controlled substances tax		General authorization		
Airflight property tax		lodging taxes		
Aircraft registration tax		Auxiliary forest tax		
Rural electric cooperatives tax		Contamination tax		
Metropolitan solid waste landfill fee		Severed mineral interests tax		
		Unmined taconite tax		
		Aggregate material production tax		
<b>Total</b>	<b>\$18</b>	<b>Total</b>	<b>\$18</b>	<b>Total</b>
				<b>\$36</b>
<b>Total State Tax Collections</b>	<b>\$16,840</b>		<b>\$7,520</b>	<b>\$24,360</b>

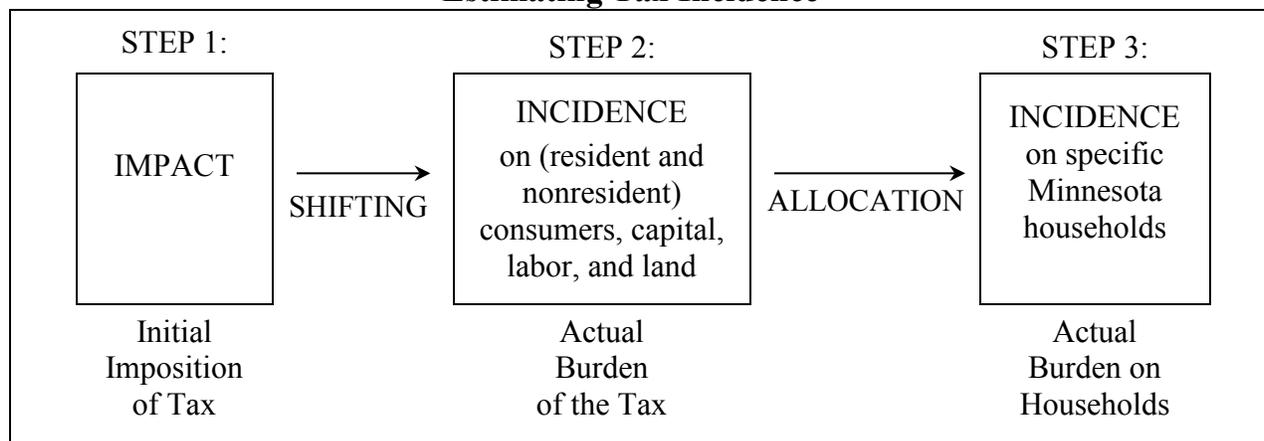
<sup>1</sup>Includes Health Impact Fees.

## 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**

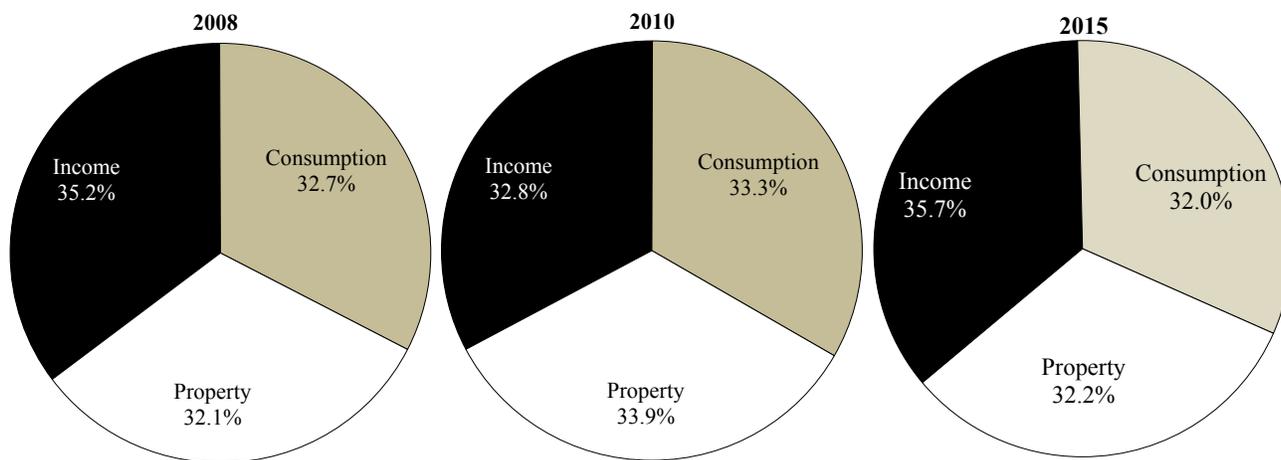


Each of the three steps shown in Figure 1-1 is discussed separately below. The major findings from this study are reviewed in the context of that three-step estimating process.

### Step 1 – Impact

Figure 1-2, derived from Tables 1-2 and 1-3, describes the revenues actually collected in 2008 and 2010 and expected to be collected in 2015. Taxes are divided into three general categories: Income, Consumption, and Property.<sup>8</sup>

**Figure 1-2**  
**Minnesota Tax System Impacts by Tax Type**



<sup>8</sup> 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. Property tax is net of property tax refunds. Parts may not sum to 100% due to rounding.

The three graphs in *Figure 1-2* show that the income tax share fell in 2010 but is expected to rise significantly through 2015. Both the property tax share and the consumption tax share rose significantly between 2008 and 2010, and both are expected to fall through 2015. These swings in tax shares are primarily due to the recession and recovery.

- Total household income grew less than one percent between 2008 and 2010. For the first time, household income is below what it was in the previous study. The income ranges for every population decile are below what they were in the previous study. In contrast, income is expected to grow by 23 percent between 2010 and 2015 (an average of 4.2 percent per year).
- As a general rule (in the absence of any law change), income tax revenue falls sharply in a recession but tends to rise faster than income when the economy expands. Revenue from income taxes fell by 4.7 percent between 2008 and 2010, but is expected to rise by 30 percent – faster than income – between 2010 and 2015.
- Taxes on consumption (sales and excise taxes) are generally less responsive to changes in income. Consumption tax revenue rose by 4.2 percent between 2008 and 2010 (due mostly to increased tax rates) and is projected to rise by 15 percent – much slower than income – between 2010 and 2015.
- Property taxes differ from income and consumption taxes. They are not as directly affected by a recession. With fixed income tax rates, income tax revenue falls automatically as income falls. The same is true of sales tax revenue. In contrast, property tax levies are set to raise a fixed amount of dollars. The recession and falling property values may eventually affect property tax levies, but only with a lag. The rate of growth in property tax levies also 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. Property taxes increased 7.8 percent between 2008 and 2010, despite the recession. They are projected to rise by 14 percent – much slower than income – between 2010 and 2015.

Another way of looking at Minnesota's tax system is to consider how tax revenues are split between state and local taxes. Between 2008 and 2010, the state's share fell from 70.9 percent to 69.2 percent. By 2015, it is expected to rise to 70.0 percent. The local share (including school taxes) rose from 29.1 percent in 2008 to 30.8 percent in 2010 and is expected to fall to 30.0 percent by 2015. Although local tax revenue is projected to rise by 16.5 percent, state tax revenue is projected to rise by 21.1 percent.

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 any tax paid by business that is *not* expected to be fully reflected in the price paid by consumers. Business taxes include, among others, the corporate franchise tax, business property taxes (including property taxes on rental housing), the sales tax on business purchases, and insurance taxes on business insurance.

**Table 1-2**  
**2010 State and Local Tax Collections by**  
**Type of Tax and Taxpayer Category**

Tax Type	Collections		Percentage by Taxpayer Category			
	Total (\$ Millions)	Percent Distribution	Households		Business	Total
			Resident	Nonresident		
<b>State Taxes</b>						
<b>Taxes on Income and Estates</b>						
Individual income tax	\$7,030	28.9%	94.6%	5.4%		100.0%
Corporation franchise tax <sup>1</sup>	800	3.3%			100.0%	100.0%
Estate tax	155	0.6%	100.0%			100.0%
<b>Total Income and Estate Taxes</b>	<b>\$7,985</b>	<b>32.8%</b>	<b>85.3%</b>	<b>4.7%</b>	<b>10.0%</b>	<b>100.0%</b>
<b>Taxes on Consumption</b>						
Total sales tax	\$5,497	22.6%	53.3%	5.0%	41.7%	100.0%
General sales/use tax	5,018	20.6%	53.6%	5.5%	40.9%	100.0%
Sales tax on motor vehicles	478	2.0%	50.3%		49.7%	100.0%
Motor fuels excise taxes	838	3.4%	55.0%	5.6%	39.4%	100.0%
Alcoholic beverage excise taxes	77	0.3%	92.9%	7.1%	0.0%	100.0%
Cigarette and tobacco excise taxes <sup>2</sup>	430	1.8%	94.8%	5.2%	0.0%	100.0%
Insurance premiums taxes	360	1.5%	76.7%		23.3%	100.0%
Gambling taxes	37	0.2%	99.0%	1.0%	0.0%	100.0%
MinnesotaCare taxes	470	1.9%	91.4%	8.6%	0.0%	100.0%
Solid waste management taxes	65	0.3%	47.0%		53.0%	100.0%
<b>Total Consumption Taxes</b>	<b>\$7,774</b>	<b>32.0%</b>	<b>59.8%</b>	<b>5.0%</b>	<b>35.2%</b>	<b>100.0%</b>
<b>Taxes on Property</b>						
State Property Tax	\$782	3.2%	3.9%	1.0%	95.1%	100.0%
Residential recreational property	38	0.2%	80.2%	19.8%		100.0%
Commercial <sup>3</sup>	528	2.2%			100.0%	100.0%
Industrial	148	0.6%			100.0%	100.0%
Utility	68	0.3%			100.0%	100.0%
Motor vehicle registration tax	544	2.2%	67.6%		32.4%	100.0%
Mortgage and deed taxes	153	0.6%	76.3%		23.7%	100.0%
<b>Total Property Taxes</b>	<b>\$1,479</b>	<b>6.1%</b>	<b>34.8%</b>	<b>0.5%</b>	<b>64.6%</b>	<b>100.0%</b>
<b>Property Tax Refunds</b>						
Homeowners	-\$278	-1.1%	100.0%			100.0%
Renters	-139	-0.6%	100.0%			100.0%
<b>Total Property Tax Refunds</b>	<b>-\$416</b>	<b>-1.7%</b>	<b>100.0%</b>			<b>100.0%</b>
<b>Total State Taxes</b>	<b>\$16,822</b>	<b>69.2%</b>	<b>68.7%</b>	<b>4.6%</b>	<b>26.7%</b>	<b>100.0%</b>
<b>Local Taxes</b>						
Property Taxes	\$7,179	29.5%	52.1%	0.5%	47.4%	100.0%
General Property Tax	7,104	29.2%	52.6%	0.5%	46.9%	100.0%
Homeowners (before PTR)	3,595	14.8%	100.0%			100.0%
Residential recreational property	180	0.7%	80.2%	19.8%		100.0%
Commercial <sup>3</sup>	1,415	5.8%			100.0%	100.0%
Industrial	396	1.6%			100.0%	100.0%
Farm (other than residence) <sup>4</sup>	454	1.9%			100.0%	100.0%
Rental Housing (before PTR)	874	3.6%			100.0%	100.0%
Utility	191	0.8%			100.0%	100.0%
Mining Production Taxes (taconite)	74	0.3%			100.0%	100.0%
Taxes on consumption						
Local Sales Taxes	214	0.9%	53.6%	5.5%	40.9%	100.0%
Local Gross Earnings Taxes	110	0.5%			100.0%	100.0%
<b>Total Local Taxes</b>	<b>\$7,502</b>	<b>30.8%</b>	<b>51.4%</b>	<b>0.6%</b>	<b>48.0%</b>	<b>100.0%</b>
<b>Total State and Local Taxes</b>	<b>\$24,324</b>	<b>100.0%</b>	<b>63.3%</b>	<b>3.4%</b>	<b>33.3%</b>	<b>100.0%</b>

<sup>1</sup>Includes taconite/iron ore occupation tax.

<sup>2</sup>Includes Health Impact Fees.

<sup>3</sup>Includes resorts and railroads.

<sup>4</sup>Includes timber.

**Table 1-3**  
**2015 State and Local Tax Collections by**  
**Type of Tax and Taxpayer Category**

Tax Type	Collections		Percentage by Taxpayer Category			
	Total (\$ Millions)	Percent Distribution	Households		Business	Total
			Resident	Nonresident		
<b>State Taxes</b>						
<b>Taxes on Income and Estates</b>						
Individual income tax	\$9,285	31.9%	94.6%	5.4%		100.0%
Corporation franchise tax <sup>1</sup>	963	3.3%			100.0%	100.0%
Estate tax	155	0.5%	100.0%			100.0%
<b>Total Income and Estate Taxes</b>	<b>\$10,403</b>	<b>35.7%</b>	<b>86.0%</b>	<b>4.8%</b>	<b>9.3%</b>	<b>100.0%</b>
<b>Taxes on Consumption</b>						
Total sales tax	\$6,252	21.5%	53.2%	4.8%	41.9%	100.0%
General sales/use tax	5,546	19.1%	53.6%	5.5%	40.9%	100.0%
Sales tax on motor vehicles	707	2.4%	50.3%		49.7%	100.0%
Motor fuels excise taxes	872	3.0%	55.0%	5.6%	39.4%	100.0%
Alcoholic beverage excise taxes	83	0.3%	92.9%	7.1%	0.0%	100.0%
Cigarette and tobacco excise taxes <sup>2</sup>	419	1.4%	94.8%	5.2%	0.0%	100.0%
Insurance premiums taxes	442	1.5%	76.7%		23.3%	100.0%
Gambling taxes	90	0.3%	99.0%	1.0%	0.0%	100.0%
MinnesotaCare taxes	593	2.0%	91.4%	8.6%	0.0%	100.0%
Solid waste management taxes	78	0.3%	47.0%		53.0%	100.0%
<b>Total Consumption Taxes</b>	<b>\$8,829</b>	<b>30.3%</b>	<b>59.9%</b>	<b>4.9%</b>	<b>35.2%</b>	<b>100.0%</b>
<b>Taxes on Property</b>						
State Property Tax	\$870	3.0%	4.3%	1.1%	94.6%	100.0%
Residential recreational property	47	0.2%	80.2%	19.8%		100.0%
Commercial <sup>3</sup>	566	1.9%			100.0%	100.0%
Industrial	160	0.5%			100.0%	100.0%
Utility	97	0.3%			100.0%	100.0%
Motor vehicle registration tax	614	2.1%	67.6%		32.4%	100.0%
Mortgage and deed taxes	208	0.7%	76.3%		23.7%	100.0%
<b>Total Property Taxes</b>	<b>\$1,691</b>	<b>5.8%</b>	<b>36.1%</b>	<b>0.6%</b>	<b>63.3%</b>	<b>100.0%</b>
<b>Property Tax Refunds</b>						
Homeowners	-\$347	-1.2%	100.0%			100.0%
Renters	-210	-0.7%	100.0%			100.0%
<b>Total Property Tax Refunds</b>	<b>-\$557</b>	<b>-1.9%</b>	<b>100.0%</b>			<b>100.0%</b>
<b>Total State Taxes</b>	<b>\$20,365</b>	<b>70.0%</b>	<b>70.1%</b>	<b>4.6%</b>	<b>25.2%</b>	<b>100.0%</b>
<b>Local Taxes</b>						
Property Taxes	\$8,247	28.3%	48.9%	0.6%	50.5%	100.0%
General Property Tax	8,145	28.0%	49.5%	0.6%	49.9%	100.0%
Homeowners (before PTR)	3,833	13.2%	100.0%			100.0%
Residential recreational property	247	0.8%	80.2%	19.8%		100.0%
Commercial <sup>3</sup>	1,655	5.7%			100.0%	100.0%
Industrial	469	1.6%			100.0%	100.0%
Farm (other than residence) <sup>4</sup>	590	2.0%			100.0%	100.0%
Rental Housing (before PTR)	1,043	3.6%			100.0%	100.0%
Utility	308	1.1%			100.0%	100.0%
Mining Production Taxes (taconite)	102	0.4%			100.0%	100.0%
Taxes on consumption						
Local Sales Taxes	361	1.2%	53.6%	5.5%	40.9%	100.0%
Local Gross Earnings Taxes	134	0.5%			100.0%	100.0%
<b>Total Local Taxes</b>	<b>\$8,743</b>	<b>30.0%</b>	<b>48.3%</b>	<b>0.8%</b>	<b>50.9%</b>	<b>100.0%</b>
<b>Total State and Local Taxes</b>	<b>\$29,108</b>	<b>100.0%</b>	<b>63.6%</b>	<b>3.5%</b>	<b>33.0%</b>	<b>100.0%</b>

<sup>1</sup>Includes taconite/iron ore occupation tax.

<sup>2</sup>Includes Health Impact Fee.

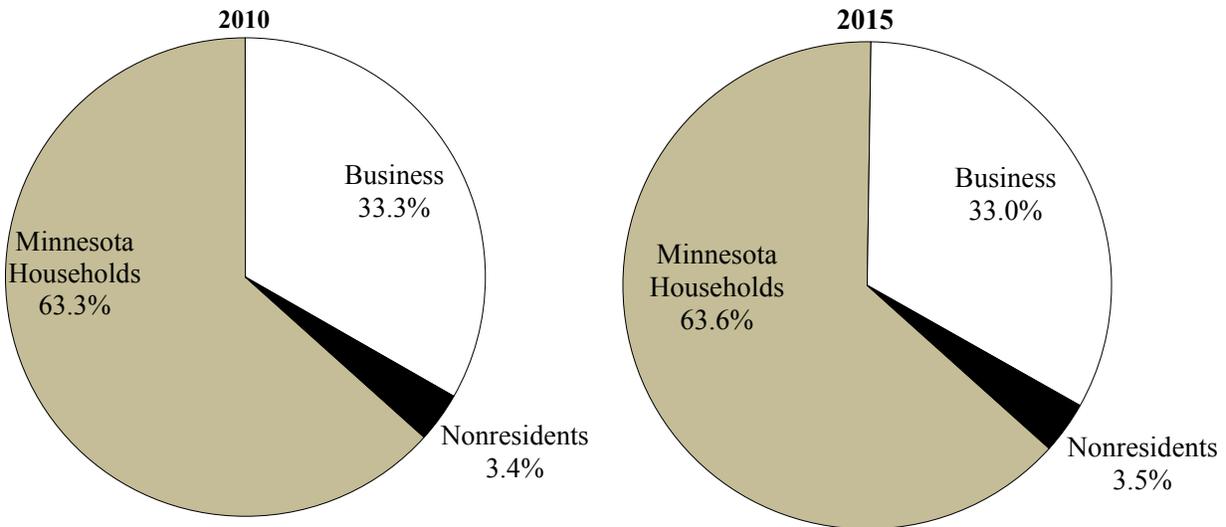
<sup>3</sup>Includes resorts and railroads.

<sup>4</sup>Farm includes timber.

Figure 1-3 shows that business taxes accounted for 33.3 percent of total state and local taxes in 2010. That share is expected to fall slightly in 2015.

**Figure 1-3**

**Minnesota Tax System Impacts: Business vs. Households**



Given the 20 percent rise in corporate income tax revenue forecast between 2010 and 2015, the small reduction in the business share may seem surprising. The corporate income tax accounted for less than one-tenth of total business taxes in 2010, but business property taxes – which accounted for more than half of total business taxes in 2010 – are also forecast to increase by 20 percent. Other business taxes are projected to grow less rapidly. Although total business taxes are projected to increase by 18.4 percent, individual taxes are projected to increase a bit faster at 20.3 percent.

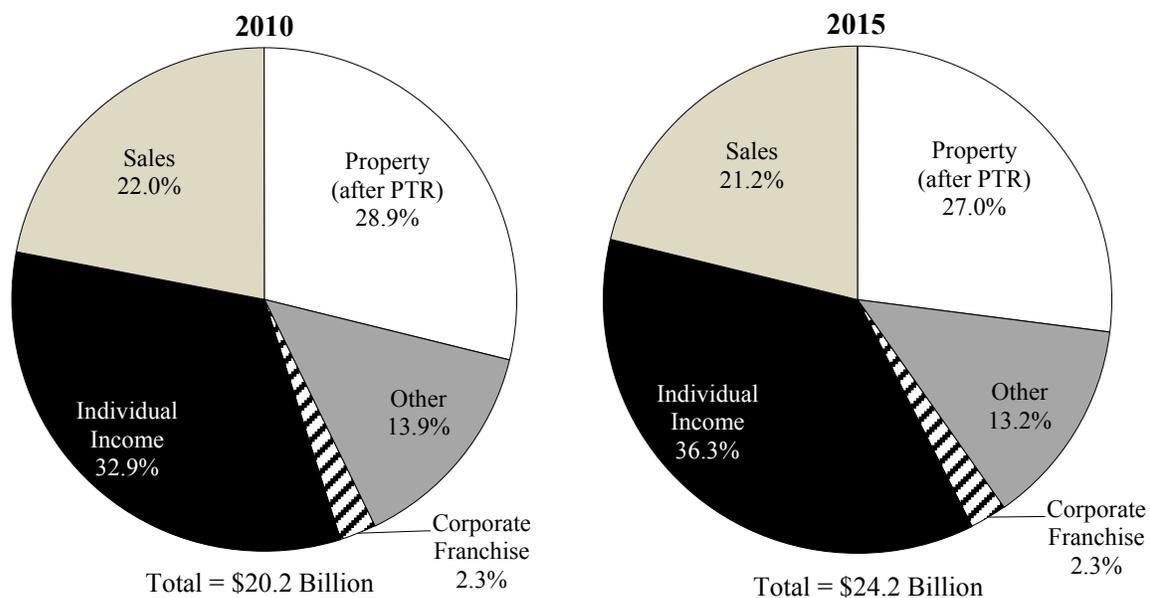
**Step 2 – Shifting**

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. *Appendix B* 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 2010 Minnesota households paid (either directly or indirectly through shifted business tax) a total of \$20.2 billion in Minnesota state and local taxes. This equals 83.1 percent of total state and local tax collections (\$24.3 billion). The other \$4.1 billion (16.9 percent) is “exported” to nonresidents or visitors to the state. Between 2010 and 2015 the total burden on Minnesotans will rise by 20.0 percent (to \$24.2 billion), increasing more slowly than income (projected to increase 22.7 percent), so the tax burden as percent of income will fall from 11.5 percent to 11.3 percent.

Between 2010 and 2015, the individual income tax and the corporate tax shares of the burden on Minnesota households are both projected to increase. The shares of property tax (after PTR), sales taxes, and other taxes each fall.

**Figure 1-4**  
**Tax Incidence After Shifting**



### 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 2.58 million households.<sup>9</sup> 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 state and local tax burden for each household. Effective tax rates are calculated by comparing the tax burden to the household’s income.

<sup>9</sup> 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 (2,575,184 in 2010) exceeds the number of households reported by the Census (2,087,227). A more detailed comparison is provided in the last section of *Chapter 5*.

## 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 the richest household, 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 full-sample Suits indexes for selected Minnesota state and local tax categories in 2010 and 2015. 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 regressive in 2010 (a full-sample Suits index of -0.060). State taxes were roughly proportional (-0.008), and local taxes were regressive (-0.182). Between 2010 and 2015, Minnesota’s overall population-decile Suits index is expected to rise (moving toward zero) from -0.060 to -0.049.

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

<b>Tax Category</b>	<b>2010 Suits Index</b>	<b>2015 Suits Index</b>
Personal Income Tax	+0.230	+0.215
Sales Taxes (State & Local)	-0.231	-0.222
Business Taxes	-0.187	-0.186
Individual Taxes	-0.021	-0.006
All State Taxes	-0.008	+0.007
All Local Taxes	-0.182	-0.185
Total Taxes	-0.060	-0.049

Unless otherwise noted, the Suits indexes cited in this study are calculated using the full sample of over 100,000 records. A Suits index calculated using only totals for ten groups of households (a “population-decile” or “income-decile” Suits index) will differ from this “full-sample” Suits index. See *Chapter 4, Section B* for further explanation.<sup>10</sup>

<sup>10</sup> Tables 2-1 and 3-1 below show both the full-sample Suits index and the population-decile Suits index for each individual tax in 2010 and 2015 respectively.

## *Effective Tax Rates by Decile*

For analytical purposes, Minnesota's households are divided into ten equal groups, or deciles. Each of these ten population deciles includes 10 percent of all households. The bottom (1<sup>st</sup>) decile includes the tenth with lowest incomes; the top (10<sup>th</sup>) 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).<sup>11</sup>

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 2010, effective tax rates rose from 11.7 percent of income in the fourth decile to 12.3 percent in the sixth decile, and then fell significantly to 10.3 percent of income in the tenth decile.<sup>12</sup>

Between 2010 and 2015, effective tax rates are projected to fall in every decile (though the tenth decile rounds to the same number in both years).

As shown in *Table 1-5*, Minnesota residents paid an estimated 11.5 percent of their 2010 total income in state and local taxes. Under current law (and with the current economic forecast), this is expected to fall to 11.3 percent in 2015. For 2010, the effective tax rate was 8.0 percent for state taxes and 3.5 percent for local taxes. By 2015, the effective state tax rate is projected to fall slightly (though it still rounds to 8.0 percent) and the effective local tax rate is projected to fall to 3.3 percent.

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<sup>11</sup> 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 those filing neither income tax nor property tax returns, additional wage and nonwage income is included if reported on W2s or 1099s. 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. For more information on how income is defined, see *Appendix A* of this report.

<sup>12</sup> The income ranges for each population decile are shown in *Table 2-2* (for 2010) and *Table 3-2* (for 2015).

**Table 1-5**  
**Minnesota Effective Tax Rates for 2010 and 2015<sup>1</sup>**  
**State and Local Taxes by Population Decile**

Population Decile	2010			2015		
	State	Local	Total	State	Local	Total
First	18.6%	13.5%	32.1%	16.4%	13.6%	29.9%
Second	9.0%	5.1%	14.0%	7.7%	4.9%	12.6%
Third	7.4%	4.9%	12.3%	6.6%	4.8%	11.4%
Fourth	7.1%	4.6%	11.7%	6.6%	4.3%	11.0%
Fifth	7.6%	4.4%	12.1%	7.5%	4.2%	11.7%
Sixth	7.9%	4.5%	12.3%	7.7%	4.2%	11.9%
Seventh	8.0%	4.2%	12.2%	8.0%	4.0%	12.0%
Eighth	8.2%	3.9%	12.0%	8.2%	3.6%	11.8%
Ninth	8.2%	3.5%	11.7%	8.3%	3.3%	11.6%
Tenth	7.9%	2.4%	10.3%	8.0%	2.3%	10.3%
Total	8.0%	3.5%	11.5%	8.0%	3.3%	11.3%

As shown in *Figure 1-5*, state tax burdens and local tax burdens are distributed quite differently. Total state taxes for 2010 (individual and business combined) were roughly proportional overall, with effective tax rates rising continuously from 7.1 percent in the fourth decile to 8.2 percent in the ninth decile before falling to 7.9 percent in the tenth decile. Effective local tax rates, essentially local property taxes (before any state property tax refunds), declined steadily with income and were regressive overall. Between 2010 and 2015, effective rates for state taxes are projected to fall in the first 6 deciles, increase slightly (but no change after rounding) in the 7<sup>th</sup> and 8<sup>th</sup>, and increase in the 9<sup>th</sup> and 10<sup>th</sup>. Effective tax rates for local taxes, in contrast, are expected to fall across the board.

**Figure 1-5**  
**Effective Tax Rates for 2010 and 2015**  
**State and Local Taxes by Population Decile**

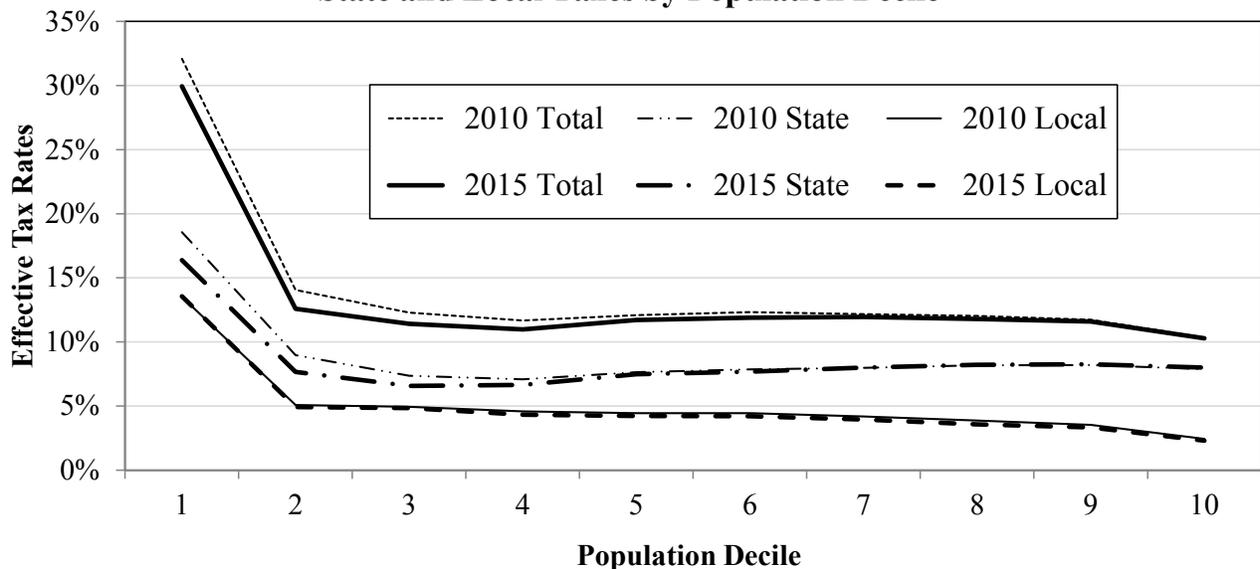


Table 1-6 and Figure 1-6 show that the patterns of effective rates for taxes paid by individuals versus businesses are also quite different. For 2010, effective rates for taxes paid by individuals increased from 7.5 percent of income in the third decile to 9.5 percent in the eighth decile, and then declined to 8.3 percent in the tenth decile.

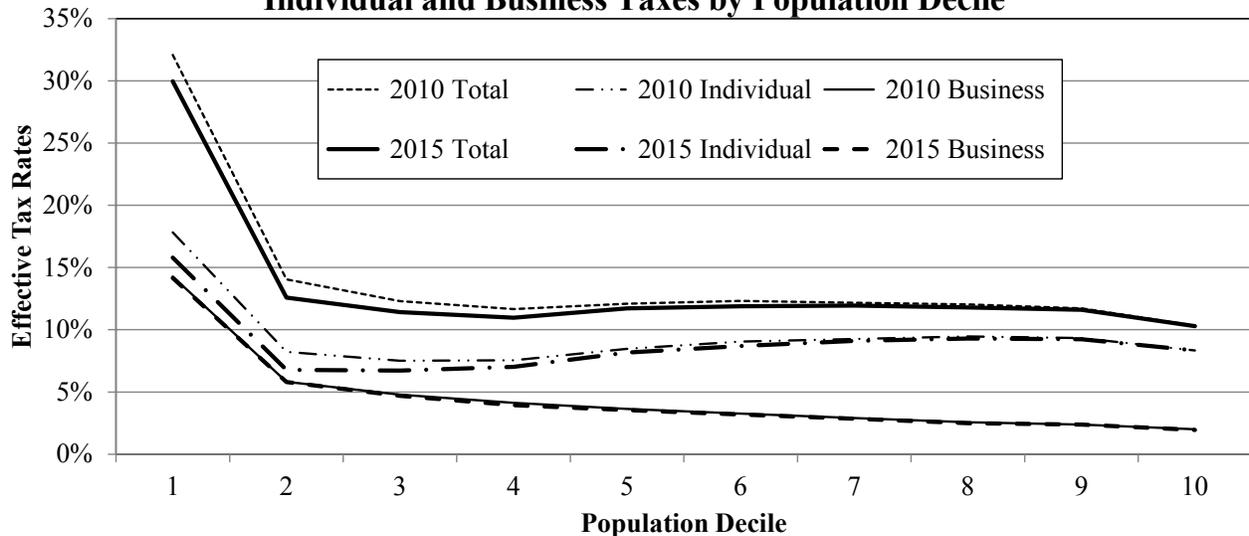
In contrast, Minnesota state and local taxes on businesses (after shifting) are regressive, with effective tax rates for 2010 falling from 5.8 to 2.0 percent between the second and tenth deciles. The overall effective rate for taxes on businesses after shifting was 2.7 percent and on individuals was 8.8 percent in 2010. For the projections to 2015, effective tax rates for both business taxes and individual taxes fall in every decile (though the rate for the top deciles is the same after rounding).

**Table 1-6**  
**Minnesota Effective Tax Rates for 2010 and 2015<sup>1</sup>**  
**Individual and Business Taxes by Population Decile**

Population Decile	2010			2015		
	Individual	Business	Total	Individual	Business	Total
First	17.8%	14.3%	32.1%	15.8%	14.2%	29.9%
Second	8.2%	5.8%	14.0%	6.8%	5.8%	12.6%
Third	7.5%	4.8%	12.3%	6.7%	4.7%	11.4%
Fourth	7.5%	4.1%	11.7%	7.0%	3.9%	11.0%
Fifth	8.5%	3.6%	12.1%	8.2%	3.5%	11.7%
Sixth	9.1%	3.3%	12.3%	8.7%	3.2%	11.9%
Seventh	9.3%	2.9%	12.2%	9.1%	2.8%	12.0%
Eighth	9.5%	2.6%	12.0%	9.3%	2.5%	11.8%
Ninth	9.3%	2.4%	11.7%	9.2%	2.4%	11.6%
Tenth	8.3%	2.0%	10.3%	8.3%	2.0%	10.3%
Total	8.8%	2.7%	11.5%	8.6%	2.7%	11.3%

<sup>1</sup>Parts may not sum to totals due to rounding.

**Figure 1-6**  
**Effective Tax Rates for 2010 and 2015**  
**Individual and Business Taxes by Population Decile**



### ***Effective Tax Rates in the First Decile***

As shown in *Table 1-5*, the total effective tax rate of 32.1 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 2010. 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 2010.

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.

If the first decile were excluded, the full-sample Suits index for 2010 would rise from -0.060 to -0.046 – still quite regressive.<sup>13</sup>

### **Historical Comparison with Earlier Studies**

Incidence data has been collected and published in a series of studies, of which this is the twelfth. That data extends back to 1990. It is interesting to consider the pattern of effective tax rates and Suits indexes over that time. This period illustrates the effect of the business cycle on incomes and tax receipts. It includes both periods of very rapid

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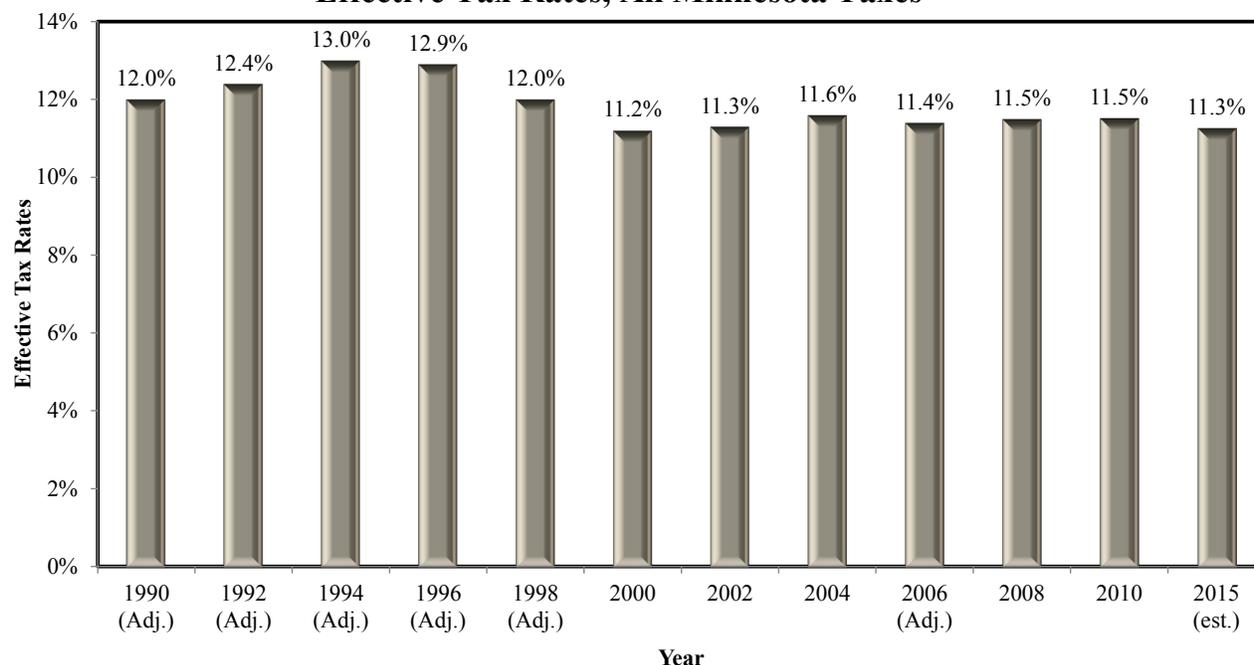
<sup>13</sup> The overall regressivity is more the result of the lower effective tax rate for the top decile. If both the 1<sup>st</sup> and 10<sup>th</sup> deciles were excluded, the full-sample Suits index would rise to -0.012 – close to proportional.

growth in the mid- and late 1990's, the slowdown of the early 1990's, the contraction from 2000 to 2002, solid growth between 2002 and 2008, and recession in 2010.

As shown in *Figure 1-7*, effective tax rates over the period 1990–2010 first rise but then fall and remain well below those of the 1990's. The effective tax rate for the tax system as a whole was 12.0 percent in 1990. 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 through 2000 was attributable partly to tax cuts and partly to income growth, especially in the late 1990's, that outstripped tax collections (see *Table 1-7*). As the economy emerged from recession after 2002, the effective tax rate rose to 11.6 percent in 2004, but fell to 11.5 percent in 2008 and 2010 and is projected to continue to fall to 11.3 percent in 2015.

**Figure 1-7**

**Effective Tax Rates, All Minnesota Taxes<sup>14</sup>**



Changes in the population-decile Suits index are shown in *Table 1-7* and *Figure 1-8*. The tax system was essentially proportional in 1990, with a population-decile Suits index near zero. The population-decile Suits index fell from -0.017 in 1992 to a low of -0.040 in 1998. It rebounded somewhat in succeeding years, reaching -0.018 in 2002, but then fell to -0.024 in 2004. It dropped significantly to -0.059 in 2006, -0.054 in 2008, and -0.056 in 2010. It is projected to rise to -0.044 in 2015.

<sup>14</sup> 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.

Note that the HIF is included in the most recent studies, so 2006 numbers are adjusted to include the HIF as well.

Also note that the effective tax rates for years 2008 and after would have been 0.2 percentage points higher, if this study had not broadened the definition of income. So the slight drop after 2004 is artificial.

Figure 1-8 also shows the more accurate full-sample Suits index for years 2004 and after. This report generally refers to the full-sample Suits index, but it was not reported until tax year 2004.

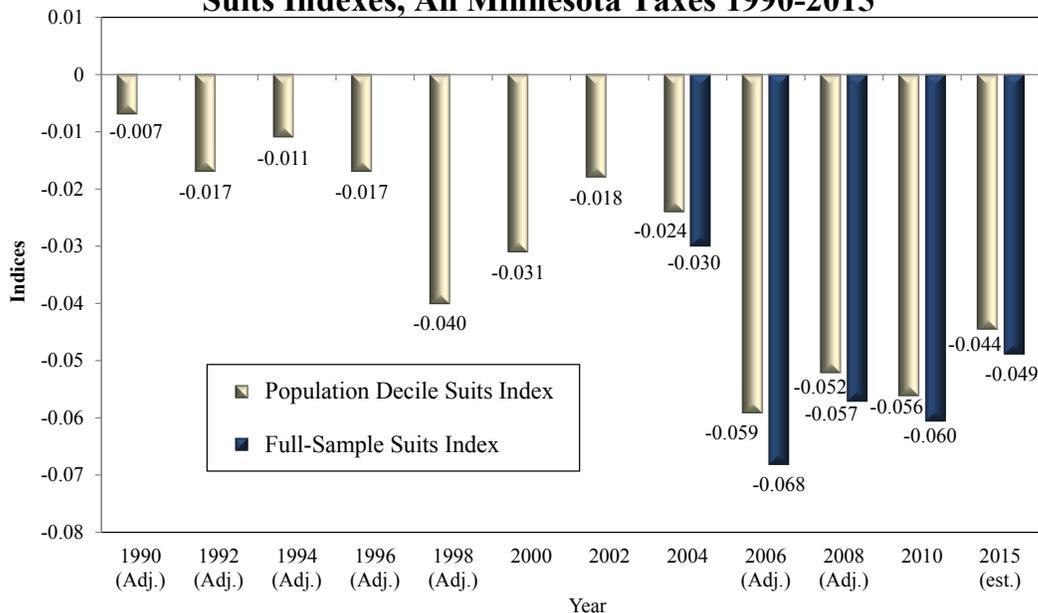
**Table 1-7**  
**Households, Household Income, Total Taxes,**  
**Effective Tax Rates, and Population-Decile Suits Indexes, All Taxes, 1990-2015**

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	Pop. Decile Suits Index
1990	2,072,488	65,842,600	9,575,000	97.1%	\$7,747,743	11.8%	-0.007
1992	2,120,967	74,410,299	11,050,000	96.9%	8,991,383	12.1%	-0.017
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	11.6%	-0.024
2006	2,448,872	165,040,421	22,310,000	99.9%	18,753,567	11.4%	-0.059
2008	2,541,183	173,854,675	23,796,000	99.9%	19,949,473	11.5%	-0.057
2010	2,575,184	175,349,202	24,324,000	99.9%	20,203,520	11.5%	-0.056
2015 (est.)	2,785,567	215,159,227	29,108,000	99.9%	24,239,690	11.3%	-0.044

Interval	Household Growth	Income Growth	Post-Shifting Tax Growth
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%
2004-2006	3.6%	18.9% *	16.0%
2006-2008	3.8%	5.3%	6.4%
2008-2010	1.3%	0.9%	1.3%
2010-2015 (est.)	8.2%	22.7%	20.0%

\*Two percentage points was due to expanded definition of income.

**Figure 1-8**  
**Suits Indexes, All Minnesota Taxes 1990-2015<sup>15</sup>**



<sup>15</sup> The unadjusted Suits index was -0.004 in 1990, -0.013 in 1992, and -0.062 (full-sample Suits) in 2006. The 2008 Suits index are corrected for errors in the database for that year. (See previous footnote.)

Table 1-8 shows effective tax rates by decile for 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 2010. In 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 was quite different in more recent years, including 2008:

- The lower deciles (3 and 4) had effective tax rates significantly lower than the average for deciles 5 through 8.
- The effective tax rates dropped 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 point in 2002 but rose to 1.4 percentage points in 2008.

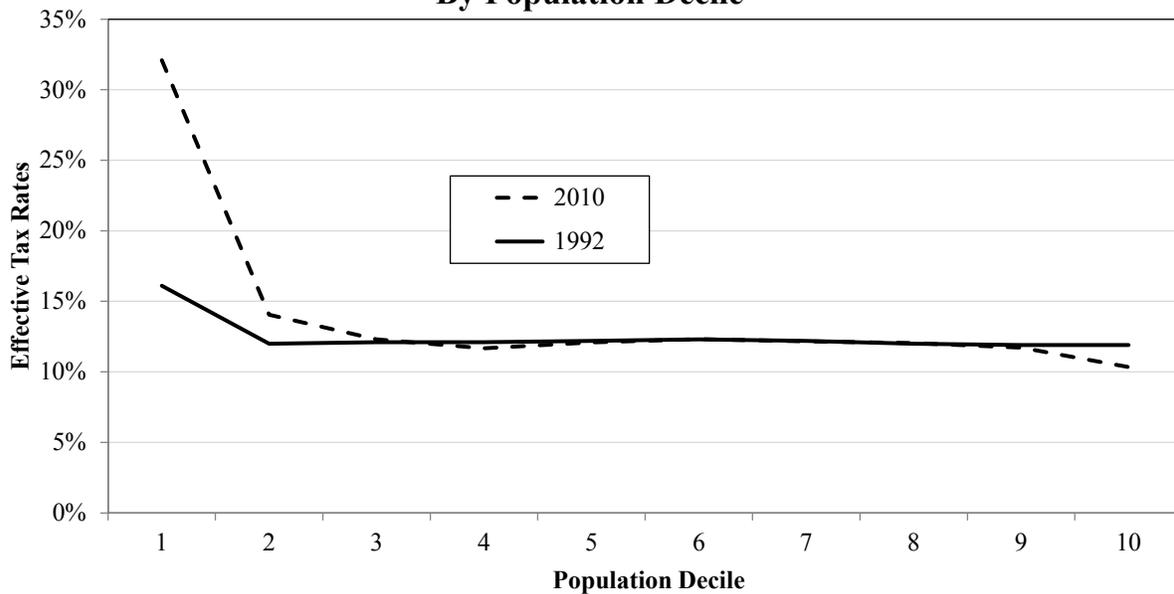
Each of these two characteristics was found consistently in recent studies, regardless of the point in the business cycle. The first apparently reflects the increased role of refundable income tax credits and property tax refunds. The cause of the second is also likely to involve law changes.

The 2010 pattern differs in one important way from that of 2008 and other recent years. In 2010, effective tax rates are noticeably higher in deciles 2 and 3. The effective tax rate for the decile 3 increased from 11.7 percent in 2008 to 12.3 percent in 2010, equal to that in decile 6. This was at least partly the result of a law change that reduced property tax refunds for renters (down 16 percent between 2008 and 2010). It is also worth noting, though, that decile 3's effective tax rate is projected to fall considerably in 2015.

