

# 2024 Minnesota Tax Incidence Study

An Analysis of Minnesota's Household and Business Taxes

Using November 2023 Forecast



# 2024 Minnesota Tax Incidence Study

## An Analysis of Minnesota's Household and Business Taxes



**March 1, 2024**

**The *Tax Incidence Study* is available on the  
Department of Revenue's website at  
<https://www.revenue.state.mn.us/tax-incidence-studies>**





March 1, 2024

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

I am pleased to transmit to you the seventeenth 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 Minnesota 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 2021. It includes over 99.9 percent of Minnesota taxes paid, those paid by businesses as well as those paid by individuals. The study addresses the important question: “Who pays Minnesota’s taxes?”

Previous reports have also included projections of the tax incidence in a future year. Because of the unusual economic circumstances and distribution of income in 2021, projections based on that year may be misleading. Therefore, this study does not include an analysis of a projection year. However, the study does discuss the significant law changes enacted in 2023 and how they may affect the distribution of taxes paid.

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 \$123,000.

This report is available on the Department of Revenue website at:  
<https://www.revenue.state.mn.us/tax-incidence-studies>

Sincerely,

A handwritten signature in blue ink that reads 'Paul Marquart'.

Paul Marquart  
Commissioner

# Table of Contents

<b>Executive Summary</b> .....	1
<b>Chapter 1: Overview of Study</b> .....	4
Minnesota State and Local Tax Collections .....	4
The Concept of Tax Incidence .....	6
Step 1 – Impact .....	6
Step 2 – Shifting .....	9
Step 3 – Allocation to Specific Households .....	10
Tax Progressivity and the Suits Index .....	10
Effective Tax Rates by Decile .....	11
Effective Tax Rates in the 1 <sup>st</sup> Decile .....	14
Historical Comparison with Earlier Studies .....	15
<b>Chapter 2: Principal Results, 2021</b> .....	21
Total Tax Burden .....	21
Taxes by Population Decile .....	24
Overall Effective Tax Rates .....	24
State Taxes Compared to Local Taxes .....	26
Business Taxes Compared to Taxes on Individuals .....	28
Summary of 2021 Tax Burden by Major Tax Type .....	29
Individual Income Tax .....	30
Residential Property Taxes (After PTR) .....	31
Nonresidential Property Taxes .....	31
State and Local Sales Taxes .....	31
Other Taxes .....	32
Representative Households .....	32
Minnesota’s Diversified Tax Portfolio in 2021 .....	34

<b>Chapter 3: Projected Effects of Law Changes</b> .....	37
Effects of the 2023 Tax Law Changes .....	37
Individual Income Tax .....	41
Corporate Franchise Tax .....	41
State Sales and Excise Taxes.....	41
Gambling Taxes .....	42
Property Taxes.....	42
Local Sales Taxes.....	42
Combined Impact of Tax Law Changes.....	43
<b>Chapter 4: Additional Results</b> .....	44
Section A – An Alternative Presentation: Income Deciles .....	45
Section B – An Alternative Methodology: Adjusting for the Federal Tax Offset.....	49
Section C – The Impact of Refundable Income Tax Credits and Property Tax Refunds.....	52
Section D – Incremental Incidence: Estimating the Incidence of a Change in Business Taxes .....	56
Section E – Tax Incidence in Other States .....	58
<b>Chapter 5: Demographic Variation</b> .....	63
Household Types by Population Decile .....	63
Average Tax Burdens by Household Type .....	66
Housing Status by Population Decile .....	73
Incidence Households Compared to Census Households .....	74

<b>Appendix A – The Incidence Study Database</b>	<b>76</b>
Measurement of Household Income	77
Definition of Income	77
Components of Household Income in 2021	79
Income Not Included in Incidence Study Income	81
Comparison to Personal Income	82
Accounting Period	82
Definition of a Household	82
<b>Appendix B – The Incidence Analysis</b>	<b>83</b>
Introduction	83
Taxes on Households	84
Taxes on Income or Wealth	84
Taxes on Consumer Purchases	84
Property Taxes on Non-Business Property	85
Adjustment for Burdens on Nonresident Households	86
Taxes on Business	86
Introduction	86
Conceptual Structure	87
Allocation of Business Taxes	88
Allocation of Business Taxes: An Example	89
Allocating the Burden Among Capital, Consumers, and Labor	89
Allocating the Burden Between Minnesota Residents and Nonresidents	92
Taxes on Intermediate Business Inputs	93
Property Taxes on Land	93
Business Tax Allocators	94
Incremental vs. “Average” Incidence	97
<b>Appendix C – The Suits Index</b>	<b>98</b>
<b>Appendix D – Tax Incidence by Type of Tax (2021)</b>	<b>100</b>
<b>Glossary of Tax Incidence Study Terms</b>	<b>139</b>
<b>Legislative Mandate</b>	<b>141</b>

## Tables and Figures

### Tables

1-1	Minnesota State and Local Tax Collections in 2021.....	5
1-2	2021 State and Local Tax Collections by Type of Tax and Taxpayer Category.....	8
1-3	Suits Indexes for Selected Minnesota State and Local Taxes.....	11
1-4	Minnesota Effective Tax Rates for 2021, State and Local Taxes by Population Decile.....	12
1-5	Minnesota Effective Tax Rates for 2021, Individual and Business Taxes by Population Decile.....	13
1-6	Households, Household Income, Total Taxes, Effective Tax Rates, and Suits Indexes, All Taxes, 1990-2021.....	16
1-7	Effective Tax Rates by Population Decile, All Taxes, 1990-2021.....	18
2-1	2021 Tax Collection Amounts.....	22
2-2	2021 Population Deciles – Amounts.....	25
2-3	2021 Population Deciles – Effective Tax Rates.....	27
2-4	Effective Tax Rates by Tax Type (2021).....	30
2-5	Household Characteristics and Average Tax Burden Amounts by Population Decile – All Households.....	33
3-1	2018 Population Deciles – Household Income by Category, All Individuals....	38
3-2	2021 Population Deciles – Household Income by Category, All Individuals....	39
3-3	Percentage Change in Household Income by Category from 2018 to 2021, All Individuals.....	40
3-4	Changes in Tax Burden due to Law Changes.....	43
4-1	2021 Income Deciles – Amounts.....	46
4-2	2021 Income Deciles – Effective Tax Rates.....	47



## Tables (cont.)

4-3	Impact of Federal Tax Offset on Effective State and Local Tax Rates by Population Decile (Minnesota Residents, 2021) .....	50
4-4	Suits Index With and Without Federal Tax Offset .....	50
4-5	Population-Decile Suits Index for Refundable Credits Property Tax Refund Payments in 2021 .....	52
4-6	Impact of Refundable Income Tax Credits on Effective Income Tax Rates.....	53
4-7	Residential Property Taxes Before and After Property Tax Refunds for 2021 (Homesteads and Rental Housing) .....	54
4-8	Combined Impact of Property Tax Refunds and Refundable Income Tax Credits on Effective State and Local Tax Rates .....	55
4-9	ITEP “7-Point” Suits Index by State, Non-Senior Households in 2023 (2023 Law) .....	60
5-1	Household Characteristics and Average Tax Burden Amounts by Population Decile – Married Couples with Children.....	67
5-2	Household Characteristics and Average Tax Burden Amounts by Population Decile – Non-Senior Married Couples without Children.....	68
5-3	Household Characteristics and Average Tax Burden Amounts by Population Decile – Non-Senior Single-Person Households .....	69
5-4	Household Characteristics and Average Tax Burden Amounts by Population Decile – Senior Single-Person Households.....	70
5-5	Household Characteristics and Average Tax Burden Amounts by Population Decile – Senior Married Households.....	71
5-6	Household Characteristics and Average Tax Burden Amounts by Population Decile – Single-Parent Households .....	72
5-7	Full-Sample Suits Index Calculated Separately for Each Household Type.....	73
A-1	Economic Impact Payments by Decile .....	78
A-2	Components of Total Household Income in 2021 .....	80
B-1	Business Tax Allocators .....	94
B-2	Distribution of Business Tax Burden by Taxpayer Category (2021) .....	96

## Figures

E-1	Effective Tax Rates, All Minnesota Taxes. ....	3
E-2	Suits Index, All Minnesota Taxes. ....	3
1-1	Estimating Tax Incidence . ....	6
1-2	Minnesota Tax System Impacts by Tax Type (2018 and 2021) . ....	6
1-3	Minnesota Tax System Impacts: Business vs. Households . ....	9
1-4	Tax Incidence after Shifting (2018 and 2021) . ....	10
1-5	Effective Tax Rates for 2021, State and Local Taxes by Population Decile . ....	12
1-6	Effective Tax Rates for 2021, Individual and Business Taxes by Population Decile . ....	13
1-7	Effective Tax Rates, All Minnesota Taxes, 1990-2021 . ....	15
1-8	Suits Indexes, All Minnesota Taxes, 1994-2021 . ....	17
1-9	Effective Tax Rates for 1992 and 2021 by Population Decile . ....	18
1-10	Shares of Household Income, 1992-2021 . ....	20
2-1	2021 Distribution of State and Local Tax Burdens by Type of Tax and Level of Government . ....	23
2-2	2021 Effective Tax Rates by Population Decile, State Taxes Compared to Local Taxes . ....	26
2-3	2021 Effective Tax Rates by Population Decile, Business Taxes Compared to Taxes on Individuals. ....	28
2-4	2021 Tax Incidence by Tax Type . ....	29
2-5	Dollars of Tax Burden and Suits Index by Type of Tax (2021) . ....	35
4-1	State and Local Effective Tax Rates for 2021, Income Deciles vs. Population Deciles . ....	48
4-2	Effective Tax Rates for 2021, With and Without Federal Tax Offset . ....	51
4-3	Effective Income Tax Rates by Population Decile, With and Without Refundable Credits . ....	53
4-4	Effective Residential Property Tax Rates by Population Decile, Before and After Property Tax Refunds. ....	54
4-5	Effective State and Local Tax Rates by Population Decile, With and Without Property Tax Refunds and Refundable Credits . ....	55
4-6	Average vs. Incremental Incidence: An Example . ....	57

## Figures (cont.)

4-7	ITEP Effective Tax Rates for Minnesota, Vermont, and All States Combined (Non-Seniors) .....	61
4-8	ITEP Effective Tax Rates for Minnesota and Three States with More Regressive Tax Systems (Non-Seniors) .....	61
4-9	ITEP Effective Tax Rates for Minnesota and Neighboring States (Non-Seniors) .....	62
5-1	Family Type by Population Decile .....	64
5-2	Median Income by Household Type (2021) .....	65
5-3	Housing Status by Population Decile .....	73
A-1	Shares of Total Income (2021) .....	81
B-1	Incidence of a Hypothetical \$120 Million Tax on Capital .....	90
C-1	Suits Index of Sales Tax .....	98
C-2	Suits Index of Individual Income Tax .....	99

## Executive Summary

This study reports the distribution of calendar year 2021 Minnesota state and local taxes in relation to taxpayer income. 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 seventeenth biennial tax incidence study prepared in response to the statutory requirement enacted in 1990. Previous reports were published in March of odd-numbered years. A 2021 law change shifted the timing of the report to even years, beginning with March 1, 2024. As a result, it has been three years since the most recent report.

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 \$42 billion in taxes collected in 2021, a total that represents over 99.9 percent of all state and local taxes.
- Identifies the shares paid initially by households (64.9 percent by Minnesota residents and 3.5 percent by nonresidents) and the share paid initially by business (31.6 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.

---

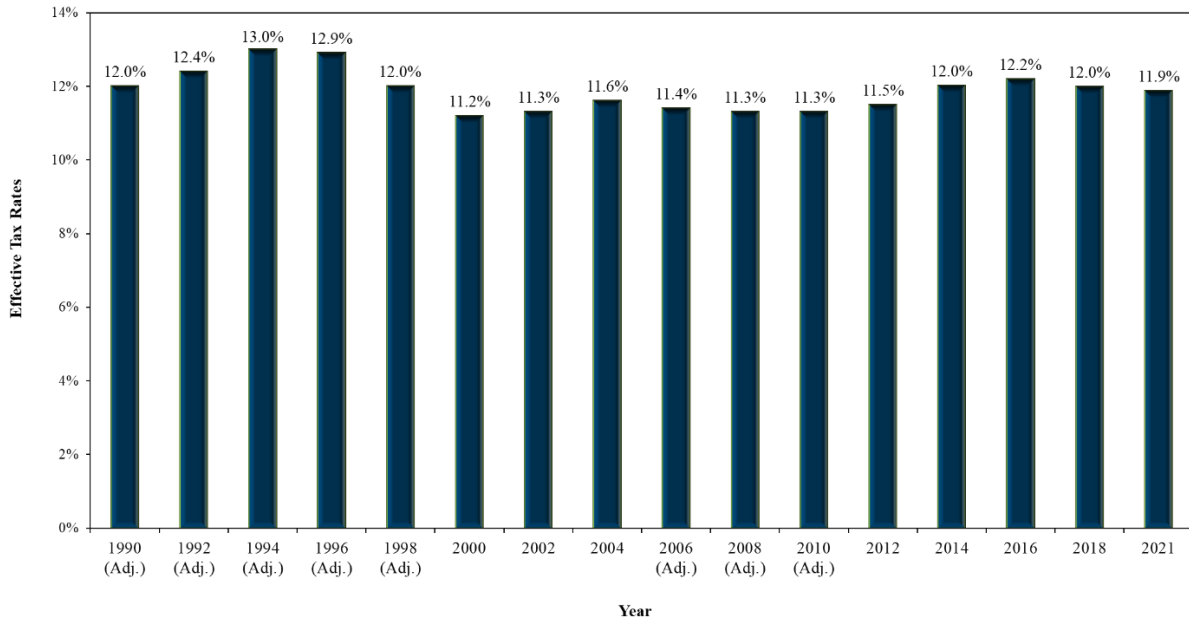
<sup>1</sup> Throughout this study, the phrase “tax burden” refers to the burden of Minnesota’s state and local taxes on Minnesota residents. The study includes no analysis of either federal taxes or taxes imposed in other states.

- Presents results by population decile, each decile including one-tenth of all households (the lowest-income 10 percent in the 1<sup>st</sup> decile and highest-income 10 percent in the 10<sup>th</sup> decile). Conclusions of the research are:
- Of the total \$42.0 billion in 2021 taxes, 84.9 percent of the burden ultimately falls on Minnesota residents (\$35.6 billion). The remaining \$6.4 billion of the tax burden is “exported” to nonresident consumers or nonresident owners of capital.
- In 2021, the state and local tax burden on Minnesota households averaged 11.9 percent of income, down from 12.0 percent in 2018.
- The local tax share of tax revenue fell from 29.0 percent in 2018 to 27.3 percent in 2021. The state tax share rose from 71.0 percent in 2018 to 72.7 percent in 2021.
- In 2021, taxes on income accounted for about 43.7 percent of state and local revenue, compared to 39.4 percent in 2018. The property tax share fell from 29.9 percent in 2018 to 28.0 percent in 2021. The consumption tax share fell from 30.7 percent in 2018 to 28.3 percent in 2021.
- The business tax share of total tax revenue decreased from 32.6 percent in 2018 to 31.6 percent in 2021.
- After allowing for the shifting of business taxes, the Minnesota tax system in 2021 remained slightly regressive (as it had been in 2018). The full-sample Suits index, a measure of the progressivity or regressivity of a tax or tax system, fell (away from zero) from -0.013 in 2018 to -0.024 in 2021. This change reflects an 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 2021 Suits index would fall from -0.024 to -0.030.

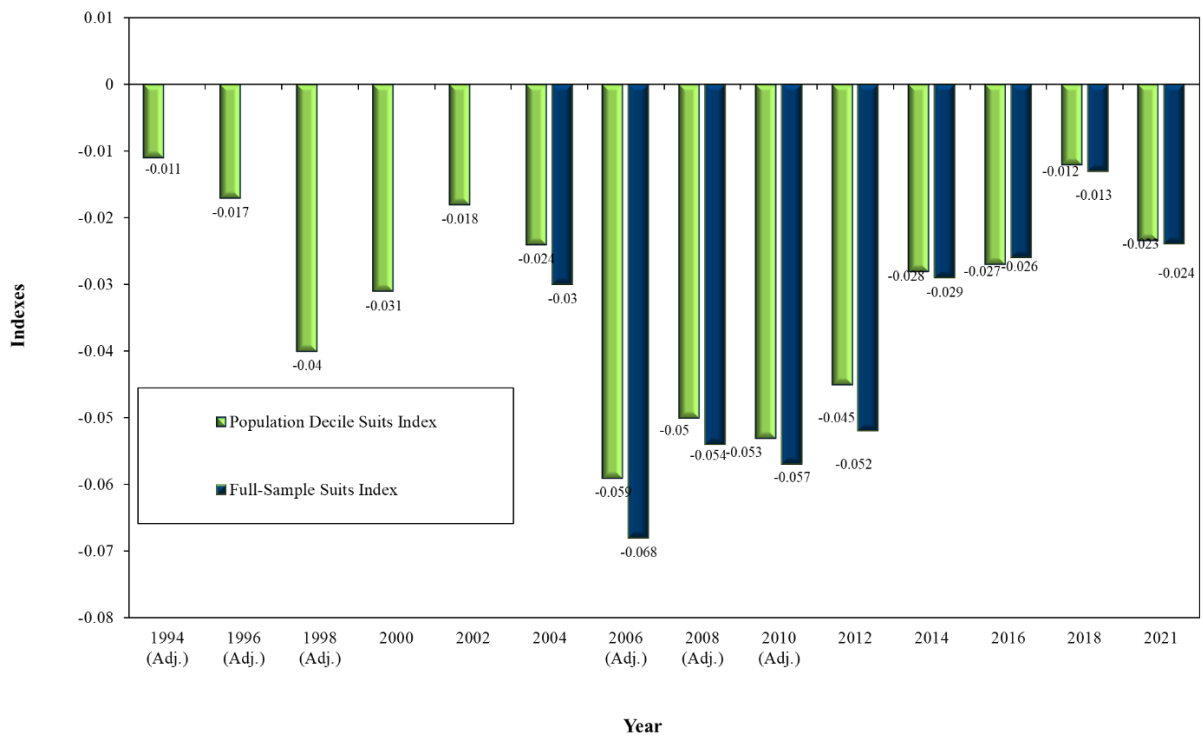
The seventeen biennial tax incidence studies cover a 31-year period. Comparison with earlier reports provides some historical context for the results of the current study.

*Figures E-1 and E-2* below show how effective tax rates and 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.

**Figure E-1**  
**Effective Tax Rates, All Minnesota Taxes<sup>2</sup>**



**Figure E-2**  
**Suits Index, All Minnesota Taxes<sup>3</sup>**



<sup>2</sup> Effective tax rates for 2006 and later years would have been 0.2 percentage points higher except for methodological changes that identified additional income. Data for 1998 is excluded because the first study excluded business taxes.

<sup>3</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. The 2008 and 2010 Suits indexes were also corrected for errors in the database for those years. In 2018, a revision to federal consumption data increased the business share of consumption taxes and decreased the regressivity of sales and consumption taxes. Corrections to estate and industrial taxes had offsetting impacts on overall regressivity in 2018.