**Table 1-8**  
**Effective Tax Rates by Population Decile**  
**All Taxes, 1990–2010, 2015 (est.)**

Decile	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2015 (est.)
<b>First</b>	17.9%	16.1%	17.3%	17.8%	20.2%	17.4%	18.2%	18.9%	25.2%	32.5%	32.1%	29.9%
<b>Second</b>	11.1%	12.0%	12.3%	12.0%	11.3%	9.8%	10.5%	11.3%	13.2%	13.3%	14.0%	12.6%
<b>Third</b>	10.7%	12.1%	11.8%	12.2%	10.8%	10.6%	10.1%	10.5%	12.0%	11.7%	12.3%	11.4%
<b>Fourth</b>	11.3%	12.1%	12.8%	12.5%	12.0%	11.1%	11.0%	11.5%	11.9%	11.8%	11.7%	11.0%
<b>Fifth</b>	11.1%	12.2%	12.8%	13.0%	12.1%	11.5%	11.4%	11.9%	12.7%	12.1%	12.1%	11.7%
<b>Sixth</b>	11.8%	12.3%	13.2%	13.1%	13.1%	12.3%	11.9%	12.2%	12.4%	12.3%	12.3%	11.9%
<b>Seventh</b>	12.0%	12.2%	13.0%	13.1%	12.9%	12.0%	12.0%	12.3%	12.3%	12.1%	12.2%	12.0%
<b>Eighth</b>	11.9%	12.0%	13.0%	13.0%	12.9%	12.0%	11.8%	12.3%	12.0%	12.2%	12.0%	11.8%
<b>Ninth</b>	11.8%	11.9%	13.0%	13.0%	12.5%	11.9%	11.7%	12.3%	11.8%	11.7%	11.7%	11.6%
<b>Tenth</b>	11.7%	11.9%	12.6%	12.2%	10.6%	10.3%	10.7%	10.9%	10.1%	10.3%	10.3%	10.3%
<b>Total</b>	11.8%	12.1%	12.9%	12.7%	11.8%	11.2%	11.3%	11.6%	11.4%	11.5%	11.5%	11.3%
<b>Top 5%</b>	11.6%	11.8%	12.3%	11.9%	10.1%	9.9%	10.5%	10.5%	9.7%	10.0%	10.1%	10.1%
<b>Top 1%</b>	11.2%	11.6%	11.8%	11.0%	8.3%	8.4%	9.0%	9.6%	8.9%	9.7%	9.6%	9.6%

**Figure 1-9**  
**Effective Tax Rates for 1992 and 2010**  
**By Population Decile**



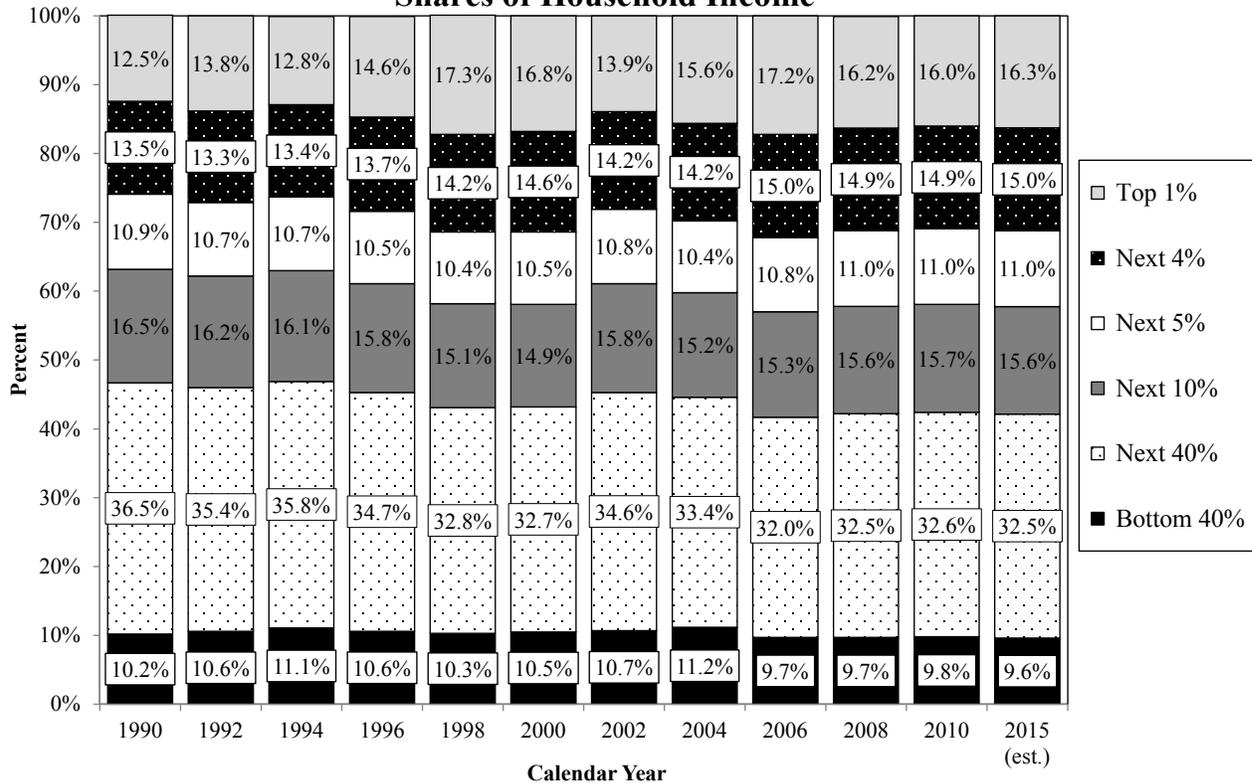
Although the historical changes in the degree of regressivity are due partly to changes in tax laws, the role of the business cycle may be even more important. During the past two decades, income inequality has generally risen during times of rapid growth and fallen during economic contractions. The years of greatest regressivity (1998, 2000, 2006, and 2008) 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 percent and top 1 percent of Minnesota households was unusually high in those years. In 1998 and 2000, the top 5 percent of households accounted for 31.4 percent of total household income, up from an average of only 26.7 percent in 1988-1996. It was even higher (at 32.2 percent) in 2006 and remained high by historical standards in both 2008 (at 31.1 percent) and 2010 (at 30.9 percent). Despite the recession, the share of income received by the top 5 percent did not drop in 2010 as it had in 2002 (when it fell from 31.4 percent to 28.1 percent). It is projected to increase further with recovery from the recession by 2015 (to 31.3 percent).

The pattern is similar for the share of income received by the top 1 percent of Minnesota households. In 1998 and 2000, the top 1 percent received over 17 percent of total income, up from an average of 13.3 percent in the earlier study years. After a drop to 13.9 percent in 2002, the share of the top 1 percent rose to 17.2 percent in 2006 before falling to 16.2 percent in 2008 and 16.0 percent in 2010. The share of the top 1 percent is projected to rise to 16.3 percent in 2015.

This concentration of income by itself, with no change in tax law, will increase the measured regressivity of the tax system. Lower regressivity in earlier recession years (such as 2002) partly reflected the reduced share of income at the top. A substantial portion of the increase in regressivity in 2008 and 2010 is likely the result of the unusually high share of income received by the richest Minnesotans.<sup>16</sup> The income share of the bottom 40 percent dropped below 10 percent in 2006 for the first time since these studies began. It remained below 10 percent (at 9.8 percent) in 2010 and is projected to fall even further to 9.6 percent in 2015.

**Figure 1-10**

**Shares of Household Income**



Tax policy can certainly affect the degree of regressivity, but it is difficult to identify tax changes that are large enough to move the Suits index by as much as it has moved over the last 20 years. Trends in income inequality are certainly responsible for much of the pattern shown above.

<sup>16</sup> A simple correlation between the population-decile Suits index and the share of income received by the top 1 percent of households (1990-2010) is -0.85, suggesting that the variation in income inequality could explain much of the variation in the Suits index.

## Chapter 2: Principal Results, 2010

This section examines the state and local tax burdens imposed on Minnesota taxpayers in 2010. 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 2010.

Only Minnesota taxes paid by residents are included in the analysis below; Minnesota taxes paid by nonresidents and taxes Minnesota residents pay to the federal government or 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).

### Total Tax Burden

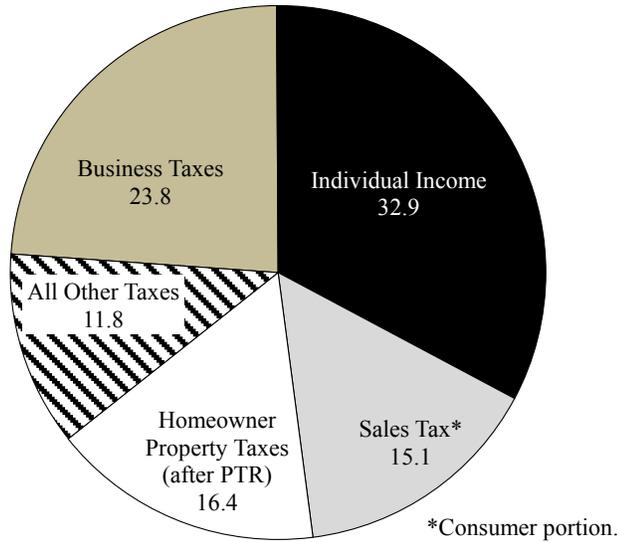
For 2010, Minnesota residents paid a total of \$20.2 billion in Minnesota state and local taxes while receiving \$175.3 billion in total money income.<sup>17</sup> Minnesota residents thus paid 11.5 percent of their total income in state and local taxes.

As shown in *Figure 2-1*, the individual income tax accounted for 32.9 percent of the total state and local tax burden on Minnesota residents. Homeowner property taxes (after PTR) accounted for 16.4 percent and the consumer state and local sales tax (including sales tax on motor vehicles) accounted for 15.1 percent of the total. Taxes imposed on business accounted for 23.8 percent. All other taxes comprised the remaining 11.8 percent.

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<sup>17</sup> Total tax collections were \$24.3 billion, but \$4.12 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. For a more complete description of the definition of household income, see *Appendix A* of this study.

**Figure 2-1**  
**2010 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 \$24.3 billion in total tax collections in 2010, \$20.2 billion or 83.1 percent of the total burden falls on Minnesotans, directly or indirectly. The rest is exported to nonresident consumers and owners of capital.

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 95 percent of total collections. Minnesota residents pay a smaller share of the general sales tax (78 percent). At the other end of the scale, Minnesotans are estimated to pay only 13 percent of the property taxes on industrial property.

**Table 2-1**  
**2010 Tax Collection Amounts**

Tax Type	Total (\$ Millions)	As Imposed			After shifting		Suits Index	
		MN HH's	NR	Business	Minnesota	Exported	Pop. Decile	Full Sample
<b>State Taxes</b>								
<b>Taxes on Income and Estates</b>								
Individual income tax	\$7,030	\$6,653	\$378		\$6,653	\$378	0.213	0.230
Corporation franchise tax <sup>1</sup>	800			\$800	\$470	330	-0.181	-0.199
Estate tax	155	155			\$155		0.529	0.832
<b>Total Income and Estate Taxes</b>	<b>\$7,985</b>	<b>\$6,808</b>	<b>\$378</b>	<b>\$800</b>	<b>\$7,278</b>	<b>\$707</b>	<b>0.194</b>	<b>0.215</b>
<b>Taxes on Consumption</b>								
Total sales tax	\$5,497	\$2,931	\$274	\$2,292	\$4,272	\$1,224	-0.216	-0.230
General sales/use tax	5,018	2,691	274	2,054	\$3,941	1,078	-0.229	-0.245
Sales tax on motor vehicles	478	240		238	\$331	147	-0.062	-0.058
Motor fuels excise taxes	838	461	47	330	\$618	220	-0.310	-0.338
Alcoholic beverage excise taxes	77	72	5		\$72	5	-0.212	-0.225
Cigarette and tobacco excise taxes <sup>2</sup>	430	407	22		\$407	22	-0.581	-0.598
Insurance premiums taxes	360	277		84	\$318	43	-0.324	-0.349
Gambling taxes	37	37	0		\$37	0	-0.485	-0.503
MinnesotaCare taxes	470	430	40		\$430	40	-0.280	-0.314
Solid waste management taxes	65	30		34	\$59	5	-0.389	-0.411
<b>Total Consumption Taxes</b>	<b>\$7,774</b>	<b>\$4,645</b>	<b>\$389</b>	<b>\$2,740</b>	<b>\$6,213</b>	<b>\$1,561</b>	<b>-0.263</b>	<b>-0.280</b>
<b>Taxes on Property</b>								
State Property Tax	\$782	\$31	\$8	\$744	\$361	\$421	-0.126	-0.125
Residential recreational property	38	31	8		\$31	8	-0.193	-0.228
Commercial <sup>3</sup>	528			528	\$272	256	-0.117	-0.112
Industrial	148			148	\$20	128	0.028	0.067
Utility	68			68	\$39	29	-0.212	-0.232
Motor vehicle registration tax	544	368		176	\$505	39	-0.334	-0.362
Mortgage and deed taxes	153	117		36	\$144	9	-0.085	-0.105
<b>Total Property Taxes</b>	<b>\$1,479</b>	<b>\$515</b>	<b>\$8</b>	<b>\$956</b>	<b>\$1,010</b>	<b>\$469</b>	<b>-0.224</b>	<b>-0.240</b>
<b>Property Tax Refunds</b>								
Homeowners	-\$278	-\$278			-\$278		0.688	0.694
Renters	-139	-139			-\$139		0.885	0.889
<b>Total Property Tax Refunds</b>	<b>-\$416</b>	<b>-\$416</b>			<b>-\$416</b>		<b>0.754</b>	<b>0.759</b>
<b>Total State Taxes</b>	<b>\$16,822</b>	<b>\$11,552</b>	<b>\$774</b>	<b>\$4,496</b>	<b>\$14,085</b>	<b>\$2,737</b>	<b>-0.009</b>	<b>-0.008</b>
<b>Local Taxes</b>								
Property Taxes	\$7,179	\$3,739	\$36	\$3,404	\$5,888	\$1,290	-0.161	-0.180
General Property Tax	7,104	3,739	36	3,330	5,881	1,223	-0.161	-0.181
Homeowners (before PTR)	3,595	3,595			\$3,595	0	-0.144	-0.176
Residential recreational property	180	144	36		\$144	36	-0.193	-0.228
Commercial <sup>3</sup>	1,415			1,415	\$730	685	-0.117	-0.112
Industrial	396			396	\$52	344	0.028	0.067
Farm (other than residence) <sup>4</sup>	454			454	\$453	1	-0.141	-0.156
Rental Housing (before PTR)	874			874	\$798	75	-0.292	-0.277
Utility	191			191	\$109	82	-0.212	-0.232
Mining Production Taxes (taconite)	74			74	\$7	67	0.219	0.299
Taxes on consumption					\$0			
Local Sales Taxes	214	115	12	87	\$168	46	-0.229	-0.245
Local Gross Earnings Taxes	110			110	\$63	47	-0.212	-0.232
<b>Total Local Taxes</b>	<b>\$7,502</b>	<b>\$3,853</b>	<b>\$47</b>	<b>\$3,602</b>	<b>\$6,119</b>	<b>\$1,384</b>	<b>-0.163</b>	<b>-0.182</b>
<b>Total State and Local Taxes</b>	<b>\$24,324</b>	<b>\$15,405</b>	<b>\$821</b>	<b>\$8,098</b>	<b>\$20,204</b>	<b>\$4,121</b>	<b>-0.056</b>	<b>-0.060</b>

<sup>1</sup>Includes taconite/iron ore occupation tax.

<sup>3</sup>Includes resorts and railroads.

<sup>2</sup>Includes Health Impact Fee.

<sup>4</sup>Includes timber.

Of the total, \$8.1 billion or 33.3 percent of Minnesota taxes are imposed on businesses. Of that amount, \$3.3 billion or 41 percent of the burden is exported.

The full-sample Suits index (last column of *Table 2-1*) shows that most taxes levied in Minnesota are regressive to some degree. Only a few taxes, and only one large tax, the individual income tax, are progressive (Suits index greater than zero). The state consumption taxes as a group are the most regressive, with a full-sample Suits index of -0.280. The progressive income tax and the few other progressive taxes largely offset the many regressive taxes, but the full-sample Suits index of the tax system as a whole remains regressive at -0.060.

### **Taxes by Decile**

To summarize the distribution of tax burdens by income level, the population of Minnesota households is 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 257,518 households in each population decile. The total burden by tax type for each decile is summarized in *Table 2-2*.

The base year for this study (2010) was an unusual year. The recession's impact is clear. For the first time, median household income is lower in this study than it was in the previous study, falling from \$41,161 to \$41,101. The income ranges for every population decile are below what they were in the previous study.

Taxpayers in the top decile (incomes of \$129,114 and over) bore 37.6 percent of the total tax burden while having 42 percent of total income. By tax type, taxpayers in the top decile paid 56 percent of the individual income tax, 26 percent of the consumer sales tax, 29 percent of the gross homeowner property tax, and 31 percent of business taxes.<sup>18</sup>

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<sup>18</sup> 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**

**2010 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	\$10,154 & Under	257,518	\$1,577,742	-\$20,009	\$17,191	\$115,896	\$60,288	\$176,184	-\$38,755	\$16,567	\$78,594	\$52,845	\$10,169
Second	\$10,155 - \$16,449	257,518	3,434,050	-24,917	19,106	143,120	57,404	200,524	-53,465	12,887	80,445	63,970	9,610
Third	\$16,450 - \$23,476	257,518	5,122,640	-647	23,090	166,348	67,916	234,264	-69,795	15,517	85,981	77,087	11,565
Fourth	\$23,477 - \$31,430	257,518	7,060,818	55,991	27,596	192,632	79,137	271,769	-71,175	18,556	92,392	91,068	13,637
Fifth	\$31,431 - \$41,101	257,518	9,305,855	180,763	32,755	219,117	92,091	311,208	-60,200	22,473	99,233	109,010	16,034
Sixth	\$41,102 - \$53,071	257,518	12,077,760	329,533	38,273	250,813	107,076	357,889	-51,152	26,283	106,441	124,067	18,921
Seventh	\$53,072 - \$68,773	257,518	15,582,748	489,306	46,349	297,156	128,603	425,759	-39,403	32,433	116,450	149,672	22,873
Eighth	\$68,774 - \$89,746	257,518	20,229,078	741,049	56,869	352,772	156,381	509,153	-21,489	40,664	127,165	173,199	27,579
Ninth	\$89,747 - \$129,113	257,518	27,476,974	1,144,221	71,311	427,916	189,695	617,612	-8,403	50,907	141,886	199,963	34,366
Tenth	\$129,114 & Over	257,518	73,481,539	3,757,269	137,411	765,615	402,258	1,167,873	-2,527	124,685	168,796	372,832	69,628
<b>TOTALS</b>		<b>2,575,184</b>	<b>\$175,349,202</b>	<b>\$6,652,559</b>	<b>\$469,950</b>	<b>\$2,931,385</b>	<b>\$1,340,849</b>	<b>\$4,272,235</b>	<b>-\$416,364</b>	<b>\$360,972</b>	<b>\$1,097,384</b>	<b>\$1,413,712</b>	<b>\$234,381</b>
Top 5%	Over \$178,170	128,829	\$54,229,432	\$2,882,307	\$91,851	\$504,805	\$282,078	\$786,883	-\$2,060	\$91,936	\$93,448	\$262,504	\$48,258
Top 1%	Over \$446,961	25,767	\$28,082,995	\$1,585,527	\$38,400	\$216,502	\$134,720	\$351,222	-\$432	\$49,245	\$25,894	\$166,163	\$21,528

Population Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes <sup>2</sup>	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 <sup>1</sup>				Total on Individuals	Total on Businesses	State Taxes Total	
First	\$89,507	\$16,963	\$37,413	\$54,375	\$147,624	\$56,423	\$9,378	\$213,424	\$183,234	\$109,552	\$292,785	\$506,210
Second	70,375	33,633	14,202	47,835	122,160	41,108	10,976	174,243	202,345	105,814	308,159	482,402
Third	121,548	43,221	17,068	60,289	187,373	52,666	12,841	252,880	251,120	125,941	377,061	629,941
Fourth	164,819	53,465	18,399	71,864	244,488	64,304	15,023	323,815	352,037	147,797	499,834	823,650
Fifth	229,075	52,111	23,079	75,190	315,708	81,103	17,235	414,046	538,255	173,020	711,275	1,125,321
Sixth	323,285	41,475	27,770	69,245	404,328	113,665	19,890	537,882	748,332	201,925	950,257	1,488,139
Seventh	415,110	28,318	36,007	64,325	495,051	134,583	23,644	653,278	1,000,092	243,348	1,243,440	1,896,718
Eighth	523,148	17,080	47,174	64,255	607,504	144,998	28,412	780,915	1,357,442	296,747	1,654,189	2,435,104
Ninth	629,689	10,573	56,963	67,536	727,045	207,647	34,588	969,279	1,888,273	363,589	2,251,862	3,221,141
Tenth	1,028,077	6,031	217,288	223,318	1,285,755	447,543	65,632	1,798,929	5,030,736	765,230	5,795,966	7,594,895
<b>TOTALS</b>	<b>\$3,594,635</b>	<b>\$302,869</b>	<b>\$495,363</b>	<b>\$798,231</b>	<b>\$4,537,035</b>	<b>\$1,344,038</b>	<b>\$237,618</b>	<b>\$6,118,692</b>	<b>\$11,551,864</b>	<b>\$2,532,964</b>	<b>\$14,084,828</b>	<b>\$20,203,520</b>
Top 5%	\$616,780	\$2,638	\$177,924	\$180,562	\$815,899	\$352,168	\$44,167	\$1,212,235	\$3,720,889	\$534,238	\$4,255,127	\$5,467,361
Top 1%	\$182,200	\$480	\$109,652	\$110,132	\$296,943	\$151,809	\$19,834	\$468,586	\$1,986,332	\$251,214	\$2,237,546	\$2,706,132

<sup>1</sup> Includes seasonal recreational residential (cabins).

<sup>2</sup> Includes taconite production tax.

In contrast, taxpayers in the bottom decile (incomes of \$10,154 and below) bore 2.5 percent of the total tax burden and received 0.9 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 4.0 percent of the consumer sales tax, 2.5 percent of gross homeowner property tax, and 4.7 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*. 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. However, as a whole, the state and local system of taxation in Minnesota remains regressive overall.

**Table 2-3**

**2010 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	\$10,154 & Under	257,518	\$1,577,742	- 1.3%	1.1%	7.3%	3.8%	11.2%	- 2.5%	1.1%	5.0%	3.3%	0.6%
Second	\$10,155 - \$16,449	257,518	3,434,050	- 0.7%	0.6%	4.2%	1.7%	5.8%	- 1.6%	0.4%	2.3%	1.9%	0.3%
Third	\$16,450 - \$23,476	257,518	5,122,640	0.0%	0.5%	3.2%	1.3%	4.6%	- 1.4%	0.3%	1.7%	1.5%	0.2%
Fourth	\$23,477 - \$31,430	257,518	7,060,818	0.8%	0.4%	2.7%	1.1%	3.8%	- 1.0%	0.3%	1.3%	1.3%	0.2%
Fifth	\$31,431 - \$41,101	257,518	9,305,855	1.9%	0.4%	2.4%	1.0%	3.3%	- 0.6%	0.2%	1.1%	1.2%	0.2%
Sixth	\$41,102 - \$53,071	257,518	12,077,760	2.7%	0.3%	2.1%	0.9%	3.0%	- 0.4%	0.2%	0.9%	1.0%	0.2%
Seventh	\$53,072 - \$68,773	257,518	15,582,748	3.1%	0.3%	1.9%	0.8%	2.7%	- 0.3%	0.2%	0.7%	1.0%	0.1%
Eighth	\$68,774 - \$89,746	257,518	20,229,078	3.7%	0.3%	1.7%	0.8%	2.5%	- 0.1%	0.2%	0.6%	0.9%	0.1%
Ninth	\$89,747 - \$129,113	257,518	27,476,974	4.2%	0.3%	1.6%	0.7%	2.2%	0.0%	0.2%	0.5%	0.7%	0.1%
Tenth	\$129,114 & Over	257,518	73,481,539	5.1%	0.2%	1.0%	0.5%	1.6%	0.0%	0.2%	0.2%	0.5%	0.1%
<b>TOTALS</b>		<b>2,575,184</b>	<b>\$175,349,202</b>	<b>3.8%</b>	<b>0.3%</b>	<b>1.7%</b>	<b>0.8%</b>	<b>2.4%</b>	<b>- 0.2%</b>	<b>0.2%</b>	<b>0.6%</b>	<b>0.8%</b>	<b>0.1%</b>
Top 5%	Over \$178,170	128,829	\$54,229,432	5.3%	0.2%	0.9%	0.5%	1.5%	0.0%	0.2%	0.2%	0.5%	0.1%
Top 1%	Over \$446,961	25,767	\$28,082,995	5.6%	0.1%	0.8%	0.5%	1.3%	0.0%	0.2%	0.1%	0.6%	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 <sup>1</sup>		
First	5.7%	1.1%	2.4%	3.4%	9.4%	3.6%	0.6%
Second	2.0%	1.0%	0.4%	1.4%	3.6%	1.2%	0.3%
Third	2.4%	0.8%	0.3%	1.2%	3.7%	1.0%	0.3%
Fourth	2.3%	0.8%	0.3%	1.0%	3.5%	0.9%	0.2%
Fifth	2.5%	0.6%	0.2%	0.8%	3.4%	0.9%	0.2%
Sixth	2.7%	0.3%	0.2%	0.6%	3.3%	0.9%	0.2%
Seventh	2.7%	0.2%	0.2%	0.4%	3.2%	0.9%	0.2%
Eighth	2.6%	0.1%	0.2%	0.3%	3.0%	0.7%	0.1%
Ninth	2.3%	0.0%	0.2%	0.2%	2.6%	0.8%	0.1%
Tenth	1.4%	0.0%	0.3%	0.3%	1.7%	0.6%	0.1%
<b>TOTALS</b>	<b>2.0%</b>	<b>0.2%</b>	<b>0.3%</b>	<b>0.5%</b>	<b>2.6%</b>	<b>0.8%</b>	<b>0.1%</b>
Top 5%	1.1%	0.0%	0.3%	0.3%	1.5%	0.6%	0.1%
Top 1%	0.6%	0.0%	0.4%	0.4%	1.1%	0.5%	0.1%

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
13.5%	11.6%	6.9%	18.6%	32.1%
5.1%	5.9%	3.1%	9.0%	14.0%
4.9%	4.9%	2.5%	7.4%	12.3%
4.6%	5.0%	2.1%	7.1%	11.7%
4.4%	5.8%	1.9%	7.6%	12.1%
4.5%	6.2%	1.7%	7.9%	12.3%
4.2%	6.4%	1.6%	8.0%	12.2%
3.9%	6.7%	1.5%	8.2%	12.0%
3.5%	6.9%	1.3%	8.2%	11.7%
2.4%	6.8%	1.0%	7.9%	10.3%
<b>3.5%</b>	<b>6.6%</b>	<b>1.4%</b>	<b>8.0%</b>	<b>11.5%</b>
2.2%	6.9%	1.0%	7.8%	10.1%
1.7%	7.1%	0.9%	8.0%	9.6%

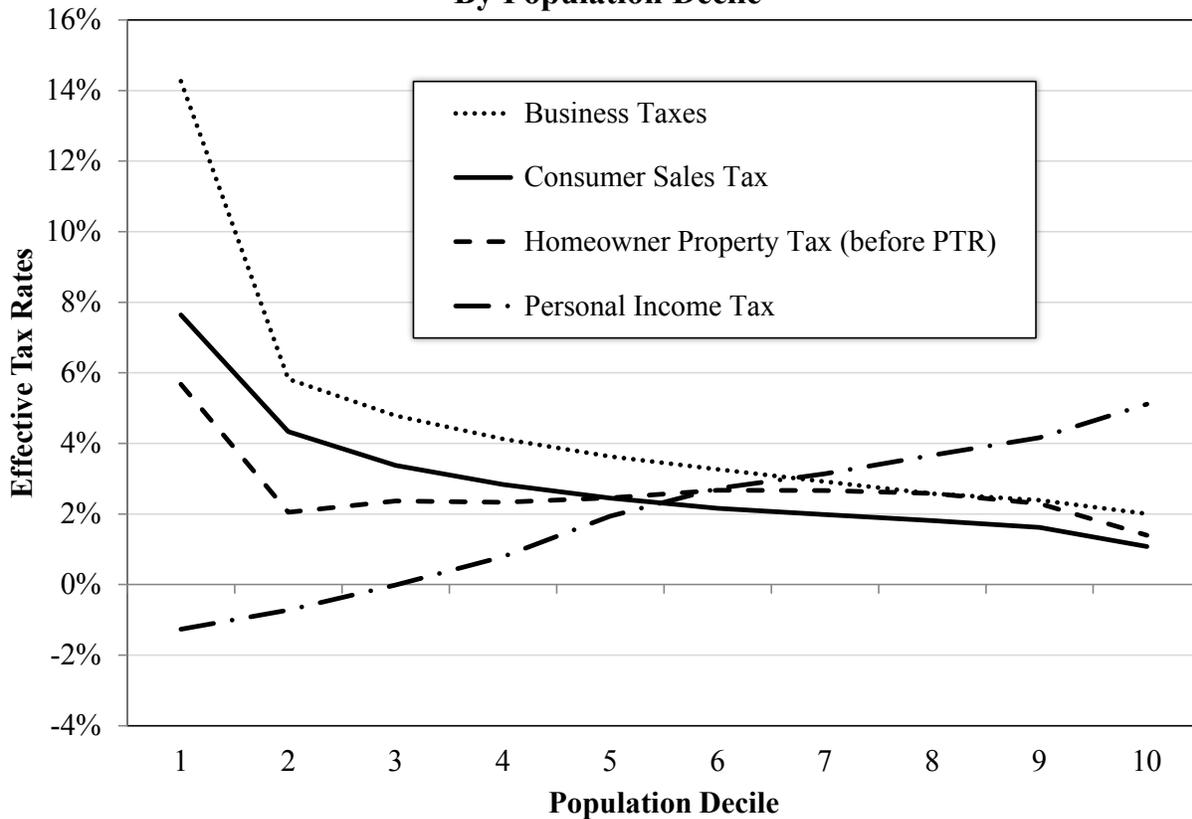
<sup>1</sup> Includes seasonal recreational residential (cabins).

**Table 2-4**  
**Effective Tax Rates (2010)**

Population Decile	Personal Income Tax	Business Taxes	Consumer Sales Tax <sup>1</sup>	Homeowner Property Tax (before PTR)
First	-1.3%	14.3%	7.6%	5.7%
Second	-0.7%	5.8%	4.3%	2.0%
Third	0.0%	4.8%	3.4%	2.4%
Fourth	0.8%	4.1%	2.8%	2.3%
Fifth	1.9%	3.6%	2.4%	2.5%
Sixth	2.7%	3.3%	2.2%	2.7%
Seventh	3.1%	2.9%	2.0%	2.7%
Eighth	3.7%	2.6%	1.8%	2.6%
Ninth	4.2%	2.4%	1.6%	2.3%
Tenth	5.1%	2.0%	1.1%	1.4%
Total	3.8%	2.7%	1.7%	2.0%

<sup>1</sup>Includes motor vehicle and local sales taxes.

**Figure 2-2**  
**Effective Tax Rates for 2010**  
**By Population Decile**



## ***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 2010, 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 two deciles and zero in the third decile, showing the impact of refundable credits (which can more than offset any income tax liabilities).<sup>19</sup> It rose steadily from 0.8 percent of income for the fourth decile to 5.1 percent for the tenth decile. The top 5 percent and 1 percent of households have even higher effective tax rates, at 5.3 and 5.6 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 2010, the effective state and local consumer sales tax rate for the bottom decile was 7.6 percent, compared to the rate for the top decile of 1.1 percent (see *Table 2-4*). Effective tax rates for the second through ninth deciles, representing 80 percent of all taxpayers, declined continuously from 4.3 to 1.6 percent.

## ***Excise Taxes***

Excise taxes on cigarettes, alcohol, and motor fuels are even more regressive. As shown in *Table 2-3*, effective tax rates fell from 5 percent in the bottom decile to 0.2 percent in the tenth.

## ***Residential Property Taxes***<sup>20</sup>

*Homeowner Property Taxes.* The property tax on owner-occupied homes (before PTR) showed little variation between the third and ninth deciles. For 2010, the effective property tax rate was 5.7 percent for the first decile, 2.0 percent for the second decile, and between 2.3 and 2.7 percent for the third through ninth deciles. It then fell to 1.4 percent in the tenth decile.

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<sup>19</sup> The impact of these refundable credits on the distribution of the overall tax burden is shown in *Chapter 4, Section D*.

<sup>20</sup> The impact of property tax refunds on residential property taxes is summarized in *Chapter 4, Table 4-10*.

*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 2010 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.<sup>21</sup> 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.

### ***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 23.8 percent of the total tax burden on Minnesota residents. Business taxes include the following:

- Business property taxes<sup>22</sup>
- 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 is 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 B*.)

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<sup>21</sup> Note that this is the result for existing taxes and includes both apartments and other rental residential property. The model predicts that over 80 percent of a change in tax would be shifted forward to renters. See *Chapter 4, Section E*.

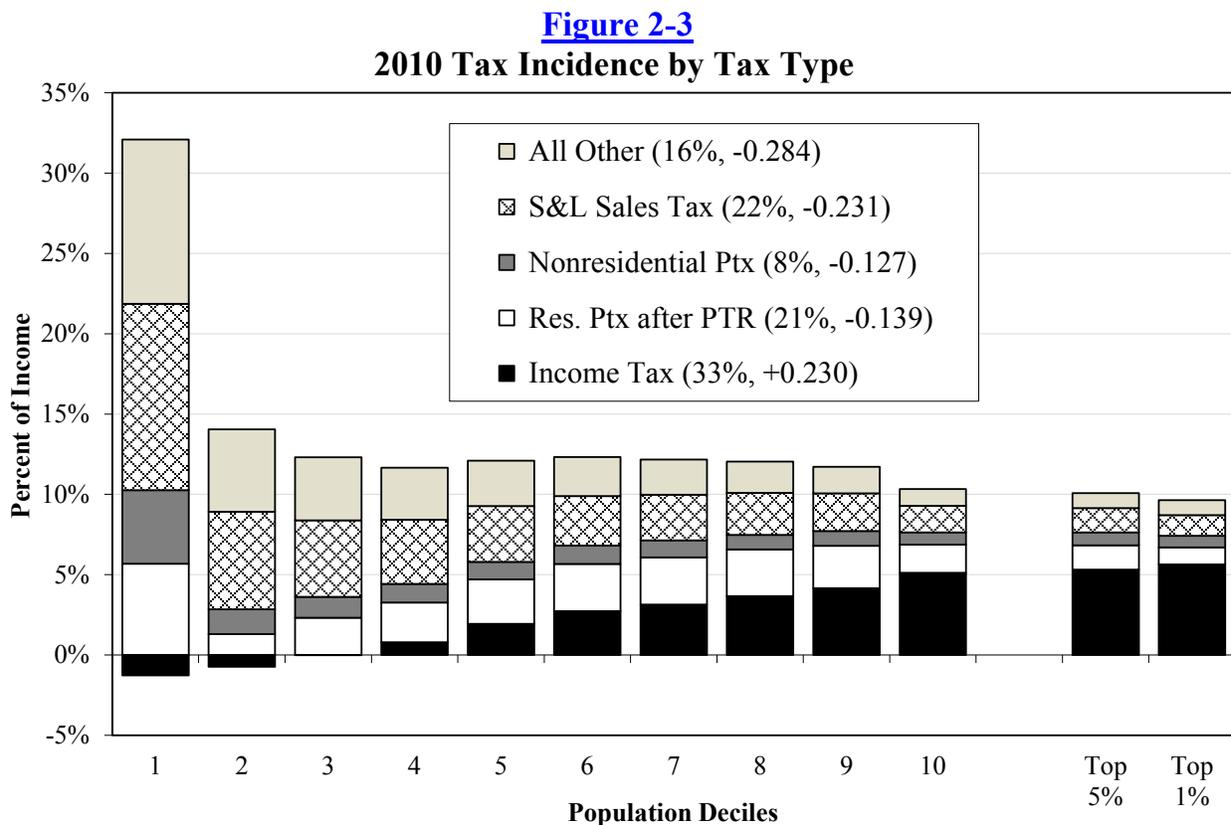
<sup>22</sup> Includes the tax on rental housing.

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 5.8 percent in the second decile; it fell steadily as income rose, reaching 2.0 percent in the tenth decile.

### Summary of 2010 Tax Burden by Major Tax Type

*Figure 2-3* summarizes how the 2010 tax burden of the major tax categories varies by population decile. The categories for this table combine both the individual and business components of these tax types. For example, the state sales tax total includes both the consumer and business portions (including the tax on motor vehicles). Residential property tax includes homeowner and rental property taxes, along with cabins.<sup>23</sup>



**Note:** Numbers in parentheses show percent of total tax burden and the full-sample Suits index.

<sup>23</sup> For an analysis of residential property taxes excluding cabins, see *Chapter 4, Section D*.

*Figure 2-3* clearly demonstrates the importance of the progressive income tax in offsetting most of the regressivity of other taxes. Note that the sum of state sales tax, nonresidential property tax, and “all other taxes” accounts for more than half of the overall tax burden for those in the first six deciles. The sum accounts for more than 80 percent of the overall tax burden in deciles 2 and 3. The residential property tax burden (after PTR) is noticeably less regressive than the sales tax or “all other taxes,” mostly because of the property tax refunds. In their absence, the Suits index for residential property taxes would be -0.196 – nearly as regressive as the sales tax.

## Chapter 3: Projected Results, 2015

This section examines the state and local tax burdens imposed on Minnesota taxpayers in 2015. The taxes included are the same as those analyzed for 2010.

### **Tax Incidence Projections to 2015 (Assuming Current Law)**

To analyze tax incidence five years beyond 2010, the 2010 results must be projected into the future. A variety of methods were used to do this.

**Income** – The HITS income tax model<sup>24</sup> 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 2010, yielding an estimate of total household income in 2015. 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 2010 and 2015.

**Population** – The number of Minnesota households is expected to grow by 8.2 percent between 2010 and 2015, a growth rate of 1.6 percent per year. Therefore, each sample household is assumed to represent 8.2 percent more households in 2015.

**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 November 2012 forecast from the Department of Management and Budget. Business taxes were assumed to be shifted in the same manner as were the corresponding 2010 business taxes. Taxes imposed directly on households were also assumed to be allocated to the various households in the sample in the same way as were the 2010 taxes.

### **Total Tax Collections in 2015**

Total tax collections are projected to rise by 19.7 percent between 2010 and 2015, from \$24.3 billion to \$29.1 billion. Of the 2015 total, \$24.2 billion or 83 percent is paid by Minnesotans, directly or indirectly. The rest is exported to taxpayers out of state.

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<sup>24</sup> The House Income Tax Simulation (HITS) model is the micro-simulation model used both for forecasting and for estimating the revenue impact of proposed changes in tax law. The version used in this study is based on a stratified random sample of tax year 2010 income tax returns and the November 2012 economic forecast.

As was the case in 2010, the income tax is borne almost entirely by Minnesota residents, who pay 95 percent of total collections. Residents of Minnesota pay 78 percent of the general sales tax. At the other end of the scale, Minnesotans pay only 13 percent of the property taxes on industrial property. Of total Minnesota state and local taxes in 2015, \$9.6 billion or 33.0 percent are imposed on businesses. Of that amount, \$3.9 billion or 40 percent of the burden of business taxes is exported.

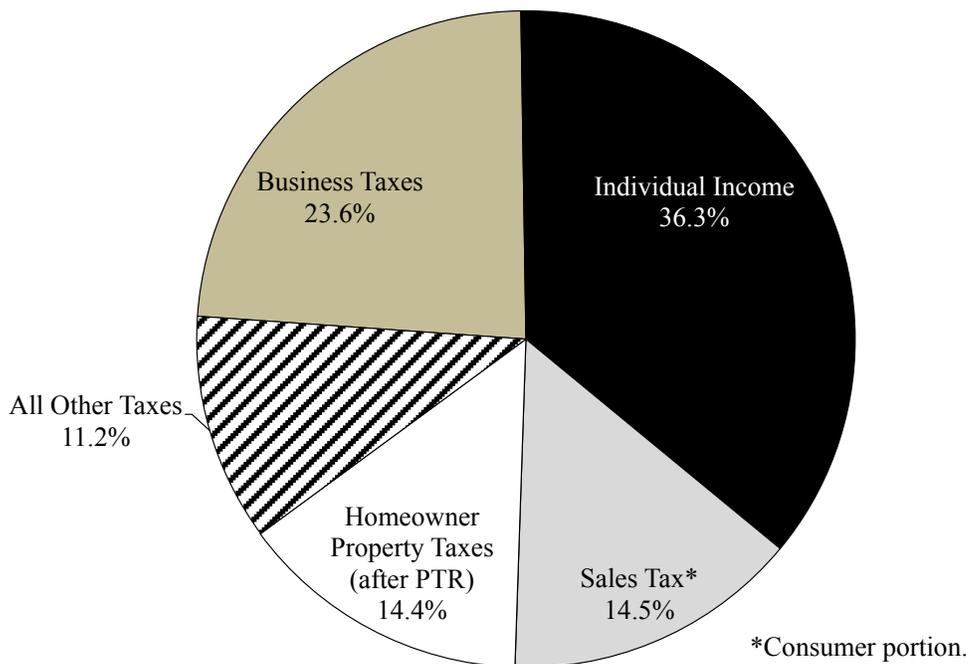
Details of Minnesota tax projections for 2015 – before and after tax shifting – are shown in *Table 3-1*.

### Tax Burdens in 2015

Minnesota residents are expected to pay a total of \$24.2 billion in Minnesota state and local taxes in 2015 while earning \$215.2 billion in total money income. Minnesota residents thus will pay 11.3 percent of their total income in Minnesota state and local taxes.

As shown in *Figure 3-1*, the individual income tax is projected to account for 36.3 percent of the total state and local tax burden on Minnesota residents in 2015. Homeowner property taxes (after PTR) and state and local consumer sales taxes (including sales tax on motor vehicles) are projected to be 14.4 percent and 14.5 percent of the total, respectively. Taxes on business will account for 23.6 percent. All other taxes will comprise the remaining 11.2 percent.

**Figure 3-1**  
**2015 Distribution of Minnesota State and Local Tax Burdens by Tax**



Compared to 2010 (as shown in *Figure 2-1*), the share from the individual income tax is projected to be significantly higher, rising from 32.9 percent to 36.3 percent. The share from homeowner property taxes (after property tax refunds) is projected to fall from 16.4 percent to 14.5 percent, and the sales tax share from 15.1 percent to 14.4 percent. The share from business taxes is projected to fall from 23.8 percent to 23.6 percent. As explained in *Chapter 1* (page 8), these changes are primarily the result of the recovery from recession.

### **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 278,557 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 \$146,401 and over in 2015) are expected to bear 38.8 percent of the total tax burden while having 42.2 percent of total income. By tax type, taxpayers in the top decile would pay 56 percent of the individual income tax, 27 percent of the consumer sales tax, 29 percent of the gross homeowner property tax, and 31 percent of business taxes.<sup>25</sup>

In contrast, taxpayers in the bottom decile (incomes of \$10,937 and below) are projected to bear 2.1 percent of the total tax burden while receiving only 0.8 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 3.7 percent of the consumer sales tax, 2.5 percent of gross homeowner property tax, and 4.4 percent of business taxes.

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<sup>25</sup> 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**  
**2015 Tax Collection Amounts**

Tax Type	Total (\$ Millions)	As Imposed			After shifting		Suits Index	
		MN HH's	NR	Business	Minnesota	Exported	Pop. Decile	Full Sample
<b>State Taxes</b>								
<b>Taxes on Income and Estates</b>								
Individual income tax	\$9,285	\$8,786	\$499		\$8,786	\$499	0.200	0.215
Corporation franchise tax <sup>1</sup>	963			\$963	566	397	-0.181	-0.200
Estate tax	155	155			155		0.526	0.828
<b>Total Income and Estate Taxes</b>	<b>\$10,403</b>	<b>\$8,941</b>	<b>\$499</b>	<b>\$963</b>	<b>\$9,507</b>	<b>\$896</b>	<b>0.183</b>	<b>0.200</b>
<b>Taxes on Consumption</b>								
Total sales tax	\$6,252	\$3,329	\$302	\$2,621	\$4,844	\$1,408	-0.207	-0.221
General sales/use tax	5,546	2,974	302	2,269	4,355	1,191	-0.224	-0.240
Sales tax on motor vehicles	707	355		351	490	217	-0.055	-0.053
Motor fuels excise taxes	872	479	49	343	643	229	-0.315	-0.343
Alcoholic beverage excise taxes	83	77	6		77	6	-0.201	-0.215
Cigarette and tobacco excise taxes <sup>2</sup>	419	397	22		397	22	-0.593	-0.610
Insurance premiums taxes	442	339		103	390	52	-0.332	-0.358
Gambling taxes	90	89	1		89	1	-0.491	-0.509
MinnesotaCare taxes	593	543	51		543	51	-0.288	-0.322
Solid waste management taxes	78	37		41	71	6	-0.389	-0.412
<b>Total Consumption Taxes</b>	<b>\$8,829</b>	<b>\$5,290</b>	<b>\$430</b>	<b>\$3,108</b>	<b>\$7,055</b>	<b>\$1,774</b>	<b>-0.257</b>	<b>-0.275</b>
<b>Taxes on Property</b>								
State Property Tax	\$870	\$38	\$9	\$823	\$406	\$464	-0.130	-0.133
Residential recreational property	47	38	9		38	9	-0.199	-0.235
Commercial <sup>3</sup>	566			566	292	274	-0.117	-0.114
Industrial	160			160	21	139	0.020	0.049
Utility	97			97	55	42	-0.210	-0.232
Motor vehicle registration tax	614	415		199	570	44	-0.341	-0.369
Mortgage and deed taxes	208	159		49	195	12	-0.090	-0.111
<b>Total Property Taxes</b>	<b>\$1,691</b>	<b>\$611</b>	<b>\$9</b>	<b>\$1,071</b>	<b>\$1,171</b>	<b>\$520</b>	<b>-0.226</b>	<b>-0.244</b>
<b>Property Tax Refunds</b>								
Homeowners	-\$347	-\$347			-\$347		0.733	0.737
Renters	-210	-210			-210		0.906	0.909
<b>Total Property Tax Refunds</b>	<b>-\$557</b>	<b>-\$557</b>			<b>-\$557</b>		<b>0.798</b>	<b>0.802</b>
<b>Total State Taxes</b>	<b>\$20,365</b>	<b>\$14,285</b>	<b>\$938</b>	<b>\$5,142</b>	<b>\$17,175</b>	<b>\$3,190</b>	<b>0.006</b>	<b>0.007</b>
<b>Local Taxes</b>								
Property Taxes	\$8,247	\$4,031	\$49	\$4,167	\$6,705	\$1,543	-0.164	-0.183
General Property Tax	8,145	4,031	49	4,065	6,694	1,450	-0.165	-0.183
Homeowners (before PTR)	3,833	3,833			3,833	0	-0.147	-0.180
Residential recreational property	247	198	49		198	49	-0.199	-0.235
Commercial <sup>3</sup>	1,655			1,655	854	801	-0.117	-0.114
Industrial	469			469	62	407	0.020	0.049
Farm (other than residence) <sup>4</sup>	590			590	589	1	-0.145	-0.154
Rental Housing (before PTR)	1,043			1,043	984	59	-0.284	-0.269
Utility	308			308	175	133	-0.210	-0.232
Mining Production Taxes (taconite)	102			102	10	92	0.203	0.265
Taxes on consumption								
Local Sales Taxes	361	194	20	148	284	78	-0.224	-0.240
Local Gross Earnings Taxes	134			134	76	58	-0.210	-0.232
<b>Total Local Taxes</b>	<b>\$8,743</b>	<b>\$4,225</b>	<b>\$69</b>	<b>\$4,450</b>	<b>\$7,065</b>	<b>\$1,678</b>	<b>-0.167</b>	<b>-0.185</b>
<b>Total State and Local Taxes</b>	<b>\$29,108</b>	<b>\$18,510</b>	<b>\$1,007</b>	<b>\$9,591</b>	<b>\$24,240</b>	<b>\$4,869</b>	<b>-0.044</b>	<b>-0.049</b>

<sup>1</sup>Includes taconite/iron ore occupation tax.

<sup>3</sup>Includes resorts and railroads.

<sup>2</sup>Includes Health Impact Fee.

<sup>4</sup>Includes Timber.