## Chapter 1: Overview of Study

### Minnesota State and Local Tax Collections

Minnesota collected \$42.0 billion in state and local taxes in 2021.<sup>4</sup> This report estimates how much of the burden of total state and local taxes falls on Minnesota residents and how the tax burden on Minnesota residents varies with income.<sup>5</sup>

Minnesota's 2021 state and local taxes are summarized in *Table 1-1*. In 2021, 72.7 percent of the \$42 billion of tax was collected at the state level; local governments collected the remainder, largely from property taxes. The study includes taxes paid by businesses as well as those paid directly by households. The 31 separate tax components included in the study account for over 99.9 percent of total state tax collections and over 99.9 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 2021 results are based on a stratified random sample of about 139,000 Minnesota households.

---

<sup>4</sup> If the \$19 million excluded from this study were added, the total would still round to \$42.0 billion (as on *Table 1-1*).

<sup>5</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 2021**  
(\$ Millions)

State		Local		State and Local	
<b>Included</b>		<b>Included</b>		<b>Included</b>	
Individual income tax	\$15,488	Local property taxes			
Corporate franchise tax	2,637	Homestead property taxes	\$5,090		
Estate tax	212	Property taxes on cabins and			
General sales and use tax	6,873	second homes	395		
Motor vehicle sales tax	984	Rental property taxes (residential)	1,323		
Motor fuels excise taxes	874	Other business property taxes	3,543		
Alcoholic beverage excise taxes	104				
Cigarette & tobacco excise taxes	623	Subtotal	\$10,351		
Insurance premiums tax	595				
Gambling taxes	152	Mining production taxes (taconite)	109		
MinnesotaCare taxes	657	Wheelage taxes	60		
Motor vehicle registration tax	838	Local sales taxes	749		
Mortgage and deed taxes	407	Gross earnings taxes	186		
Waste taxes	102				
State property tax	777				
Property tax refunds	(802)				
<b>Total</b>	<b>\$30,521</b>	<b>Total</b>	<b>\$11,455</b>	<b>Total</b>	<b>\$41,976</b>
<b>Omitted</b>		<b>Omitted</b>		<b>Omitted</b>	
Airflight property tax	7.026	Aggregate material production tax	7.281		
Aircraft registration tax	3.423	Auxiliary forest tax	0.001		
Rural electric cooperatives tax	0.052	Contamination tax	0.097		
Contamination tax	0.31	Severed mineral interests tax	0.542		
		Unmined taconite tax	0.289		
<b>Total</b>	<b>\$11</b>	<b>Total</b>	<b>\$8</b>	<b>Total</b>	<b>\$19</b>
<b>Total Tax Collections</b>	<b>\$30,532</b>		<b>\$11,463</b>		<b>\$41,995</b>

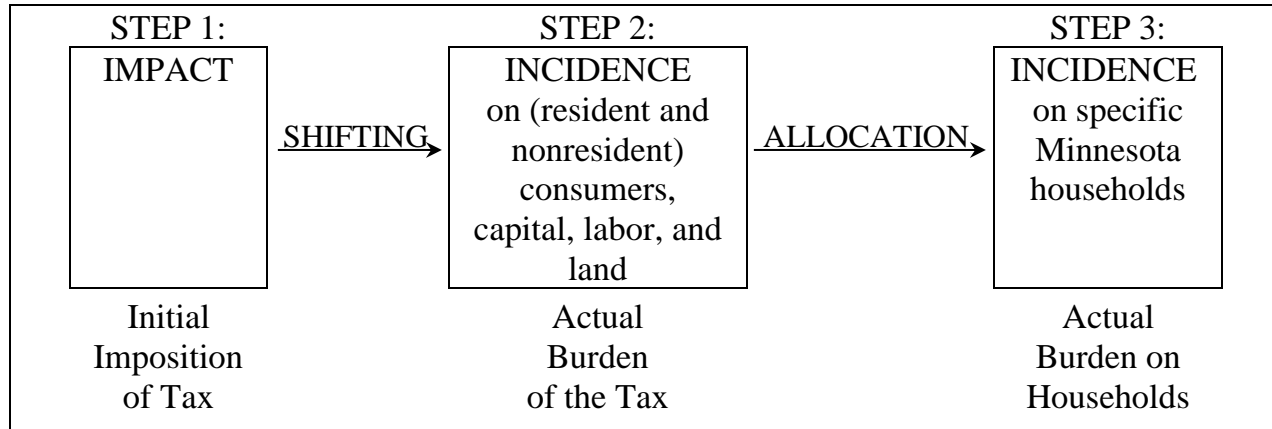


## The Concept of Tax Incidence

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**

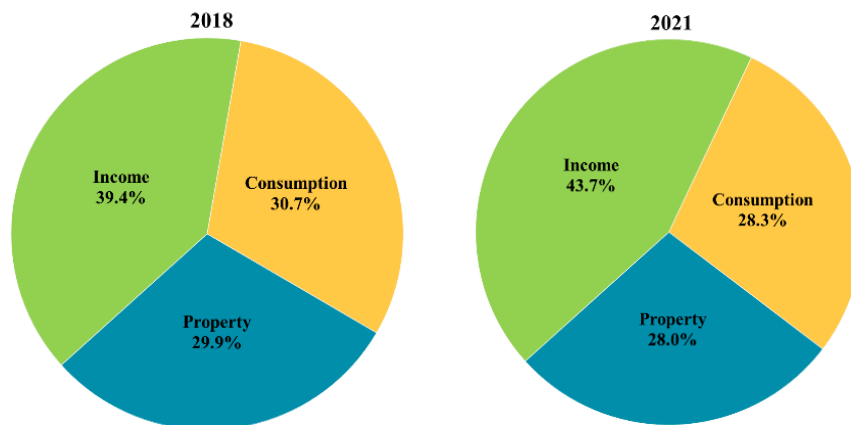


Each of the three steps shown in *Figure 1-1* is discussed separately below. The major findings from this study are reviewed in the context of the three-step estimating process.

### Step 1 – Impact

Figure 1-2, derived from *Table 1-2*, describes the revenues actually collected in 2021 compared to 2018. Taxes are divided into three general categories: Income, Consumption, and Property.<sup>6</sup>

**Figure 1-2**  
**Minnesota Tax System Impacts by Tax Type (2018 and 2021)**



<sup>6</sup> All taxes are assigned to one of the three categories. The motor vehicle registration tax, wheelage taxes, 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.

The charts in *Figure 1-2* show that income taxes make up a greater share of the tax burden in 2021, while the consumption tax and property tax shares shrank. This was due to significant growth in income and corporate tax collections. Individual income tax collections grew 28.1% from 2018 to 2021, and corporate franchise tax collections grew 75.3%.

Total household income grew 23.1 percent between 2018 and 2021 (an average of 7.2 percent per year).

- As a general rule (in the absence of any law change), revenue from taxes on income falls sharply in a recession but rises faster than income when the economy expands. Revenue from income taxes rose by 32.7 percent between 2018 and 2021, faster than the rate of income growth. However, the income growth rates are not equal across all deciles, with the highest growth in the top deciles, as seen in *Figure 1-10*.
- Taxes on consumption (sales and excise taxes) are generally less responsive to changes in income. Consumption tax revenue rose by 10.5 percent between 2018 and 2021 (less than income growth).
- Property taxes differ from income and consumption taxes. They are not as directly affected by economic growth. With fixed income tax rates, income tax revenue rises automatically as income rises. The same is true of sales tax revenue. In contrast, property tax levies are set to raise a fixed amount of dollars. Economic growth may eventually affect property tax levies, but only with a lag. The rate of growth in property tax levies depends partly on changes in the system of state aid to schools and local governments. When state aid increases, this places less upward pressure on local property tax levies. Property taxes net of property tax refunds increased 11.9 percent between 2018 and 2021, below the growth of income.

Another way of looking at Minnesota's tax system is to consider how tax revenues are split between state and local taxes. Between 2018 and 2021, the state's share rose from 71.0 percent to 72.7 percent. The local share (including school taxes) fell from 29.0 percent in 2018 to 27.3 percent in 2021. This was due primarily to the strong growth in income taxes, which outpaced growth in local property taxes, the largest component of local taxes.

This study also highlights the distinction between taxes on households and taxes on businesses. 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**  
**2021 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	\$15,488	36.9%	93.5%	6.5%		100.0%
Corporation franchise tax <sup>1</sup>	2,637	6.3%	.	.		100.0%
Estate tax	212	0.5%	94.0%	6.0%		100.0%
<b>Total Income and Estate Taxes</b>	<b>\$18,337</b>	<b>43.7%</b>	<b>80.1%</b>	<b>5.5%</b>	<b>14.4%</b>	<b>100.0%</b>
<b>Taxes on Consumption</b>						
Total sales tax	\$7,857	18.7%	51.1%	2.6%	46.3%	100.0%
General sales/use tax	6,873	16.4%	48.6%	3.0%	48.4%	100.0%
Sales tax on motor vehicles	984	2.3%	68.3%		31.7%	100.0%
Motor fuels excise taxes	874	2.1%	63.3%	3.4%	33.3%	100.0%
Alcoholic beverage excise taxes	104	0.3%	90.6%	9.4%		100.0%
Cigarette and tobacco excise taxes	623	1.5%	98.0%	2.0%		100.0%
Insurance premiums taxes	595	1.4%	81.0%		19.0%	100.0%
Gambling taxes	152	0.4%	98.0%	2.0%		100.0%
MinnesotaCare taxes	657	1.6%	91.4%	8.6%		100.0%
Solid waste management taxes	102	0.2%	46.4%	0.0%	53.6%	100.0%
<b>Total Consumption Taxes</b>	<b>\$10,965</b>	<b>26.1%</b>	<b>59.8%</b>	<b>2.9%</b>	<b>37.4%</b>	<b>100.0%</b>
<b>Taxes on Property</b>						
State Property Tax	\$777	1.9%	4.2%	1.0%	94.7%	100.0%
Residential recreational property	41	0.1%	80.2%	19.8%		100.0%
Commercial <sup>2</sup>	462	1.1%			100.0%	100.0%
Industrial	178	0.4%			100.0%	100.0%
Utility	96	0.2%			100.0%	100.0%
Motor vehicle registration tax	838	2.0%	81.5%		18.5%	100.0%
Mortgage and deed taxes	407	1.0%	71.1%		28.9%	100.0%
<b>Total Property Taxes</b>	<b>\$2,022</b>	<b>4.8%</b>	<b>49.7%</b>	<b>0.4%</b>	<b>49.9%</b>	<b>100.0%</b>
<b>Property Tax Refunds</b>						
Homeowners	-\$581	-1.4%	100.0%			100.0%
Renters	-\$221	-0.5%	100.0%			100.0%
<b>Total Property Tax Refunds</b>	<b>-\$802</b>	<b>-1.9%</b>	<b>100.0%</b>			<b>100.0%</b>
<b>Total State Taxes</b>	<b>\$30,522</b>	<b>72.7%</b>	<b>70.3%</b>	<b>4.4%</b>	<b>25.4%</b>	<b>100.0%</b>
<b>Local Taxes</b>						
<b>Taxes on Property</b>	\$10,519	25.1%	51.9%	0.7%	47.3%	100.0%
General Property Tax	10,351	24.7%	52.2%	0.8%	47.0%	100.0%
Homeowners (before PTR)	5,090	12.1%	100.0%			100.0%
Residential recreational & 2nd hom	395	0.9%	80.2%	19.8%		100.0%
Commercial <sup>2</sup>	1,825	4.4%			100.0%	100.0%
Industrial	675	1.6%			100.0%	100.0%
Farm (other than residence) <sup>4</sup>	635	1.5%			100.0%	100.0%
Rental Housing (before PTR) <sup>5</sup>	1,323	3.2%			100.0%	100.0%
Utility <sup>6</sup>	408	1.0%			100.0%	100.0%
Mining Production Taxes (taconite)	109	0.3%			100.0%	100.0%
Wheelage Taxes	60	0.1%	90.6%		9.4%	100.0%
<b>Taxes on Consumption</b>						
Local Sales Taxes <sup>7</sup>	749	1.8%	46.0%	7.3%	46.7%	100.0%
Local Gross Earnings Taxes	186	0.4%			100.0%	100.0%
<b>Total Local Taxes</b>	<b>\$11,454</b>	<b>27.3%</b>	<b>50.7%</b>	<b>1.2%</b>	<b>48.2%</b>	<b>100.0%</b>
<b>Total State and Local Taxes</b>	<b>\$41,976</b>	<b>100.0%</b>	<b>64.9%</b>	<b>3.5%</b>	<b>31.6%</b>	<b>100.0%</b>

<sup>1</sup>Includes taconite, iron, and other ores occupation tax

<sup>2</sup>Includes resorts, railroads, and minerals

<sup>3</sup>Second homes are 20% of residential non-homestead property

<sup>4</sup>Includes timber

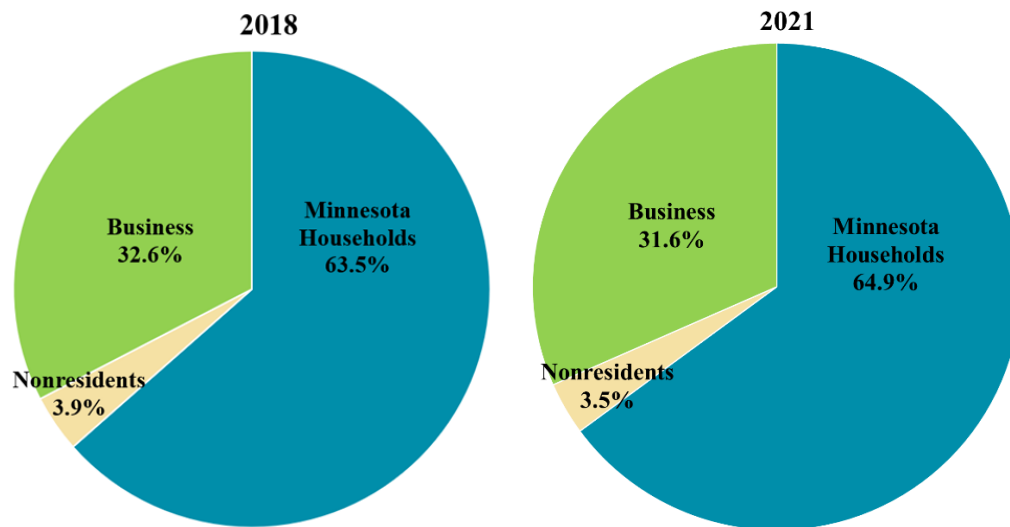
<sup>5</sup>Apartments, 80% of residential non-homestead property, and rented mobile homes

<sup>6</sup>Includes wind and solar energy production taxes

<sup>7</sup>Includes lodging and other selective sales taxes

Figure 1-3 shows that business taxes accounted for 31.6 percent of total state and local taxes in 2021, down from 32.6 percent in 2018.

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

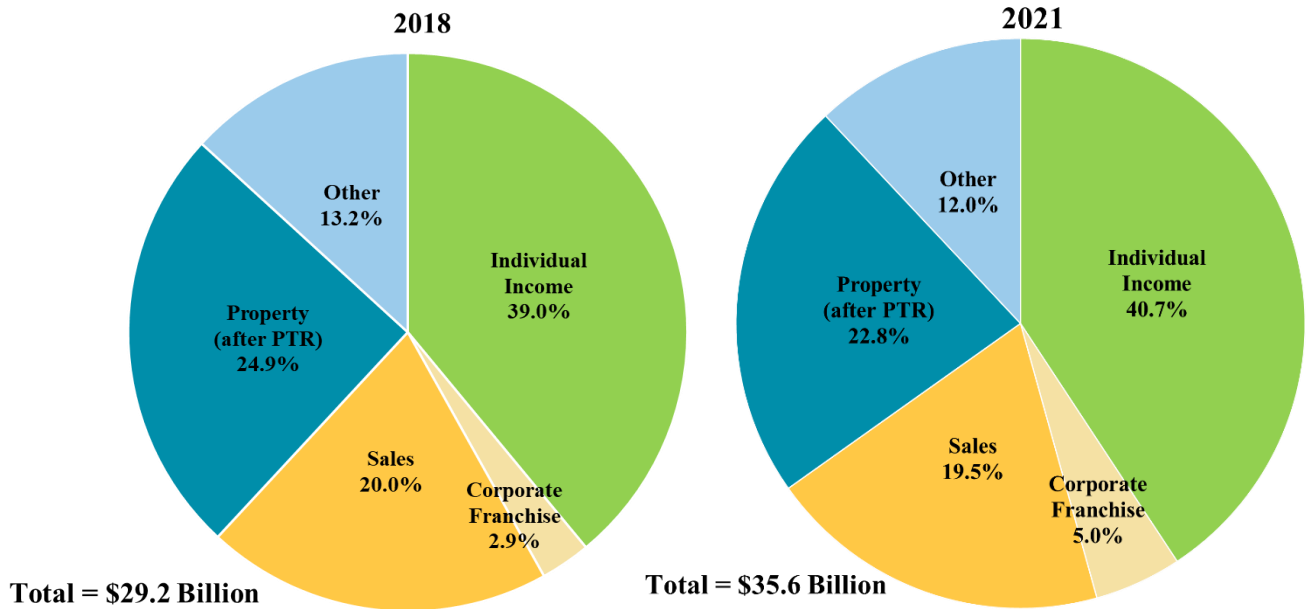


## Step 2 – Shifting

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 2021 Minnesota households paid (either directly or indirectly through shifted business tax) a total of \$35.6 billion in Minnesota state and local taxes. This equals 84.9 percent of total state and local tax collections (\$42.0 billion). The other \$6.3 billion (15.1 percent) is “exported” to nonresidents or visitors to the state.

**Figure 1-4  
Tax Incidence After Shifting (2018 and 2021)**



### 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 2.94 million households.<sup>7</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.

### 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. Taxes may be progressive over some income ranges and regressive over others. The Suits index is often used as a summary measure of overall 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

<sup>7</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 (2,937,388 in 2021) exceeds the number of households reported by the Census (2,281,033). A more detailed comparison is provided in the last section of *Chapter 5*.

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. (For a more complete description of the Suits index, see *Appendix C*.)

*Table 1-3* presents full-sample Suits indexes for selected Minnesota state and local tax categories in 2021. 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 2021 (a full-sample Suits index of -0.024). State taxes were progressive (+0.055), and local taxes were regressive (-0.247).

**Table 1-3**  
**Suits Indexes for Selected Minnesota State and Local Taxes**

<b>Tax Category</b>	<b>2021 Suits Index</b>
Personal Income Tax	+0.268
Sales Taxes (State & Local)	-0.221
Business Taxes	-0.167
Individual Taxes	+0.020
All State Taxes	+0.055
All Local Taxes	-0.247
<b>Total Taxes</b>	<b>-0.024</b>

### *Effective Tax Rates by Decile*

For analytical purposes, Minnesota's households are divided into 10 equal groups, or deciles. Each of these 10 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>8</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.

---

<sup>8</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.