**Table 3-2**

**2015 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 & HIF	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	\$10,937 & under	278,557	\$1,796,169	-\$23,929	\$19,675	\$124,110	\$65,390	\$189,501	-\$66,222	\$17,369	\$79,461	\$66,398	\$11,964
Second	\$10,938 - \$18,316	278,557	4,089,054	-29,963	22,679	156,335	63,794	220,129	-86,641	14,655	81,674	79,279	11,379
Third	\$18,317 - \$26,397	278,556	6,205,944	2,041	27,535	184,044	74,965	259,009	-97,316	17,558	87,460	97,579	13,632
Fourth	\$26,398 - \$35,600	278,557	8,613,566	85,733	32,934	213,841	87,273	301,113	-93,546	20,772	94,030	115,645	15,772
Fifth	\$35,601 - \$46,507	278,557	11,395,280	258,249	39,356	244,948	102,682	347,630	-78,687	25,609	101,352	140,067	18,850
Sixth	\$46,508 - \$59,998	278,557	14,770,544	436,282	45,979	281,218	119,494	400,712	-65,046	29,800	108,504	157,033	22,188
Seventh	\$59,999 - \$77,704	278,557	19,057,225	662,774	55,985	334,993	145,030	480,023	-43,760	36,946	117,441	188,031	26,727
Eighth	\$77,705 - \$101,616	278,557	24,751,811	988,764	68,129	400,159	173,379	573,538	-21,972	44,918	129,400	217,542	32,093
Ninth	\$101,617 - \$146,400	278,557	33,640,753	1,499,913	86,764	486,691	217,119	703,810	-3,871	59,123	144,064	248,734	40,536
Tenth	\$146,401 & over	278,557	90,838,881	4,906,239	166,660	902,411	466,418	1,368,829	-368	139,018	173,692	426,486	83,610
<b>TOTALS</b>		<b>2,785,567</b>	<b>\$215,159,227</b>	<b>\$8,786,103</b>	<b>\$565,697</b>	<b>\$3,328,751</b>	<b>\$1,515,543</b>	<b>\$4,844,294</b>	<b>-\$557,429</b>	<b>\$405,769</b>	<b>\$1,117,079</b>	<b>\$1,736,794</b>	<b>\$276,751</b>
Top 5%	Over \$202,407	139,438	\$67,208,813	\$3,759,851	\$111,445	\$602,674	\$330,106	\$932,780	-\$304	\$102,068	\$97,018	\$290,844	\$58,374
Top 1%	Over \$510,006	27,934	\$35,027,984	\$2,060,487	\$45,939	\$263,828	\$156,910	\$420,738	-\$64	\$52,436	\$27,362	\$172,196	\$26,369

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Population Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes <sup>2</sup>	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 <sup>1</sup>				Total on Individuals	Total on Businesses	State Taxes Total	
First	\$96,269	\$20,727	\$43,522	\$64,248	\$165,717	\$63,949	\$14,045	\$243,711	\$174,724	\$119,493	\$294,217	\$537,928
Second	68,988	40,206	19,585	59,791	133,747	51,014	16,845	201,606	193,875	119,316	313,191	514,797
Third	131,568	52,229	21,338	73,567	213,280	67,307	19,835	300,422	266,110	141,389	407,499	707,921
Fourth	175,163	63,579	22,947	86,526	272,328	77,211	23,153	372,692	406,897	165,556	572,453	945,145
Fifth	243,677	61,689	29,338	91,027	350,715	104,231	26,737	481,682	656,483	195,943	852,426	1,334,108
Sixth	345,328	49,349	34,570	83,919	445,652	144,099	30,885	620,637	906,746	228,705	1,135,452	1,756,088
Seventh	447,347	33,316	46,390	79,706	548,377	168,113	36,857	753,347	1,246,438	277,730	1,524,168	2,277,516
Eighth	549,982	20,493	55,413	75,905	653,654	186,439	44,117	884,210	1,698,803	333,609	2,032,412	2,916,622
Ninth	677,388	12,626	74,189	86,815	804,959	264,388	54,352	1,123,699	2,358,543	420,532	2,779,075	3,902,773
Tenth	1,096,977	7,227	275,048	282,275	1,426,226	553,091	103,309	2,082,626	6,376,743	887,423	7,264,166	9,346,791
<b>TOTALS</b>	<b>\$3,832,687</b>	<b>\$361,440</b>	<b>\$622,340</b>	<b>\$983,780</b>	<b>\$5,014,653</b>	<b>\$1,679,843</b>	<b>\$370,135</b>	<b>\$7,064,631</b>	<b>\$14,285,362</b>	<b>\$2,889,696</b>	<b>\$17,175,059</b>	<b>\$24,239,690</b>
Top 5%	\$663,032	\$3,116	\$225,824	\$228,941	\$917,399	\$428,820	\$69,813	\$1,416,032	\$4,729,514	\$622,562	\$5,352,075	\$6,768,108
Top 1%	\$194,420	\$547	\$137,038	\$137,585	\$338,319	\$180,033	\$31,089	\$549,441	\$2,516,215	\$289,247	\$2,805,462	\$3,354,904

<sup>1</sup> Includes seasonal recreational residential (cabins).

<sup>2</sup> Includes taconite production tax.

## Overall Effective Tax Rates

In a similar fashion as was done for taxes paid in 2010, effective tax rates by tax type for 2015 are reported in *Table 3-3*. Effective tax rates by population deciles for 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 much of the regressivity of the other state and local taxes. Despite the progressive income tax, the overall state and local system is expected to remain regressive in 2015, with a full-sample Suits index of -0.049. This would be less regressive than 2010, when the full-sample Suits index was -0.060.

**Table 3-3**

**2015 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 & HIF	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	\$10,937 & under	278,557	\$1,796,169	- 1.3%	1.1%	6.9%	3.6%	10.6%	- 3.7%	1.0%	4.4%	3.7%	0.7%
Second	\$10,938 - \$18,316	278,557	4,089,054	- 0.7%	0.6%	3.8%	1.6%	5.4%	- 2.1%	0.4%	2.0%	1.9%	0.3%
Third	\$18,317 - \$26,397	278,556	6,205,944	0.0%	0.4%	3.0%	1.2%	4.2%	- 1.6%	0.3%	1.4%	1.6%	0.2%
Fourth	\$26,398 - \$35,600	278,557	8,613,566	1.0%	0.4%	2.5%	1.0%	3.5%	- 1.1%	0.2%	1.1%	1.3%	0.2%
Fifth	\$35,601 - \$46,507	278,557	11,395,280	2.3%	0.3%	2.1%	0.9%	3.1%	- 0.7%	0.2%	0.9%	1.2%	0.2%
Sixth	\$46,508 - \$59,998	278,557	14,770,544	3.0%	0.3%	1.9%	0.8%	2.7%	- 0.4%	0.2%	0.7%	1.1%	0.2%
Seventh	\$59,999 - \$77,704	278,557	19,057,225	3.5%	0.3%	1.8%	0.8%	2.5%	- 0.2%	0.2%	0.6%	1.0%	0.1%
Eighth	\$77,705 - \$101,616	278,557	24,751,811	4.0%	0.3%	1.6%	0.7%	2.3%	- 0.1%	0.2%	0.5%	0.9%	0.1%
Ninth	\$101,617 - \$146,400	278,557	33,640,753	4.5%	0.3%	1.4%	0.6%	2.1%	0.0%	0.2%	0.4%	0.7%	0.1%
Tenth	\$146,401 & over	278,557	90,838,881	5.4%	0.2%	1.0%	0.5%	1.5%	0.0%	0.2%	0.2%	0.5%	0.1%
<b>TOTALS</b>		<b>2,785,567</b>	<b>\$215,159,227</b>	<b>4.1%</b>	<b>0.3%</b>	<b>1.5%</b>	<b>0.7%</b>	<b>2.3%</b>	<b>- 0.3%</b>	<b>0.2%</b>	<b>0.5%</b>	<b>0.8%</b>	<b>0.1%</b>
Top 5%	Over \$202,407	139,438	\$67,208,813	5.6%	0.2%	0.9%	0.5%	1.4%	0.0%	0.2%	0.1%	0.4%	0.1%
Top 1%	Over \$510,006	27,934	\$35,027,984	5.9%	0.1%	0.8%	0.4%	1.2%	0.0%	0.1%	0.1%	0.5%	0.1%

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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 <sup>1</sup>		
First	5.4%	1.2%	2.4%	3.6%	9.2%	3.6%	0.8%
Second	1.7%	1.0%	0.5%	1.5%	3.3%	1.2%	0.4%
Third	2.1%	0.8%	0.3%	1.2%	3.4%	1.1%	0.3%
Fourth	2.0%	0.7%	0.3%	1.0%	3.2%	0.9%	0.3%
Fifth	2.1%	0.5%	0.3%	0.8%	3.1%	0.9%	0.2%
Sixth	2.3%	0.3%	0.2%	0.6%	3.0%	1.0%	0.2%
Seventh	2.3%	0.2%	0.2%	0.4%	2.9%	0.9%	0.2%
Eighth	2.2%	0.1%	0.2%	0.3%	2.6%	0.8%	0.2%
Ninth	2.0%	0.0%	0.2%	0.3%	2.4%	0.8%	0.2%
Tenth	1.2%	0.0%	0.3%	0.3%	1.6%	0.6%	0.1%
<b>TOTALS</b>	<b>1.8%</b>	<b>0.2%</b>	<b>0.3%</b>	<b>0.5%</b>	<b>2.3%</b>	<b>0.8%</b>	<b>0.2%</b>
Top 5%	1.0%	0.0%	0.3%	0.3%	1.4%	0.6%	0.1%
Top 1%	0.6%	0.0%	0.4%	0.4%	1.0%	0.5%	0.1%

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
13.6%	9.7%	6.7%	16.4%	29.9%
4.9%	4.7%	2.9%	7.7%	12.6%
4.8%	4.3%	2.3%	6.6%	11.4%
4.3%	4.7%	1.9%	6.6%	11.0%
4.2%	5.8%	1.7%	7.5%	11.7%
4.2%	6.1%	1.5%	7.7%	11.9%
4.0%	6.5%	1.5%	8.0%	12.0%
3.6%	6.9%	1.3%	8.2%	11.8%
3.3%	7.0%	1.3%	8.3%	11.6%
2.3%	7.0%	1.0%	8.0%	10.3%
<b>3.3%</b>	<b>6.6%</b>	<b>1.3%</b>	<b>8.0%</b>	<b>11.3%</b>
2.1%	7.0%	0.9%	8.0%	10.1%
1.6%	7.2%	0.8%	8.0%	9.6%

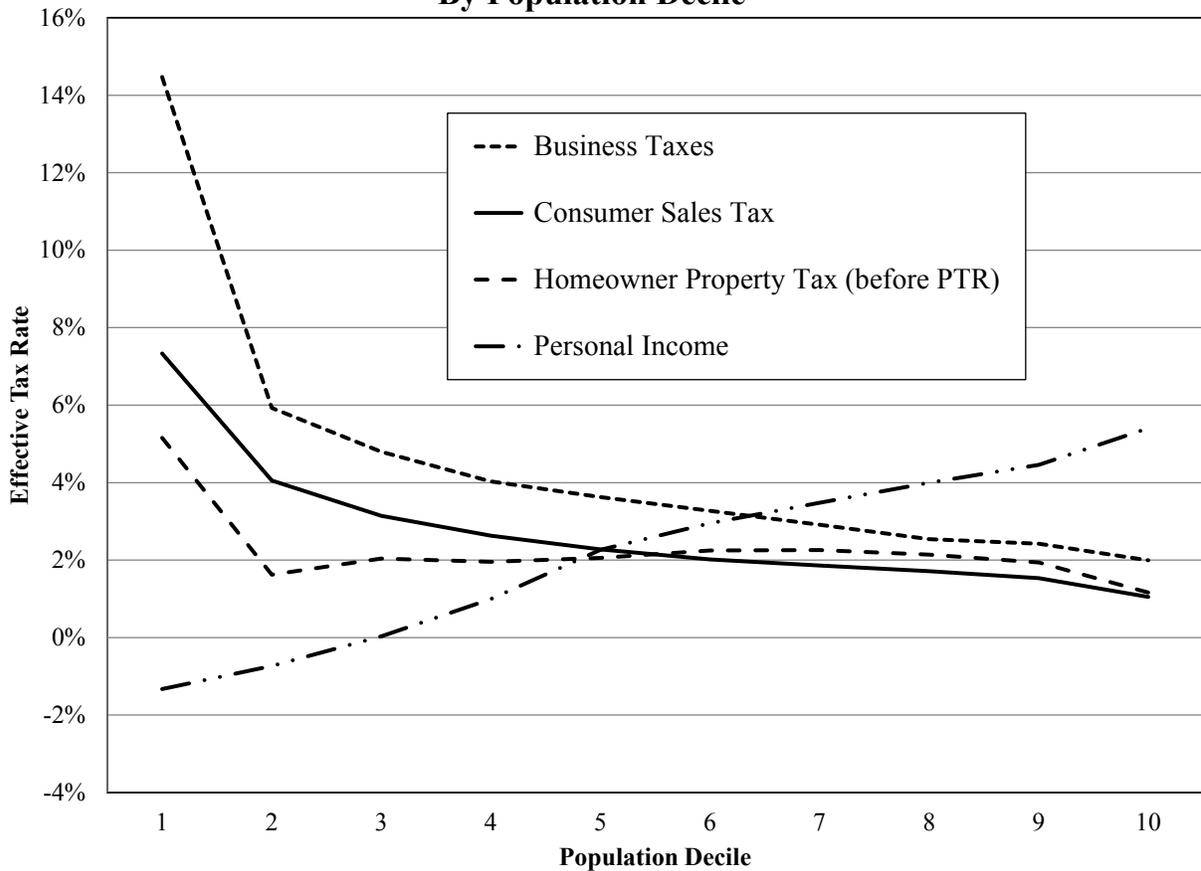
<sup>1</sup> Includes seasonal recreational residential (cabins).

**Table 3-4**  
**Effective Tax Rates (2015)**

Population Decile	Personal Income Tax	Business Taxes	Consumer Sales Tax <sup>1</sup>	Homeowner Property Tax (before PTR)
First	-1.3%	14.5%	7.3%	5.2%
Second	-0.7%	5.9%	4.1%	1.6%
Third	0.0%	4.8%	3.1%	2.0%
Fourth	1.0%	4.0%	2.6%	2.0%
Fifth	2.3%	3.6%	2.3%	2.1%
Sixth	3.0%	3.3%	2.0%	2.3%
Seventh	3.5%	2.9%	1.9%	2.3%
Eighth	4.0%	2.5%	1.7%	2.1%
Ninth	4.5%	2.4%	1.5%	1.9%
Tenth	5.4%	2.0%	1.0%	1.2%
Total	4.1%	2.7%	1.6%	1.7%

<sup>1</sup>Includes motor vehicle and local sales taxes.

**Figure 3-2**  
**Effective Tax Rates for 2015**  
**By Population Decile**

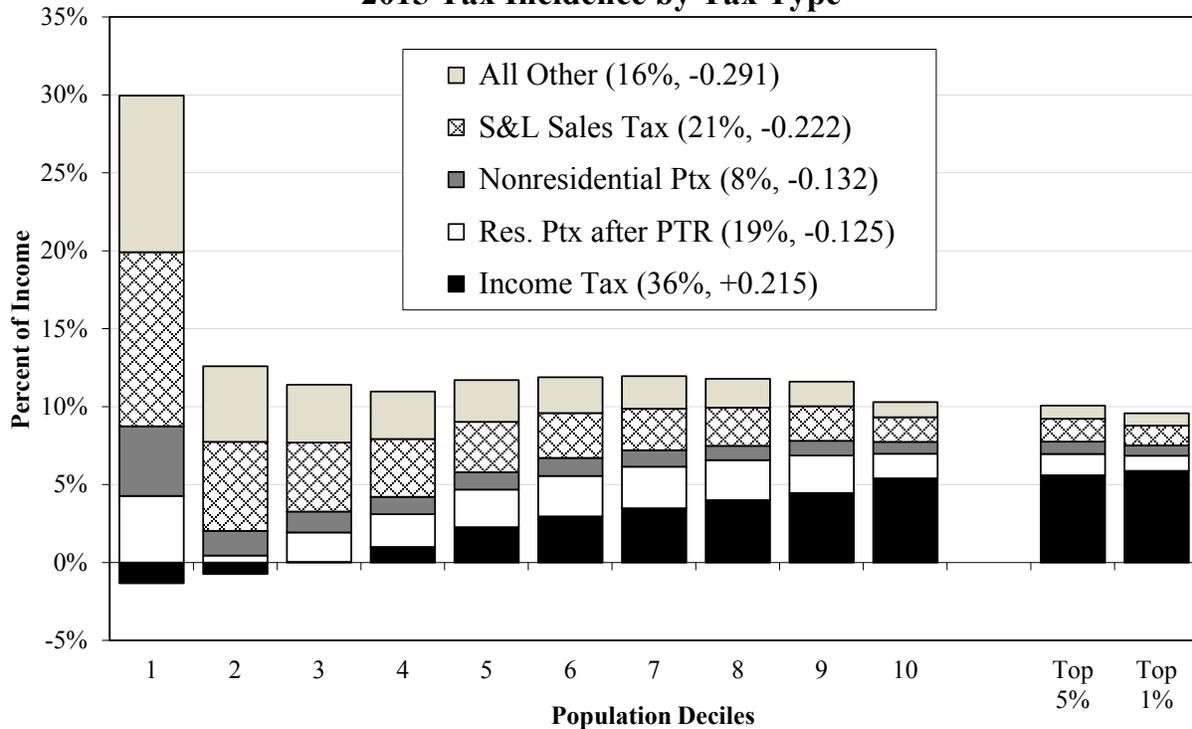


## Summary of 2015 Tax Burden by Major Tax Type

Figure 3-3 summarizes how the 2015 tax burden of the major tax categories varies by population decile. The categories for this table combine both the individual and business components of these tax types. For example, the state sales tax total includes both the consumer and business portions (including the tax on motor vehicles). Residential property tax includes homeowner and rental property taxes, along with cabins.

**Figure 3-3**

### 2015 Tax Incidence by Tax Type



**Note:** Numbers in parentheses show percent of total tax burden and the full-sample Suits index.

Figure 3-3 clearly demonstrates the importance of the progressive income tax in offsetting most of the regressivity of other taxes. Note that the sum of state sales tax, nonresidential property tax, and “all other taxes” accounts for at least half of the overall tax burden for those in each of the first six deciles. The sum accounts for more than 80 percent of the overall tax burden in deciles 2 and 3. The residential property tax burden (after PTR) is noticeably less regressive than the sales tax or “all other taxes,” mostly because of the property tax refunds. In their absence, the Suits index for residential property taxes would be -0.200 – more regressive than nonresidential property taxes and almost as regressive as the sales tax.



## Chapter 4: Additional Results

This chapter provides additional analysis of the 2010 results.

- Section A reports the 2010 results by income deciles rather than population deciles. The households in each income decile receive 10 percent of total household income. This provides added detail for high-income households (but less detail for lower-income households).
- Section B discusses three alternative methods that have been used to compute Suits indexes in recent editions of this study. It explains why the “full-sample” Suits index is generally preferred over “population-decile” and “income-decile” indexes.
- Section C explains why the study disregards the “federal tax offset” in calculating the burden of state and local taxes. For those who itemize deductions, an increase in their state income tax, homestead property tax, or motor vehicle registration tax may reduce their federal income tax liability. Taking this into account would reduce the estimated tax rates reported in this study. For informational purposes, effective tax rates and Suits indexes adjusted for the federal tax offset are included in this section.
- Section D demonstrates the significant impact that refundable income tax credits and property tax refunds have on the distribution of the overall tax burden. Effective tax rates and Suits indexes are calculated both with and without these provisions.
- Section E explains why this study’s estimates of the incidence of *existing* business taxes should not be used to estimate the incidence of a *change* in Minnesota taxes. The difference between “average incidence” (for existing taxes) and “incremental incidence” (for a change in taxes) is illustrated for the corporate income tax, rental property tax, and industrial property tax.
- Section F presents results from a 50-state study of overall tax incidence. Though the results are limited to the population of non-seniors, they help provide context for the results of Minnesota’s tax incidence studies.

**Section A**  
**An Alternative Presentation: Income Deciles<sup>26</sup>**

The results presented elsewhere in this study have been summarized for deciles of households. Each population decile represented 10 percent of the population of households in the study. This section provides an alternative way to summarize the distribution of the 2010 and 2015 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 2010 for purposes of illustration in the population decile distribution, each decile of 257,518 households is 10 percent of all households; in the income decile distribution, each decile with \$17.5 billion of income constitutes 10 percent of total income. Because of their relatively low incomes, it takes 1,040,891 households in the first income decile to account for 10 percent of total income; in contrast, there are only 7,937 high-income households in the tenth decile, who also received 10 percent of total income.

Again using the year 2010 for illustration, the first decile includes 40.4 percent of all households. Their share of total taxes (12 percent) exceeded 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 21 percent of the consumer sales tax, 31 percent of excise taxes, and 20 percent of all business taxes borne by Minnesota residents.

The tenth income decile includes less than 0.3 percent of all households. Their share of total taxes (8.9 percent) was lower than their share of household income (10 percent). They paid 16.4 percent of the individual income tax, 4.3 percent of the consumer sales tax, 1.1 percent of excise taxes, and 7.1 percent of business taxes borne by Minnesota residents.

Tables by income decile provide more detail about the tax burdens of higher-income households. In contrast, tables by population decile provide more detail about tax burdens for households at the middle of the income distribution or below.

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<sup>26</sup> Unlike some earlier studies, *Tables 4-1* through *4-4* do not report the results separately for those receiving the top 1 percent of income. Because 20 or fewer households would be included in that group, reporting such information separately would raise disclosure issues.

**Table 4-1**

**2010 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	\$31,810 & under	1,040,891	\$17,537,271	\$15,032	\$88,192	\$626,490	\$268,179	\$894,669	-\$236,054	\$64,358	\$341,211	\$289,049	\$45,551
Second	\$31,811 - \$49,685	435,900	17,533,159	405,483	58,994	390,929	165,611	556,540	-96,527	40,459	172,581	194,001	29,048
Third	\$49,686 - \$67,052	302,958	17,538,120	537,751	52,704	339,167	146,311	485,477	-48,304	36,740	135,083	170,582	26,043
Fourth	\$67,053 - \$85,120	231,858	17,540,074	626,864	49,624	310,047	136,775	446,822	-21,145	35,347	112,896	152,780	24,066
Fifth	\$85,121 - \$106,562	184,712	17,527,127	699,265	47,317	287,319	128,402	415,721	-9,565	34,384	98,648	137,445	23,120
Sixth	\$106,563 - \$135,666	146,709	17,551,361	758,017	43,907	260,026	114,657	374,683	-2,330	30,743	82,916	118,809	20,795
Seventh	\$135,667 - \$184,750	112,308	17,520,726	797,814	40,921	233,432	107,849	341,282	-599	29,330	66,206	96,393	19,131
Eighth	\$184,751 - \$314,916	75,229	17,534,977	859,294	36,921	199,203	101,090	300,294	-965	28,992	48,232	67,845	18,459
Ninth	\$314,917 - \$824,185	36,682	17,532,226	862,588	29,618	158,812	88,707	247,520	-807	27,893	28,498	41,000	15,367
Tenth	\$824,186 & over	7,937	17,534,161	1,090,450	21,753	125,960	83,268	209,227	-68	32,726	11,112	145,807	12,800
<b>TOTALS</b>		<b>2,575,184</b>	<b>\$175,349,202</b>	<b>\$6,652,559</b>	<b>\$469,950</b>	<b>\$2,931,385</b>	<b>\$1,340,849</b>	<b>\$4,272,235</b>	<b>-\$416,364</b>	<b>\$360,972</b>	<b>\$1,097,384</b>	<b>\$1,413,712</b>	<b>\$234,381</b>
Top 5%	Over \$2,620,217	1,163	\$8,774,881	\$588,703	\$9,209	\$62,671	\$38,663	\$101,334	-\$2	\$16,421	\$3,268	\$118,550	\$5,612

Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes <sup>2</sup>
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total <sup>1</sup>		
First	\$456,588	\$149,090	\$87,688	\$236,778	\$714,881	\$216,294	\$48,885
Second	449,921	81,263	42,397	123,661	592,754	158,388	30,865
Third	465,566	36,900	40,372	77,272	560,529	158,528	26,958
Fourth	454,307	16,514	40,485	56,999	528,690	124,475	24,917
Fifth	427,303	8,214	40,676	48,890	495,396	136,881	23,212
Sixth	384,865	5,297	32,643	37,939	440,979	122,275	21,053
Seventh	367,644	2,998	35,526	38,524	419,734	81,993	19,234
Eighth	308,422	1,798	45,068	46,866	365,094	144,488	16,831
Ninth	203,811	641	53,639	54,280	264,341	101,668	13,614
Tenth	76,209	154	76,869	77,022	154,636	99,049	12,049
<b>TOTALS</b>	<b>\$3,594,635</b>	<b>\$302,869</b>	<b>\$495,363</b>	<b>\$798,231</b>	<b>\$4,537,035</b>	<b>\$1,344,038</b>	<b>\$237,618</b>
Top 5%	\$15,861	\$4	\$38,897	\$38,901	\$54,972	\$44,889	\$5,917

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
\$980,061	\$1,006,497	\$495,511	\$1,502,008	\$2,482,068
782,007	1,048,930	311,649	1,360,579	2,142,586
746,014	1,119,303	276,774	1,396,077	2,142,091
678,082	1,167,978	259,277	1,427,255	2,105,337
655,489	1,201,341	244,996	1,446,336	2,101,826
584,307	1,206,898	220,642	1,427,539	2,011,847
520,961	1,183,154	207,324	1,390,477	1,911,438
526,414	1,164,699	194,374	1,359,072	1,885,486
379,623	1,083,359	168,317	1,251,676	1,631,299
265,734	1,369,708	154,100	1,523,808	1,789,543
<b>\$6,118,692</b>	<b>\$11,551,864</b>	<b>\$2,532,964</b>	<b>\$14,084,828</b>	<b>\$20,203,520</b>
\$105,777	\$772,048	\$71,044	\$843,093	\$948,870

<sup>1</sup> Includes seasonal recreational residential (cabins)

<sup>2</sup> Includes taconite production tax

**Table 4-2**

**2010 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	\$31,810 & under	1,040,891	\$17,537,271	0.1%	0.5%	3.6%	1.5%	5.1%	- 1.3%	0.4%	1.9%	1.6%	0.3%
Second	\$31,811 - \$49,685	435,900	17,533,159	2.3%	0.3%	2.2%	0.9%	3.2%	- 0.6%	0.2%	1.0%	1.1%	0.2%
Third	\$49,686 - \$67,052	302,958	17,538,120	3.1%	0.3%	1.9%	0.8%	2.8%	- 0.3%	0.2%	0.8%	1.0%	0.1%
Fourth	\$67,053 - \$85,120	231,858	17,540,074	3.6%	0.3%	1.8%	0.8%	2.5%	- 0.1%	0.2%	0.6%	0.9%	0.1%
Fifth	\$85,121 - \$106,562	184,712	17,527,127	4.0%	0.3%	1.6%	0.7%	2.4%	- 0.1%	0.2%	0.6%	0.8%	0.1%
Sixth	\$106,563 - \$135,666	146,709	17,551,361	4.3%	0.3%	1.5%	0.7%	2.1%	0.0%	0.2%	0.5%	0.7%	0.1%
Seventh	\$135,667 - \$184,750	112,308	17,520,726	4.6%	0.2%	1.3%	0.6%	1.9%	0.0%	0.2%	0.4%	0.6%	0.1%
Eighth	\$184,751 - \$314,916	75,229	17,534,977	4.9%	0.2%	1.1%	0.6%	1.7%	0.0%	0.2%	0.3%	0.4%	0.1%
Ninth	\$314,917 - \$824,185	36,682	17,532,226	4.9%	0.2%	0.9%	0.5%	1.4%	0.0%	0.2%	0.2%	0.2%	0.1%
Tenth	\$824,186 & over	7,937	17,534,161	6.2%	0.1%	0.7%	0.5%	1.2%	0.0%	0.2%	0.1%	0.8%	0.1%
<b>TOTALS</b>		<b>2,575,184</b>	<b>\$175,349,202</b>	<b>3.8%</b>	<b>0.3%</b>	<b>1.7%</b>	<b>0.8%</b>	<b>2.4%</b>	<b>- 0.2%</b>	<b>0.2%</b>	<b>0.6%</b>	<b>0.8%</b>	<b>0.1%</b>
Top 5%	Over \$2,620,217	1,163	\$8,774,881	6.7%	0.1%	0.7%	0.4%	1.2%	0.0%	0.2%	0.0%	1.4%	0.1%

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Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total <sup>1</sup>		
First	2.6%	0.9%	0.5%	1.4%	4.1%	1.2%	0.3%
Second	2.6%	0.5%	0.2%	0.7%	3.4%	0.9%	0.2%
Third	2.7%	0.2%	0.2%	0.4%	3.2%	0.9%	0.2%
Fourth	2.6%	0.1%	0.2%	0.3%	3.0%	0.7%	0.1%
Fifth	2.4%	0.0%	0.2%	0.3%	2.8%	0.8%	0.1%
Sixth	2.2%	0.0%	0.2%	0.2%	2.5%	0.7%	0.1%
Seventh	2.1%	0.0%	0.2%	0.2%	2.4%	0.5%	0.1%
Eighth	1.8%	0.0%	0.3%	0.3%	2.1%	0.8%	0.1%
Ninth	1.2%	0.0%	0.3%	0.3%	1.5%	0.6%	0.1%
Tenth	0.4%	0.0%	0.4%	0.4%	0.9%	0.6%	0.1%
<b>TOTALS</b>	<b>2.0%</b>	<b>0.2%</b>	<b>0.3%</b>	<b>0.5%</b>	<b>2.6%</b>	<b>0.8%</b>	<b>0.1%</b>
Top 5%	0.2%	0.0%	0.4%	0.4%	0.6%	0.5%	0.1%

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
5.6%	5.7%	2.8%	8.6%	14.2%
4.5%	6.0%	1.8%	7.8%	12.2%
4.3%	6.4%	1.6%	8.0%	12.2%
3.9%	6.7%	1.5%	8.1%	12.0%
3.7%	6.9%	1.4%	8.3%	12.0%
3.3%	6.9%	1.3%	8.1%	11.5%
3.0%	6.8%	1.2%	7.9%	10.9%
3.0%	6.6%	1.1%	7.8%	10.8%
2.2%	6.2%	1.0%	7.1%	9.3%
1.5%	7.8%	0.9%	8.7%	10.2%
<b>3.5%</b>	<b>6.6%</b>	<b>1.4%</b>	<b>8.0%</b>	<b>11.5%</b>
<b>1.2%</b>	<b>8.8%</b>	<b>0.8%</b>	<b>9.6%</b>	<b>10.8%</b>

<sup>1</sup> Includes seasonal recreational residential (cabins).

**Table 4-3**

**2015 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	\$36,431 & under	1,136,811	\$21,518,314	\$47,082	\$105,790	\$696,914	\$299,422	\$996,336	-\$351,127	\$72,388	\$350,448	\$369,219	\$54,166
Second	\$36,432 - \$56,585	468,650	21,516,597	562,814	70,683	436,496	184,189	620,685	-122,388	45,873	175,281	247,382	33,988
Third	\$56,586 - \$76,407	326,621	21,519,594	730,970	63,860	383,251	165,136	548,387	-54,953	41,938	136,681	215,008	30,511
Fourth	\$76,408 - \$96,967	249,915	21,516,954	840,786	59,562	351,519	152,043	503,562	-21,724	39,222	114,577	191,852	28,088
Fifth	\$96,968 - \$121,491	199,217	21,525,048	931,301	57,246	325,936	145,135	471,071	-5,761	39,223	100,249	171,525	26,993
Sixth	\$121,492 - \$154,720	157,486	21,504,356	998,061	53,235	295,427	130,476	425,903	-1,112	35,379	83,267	146,107	24,487
Seventh	\$154,721 - \$211,978	120,273	21,510,855	1,041,446	49,899	268,525	123,958	392,483	-94	33,936	67,151	117,900	22,739
Eighth	\$211,979 - \$366,010	79,943	21,520,249	1,124,071	44,845	231,255	117,643	348,898	-144	33,367	48,973	82,848	21,907
Ninth	\$366,011 - \$967,943	38,605	21,523,533	1,124,018	35,569	187,791	103,040	290,831	-118	31,064	29,068	48,412	18,461
Tenth	\$967,944 & over	8,047	21,503,727	1,385,554	25,008	151,638	94,502	246,140	-8	33,378	11,385	146,540	15,411
<b>TOTALS</b>		<b>2,785,568</b>	<b>\$198,138,396</b>	<b>\$8,111,957</b>	<b>\$483,279</b>	<b>\$2,988,526</b>	<b>\$1,502,832</b>	<b>\$4,491,358</b>	<b>-\$550,490</b>	<b>\$364,677</b>	<b>\$1,130,164</b>	<b>\$1,616,646</b>	<b>\$201,613</b>
Top 5%	Over \$3,308,112	1,129	\$10,761,437	\$743,361	\$10,123	\$76,258	\$42,320	\$118,578	\$0	\$15,832	\$3,348	\$108,183	\$6,615

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Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes <sup>2</sup>
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total <sup>1</sup>		
First	\$490,095	\$181,931	\$109,845	\$291,777	\$811,998	\$265,669	\$75,934
Second	478,908	94,881	52,894	147,774	653,418	202,847	47,795
Third	506,420	42,578	51,843	94,421	625,239	189,487	42,114
Fourth	481,085	19,650	48,329	67,980	573,091	163,765	38,714
Fifth	450,961	9,819	50,357	60,176	537,490	168,360	36,344
Sixth	415,422	6,144	42,387	48,531	488,664	161,321	32,863
Seventh	393,818	3,367	45,051	48,418	460,668	111,677	30,321
Eighth	325,146	2,186	59,254	61,440	399,822	175,258	26,438
Ninth	212,542	708	68,411	69,119	290,029	127,915	21,221
Tenth	78,291	177	93,968	94,145	174,235	113,544	18,391
<b>TOTALS</b>	<b>\$3,832,687</b>	<b>\$361,440</b>	<b>\$622,340</b>	<b>\$983,780</b>	<b>\$5,014,653</b>	<b>\$1,679,843</b>	<b>\$370,135</b>
Top 5%	\$15,545	\$5	\$46,124	\$46,130	\$61,931	\$47,907	\$8,878

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
\$1,153,601	\$1,083,409	\$560,891	\$1,644,301	\$2,797,902
904,059	1,282,390	351,928	1,634,318	2,538,377
856,841	1,396,033	316,369	1,712,402	2,569,243
775,571	1,463,673	292,252	1,755,925	2,531,495
742,194	1,511,733	280,113	1,791,846	2,534,040
682,847	1,511,383	253,945	1,765,328	2,448,175
602,667	1,484,811	240,650	1,725,460	2,328,127
601,517	1,478,033	226,733	1,704,766	2,306,283
439,164	1,382,384	194,921	1,577,305	2,016,469
306,170	1,691,513	171,895	1,863,408	2,169,578
<b>\$7,064,631</b>	<b>\$13,150,842</b>	<b>\$2,719,429</b>	<b>\$15,870,271</b>	<b>\$22,934,903</b>
\$118,716	\$930,006	\$76,033	\$1,006,040	\$1,124,756

<sup>1</sup> Includes seasonal recreational residential (cabins)

<sup>2</sup> Includes taconite production tax

**Table 4-4**

**2015 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	\$36,431 & under	1,136,811	\$21,518,314	0.2%	0.5%	3.2%	1.4%	4.6%	- 1.6%	0.3%	1.6%	1.7%	0.3%
Second	\$36,432 - \$56,585	468,650	21,516,597	2.6%	0.3%	2.0%	0.9%	2.9%	- 0.6%	0.2%	0.8%	1.1%	0.2%
Third	\$56,586 - \$76,407	326,621	21,519,594	3.4%	0.3%	1.8%	0.8%	2.5%	- 0.3%	0.2%	0.6%	1.0%	0.1%
Fourth	\$76,408 - \$96,967	249,915	21,516,954	3.9%	0.3%	1.6%	0.7%	2.3%	- 0.1%	0.2%	0.5%	0.9%	0.1%
Fifth	\$96,968 - \$121,491	199,217	21,525,048	4.3%	0.3%	1.5%	0.7%	2.2%	0.0%	0.2%	0.5%	0.8%	0.1%
Sixth	\$121,492 - \$154,720	157,486	21,504,356	4.6%	0.2%	1.4%	0.6%	2.0%	0.0%	0.2%	0.4%	0.7%	0.1%
Seventh	\$154,721 - \$211,978	120,273	21,510,855	4.8%	0.2%	1.2%	0.6%	1.8%	0.0%	0.2%	0.3%	0.5%	0.1%
Eighth	\$211,979 - \$366,010	79,943	21,520,249	5.2%	0.2%	1.1%	0.5%	1.6%	0.0%	0.2%	0.2%	0.4%	0.1%
Ninth	\$366,011 - \$967,943	38,605	21,523,533	5.2%	0.2%	0.9%	0.5%	1.4%	0.0%	0.1%	0.1%	0.2%	0.1%
Tenth	\$967,944 & over	8,047	21,503,727	6.4%	0.1%	0.7%	0.4%	1.1%	0.0%	0.2%	0.1%	0.7%	0.1%
<b>TOTALS</b>		<b>2,785,568</b>	<b>\$198,138,396</b>	<b>4.1%</b>	<b>0.2%</b>	<b>1.5%</b>	<b>0.8%</b>	<b>2.3%</b>	<b>- 0.3%</b>	<b>0.2%</b>	<b>0.6%</b>	<b>0.8%</b>	<b>0.1%</b>
Top 5%	Over \$3,308,112	1,129	\$10,761,437	6.9%	0.1%	0.7%	0.4%	1.1%	0.0%	0.1%	0.0%	1.0%	0.1%

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Income Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes	Other Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total <sup>1</sup>		
First	2.3%	0.8%	0.5%	1.4%	3.8%	1.2%	0.4%
Second	2.2%	0.4%	0.2%	0.7%	3.0%	0.9%	0.2%
Third	2.4%	0.2%	0.2%	0.4%	2.9%	0.9%	0.2%
Fourth	2.2%	0.1%	0.2%	0.3%	2.7%	0.8%	0.2%
Fifth	2.1%	0.0%	0.2%	0.3%	2.5%	0.8%	0.2%
Sixth	1.9%	0.0%	0.2%	0.2%	2.3%	0.8%	0.2%
Seventh	1.8%	0.0%	0.2%	0.2%	2.1%	0.5%	0.1%
Eighth	1.5%	0.0%	0.3%	0.3%	1.9%	0.8%	0.1%
Ninth	1.0%	0.0%	0.3%	0.3%	1.3%	0.6%	0.1%
Tenth	0.4%	0.0%	0.4%	0.4%	0.8%	0.5%	0.1%
<b>TOTALS</b>	<b>1.9%</b>	<b>0.2%</b>	<b>0.3%</b>	<b>0.5%</b>	<b>2.5%</b>	<b>0.8%</b>	<b>0.2%</b>
Top 5%	0.1%	0.0%	0.4%	0.4%	0.6%	0.4%	0.1%

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
5.4%	5.0%	2.6%	7.6%	13.0%
4.2%	6.0%	1.6%	7.6%	11.8%
4.0%	6.5%	1.5%	8.0%	11.9%
3.6%	6.8%	1.4%	8.2%	11.8%
3.4%	7.0%	1.3%	8.3%	11.8%
3.2%	7.0%	1.2%	8.2%	11.4%
2.8%	6.9%	1.1%	8.0%	10.8%
2.8%	6.9%	1.1%	7.9%	10.7%
2.0%	6.4%	0.9%	7.3%	9.4%
1.4%	7.9%	0.8%	8.7%	10.1%
<b>3.6%</b>	<b>6.6%</b>	<b>1.4%</b>	<b>8.0%</b>	<b>11.6%</b>
1.1%	8.6%	0.7%	9.3%	10.5%

<sup>1</sup> 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 (14.2 percent) was much lower than that for the first population decile (32.1 percent), again using 2010 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.

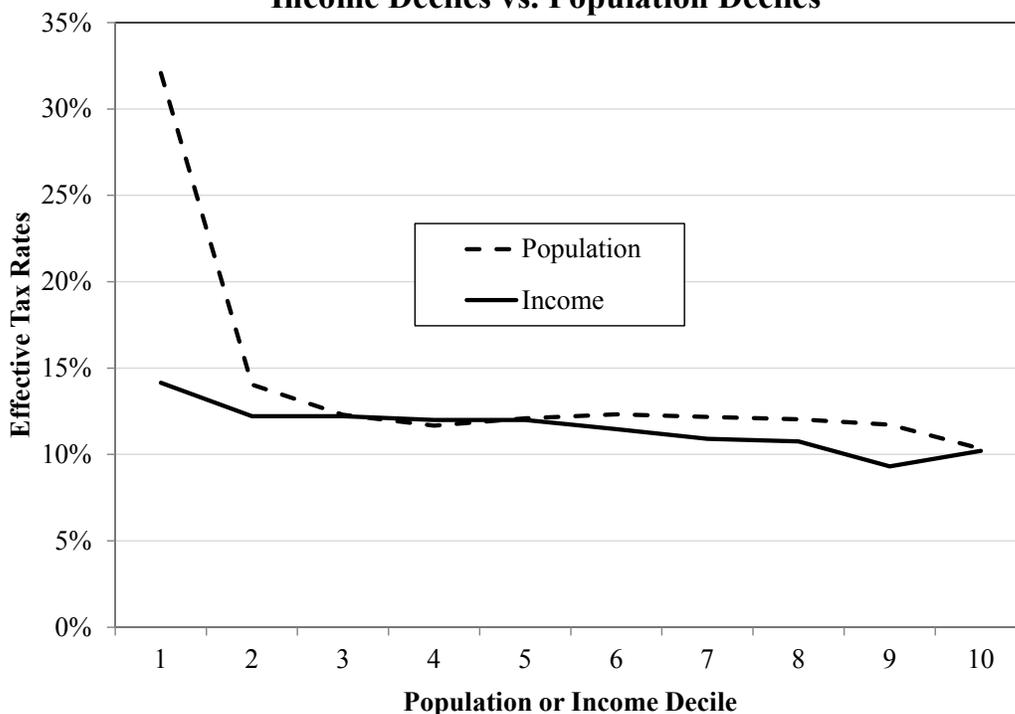
The pattern of effective tax rates also differs for the top deciles. The tenth income decile (with 7,937 households) had an effective tax rate of 10.2 percent. In contrast, the tenth population decile (with about 257,518 households) had an effective tax rate of 10.3 percent.

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 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 57.3 percent of households who are combined in the first two income deciles.

**Figure 4-1**  
**State and Local Effective Tax Rates for 2010**  
**Income Deciles vs. Population Deciles**



<b>Section B</b> <b>An Alternative Methodology: Three Versions of the Suits Index</b>
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The Suits indexes reported in early editions of this study were calculated using summary data for each of the ten population deciles. The calculations were 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) were used to calculate this "population-decile" Suits index.

More recent editions of this study also reported "income-decile" Suits indexes. Income-decile Suits indexes are generally farther from zero than the corresponding population-decile Suits index. Use of the income-decile Suits makes regressive taxes appear to be more regressive and progressive taxes appear to be more progressive. The income-decile Suits index – like the population-decile one – is calculated using only ten observations.

In contrast, the "full-sample" Suits index (first reported in the 2007 study) uses each of the 117,771 sample records. It provides a more accurate measure of regressivity or progressivity. In almost every case, the full-sample Suits index for a particular tax is farther from zero than either the population-decile or income-decile Suits index. Using all sample records makes regressive taxes appear more regressive and progressive taxes appear more progressive.

For example, the full-sample Suits index for the income tax in 2010 is +0.230. This exceeds both the population-decile Suits index (+0.213) and the income-decile Suits index (+0.226). 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 2010 (-0.230 compared to -0.216 and -0.225 for the population-decile and income-decile Suits indexes). For the tax system as a whole, the full-sample Suits (at -0.060) suggests greater regressivity than either the population or income decile Suits indexes (at -0.056 and -0.058).

The full-sample index is theoretically preferred because it is based on all available data, and computers can now quickly calculate an index based on every sample record. This study generally reports full-sample Suits indexes except in places where this would make it difficult to compare this study's results with those of earlier years, which did not report the full-sample indexes.

Both the full-sample Suits index and population-decile Suits index are reported on *Tables 2-1* and *3-1* (two far-right columns). For easy comparison, *Table 4-5* shows all three versions of the Suits index for each tax category.

**Table 4-5**

**Suits Indexes: Population-Decile, Income-Decile, and Full-Sample (2010-2015)**

Tax Type	2010 Suits Index			2015 Suits Index		
	Pop.-Decile	Inc.-Decile	Full-Sample	Pop.-Decile	Inc.-Decile	Full-Sample
<b>State Taxes</b>						
<b>Taxes on Income and Estates</b>						
Individual income tax	0.213	0.226	0.230	0.200	0.212	0.215
Corporation franchise tax <sup>1</sup>	-0.181	-0.194	-0.199	-0.181	-0.195	-0.200
Estate tax	0.529	0.817	0.832	0.526	0.815	0.828
<b>Total Income and Estate Taxes</b>	<b>0.194</b>	<b>0.212</b>	<b>0.215</b>	<b>0.183</b>	<b>0.198</b>	<b>0.200</b>
<b>Taxes on Consumption</b>						
Total sales tax	-0.216	-0.225	-0.230	-0.207	-0.215	-0.221
General sales/use tax	-0.229	-0.239	-0.245	-0.224	-0.234	-0.240
Sales tax on motor vehicles	-0.062	-0.054	-0.058	-0.055	-0.049	-0.053
Motor fuels excise taxes	-0.310	-0.331	-0.338	-0.315	-0.336	-0.343
Alcoholic beverage excise taxes	-0.212	-0.219	-0.225	-0.201	-0.208	-0.215
Cigarette and tobacco excise taxes <sup>2</sup>	-0.581	-0.581	-0.598	-0.593	-0.592	-0.610
Insurance premiums taxes	-0.324	-0.344	-0.349	-0.332	-0.352	-0.358
Gambling taxes	-0.485	-0.496	-0.503	-0.491	-0.502	-0.509
MinnesotaCare taxes	-0.280	-0.309	-0.314	-0.288	-0.317	-0.322
Solid waste management taxes	-0.389	-0.400	-0.411	-0.389	-0.401	-0.412
<b>Total Consumption Taxes</b>	<b>-0.263</b>	<b>-0.274</b>	<b>-0.280</b>	<b>-0.257</b>	<b>-0.268</b>	<b>-0.275</b>
<b>Taxes on Property</b>						
State Property Tax	-0.126	-0.120	-0.125	-0.130	-0.127	-0.133
Residential recreational property	-0.193	-0.224	-0.228	-0.199	-0.231	-0.235
Commercial <sup>3</sup>	-0.117	-0.107	-0.112	-0.117	-0.108	-0.114
Industrial	0.028	0.067	0.067	0.020	0.050	0.049
Utility	-0.212	-0.227	-0.232	-0.210	-0.227	-0.232
Motor vehicle registration tax	-0.334	-0.354	-0.362	-0.341	-0.360	-0.369
Mortgage and deed taxes	-0.085	-0.101	-0.105	-0.090	-0.107	-0.111
<b>Total Property Taxes</b>	<b>-0.224</b>	<b>-0.234</b>	<b>-0.240</b>	<b>-0.226</b>	<b>-0.237</b>	<b>-0.244</b>
<b>Property Tax Refunds</b>						
Homeowners	0.688	0.685	0.694	0.733	0.725	0.737
Renters	0.885	0.863	0.889	0.906	0.876	0.909
<b>Total Property Tax Refunds</b>	<b>0.754</b>	<b>0.744</b>	<b>0.759</b>	<b>0.798</b>	<b>0.782</b>	<b>0.802</b>
<b>Total State Taxes</b>	<b>-0.009</b>	<b>-0.006</b>	<b>-0.008</b>	<b>0.006</b>	<b>0.008</b>	<b>0.007</b>
<b>Local Taxes</b>						
Property Taxes	-0.161	-0.176	-0.180	-0.164	-0.177	-0.183
General Property Tax	-0.161	-0.176	-0.181	-0.165	-0.178	-0.183
Homeowners (before PTR)	-0.144	-0.173	-0.176	-0.147	-0.177	-0.180
Residential recreational property	-0.193	-0.224	-0.228	-0.199	-0.231	-0.235
Commercial <sup>3</sup>	-0.117	-0.107	-0.112	-0.117	-0.108	-0.114
Industrial	0.028	0.067	0.067	0.020	0.050	0.049
Farm (other than residence) <sup>4</sup>	-0.141	-0.149	-0.156	-0.145	-0.142	-0.154
Rental Housing (before PTR)	-0.292	-0.268	-0.277	-0.284	-0.261	-0.269
Utility	-0.212	-0.227	-0.232	-0.210	-0.227	-0.232
Mining Production Taxes (taconite)	0.219	0.293	0.299	0.203	0.261	0.265
Taxes on consumption						
Local Sales Taxes	-0.229	-0.239	-0.245	-0.224	-0.234	-0.240
Local Gross Earnings Taxes	-0.212	-0.227	-0.232	-0.210	-0.227	-0.232
<b>Total Local Taxes</b>	<b>-0.163</b>	<b>-0.178</b>	<b>-0.182</b>	<b>-0.167</b>	<b>-0.180</b>	<b>-0.185</b>
<b>Total State and Local Taxes</b>	<b>-0.056</b>	<b>-0.058</b>	<b>-0.060</b>	<b>-0.044</b>	<b>-0.047</b>	<b>-0.049</b>

<sup>1</sup>Includes taconite/iron ore occupation tax.

<sup>2</sup>Includes Health Impact Fee.

<sup>3</sup>Includes resorts and railroads.

<sup>4</sup>Includes Timber.

## Section C

### An Alternative Methodology: Adjusting for the Federal Tax Offset

In estimating the incidence of existing Minnesota taxes, this study has made no adjustment for the “federal tax offset” due to the deductibility of Minnesota taxes in calculating the federal income tax. Individuals can generally deduct what they pay in state income tax and homeowner property taxes (and a portion of their motor vehicle registration tax) as itemized deductions. Those who itemize deductions pay less federal income tax as a result. For a taxpayer in the 28 percent federal tax bracket, each additional dollar of itemized deductions lowers federal income tax by 28 cents. As a result, 28 percent of deductible state and local taxes would be borne by the federal government in lower tax revenue. If no adjustment is made for this federal tax offset, the Minnesota tax burden 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. A regressive system would look even more regressive.

This same reasoning applies to business taxes. If an additional dollar in business taxes reduces 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 for non-business taxes is shown in *Tables 4-6 and 4-7*, and *Figure 4-2*. For all households combined, the federal offset for non-business taxes would reduce Minnesota tax burdens by almost 10 percent, reducing the effective tax rate from 11.5 percent to 10.6 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 federal Alternative Minimum Tax and the limitation on itemized deductions for high-income taxpayers, the effective tax rate in the tenth decile would fall from 10.3 percent to 9.0 percent. The adjusted tax burden for all taxes combined is noticeably more regressive, with the full-sample Suits index falling from -0.060 to -0.085.

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.

As explained in *Section E* of this chapter, though, the federal tax offset *should* be included in estimates of the incidence of *changes* in Minnesota taxes.

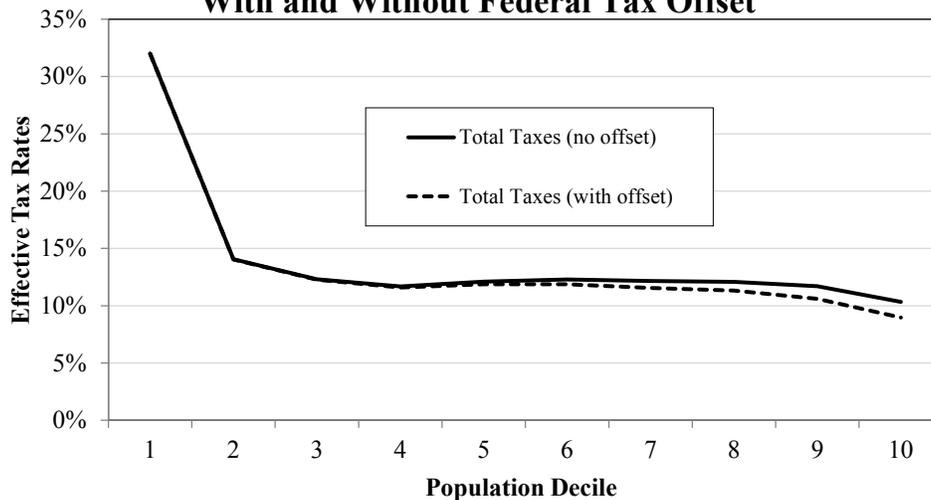
**Table 4-6**  
**Impact of Federal Tax Offset on Effective State and Local Tax Rates by Population Decile (Minnesota Residents, 2010)**

Population Decile	Household Income	Effective Tax Rate		
		No Federal Tax Offset	Change Due to Federal Tax Offset	Adjusted for Federal Tax Offset
First	\$ 10,154 & Under	32.0%	0.0%	32.0%
Second	10,155 - \$ 16,449	14.1%	0.0%	14.0%
Third	16,450 - 23,476	12.3%	0.0%	12.3%
Fourth	23,477 - 31,430	11.7%	0.1%	11.6%
Fifth	31,431 - 41,101	12.1%	0.2%	11.9%
Sixth	41,102 - 53,071	12.3%	0.4%	11.9%
Seventh	53,072 - 68,773	12.2%	0.6%	11.6%
Eighth	68,774 - 89,746	12.1%	0.8%	11.3%
Ninth	89,747 - 129,113	11.7%	1.1%	10.6%
Tenth	\$ 129,114 & Over	10.3%	1.4%	9.0%
<b>Total</b>		<b>11.5%</b>	<b>0.9%</b>	<b>10.6%</b>
Top 5%	\$ 178,170 & Over	10.0%	1.3%	8.7%
Top 1%	\$ 446,961 & Over	9.6%	1.5%	8.1%

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

	Without Offset	With Offset
All Taxes	-0.060	-0.085

**Figure 4-2**  
**Effective Tax Rates for 2010 With and Without Federal Tax Offset**



**Section D**  
**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 2010. That table also shows the full-sample Suits index for each of the major categories of payments.

**Table 4-8**  
**Population-Decile Suits Index for Refundable Credits  
and Property Tax Refund Payments in 2010**

Payments	Amount (\$ Thousands)	Suits Index
<b>Income Tax Credits</b>		
Working Family Credit	\$ 193,565	+0.885
Dependent Care Credit	14,427	+0.881
K-12 Education Credit	15,278	+0.871
Subtotal	\$ 223,270	+0.884
<b>Property Tax Refund</b>		
Homeowners	\$ 277,656	+0.694
Renters	138,708	+0.889
Subtotal	\$ 416,364	+0.759
<b>Total</b>	<b>\$ 639,634</b>	<b>+0.803</b>

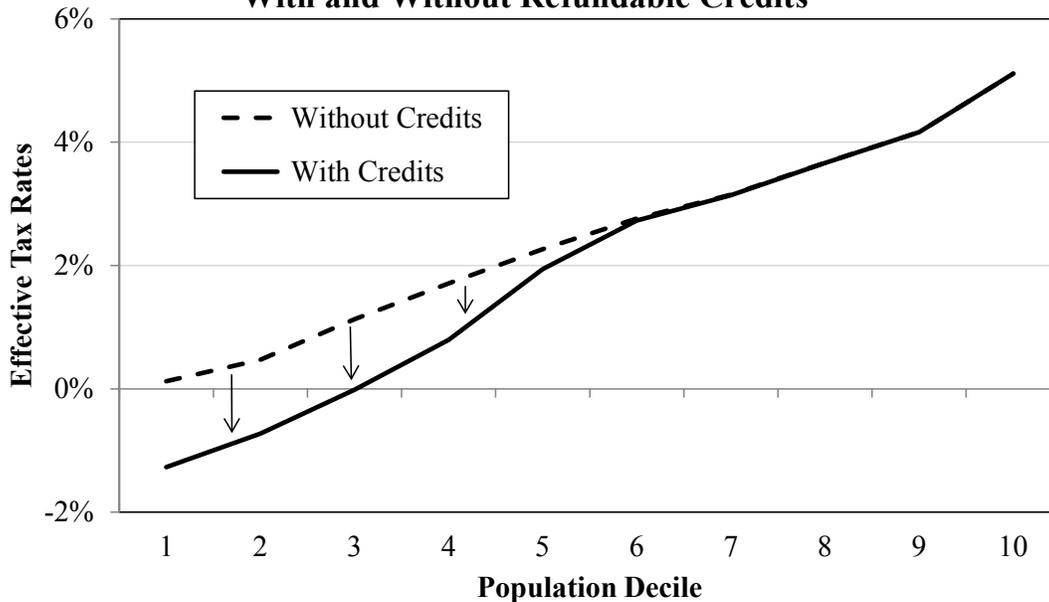
Total dollars of property tax refunds and refundable credits increased by 5.7 percent between 2008 and 2010, growing faster than total tax collections (which rose only 2.2 percent). The refundable income tax credits increased by 11 percent; property tax refunds rose by 3 percent. However, homeowner property tax refunds rose by 16 percent, but renter refunds fell by 16 percent.

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 2010. 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 -0.7 percent to +0.5 percent. The refundable credits make the income tax more progressive. In their absence, the full-sample Suits index for the income tax would be +0.194 rather than the +0.230.

**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	\$ 10,154 & Under	-1.3%	+1.4%	0.1%
Second	10,155 - \$ 16,449	-0.7%	+1.2%	0.5%
Third	16,450 - 23,476	0.0%	+1.1%	1.1%
Fourth	23,477 - 31,430	0.8%	+0.9%	1.7%
Fifth	31,431 - 41,101	1.9%	+0.3%	2.3%
Sixth	41,102 - 53,071	2.7%	0.0%	2.8%
Seventh	53,072 - 68,773	3.1%	0.0%	3.1%
Eighth	68,774 - 89,746	3.7%	0.0%	3.7%
Ninth	89,747 - 129,113	4.2%	0.0%	4.2%
Tenth	\$ 129,114 & Over	5.1%	0.0%	5.1%
<b>Total</b>		<b>3.8%</b>	<b>+0.1%</b>	<b>3.9%</b>

**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 would be almost as regressive as the sales tax, with a population-decile Suits index of -0.196 rather than -0.139. As shown in *Figure 4-4* and the last column of *Table 4-10*, effective tax rates would be 3.4 percent in the second decile and fall to 1.7 percent in the tenth decile. Property tax refunds reduce effective tax rates in the first eight deciles. With the PTR, effective tax rates fall to 1.9 percent in the second decile, then rise to 2.8 percent in the sixth decile before falling to 2.5 percent in the ninth decile and 1.7 percent in the tenth. Net residential property taxes (after PTR) are still regressive (with a full-sample Suits index of -0.139), but the burden as a percent of income is relatively constant over a wide range of incomes.

**Table 4-10**

**Residential Property Taxes Before and After Property Tax Refunds for 2010  
(Homesteads and Rental Housing)**

Population Decile	Household Income	Effective Tax Rates (Property Tax)		
		With PTR	Change If No PTR	Without PTR
First	\$ 10,154 & Under	6.7%	+2.5%	9.1%
Second	10,155 - \$ 16,449	1.9%	+1.6%	3.4%
Third	16,450 - 23,476	2.2%	+1.4%	3.5%
Fourth	23,477 - 31,430	2.3%	+1.0%	3.4%
Fifth	31,431 - 41,101	2.6%	+0.6%	3.3%
Sixth	41,102 - 53,071	2.8%	+0.4%	3.3%
Seventh	53,072 - 68,773	2.8%	+0.3%	3.1%
Eighth	68,774 - 89,746	2.8%	+0.1%	2.9%
Ninth	89,747 - 129,113	2.5%	0.0%	2.5%
Tenth	129,114 & Over	1.7%	0.0%	1.7%
Total		2.3%	+0.2%	2.5%

**Figure 4-4**

**Effective Residential Property Tax Rates by Population Decile,  
Before and After Property Tax Refunds**

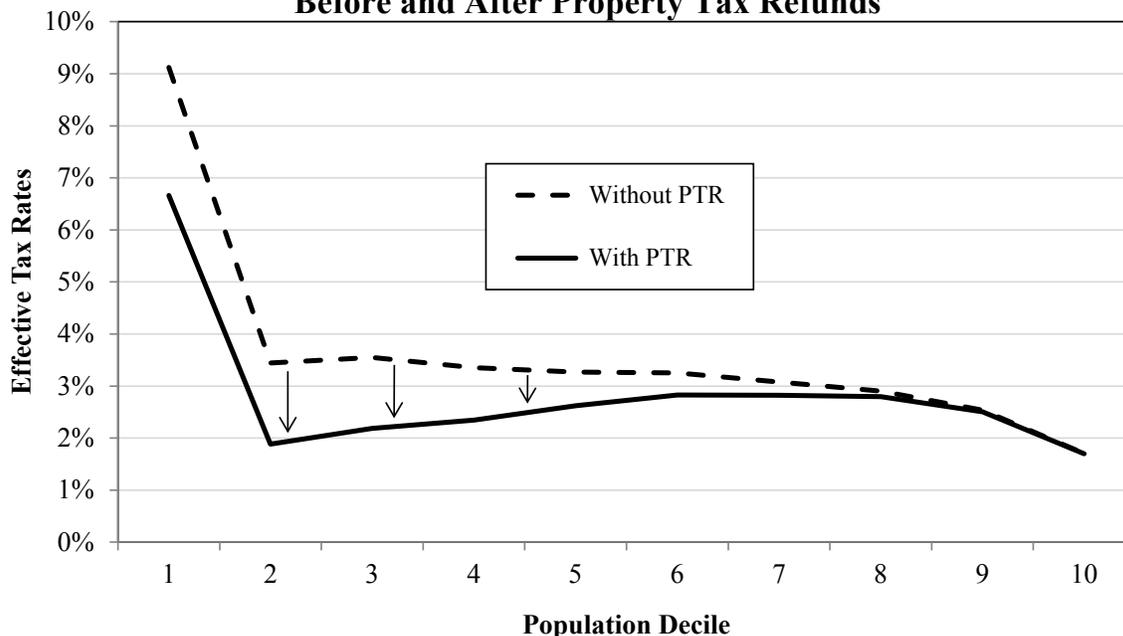


Table 4-11 and Figure 4-5 show the combined impact of both the income tax credits and property tax refunds on the overall effective tax rates by population decile. Without the credits or property tax refunds, effective tax rates would be higher in the first eight deciles. These payments make the overall tax system less regressive. In their absence, the full-sample Suits index for all taxes would be -0.083 rather than -0.060.

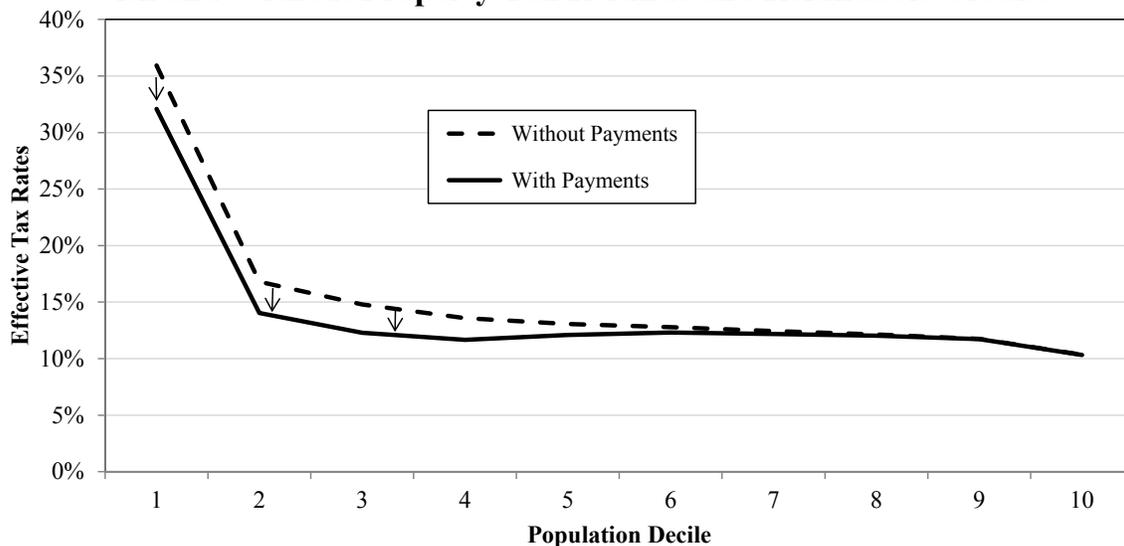
**Table 4-11**

**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 & Credits	Change If No PTR or Credits	Without PTR or Credits
First	\$ 10,154 & Under	32.1%	+3.8%	35.9%
Second	10,155 - \$ 16,449	14.0%	+2.8%	16.8%
Third	16,450 - 23,476	12.3%	+2.5%	14.8%
Fourth	23,477 - 31,430	11.7%	+1.9%	13.6%
Fifth	31,431 - 41,101	12.1%	+1.0%	13.1%
Sixth	41,102 - 53,071	12.3%	+0.5%	12.8%
Seventh	53,072 - 68,773	12.2%	+0.3%	12.4%
Eighth	68,774 - 89,746	12.0%	+0.1%	12.1%
Ninth	89,747 - 129,113	11.7%	0.0%	11.8%
Tenth	129,114 & Over	10.3%	0.0%	10.3%
Total		11.5%	+0.4%	11.9%

**Figure 4-5**

**Effective State and Local Tax Rates by Population Decile, With and Without Property Tax Refunds and Refundable Credits**



## Section E

### Incremental Incidence: Estimating the Incidence of a Change in Business Taxes

The incidence of proposed changes in business taxes has, on occasion, been mistakenly assumed to be identical to the incidence reported in the Tax Incidence Study. This is a mistake. The incidence results reported here cannot be applied to proposals for business tax changes.

The Tax Incidence Study estimates the burden of business taxes under the assumption that all states levy their existing taxes at the same time. Under that assumption, the ultimate burden of business taxes depends on how Minnesota's taxes compare to the taxes in other states. A tax on capital (other than land) is divided into three parts:

- The “average national tax rate on all capital.”
- The “sector differential”, defined as any portion of the tax that reflects higher national tax rates for a particular business sector.
- The “Minnesota differential”, defined as any excess of Minnesota's tax over the average national level of tax levied on this sector.

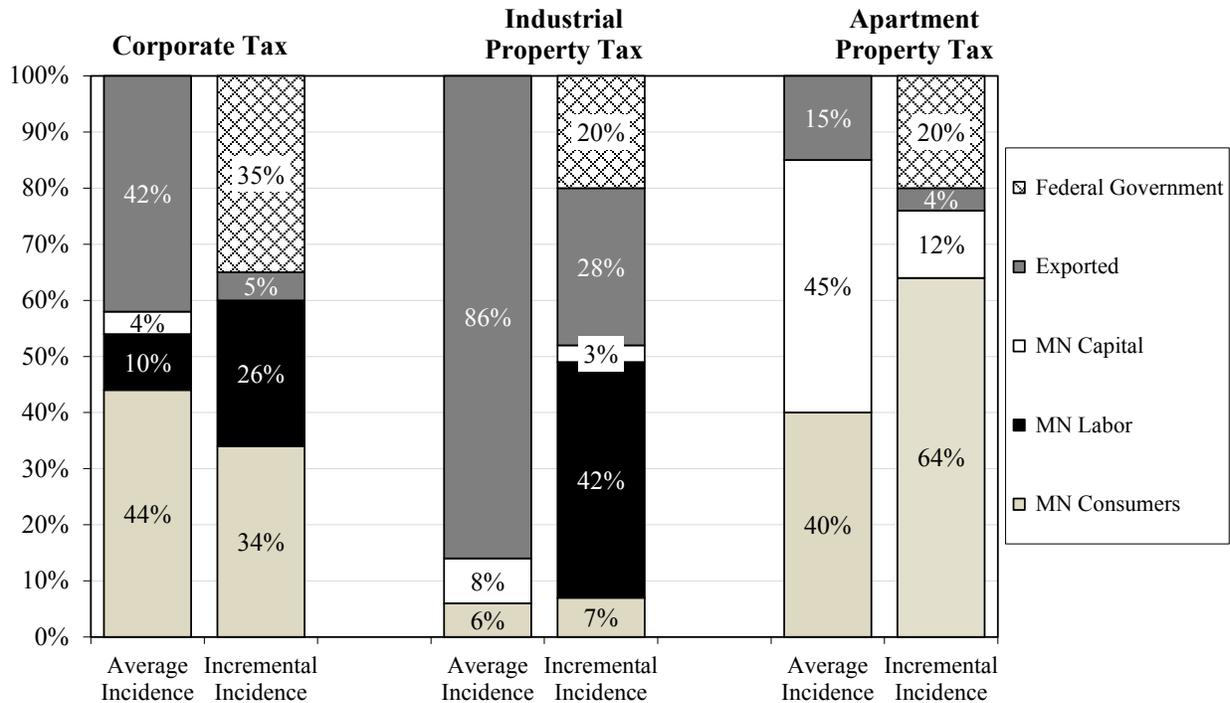
The portion of Minnesota's tax representing the national average tax on capital has a different incidence than the “Minnesota differential.” The tax burden reported in this study is the “average” incidence of a tax that is partly a tax levied at average national rates and partly a tax in excess of what is typical in other states. (A more detailed explanation of the modeling of business tax incidence is found in *Appendix B*.)

The burden of *existing* business taxes (the “average” incidence reported in this study) can be much different from the incidence of a *change* in tax (“incremental incidence”). If Minnesota changes its tax alone – with no changes in other states – then *all* of that tax change should be considered a change in the Minnesota differential.

Compared to the “average” incidence reported in this study, the burden of an *increase* in a business tax is less likely to fall on capital and more likely to fall on labor and consumers. Similarly, a *cut* in business taxes is more likely to benefit labor and consumers and less likely to benefit capital owners than is suggested by the results reported in this study. The ability to export the tax burden to residents of other states is also less than is suggested by the results for “average incidence” reported here. Moreover, the incidence of change in tax – unlike existing taxes – should take the federal tax offset into account. (See *Section C* of this chapter for a discussion of the federal tax offset.)

Three examples are provided in *Figure 4-6* to illustrate the potential differences. The figure contrasts the average incidence reported in this study with the incremental incidence of a change in the corporate tax, industrial property taxes, or property taxes levied on apartments.<sup>27</sup> These results should be considered rough approximations, provided for illustration only. In calculating the federal tax offset, the federal corporate tax rate is assumed to be 35 percent for those paying Minnesota corporate tax, while the federal tax rate for manufacturing and rental housing is assumed to be 20 percent.

**Figure 4-6**  
Average vs. Incremental Incidence



<sup>27</sup> Apartments are only a portion of the rental housing category shown on *Table B-2*, so the average-incidence results differ somewhat.

## Section F

### Tax Incidence in Other States

Minnesota is the only state that completes a comprehensive tax incidence study on a regular basis. This makes it difficult to know how to put the Minnesota results in context. Given the questions raised about how Minnesota compares to other states, this section summarizes the results of a 50-state study of state and local tax incidence. That study, entitled *Who Pays? A Distributional Analysis of Tax Systems in All 50 States* (4<sup>th</sup> Edition), was published by the Institute on Taxation and Economic Policy (ITEP) in January 2013.<sup>28</sup> It uses a methodology that is relatively close to what is used in this study.

The ITEP study is of high quality, but its results should be used with caution for several reasons.

- The population is limited to non-senior households.
- The results are based on 2010 income levels adjusted for the impact of tax changes enacted through January 2, 2013.
- Because all 50 states are included, there is obviously a less detailed analysis of each individual state's tax structure than in Minnesota's studies.
- The assumptions about business tax incidence are different (though the results for Minnesota are close).
- The results include only 7 population groups rather than either population deciles or income deciles:
  - Bottom 20 percent
  - Second 20 percent
  - Third 20 percent
  - Fourth 20 percent
  - Next 15 percent
  - Next 4 percent
  - Top 1 percent

Given these differences, it would be misleading to compare the “7-point” Suits indexes for 2013 law reported in the ITEP study with those reported in the current edition of the Tax Incidence Study for 2010 and 2015. However, the ITEP Study's “7-point” Suits index for Minnesota (-0.033) is not far from the population-decile Suits index reported here for 2015 (-0.040). Any difference for Minnesota is not likely to reflect ITEP's omission of senior households. A Suits index for non-senior households calculated using the Minnesota database is almost identical to the Suits index for senior and non-senior households combined.

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<sup>28</sup> Available at: [www.itepnet.org/whopays.htm](http://www.itepnet.org/whopays.htm). The “7-point” Suits indexes were calculated by Jeff Van Wychen, director of Tax Policy and Analysis for Minnesota 2020. A forthcoming Minnesota 2020 report will feature a more precise calculation of state-by-state Suits indexes based on more detailed ITEP data than was available at the time of publication.

*Table 4-12* lists the 7-point Suits indexes for each state (for non-senior households), based on the ITEP study. The variation across states is striking. Although the tax system of only three states are progressive (with a Suits indexes greater than zero), 14 states are estimated to be less regressive than Minnesota. In contrast, fifteen states had Suits indexes below -0.100, and four of those were below -0.200. The 7-point Suits based on the average of effective tax rates for the seven population groups in all states was -0.058.

Minnesota (at -0.033) was among the less regressive states. This would be expected for several reasons:

- Minnesota is more reliant on the income tax than most states. Minnesota's income tax share of state and local taxes is exceeded in only a few other states. The nine most regressive state tax systems, as measured by ITEP's 7-point Suits index, include all eight states with no broad-based income tax.
- Minnesota's income tax is one of the more progressive.<sup>29</sup> The most regressive states that have an income tax generally have a flat-rate tax.
- Minnesota also has among the most generous refundable income tax credits for low-income households, along with one of the most generous income-conditioned property tax refunds for homeowners and renters. As seen in *Section D* of this chapter, these credits significantly reduce the regressivity of Minnesota's overall tax system.

*Table 4-12* also shows the average overall effective tax rate in 2010 as estimated by ITEP for non-senior households. Minnesota's effective tax rate (at 9.5 percent) was above the U.S. average reported by ITEP (at 8.9 percent). The correlation between the average effective tax rate and the Suits index (+0.55) suggests that the tax structures of states with high average taxes tend to be less regressive. The ten most regressive tax structures are in states with average effective tax rates at or below 8.0 percent. In contrast, of the 26 states with Suits indexes showing below-average regressivity, only four (Montana, Delaware, Virginia, and South Carolina) had average effective tax rates at or below 8.0 percent.

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<sup>29</sup> Based on a Minnesota 2020 analysis of individual income tax Suits indices calculated using 2007 data from *Who Pays? A Distributional Analysis of Tax Systems in All 50 States* (3<sup>rd</sup> edition), Minnesota has the 16<sup>th</sup> most progressive individual income tax among the 50 states.

**Table 4-12**

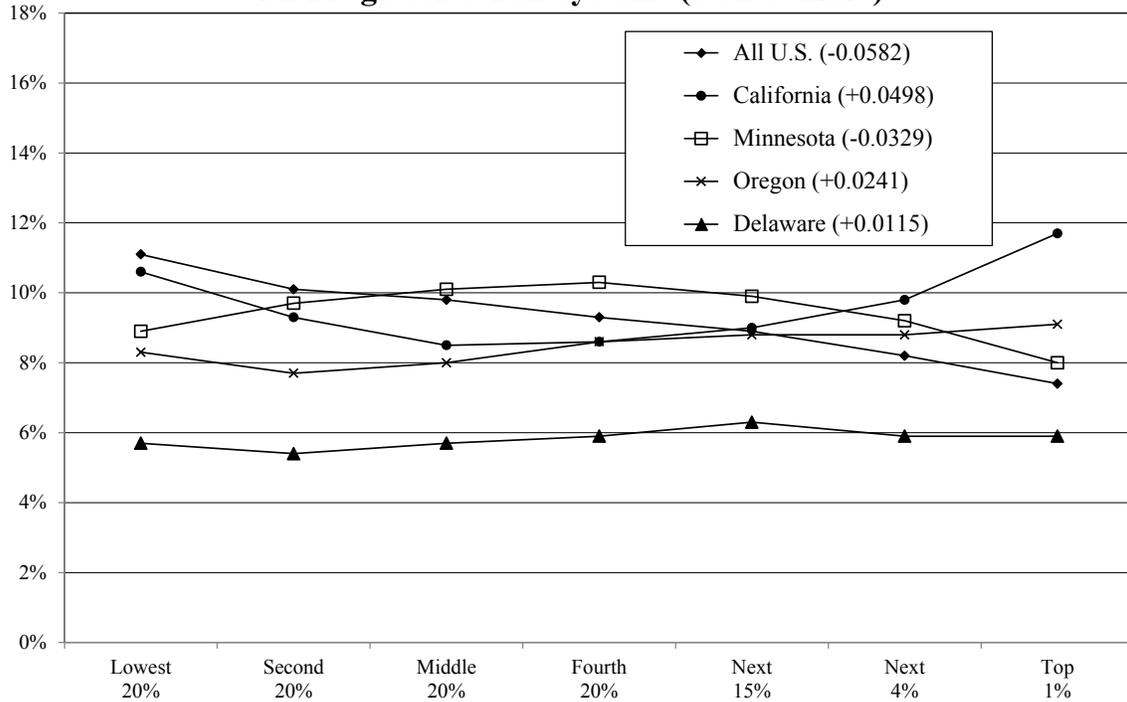
**ITEP “7-Point” Suits Index by State  
Non-Senior Households in 2010 (2013 Law)**

Listed Alphabetically			Ranked from Most Progressive to Most Regressive			
State	7-Point Suits Index	Average Effective Tax Rate	State Suits Rank	State	7-Point Suits Index	Average Effective Tax Rate
Alabama	-0.133	7.6%	1	California	0.050	9.6%
Alaska	-0.131	3.7%	2	Oregon	0.024	8.6%
Arizona	-0.113	8.4%	3	Delaware	0.012	5.9%
Arkansas	-0.081	9.9%	4	Vermont	-0.003	9.6%
California	0.050	9.6%	5	Montana	-0.006	6.3%
Colorado	-0.076	7.6%	6	New Jersey	-0.009	10.0%
Connecticut	-0.083	9.7%	7	Idaho	-0.010	8.1%
Delaware	0.012	5.9%	8	Maine	-0.011	9.5%
Florida	-0.214	6.1%	9	South Carolina	-0.017	7.4%
Georgia	-0.069	9.1%	10	New York	-0.022	11.7%
Hawaii	-0.065	10.2%	11	West Virginia	-0.023	8.6%
Idaho	-0.010	8.1%	12	North Carolina	-0.025	9.3%
Illinois	-0.118	9.6%	13	Maryland	-0.030	9.8%
Indiana	-0.094	9.5%	14	Wisconsin	-0.032	10.5%
Iowa	-0.053	9.5%	<b>15</b>	<b>Minnesota</b>	<b>-0.033</b>	<b>9.5%</b>
Kansas	-0.077	8.2%	16	Rhode Island	-0.033	10.1%
Kentucky	-0.062	9.6%	17	Virginia	-0.044	8.0%
Louisiana	-0.115	8.2%	18	Ohio	-0.050	9.9%
Maine	-0.011	9.5%	19	Missouri	-0.052	8.5%
Maryland	-0.030	9.8%	20	Iowa	-0.053	9.5%
Massachusetts	-0.079	8.6%	21	Michigan	-0.056	9.0%
Michigan	-0.056	9.0%	22	Nebraska	-0.057	9.3%
<b>Minnesota</b>	<b>-0.033</b>	<b>9.5%</b>		<b>All U.S.</b>	<b>-0.058</b>	<b>8.9%</b>
Mississippi	-0.091	8.6%	23	Kentucky	-0.062	9.6%
Missouri	-0.052	8.5%	24	Utah	-0.063	8.2%
Montana	-0.006	6.3%	25	Hawaii	-0.065	10.2%
Nebraska	-0.057	9.3%	26	Georgia	-0.069	9.1%
Nevada	-0.165	5.4%	27	Colorado	-0.076	7.6%
New Hampshire	-0.123	6.1%	28	Kansas	-0.077	8.2%
New Jersey	-0.009	10.0%	29	Massachusetts	-0.079	8.6%
New Mexico	-0.089	8.6%	30	Arkansas	-0.081	9.9%
New York	-0.022	11.7%	31	Connecticut	-0.083	9.7%
North Carolina	-0.025	9.3%	32	New Mexico	-0.089	8.6%
North Dakota	-0.103	6.5%	33	Mississippi	-0.091	8.6%
Ohio	-0.050	9.9%	34	Pennsylvania	-0.091	9.0%
Oklahoma	-0.101	8.0%	35	Indiana	-0.094	9.5%
Oregon	0.024	8.6%	36	Oklahoma	-0.101	8.0%
Pennsylvania	-0.091	9.0%	37	North Dakota	-0.103	6.5%
Rhode Island	-0.033	10.1%	38	Arizona	-0.113	8.4%
South Carolina	-0.017	7.4%	39	Louisiana	-0.115	8.2%
South Dakota	-0.204	6.3%	40	Illinois	-0.118	9.6%
Tennessee	-0.194	6.5%	41	New Hampshire	-0.123	6.1%
Texas	-0.174	6.9%	42	Alaska	-0.131	3.7%
Utah	-0.063	8.2%	43	Alabama	-0.133	7.6%
Vermont	-0.003	9.6%	44	Nevada	-0.165	5.4%
Virginia	-0.044	8.0%	45	Texas	-0.174	6.9%
Washington	-0.213	8.0%	46	Tennessee	-0.194	6.5%
West Virginia	-0.023	8.6%	47	Wyoming	-0.203	4.5%
Wisconsin	-0.032	10.5%	48	South Dakota	-0.204	6.3%
Wyoming	-0.203	4.5%	49	Washington	-0.213	8.0%
<b>All U.S.</b>	<b>-0.058</b>	<b>8.9%</b>	50	Florida	-0.214	6.1%

Figures 4-7, 4-8, and 4-9 illustrate the variation in patterns among the states more visually. Figure 4-7 compares Minnesota and the national average and the only three states with progressive tax systems. Figure 4-8 shows three states with more regressive tax structures. Figure 4-9 compares Minnesota with its neighboring states.

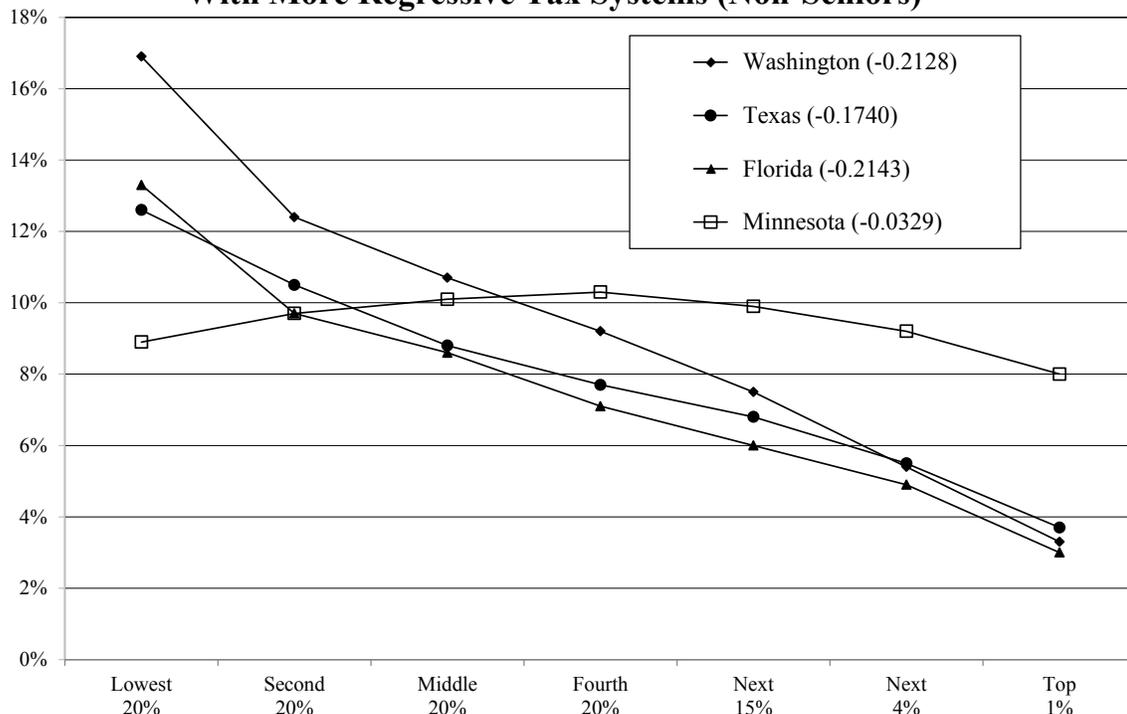
**Figure 4-7**

**ITEP Study Results for Minnesota and Three States With Progressive Tax Systems (Non-Seniors)**

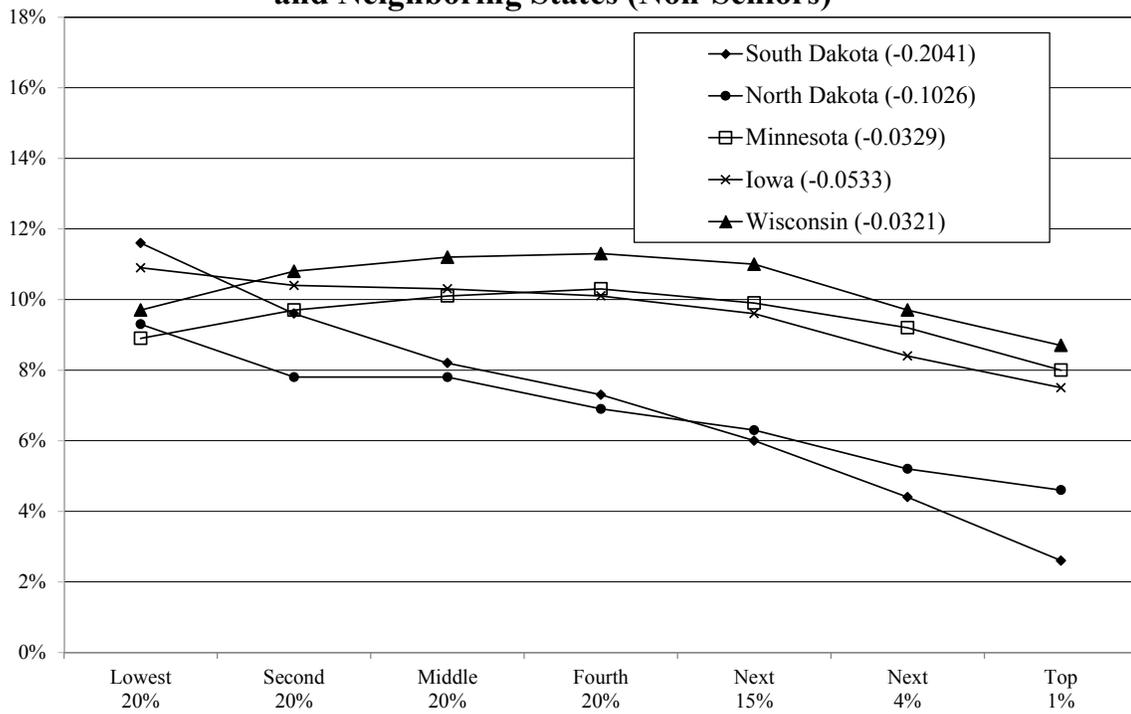


**Figure 4-8**

**ITEP Study Results for Minnesota and Three States With More Regressive Tax Systems (Non-Seniors)**



**Figure 4-9**  
**ITEP Study Results for Minnesota**  
**and Neighboring States (Non-Seniors)**



## Chapter 5: Demographic Variation

Previous chapters show how effective tax rates vary by income when all households are considered together, regardless of household size, marital status, or age. This implicitly assumes that a single person with \$50,000 of income is the same as a family of six with the same income. This chapter provides more detail by type of household, allowing comparisons of tax across similar households. For example, *Table 5-1* shows average tax burdens for married couples with children at different levels of income. This allows the reader to identify the average tax burden for representative households – a married couple with children and income of \$100,000 or a non-senior single-person household with income of \$40,000.

### Household Types by Population Decile

The demographic makeup of individual deciles varies greatly, as shown in *Figure 5-1*. In each of the bottom two deciles, more than 70 percent of the households are single-person households; only 23 percent include children. In contrast, in the top two deciles only 11 percent of all households are single-person households, and 51 percent include children.

*Figure 5-1* also shows that senior households (married and single) are distributed unevenly across deciles. Seniors account for about one-fifth of all households in deciles 2 through 4. In contrast, seniors comprise less than 15 of all households in the top decile – and 86 percent 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, three out of four 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 all households in the top two deciles are married couples (with or without children).

**Figure 5-1**

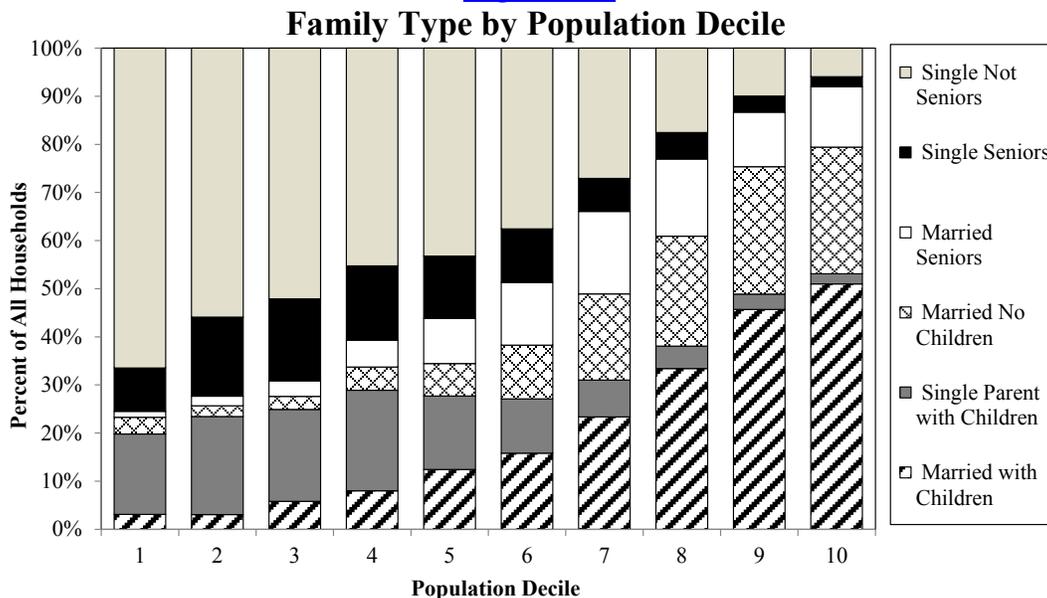
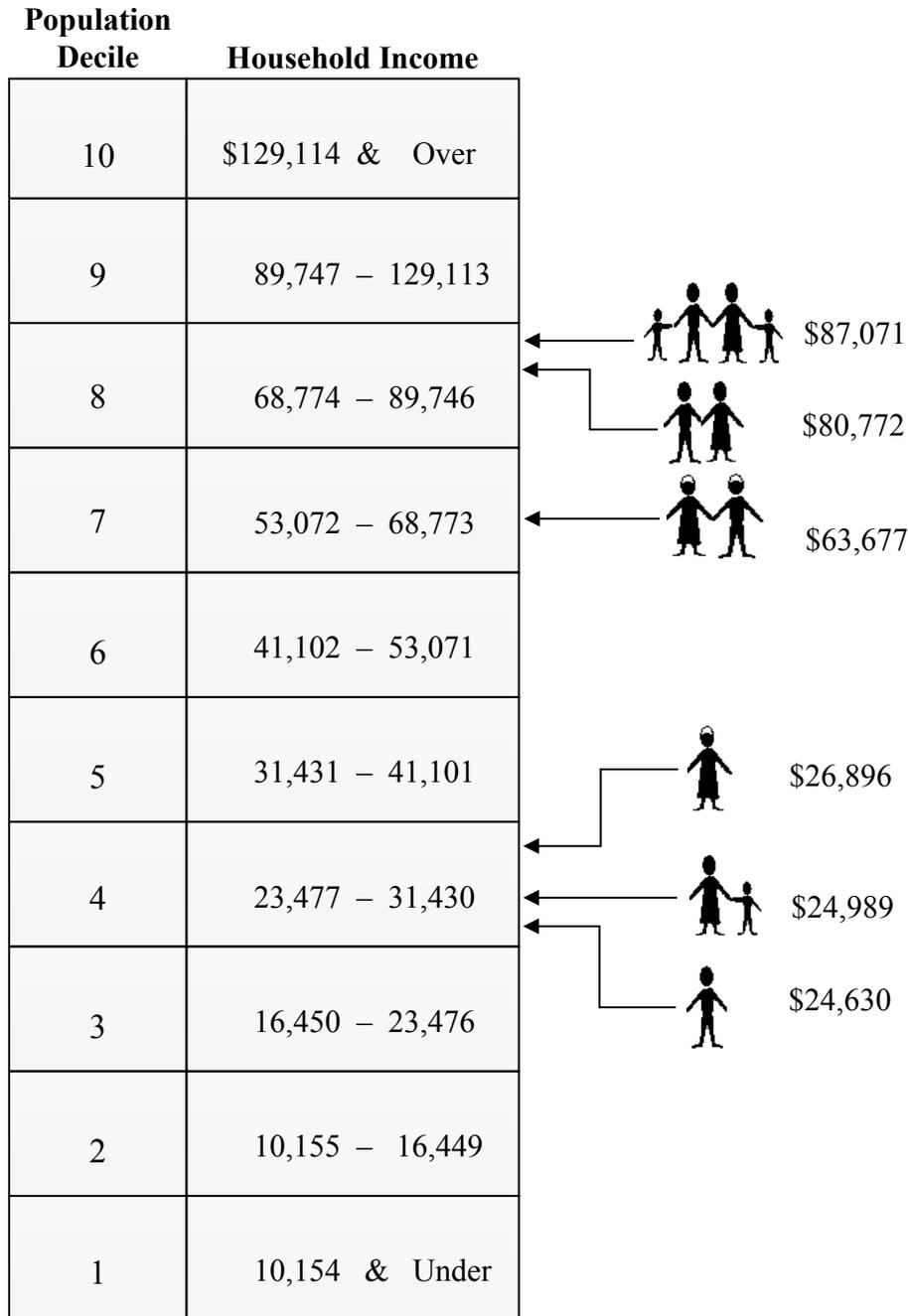


Figure 5-2 illustrates the great differences in median incomes for each of the six family types. In 2010, the median income for a single-parent family was \$24,989, so the typical single-parent family was in the fourth population decile. The median income for a married couple with children was \$87,071 (in the eighth decile). The median income for senior couples (\$63,677) puts them in the seventh decile. In contrast, the median single senior (at \$26,896) is in the fourth decile.

**Figure 5-2**  
**Median Income by Household Type (2010)**



## Average Tax Burdens by Household Type

*Tables 5-1 through 5-5* each show how average tax burdens and demographic characteristics vary with income for a particular type of household. *Figure 5-1* is limited to Minnesota's 518,958 married couples with children. The couples are divided into ten groups, each with 51,896 couples, ordered from lowest income to highest income.

For example, consider the third decile of married couples with children (the shaded column on *Table 5-1*). These households have incomes between \$47,517 (the maximum income for the second decile) and \$61,119 (the maximum income for the third decile). This is the third decile, so twenty percent of married couples with children have lower incomes; 70 percent of such families have higher incomes. For those in the third decile, average income is \$54,691, and 98 percent have earned income (averaging \$50,104). Almost all are homeowners (79 percent when farm homesteads are included), with homes valued an average of \$185,436. Nineteen percent are renters (paying an average of \$941 per month), and 2 percent are neither owners nor renters (perhaps living with parents).

These married couples with children pay state and local taxes equal to 12.9 percent of their income (an average of \$7,031 of tax). This includes \$1,320 in residential property tax (net of PTR), \$1,282 of income tax, \$1,279 in state sales tax, \$488 in excise taxes (motor fuels, cigarettes, and alcohol), \$813 in other types of taxes levied on individuals, and \$1,849 in business taxes.