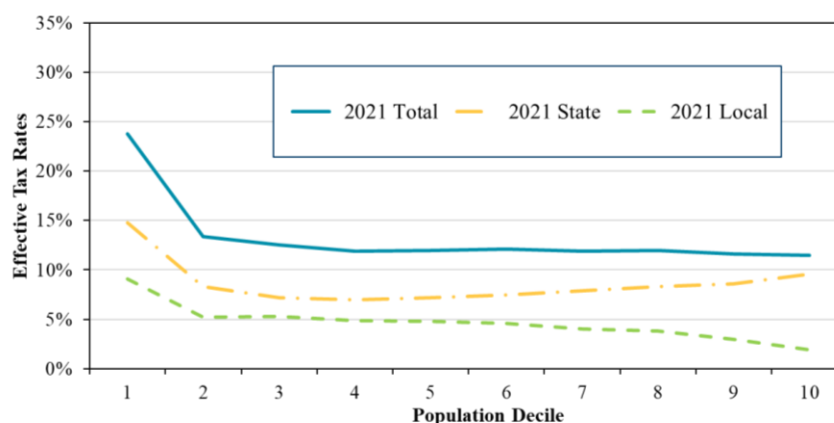
As *Table 1-4* shows, Minnesota's state and local tax system was slightly regressive to proportional across most deciles in 2021. It is approximately proportional in the 4<sup>th</sup> through 8<sup>th</sup> deciles.<sup>9</sup> Minnesota residents paid an estimated 11.9 percent of their 2021 total income in state and local taxes. The effective tax rate was 8.8 percent for state taxes (up from 8.6 percent in 2018) and 3.1 percent for local taxes (down from 3.4 percent in 2018).

**Table 1-4**  
**Minnesota Effective Tax Rates for 2021**  
**State and Local Taxes by Population Decile**

Population Decile	2021		
	State	Local	Total
<b>First</b>	14.8%	9.1%	23.8%
<b>Second</b>	8.3%	5.2%	13.4%
<b>Third</b>	7.2%	5.3%	12.5%
<b>Fourth</b>	7.0%	4.9%	11.9%
<b>Fifth</b>	7.2%	4.8%	12.0%
<b>Sixth</b>	7.5%	4.6%	12.1%
<b>Seventh</b>	7.9%	4.0%	11.9%
<b>Eighth</b>	8.3%	3.8%	12.0%
<b>Ninth</b>	8.6%	3.0%	11.6%
<b>Tenth</b>	9.6%	1.9%	11.5%
<b>Total</b>	8.8%	3.1%	11.9%

As shown in *Figure 1-5*, state tax burdens and local tax burdens are distributed quite differently. Total state taxes for 2021 (individual and business combined) were progressive with effective tax rates generally rising from 7.0 percent in the 4<sup>th</sup> decile to 8.6 percent in the 9<sup>th</sup> decile and 9.6 percent in the 10<sup>th</sup> decile. In contrast, effective local tax rates, primarily local property taxes (before any state property tax refunds), declined steadily with income and were regressive overall. This distribution is consistent with the pattern seen in 2018 and previous years.

**Figure 1-5**  
**Effective Tax Rates for 2021**  
**State and Local Taxes by Population Decile**



<sup>9</sup> The income ranges for each population decile are shown in *Table 2-2*.

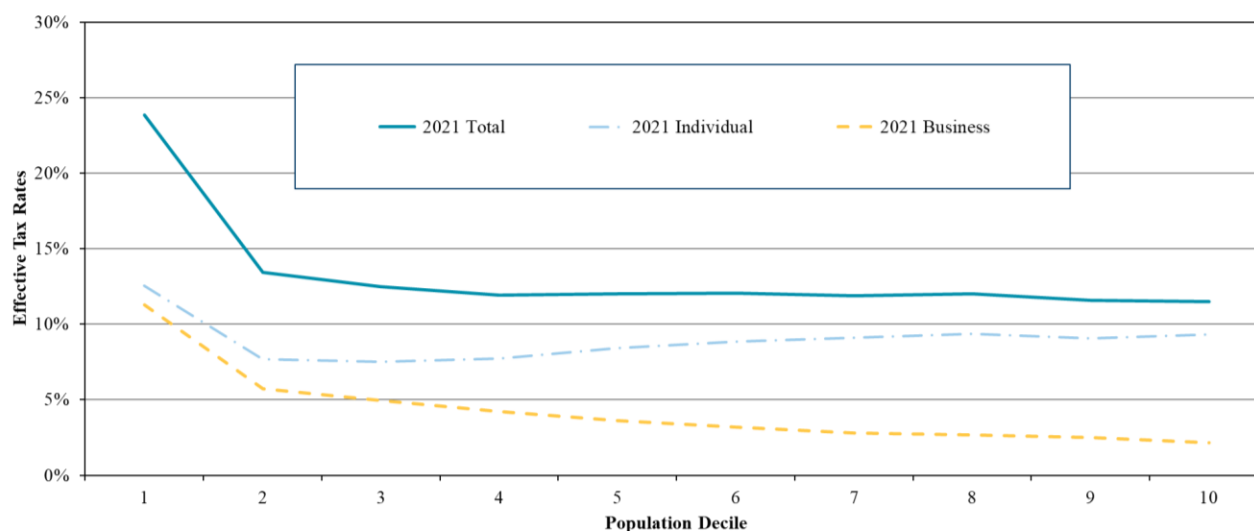
Table 1-5 and Figure 1-6 show that the patterns of effective rates for taxes paid by individuals versus businesses are also quite different. For 2021, effective rates for taxes paid by individuals increased from 7.5 percent of income in the 3<sup>rd</sup> decile to 9.4 percent in the 8<sup>th</sup> decile, and then declined to 9.1 percent in the 9<sup>th</sup> decile and 9.3 percent in the 10<sup>th</sup> decile.

In contrast, Minnesota state and local taxes on businesses (after shifting) are regressive, with effective tax rates for 2021 falling from 5.7 to 2.2 percent of income between the 2<sup>nd</sup> and 10<sup>th</sup> deciles. The overall effective rate for taxes on businesses after shifting was 2.8 percent and was 9.1 percent on individuals in 2021.

**Table 1-5**  
**Minnesota Effective Tax Rates for 2021**  
**Individual and Business Taxes by Population Decile**

Population Decile	2021		
	Individual	Business	Total
First	12.6%	11.3%	23.8%
Second	7.7%	5.7%	13.4%
Third	7.5%	5.0%	12.5%
Fourth	7.7%	4.2%	11.9%
Fifth	8.4%	3.6%	12.0%
Sixth	8.9%	3.2%	12.1%
Seventh	9.1%	2.8%	11.9%
Eighth	9.4%	2.7%	12.0%
Ninth	9.1%	2.5%	11.6%
Tenth	9.3%	2.2%	11.5%
<b>Total</b>	<b>9.1%</b>	<b>2.8%</b>	<b>11.9%</b>

**Figure 1-6**  
**Effective Tax Rates for 2021**  
**Individual and Business Taxes by Population Decile**





### ***Effective Tax Rates in the 1<sup>st</sup> Decile***

As shown in *Table 1-5*, the total 2021 effective tax rate of 23.8 percent for taxpayers in the 1<sup>st</sup> decile is much higher than the rates in other deciles.

The effective tax rate for the 1<sup>st</sup> 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 2021. 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 1<sup>st</sup> decile. A small portion of all 1<sup>st</sup> decile households were in this decile only because they reported business losses or large capital losses for income tax purposes in 2021.

Second, effective tax rates for the 1<sup>st</sup> decile are overstated because income is understated. The incidence sample was unable to identify all sources of income. Many 1<sup>st</sup> 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 1<sup>st</sup> decile are overstated by an unknown but possibly significant amount.

If the 1<sup>st</sup> decile were excluded, the full-sample Suits index for 2021 would rise from -0.024 to -0.014, just less than proportional.<sup>10</sup>

---

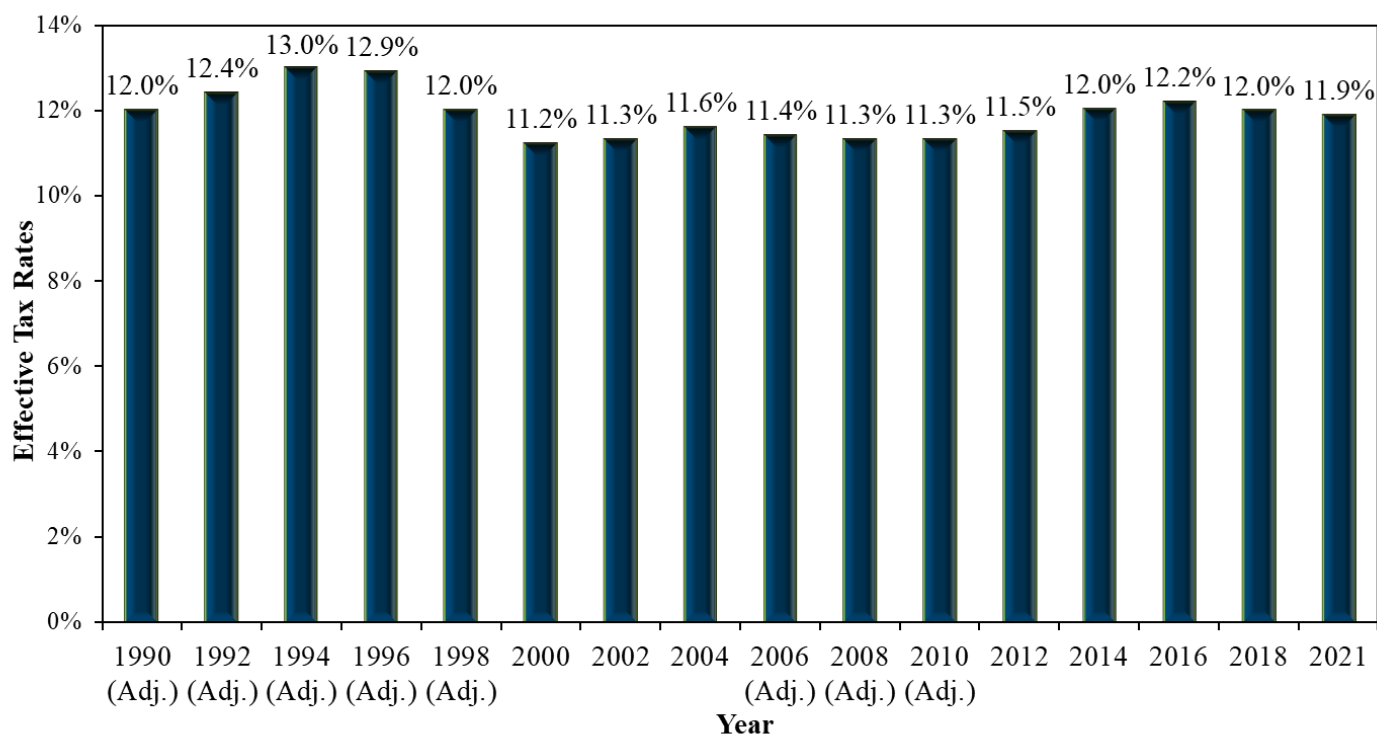
<sup>10</sup> The remaining regressivity is primarily the result of the lower effective tax rate for the top decile. If both the 1<sup>st</sup> and 10<sup>th</sup> deciles were excluded, the full-sample Suits index would rise to +0.050 – slightly progressive.

## Historical Comparison with Earlier Studies

Incidence data has been collected and published in a series of studies, of which this is the seventeenth. Comparable 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 growth in the mid- and late 1990s, the slowdown of the early 1990s, the contraction from 2000 to 2002, solid growth between 2002 and 2008, recession in 2010, and recovery from 2012 and 2016.

As shown in *Figure 1-7*, effective tax rates over the period 1990–2012 first rise but then fall and remain well below those in 1992 to 1996. 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 1990s, that outstripped tax collections (see *Table 1-6*). As the economy emerged from recession after 2002, the effective tax rate rose to 11.6 percent in 2004, and remained fairly constant (11.3 to 11.5 percent) through 2012. From 2014 through 2018, the effective tax rate has been between 12.0 and 12.2 percent, and in 2021 it is 11.9 percent.

**Figure 1-7**  
**Effective Tax Rates, All Minnesota Taxes, 1990-2021<sup>11</sup>**



<sup>11</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 11.4% for 1990-1998. Health Impact Fees were excluded in 2006 but included starting in 2008, so 2006 numbers are adjusted to include the HIF in that year as well. Effective tax rates for 2008 and 2010 are also adjusted downward to correct errors in the published numbers. A change in methodology starting in 2006 identified additional income. By increasing measured income, this caused effective tax rates to fall by roughly 0.2 percentage points in later years.

Changes in the population-decile Suits index are shown in *Table 1-6* 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 2000 and 2002 and then declined significantly to a low of -0.059 in 2006. Since then, it trended upwards to a high of -0.012 in 2018 and fell to -0.023 in 2021.

*Table 1-6* and *Figure 1-8* also show 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 1-6**  
**Households, Household Income, Total Taxes,**  
**Effective Tax Rates, and Suits Indexes, All Taxes, 1990-2021**

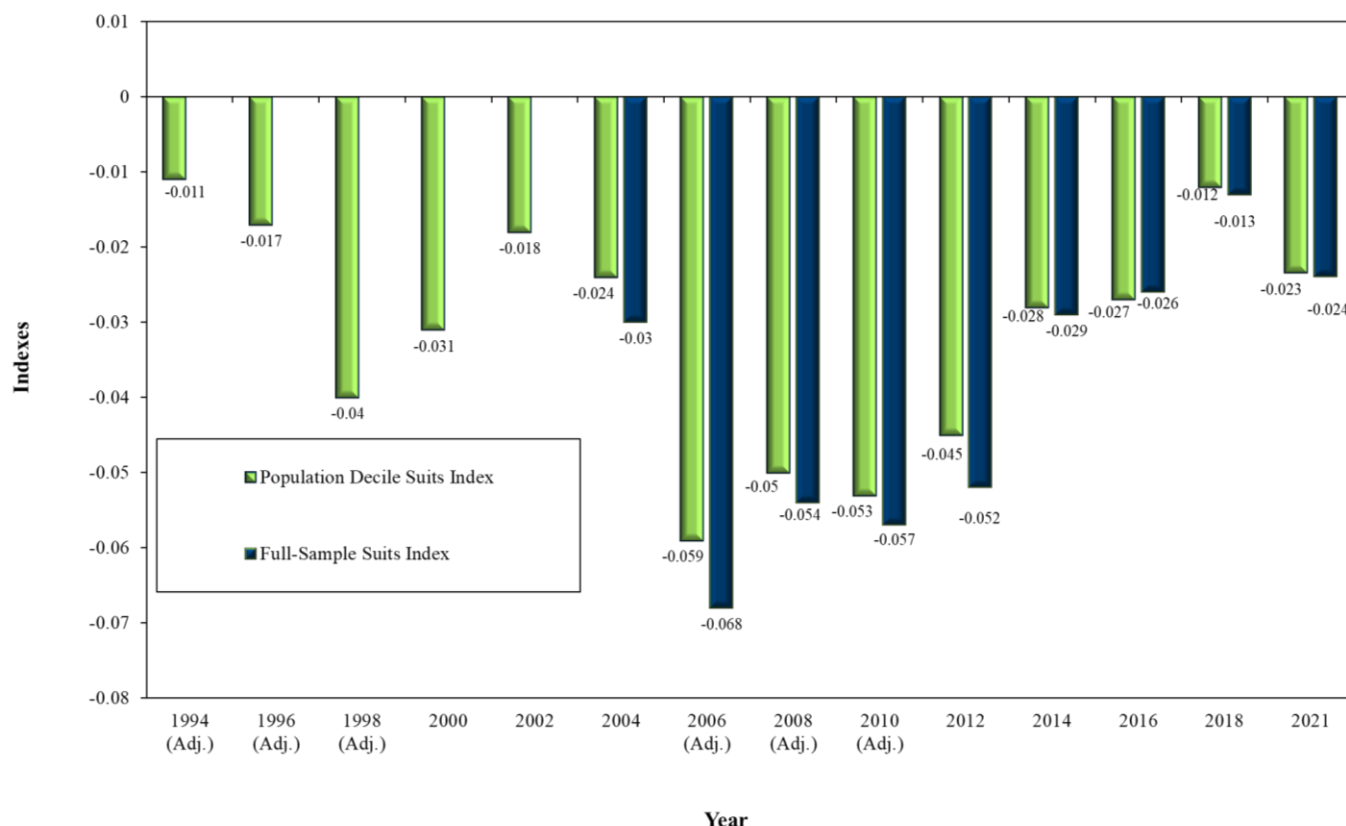
Year	Number of Households	Household Income (\$ Thousands)	Total Taxes as Imposed (\$ Thousands)	Tax Dollars Included in Study (%)	Total Taxes After Shifting (\$ Thousands)	Effective Tax Rate	Population Decile Suits Index	Full-Sample Suits Index
1990	2,072,488	\$65,842,600	\$9,575,000	97.1%	\$7,747,743	11.8%	-0.007	N/A
1992	2,120,967	74,410,299	11,050,000	96.9%	8,991,383	12.1%	-0.017	N/A
1994	2,148,820	80,148,374	12,539,000	98.0%	10,323,412	12.9%	-0.011	N/A
1996	2,193,971	93,272,563	14,495,000	98.0%	11,886,823	12.7%	-0.017	N/A
1998	2,232,670	114,610,957	16,137,000	97.8%	13,526,348	11.8%	-0.040	N/A
2000	2,322,380	132,094,974	17,599,000	99.8%	14,809,590	11.2%	-0.031	N/A
2002	2,340,070	127,311,429	17,174,000	99.9%	14,412,365	11.3%	-0.018	N/A
2004	2,363,258	138,824,077	19,313,000	99.9%	16,170,469	11.6%	-0.024	-0.030
2006	2,448,872	165,040,421	22,310,000	99.9%	18,753,567	11.4%	-0.059	-0.068
2008	2,541,183	173,854,675	23,796,000	99.9%	19,573,643	11.3%	-0.050	-0.054
2010	2,575,184	175,349,202	23,846,000	99.9%	19,827,961	11.3%	-0.053	-0.057
2012	2,580,561	194,079,578	26,983,000	99.9%	22,304,145	11.5%	-0.045	-0.052
2014	2,660,914	208,192,948	29,951,000	99.8%	25,030,270	12.0%	-0.028	-0.029
2016	2,716,900	221,139,236	31,975,000	99.96%	26,954,961	12.2%	-0.027	-0.026
2018	2,787,506	243,853,626	35,052,000	99.96%	29,220,786	12.0%	-0.012	-0.013
2021	2,937,388	300,173,817	41,976,000	99.95%	35,634,524	11.9%	-0.023	-0.024

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%	4.4%
2008-2010	1.3%	0.9%	1.3%
2010-2012	0.2%	10.7%	12.5%
2012-2014	3.1%	7.3%	12.2%
2014-2016	2.1%	6.2%	7.7%
2016-2018	2.6%	10.3%	8.4%
2018-2021**	3.6%	14.9%	14.1%

\*Two percentage points was due to more complete data on income.

\*\* Equivalent growth rate for a 2-year period to be comparable with other years.

**Figure 1-8**  
**Suits Indexes, All Minnesota Taxes, 1994-2021<sup>12</sup>**



*Table 1-7* shows effective tax rates by population 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 2021. 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) That pattern has changed over time.

- The effective tax rate in the 2<sup>nd</sup> decile has generally risen since 2000 while the rates in the 3<sup>rd</sup> through 5<sup>th</sup> decile rates have generally declined before rising in 2021. The rates in the 6<sup>th</sup> through 9<sup>th</sup> deciles generally fluctuated between 12 and 13 percent from 2000 through 2021. The 10th decile rose slightly from 2000 to 2021.
- Effective tax rates drop between the 9<sup>th</sup> and 10<sup>th</sup> deciles. The drop was largest in 1998 (dropping from 12.5 percent of income to 10.6 percent of income, or by 1.9 percentage points). The difference fell to 1.0 percentage point in 2002 but rose to 1.7 percentage points in 2006 and 1.3 percentage points in 2008, 2010, and 2012. Since then, the difference has been much smaller. In 2018, the difference is 0.2 percentage points, falling to 0.1 percentage points in 2021.
- In 2021, the tax rates increased for deciles 1 through 6 while decreasing slightly for deciles 7, 9, and 10.

<sup>12</sup> For an explanation of these adjustments, see footnote 3 on page 3.

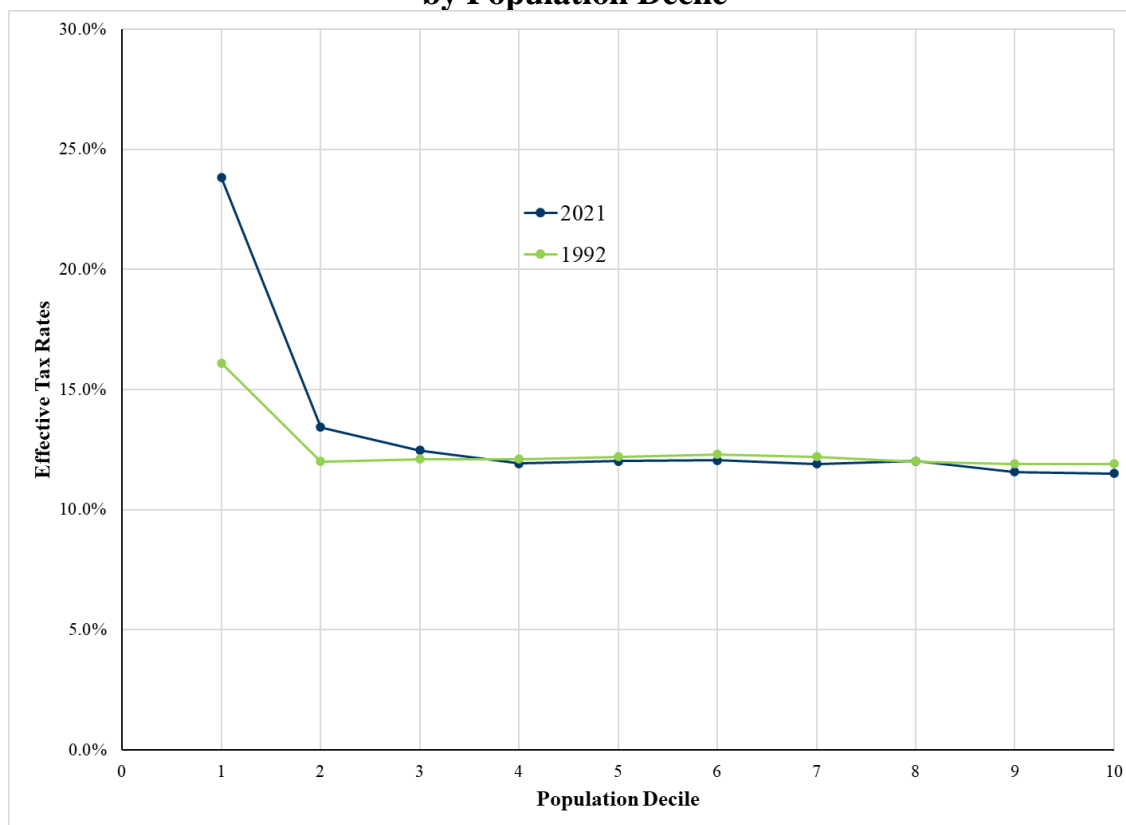
The pattern of lower effective tax rates in the 3<sup>rd</sup> and 4<sup>th</sup> deciles disappeared temporarily in 2010, but it returned starting in 2012. The one-year aberration reflects law changes that temporarily reduced property tax refunds for renters by 16 percent between 2008 and 2010.

In 2016, for the first time, the effective tax rate in the 5<sup>th</sup> and 6<sup>th</sup> deciles were below the overall average effective tax rate. That continued in 2018 before growing above the average effective tax rate in 2021.

**Table 1-7**  
**Effective Tax Rates by Population Decile,**  
**All Taxes, 1990–2021**

Decile	1990	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2012	2014	2016	2018	2021
<b>First</b>	17.9%	16.1%	17.3%	17.8%	20.2%	17.4%	18.2%	18.9%	25.2%	31.4%	31.1%	28.3%	29.9%	32.1%	28.9%	23.8%
<b>Second</b>	11.1%	12.0%	12.3%	12.0%	11.3%	9.8%	10.5%	11.3%	13.2%	12.7%	13.5%	12.9%	13.9%	13.4%	12.5%	13.4%
<b>Third</b>	10.7%	12.1%	11.8%	12.2%	10.8%	10.6%	10.1%	10.5%	12.0%	11.3%	11.9%	11.5%	11.9%	11.9%	11.5%	12.5%
<b>Fourth</b>	11.3%	12.1%	12.8%	12.5%	12.0%	11.1%	11.0%	11.5%	11.9%	11.5%	11.3%	11.4%	11.5%	11.5%	11.1%	11.9%
<b>Fifth</b>	11.1%	12.2%	12.8%	13.0%	12.1%	11.5%	11.4%	11.9%	12.7%	11.8%	11.8%	12.3%	12.1%	11.9%	11.5%	12.0%
<b>Sixth</b>	11.8%	12.3%	13.2%	13.1%	13.1%	12.3%	11.9%	12.2%	12.4%	12.0%	12.1%	12.2%	12.3%	12.3%	11.9%	12.1%
<b>Seventh</b>	12.0%	12.2%	13.0%	13.1%	12.9%	12.0%	12.0%	12.3%	12.3%	11.8%	11.9%	12.2%	12.4%	12.6%	12.0%	11.9%
<b>Eighth</b>	11.9%	12.0%	13.0%	13.0%	12.9%	12.0%	11.8%	12.3%	12.0%	11.9%	11.8%	12.1%	12.2%	12.4%	12.0%	12.0%
<b>Ninth</b>	11.8%	11.9%	13.0%	13.0%	12.5%	11.9%	11.7%	12.3%	11.8%	11.5%	11.5%	11.8%	11.9%	12.3%	12.0%	11.6%
<b>Tenth</b>	11.7%	11.9%	12.6%	12.2%	10.6%	10.3%	10.7%	10.9%	10.1%	10.2%	10.2%	10.5%	11.5%	11.6%	11.8%	11.5%
<b>Total</b>	11.8%	12.1%	12.9%	12.7%	11.8%	11.2%	11.3%	11.6%	11.4%	11.3%	11.3%	11.5%	12.0%	12.2%	12.0%	11.9%
<b>Top 5%</b>	11.6%	11.8%	12.3%	11.9%	10.1%	9.9%	10.5%	10.5%	9.7%	9.9%	10.0%	10.2%	11.3%	11.6%	11.8%	11.6%
<b>Top 1%</b>	11.2%	11.6%	11.8%	11.0%	8.3%	8.4%	9.0%	9.6%	8.9%	9.8%	9.5%	9.8%	11.5%	11.8%	11.50%	11.5%

**Figure 1-9**  
**Effective Tax Rates for 1992 and 2021**  
**by Population Decile**



Although the historical changes in the degree of regressivity are due partly to changes in tax laws, the role of economic conditions 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, 2006-2012, and 2021) were years when the distribution of income was most unequal, due in some years to unusually high capital gains income. That is particularly true in 2021, when there was high unemployment with a loss of wage income in the lower deciles but also very high capital gains income, which was concentrated in the upper deciles.

As shown in *Figure 1-10*, the concentration of income in the top decile increased in 2021 to 44.7%, the highest it has been since the study began. The income share of the top 5% increased to 34.0%, up from 31.9% in 2018. The concentration of income tends to increase during good economic times. In 1998 and 2000, the top 5 percent of households accounted for 31.5 and 31.4 percent of total household income respectively, up from an average of only 26.4 percent in 1990-1994. 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 much in 2010. This was unlike 2002 (following the 2001 recession) when it fell from 31.4 percent to 28.1 percent. In 2012, the income share of the top 5 percent (at 32.7 percent) was even higher than in 1998, and it remained above 31 percent each year since then.

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 roughly 17 percent of total income, up from an average of 13.4 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. In 2012, the income share of the top 1 percent (at 17.5 percent) was even higher than in 1998. The income share of the top 1 percent fell to about 16.5% between 2014 and 2021 before reaching an all-time high of 19.1% in 2021.

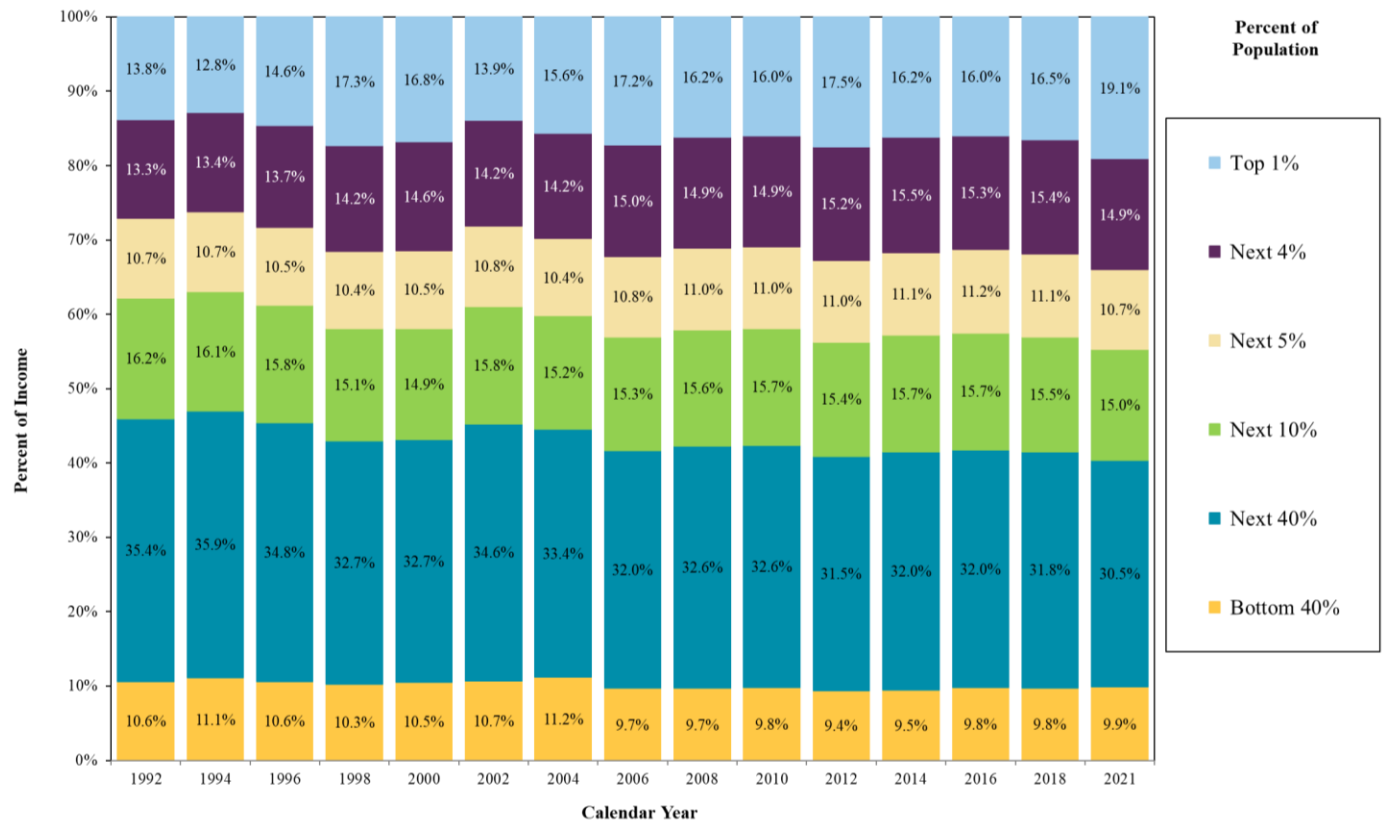
This concentration of income by itself, with no change in tax law, will increase the measured regressivity of the tax system, if the system is already regressive. That is because the effective tax rate in the upper deciles will be lower than the average effective rate, so an additional dollar in the upper deciles will be taxed at a lower rate than a dollar of income in the lower deciles. decrease their total share of tax paid. Lower regressivity in earlier recession years (such as 2002) partly reflected the lower share of income at the top. A substantial portion of the increase in regressivity in the years 2006 to 2012 was likely the result of the unusually high share of income received by the highest income Minnesotans.<sup>13</sup>

The income share of the bottom 40 percent dropped below 10 percent in 2006 for the first time since these studies began. It has remained below 10 percent since 2006 (currently at 9.9% in 2021).

---

<sup>13</sup> A simple correlation between the population-decile Suits index and the share of income received by the top decile (1990-2012) is -0.92, suggesting that the variation in income inequality could explain much of the variation in the Suits index. through 2012. For the period 1990-2021, the correlation decreases to -0.60, indicating that since 2012 income inequality alone cannot explain the variability in the Suits index. Law changes may have played an increasing role, although income inequality remains a significant factor.

**Figure 1-10**  
**Shares of Household Income, 1992-2021**



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 year-to-year over the last 20 years. Trends in income inequality are certainly responsible for much of the pattern shown above.

Changes in the distribution of the tax burden between 2012 and 2014, though, were clearly due mostly to major tax law changes enacted in 2013 and 2014. Those changes included the new top income tax rate, expanded property tax refunds, an increase in the Working Family Credit, higher cigarette taxes, and lower estate taxes. The *2015 Minnesota Tax Incidence Study* (pp. 54-55) estimated that those law changes would raise the Suits index by 0.018. The reduced regressivity of the Minnesota's state and local tax system between 2012 and 2014 is due primarily to state law changes enacted in 2013 and 2014. Law changes in 2017 and 2019 further reduced the regressivity of the system.

In 2021, the income share of the top 1 percent grew to 19.1 percent while the income share for the bottom 80 percent shrank to 40.4 percent. This was due to the loss of wage income during the COVID-19 pandemic and unusually high capital gains in 2021.

## Chapter 2: Principal Results, 2021

This chapter examines the state and local tax burdens imposed on Minnesota taxpayers in 2021. 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 2021.

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). Some of the results are different than in previous years because of the unusual economic conditions during 2021. The results should be considered to reflect the tax burden in 2021 but do not necessarily reflect other years.

### Total Tax Burden

For 2021, Minnesota residents paid a total of \$35.6 billion in Minnesota state and local taxes while receiving \$300.2 billion in total money income.<sup>14</sup> Minnesota residents thus paid 11.9 percent of their total income in state and local taxes.

Details of Minnesota tax collections before and after tax shifting are shown in *Table 2-1*. Of the \$42.0 billion in total tax collections in 2021, \$35.6 billion (84.9 percent) of the total burden falls on Minnesotans, directly or indirectly. The other 15.1 percent (\$6.3 billion) is exported to nonresident consumers and owners of capital.

As shown in the “as imposed” columns of *Table 2-1*, \$27.3 billion (64.9 percent) of the total tax is imposed directly on Minnesota households. Another \$1.5 billion (3.5 percent) is paid by out-of-state visitors. The remaining \$13.3 billion (31.6 percent) is initially imposed on businesses.

The burden of the business taxes 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 business 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 *Appendix B*.)

---

<sup>14</sup> 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 2021, federal economic impact payments (EIPs) were also included. For a more complete description of the definition of household income, see *Appendix A* of this study.



**Table 2-1**  
**2021 Tax Collection Amounts (\$ Millions)**

Tax Type	Total	As Imposed			After shifting		Full-Sample Suits Index
		MN HH's	NR	Business	Minnesota	Exported	
<b>State Taxes</b>							
<b>Taxes on Income and Estates</b>							
Individual income tax	\$15,488	\$14,487	\$1,002		\$14,487	\$1,002	+0.268
Corporation franchise tax <sup>1</sup>	2,637			\$2,637	1,763	874	-0.175
Estate tax	212	199	13		199	13	+0.357
<b>Total Income and Estate Taxes</b>	<b>\$18,337</b>	<b>\$14,686</b>	<b>\$1,015</b>	<b>\$2,637</b>	<b>\$16,449</b>	<b>\$1,889</b>	<b>+0.221</b>
<b>Taxes on Consumption</b>							
Total sales tax	\$7,857	\$4,015	\$204	\$3,639	\$6,387	\$1,470	-0.222
General sales/use tax	6,873	3,343	204	3,327	5,568	1,305	-0.227
Sales tax on motor vehicles	984	672		312	819	165	-0.184
Motor fuels excise taxes	874	554	29	291	661	214	-0.374
Alcoholic beverage excise taxes	104	94	10	0	94	10	-0.163
Cigarette and tobacco excise taxes	623	611	12	0	611	12	-0.590
Insurance premiums taxes	595	482		113	542	52	-0.331
Gambling taxes	152	149	3		149	3	-0.519
MinnesotaCare taxes	657	601	56		601	56	-0.360
Solid waste management taxes	102	48		55	86	17	-0.429
<b>Total Consumption Taxes</b>	<b>\$10,964</b>	<b>\$6,554</b>	<b>\$314</b>	<b>\$4,098</b>	<b>\$9,131</b>	<b>\$1,834</b>	<b>-0.279</b>
<b>Taxes on Property</b>							
State Property Tax	\$777	\$33	\$8	\$736	\$385	\$393	-0.067
Residential recreational property	41	33	8		33	8	-0.142
Commercial <sup>2</sup>	462			462	263	199	-0.038
Industrial	178			178	30	149	0.084
Utility	96			96	59	37	-0.232
Motor vehicle registration tax	838	684		155	790	48	-0.223
Mortgage and deed taxes	407	289		117	374	33	-0.028
<b>Total Property Taxes</b>	<b>\$2,022</b>	<b>\$1,006</b>	<b>\$8</b>	<b>\$1,008</b>	<b>\$1,549</b>	<b>\$474</b>	<b>-0.137</b>
<b>Property Tax Refunds</b>							
Homeowners	-\$581	-\$581			-\$581		+0.646
Renters	-221	-221			-221		+0.864
<b>Total Property Tax Refunds</b>	<b>-\$802</b>	<b>-\$802</b>			<b>-\$802</b>		<b>+0.706</b>
<b>Total State Taxes</b>	<b>\$30,522</b>	<b>\$21,444</b>	<b>\$1,337</b>	<b>\$7,743</b>	<b>\$26,326</b>	<b>\$4,197</b>	<b>+0.055</b>
<b>Local Taxes</b>							
<b>Taxes on Property</b>	\$10,520	\$5,461	\$78	\$4,981	\$8,616	\$1,903	-0.249
General Property Tax	10,351	5,407	78	4,866	8,547	1,803	-0.249
Homeowners (before PTR)	5,090	5,090			5,090		-0.314
Residential recreational & 2 <sup>nd</sup> homes <sup>3</sup>	395	317	78		317	78	-0.007
Commercial <sup>2</sup>	1,825			1,825	1,038	787	-0.038
Industrial	675			675	112	563	0.084
Farm (other than residence) <sup>4</sup>	635			635	635	0	-0.106
Rental Housing (before PTR) <sup>5</sup>	1,323			1,323	1,105	218	-0.340
Utility <sup>6</sup>	408			408	250	157	-0.232
Mining Production Taxes (taconite)	109			109	11	98	0.318
Wheelage Taxes	60	54		6	58	2	-0.338
<b>Taxes on Consumption</b>							
Local Sales Taxes <sup>7</sup>	749	345	54	350	579	170	-0.215
Local Gross Earnings Taxes	186			186	114	72	-0.232
<b>Total Local Taxes</b>	<b>\$11,455</b>	<b>\$5,806</b>	<b>\$132</b>	<b>\$5,517</b>	<b>\$9,309</b>	<b>\$2,145</b>	<b>-0.247</b>
<b>Total State and Local Taxes</b>	<b>\$41,977</b>	<b>\$27,250</b>	<b>\$1,469</b>	<b>\$13,260</b>	<b>\$35,635</b>	<b>\$6,342</b>	<b>-0.024</b>