Similar information is provided for other household types.

When the population is limited to a single household type, the variation of effective tax rates with income is easier to interpret. For married couples with children (*Table 5-1*), the effective tax rate falls steadily from 16.9 percent of income for the poorest 10 percent to 10.6 percent for the richest 10 percent. The full-sample Suits index is -0.044 – fairly close to the all-household Suits index.

*Table 5-6* shows the full-sample Suits index for each of the five household types considered separately. The tax is most regressive for married couples with no children (at -0.094) and non-senior single-person households (at -0.086). It is progressive for single parents (Suits index of +0.013). The Suits index for seniors (-0.055) is almost identical to that for all households combined.

**Table 5-1**

**Household Characteristics and Average Tax Burden Amounts by Population Decile  
Married Couples with Children**

*Each Decile Contains 51,896 Married Couples with Children*

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
<i>Number of Households</i>	51,896	51,896	51,896	51,896	51,896	51,896	51,896	51,896	51,896	51,896	518,958
<i>Average number of children</i>	2.2	2.2	2.1	2.0	2.1	2.0	2.0	2.0	2.0	2.1	2.1
<i>Average Household Income</i>	\$19,954	\$39,678	\$54,691	\$67,926	\$80,536	\$93,798	\$109,469	\$130,424	\$168,408	\$455,249	\$122,014
Maximum Household Income	\$31,797	\$47,517	\$61,119	\$74,594	\$87,071	\$100,625	\$118,666	\$143,621	\$202,841		
Percent with Earned Income	80%	96%	98%	99%	99%	100%	100%	100%	100%	98%	97%
Average Earned income	\$22,051	\$35,261	\$50,104	\$61,868	\$71,899	\$85,535	\$99,502	\$113,961	\$143,813	\$286,611	\$98,610
<i>Housing Status</i>											
Homeowners	38%	60%	75%	81%	88%	91%	94%	94%	95%	96%	81%
Renters	45%	34%	19%	10%	8%	5%	1%	1%	1%	1%	13%
Farmers	4%	3%	4%	7%	4%	4%	5%	4%	4%	4%	4%
Other	12%	4%	2%	2%	0%	0%	0%	0%	0%	0%	2%
Average Taxable Market Value	\$196,035	\$153,941	\$185,436	\$191,783	\$198,402	\$208,252	\$231,439	\$266,175	\$292,939	\$458,421	\$246,859
Average Monthly Rent	\$460	\$724	\$941	\$994	\$1,131	\$1,126	\$1,297	\$1,298	\$1,455	\$1,605	\$753
<b><u>AVERAGE TAX BURDENS</u></b>											
<i>Local Property Tax</i>											
All Households											
Total Tax	\$998	\$1,206	\$1,531	\$1,886	\$2,089	\$2,228	\$2,573	\$2,964	\$3,380	\$5,666	\$2,452
<u>-Property Tax Refund</u>	<u>-\$425</u>	<u>-\$317</u>	<u>-\$210</u>	<u>-\$163</u>	<u>-\$84</u>	<u>-\$43</u>	<u>-\$22</u>	<u>-\$3</u>	<u>-\$1</u>	<u>-\$9</u>	<u>-\$128</u>
Tax After PTR	\$573	\$889	\$1,320	\$1,723	\$2,005	\$2,186	\$2,551	\$2,960	\$3,378	\$5,657	\$2,324
Renters Only											
Total Tax On Rental Unit	\$1,016	\$1,444	\$1,832	\$1,931	\$2,198	\$2,188	\$2,520	\$2,523	\$2,828	\$3,119	\$1,517
Renters Total Tax on Unit	\$341	\$484	\$614	\$648	\$737	\$734	\$845	\$846	\$948	\$1,046	\$509
<u>-Property Tax Refund</u>	<u>-\$360</u>	<u>-\$247</u>	<u>-\$93</u>	<u>-\$3</u>	<u>-\$1</u>	<u>-\$24</u>	<u>\$0</u>	<u>\$0</u>	<u>-\$3</u>	<u>\$0</u>	<u>-\$210</u>
Tax After PTR	-\$19	\$237	\$521	\$645	\$737	\$710	\$845	\$846	\$945	\$1,046	\$298
Homeowners Only											
Total Tax on Home	\$1,964	\$1,643	\$1,784	\$2,061	\$2,205	\$2,308	\$2,596	\$2,995	\$3,415	\$5,713	\$2,791
<u>-Property Tax Refund</u>	<u>-\$617</u>	<u>-\$372</u>	<u>-\$243</u>	<u>-\$185</u>	<u>-\$91</u>	<u>-\$43</u>	<u>-\$22</u>	<u>-\$4</u>	<u>-\$1</u>	<u>-\$9</u>	<u>-\$119</u>
Homeowners Tax after PTR	\$1,346	\$1,271	\$1,540	\$1,876	\$2,114	\$2,264	\$2,574	\$2,991	\$3,413	\$5,704	\$2,672
<i>State Income Tax</i>	-\$803	\$151	\$1,282	\$1,965	\$2,653	\$3,516	\$4,351	\$5,590	\$7,685	\$26,060	\$5,245
<i>State Sales Tax</i>	\$853	\$1,100	\$1,279	\$1,421	\$1,546	\$1,667	\$1,805	\$1,977	\$2,276	\$4,386	\$1,831
<i>State Excise Taxes</i>	\$458	\$471	\$488	\$499	\$512	\$520	\$531	\$527	\$531	\$616	\$515
<i>Other Taxes</i>	\$566	\$707	\$813	\$907	\$978	\$1,053	\$1,131	\$1,167	\$1,194	\$2,633	\$1,115
<i>Business Taxes</i> <sup>1</sup>	\$1,719	\$1,498	\$1,849	\$1,974	\$1,961	\$2,239	\$2,314	\$2,550	\$3,189	\$8,446	\$2,774
<b>Total State and Local Tax Burden</b>	<b>\$3,366</b>	<b>\$4,816</b>	<b>\$7,031</b>	<b>\$8,489</b>	<b>\$9,656</b>	<b>\$11,182</b>	<b>\$12,683</b>	<b>\$14,771</b>	<b>\$18,253</b>	<b>\$47,798</b>	<b>\$13,805</b>
<b>Effective Tax Rate for all Taxes</b>	<b>16.9%</b>	<b>12.1%</b>	<b>12.9%</b>	<b>12.5%</b>	<b>12.0%</b>	<b>11.9%</b>	<b>11.6%</b>	<b>11.3%</b>	<b>10.8%</b>	<b>10.5%</b>	<b>11.3%</b>

<sup>1</sup>For these tables only, Business Taxes does not include the share of Rental Property Taxes borne by the renter.

**Table 5-2**

**Household Characteristics and Average Tax Burden Amounts by Population Decile  
Non-Senior Married Couples without Children**

*Each Decile Contains 32,120 Non-Senior Married Couples without Children*

HOUSEHOLD CHARACTERISTICS	Population Decile										Total	
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten		
<i>Number of Households</i>	32,120	32,120	32,120	32,120	32,120	32,120	32,120	32,120	32,120	32,120	32,120	321,199
<i>Average Household Income</i>	\$17,003	\$39,005	\$53,041	\$63,813	\$75,092	\$86,499	\$100,126	\$119,194	\$150,299	\$402,246	\$110,632	
Maximum Household Income	\$30,410	\$46,919	\$58,478	\$69,595	\$80,772	\$92,364	\$107,722	\$132,306	\$177,296			
Percent with Earned Income	54%	90%	97%	95%	98%	98%	96%	99%	99%	97%	92%	
Average Earned income	\$22,058	\$31,152	\$45,405	\$52,936	\$61,828	\$70,216	\$80,835	\$96,976	\$115,361	\$218,167	\$82,713	
<i>Housing Status</i>												
Homeowners	46%	66%	72%	80%	90%	87%	90%	94%	93%	95%	81%	
Renters	27%	23%	18%	13%	8%	7%	4%	2%	3%	2%	11%	
Farmers	8%	6%	8%	5%	3%	6%	6%	4%	4%	4%	5%	
Other	20%	4%	1%	2%	0%	0%	0%	0%	0%	0%	3%	
Average Taxable Market Value	\$194,702	\$163,834	\$173,636	\$173,665	\$184,996	\$204,307	\$219,030	\$218,995	\$252,709	\$383,383	\$221,476	
Average Monthly Rent	\$404	\$815	\$916	\$1,002	\$1,073	\$1,071	\$1,237	\$1,302	\$1,366	\$1,609	\$840	
<b>AVERAGE TAX BURDENS</b>												
<i>Local Property Tax</i>												
All Households												
Total Tax	\$1,016	\$1,321	\$1,479	\$1,580	\$1,848	\$2,014	\$2,334	\$2,411	\$2,774	\$4,522	\$2,130	
-Property Tax Refund	-\$260	-\$234	-\$119	-\$88	-\$44	-\$45	-\$29	-\$4	-\$1	-\$9	-\$83	
Tax After PTR	\$756	\$1,086	\$1,360	\$1,493	\$1,804	\$1,968	\$2,306	\$2,406	\$2,772	\$4,513	\$2,047	
Renters Only												
Total Tax On Rental Unit	\$864	\$1,594	\$1,780	\$1,947	\$2,085	\$2,081	\$1,855	\$2,530	\$1,893	\$3,126	\$1,655	
Renters Total tax on Unit	\$290	\$534	\$597	\$653	\$699	\$698	\$622	\$848	\$635	\$1,049	\$555	
-Property Tax Refund	-\$155	-\$75	-\$12	-\$1	-\$2	-\$1	-\$1	\$0	\$0	\$0	-\$58	
Tax After PTR	\$135	\$459	\$585	\$652	\$698	\$697	\$621	\$848	\$635	\$1,049	\$497	
Homeowners Only												
Total Tax on Home	\$1,748	\$1,641	\$1,703	\$1,759	\$1,943	\$2,116	\$2,401	\$2,450	\$2,827	\$4,577	\$2,390	
-Property Tax Refund	-\$411	-\$299	-\$145	-\$103	-\$47	-\$49	-\$30	-\$5	-\$1	-\$9	-\$89	
Homeowners Tax after PTR	\$1,337	\$1,343	\$1,558	\$1,656	\$1,896	\$2,067	\$2,371	\$2,445	\$2,826	\$4,567	\$2,301	
<i>State Income Tax</i>	\$93	\$740	\$1,528	\$2,161	\$2,823	\$3,477	\$4,291	\$5,358	\$7,007	\$20,481	\$4,796	
<i>State Sales Tax</i>	\$816	\$1,071	\$1,228	\$1,334	\$1,437	\$1,533	\$1,640	\$1,775	\$1,990	\$3,632	\$1,646	
<i>State Excise Taxes</i>	\$489	\$473	\$473	\$475	\$478	\$481	\$485	\$484	\$480	\$522	\$484	
<i>Other Taxes</i>	\$603	\$799	\$819	\$887	\$942	\$969	\$1,040	\$1,077	\$1,102	\$2,074	\$1,031	
<i>Business Taxes</i> <sup>1</sup>	\$2,093	\$1,637	\$1,580	\$1,784	\$1,878	\$2,703	\$2,509	\$2,382	\$2,636	\$7,985	\$2,718	
<b>Total State and Local Tax Burden</b>	<b>\$4,849</b>	<b>\$5,806</b>	<b>\$6,987</b>	<b>\$8,134</b>	<b>\$9,362</b>	<b>\$11,131</b>	<b>\$12,271</b>	<b>\$13,483</b>	<b>\$15,987</b>	<b>\$39,208</b>	<b>\$12,722</b>	
<b>Effective Tax Rate for all Taxes</b>	<b>28.5%</b>	<b>14.9%</b>	<b>13.2%</b>	<b>12.7%</b>	<b>12.5%</b>	<b>12.9%</b>	<b>12.3%</b>	<b>11.3%</b>	<b>10.6%</b>	<b>9.7%</b>	<b>11.5%</b>	

<sup>1</sup>For these tables only, Business Taxes does not include the share of Rental Property Taxes borne by the renter.

**Table 5-3**

**Household Characteristics and Average Tax Burden Amounts by Population Decile  
Non-Senior Single-Person Households**

*Each Decile Contains 93,018 Non-Senior Single-Person Households*

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
<i>Number of Households</i>	93,018	93,018	93,018	93,018	93,018	93,018	93,018	93,018	93,018	93,018	930,177
<i>Average Household Income</i>	\$3,671	\$8,914	\$12,816	\$16,974	\$21,756	\$27,615	\$34,640	\$43,358	\$56,490	\$121,944	\$34,818
Maximum Household Income	\$6,949	\$10,763	\$14,799	\$19,270	\$24,630	\$30,865	\$38,743	\$48,692	\$66,583		
Percent with Earned Income	58%	55%	63%	71%	81%	89%	94%	95%	95%	94%	80%
<i>Average Earned Income</i>	\$5,587	\$8,138	\$11,073	\$14,816	\$19,296	\$24,640	\$32,361	\$39,953	\$50,305	\$87,167	\$32,813
<i>Housing Status</i>											
Homeowners	14%	10%	12%	15%	21%	26%	39%	51%	64%	82%	33%
Renters	42%	51%	55%	57%	57%	57%	48%	39%	31%	17%	45%
Farmers	2%	1%	1%	1%	1%	1%	1%	2%	2%	1%	1%
Other	42%	38%	32%	27%	21%	15%	12%	7%	3%	1%	20%
<i>Average Taxable Market Value</i>	\$188,122	\$145,738	\$147,090	\$141,539	\$144,014	\$140,286	\$129,944	\$148,354	\$154,207	\$234,414	\$168,314
<i>Average Monthly Rent</i>	\$86	\$207	\$294	\$379	\$486	\$604	\$763	\$835	\$977	\$1,164	\$514
<b><u>AVERAGE TAX BURDENS</u></b>											
<i>Local Property Tax</i>											
All Households											
Total Tax	\$358	\$261	\$296	\$405	\$545	\$675	\$841	\$1,118	\$1,433	\$2,399	\$833
<u>-Property Tax Refund</u>	<u>-\$110</u>	<u>-\$133</u>	<u>-\$130</u>	<u>-\$159</u>	<u>-\$168</u>	<u>-\$175</u>	<u>-\$126</u>	<u>-\$116</u>	<u>-\$94</u>	<u>-\$46</u>	<u>-\$126</u>
Tax After PTR	\$247	\$129	\$166	\$247	\$377	\$500	\$715	\$1,002	\$1,339	\$2,353	\$708
Renters Only											
Total Tax On Rental Unit	\$300	\$511	\$651	\$791	\$982	\$1,197	\$1,489	\$1,624	\$1,900	\$996	\$1,048
Renters Total Tax on Unit	\$101	\$171	\$218	\$265	\$329	\$401	\$499	\$545	\$637	\$334	\$352
<u>-Property Tax Refund</u>	<u>-\$134</u>	<u>-\$185</u>	<u>-\$166</u>	<u>-\$178</u>	<u>-\$175</u>	<u>-\$149</u>	<u>-\$88</u>	<u>-\$39</u>	<u>-\$8</u>	<u>-\$3</u>	<u>-\$130</u>
Tax After PTR	-\$34	-\$13	\$52	\$87	\$154	\$253	\$411	\$506	\$629	\$331	\$222
Homeowners Only											
Total Tax on Home	\$1,986	\$1,530	\$1,397	\$1,551	\$1,617	\$1,608	\$1,493	\$1,690	\$1,874	\$2,748	\$1,935
<u>-Property Tax Refund</u>	<u>-\$341</u>	<u>-\$348</u>	<u>-\$311</u>	<u>-\$354</u>	<u>-\$311</u>	<u>-\$327</u>	<u>-\$208</u>	<u>-\$190</u>	<u>-\$138</u>	<u>-\$55</u>	<u>-\$193</u>
Homeowners Tax after PTR	\$1,645	\$1,181	\$1,087	\$1,197	\$1,306	\$1,282	\$1,285	\$1,500	\$1,736	\$2,692	\$1,742
<i>State Income Tax</i>	-\$16	-\$15	\$84	\$245	\$492	\$801	\$1,201	\$1,700	\$2,415	\$6,043	\$1,295
<i>State Sales Tax</i>	\$369	\$452	\$514	\$569	\$622	\$679	\$738	\$802	\$891	\$1,256	\$689
<i>State Excise Taxes</i>	\$272	\$285	\$298	\$309	\$319	\$330	\$341	\$352	\$356	\$328	\$319
<i>Other Taxes</i>	\$196	\$202	\$239	\$276	\$296	\$326	\$371	\$406	\$449	\$693	\$345
<i>Business Taxes</i> <sup>1</sup>	\$549	\$535	\$574	\$654	\$709	\$824	\$927	\$1,038	\$1,269	\$2,380	\$946
<b>Total State and Local Tax Burden</b>	<b>\$1,618</b>	<b>\$1,589</b>	<b>\$1,876</b>	<b>\$2,300</b>	<b>\$2,815</b>	<b>\$3,460</b>	<b>\$4,292</b>	<b>\$5,300</b>	<b>\$6,719</b>	<b>\$13,052</b>	<b>\$4,302</b>
<b>Effective Tax Rate for all Taxes</b>	<b>44.1%</b>	<b>17.8%</b>	<b>14.6%</b>	<b>13.5%</b>	<b>12.9%</b>	<b>12.5%</b>	<b>12.4%</b>	<b>12.2%</b>	<b>11.9%</b>	<b>10.7%</b>	<b>12.4%</b>

<sup>1</sup>For these tables only, Business Taxes does not include the share of Rental Property Taxes borne by the renter.

**Table 5-4**

**Household Characteristics and Average Tax Burden Amounts by Population Decile Senior Households (Single or Married)**

Each Decile Contains 49,233 Senior Households

HOUSEHOLD CHARACTERISTICS	Population Decile										Total	
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten		
<i>Number of Households</i>	49,233	49,233	49,233	49,233	49,233	49,233	49,233	49,233	49,233	49,233	49,233	492,334
<i>Percent that are married</i>	11%	13%	20%	32%	46%	55%	67%	74%	79%	83%	48%	
<i>Average Household Income</i>	\$9,547	\$16,543	\$23,088	\$30,201	\$38,369	\$47,347	\$57,956	\$71,114	\$92,318	\$289,970	\$67,645	
Maximum Household Income	\$13,463	\$19,777	\$26,483	\$34,060	\$42,667	\$52,143	\$64,351	\$79,611	\$111,973			
Percent with Earned Income	5%	8%	14%	19%	30%	32%	38%	49%	51%	63%	31%	
<i>Average earned income</i>	\$13,455	\$3,864	\$7,482	\$8,742	\$12,661	\$14,328	\$21,879	\$24,325	\$32,569	\$100,942	\$36,336	
<i>Housing Status</i>												
Homeowners	28%	44%	55%	64%	72%	77%	83%	86%	90%	88%	69%	
Renters	46%	40%	33%	26%	17%	13%	9%	5%	5%	5%	20%	
Farmers	5%	6%	6%	6%	8%	8%	7%	7%	5%	7%	7%	
Other	20%	10%	6%	3%	3%	2%	1%	2%	0%	0%	5%	
<i>Average Taxable Market Value</i>	\$161,334	\$151,906	\$162,718	\$173,407	\$184,505	\$209,151	\$207,657	\$225,312	\$264,624	\$354,332	\$220,557	
<i>Average Monthly Rent</i>	\$218	\$362	\$529	\$675	\$829	\$919	\$989	\$1,028	\$1,179	\$1,379	\$565	
<b>AVERAGE TAX BURDENS</b>												
<i>Local Property Tax</i>												
All Households												
Total Tax	\$550	\$863	\$1,102	\$1,336	\$1,501	\$1,784	\$2,034	\$2,178	\$2,705	\$3,749	\$1,780	
-Property Tax Refund	-\$239	-\$449	-\$452	-\$385	-\$300	-\$312	-\$232	-\$152	-\$92	-\$32	-\$265	
Tax After PTR	\$311	\$415	\$650	\$951	\$1,201	\$1,472	\$1,802	\$2,027	\$2,613	\$3,718	\$1,516	
Renters Only												
Total Tax on Rental Unit	\$531	\$933	\$1,178	\$1,414	\$1,720	\$1,905	\$1,923	\$1,997	\$2,291	\$2,681	\$1,223	
Renters Total tax on Unit	\$178	\$313	\$395	\$474	\$577	\$639	\$645	\$670	\$768	\$899	\$410	
-Property Tax Refund	-\$247	-\$413	-\$388	-\$328	-\$245	-\$219	-\$33	-\$42	-\$5	-\$31	-\$285	
Tax After PTR	-\$69	-\$100	\$7	\$146	\$332	\$420	\$612	\$628	\$764	\$868	\$125	
Homeowners Only												
Total Tax on Home	\$1,370	\$1,454	\$1,569	\$1,699	\$1,728	\$1,989	\$2,192	\$2,307	\$2,808	\$3,893	\$2,243	
-Property Tax Refund	-\$370	-\$566	-\$530	-\$424	-\$321	-\$332	-\$255	-\$161	-\$97	-\$32	-\$275	
Homeowners Tax after PTR	\$1,000	\$889	\$1,038	\$1,275	\$1,407	\$1,656	\$1,938	\$2,146	\$2,711	\$3,861	\$1,968	
<i>State Income Tax</i>	\$18	-\$1	\$20	\$109	\$324	\$632	\$1,163	\$2,020	\$3,367	\$13,562	\$2,121	
<i>State Sales Tax</i>	\$439	\$545	\$651	\$763	\$875	\$978	\$1,099	\$1,232	\$1,442	\$2,912	\$1,094	
<i>State Excise Taxes</i>	\$145	\$168	\$189	\$212	\$229	\$244	\$264	\$281	\$300	\$374	\$241	
<i>Other Taxes</i>	\$312	\$373	\$430	\$527	\$582	\$602	\$664	\$711	\$798	\$1,586	\$659	
<i>Business Taxes<sup>1</sup></i>	\$882	\$739	\$840	\$918	\$1,367	\$1,490	\$1,647	\$2,073	\$2,522	\$7,609	\$2,009	
<b>Total State and Local Tax Burden</b>	<b>\$2,108</b>	<b>\$2,239</b>	<b>\$2,781</b>	<b>\$3,480</b>	<b>\$4,577</b>	<b>\$5,417</b>	<b>\$6,639</b>	<b>\$8,344</b>	<b>\$11,041</b>	<b>\$29,761</b>	<b>\$7,639</b>	
<b>Effective Tax Rate for all Taxes</b>	<b>22.1%</b>	<b>13.5%</b>	<b>12.0%</b>	<b>11.5%</b>	<b>11.9%</b>	<b>11.4%</b>	<b>11.5%</b>	<b>11.7%</b>	<b>12.0%</b>	<b>10.3%</b>	<b>11.3%</b>	

<sup>1</sup>For these tables only, Business Taxes does not include the share of Rental Property Taxes borne by the renter.

**Table 5-5**

**Household Characteristics and Average Tax Burden Amounts by Population Decile  
Single-Parent Households**

*Each Decile Contains 31,252 Single-Parent Households*

HOUSEHOLD CHARACTERISTICS	Population Decile										Total	
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten		
<i>Number of Households</i>	31,252 <sup>1</sup>	31,252 <sup>1</sup>	312,515									
<i>Average Number of Children</i>	1.6 <sup>1</sup>	1.5 <sup>1</sup>	1.8 <sup>1</sup>	1.8 <sup>1</sup>	1.7 <sup>1</sup>	1.9 <sup>1</sup>	1.9 <sup>1</sup>	1.7 <sup>1</sup>	1.5 <sup>1</sup>	1.4 <sup>1</sup>	1.4 <sup>1</sup>	1.7
<i>Average Household Income</i>	\$5,384 <sup>1</sup>	\$10,641 <sup>1</sup>	\$14,499 <sup>1</sup>	\$18,432 <sup>1</sup>	\$22,814 <sup>1</sup>	\$27,218 <sup>1</sup>	\$32,430 <sup>1</sup>	\$40,100 <sup>1</sup>	\$52,999 <sup>1</sup>	\$121,177 <sup>1</sup>		\$34,570
Maximum Household Income	\$8,736 <sup>1</sup>	\$12,634 <sup>1</sup>	\$16,282 <sup>1</sup>	\$20,570 <sup>1</sup>	\$24,989 <sup>1</sup>	\$29,694 <sup>1</sup>	\$35,656 <sup>1</sup>	\$45,691 <sup>1</sup>	\$63,281 <sup>1</sup>			
Percent with Earned Income	66% <sup>1</sup>	81% <sup>1</sup>	84% <sup>1</sup>	86% <sup>1</sup>	91% <sup>1</sup>	93% <sup>1</sup>	93% <sup>1</sup>	95% <sup>1</sup>	94% <sup>1</sup>	96% <sup>1</sup>		88%
Average Earned income	\$5,450 <sup>1</sup>	\$9,450 <sup>1</sup>	\$13,260 <sup>1</sup>	\$16,302 <sup>1</sup>	\$20,164 <sup>1</sup>	\$24,604 <sup>1</sup>	\$29,176 <sup>1</sup>	\$36,824 <sup>1</sup>	\$48,308 <sup>1</sup>	\$88,432 <sup>1</sup>		\$30,731
<i>Housing Status</i>												
Homeowners	14% <sup>1</sup>	11% <sup>1</sup>	17% <sup>1</sup>	21% <sup>1</sup>	27% <sup>1</sup>	26% <sup>1</sup>	41% <sup>1</sup>	49% <sup>1</sup>	67% <sup>1</sup>	83% <sup>1</sup>		36%
Renters	67% <sup>1</sup>	71% <sup>1</sup>	68% <sup>1</sup>	63% <sup>1</sup>	58% <sup>1</sup>	62% <sup>1</sup>	49% <sup>1</sup>	45% <sup>1</sup>	27% <sup>1</sup>	15% <sup>1</sup>		53%
Farmers	0% <sup>1</sup>	2% <sup>1</sup>	1% <sup>1</sup>	1% <sup>1</sup>	2% <sup>1</sup>	1% <sup>1</sup>		1%				
Other	18% <sup>1</sup>	18% <sup>1</sup>	14% <sup>1</sup>	16% <sup>1</sup>	15% <sup>1</sup>	10% <sup>1</sup>	9% <sup>1</sup>	5% <sup>1</sup>	3% <sup>1</sup>	1% <sup>1</sup>		11%
Average Taxable Market Value	\$179,415 <sup>1</sup>	\$127,691 <sup>1</sup>	\$126,546 <sup>1</sup>	\$131,239 <sup>1</sup>	\$111,176 <sup>1</sup>	\$139,399 <sup>1</sup>	\$143,429 <sup>1</sup>	\$152,806 <sup>1</sup>	\$180,465 <sup>1</sup>	\$247,073 <sup>1</sup>		\$172,578
Average Monthly Rent	\$118 <sup>1</sup>	\$227 <sup>1</sup>	\$297 <sup>1</sup>	\$382 <sup>1</sup>	\$459 <sup>1</sup>	\$570 <sup>1</sup>	\$667 <sup>1</sup>	\$780 <sup>1</sup>	\$915 <sup>1</sup>	\$1,117 <sup>1</sup>		\$455
<b>AVERAGE TAX BURDENS</b>												
<i>Local Property Tax</i>												
All Households												
Total Tax	\$390 <sup>1</sup>	\$269 <sup>1</sup>	\$406 <sup>1</sup>	\$536 <sup>1</sup>	\$538 <sup>1</sup>	\$700 <sup>1</sup>	\$957 <sup>1</sup>	\$1,157 <sup>1</sup>	\$1,634 <sup>1</sup>	\$2,673 <sup>1</sup>		\$926
-Property Tax Refund	-\$176 <sup>1</sup>	-\$170 <sup>1</sup>	-\$281 <sup>1</sup>	-\$315 <sup>1</sup>	-\$287 <sup>1</sup>	-\$322 <sup>1</sup>	-\$328 <sup>1</sup>	-\$247 <sup>1</sup>	-\$217 <sup>1</sup>	-\$95 <sup>1</sup>		-\$244
Tax After PTR	\$214 <sup>1</sup>	\$99 <sup>1</sup>	\$126 <sup>1</sup>	\$221 <sup>1</sup>	\$252 <sup>1</sup>	\$378 <sup>1</sup>	\$629 <sup>1</sup>	\$910 <sup>1</sup>	\$1,417 <sup>1</sup>	\$2,577 <sup>1</sup>		\$682
Renters Only												
Total Tax on Rental Unit	\$342 <sup>1</sup>	\$544 <sup>1</sup>	\$710 <sup>1</sup>	\$858 <sup>1</sup>	\$958 <sup>1</sup>	\$1,176 <sup>1</sup>	\$1,346 <sup>1</sup>	\$1,534 <sup>1</sup>	\$1,788 <sup>1</sup>	\$1,679 <sup>1</sup>		\$967
Renters Total tax on Unit	\$115 <sup>1</sup>	\$182 <sup>1</sup>	\$238 <sup>1</sup>	\$288 <sup>1</sup>	\$321 <sup>1</sup>	\$394 <sup>1</sup>	\$451 <sup>1</sup>	\$514 <sup>1</sup>	\$600 <sup>1</sup>	\$563 <sup>1</sup>		\$324
-Property Tax Refund	-\$150 <sup>1</sup>	-\$195 <sup>1</sup>	-\$284 <sup>1</sup>	-\$320 <sup>1</sup>	-\$328 <sup>1</sup>	-\$316 <sup>1</sup>	-\$300 <sup>1</sup>	-\$209 <sup>1</sup>	-\$92 <sup>1</sup>	-\$14 <sup>1</sup>		-\$246
Tax After PTR	-\$36 <sup>1</sup>	-\$12 <sup>1</sup>	-\$46 <sup>1</sup>	-\$33 <sup>1</sup>	-\$7 <sup>1</sup>	\$78 <sup>1</sup>	\$152 <sup>1</sup>	\$306 <sup>1</sup>	\$508 <sup>1</sup>	\$549 <sup>1</sup>		\$79
Homeowners Only												
Total Tax on Home	\$2,134 <sup>1</sup>	\$1,224 <sup>1</sup>	\$1,341 <sup>1</sup>	\$1,638 <sup>1</sup>	\$1,271 <sup>1</sup>	\$1,573 <sup>1</sup>	\$1,762 <sup>1</sup>	\$1,833 <sup>1</sup>	\$2,112 <sup>1</sup>	\$3,024 <sup>1</sup>		\$2,052
-Property Tax Refund	-\$511 <sup>1</sup>	-\$288 <sup>1</sup>	-\$481 <sup>1</sup>	-\$530 <sup>1</sup>	-\$362 <sup>1</sup>	-\$448 <sup>1</sup>	-\$438 <sup>1</sup>	-\$307 <sup>1</sup>	-\$278 <sup>1</sup>	-\$110 <sup>1</sup>		-\$314
Homeowners Tax after PTR	\$1,623 <sup>1</sup>	\$936 <sup>1</sup>	\$861 <sup>1</sup>	\$1,109 <sup>1</sup>	\$909 <sup>1</sup>	\$1,125 <sup>1</sup>	\$1,324 <sup>1</sup>	\$1,525 <sup>1</sup>	\$1,834 <sup>1</sup>	\$2,914 <sup>1</sup>		\$1,737
State Income Tax	-\$311 <sup>1</sup>	-\$582 <sup>1</sup>	-\$708 <sup>1</sup>	-\$766 <sup>1</sup>	-\$742 <sup>1</sup>	-\$484 <sup>1</sup>	\$101 <sup>1</sup>	\$947 <sup>1</sup>	\$1,635 <sup>1</sup>	\$5,419 <sup>1</sup>		\$451
State Sales Tax	\$526 <sup>1</sup>	\$606 <sup>1</sup>	\$668 <sup>1</sup>	\$721 <sup>1</sup>	\$772 <sup>1</sup>	\$818 <sup>1</sup>	\$866 <sup>1</sup>	\$930 <sup>1</sup>	\$1,037 <sup>1</sup>	\$1,800 <sup>1</sup>		\$874
State Excise Taxes	\$299 <sup>1</sup>	\$297 <sup>1</sup>	\$303 <sup>1</sup>	\$308 <sup>1</sup>	\$314 <sup>1</sup>	\$319 <sup>1</sup>	\$325 <sup>1</sup>	\$334 <sup>1</sup>	\$349 <sup>1</sup>	\$413 <sup>1</sup>		\$326
Other Taxes	\$256 <sup>1</sup>	\$280 <sup>1</sup>	\$328 <sup>1</sup>	\$348 <sup>1</sup>	\$400 <sup>1</sup>	\$415 <sup>1</sup>	\$474 <sup>1</sup>	\$546 <sup>1</sup>	\$651 <sup>1</sup>	\$1,026 <sup>1</sup>		\$472
Business Taxes <sup>1</sup>	\$605 <sup>1</sup>	\$569 <sup>1</sup>	\$663 <sup>1</sup>	\$757 <sup>1</sup>	\$794 <sup>1</sup>	\$871 <sup>1</sup>	\$943 <sup>1</sup>	\$1,048 <sup>1</sup>	\$1,268 <sup>1</sup>	\$2,526 <sup>1</sup>		\$1,004
<b>Total State and Local Tax Burden</b>	<b>\$1,589<sup>1</sup></b>	<b>\$1,269<sup>1</sup></b>	<b>\$1,380<sup>1</sup></b>	<b>\$1,588<sup>1</sup></b>	<b>\$1,790<sup>1</sup></b>	<b>\$2,317<sup>1</sup></b>	<b>\$3,339<sup>1</sup></b>	<b>\$4,714<sup>1</sup></b>	<b>\$6,357<sup>1</sup></b>	<b>\$13,762<sup>1</sup></b>		<b>\$3,811</b>
<b>Effective Tax Rate for all Taxes</b>	<b>29.5%<sup>1</sup></b>	<b>11.9%<sup>1</sup></b>	<b>9.5%<sup>1</sup></b>	<b>8.6%<sup>1</sup></b>	<b>7.8%<sup>1</sup></b>	<b>8.5%<sup>1</sup></b>	<b>10.3%<sup>1</sup></b>	<b>11.8%<sup>1</sup></b>	<b>12.0%<sup>1</sup></b>	<b>11.4%<sup>1</sup></b>		<b>11.0%</b>

<sup>1</sup>For these tables only, Business Taxes does not include the share of Rental Property Taxes borne by the renter.

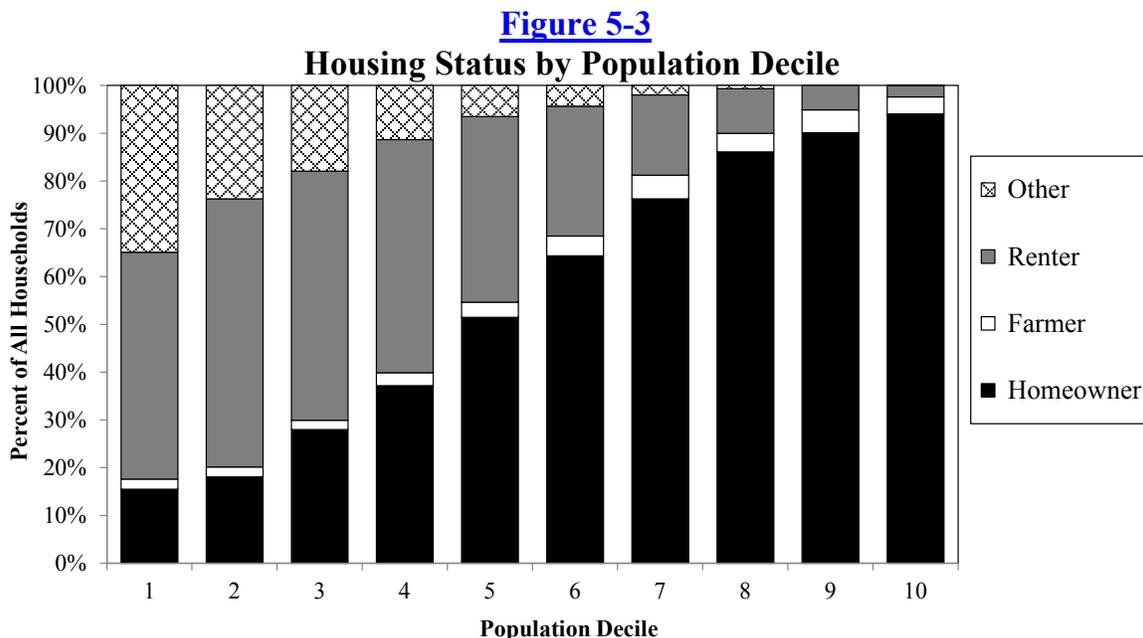
**Table 5-6**  
**Full-Sample Suits Index**  
**Calculated Separately for Each Household Type**

Household Type	Full Sample Suits Index
Married With Children	-0.044
Married No Children (Non-Senior)	-0.094
Single-Person Household (Non-Senior)	-0.086
Seniors (Single or Married)	-0.055
Single Parents	+0.013
All Family Types	-0.060

### Housing Status by Population Decile

Figure 5-3 shows how housing status varied with income. As expected, home ownership rates (including farmers) rose steadily with income, from 18 percent in the first decile to 98 percent in the tenth decile. For all households, 59 percent were homeowners. Renter households outnumbered homeowners in each of the first four deciles; the top three deciles contained 17 homeowner households for every renter household. There were twice as many farmers in the top three deciles as in the bottom three deciles.<sup>30</sup>

Figure 5-3 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.



<sup>30</sup> 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.

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 dependent) 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.<sup>31</sup> Although the second incidence household might be considered to have paid part of the homeowner property tax, it is not possible to link the two households using available information (nor would it be clear how to split the tax between them).

Most of the non-renter/non-owner households were single persons in the lower income deciles, reflecting the characteristics of such persons in the Census data. Those living in group quarters (including nursing homes) were also included in this category. None of 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 2,575,184 Minnesota households in 2010, with a median income of \$41,101. In contrast, the U.S. Census reports a total of 2,087,227 Minnesota households in 2010, with a median income of \$58,476. Census households average 2.48 persons, while the incidence study households average 2.05 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.

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<sup>31</sup> If a home is owned jointly, the property tax is split equally among all owners.

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 23 percent more households than the Census, and the median household income in the incidence study is only 70 percent of that reported by the Census.

In summary, the incidence study's population is consistent with the Census.<sup>32</sup> The U.S. Census estimate of Minnesota's 2010 population exceeds the Incidence Study population by less than one percent. This difference is primarily due to this study's exclusion of part-year residents. The lower median income reported 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.

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<sup>32</sup> 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. Total household income reported in the Tax Incidence Study exceeds that in Census estimates by 10 percent. This reflects both the study's broader definition of income and income underreporting in the Census.



## **Appendix A**

### **The Incidence Study Database**

The 2010 incidence study database includes detailed information on income and taxes for a stratified random sample of 117,711 Minnesota households. This sample is then “blown up” to represent 2.58 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 was taken from state and federal income tax returns filed in Minnesota. Then, data was added from property tax refund returns. More information concerning homestead property taxes was obtained from data provided by Minnesota counties to the Department of Revenue. Additional income and data came from several state agencies. Information obtained from the American Community Survey of the United States Bureau of the Census was 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.

## **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.

### ***Components of Household Income in 2010***

*Table A-1* summarizes the measure of household income used in this study. Minnesota households are divided into three groups.

- Income tax filers (87.6 percent of all households and 96.8 percent of all income)
- Property Tax Refund filers who file no income tax return (4.4 percent of all filers and 1.2 percent of all income)
- Nonfilers (8.0 percent of all households and 2.0 percent of all income)

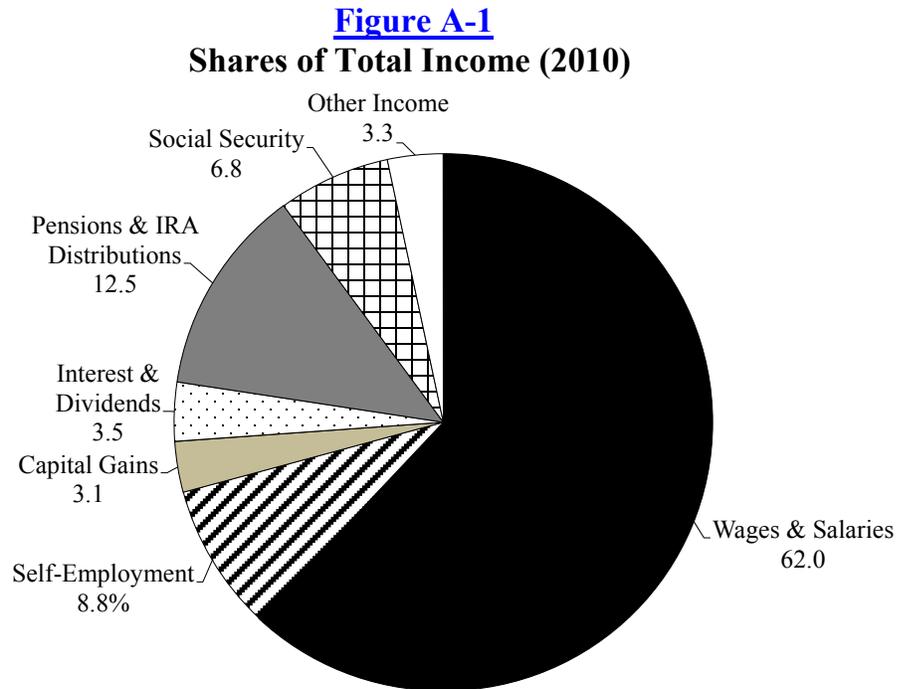
Federal Gross Income (FGI) reported on federal income tax returns accounts for 85.5 percent of total income. Nontaxable interest and retirement income reported on tax returns adds another 7.8 percent.

**Table A-1****Components of Total Household Income in 2010 (\$ Millions)**

<b>Group</b>	<b>Source of Income</b>	<b>Amount</b>
File income tax 2,256,000 households	Wages	\$ 106,944
	Taxable interest & dividends	5,021
	Business income (Schedules C, E, and F)	13,249
	Capital gains & other gains	5,298
	Taxable IRA distributions	3,803
	Taxable pension & annuity income	8,702
	Taxable unemployment benefits	2,196
	Taxable social security benefits	3,611
	Other taxable income	(312)
	<b>Federal Gross Income (FGI)</b>	<b>\$ 148,512</b>
	Adjustments to FGI	
	Taxable refunds of state income taxes	(536)
	Half of Self-employment tax	(383)
	Self-employed health insurance deduction	(548)
	Penalty on early withdrawal of savings	(4)
	Alimony paid	(166)
	Nontaxable interest	1,023
	Nontaxable IRA distributions	1,623
	Nontaxable pension & annuity income	6,674
	Nontaxable social security income	5,295
Other nontaxable income	6,222	
Public assistance cash payments	195	
Workers' compensation	214	
<b>Total Household Income</b>	<b>\$ 168,121</b>	
File Property Tax Refund (but not income tax) 112,500 households	Wages	\$ 254
	Interest & dividends	32
	Unemployment benefits	22
	Pension income	191
	Social security income	1,097
	Public assistance cash payments	206
	Workers' compensation	10
	Other income	306
	<b>Total Household Income</b>	<b>\$ 2,118</b>
Nonfilers 206,700 households	Wages	\$ 489
	Interest & dividends	64
	Unemployment benefits	128
	Pension income	717
	Social security income	1,741
	Public assistance cash payments	119
	Workers' compensation	52
	Other income	108
<b>Total Household Income</b>	<b>\$ 3,418</b>	
<b>Total Population</b> 2,575,200 households	<b>Total Household Income<sup>1</sup></b>	<b>\$ 173,657</b>

<sup>1</sup>Household income differs what is shown in *Table 2-2* because it includes negative income.

Figure A-1 shows the shares of income by type of income. Wages account for 62.0 percent of all income, and income from sole proprietors, farmers, pass-through entities, and rents accounts for another 8.8 percent. Capital income in the form of interest, dividends, and capital gains combines for 6.6 percent. Retirement income totals 19.3 percent.



### ***Income Not Included in Incidence Study 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. Three 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). Third, child support payments are not included as income for the recipient, nor are they subtracted from the income of the payer.

## ***Comparison to Personal Income***

A commonly used measure of income is “personal income” as reported by the U.S. Department of Commerce, Bureau of Economic Analysis. Personal income differs from the definition of income used in this study in a number of ways. The most important components of personal income that are not included here are employer contributions for employee pension and insurance funds and the investment income of life insurance carriers and pension plans. It should also be noted that personal income does not include some significant items that are included in FAGI and hence in this study. Personal income excludes the following: capital gains, taxable pensions, and the employee share of Social Security and Medicare taxes.

## ***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.

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



## Appendix B

### The 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 last two full years prior to death. All returns filed between 2002 and 2010 were included in estimating how the tax varied with income.

### ***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<sup>33</sup> 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. In this study, the actual tax paid by sample households was found by matching sample households to the motor vehicle registration files.

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<sup>33</sup> Minnesota State Lottery (1994). *Gambling in Minnesota*. St. Cloud University Survey Research, February.

*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 2010, the burden of the mortgage registration tax was distributed over all mortgage holders (in proportion to mortgage interest paid in 2010); the deed transfer tax burden was distributed over all homeowners (in proportion to the estimated market value of the home).

### ***Adjustment for Burdens on Nonresident Households***

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

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

## **Taxes on Business**

### ***Introduction***

This study includes \$8.1 billion in business taxes in 2010, 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.

## *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 B-1*, using the example of a \$120 million property tax on capital in the manufacturing sector.

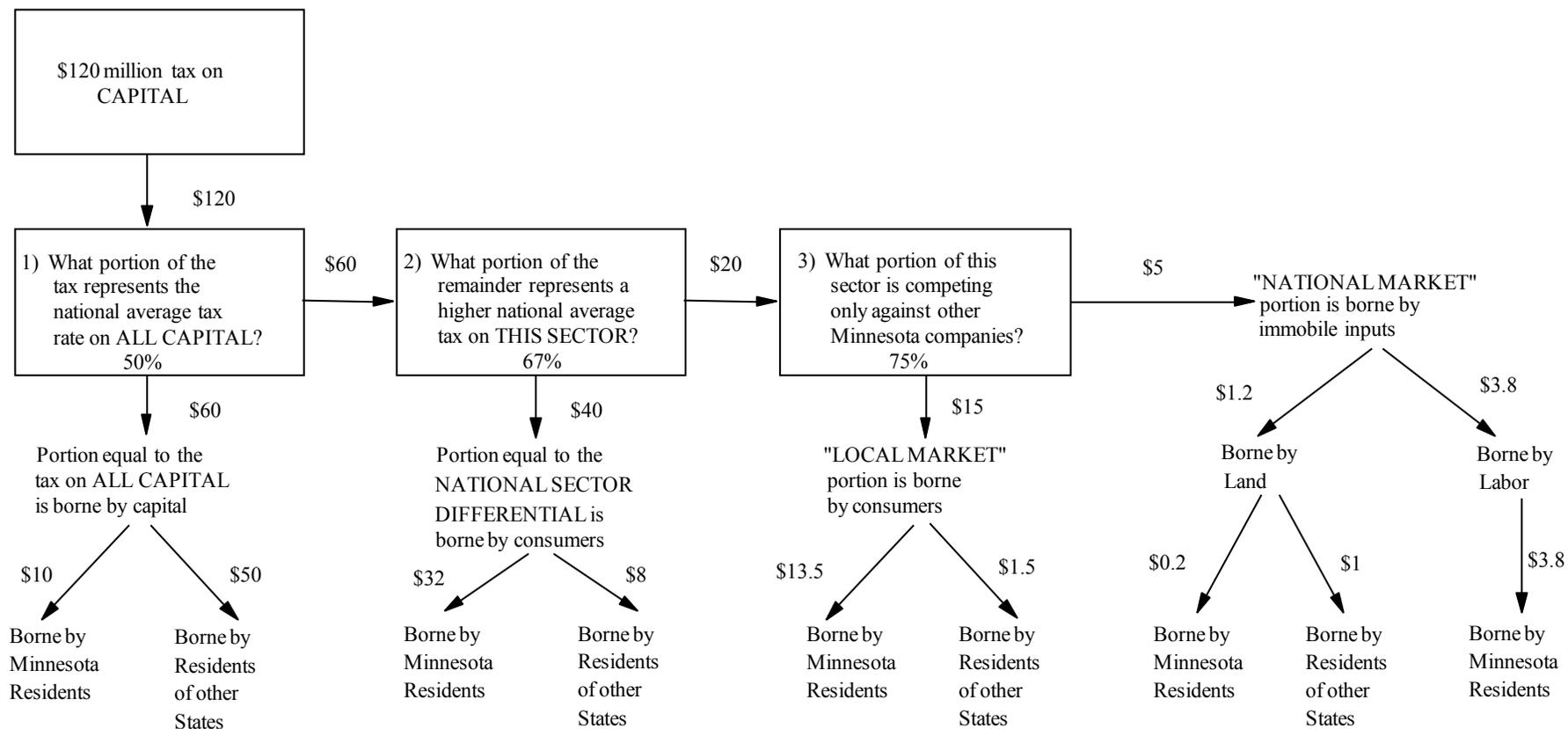
*Question 1.* What portion of this \$120 million Minnesota tax represents the national average tax on all capital? If all states levied an identical tax on *all* forms of capital, capital would be unable to shift that tax to others and the entire burden would be borne by capital. Given the variation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

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

For each particular tax on capital, this study estimates the average national tax rate on all capital. If the Minnesota tax rate on a particular form of capital is twice the national average (as is assumed hypothetically in *Figure B-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 B-1**

**Incidence of a Hypothetical \$120 Million Tax on Capital**



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

\*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 B-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 B-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 *Chapter 4, Section C*.