<sup>1</sup> Includes occupation tax on taconite, iron, and other ores

<sup>2</sup> Includes resorts, railroads, and minerals

<sup>3</sup> Second homes are 20% of residential non-homestead property

<sup>4</sup> Includes timber

<sup>5</sup> Apartments, 80% of residential non-homestead property, & rented mobile homes

<sup>6</sup> Includes wind and solar energy production taxes

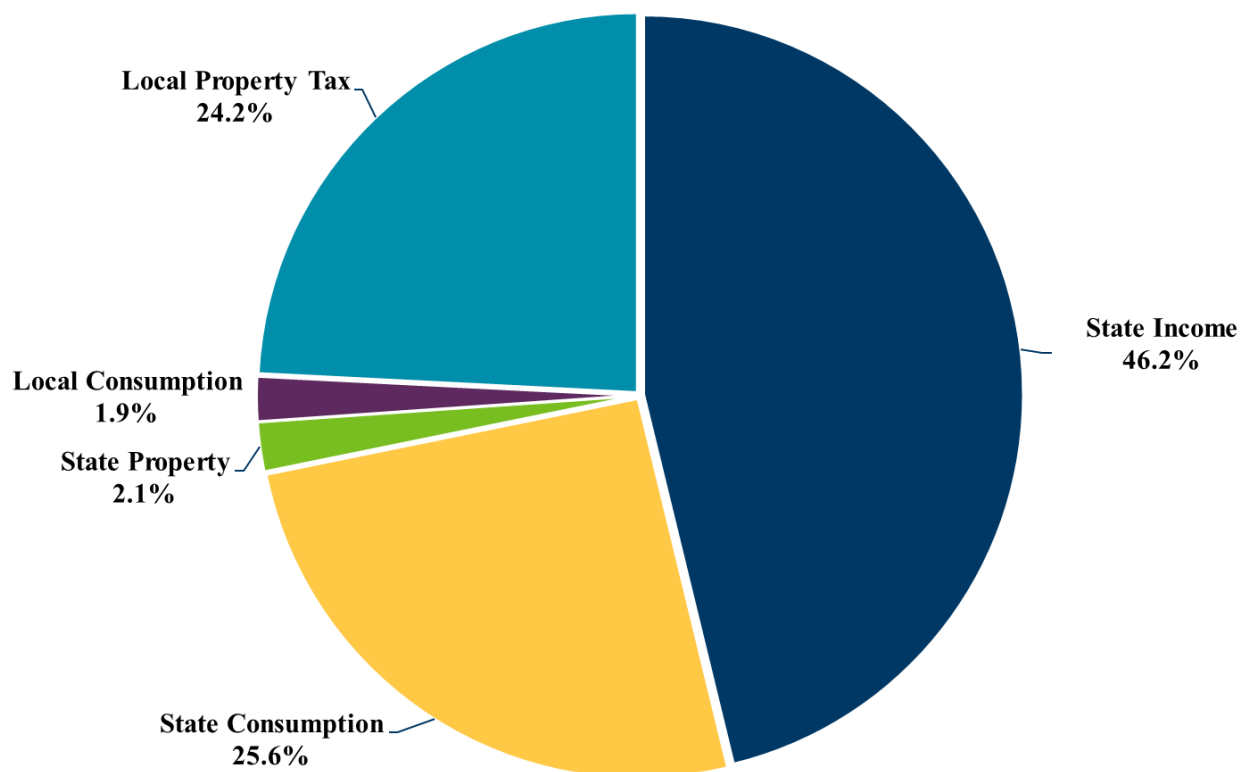
<sup>7</sup> Includes lodging and other selective sales taxes

The “after shifting” columns in *Table 2-1* show 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 93.5 percent of total collections. Minnesota residents bear a smaller share of the general sales tax burden (81.0 percent). At the other end of the scale, Minnesotans are estimated to bear only 16.9 percent of the burden of property taxes on industrial property. Minnesotans are estimated to bear 63.2 percent of the burden of the total tax imposed on business.<sup>15</sup>

*Table 2-1* assigns each tax to one of three broad categories. Each tax is either a tax on income, a tax on consumption, or a tax on property. *Figure 2-1* shows each category’s share of the total state and local tax burden for Minnesotans. It also distinguishes state taxes from local taxes. About 73.9 percent of the total burden is from state taxes; the other 26.1 percent is from local taxes. By tax category, 46.2 percent of the burden is from taxes on income, 26.3 percent from taxes on property, and 27.5 percent from taxes on consumption.

Local taxes are primarily taxes on property, with a small but growing portion on consumption (local sales taxes). State taxes are primarily on income or consumption, with a relatively small portion on property.

**Figure 2-1**  
**2021 Distribution of State and Local Tax Burdens**  
**by Type of Tax and Level of Government**



<sup>15</sup> Other than the individual income tax, estate tax, gambling tax, MinnesotaCare tax, and property tax on residential properties (not including rental), all taxes have some part imposed directly on businesses.

## Taxes by Population 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 1<sup>st</sup> decile includes the 10 percent of households with the lowest incomes and the 10<sup>th</sup> decile includes the 10 percent of households with the highest incomes. There were 293,739 households in each population decile. The total burden by tax type for each decile is summarized in *Table 2-2*. The table also shows the tax burden on the top 5 percent and top 1 percent of households.

Taxpayers in the top decile (incomes of \$183,476 and over) bore 43.3 percent of the total tax burden while having 44.7 percent of total income. By tax type, taxpayers in the top decile paid 63.8 percent of the individual income tax, 27.7 percent of the consumer sales tax, 20.6 percent of the gross homeowner local property tax (before property tax refunds), and 34.6 percent of business taxes.<sup>16</sup>

In contrast, taxpayers in the bottom decile (incomes of \$15,544 and below) bore 2.0 percent of the total tax burden and received 1.0 percent of total income. The two bottom-decile taxpayers had a negative net individual income tax burden due to refundable tax credits. First-decile households paid 3.8 percent of consumer sales taxes, 2.0 percent of gross homeowner property tax, and 3.9 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 may 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.

Effective tax rates by population decile and tax type are reported in *Table 2-3*. The effective tax rate for all Minnesota state and local taxes combined is shown in the last column in the lower section of the table. For all households combined, the effective tax rate is 11.9 percent. Effective tax rates decrease from 13.4 percent of income in the 2<sup>nd</sup> decile to 12.5 percent in the 3<sup>rd</sup> decile, remains at about 12.0 percent in the 4<sup>th</sup> through 8<sup>th</sup> deciles before falling to 11.6 percent and 11.5 percent in the 9<sup>th</sup> and 10<sup>th</sup> deciles respectively. For the top 5 percent of households, the effective tax rate is 11.6 percent, falling to 11.5 percent of income for the top 1 percent.

---

<sup>16</sup> 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 2-2

## 2021 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	\$15,544 & Under	293,739	\$3,059,682	-\$13,418	\$65,050	\$153,365	\$94,793	\$248,158	-\$48,702	\$14,440	\$100,437	\$73,861	\$11,504
Second	\$15,545 - \$24,961	293,739	5,929,307	-9,265	70,661	188,346	100,132	288,477	-79,087	12,206	105,550	93,812	8,807
Third	\$24,962 - \$35,168	293,739	8,778,138	52,380	84,271	217,388	117,032	334,420	-104,231	14,910	113,196	121,206	11,554
Fourth	\$35,169 - \$45,808	293,739	11,892,548	169,250	98,633	246,099	134,731	380,830	-108,110	17,717	118,760	145,287	13,929
Fifth	\$45,809 - \$58,014	293,739	15,182,617	343,362	111,821	277,377	150,528	427,904	-125,458	20,358	122,993	179,938	15,441
Sixth	\$58,015 - \$73,668	293,739	19,137,305	558,486	127,329	318,478	170,199	488,677	-123,273	23,583	127,787	207,217	17,916
Seventh	\$73,669 - \$95,360	293,739	24,624,218	853,550	157,636	391,021	210,616	601,636	-111,976	30,069	138,931	251,461	23,334
Eighth	\$95,361 - \$127,780	293,739	32,507,176	1,260,705	200,151	495,862	265,300	761,162	-83,130	39,407	157,405	321,949	30,264
Ninth	\$127,781 - \$183,475	293,739	44,965,720	2,035,053	253,682	614,479	329,265	943,744	-16,110	51,159	174,501	390,152	39,254
Tenth	\$183,476 & Over	293,739	134,097,107	9,236,499	594,172	1,112,660	799,519	1,912,179	-1,984	159,847	206,095	666,479	118,116
Totals		2,937,388	\$300,173,817	\$14,486,602	\$1,763,406	\$4,015,072	\$2,372,115	\$6,387,187	-\$802,060	\$383,695	\$1,365,655	\$2,451,361	\$290,120
Top 5%	Over \$266,196	146,980	\$102,038,490	\$7,558,501	\$424,187	\$738,372	\$579,933	\$1,318,306	-\$1,075	\$122,168	\$114,905	\$435,256	\$92,562
Top 1%	Over \$668,416	29,386	57,272,945	4,666,976	203,900	323,872	290,169	614,040	-304	68,332	34,495	169,830	50,065

Population 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	\$101,568	\$40,036	\$27,613	\$67,649	\$174,765	\$74,346	\$28,592
Second	139,681	63,626	15,816	79,442	223,056	48,457	33,889
Third	235,023	87,881	19,525	107,407	348,856	77,963	39,850
Fourth	317,693	91,550	24,411	115,961	442,233	94,922	45,748
Fifth	442,605	95,313	26,784	122,096	579,872	97,987	51,304
Sixth	559,122	83,119	29,440	112,559	694,438	127,249	58,837
Seventh	660,493	21,742	39,765	61,507	746,438	166,563	71,817
Eighth	811,684	12,199	52,931	65,130	910,738	220,232	90,054
Ninth	772,980	7,521	64,966	72,487	895,085	322,501	111,570
Tenth	1,048,909	4,217	296,904	301,121	1,496,293	804,493	230,411
Totals	\$5,089,758	\$507,203	\$598,155	\$1,105,358	\$6,511,774	\$2,034,714	\$762,071
Top 5%	\$616,925	\$1,842	\$247,545	\$249,387	\$971,243	\$643,070	\$158,670
Top 1%	177,097	438	155,195	155,633	376,644	312,270	73,031

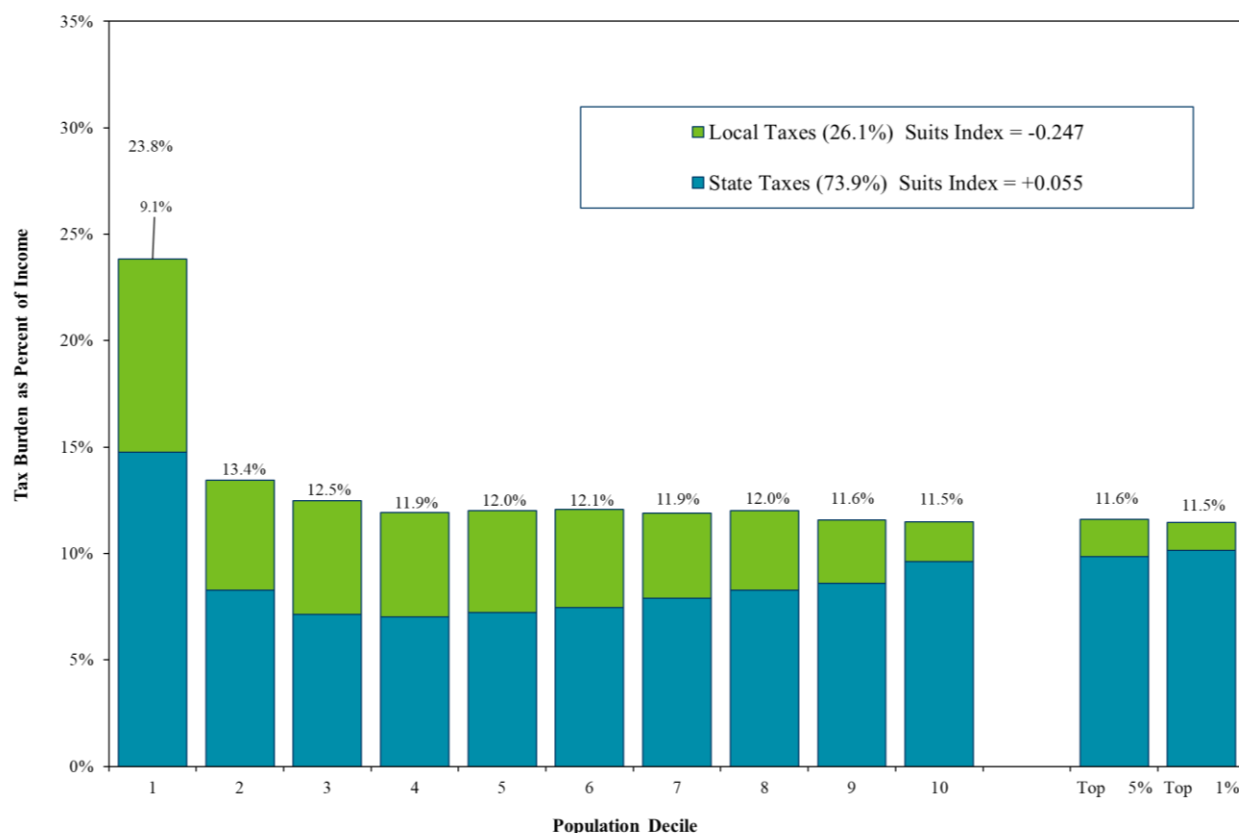
Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
\$277,703	\$261,975	\$189,355	\$451,330	\$729,033
305,403	294,789	196,373	491,162	796,565
466,669	394,920	232,786	627,706	1,094,375
582,902	565,562	270,733	836,295	1,419,197
729,163	792,318	304,042	1,096,360	1,825,523
880,524	1,082,429	345,292	1,427,721	2,308,245
984,818	1,515,380	429,261	1,944,641	2,929,460
1,221,024	2,144,082	543,830	2,687,912	3,908,935
1,329,156	3,188,963	682,472	3,871,435	5,200,591
2,531,197	11,201,996	1,689,408	12,891,404	15,422,601
\$9,308,559	\$21,442,413	\$4,883,553	\$26,325,966	\$35,634,524
\$1,772,983	\$8,832,784	\$1,232,026	\$10,064,810	\$11,837,793
761,945	5,188,856	618,478	5,807,334	6,569,280

<sup>1</sup> Includes seasonal recreational residential (cabins) and second homes.<sup>2</sup> Includes taconite production tax and wheelage taxes.

## State Taxes Compared to Local Taxes

As shown in *Figure 2-2*, the distribution of the burden of state taxes differs greatly from that of local taxes. The effective state tax rate rises with income (from the 4<sup>th</sup> to the 10<sup>th</sup> decile) and continues to rise for the top 5 and top 1 percent. In contrast, the effective local tax rate falls steadily as income rises.

**Figure 2-2**  
**Effective Tax Rates by Population Decile,**  
**State Taxes Compared to Local Taxes**



The Suits index for state taxes is +0.055, meaning that (as seen in *Figure 2-2*) state taxes are progressive. In contrast, the Suits index for local taxes is -0.247 (regressive). When combined, the Suits index for all Minnesota state and local taxes is -0.024 (regressive).

A tax is said to be regressive if effective tax rates fall with income. A regressive tax claims a smaller share of household income as income rises. If effective tax rates rise with income, a tax is said to be progressive. A progressive tax claims an increasing share of household income as income rises. If the effective tax rate remains constant as income rises, the tax is said to be proportional.

The Suits index is a useful summary measure of regressivity or progressivity. A regressive tax has a negative Suits index (between 0 and -1). A progressive tax has a positive Suits index (between 0 and +1). The more regressive or progressive, the further the Suits index will be from zero. (See *Appendix C* for a more complete description of the Suits index.)

Table 2-3

## 2021 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	\$15,544 & Under	293,739	\$3,059,682	- 0.4%	2.1%	5.0%	3.1%	8.1%	- 1.6%	0.5%	3.3%	2.4%	0.4%
Second	\$15,545 - \$24,961	293,739	5,929,307	- 0.2%	1.2%	3.2%	1.7%	4.9%	- 1.3%	0.2%	1.8%	1.6%	0.1%
Third	\$24,962 - \$35,168	293,739	8,778,138	0.6%	1.0%	2.5%	1.3%	3.8%	- 1.2%	0.2%	1.3%	1.4%	0.1%
Fourth	\$35,169 - \$45,808	293,739	11,892,548	1.4%	0.8%	2.1%	1.1%	3.2%	- 0.9%	0.1%	1.0%	1.2%	0.1%
Fifth	\$45,809 - \$58,014	293,739	15,182,617	2.3%	0.7%	1.8%	1.0%	2.8%	- 0.8%	0.1%	0.8%	1.2%	0.1%
Sixth	\$58,015 - \$73,668	293,739	19,137,305	2.9%	0.7%	1.7%	0.9%	2.6%	- 0.6%	0.1%	0.7%	1.1%	0.1%
Seventh	\$73,669 - \$95,360	293,739	24,624,218	3.5%	0.6%	1.6%	0.9%	2.4%	- 0.5%	0.1%	0.6%	1.0%	0.1%
Eighth	\$95,361 - \$127,780	293,739	32,507,176	3.9%	0.6%	1.5%	0.8%	2.3%	- 0.3%	0.1%	0.5%	1.0%	0.1%
Ninth	\$127,781 - \$183,475	293,739	44,965,720	4.5%	0.6%	1.4%	0.7%	2.1%	0.0%	0.1%	0.4%	0.9%	0.1%
Tenth	\$183,476 & Over	293,739	134,097,107	6.9%	0.4%	0.8%	0.6%	1.4%	0.0%	0.1%	0.2%	0.5%	0.1%
Totals		2,937,388	\$300,173,817	4.8%	0.6%	1.3%	0.8%	2.1%	- 0.3%	0.1%	0.5%	0.8%	0.1%
Top 5%	Over \$266,196	146,980	\$102,038,490	7.4%	0.4%	0.7%	0.6%	1.3%	0.0%	0.1%	0.1%	0.4%	0.1%
Top 1%	Over \$668,416	29,386	57,272,945	8.1%	0.4%	0.6%	0.5%	1.1%	0.0%	0.1%	0.1%	0.3%	0.1%

Population Decile	Residential Local Property Taxes					Nonresidential Local Property Taxes <sup>2</sup>	Other Local Taxes
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total <sup>1</sup>		
First	3.3%	1.3%	0.9%	2.2%	5.7%	2.4%	0.9%
Second	2.4%	1.1%	0.3%	1.3%	3.8%	0.8%	0.6%
Third	2.7%	1.0%	0.2%	1.2%	4.0%	0.9%	0.5%
Fourth	2.7%	0.8%	0.2%	1.0%	3.7%	0.8%	0.4%
Fifth	2.9%	0.6%	0.2%	0.8%	3.8%	0.6%	0.3%
Sixth	2.9%	0.4%	0.2%	0.6%	3.6%	0.7%	0.3%
Seventh	2.7%	0.1%	0.2%	0.2%	3.0%	0.7%	0.3%
Eighth	2.5%	0.0%	0.2%	0.2%	2.8%	0.7%	0.3%
Ninth	1.7%	0.0%	0.1%	0.2%	2.0%	0.7%	0.2%
Tenth	0.8%	0.0%	0.2%	0.2%	1.1%	0.6%	0.2%
Totals	1.7%	0.2%	0.2%	0.4%	2.2%	0.7%	0.3%
Top 5%	0.6%	0.0%	0.2%	0.2%	1.0%	0.6%	0.2%
Top 1%	0.3%	0.0%	0.3%	0.3%	0.7%	0.5%	0.1%

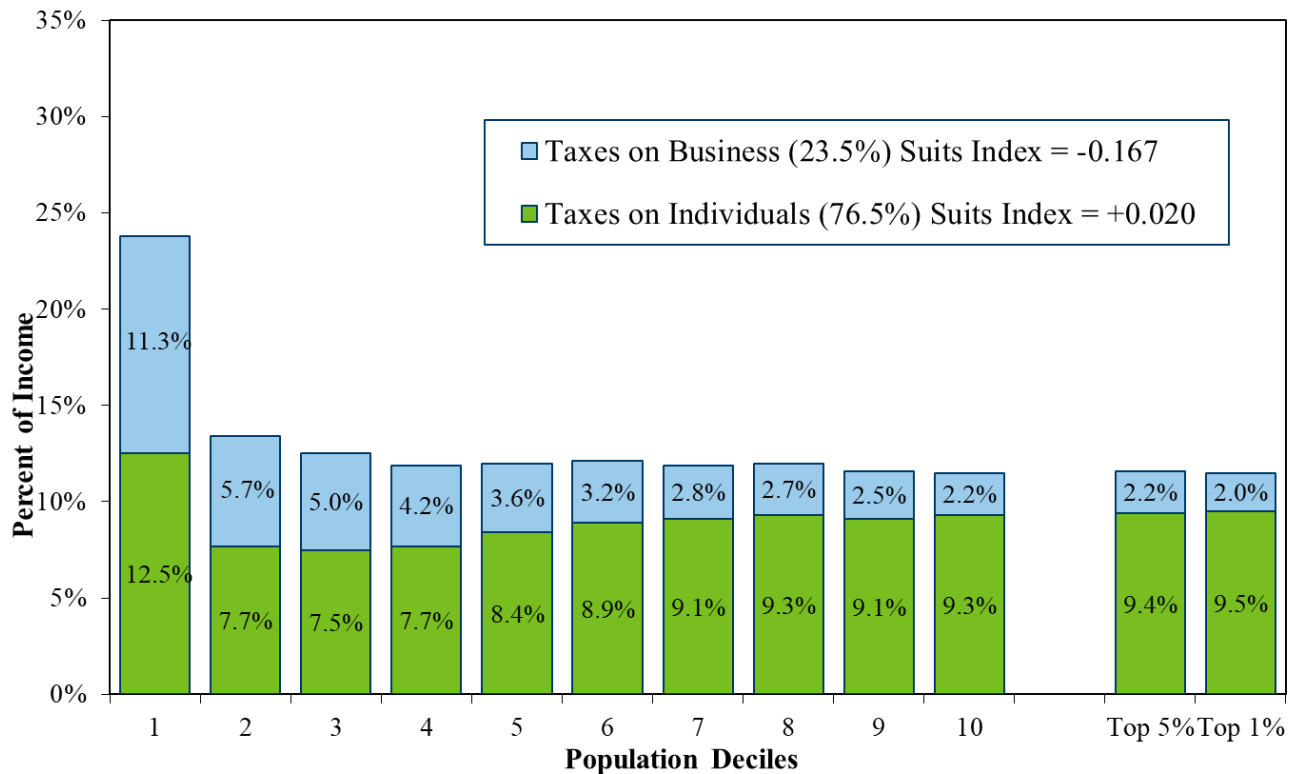
Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
9.1%	8.6%	6.2%	14.8%	23.8%
5.2%	5.0%	3.3%	8.3%	13.4%
5.3%	4.5%	2.7%	7.2%	12.5%
4.9%	4.8%	2.3%	7.0%	11.9%
4.8%	5.2%	2.0%	7.2%	12.0%
4.6%	5.7%	1.8%	7.5%	12.1%
4.0%	6.2%	1.7%	7.9%	11.9%
3.8%	6.6%	1.7%	8.3%	12.0%
3.0%	7.1%	1.5%	8.6%	11.6%
1.9%	8.4%	1.3%	9.6%	11.5%
3.1%	7.1%	1.6%	8.8%	11.9%
1.7%	8.7%	1.2%	9.9%	11.6%
1.3%	9.1%	1.1%	10.1%	11.5%

<sup>1</sup> Includes seasonal recreational residential (cabins) and second homes.<sup>2</sup> Includes taconite production tax and wheelage taxes.

## Business Taxes Compared to Taxes on Individuals

Figure 2-3 compares taxes on business with taxes paid by individuals. It illustrates that taxes on business are regressive, with effective tax rates falling with income and a Suits index of -0.167. Taxes on individuals are progressive, with effective tax rates rising with income between the 3<sup>rd</sup> and 8<sup>th</sup> deciles before falling slightly in the 9<sup>th</sup> decile, and a Suits index of +0.020.

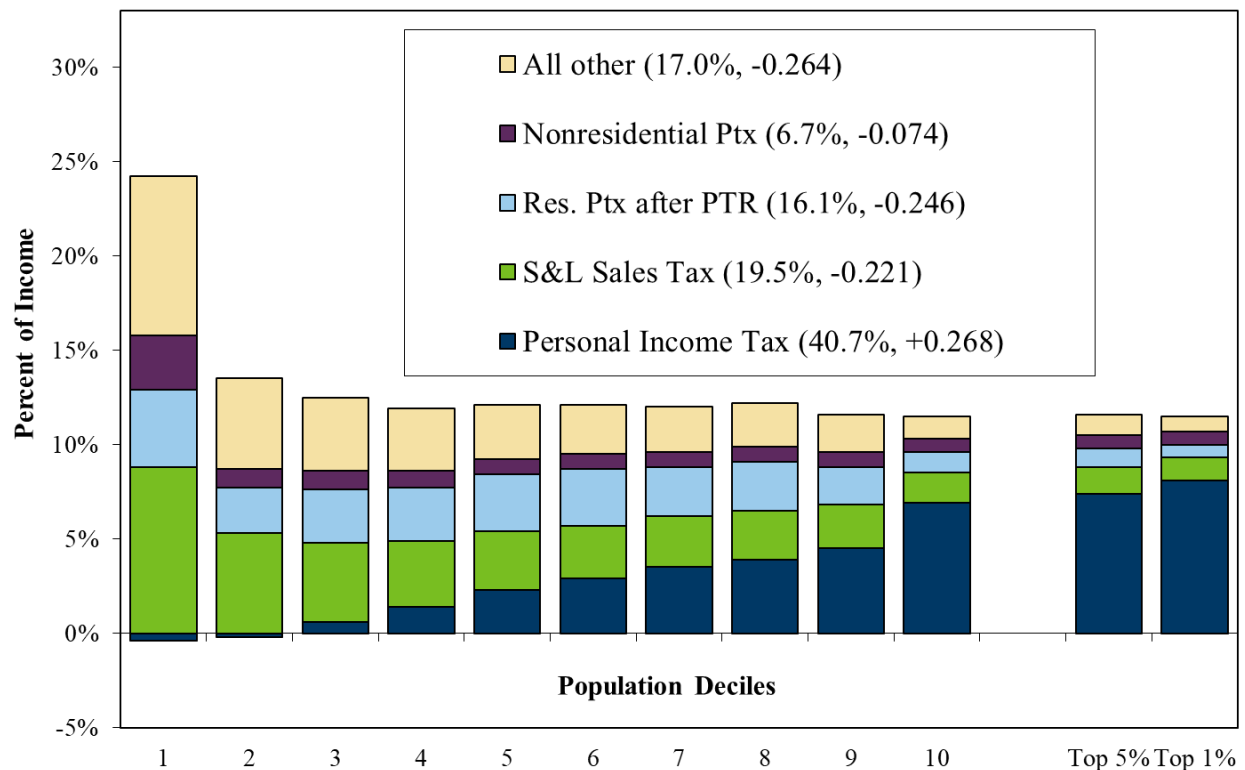
**Figure 2-3**  
**Effective Tax Rates by Population Decile**  
**Business Taxes Compared to Taxes on Individuals**



## Summary of 2021 Tax Burden by Major Tax Type

Figure 2-4 and Table 2-4 summarize how the 2021 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 and local sales tax total includes both the consumer and business portions (and includes the sales tax on motor vehicles). Residential property tax after PTR includes both homeowner and rental property taxes, along with cabins, and nets out the impact of homeowner and renter property tax refunds.

**Figure 2-4**  
**2021 Tax Incidence by Tax Type**



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



**Table 2-4**  
**Effective Tax Rates by Tax Type (2021)**

<b>Population Decile</b>	<b>Personal Income Tax</b>	<b>Residential Property Taxes*</b>	<b>Other Property Taxes</b>	<b>State &amp; Local Sales Taxes</b>	<b>All Other S&amp;L Taxes</b>
<b>First</b>	-0.4%	4.1%	2.9%	8.8%	8.4%
<b>Second</b>	-0.2%	2.4%	1.0%	5.3%	4.8%
<b>Third</b>	0.6%	2.8%	1.0%	4.2%	3.9%
<b>Fourth</b>	1.4%	2.8%	0.9%	3.5%	3.3%
<b>Fifth</b>	2.3%	3.0%	0.8%	3.1%	2.9%
<b>Sixth</b>	2.9%	3.0%	0.8%	2.8%	2.6%
<b>Seventh</b>	3.5%	2.6%	0.8%	2.7%	2.4%
<b>Eighth</b>	3.9%	2.6%	0.8%	2.6%	2.3%
<b>Ninth</b>	4.5%	2.0%	0.8%	2.3%	2.0%
<b>Tenth</b>	6.9%	1.1%	0.7%	1.6%	1.2%
<b>Total</b>	4.8%	1.9%	0.8%	2.3%	2.0%
<b>Top 5%</b>	7.4%	1.0%	0.7%	1.4%	1.1%
<b>Top 1%</b>	8.1%	0.7%	0.7%	1.2%	0.8%
<b>Total Tax Burden</b>	40.7%	16.1%	6.7%	19.5%	17.0%
<b>Suits Index</b>	+0.268	-0.246	-0.074	-0.221	-0.264

\*Residential property taxes are net of property tax refunds.

### ***Individual Income Tax***

The individual income tax accounts for about 40.7 percent of the total state and local tax burden. 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 2-4*, 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, showing the impact of three refundable low-income credits (which can more than offset any income tax liabilities).<sup>17</sup> It rose steadily from 0.6 percent of income for the 3<sup>rd</sup> decile to 6.9 percent for the 10<sup>th</sup> decile. The top 5 percent and 1 percent of households have even higher effective tax rates, at 7.4 and 8.1 percent respectively. Its Suits index of +0.268 reflects its considerable progressivity.

*Figure 2-4* (above) clearly demonstrates the importance of the progressive income tax in offsetting most of the regressivity of other taxes.

<sup>17</sup> For more detail on the impact of these refundable credits on the distribution of the overall tax burden, see *Chapter 4, Section C*.

### ***Residential Property Taxes (After PTR)***

Residential property taxes include the tax on both owned homes and rental property. The burden shown here includes the impact of state property tax refunds for both homeowners and renters. The property tax refunds (\$802 million in 2021) offset 12.3 percent of the residential property tax burden, and the refunds offset a much higher portion in the lowest five deciles. Residential property taxes net of PTR account for about 16.1 percent of the total state and local tax burden.

Effective tax rates rise from 2.4 percent of income in the 2<sup>nd</sup> decile to 3.0 percent of income in the 5<sup>th</sup> and 6<sup>th</sup> deciles before falling to 1.1 percent in the 10<sup>th</sup> decile. The Suits index of -0.246 (regressive) shows that the impact of the sharp drop in the 10<sup>th</sup> decile well outweighs the increasing effective tax rates over the lower deciles.

Although residential property tax burdens (after PTR) are regressive, they are slightly less regressive than “all other taxes.” This is mostly due to the impact of property tax refunds. In their absence, the Suits index for residential property taxes would be -0.302 – much further from that of state and local sales taxes (-0.221).<sup>18</sup>

### ***Nonresidential Property Taxes***

These include commercial and industrial taxes along with taxes on utilities and farm property. Like other business taxes, the incidence of these taxes depends on the extent to which the tax burden is borne by property owners rather than shifted to others through higher prices or lower wages. Incidence models estimate these taxes to be regressive, but less so than sales taxes.<sup>19</sup>

### ***State and Local Sales Taxes***

State and local sales taxes (including the sales tax on motor vehicles) account for 20.0 percent of the total state and local tax burden. In agreement with other incidence studies, this analysis finds the sales tax to be regressive. 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 2021, the effective state and local sales tax rate falls from 8.8 percent in the 2<sup>nd</sup> decile to 1.6 percent in the 10<sup>th</sup> decile. Sales taxes overall are slightly less regressive than property taxes (after PTR), with a Suits index of -0.221.

---

<sup>18</sup> For more detail on the impact of property tax refunds on residential property taxes, see in *Chapter 4, Section C*.

<sup>19</sup> This is less true of the portion of nonresidential property taxes that falls on utility property because more of those taxes are passed along to consumers in higher prices.

## ***Other Taxes***

The “all other taxes” category in *Table 2-4* includes one progressive tax (the estate tax) and many regressive taxes, including excise taxes on motor fuels, tobacco, and alcohol, the motor vehicle registration tax, solid waste management taxes, mortgage and deed taxes, insurance premiums taxes, gambling taxes, and MinnesotaCare taxes. These assorted taxes account for 17.0 percent of Minnesota’s state and local tax burden, and their combined impact is more regressive than state and local sales taxes, with a Suits index of -0.264.

## **Representative Households**

*Table 2-5* presents average tax burdens for households in each decile. For example, in the 6<sup>th</sup> decile (average income \$65,151), the average Minnesota state and local tax burden of \$7,858 includes \$1,767 of property taxes after PTR, \$1,901 of income tax, \$1,084 of state consumer sales tax, \$406 of excise taxes, \$900 of other taxes on individuals, and \$1,800 of taxes on businesses.

*Table 2-5* also shows how demographic characteristics vary across deciles. As incomes rise, the percentage of households who are married rises from 5.0 percent in the 1<sup>st</sup> decile to 86.9 percent in the 10<sup>th</sup> decile. The percentage who are homeowners rises from 13.9 percent in the 1<sup>st</sup> decile to 91.2 percent in the 10<sup>th</sup> decile. The percentage with children rises from 8.9 percent in the 1<sup>st</sup> decile to 47.5 percent in the 10<sup>th</sup> decile.

*Chapter 5* includes similar tables by demographic groups. *Table 5-1* is limited to married couples with children, *Table 5-2* is limited to non-senior married couples without children, *Table 5-3* is limited to single-person households with no children, *Table 5-4* is limited to single seniors, *Table 5-5* is limited to married seniors, and *Table 5-6* is limited to single parents. These tables provide a better understanding of the tax burden for typical taxpayers. They summarize the tax burden for households of the same family type and show how it varies with income. Anyone interested in tax burdens for representative households should use the *Chapter 5* tables rather than *Table 2-5*.