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

**Table B-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 in higher prices were allocated 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.* Renters are the consumers of rental housing, so the proportion of the total rental property tax shifted forward to renters in higher rents is estimated using the same methodology used for other business taxes. That portion of total taxes on rental housing is distributed across renter households in proportion to each household's annual rent. For renter households receiving a property tax refund, annual rent is known. For others, rent is estimated based on the most recent information from the U.S. Census.

*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 rents (reported on Schedule E), with the rest allocated in proportion to farm homestead property taxes.

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

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 B-2*.

**Table B-2****Distribution of Business Tax Burden by Taxpayer Category (2010)**

	Percent Borne by Minnesota Taxpayers			Percent Exported
	Capital	Labor	Consumers	
<b>State Taxes</b>				
Corporation Franchise Tax	4%	10%	44%	41%
Sales and Excise Taxes				
General Sales and Use Tax	7%	0%	54%	39%
Motor Vehicle Sales Tax	33%	1%	4%	62%
Motor Fuels Excise Taxes	0%	0%	48%	52%
Mortgage and Deed Taxes	65%	0%	10%	25%
Gross Earnings Taxes				
Insurance Premiums Taxes	12%	0%	37%	51%
In lieu of property taxes				
Motor Vehicle Registration Tax	2%	11%	65%	22%
Solid Waste Management Taxes	0%	0%	84%	16%
State Property Tax				
Commercial	17%	2%	33%	48%
Industrial	8%	0%	6%	87%
Utility	2%	5%	50%	43%
<b>Local Taxes</b>				
Property Taxes (Pay 2010)				
General Property Tax				
Commercial	17%	2%	33%	48%
Industrial	8%	0%	6%	87%
Farm (other than residence)	100%	0%	0%	0%
Rental Housing	57%	0%	35%	9%
Utility	2%	5%	50%	43%
Mining Production Taxes (taconite)	9%	1%	0%	90%
Local Sales Taxes	7%	0%	54%	39%
Local Gross Earnings Taxes	2%	5%	50%	43%

## 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.

In addition, the incidence of a change in Minnesota tax should include the impact of the federal tax offset. (See *Chapter 4, Section C.*)

Illustrations of the magnitude of these differences are presented in *Chapter 4, Section E.*

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.



## Appendix C

### Tax Incidence by Type of Tax (2010)

The tables in *Appendix C* provide more detail about the incidence of each of the taxes included in this study. For each tax, the following information is provided:

#### *Top Table*

- The total dollars of tax paid by Minnesota households, by non-resident households, and by business. The sum of these three parts equals the total tax collected in 2010. The business portion is based on this study's definition of business taxes. (See pages 8-10 of this study.)
- The total dollars of tax burden that fall on Minnesota residents – after shifting of any business portion of the tax. This equals the sum of (a) the tax imposed on Minnesota households and (b) any portion of the tax imposed on business that is borne by Minnesota residents.
- The total dollars of tax burden “exported” to nonresident households. This equals the sum of (a) the tax imposed on non-resident households and (b) any portion of the tax imposed on business that is shifted to nonresidents.
- The share of the total burden on Minnesota residents that is imposed directly on Minnesota households and the shares that represent business tax that is shifted to Minnesota consumers (in higher prices), shifted to Minnesota labor (in lower wages or benefits), or borne by Minnesota capital (as owners of businesses).

#### *Chart*

- The effective tax rate for this particular tax, by population decile – using the scale on the right-hand side of the chart.
- The effective tax rate for all Minnesota state and local taxes combined, by population decile – using the scale on the left-hand side of the chart.
- The average effective tax rate for this particular tax (and for all Minnesota state and local taxes combined).

#### *Bottom Table*

- Effective tax rates by population decile, and more detail for the top decile (divided into its first 5%, next 4%, and top 1%).
- The population-decile Suits index for this particular tax (and for all Minnesota state and local taxes combined).

## Appendix C Tables

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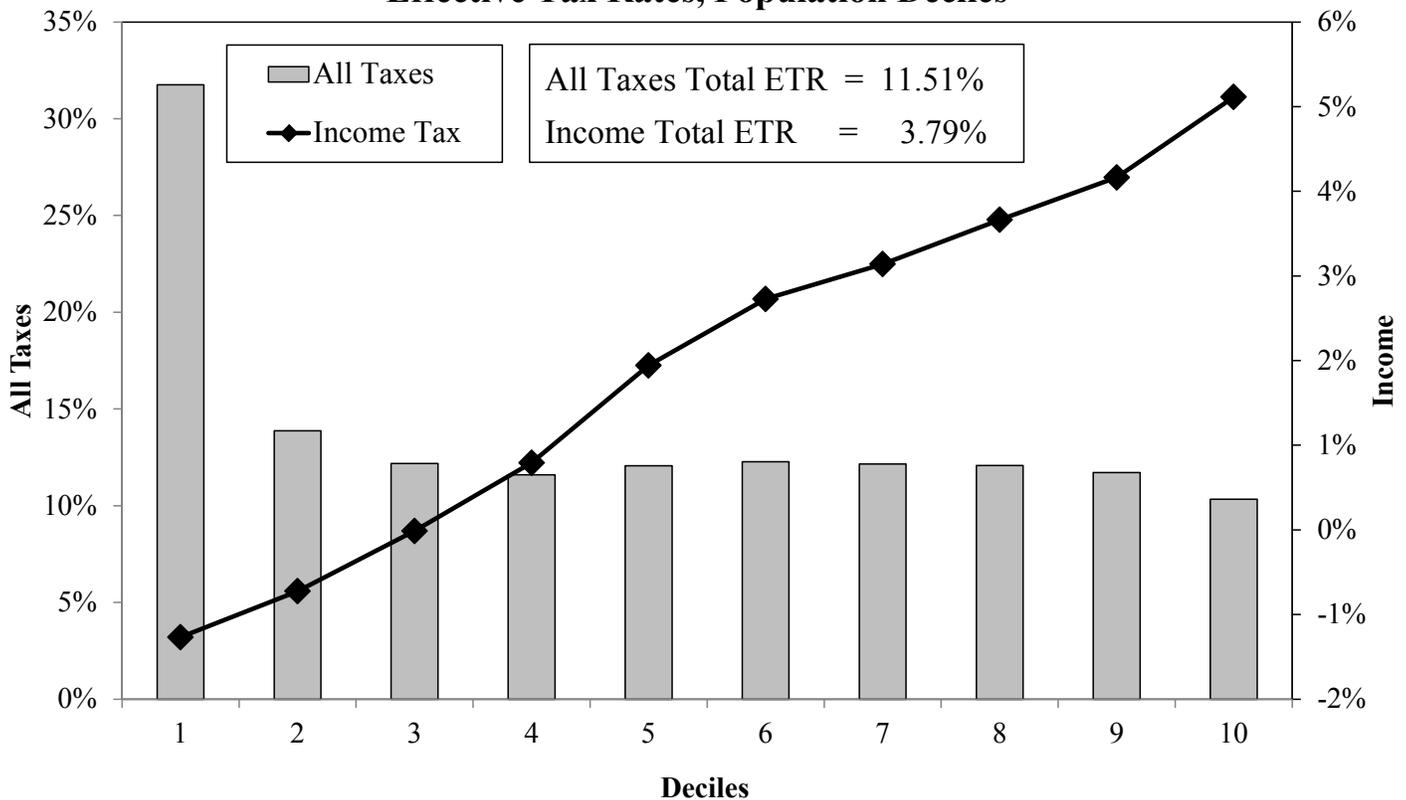
## 2010 Incidence Estimate for **Individual Income Tax**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$7,030	\$6,653	\$378	\$0	\$6,653	\$378

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Deciles



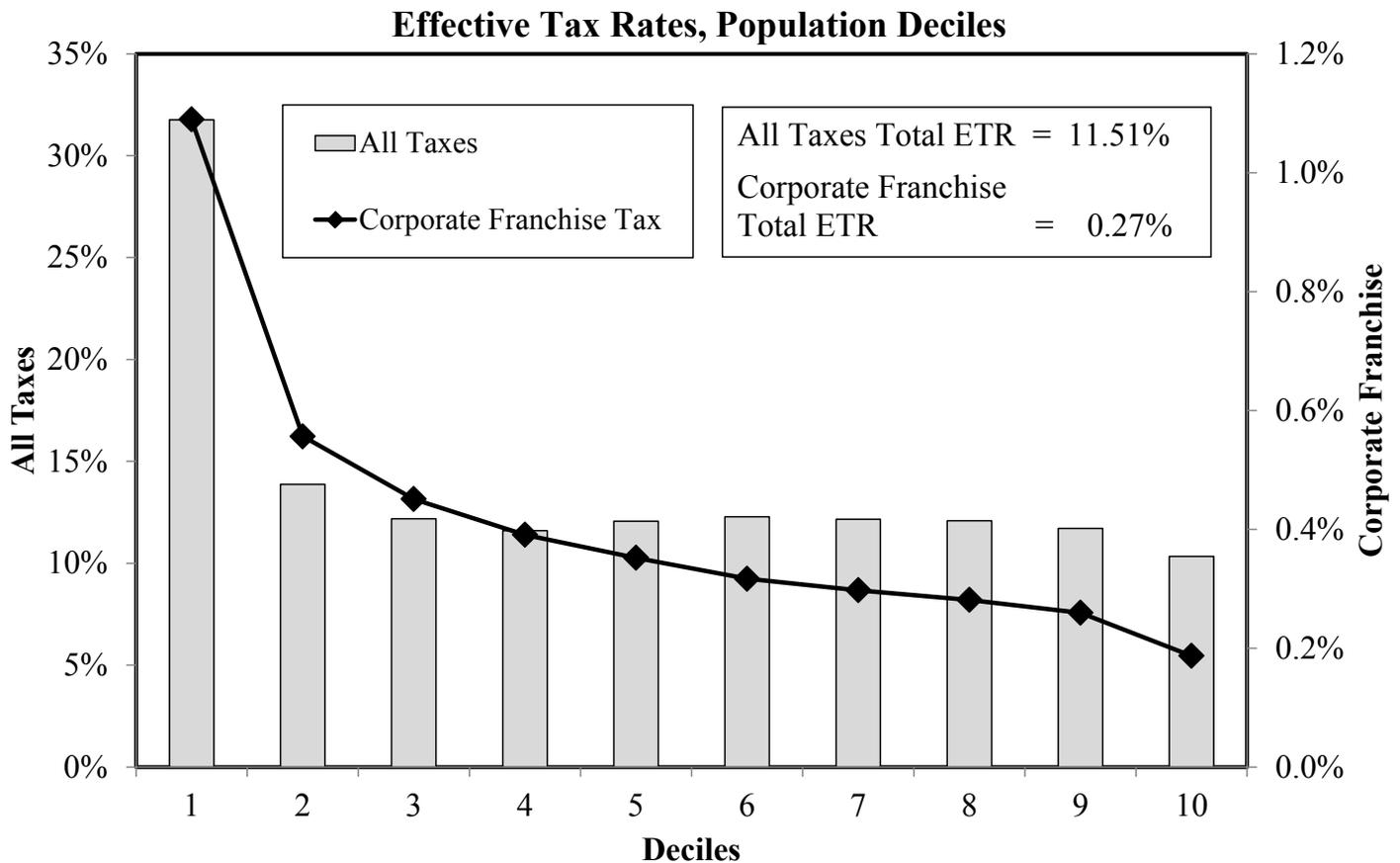
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Income	-1.27%	-0.73%	-0.01%	0.79%	1.94%	2.73%	3.14%	3.66%	4.16%	5.11%	4.54%	4.96%	5.65%	0.230

## 2010 Incidence Estimate for Corporate Franchise Tax<sup>1</sup>

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$800	\$0	\$0	\$800	\$470	\$330

\* Shifting allocations: Direct = 0%, Consumers = 75%, Labor = 18%, Capital = 7%



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Corporate Franchise	1.09%	0.56%	0.45%	0.39%	0.35%	0.32%	0.30%	0.28%	0.26%	0.19%	0.24%	0.20%	0.14%	-0.199

<sup>1</sup>Includes the Corporate Franchise Tax (\$664 million) and the Mining Occupation Tax (-\$1 million).

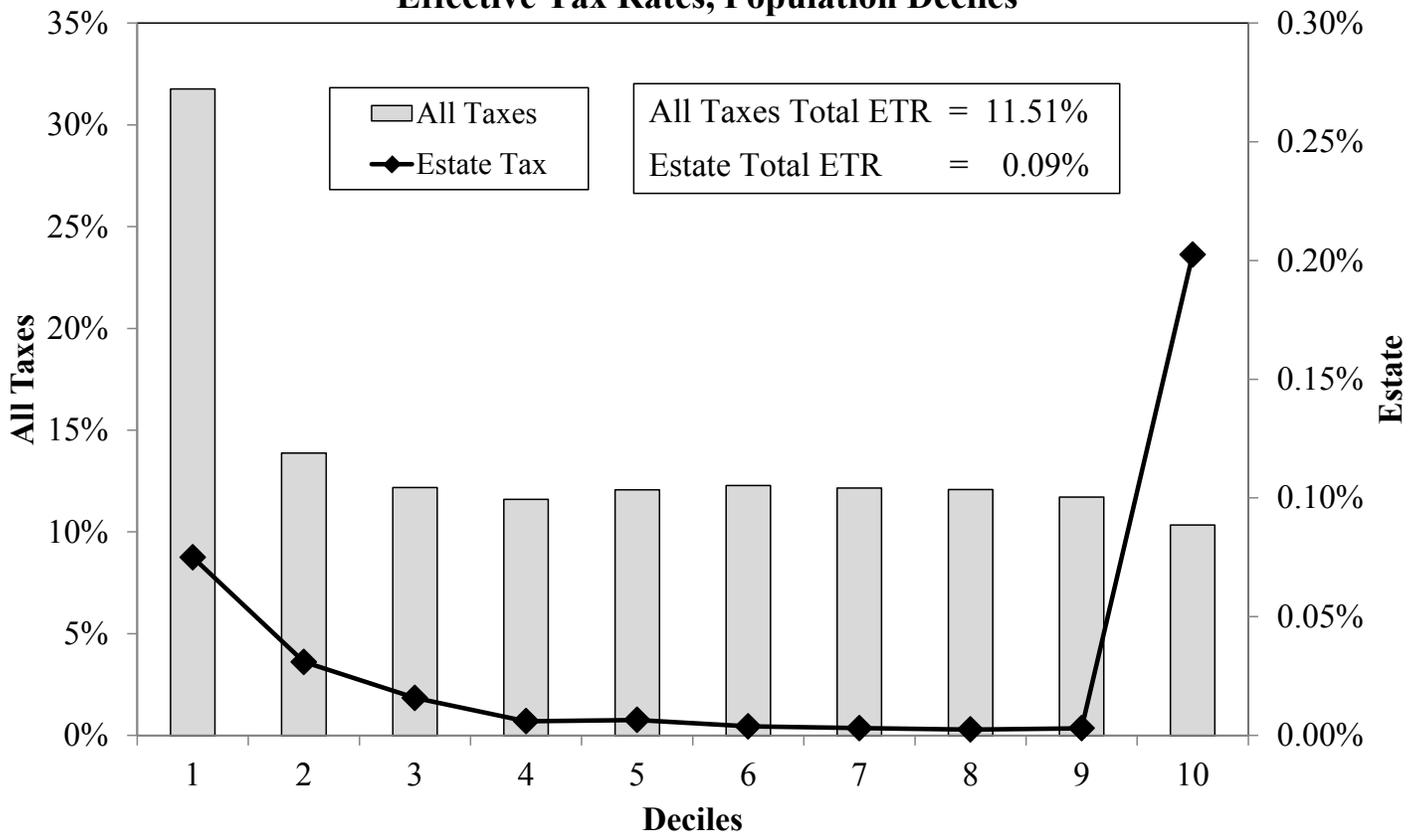
## 2010 Incidence Estimate for **Estate Tax**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$155	\$155	\$0	\$0	\$155	\$0

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Deciles



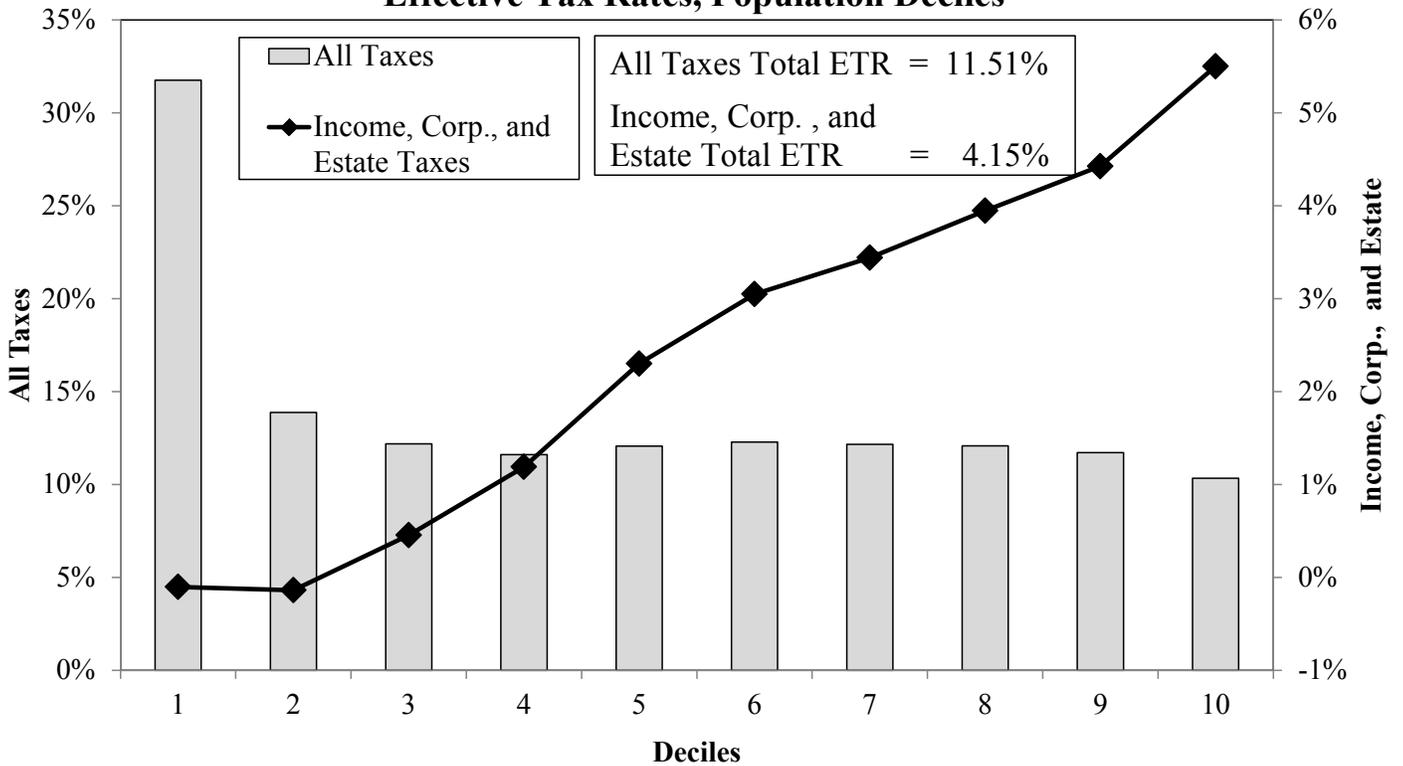
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Estate	0.08%	0.03%	0.02%	0.01%	0.01%	0.00%	0.00%	0.00%	0.00%	0.20%	0.00%	0.02%	0.51%	0.832

## 2010 Incidence Estimate for Total Income, Corporate, and Estate Taxes

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
\$7,985	\$6,808	\$378	\$800	\$7,278	\$707

### Effective Tax Rates, Population Deciles



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Income, Corp., & Estate	-0.10%	-0.14%	0.45%	1.19%	2.30%	3.05%	3.44%	3.95%	4.43%	5.50%	4.79%	5.19%	6.29%	0.215

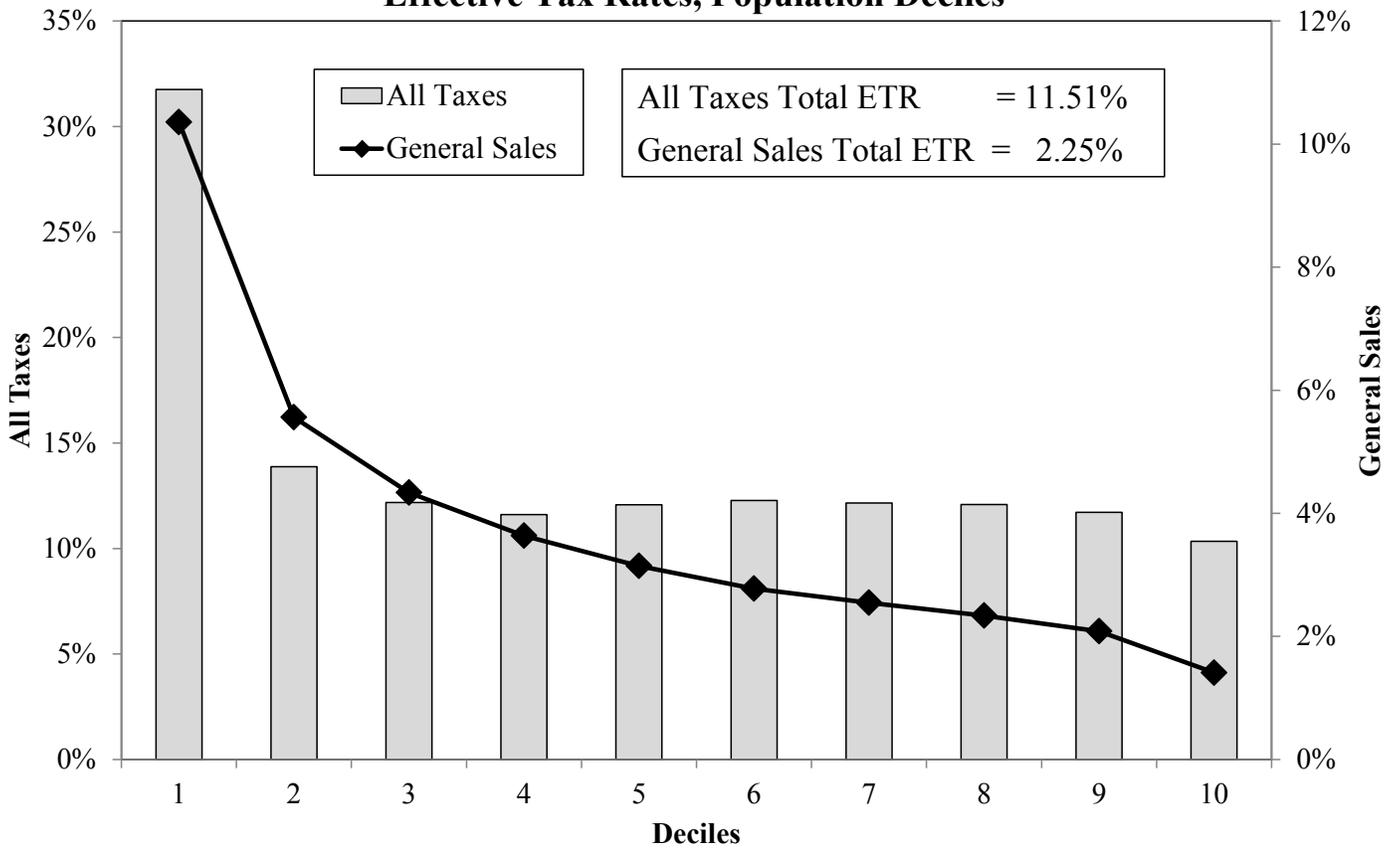
## 2010 Incidence Estimate for General Sales and Use Tax

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$5,018	\$2,691	\$274	\$2,054	\$3,941	\$1,078

\* Shifting allocations: Direct = 68%, Consumers = 28%, Labor = 0%, Capital = 4%

### Effective Tax Rates, Population Deciles



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
General Sales	10.36%	5.56%	4.34%	3.64%	3.15%	2.78%	2.55%	2.34%	2.08%	1.41%	1.82%	1.49%	1.06%	-0.245

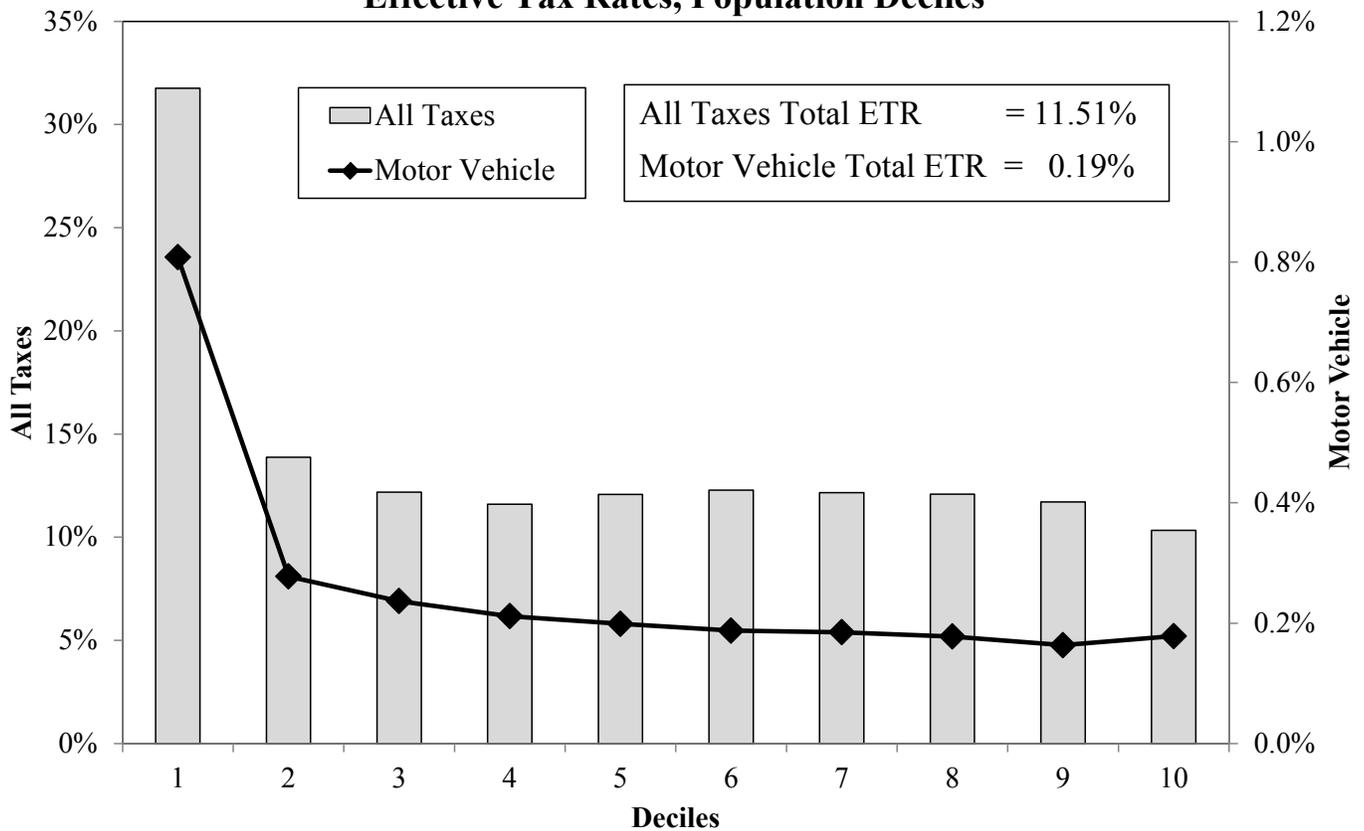
## 2010 Incidence Estimate for Sales Tax on Motor Vehicles

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$478	\$240	\$0	\$238	\$331	\$147

\* Shifting allocations: Direct = 73%, Consumers = 3%, Labor = 1%, Capital = 24%

### Effective Tax Rates, Population Deciles

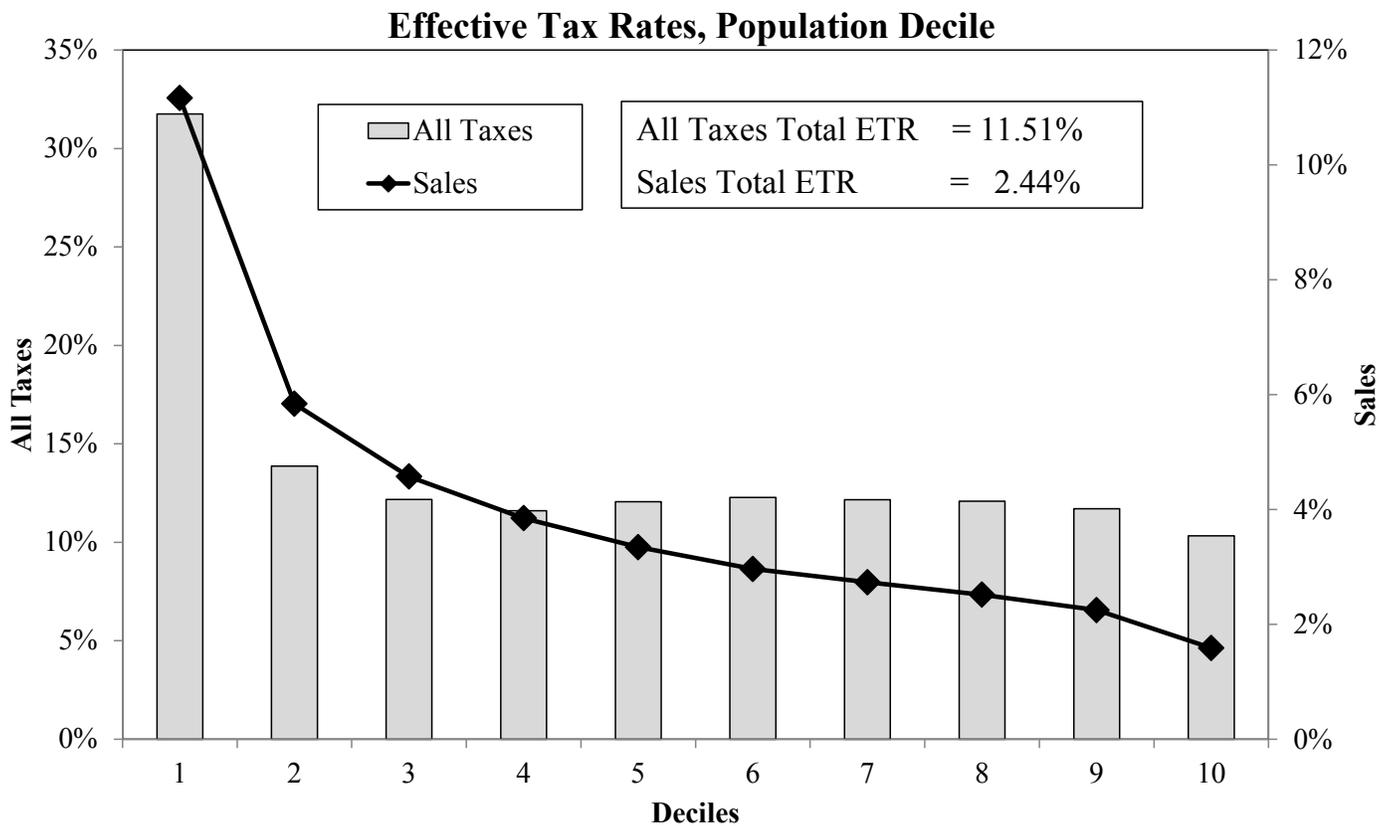


Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Motor Vehicle	0.81%	0.28%	0.24%	0.21%	0.20%	0.19%	0.18%	0.18%	0.16%	0.18%	0.16%	0.18%	0.19%	-0.058

## 2010 Incidence Estimate for **Total State Sales Taxes**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
\$5,497	\$2,931	\$274	\$2,292	\$4,272	\$1,224



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Sales	11.17%	5.84%	4.57%	3.85%	3.34%	2.96%	2.73%	2.52%	2.25%	1.59%	1.98%	1.67%	1.25%	-0.230

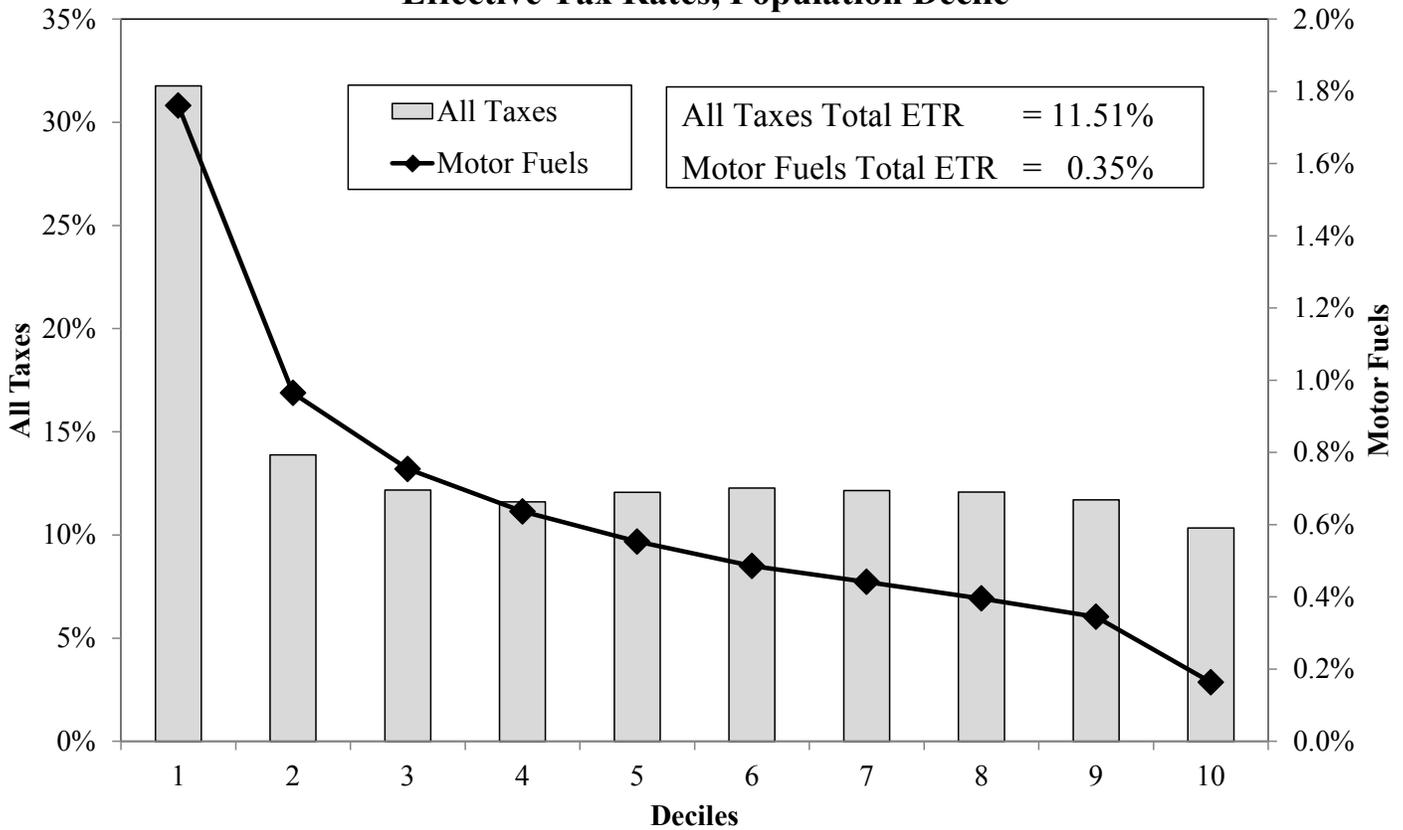
## 2010 Incidence Estimate for **Motor Fuels Excise Taxes**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$838	\$461	\$47	\$330	\$618	\$220

\* Shifting allocations: Direct = 75%, Consumers = 25%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Motor Fuels	1.76%	0.96%	0.75%	0.64%	0.55%	0.49%	0.44%	0.40%	0.34%	0.16%	0.27%	0.19%	0.06%	-0.338

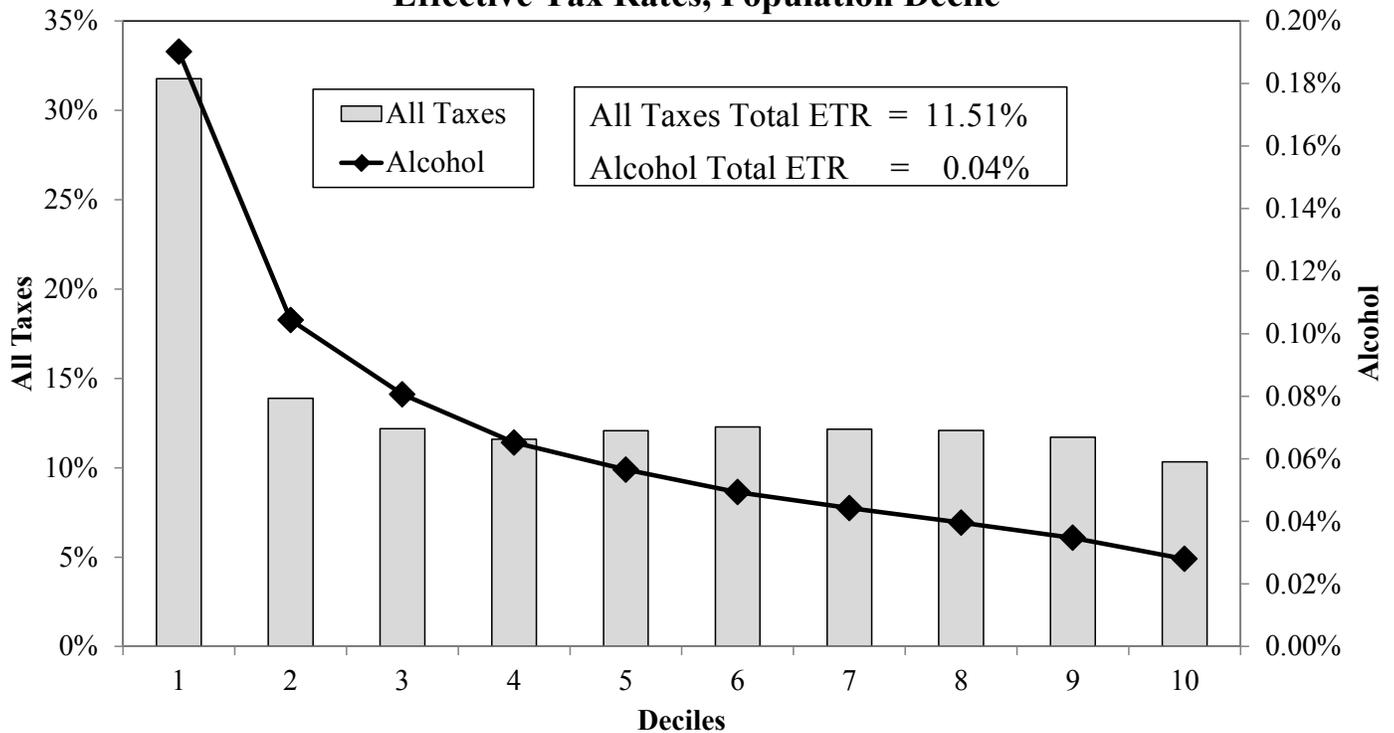
## 2010 Incidence Estimate for Alcoholic Beverage Excise Taxes

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$77	\$72	\$5	\$0	\$72	\$5

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Alcohol	0.19%	0.10%	0.08%	0.07%	0.06%	0.05%	0.04%	0.04%	0.03%	0.03%	0.03%	0.03%	0.02%	-0.225

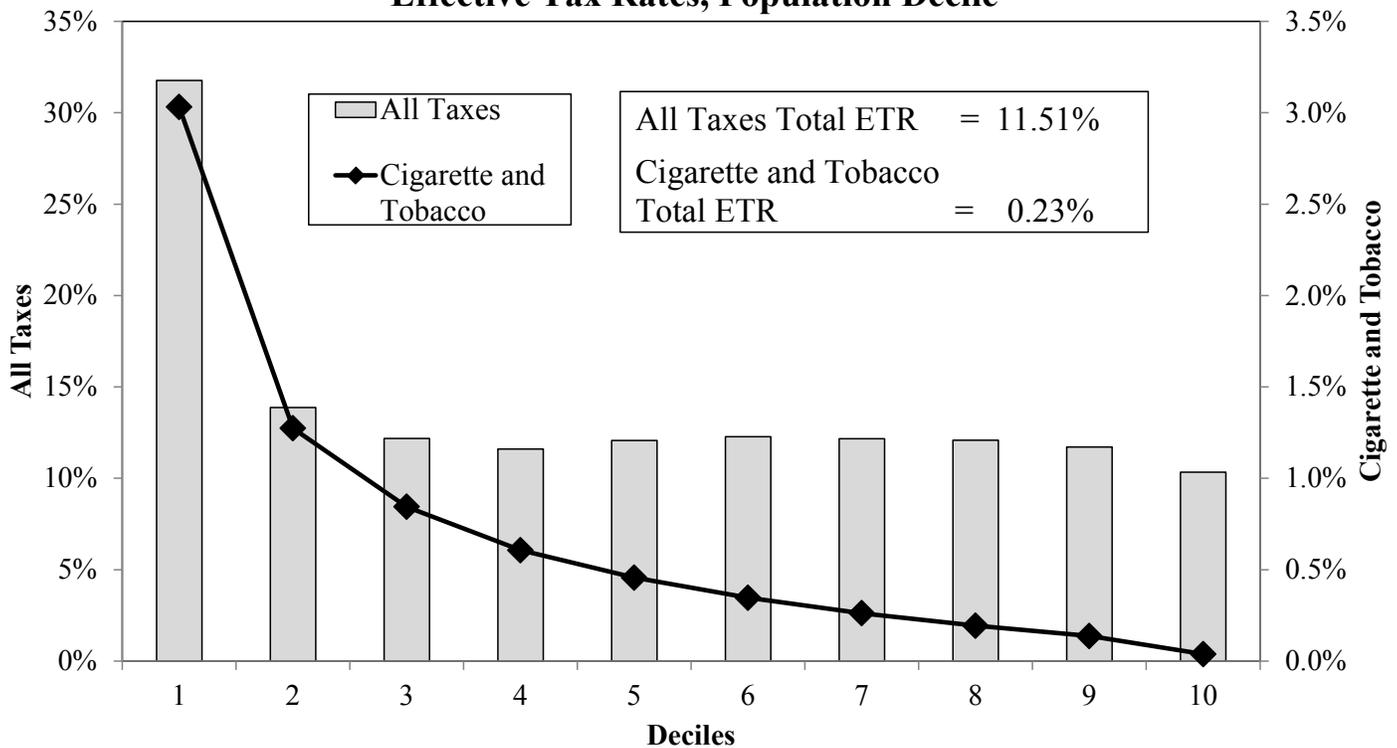
## 2010 Incidence Estimate for Cigarette and Tobacco Excise Taxes<sup>1</sup>

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$430	\$407	\$22	\$0	\$407	\$22

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Cigarette and Tobacco	3.03%	1.27%	0.84%	0.61%	0.46%	0.35%	0.26%	0.19%	0.14%	0.04%	0.08%	0.04%	0.01%	-0.598

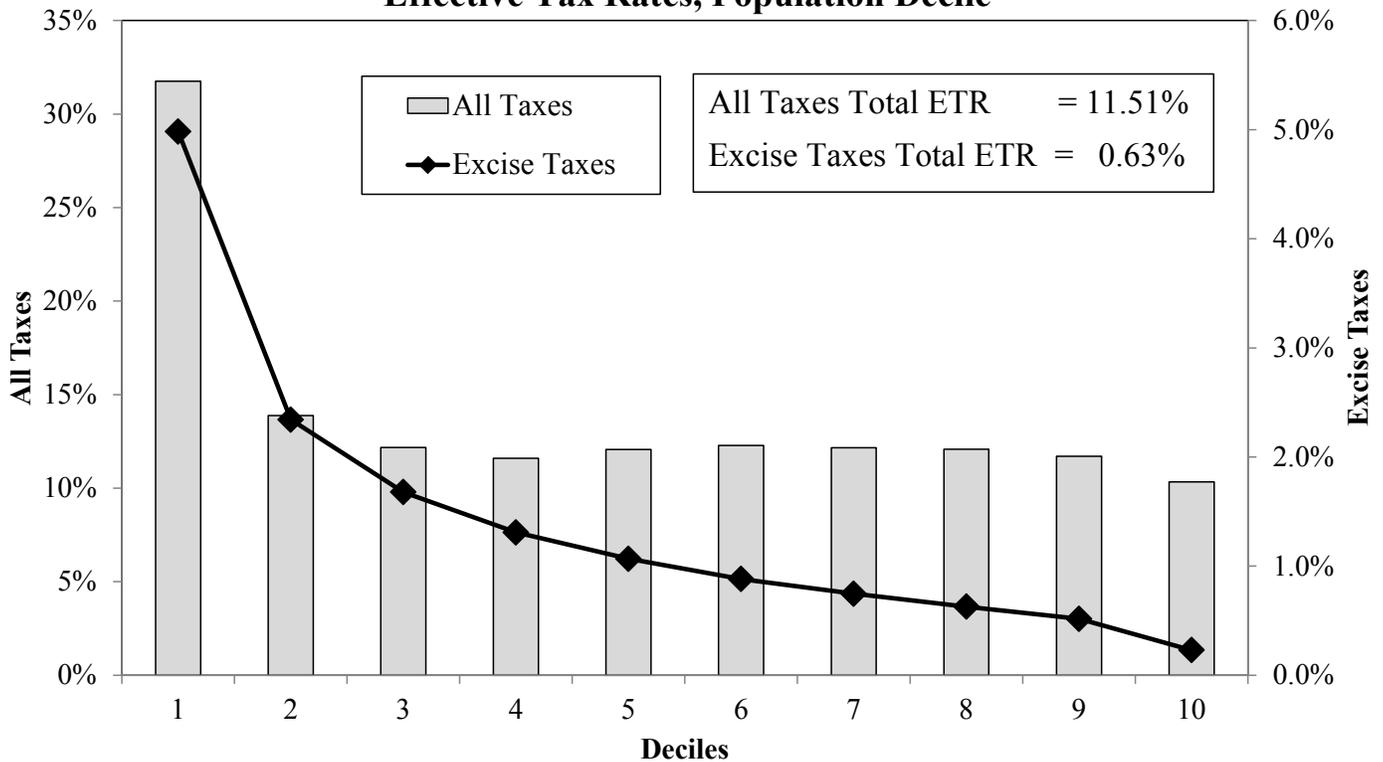
<sup>1</sup>Includes the Cigarette Tax and Fee (\$385.5 million) and the Tobacco Products Tax and Fee (\$47 million).