Table 2-5

# Household Characteristics and Average Tax Burden Amounts by Population Decile All Households

Each Decile Contains 293,739 Households

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Number of Households	293,739	293,739	293,739	293,739	293,739	293,739	293,739	293,739	293,739	293,739	2,937,388
Average Household Income	\$10,416	\$20,186	\$29,884	\$40,487	\$51,687	\$65,151	\$83,830	\$110,667	\$153,081	\$456,518	\$102,191
Maximum Household Income	\$15,544	\$24,961	\$35,168	\$45,808	\$58,014	\$73,668	\$95,360	\$127,780	\$183,475	\$839,475,587	\$839,475,587
Percent with Earned Income <sup>1</sup>	40%	47%	65%	76%	80%	79%	81%	85%	89%	90%	73%
Average Earned Income <sup>1</sup>	\$9,659	\$15,127	\$22,868	\$32,063	\$41,448	\$51,784	\$64,645	\$84,199	\$118,396	\$253,770	\$79,464
Homeowners <sup>2</sup>	13.9%	20.7%	26.8%	34.8%	45.9%	56.3%	69.6%	82.5%	88.1%	91.2%	53.0%
Married	5.0%	5.7%	8.3%	12.4%	20.2%	29.9%	46.6%	71.0%	83.4%	86.9%	36.9%
Seniors	21%	26%	25%	24%	24%	28%	29%	27%	21%	21%	25%
Households with Children	8.9%	13.5%	20.5%	22.8%	22.9%	23.9%	26.3%	34.4%	46.4%	47.5%	26.7%
Average Market Value	\$198,497	\$164,442	\$186,070	\$194,573	\$194,910	\$206,915	\$232,073	\$251,888	\$301,009	\$433,834	\$267,150
Average Monthly Rent	\$238	\$461	\$684	\$880	\$1,109	\$1,283	\$1,215	\$1,302	\$1,481	\$1,705	\$738
<b>AVERAGE TAX BURDENS</b>											
Local Property Tax											
All Households											
Total Tax	\$482	\$692	\$1,099	\$1,393	\$1,831	\$2,186	\$2,323	\$2,805	\$2,657	\$3,585	\$1,905
<u>-Property Tax Refund</u>	<u>-\$166</u>	<u>-\$269</u>	<u>-\$355</u>	<u>-\$368</u>	<u>-\$427</u>	<u>-\$420</u>	<u>-\$381</u>	<u>-\$283</u>	<u>-\$55</u>	<u>-\$7</u>	<u>-\$273</u>
Tax after PTR	\$316	\$423	\$744	\$1,025	\$1,404	\$1,767	\$1,941	\$2,522	\$2,602	\$3,578	\$1,632
Renters Only											
Total Tax on Rental Unit	\$594	\$1,254	\$1,729	\$2,261	\$2,785	\$3,218	\$1,416	\$1,112	\$1,175	\$1,340	\$1,594
Renters Share of Tax	228	481	663	867	1,068	1,234	543	426	450	514	611
<u>-Property Tax Refund</u>	<u>-\$172</u>	<u>-\$342</u>	<u>-\$397</u>	<u>-\$418</u>	<u>-\$421</u>	<u>-\$363</u>	<u>-\$80</u>	<u>-\$21</u>	<u>\$0</u>	<u>\$0</u>	<u>-\$210</u>
Tax after PTR	\$56	\$139	\$265	\$449	\$647	\$870	\$463	\$405	\$450	\$514	\$401
Homeowners Only											
Total Tax on Home	\$2,493	\$2,302	\$2,983	\$3,112	\$3,283	\$3,380	\$3,232	\$3,348	\$2,989	\$3,916	\$3,271
<u>-Property Tax Refund</u>	<u>-\$483</u>	<u>-\$583</u>	<u>-\$697</u>	<u>-\$666</u>	<u>-\$679</u>	<u>-\$617</u>	<u>-\$533</u>	<u>-\$341</u>	<u>-\$62</u>	<u>-\$7</u>	<u>-\$374</u>
Homeowners Tax after PTR	\$2,010	\$1,719	\$2,286	\$2,446	\$2,603	\$2,762	\$2,699	\$3,007	\$2,927	\$3,909	\$2,898
State Income Tax	-\$46	-\$32	\$178	\$576	\$1,169	\$1,901	\$2,906	\$4,292	\$6,928	\$31,445	\$4,932
State Sales Tax	\$522	\$641	\$740	\$838	\$944	\$1,084	\$1,331	\$1,688	\$2,092	\$3,788	\$1,367
State Excise Taxes	\$328	\$342	\$365	\$381	\$393	\$406	\$438	\$492	\$540	\$603	\$429
Other Taxes	\$323	\$397	\$511	\$612	\$765	\$900	\$1,081	\$1,392	\$1,724	\$3,187	\$1,089
Business Taxes <sup>3</sup>	\$1,038	\$941	\$1,187	\$1,399	\$1,540	\$1,800	\$2,276	\$2,922	\$3,819	\$9,903	\$2,682
<b>Total State and Local Tax Burden</b>	<b>\$2,482</b>	<b>\$2,712</b>	<b>\$3,726</b>	<b>\$4,831</b>	<b>\$6,215</b>	<b>\$7,858</b>	<b>\$9,973</b>	<b>\$13,308</b>	<b>\$17,705</b>	<b>\$52,504</b>	<b>\$12,131</b>
Effective Tax Rate for all Taxes	23.8%	13.4%	12.5%	11.9%	12.0%	12.1%	11.9%	12.0%	11.6%	11.5%	11.9%

<sup>1</sup>Earned income includes wage and self-employment income.

<sup>2</sup>Homeowners include farm homesteads.

<sup>3</sup>For this table and those in Chapter 5 only, Business Taxes do not include the share of Rental Property Taxes borne by the renter.

## Minnesota's Diversified Tax Portfolio in 2021

The state and local tax structure should be viewed as an integrated system. Minnesota's diversified tax portfolio includes many taxes, and it is important to consider the system as a whole rather than focusing on just a single part. This study helps focus attention on the system as a whole.

The right-hand column of *Table 2-1* reports the Suits index for each tax. The Suits index for the overall state and local tax system (-0.024) is a weighted average of the Suits indexes for each of the individual taxes. In that calculation, each tax's weight is that tax's share of the total burden. As a result, the overall Suits index is most affected by the taxes with the largest burden, though a smaller tax that is very progressive (such as the estate tax) or very regressive (such as the cigarette tax) can also have a substantial impact.

*Figure 2-5* provides a visual presentation of the Suits indexes for each of the individual tax types. The magnitude of each tax's burden is represented by the size and height of the circle, and the circles are arranged by Suits index on a line with values between -1 (most regressive) and +1 (most progressive).

Only three circles are located to the right of zero. The individual income tax and the estate tax are progressive taxes. The property tax refunds circle is also on the far-right side of the figure because their impact is highly progressive.<sup>20</sup> Two other tax categories (mortgage and deed taxes and the property tax on cabins and second homes) are the least regressive of the remaining taxes, with Suits indexes of -0.028 and -0.019, respectively.

Homeowner property taxes and the sales tax are among a larger group of taxes with Suits indexes between -0.314 and -0.226. Even more regressive taxes (with Suits indexes between -0.331 and -0.429) include the property tax on rental housing, the MinnesotaCare taxes, the motor fuels excise tax, taxes on insurance premiums, and solid waste management taxes in no particular order. The two most regressive taxes (Suits indexes of -0.519 and -0.590) are the lawful gambling tax and the cigarette and tobacco excise taxes.

Minnesota's income tax, property tax refunds, and estate tax are effective in offsetting almost all of the regressivity of other taxes. The full portfolio (with a Suits index of -0.024) is less regressive than almost any of the other tax types.

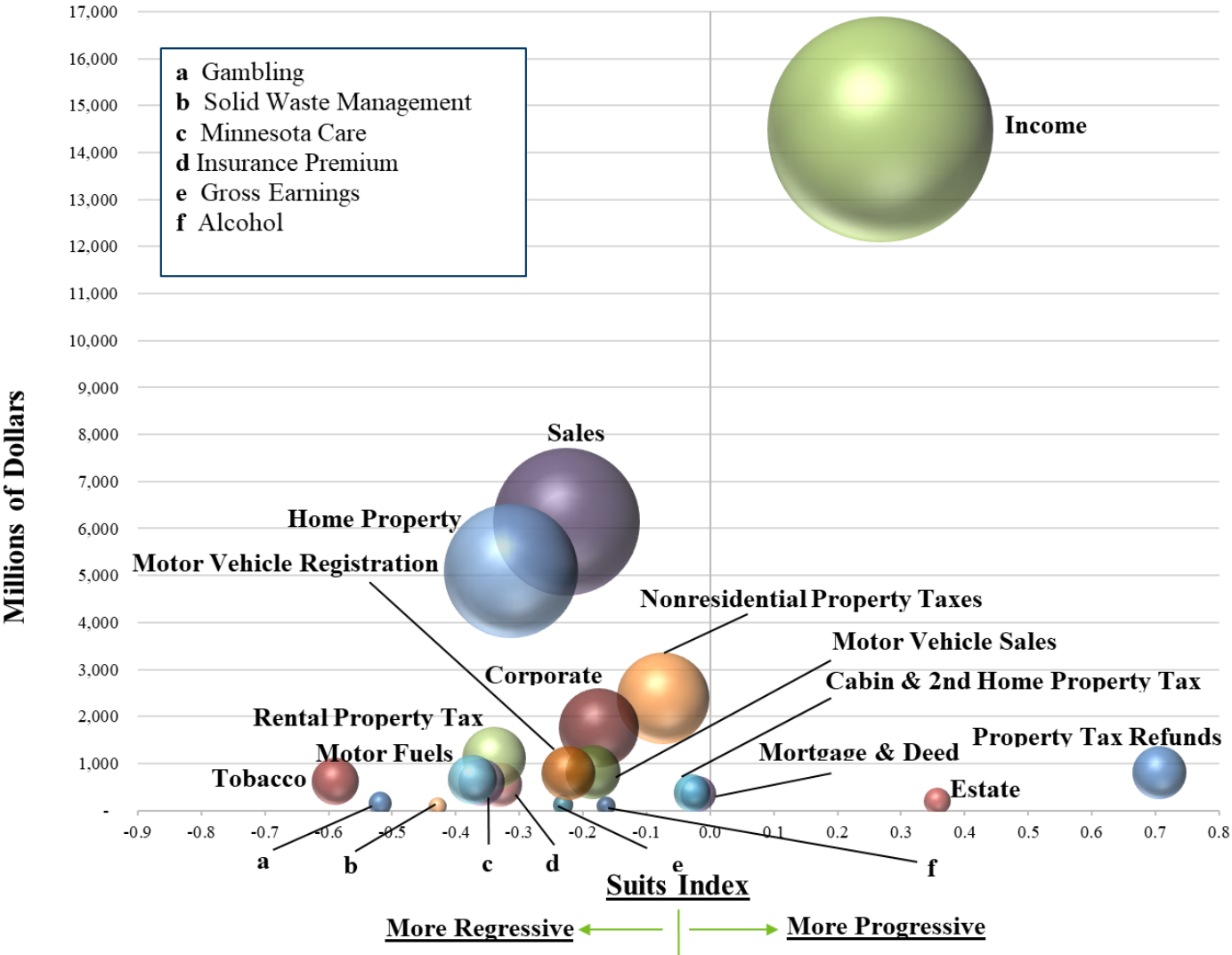
The overall tax structure can be made more or less regressive by either (1) changing the mix of taxes in the tax portfolio or (2) reducing the regressivity of a particular tax by changing the tax base or (in some cases) adjusting tax rates. On *Figure 2-5*, the first option (changing the tax mix) would change the size of the circles; the second would move the circle representing that tax either to the right or to the left. For example, increasing the sales tax rate would make the sales tax larger while leaving its regressivity unchanged. The sales tax circle would become larger and move upward, and the overall Suits index for the full tax portfolio would become more negative. Alternatively, raising

---

<sup>20</sup> Technically the refunds are negative taxes, but their placement on *Figure 2-5* accurately reflects their impact on overall progressivity and the overall Suits index.

the top rate on the income tax would shift the income tax circle to the right (and increase its size), and the full portfolio's Suits index would become less regressive.

**Figure 2-5**  
**Dollars of Tax Burden and Suits Index**  
**by Type of Tax (2021)**



Tax law changes are not the only reason the tax portfolio changes. Economic growth by itself will change the portfolio mix because some taxes (most notably the income tax) are more responsive to income growth than other taxes. Changes in the distribution of income can also modify the size and location of some of the circles in *Figure 2-5*. The Suits index will change from year to year even if there are no changes in tax law. That was particularly true in 2021, when there were significant changes to the distribution of income.

Choosing the correct tax portfolio for Minnesota requires a weighing of several competing goals. Taxes differ in many ways other than how their burden is distributed by income class. Taxes also differ in their impact on revenue stability over the short-term business cycle, in how their revenues respond to longer-run economic growth, in administrative complexity, and in their impact on Minnesota's competitiveness. In considering any of those goals, it is helpful to look at the tax system as a diversified portfolio.<sup>21</sup>

---

<sup>21</sup> For an analysis of applying the portfolio approach to the goals of revenue stability and growth, see the report of the Budget Trends Study Commission (January 12, 2009), available on the Minnesota Management and Budget website.

## Chapter 3: Projected Effects of Law Changes

### Effects of the 2023 Tax Law Changes

Previous reports have included projected results for a future tax year to provide a more current look at Minnesota's tax system, incorporating any tax law changes and the latest economic forecast. Since 2021 was an unusual year, projections based on data from 2021 are likely to be misleading. For example, wage income for many households dropped sharply in 2021 as many Minnesotans were laid off during the pandemic, while unemployment benefits increased to over \$5 billion. However, the loss of wages was not uniform. As seen in *Tables 3-1* and *3-2*, wages actually grew at, or more than, 10 percent between 2018-2021 in the top three deciles, with the largest gains in the 9<sup>th</sup> decile. Most households also received Economic Impact Payments from the federal government in 2021, which were based on income and household size. Because of the income limits, few households in the 10<sup>th</sup> decile received the payments. Capital gains income also grew considerably in 2021, with the gains concentrated in the top deciles.

The pandemic also affected the portion of state taxes that is borne by nonresidents. For example, the nonresident share of the general sales and use tax dropped from 5.3 percent in 2018 to 2.7 percent in 2021, likely due to travel restrictions. There were similar effects on other excise taxes.

While it is possible to adjust the total amount of wages, unemployment benefits, and capital gains to reflect the current economic forecast, adjusting the distribution of income is more difficult. As a result, projections based on 2021 will be distorted because of the unusual patterns of income in that year.

Projections are also uncertain because we do not yet know whether the effects of the pandemic will continue in future years or revert to their pre-2020 norm. While some changes are certainly temporary, like unemployment, others may reflect long-term shifts in behavior or income.

For these reasons, this report does not include tax incidence projections. However, significant changes to the tax system were enacted in 2023 that will change the incidence of taxes going forward. The following is a brief summary of the most significant tax law changes and their likely impact on the tax system. There is some uncertainty in these projections since they are based on the 2019 incidence database and the November 2023 economic forecast. The actual incidence in future years will depend on the distribution of income as well as changes to the tax system.



Table 3-1

2018

## Population Deciles - Household Income by Category, All Individuals

Decile	Wages	Business	Retirement	Investment	Capital Gains	Unemployment	Other	Total Income
First	\$1,277,485,536	(\$764,553,322)	\$1,260,609,743	\$108,438,917	\$160,036,043	\$20,309,798	(\$1,267,648,232)	\$794,678,482
Second	\$2,497,037,406	\$219,613,156	\$1,689,422,653	\$55,306,819	\$22,773,849	\$34,657,479	\$215,398,946	\$4,734,210,307
Third	\$4,577,740,865	\$282,710,743	\$2,039,011,133	\$70,096,727	\$40,690,164	\$59,635,826	\$89,146,201	\$7,159,031,659
Fourth	\$6,728,123,716	\$372,986,229	\$2,236,950,368	\$109,433,504	\$73,103,291	\$52,323,606	\$158,054,112	\$9,730,974,827
Fifth	\$8,625,942,728	\$381,709,266	\$3,050,174,976	\$157,487,707	\$111,027,509	\$64,648,424	\$248,959,342	\$12,639,949,952
Sixth	\$10,617,210,195	\$368,320,756	\$4,317,942,045	\$245,593,207	\$208,392,311	\$62,533,126	\$390,582,026	\$16,210,573,667
Seventh	\$13,540,573,221	\$682,513,377	\$5,376,058,106	\$399,636,383	\$295,386,893	\$85,662,872	\$628,718,371	\$21,008,549,223
Eighth	\$18,091,728,251	\$1,030,704,341	\$6,447,046,112	\$499,810,572	\$497,493,144	\$95,761,565	\$924,022,755	\$27,586,566,740
Ninth	\$25,464,189,042	\$1,662,161,833	\$6,877,752,798	\$817,444,163	\$894,104,525	\$72,073,872	\$1,910,908,706	\$37,698,634,939
Tenth	\$54,965,363,418	\$15,765,227,911	\$14,354,911,729	\$4,978,088,123	\$10,364,835,781	\$49,228,711	\$4,436,769,226	\$104,914,424,899
All	\$146,385,394,378	\$20,001,394,289	\$47,649,879,664	\$7,441,336,123	\$12,667,843,509	\$596,835,279	\$7,734,911,453	\$242,477,594,695

Table 3-2

## 2021 Population Deciles - Household Income by Category, All Individuals

Decile	Wages	Business	Retirement	Investment	Capital Gains	Unemployment	EIP	Other	Total Income
First	\$1,219,490,557	(\$739,244,240)	\$990,234,107	\$65,924,516	\$158,608,283	\$105,262,927	\$695,325,740	(\$473,320,226)	\$2,022,281,664
Second	\$2,147,164,729	\$173,787,945	\$1,910,548,092	\$38,899,366	\$43,320,620	\$589,362,268	\$749,570,899	\$276,652,634	\$5,929,306,552
Third	\$4,275,450,831	\$277,612,509	\$2,169,544,358	\$75,510,332	\$69,411,362	\$815,566,264	\$844,676,170	\$250,365,877	\$8,778,137,703
Fourth	\$6,944,222,586	\$319,712,542	\$2,518,138,936	\$99,959,203	\$132,099,453	\$687,173,094	\$904,111,643	\$287,130,679	\$11,892,548,135
Fifth	\$9,370,929,343	\$445,377,177	\$3,107,573,211	\$127,017,386	\$185,955,689	\$482,381,925	\$968,923,955	\$494,458,238	\$15,182,616,925
Sixth	\$11,609,658,175	\$420,282,087	\$4,317,345,311	\$246,148,093	\$344,925,994	\$483,985,250	\$1,023,596,538	\$691,363,559	\$19,137,305,009
Seventh	\$14,692,851,005	\$847,111,104	\$5,774,468,307	\$418,973,986	\$620,426,751	\$420,893,410	\$1,046,187,998	\$803,305,358	\$24,624,217,918
Eighth	\$19,973,353,487	\$1,375,906,515	\$6,622,117,644	\$509,983,077	\$844,564,999	\$480,457,744	\$1,265,310,886	\$1,435,481,470	\$32,507,175,824
Ninth	\$29,987,612,493	\$1,816,251,899	\$6,933,398,926	\$698,792,009	\$1,705,158,094	\$345,922,999	\$1,257,414,733	\$2,221,168,873	\$44,965,720,026
Tenth	\$63,925,809,888	\$21,503,753,104	\$12,161,041,454	\$6,014,047,517	\$25,094,193,750	\$182,937,656	\$87,449,772	\$5,127,873,921	\$134,097,107,063
All	\$164,146,543,094	\$26,440,550,642	\$46,504,410,347	\$8,295,255,485	\$29,198,664,996	\$4,593,943,537	\$8,842,568,334	\$11,114,480,384	\$299,136,416,818

**Table 3-3****Percentage Change in Household Income by Category from 2018 to 2021, All Individuals**

<b>Decile</b>	<b>Wages</b>	<b>Business</b>	<b>Retirement</b>	<b>Investment</b>	<b>Capital Gains</b>	<b>Unemployment</b>	<b>EIP</b>	<b>Other</b>	<b>Total Income</b>
<b>First</b>	-4.5%	-3.3%	-21.4%	-39.2%	-0.9%	418.3%	NA	-62.7%	154.5%
<b>Second</b>	-14.0%	-20.9%	13.1%	-29.7%	90.2%	1600.5%	NA	28.4%	25.2%
<b>Third</b>	-6.6%	-1.8%	6.4%	7.7%	70.6%	1267.6%	NA	180.8%	22.6%
<b>Fourth</b>	3.2%	-14.3%	12.6%	-8.7%	80.7%	1213.3%	NA	81.7%	22.2%
<b>Fifth</b>	8.6%	16.7%	1.9%	-19.3%	67.5%	646.2%	NA	98.6%	20.1%
<b>Sixth</b>	9.3%	14.1%	0.0%	0.2%	65.5%	674.0%	NA	77.0%	18.1%
<b>Seventh</b>	8.5%	24.1%	7.4%	4.8%	110.0%	391.3%	NA	27.8%	17.2%
<b>Eighth</b>	10.4%	33.5%	2.7%	2.0%	69.8%	401.7%	NA	55.4%	17.8%
<b>Ninth</b>	17.8%	9.3%	0.8%	-14.5%	90.7%	380.0%	NA	16.2%	19.3%
<b>Tenth</b>	16.3%	36.4%	-15.3%	20.8%	142.1%	271.6%	NA	15.6%	27.8%
<b>All</b>	<b>12.1%</b>	<b>32.2%</b>	<b>-2.4%</b>	<b>11.5%</b>	<b>130.5%</b>	<b>669.7%</b>	<b>NA</b>	<b>43.7%</b>	<b>23.4%</b>

## **Individual Income Tax**

Among the biggest changes to the individual income tax were:

- Created a new child credit, combined with a modified working family credit.
- Increased the phase-out of the standard deduction and itemized deductions.
- Increased the Social Security subtraction and enacted a public pension subtraction.
- Replaced the renter's property tax refund with an income tax credit.
- Created a 1% tax on net investment income over \$1 million.