## 2010 Incidence Estimate for **Total Excise Taxes**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
\$1,345	\$940	\$75	\$330	\$1,097	\$247

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Excise Taxes	4.98%	2.34%	1.68%	1.31%	1.07%	0.88%	0.75%	0.63%	0.52%	0.23%	0.39%	0.26%	0.09%	-0.427

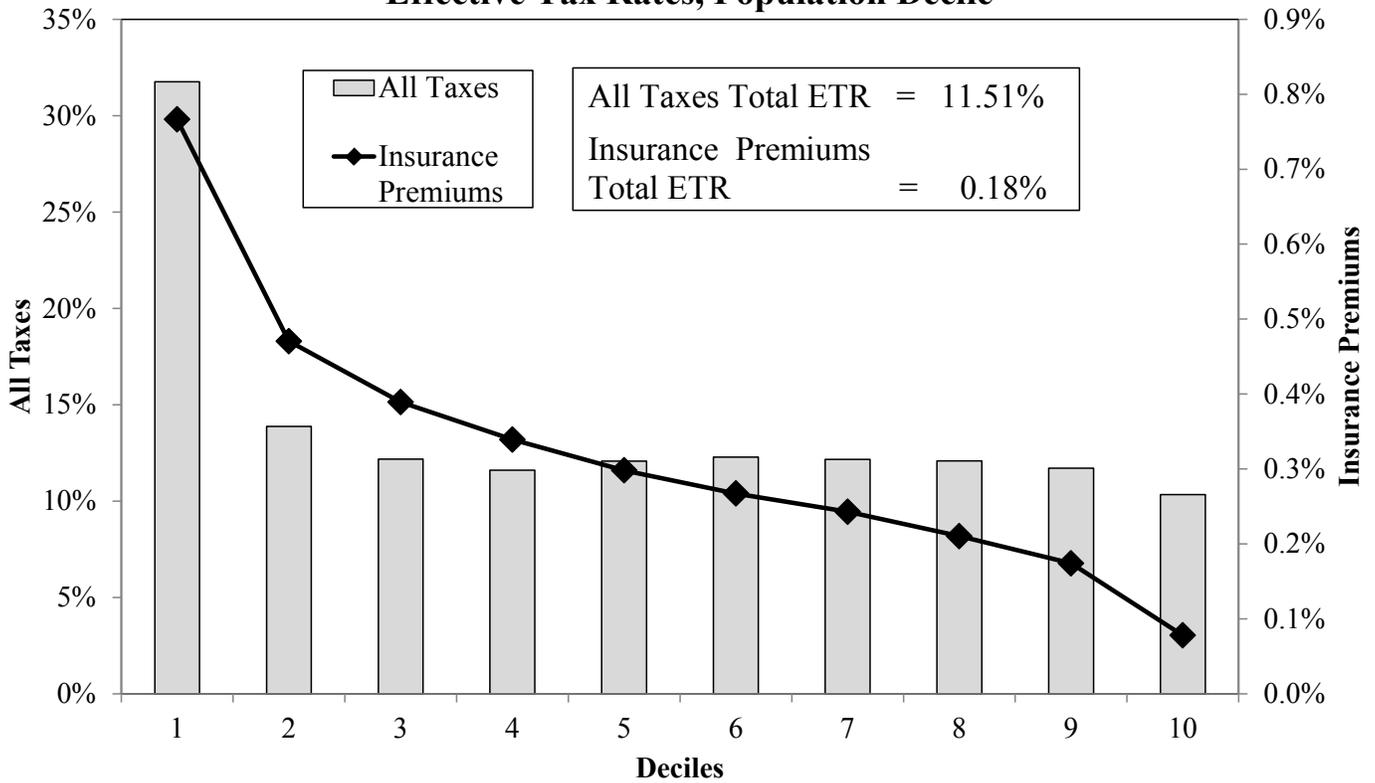
## 2010 Incidence Estimate for Insurance Premiums Taxes

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$360	\$277	\$0	\$84	\$318	\$43

\* Shifting allocations: Direct = 87%, Consumers = 10%, Labor = 0%, Capital = 3%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Insurance Premiums	0.77%	0.47%	0.39%	0.34%	0.30%	0.27%	0.24%	0.21%	0.17%	0.08%	0.13%	0.09%	0.03%	-0.349

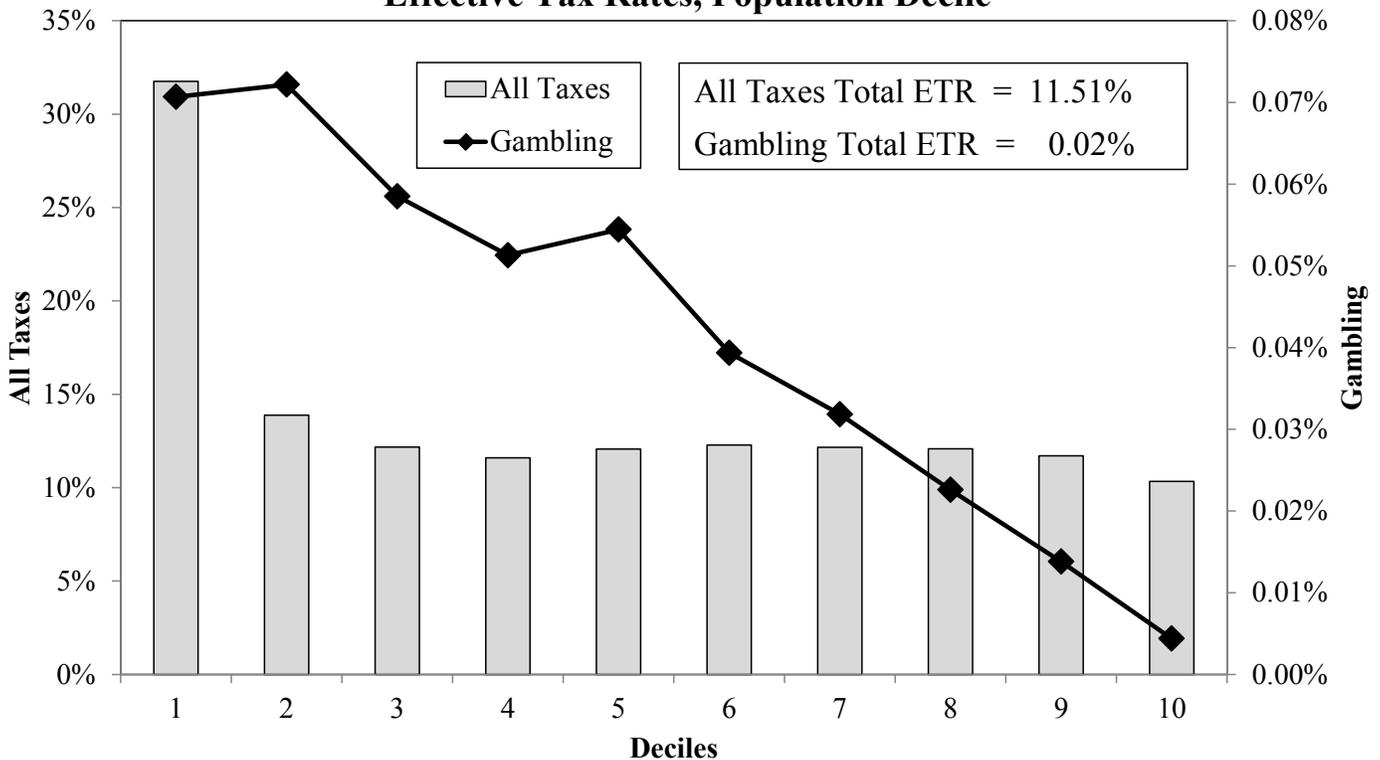
## 2010 Incidence Estimate for **Gambling Taxes<sup>1</sup>**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$37	\$37	\$0	\$0	\$37	\$0

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Gambling	0.07%	0.07%	0.06%	0.05%	0.05%	0.04%	0.03%	0.02%	0.01%	0.00%	0.01%	0.00%	0.00%	-0.503

<sup>1</sup>Gambling taxes include Lawful Gambling (\$1.7 million), Pull Tabs (\$17.2 million), Combined Receipts (\$16.8 million), and Pari-mutual (\$1.0 million).

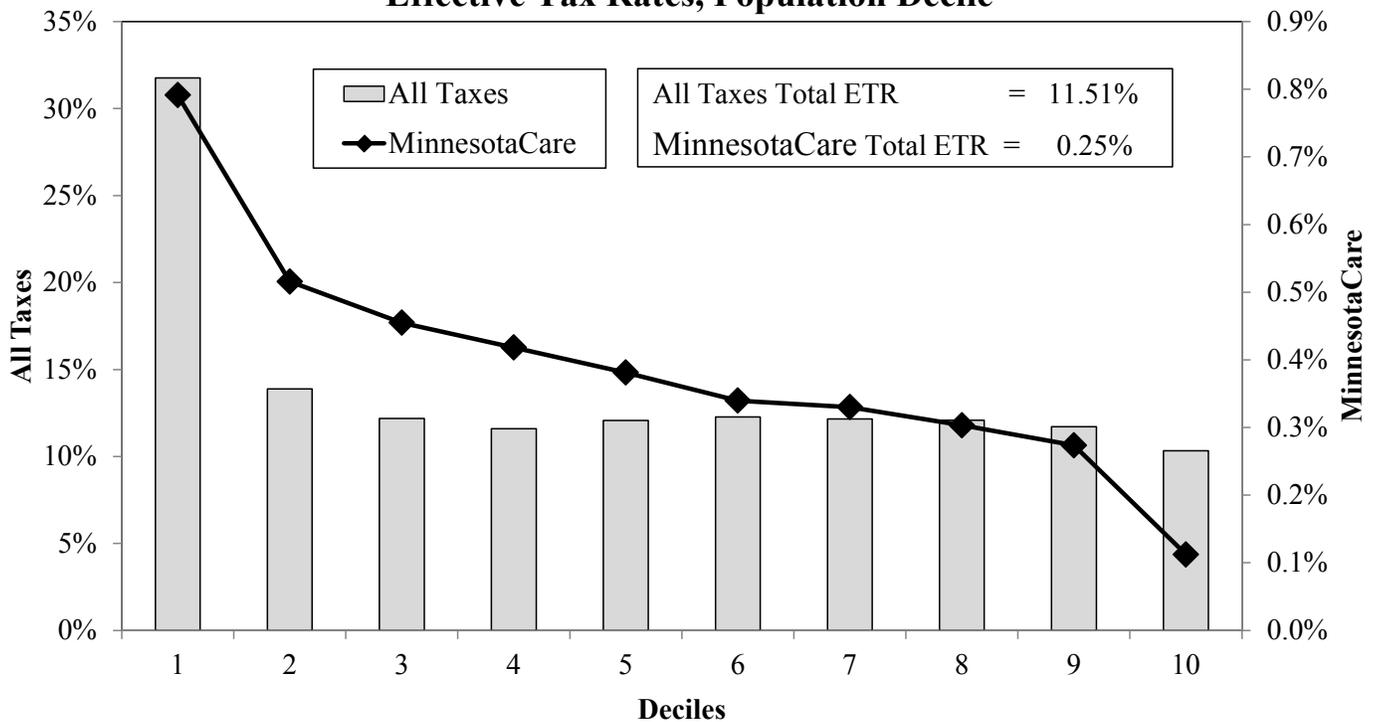
## 2010 Incidence Estimate for **MinnesotaCare Taxes<sup>1</sup>**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$470	\$430	\$40	\$0	\$430	\$40

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
MinnesotaCare	0.79%	0.52%	0.45%	0.42%	0.38%	0.34%	0.33%	0.30%	0.27%	0.11%	0.21%	0.13%	0.03%	-0.314

<sup>1</sup>Includes the Provider Tax (\$187.6 million), the Hospitals Tax (\$178.9 million), and the Drug Distributors Tax (\$91.8 million).

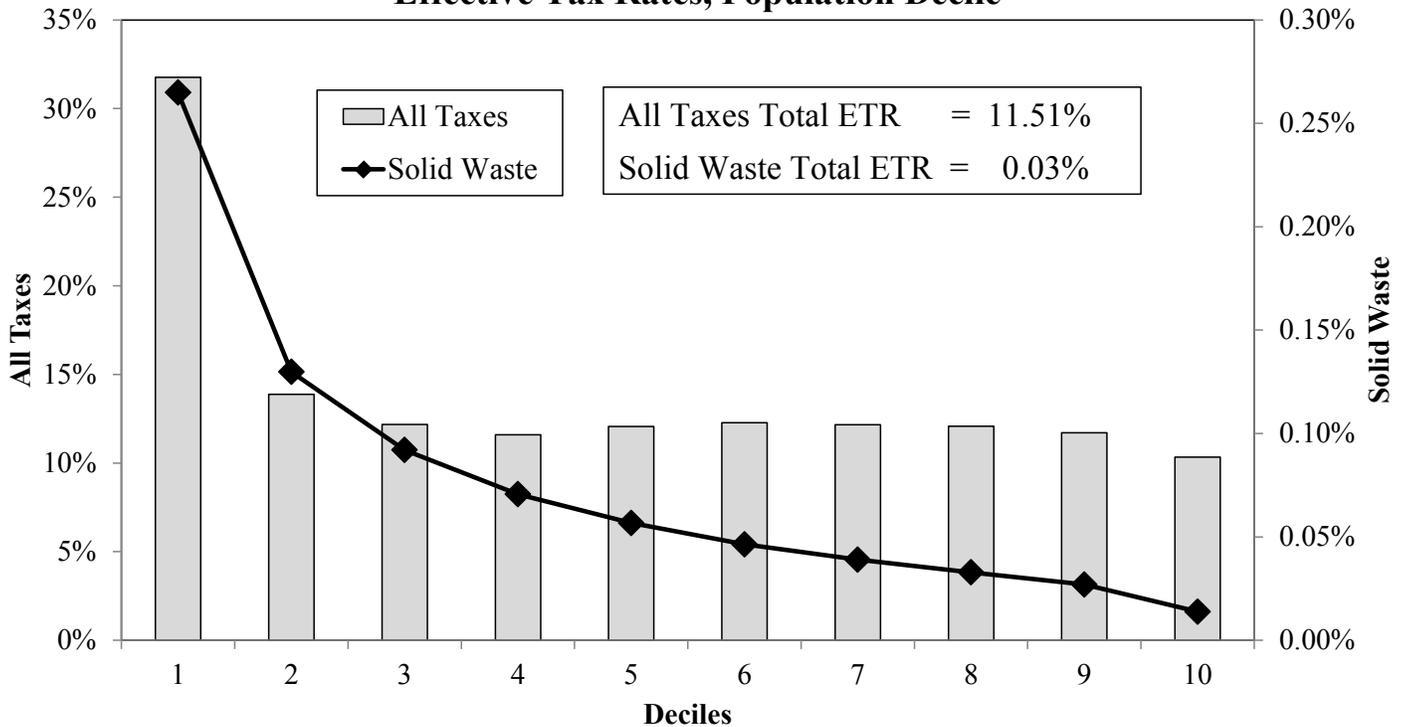
## 2010 Incidence Estimate for Solid Waste Management Taxes

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$65	\$30	\$0	\$34	\$59	\$5

\* Shifting allocations: Direct = 51%, Consumers = 49%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Decile



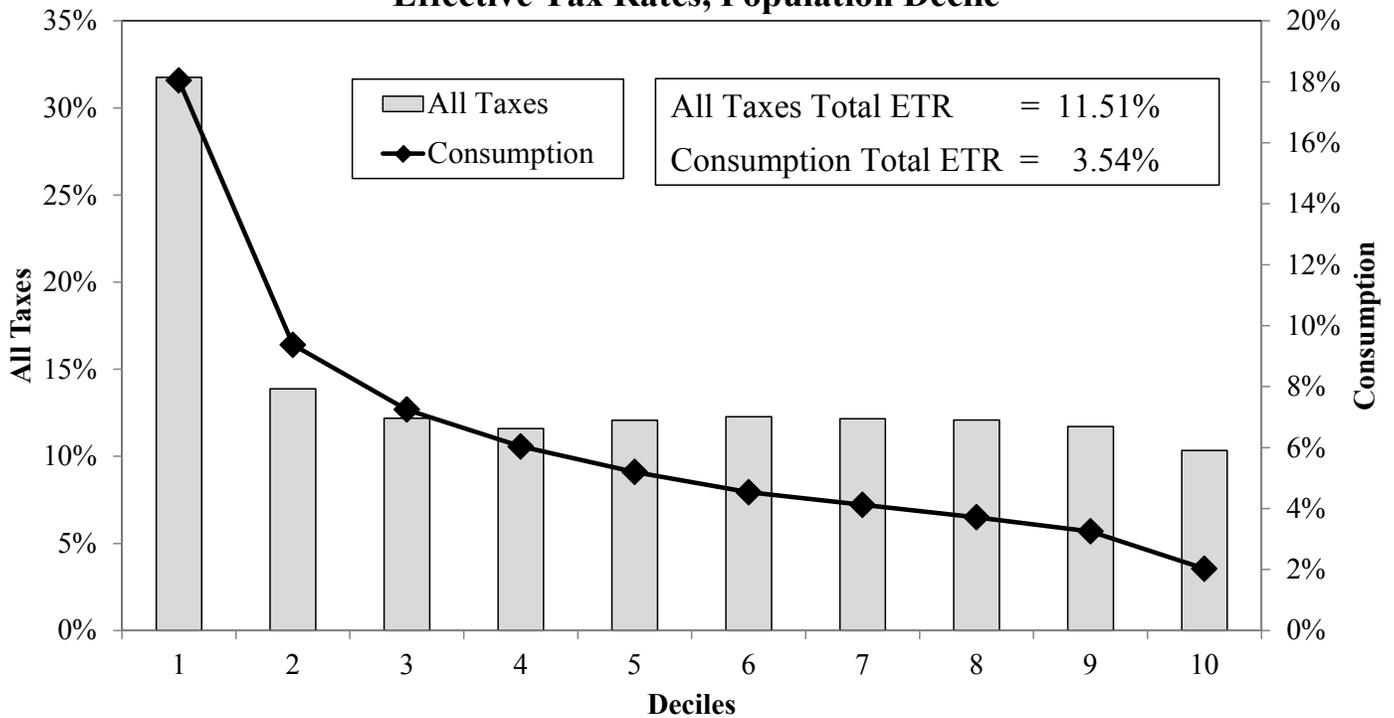
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Solid Waste	0.26%	0.13%	0.09%	0.07%	0.06%	0.05%	0.04%	0.03%	0.03%	0.01%	0.02%	0.02%	0.01%	-0.411

## 2010 Incidence Estimate for Total State Consumption Taxes

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
\$7,774	\$4,645	\$389	\$2,740	\$6,213	\$1,561

### Effective Tax Rates, Population Decile



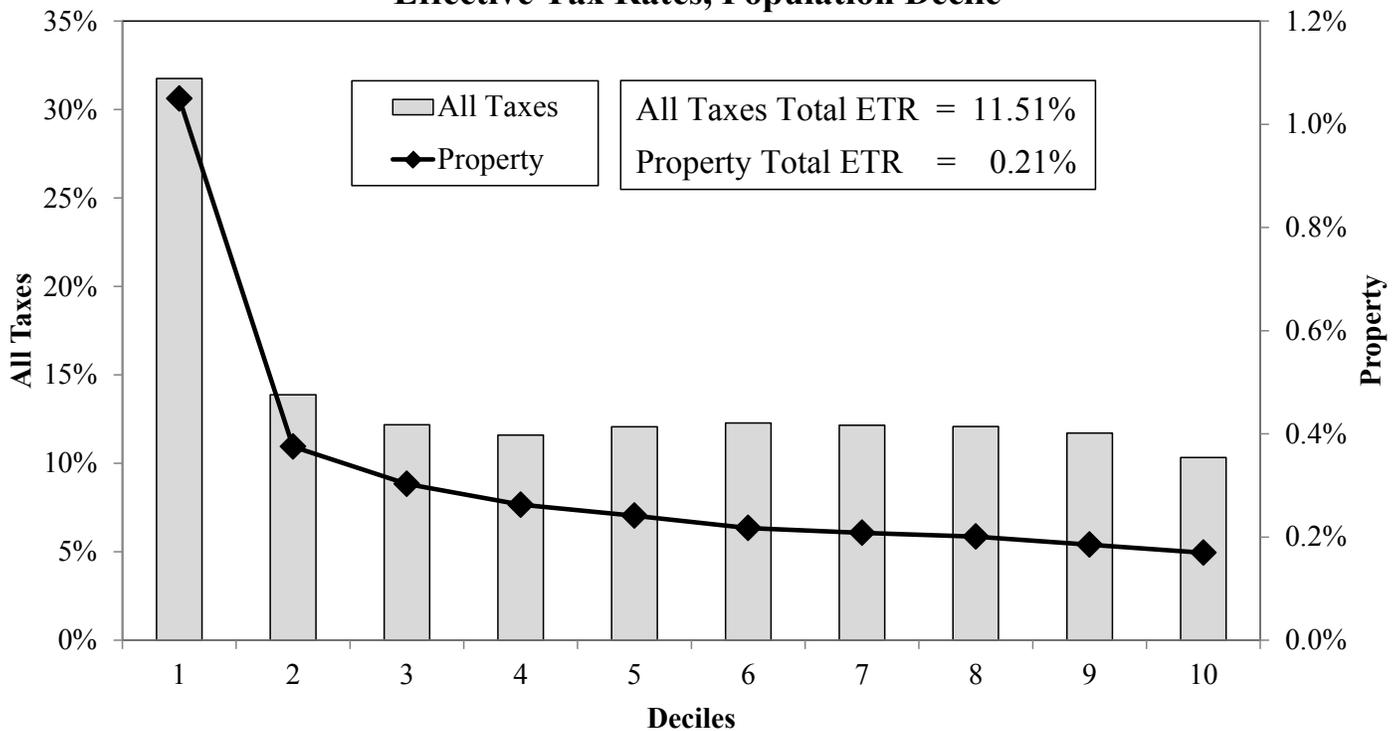
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Consumption	18.04%	9.37%	7.25%	6.04%	5.20%	4.54%	4.12%	3.71%	3.25%	2.03%	2.75%	2.16%	1.41%	-0.280

## 2010 Incidence Estimate for **State Property Tax<sup>1</sup>**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
\$782	\$31	\$8	\$744	\$361	\$421

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Property	1.05%	0.38%	0.30%	0.26%	0.24%	0.22%	0.21%	0.20%	0.19%	0.17%	0.17%	0.16%	0.18%	-0.125

<sup>1</sup>Includes taxes on Residential Recreational Property (\$38 million), Commercial Property (\$528 million), Industrial Property (\$148 million), and Utility Property (\$68 million).

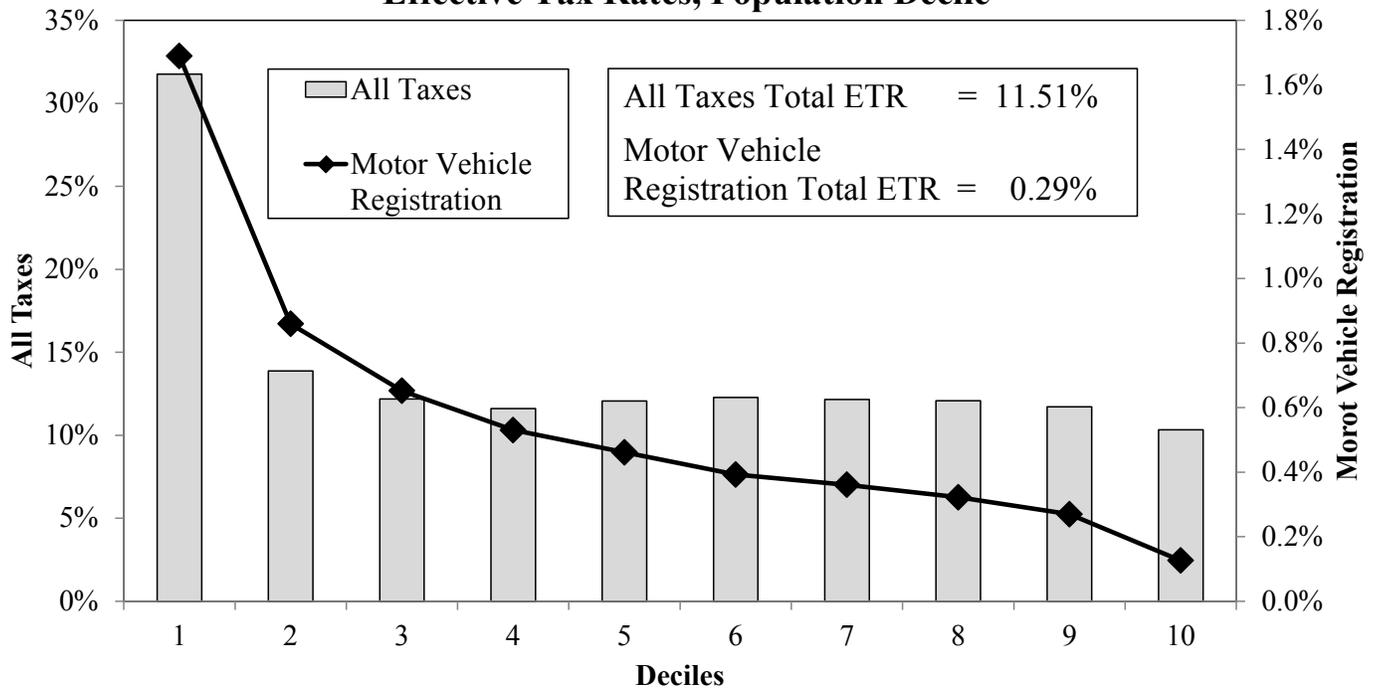
## 2010 Incidence Estimate for Motor Vehicle Registration Tax

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$544	\$368	\$0	\$176	\$505	\$39

\* Shifting allocations: Direct = 73%, Consumers = 23, Labor = 4, Capital = 1%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Motor Vehicle Registration	1.69%	0.86%	0.65%	0.53%	0.46%	0.39%	0.36%	0.32%	0.27%	0.13%	0.22%	0.14%	0.05%	-0.362

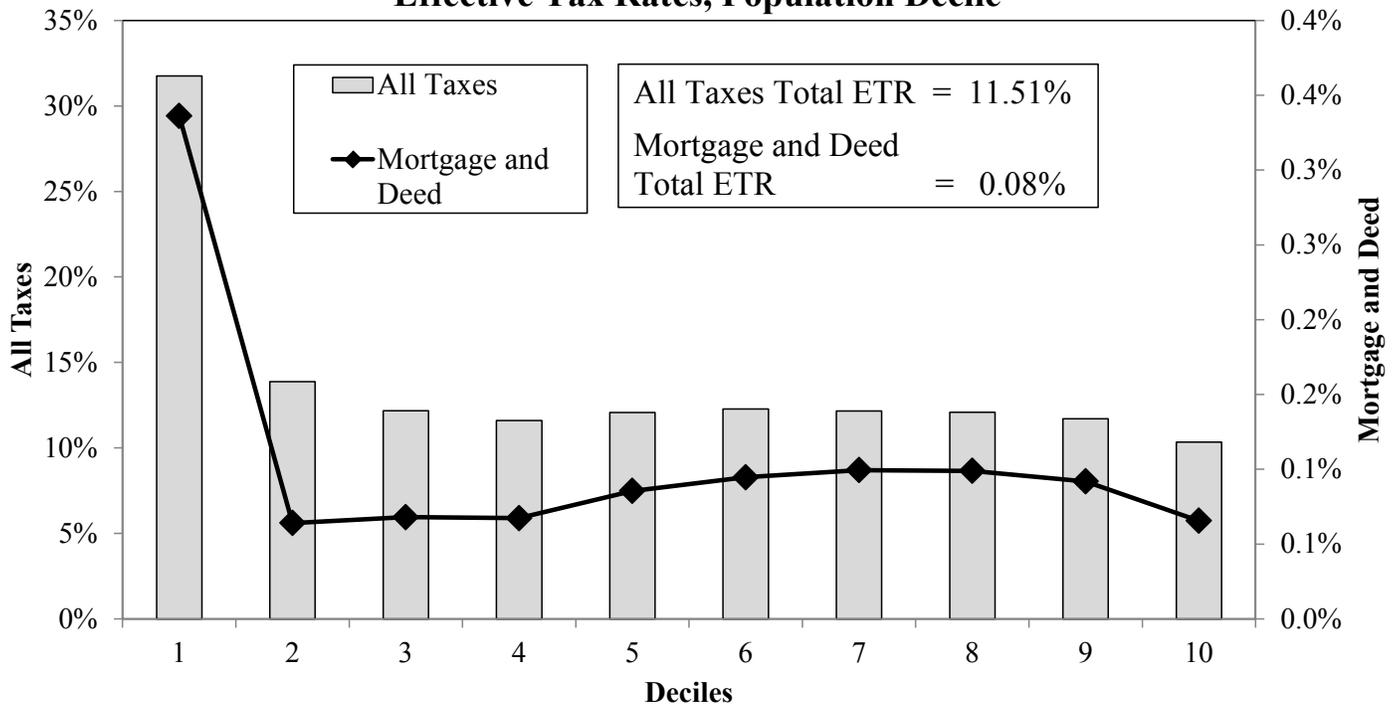
## 2010 Incidence Estimate for Mortgage and Deed Taxes<sup>1</sup>

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$153	\$117	\$0	\$36	\$144	\$9

\* Shifting allocations: Direct = 81%, Consumers = 3%, Labor = 0%, Capital = 16%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Mortgage and Deed	0.34%	0.06%	0.07%	0.07%	0.09%	0.09%	0.10%	0.10%	0.09%	0.07%	0.08%	0.07%	0.05%	-0.105

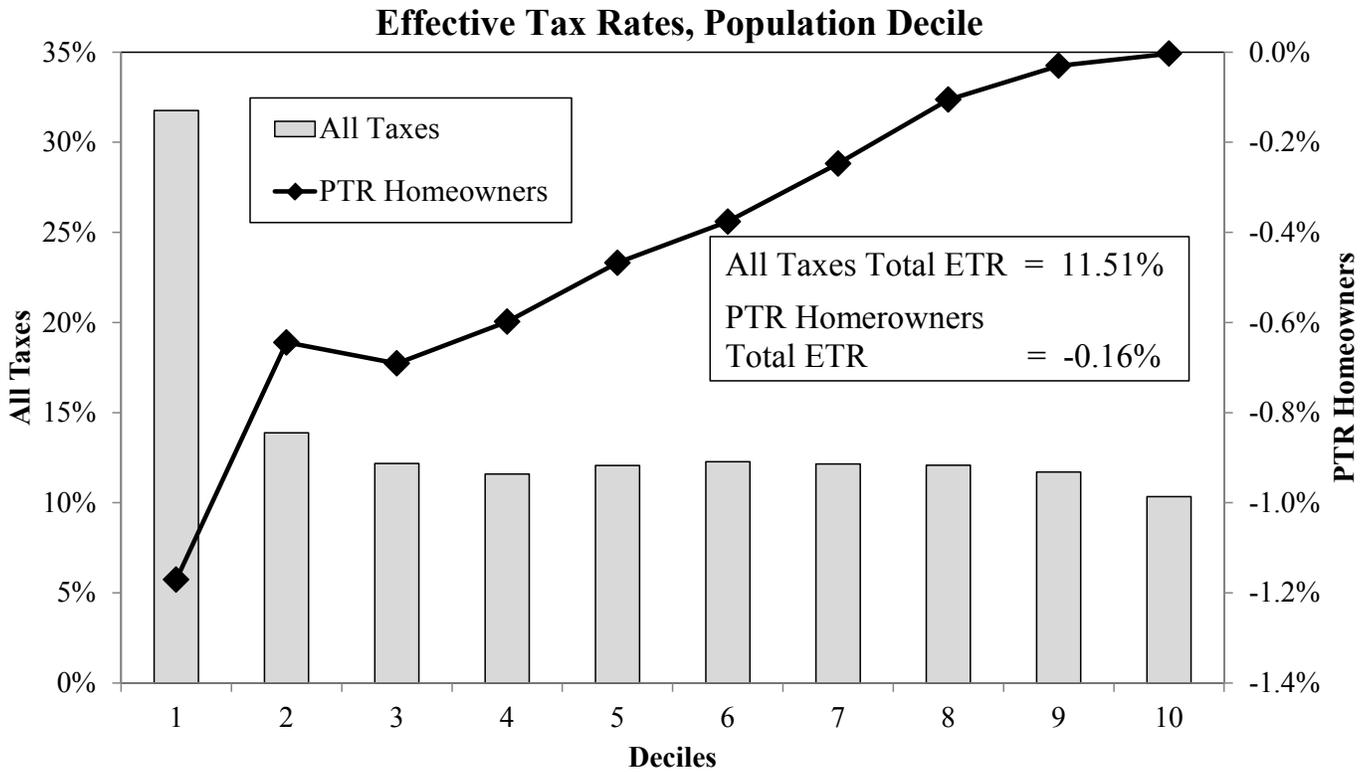
<sup>1</sup>Includes Mortgage Registry Tax (\$94.6 million) and Deed Transfer Tax (\$58.5 million).

## 2010 Incidence Estimate for Property Tax Refunds - Homeowners

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
-\$278	-\$278	\$0	\$0	-\$278	\$0

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%



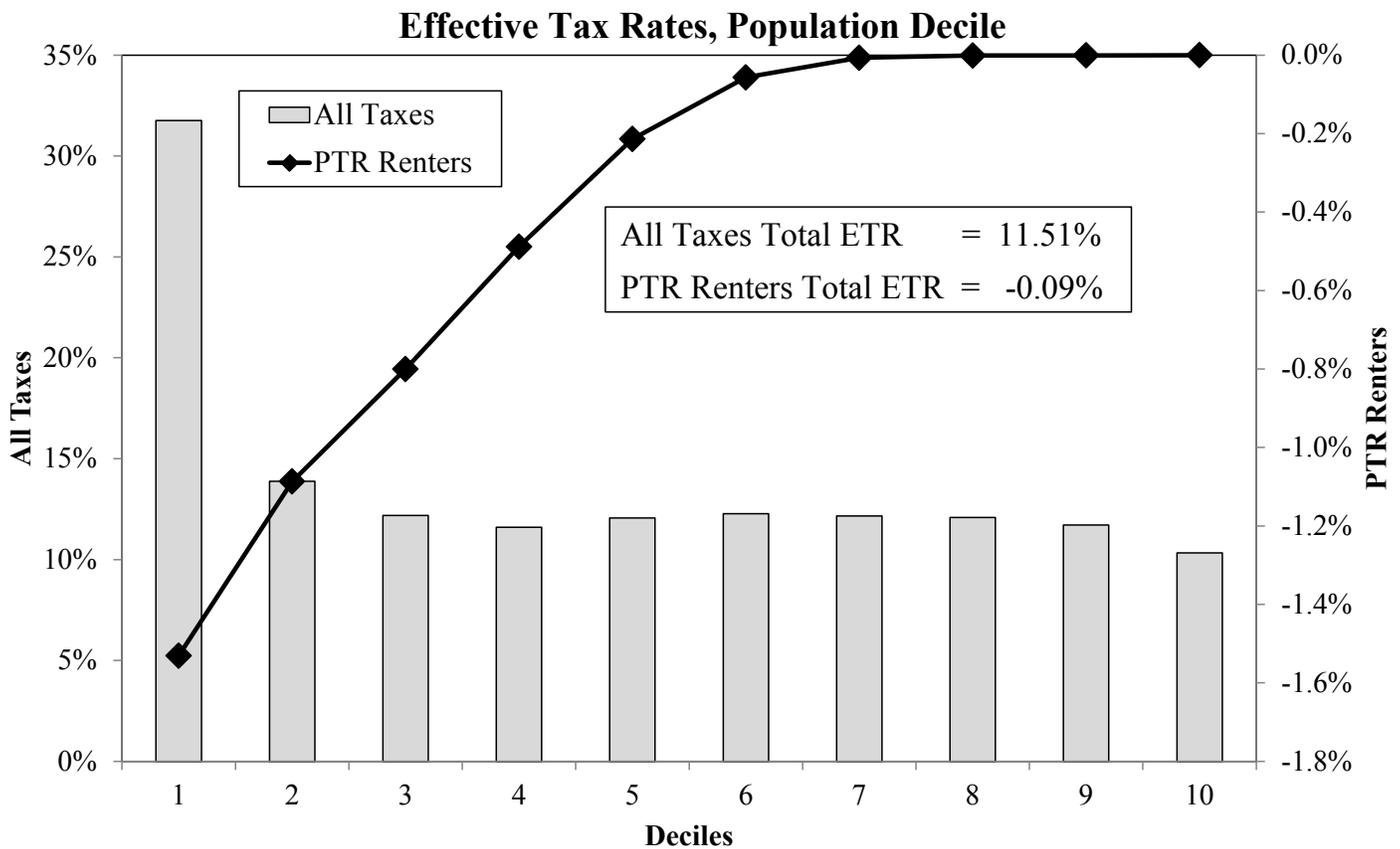
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
PTR Homeowners	-1.17%	-0.64%	-0.69%	-0.60%	-0.47%	-0.38%	-0.25%	-0.11%	-0.03%	0.00%	0.00%	-0.01%	0.00%	0.694

## 2010 Incidence Estimate for Property Tax Refunds - Renters

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
-\$139	-\$139	\$0	\$0	-\$139	\$0

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%



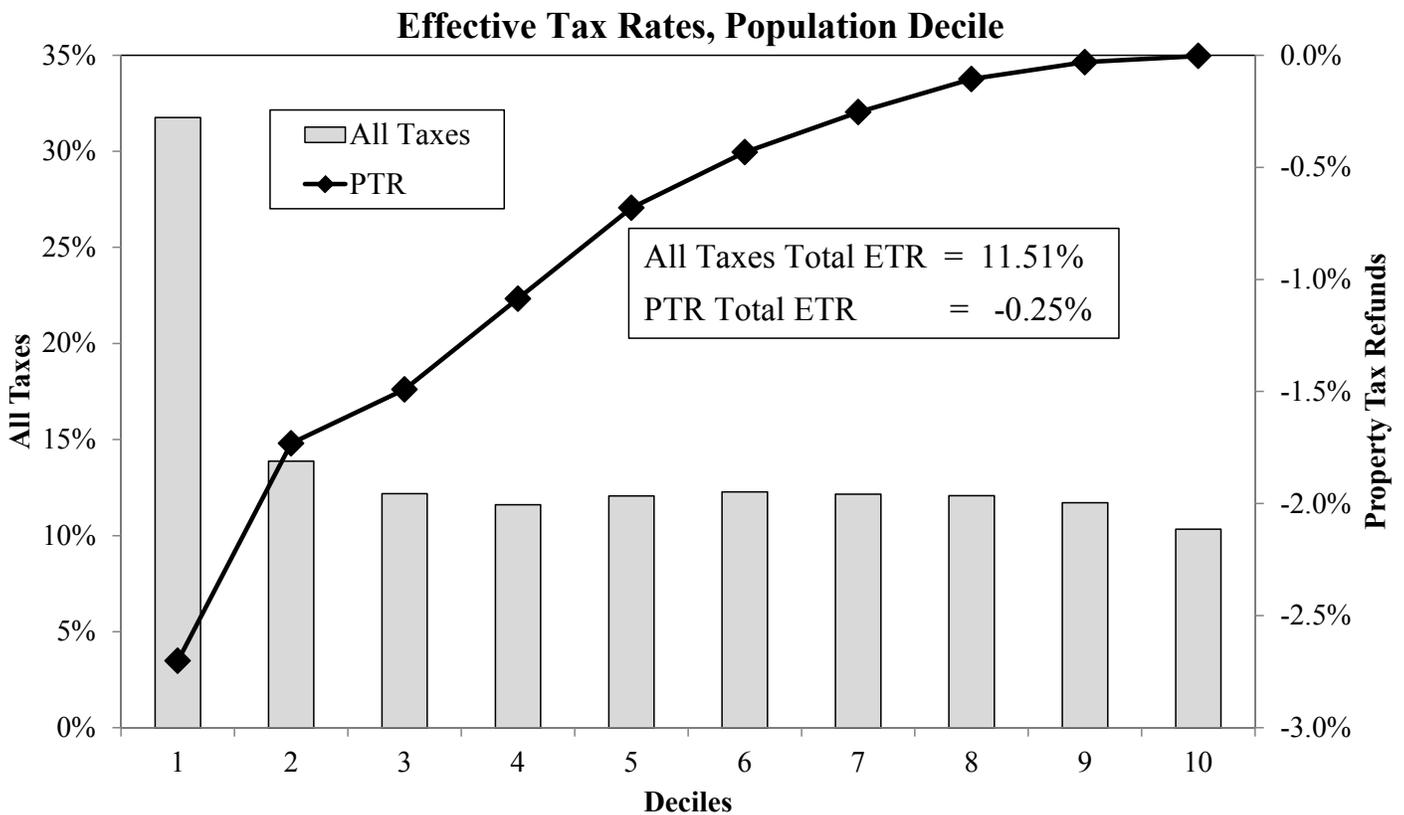
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
PTR Renters	-1.29%	-0.91%	-0.67%	-0.41%	-0.18%	-0.05%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.889

## 2010 Incidence Estimate for Total Property Tax Refunds

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
-\$416	-\$416	\$0	\$0	-\$416	\$0

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%



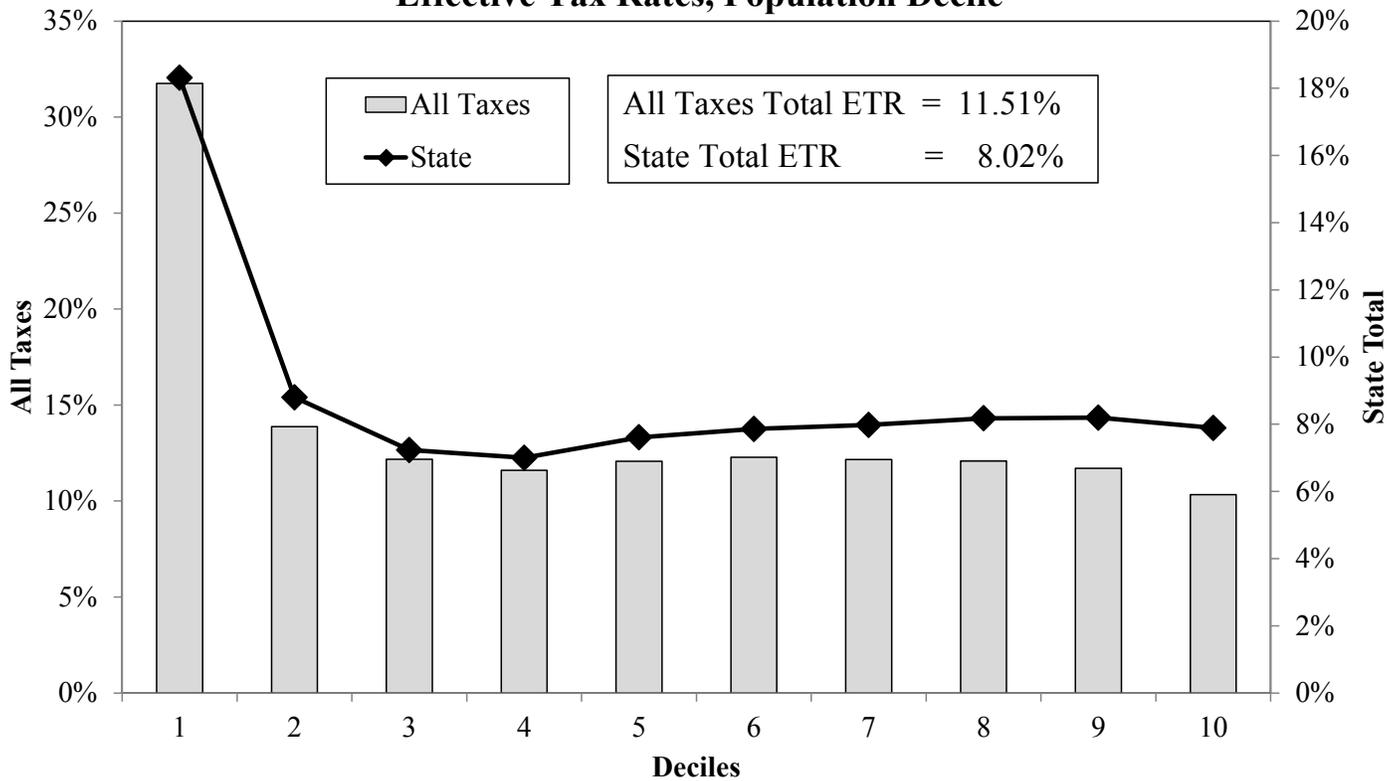
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
PTR	-2.46%	-1.56%	-1.36%	-1.01%	-0.65%	-0.42%	-0.25%	-0.11%	-0.03%	0.00%	0.00%	-0.01%	0.00%	0.759

## 2010 Incidence Estimate for **Total State Taxes**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
\$16,822	\$11,552	\$774	\$4,496	\$14,085	\$2,737

### Effective Tax Rates, Population Decile



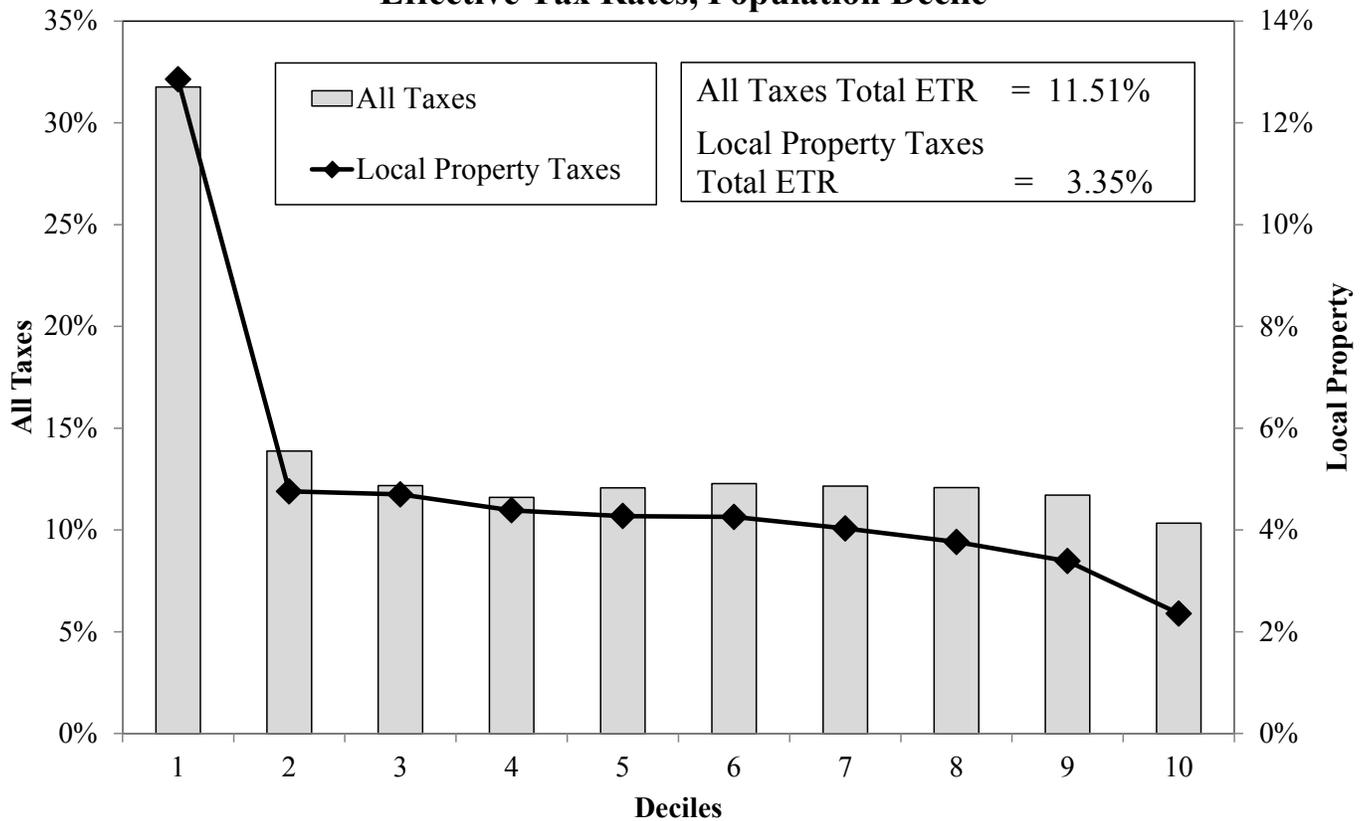
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
State	18.56%	8.97%	7.36%	7.08%	7.64%	7.87%	7.98%	8.18%	8.20%	7.89%	8.00%	7.72%	7.97%	-0.008

## 2010 Incidence Estimate for **Local Property Taxes**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
\$7,104	\$3,739	\$36	\$3,330	\$5,881	\$1,223

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Local Property	12.93%	4.75%	4.69%	4.37%	4.26%	4.29%	4.04%	3.72%	3.40%	2.36%	2.94%	2.75%	1.60%	-0.181

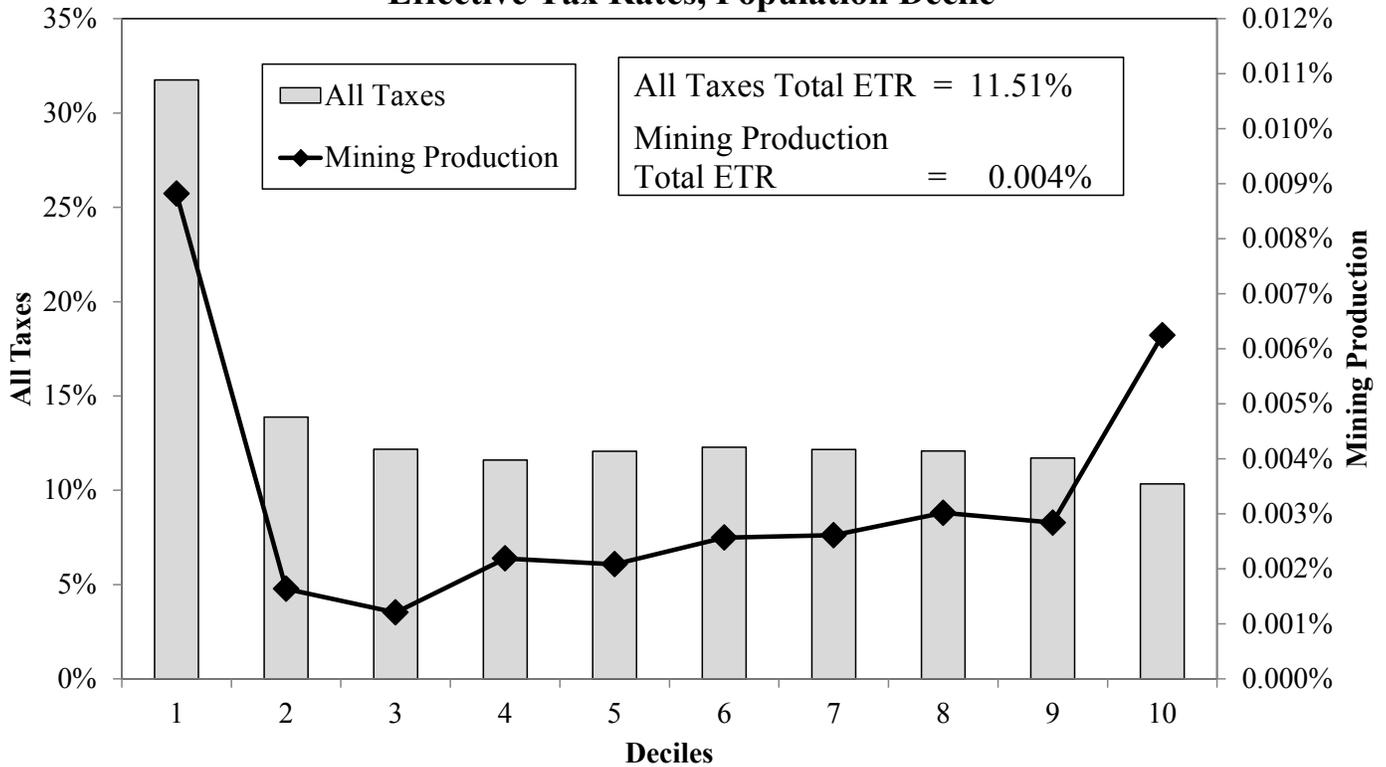
## 2010 Incidence Estimate for Mining Production Taxes (Taconite)

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$74	\$0	\$0	\$74	\$7	\$67

\* Shifting allocations: Direct = 0%, Consumers = 0%, Labor = 7%, Capital = 93%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Mining Production	0.009%	0.002%	0.001%	0.002%	0.002%	0.003%	0.003%	0.003%	0.003%	0.006%	0.003%	0.004%	0.01%	0.299

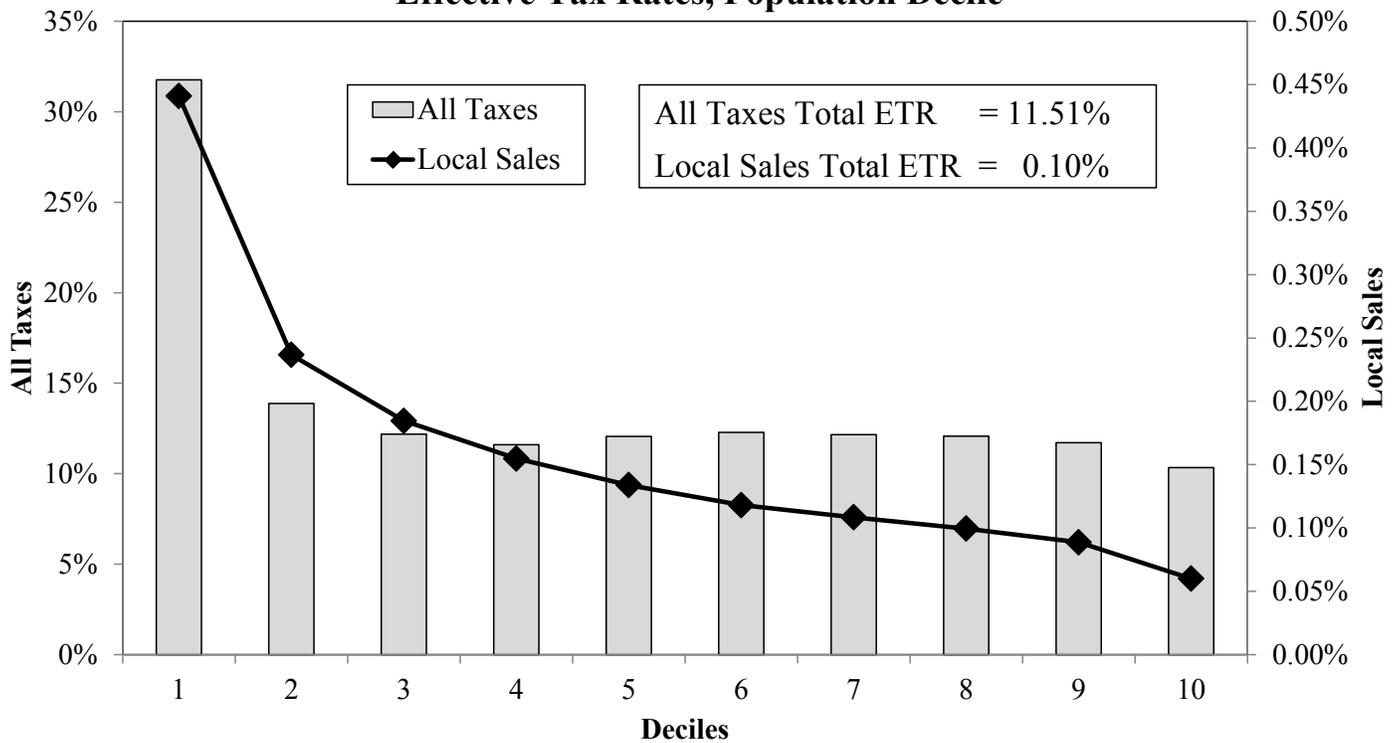
## 2010 Incidence Estimate for **Local Sales Taxes**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
\$214	\$115	\$12	\$87	\$168	\$46

\* Shifting allocations: Direct = 68%, Consumers = 28%, Labor = 0%, Capital = 4%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Local Sales	0.44%	0.24%	0.18%	0.15%	0.13%	0.12%	0.11%	0.10%	0.09%	0.06%	0.08%	0.06%	0.05%	-0.245

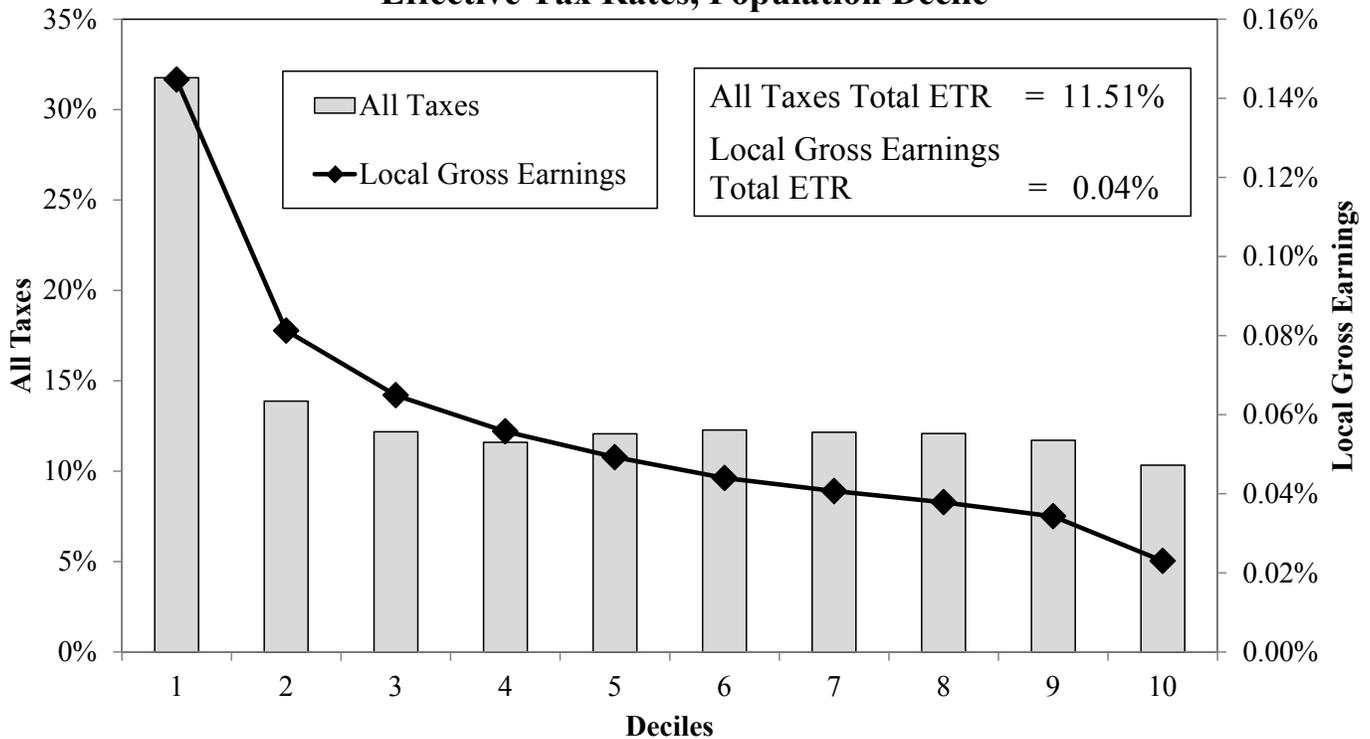
## 2010 Incidence Estimate for **Local Gross Earning Taxes**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$110	\$0	\$0	\$110	\$63	\$47

\* Shifting allocations: Direct = 0%, Consumers = 88%, Labor = 8%, Capital = 4%

### Effective Tax Rates, Population Decile



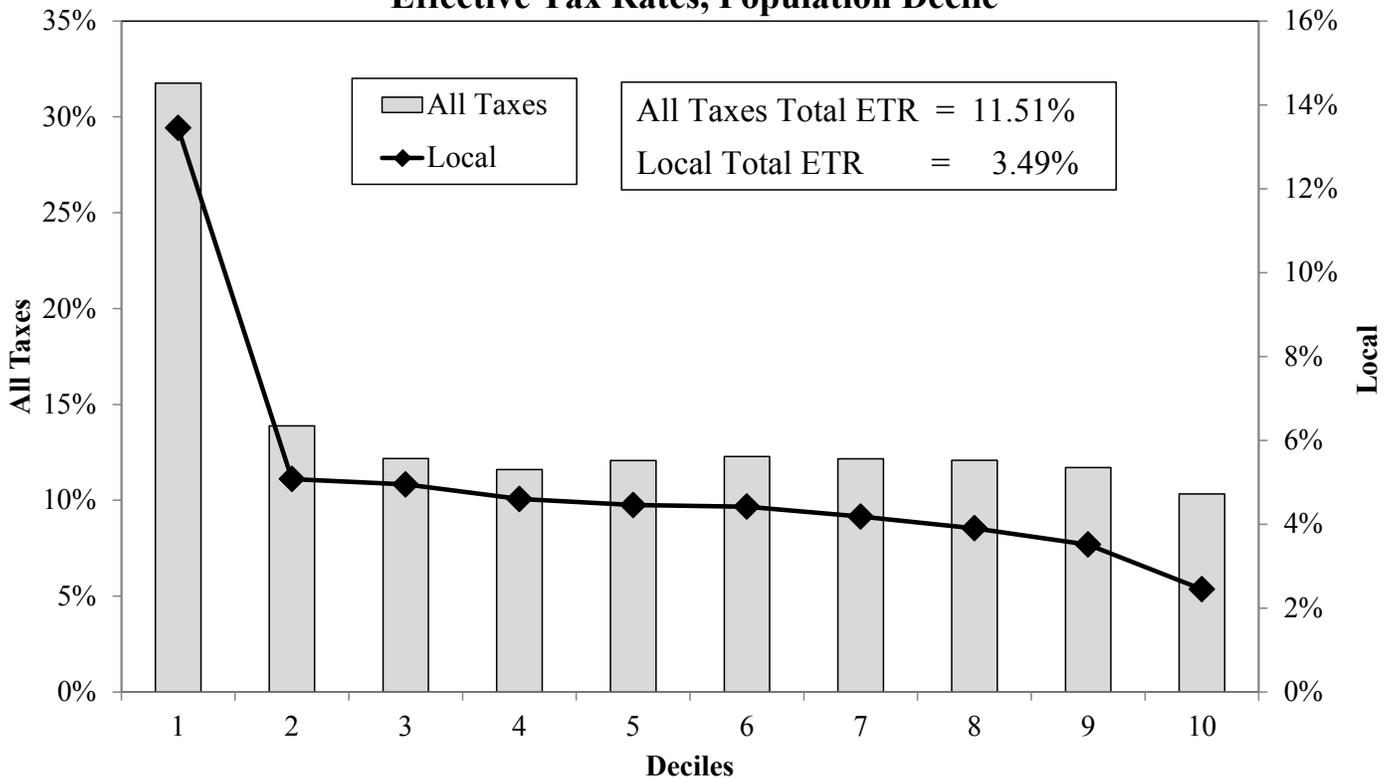
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Local Gross Earnings	0.14%	0.08%	0.06%	0.06%	0.05%	0.04%	0.04%	0.04%	0.03%	0.02%	0.03%	0.03%	0.02%	-0.232

## 2010 Incidence Estimate for **Total Local Taxes**

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
\$7,502	\$3,853	\$47	\$3,602	\$6,119	\$1,384

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Local	13.53%	5.07%	4.94%	4.59%	4.45%	4.45%	4.19%	3.86%	3.53%	2.45%	3.05%	2.84%	1.67%	-0.182

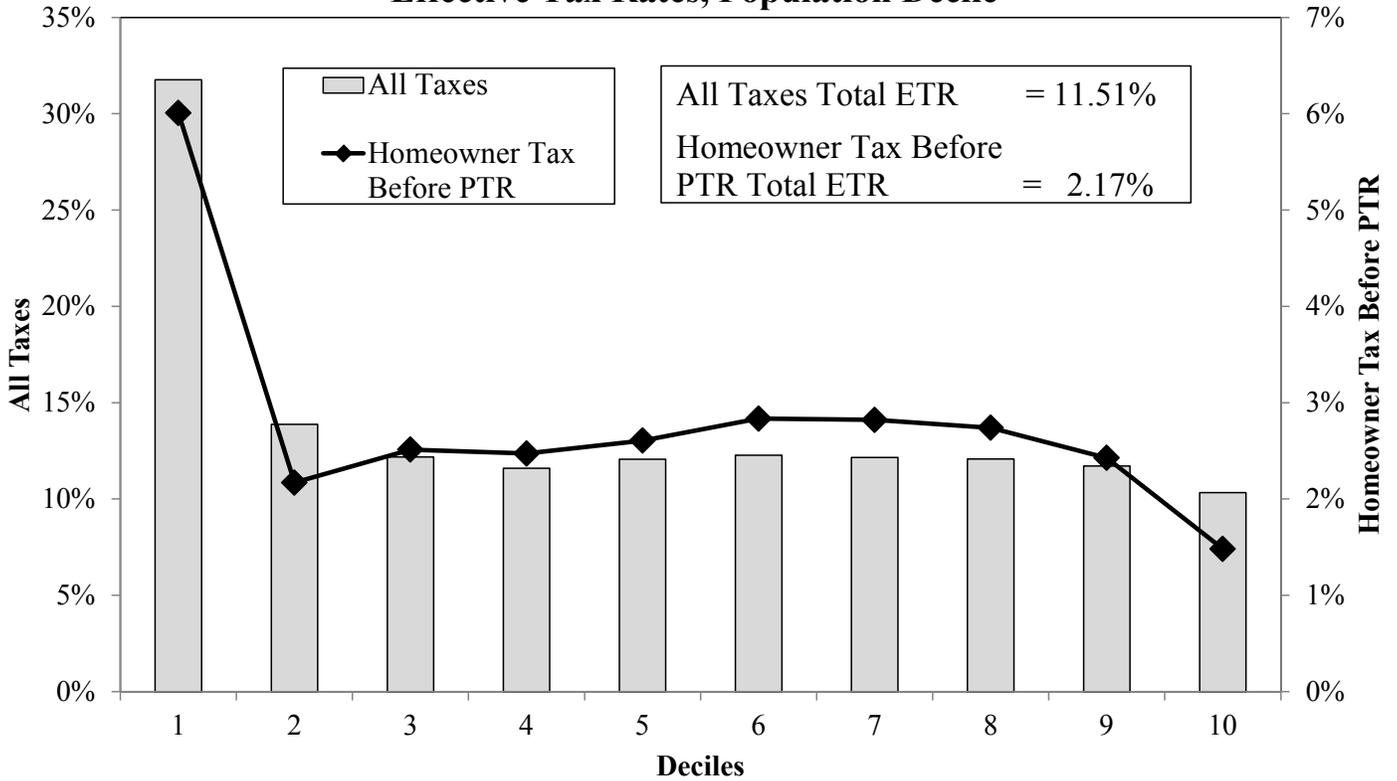
## 2010 Incidence Estimate for Homeowner Property Tax Before PTR

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$3,595	\$3,595	\$0	\$0	\$3,595	\$0

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Homeowner Tax Before PTR	5.67%	2.05%	2.37%	2.33%	2.46%	2.68%	2.66%	2.59%	2.29%	1.40%	2.14%	1.66%	0.65%	-0.176

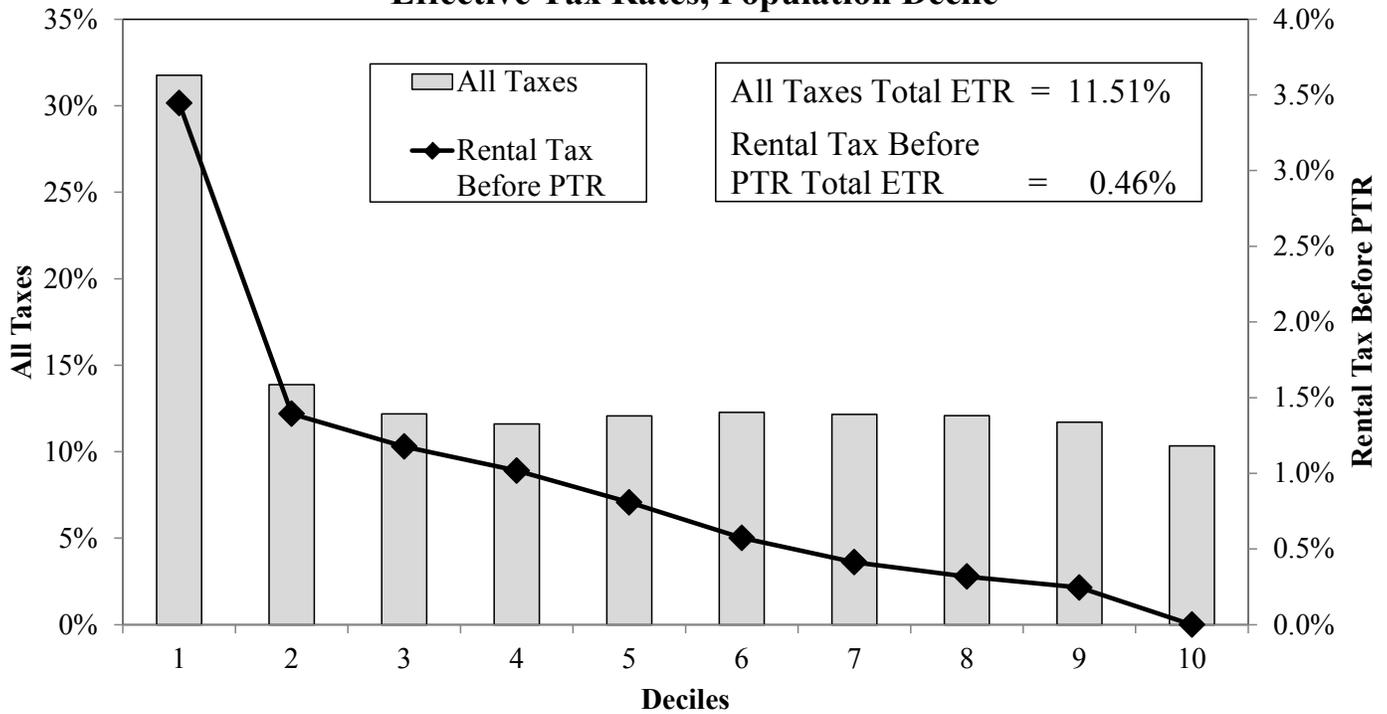
## 2010 Incidence Estimate for Rental Property Tax Before PTR

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$874	\$0	\$0	\$874	\$798	\$75

\* Shifting allocations: Direct = 0%, Consumers = 38%, Labor = 0%, Capital = 62%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Renter Tax Before PTR	3.45%	1.39%	1.18%	1.02%	0.81%	0.57%	0.41%	0.32%	0.25%	0.00%	0.22%	0.27%	0.39%	-0.277

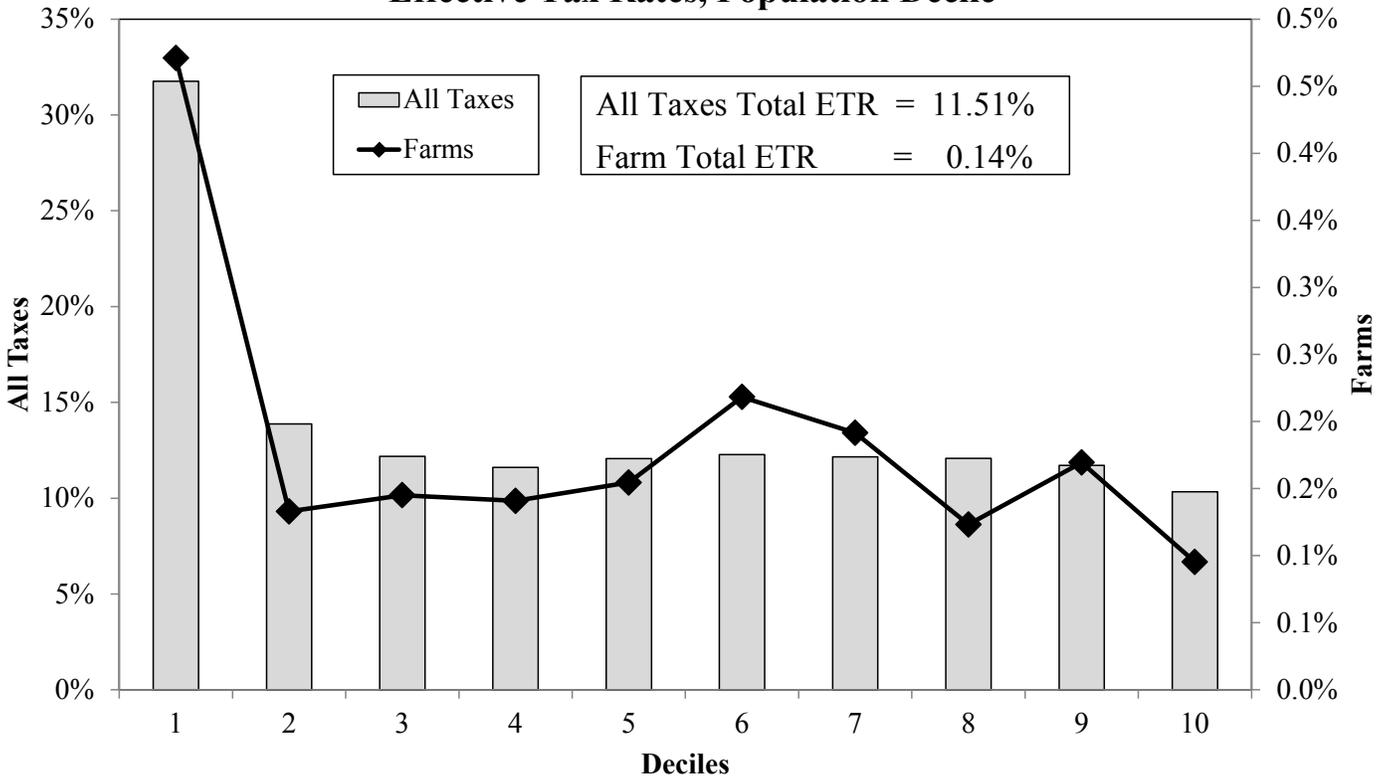
## 2010 Incidence Estimate for Farm Property Tax (other than residence)

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$454	\$0	\$0	\$454	\$453	\$1

\* Shifting allocations: Direct = 0%, Consumers = 0%, Labor = 0%, Capital = 100%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Farms	0.88%	0.25%	0.27%	0.26%	0.29%	0.41%	0.36%	0.23%	0.32%	0.18%	0.08%	0.36%	0.08%	-0.156

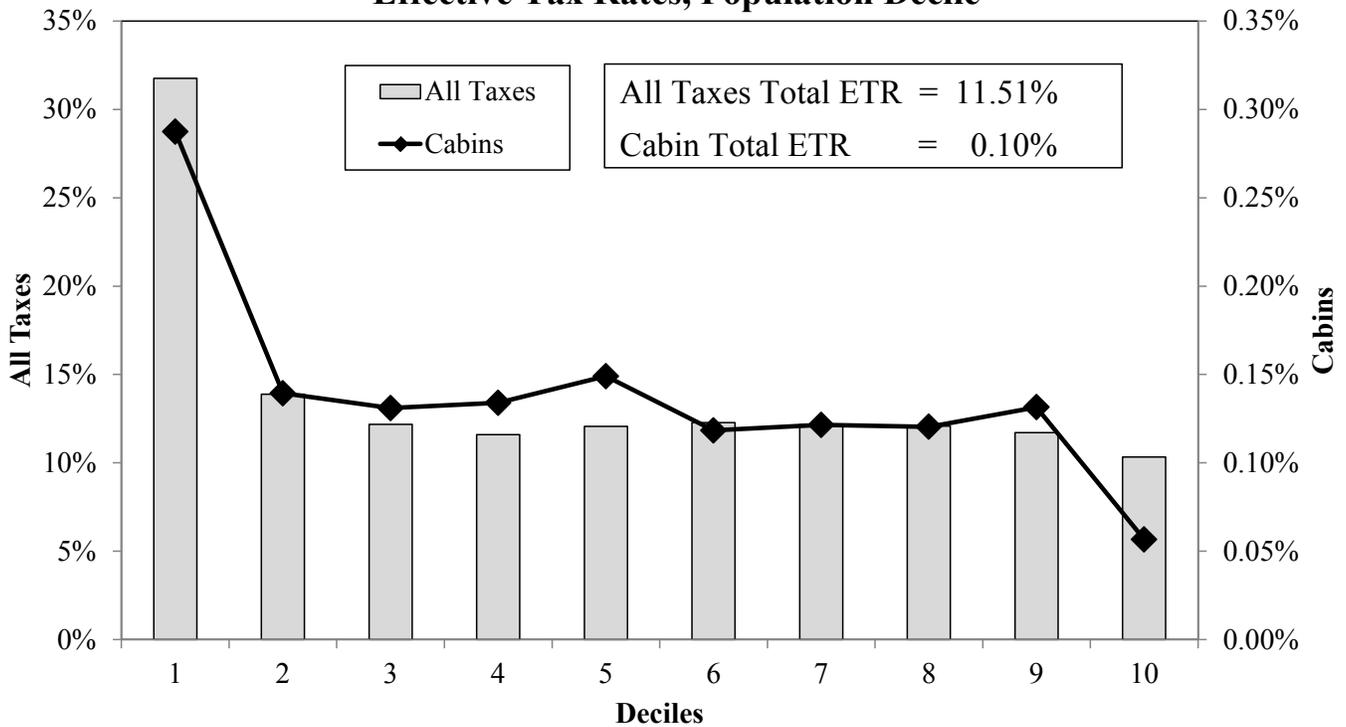
## 2010 Incidence Estimate for Residential Recreational Property Tax (State & Local)

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$218	\$175	\$43	\$0	\$175	\$43

\* Shifting allocations: Direct = 100%, Consumers = 0%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Cabins	0.29%	0.14%	0.13%	0.13%	0.15%	0.12%	0.12%	0.12%	0.13%	0.06%	0.10%	0.06%	0.02%	-0.228

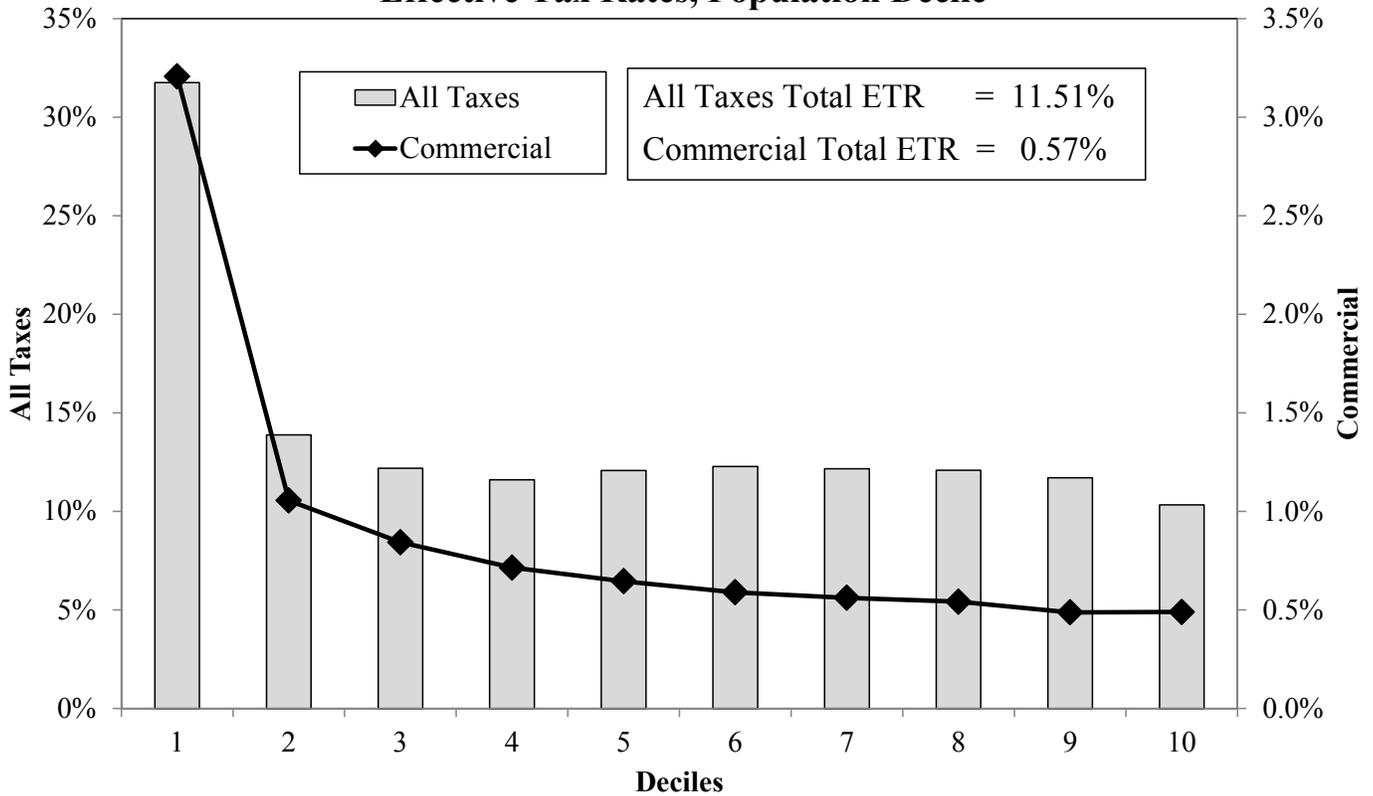
## 2010 Incidence Estimate for Commercial Property Tax (State & Local)

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$1,943	\$0	\$0	\$1,943	\$1,002	\$941

\* Shifting allocations: Direct = 0%, Consumers = 64%, Labor = 4%, Capital = 32%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Commercial	3.21%	1.06%	0.84%	0.71%	0.65%	0.59%	0.56%	0.54%	0.49%	0.49%	0.46%	0.47%	0.53%	-0.112

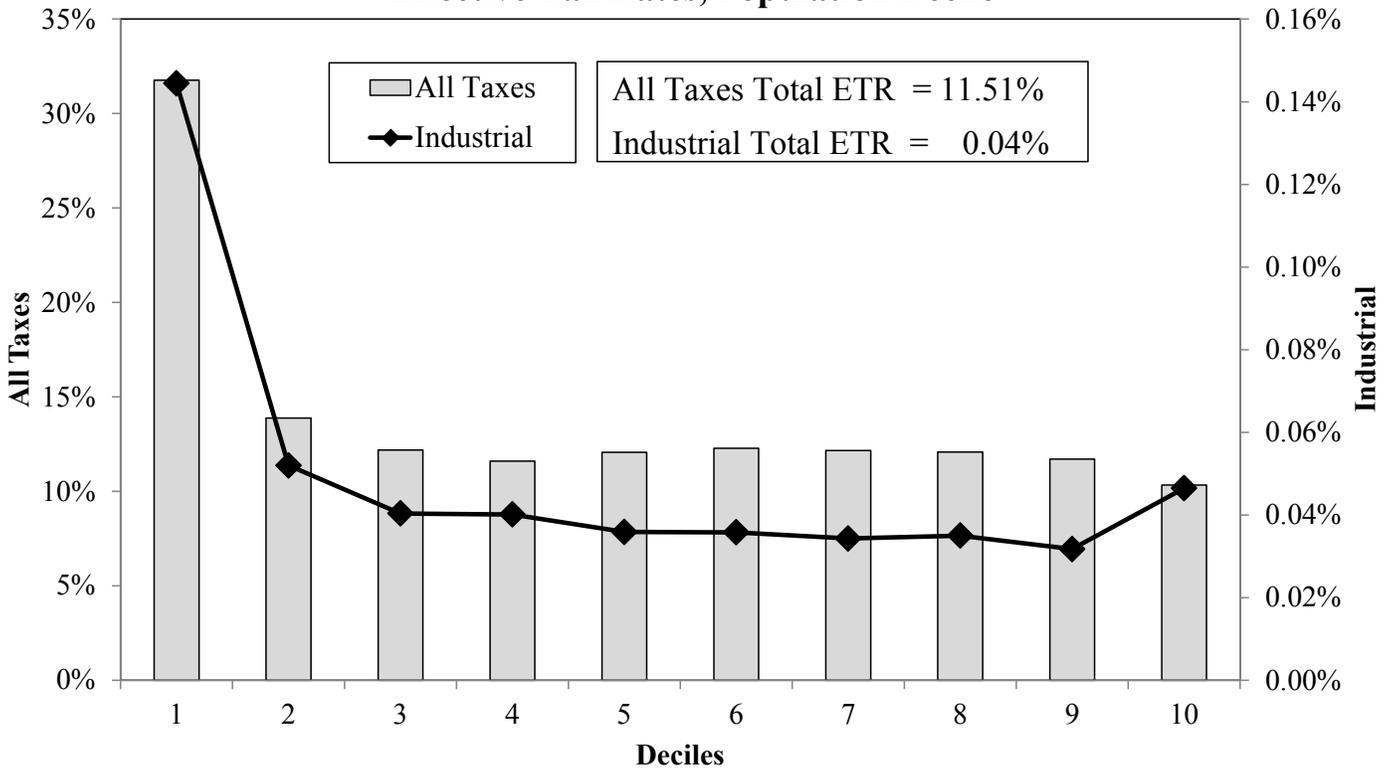
## 2010 Incidence Estimate for Industrial Property Tax (State & Local)

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$544	\$0	\$0	\$544	\$72	\$472

\* Shifting allocations: Direct = 0%, Consumers = 42%, Labor = 0%, Capital = 58%

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Industrial	0.14%	0.05%	0.04%	0.04%	0.04%	0.04%	0.03%	0.04%	0.03%	0.05%	0.03%	0.04%	0.07%	0.067

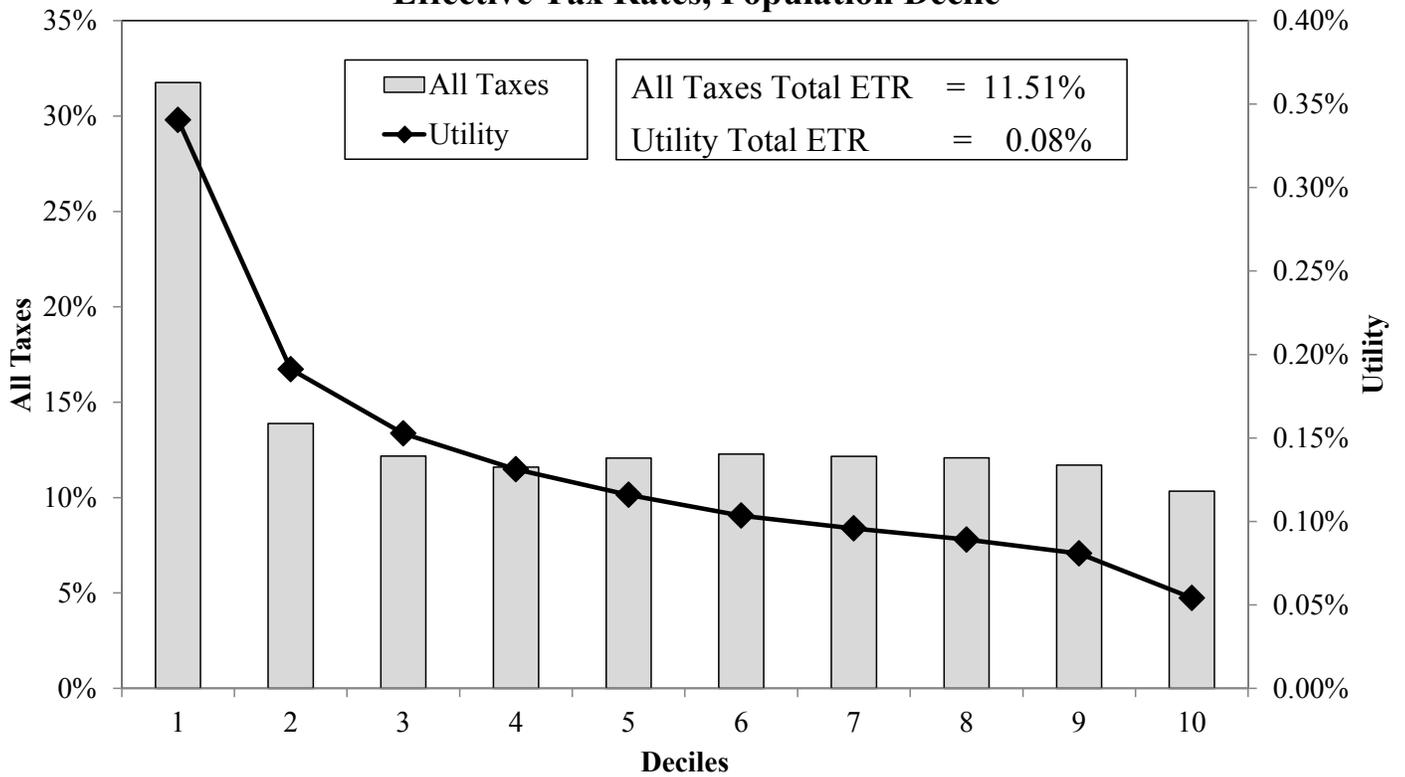
## 2010 Incidence Estimate for Utility Property Tax (State & Local)

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$259	\$0	\$0	\$259	\$147	\$112

\* Shifting allocations: Direct = 0%, Consumers = 88%, Labor = 8%, Capital = 4%

### Effective Tax Rates, Population Decile



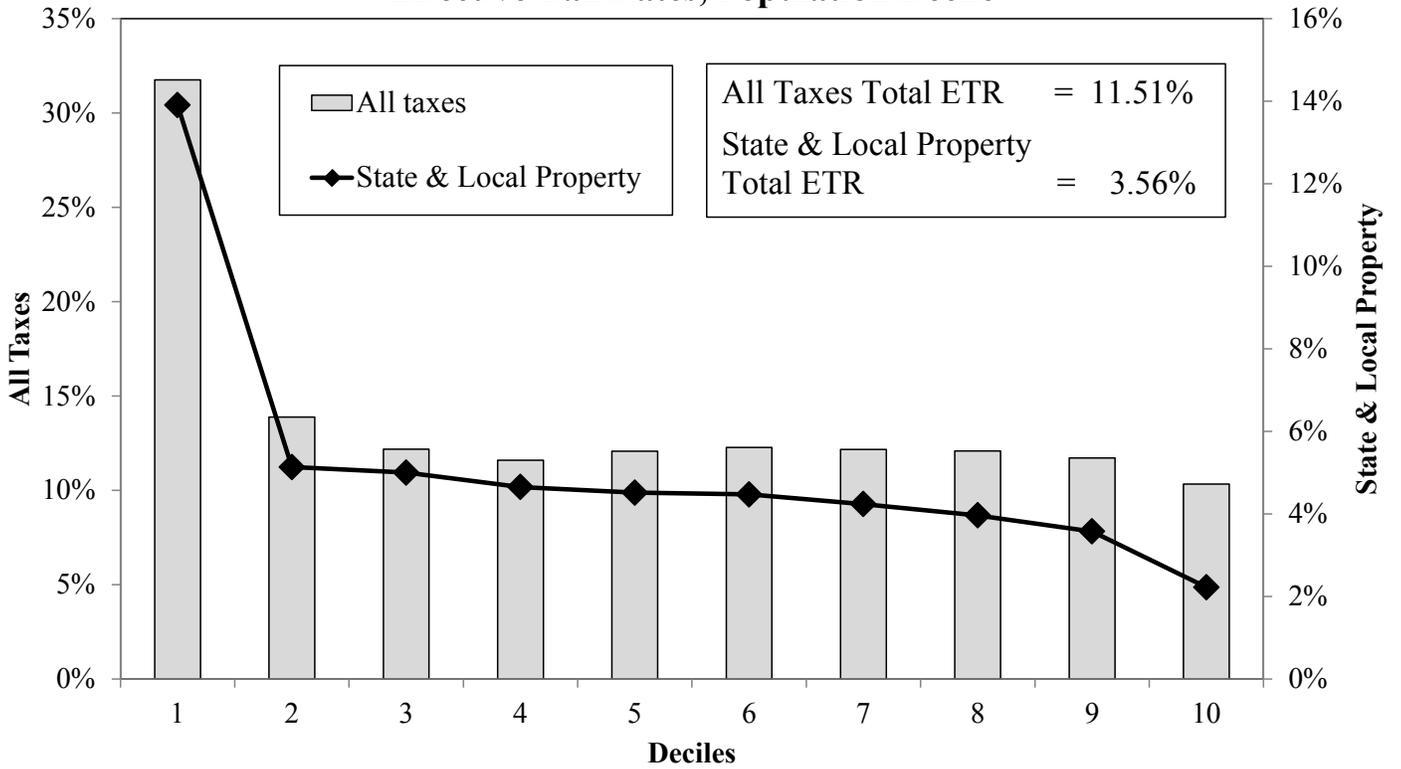
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
Utility	0.34%	0.19%	0.15%	0.13%	0.12%	0.10%	0.10%	0.09%	0.08%	0.05%	0.07%	0.06%	0.04%	-0.232

## 2010 Incidence Estimate for Total State and Local Property

### Tax Collection Amounts 2010 (\$ Millions)

Total	As Imposed			After shifting	
	MN HH's	NR	Business	Minnesota	Exported
\$7,886	\$3,769	\$43	\$4,074	\$6,242	\$1,644

### Effective Tax Rates, Population Decile



Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	32.08%	14.05%	12.30%	11.67%	12.09%	12.32%	12.17%	12.04%	11.72%	10.34%	11.05%	10.56%	9.64%	-0.060
State & Local Property	13.98%	5.13%	4.99%	4.64%	4.51%	4.51%	4.25%	3.92%	3.59%	2.22%	3.11%	2.91%	1.77%	-0.177



## Glossary of Tax Incidence Study Terms

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

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

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

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

***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.

***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. Suits indexes can be calculated based on totals for 10 deciles (a “10-point” Suits index) or based on the full sample. Except where noted, all Suits indexes reported in this report are “full-sample” Suits indexes.

***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 system wide 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.