Taken together, changes to the individual income tax will decrease tax revenue by an estimated \$896.8 million in tax year 2024, reducing the tax burden on Minnesota residents by \$900.3 million. The new child and working family credit has the largest impact, reducing revenue by \$398.7 million, with \$392.5 million borne by Minnesota residents. The net investment tax and changes to the standard/itemized deduction phase-out will increase total tax revenue by \$209.7 million, with \$194.2 million borne by Minnesota residents. Overall, the changes are expected to increase the progressivity of the tax system.

Moving the renter's property tax refund to the individual income tax will have little effect on the overall incidence of the tax system, except to the extent that more eligible people may claim the credit because it is on the income tax forms. However, it will increase the progressivity of the income tax while making property tax net of refunds more regressive. This is more a shift in presentation than an actual change. The tax benefit to renters will remain the same or slightly increase. It will simply be included with the income tax rather than property tax refunds.

## **Corporate Franchise Tax**

The most significant changes to the corporate franchise tax were:

- Repealed the subtraction for global intangible income.
- Reduced the limit on net operating losses from 80% to 70% of income.
- Reduced the dividend received deduction rates.
- Extended the historic rehabilitation credit.

Changes to the corporate franchise tax will increase tax revenue by an estimated \$278.2 million in 2024. Tax burdens for Minnesota residents will increase by an estimated \$201.6 million. The changes will make the tax system more regressive.

## **State Sales and Excise Taxes**

- Enacted several targeted sales tax exemptions.
- Increased the motor vehicle registration tax.
- Increased the motor vehicle sales tax rate to 6.875%.
- Enacted a retail delivery fee of \$0.50 per transaction of at least \$100.
- The motor fuels tax will be adjusted annually for inflation.
- Enacted a gross receipts tax on sales of cannabis.

Changes to the state sales tax will reduce revenue by \$3.2 million, lowering the tax burden on Minnesota residents by \$2.8 million. Changes to the motor vehicle registration tax will increase revenue by \$117.2 million. The net impact on Minnesota residents is estimated to be \$112.4 million. The retail delivery fee will increase collections by \$80.0 million, with \$75.5 million borne by Minnesota residents. The cannabis tax will increase revenue by \$26.7 million, with \$24.0 million borne by Minnesota residents. The state sales tax on cannabis will increase revenue by \$12.1 million with \$10.8 million borne by Minnesota residents. Overall changes to sales and excise taxes will make the tax system more regressive.

## **Gambling Taxes**

- Lowered all combined net receipts tax rates.

The changes to gambling taxes will decrease revenue by \$14.6 million, with the entire change in tax borne by Minnesota residents. Since the tax is regressive, the reduction will make the tax system slightly less regressive.

## **Property Taxes**

- Increased the levy authority for watershed districts.
- Decreased the class rate with added restrictions for low-income rental housing.
- Increased the first tier classification limit for agricultural land.
- Allowed individual taxpayer identification numbers (ITINs) for homestead.
- Expanded eligibility for the market value exclusion for veterans with a disability.
- Increased homestead market value exclusion.
- Created new aid for retired electric generating units.
- Increased property tax refunds for homeowners.
- Increased aids to cities and counties.
- Increased payments for the payment in lieu of taxes (PILT) program.
- Added Tribal governments to Local Homeless Prevention Aid.
- Created new aids for housing.
- Created new aid for Tribal Nations.

Local property taxes on business property, utilities, second homes, and seasonal recreational property will increase by \$20.0 million. The impact on Minnesota residents is estimated to be \$12.2 million. Homeowner, renter, and farm and timber property tax changes will decrease revenue by \$104.7 million. The impact on Minnesota residents is a decrease to their tax burden by \$101.2 million. Homeowner property tax refunds will increase, reducing the resident tax burden by \$19.8 million.

## **Local Sales Tax**

The following local sales taxes were authorized:

- A metropolitan area sales tax of 0.25% dedicated to metropolitan housing uses.
- A metropolitan area sales tax of 0.75% dedicated to metropolitan transit uses.

Increased local sales taxes will increase revenue by \$615.9 million, with \$540.8 million borne by Minnesota residents. Since sales taxes are regressive, this will make the tax system more regressive. The impact of the additional tax will fall primarily on residents of the metropolitan area.

### Combined Impact of Tax Law Changes

In total, the tax law changes enacted in 2023 will increase tax collections by \$634.5 million in 2024, with \$426.5 million borne by Minnesota residents. The largest tax increases are the metropolitan area local sales taxes. The largest tax decreases are changes to the individual income tax. The law changes are estimated to increase the Suits index by 0.014, making the tax system slightly less regressive and closer to proportional.

As shown in *Table 3-3*, the tax law changes are expected to increase total taxes paid by 1.1%, with tax decreases in the bottom five deciles and tax increases in the top five deciles. The largest changes are in the bottom two and the top two deciles. The actual impact will depend on the distribution of income in future years.

**Table 3-4**  
**Changes in Tax Burden due to Law Changes**

Decile	Income Range*	Percent of Households	Change in Tax Burden
<b>First</b>	\$16,552 & under	10%	-2.7%
<b>Second</b>	\$16,553 to \$27,877	10%	-1.4%
<b>Third</b>	\$27,878 to \$39,910	10%	-0.8%
<b>Fourth</b>	\$39,911 to \$52,158	10%	-0.2%
<b>Fifth</b>	\$52,159 to \$66,770	10%	0.0%
<b>Sixth</b>	\$66,771 to \$85,609	10%	0.1%
<b>Seventh</b>	\$85,610 to \$111,624	10%	0.0%
<b>Eighth</b>	\$111,625 to \$148,734	10%	0.1%
<b>Ninth</b>	\$148,735 to \$223,388	10%	0.3%
<b>Tenth</b>	\$223,389 & over	10%	0.3%
<b>All</b>		100%	0.1%
<b>Lower Half</b>	\$223,389 to \$250,362	5%	0.3%
<b>Next 4%</b>	\$250,363 to \$589,214	4%	0.3%
<b>Top 1%</b>	\$598,215 and over	1%	0.4%

\* Population deciles are based on estimated 2024 total household income.

## Chapter 4: Additional Results

This chapter provides additional analysis of the 2021 results.

- *Section A* reports the 2021 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* 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 C* 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 D* 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 E* 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>22</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 2021 tax burdens. *Tables 4-1* and *4-2* 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* and *2-3*. In both distributions, households are ranked by income level. In 2021, for example, each population decile of 293,739 households includes 10 percent of all households; each income decile with \$30.0 billion of income includes 10 percent of total income. Because of their relatively low incomes, it takes 1,236,750 households in the first income decile to account for 10 percent of total income. In contrast, there are only 3,426 high-income households in the 10th decile, who also received 10 percent of total income.

Again, using the year 2021 for illustration, the 1<sup>st</sup> income decile includes 42.1 percent of all households. Their share of total taxes (11.5 percent) exceeded their share of household income (10 percent). 1<sup>st</sup> income decile households (with 10 percent of total income) paid 1.4 percent of the individual income tax but paid 20.2 percent of the consumer sales tax, 32.3 percent of consumer excise taxes, and 18.4 percent of all business taxes borne by Minnesota residents.

The 10<sup>th</sup> income decile includes only 0.1 percent of all households. Their share of total taxes (9.4 percent) is slightly less than their share of household income (10 percent). They paid 17.6 percent of the individual income tax but paid 3.7 percent of the consumer sales tax, 0.8 percent of consumer excise taxes, and 5.7 percent of business taxes borne by Minnesota residents. The number of households in the 10<sup>th</sup> decile decreased from 7,568 in 2018 to 3,426 in 2021, an indication of the increasing concentration of income. The number of households in the top 5% decreased from 1,206 in 2018 to 361 in 2021.

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.

---

<sup>22</sup> Unlike some earlier studies, *Tables 4-1* and *4-2* do not report the results separately for those receiving the top 1 percent of income. Because fewer than 25 households would be included in that group, reporting such information separately would raise disclosure issues.



Table 4-1

## 2021 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	\$46,101 & under	1,236,750	\$30,017,382	\$205,483	\$321,560	\$812,068	\$450,739	\$1,262,807	-\$343,120	\$59,870	\$441,055	\$438,864	\$46,228
Second	\$46,102 - \$69,901	518,291	\$30,017,382	\$772,407	\$210,687	\$524,873	\$282,715	\$807,588	-\$223,476	\$38,678	\$223,124	\$340,613	\$29,295
Third	\$69,902 - \$96,969	354,740	\$30,017,382	\$1,027,598	\$192,141	\$477,830	\$256,498	\$734,328	-\$140,356	\$36,415	\$171,009	\$308,337	\$28,334
Fourth	\$96,970 - \$126,465	263,549	\$30,017,382	\$1,166,664	\$184,914	\$457,756	\$245,186	\$702,942	-\$74,935	\$36,488	\$145,104	\$296,716	\$27,998
Fifth	\$126,466 - \$162,227	202,732	\$30,017,382	\$1,322,746	\$171,533	\$420,328	\$222,900	\$643,228	-\$17,176	\$33,726	\$122,879	\$265,772	\$27,271
Sixth	\$162,228 - \$214,449	154,602	\$30,017,382	\$1,455,455	\$164,011	\$381,835	\$211,750	\$593,584	-\$1,495	\$35,114	\$100,320	\$241,801	\$23,749
Seventh	\$214,450 - \$317,129	109,256	\$30,017,382	\$1,666,079	\$155,045	\$326,364	\$201,510	\$527,875	-\$608	\$35,172	\$74,024	\$201,308	\$25,579
Eighth	\$317,130 - \$610,418	66,554	\$30,017,382	\$2,000,404	\$146,561	\$268,766	\$193,097	\$461,862	-\$447	\$36,319	\$50,237	\$170,429	\$28,813
Ninth	\$610,419 - \$2,348,506	27,488	\$30,017,382	\$2,315,114	\$128,579	\$197,139	\$176,867	\$374,005	-\$438	\$37,795	\$27,220	\$129,265	\$28,612
Tenth	\$2,348,507 & over	3,426	\$30,017,382	\$2,554,651	\$88,375	\$148,113	\$130,853	\$278,966	-\$10	\$34,118	\$10,683	\$58,257	\$24,242
Total		\$2,937,388	\$300,173,817	\$14,486,602	\$1,763,406	\$4,015,072	\$2,372,115	\$6,387,187	-\$802,060	\$383,695	\$1,365,655	\$2,451,361	\$290,120
Top 5%	Over \$3,949,790	361	\$15,014,943	\$1,203,423	\$33,735	\$77,622	\$51,039	\$128,660	\$0	\$14,043	\$4,073	\$28,238	\$10,015

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	\$806,174	\$285,030	\$88,360	\$373,390	\$1,204,299	\$297,910	\$149,399
Second	\$880,942	\$166,531	\$49,360	\$215,891	\$1,129,996	\$196,169	\$97,179
Third	\$809,929	\$32,980	\$47,727	\$80,707	\$920,612	\$203,654	\$87,561
Fourth	\$742,144	\$10,724	\$49,254	\$59,978	\$834,180	\$204,505	\$83,163
Fifth	\$549,398	\$5,677	\$43,066	\$48,744	\$628,145	\$247,717	\$75,887
Sixth	\$457,537	\$2,763	\$43,851	\$46,614	\$542,655	\$145,414	\$70,773
Seventh	\$357,946	\$2,328	\$50,227	\$52,555	\$452,267	\$181,110	\$64,177
Eighth	\$287,169	\$701	\$64,126	\$64,827	\$391,443	\$224,323	\$56,149
Ninth	\$165,470	\$431	\$79,280	\$79,711	\$279,712	\$198,626	\$45,576
Tenth	\$33,048	\$37	\$82,904	\$82,941	\$128,465	\$135,285	\$32,207
Total	\$5,089,758	\$507,203	\$598,155	\$1,105,358	\$6,511,774	\$2,034,714	\$762,071
Top 5%	\$4,663	*	\$35,488	\$35,489	\$42,626	\$56,283	\$14,035

<sup>1</sup> Includes seasonal recreational residential (cabins) and second homes.<sup>2</sup> Includes taconite production tax and wheelage taxes.

\* The data is suppressed to prevent disclosure of taxpayer information.

Local Taxes Total	Total State Taxes		State Taxes Total	Total State and Local Taxes
	Total on Individuals	Total on Businesses		
\$1,651,607	\$1,535,325	\$897,422	\$2,432,747	\$4,084,355
\$1,423,344	\$1,626,808	\$572,109	\$2,198,917	\$3,622,261
\$1,211,826	\$1,835,109	\$522,698	\$2,357,807	\$3,569,633
\$1,121,848	\$1,983,284	\$502,607	\$2,485,890	\$3,607,739
\$951,749	\$2,107,725	\$462,254	\$2,569,979	\$3,521,728
\$758,842	\$2,173,526	\$439,015	\$2,612,541	\$3,371,383
\$697,554	\$2,262,561	\$421,912	\$2,684,474	\$3,382,028
\$671,915	\$2,484,519	\$409,658	\$2,894,178	\$3,566,092
\$523,915	\$2,664,116	\$376,036	\$3,040,152	\$3,564,067
\$295,957	\$2,769,439	\$279,842	\$3,049,282	\$3,345,239
\$9,308,559	\$21,442,413	\$4,883,553	\$26,325,966	\$35,634,524
\$112,944	\$1,312,621	\$109,565	\$1,422,186	\$1,535,129

Table 4-2

2021 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	\$46,101 & under	1,236,750	\$30,017,382	0.7%	1.1%	2.7%	1.5%	4.2%	- 1.1%	0.2%	1.5%	1.5%	0.2%
Second	\$46,102 - \$69,901	518,291	30,017,382	2.6%	0.7%	1.7%	0.9%	2.7%	- 0.7%	0.1%	0.7%	1.1%	0.1%
Third	\$69,902 - \$96,969	354,740	30,017,382	3.4%	0.6%	1.6%	0.9%	2.4%	- 0.5%	0.1%	0.6%	1.0%	0.1%
Fourth	\$96,970 - \$126,465	263,549	30,017,382	3.9%	0.6%	1.5%	0.8%	2.3%	- 0.2%	0.1%	0.5%	1.0%	0.1%
Fifth	\$126,466 - \$162,227	202,732	30,017,382	4.4%	0.6%	1.4%	0.7%	2.1%	- 0.1%	0.1%	0.4%	0.9%	0.1%
Sixth	\$162,228 - \$214,449	154,602	30,017,382	4.8%	0.5%	1.3%	0.7%	2.0%	0.0%	0.1%	0.3%	0.8%	0.1%
Seventh	\$214,450 - \$317,129	109,256	30,017,382	5.6%	0.5%	1.1%	0.7%	1.8%	0.0%	0.1%	0.2%	0.7%	0.1%
Eighth	\$317,130 - \$610,418	66,554	30,017,382	6.7%	0.5%	0.9%	0.6%	1.5%	0.0%	0.1%	0.2%	0.6%	0.1%
Ninth	\$610,419 - \$2,348,506	27,488	30,017,382	7.7%	0.4%	0.7%	0.6%	1.2%	0.0%	0.1%	0.1%	0.4%	0.1%
Tenth	\$2,348,507 & over	3,426	30,017,382	8.5%	0.3%	0.5%	0.4%	0.9%	0.0%	0.1%	0.0%	0.2%	0.1%
Total		2,937,388	\$300,173,817	4.8%	0.6%	1.3%	0.8%	2.1%	- 0.3%	0.1%	0.5%	0.8%	0.1%
Top 5%	Over \$3,949,790	361	\$15,014,943	8.0%	0.2%	0.5%	0.3%	0.9%	0.0%	0.1%	0.0%	0.2%	0.1%

Income Decile	Residential Local Property Taxes					Nonresidential	Other
	Homeowners Gross	Renters Gross	Owners of Rental Prop.	Total on Rental Prop.	Residential Total <sup>1</sup>	Local Property Taxes	Local Taxes
First	2.7%	0.9%	0.3%	1.2%	4.0%	1.0%	0.5%
Second	2.9%	0.6%	0.2%	0.7%	3.8%	0.7%	0.3%
Third	2.7%	0.1%	0.2%	0.3%	3.1%	0.7%	0.3%
Fourth	2.5%	0.0%	0.2%	0.2%	2.8%	0.7%	0.3%
Fifth	1.8%	0.0%	0.1%	0.2%	2.1%	0.8%	0.3%
Sixth	1.5%	0.0%	0.1%	0.2%	1.8%	0.5%	0.2%
Seventh	1.2%	0.0%	0.2%	0.2%	1.5%	0.6%	0.2%
Eighth	1.0%	0.0%	0.2%	0.2%	1.3%	0.7%	0.2%
Ninth	0.6%	0.0%	0.3%	0.3%	0.9%	0.7%	0.2%
Tenth	0.1%	0.0%	0.3%	0.3%	0.4%	0.5%	0.1%
Total	1.7%	0.2%	0.2%	0.4%	2.2%	0.7%	0.3%
Top 5%	0.0%	0.0%	0.2%	0.2%	0.3%	0.4%	0.1%

Local Taxes Total	Total State Taxes			Total State and Local Taxes
	Total on Individuals	Total on Businesses	State Taxes Total	
5.5%	5.1%	3.0%	8.1%	13.6%
4.7%	5.4%	1.9%	7.3%	12.1%
4.0%	6.1%	1.7%	7.9%	11.9%
3.7%	6.6%	1.7%	8.3%	12.0%
3.2%	7.0%	1.5%	8.6%	11.7%
2.5%	7.2%	1.5%	8.7%	11.2%
2.3%	7.5%	1.4%	8.9%	11.3%
2.2%	8.3%	1.4%	9.6%	11.9%
1.7%	8.9%	1.3%	10.1%	11.9%
1.0%	9.2%	0.9%	10.2%	11.1%
3.1%	7.1%	1.6%	8.8%	11.9%
0.8%	8.7%	0.7%	9.5%	10.2%

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

Tables 4-2 and 2-3 show effective tax rates by income and population decile respectively in 2021. A comparison with the effective tax rates for population deciles reveals some differences. First, the effective tax rate for the 1<sup>st</sup> income decile (13.6 percent) was much lower than that for the 1<sup>st</sup> population decile (23.8 percent). The 1<sup>st</sup> *income* decile included more than four times as many households as the 1<sup>st</sup> *population* decile.

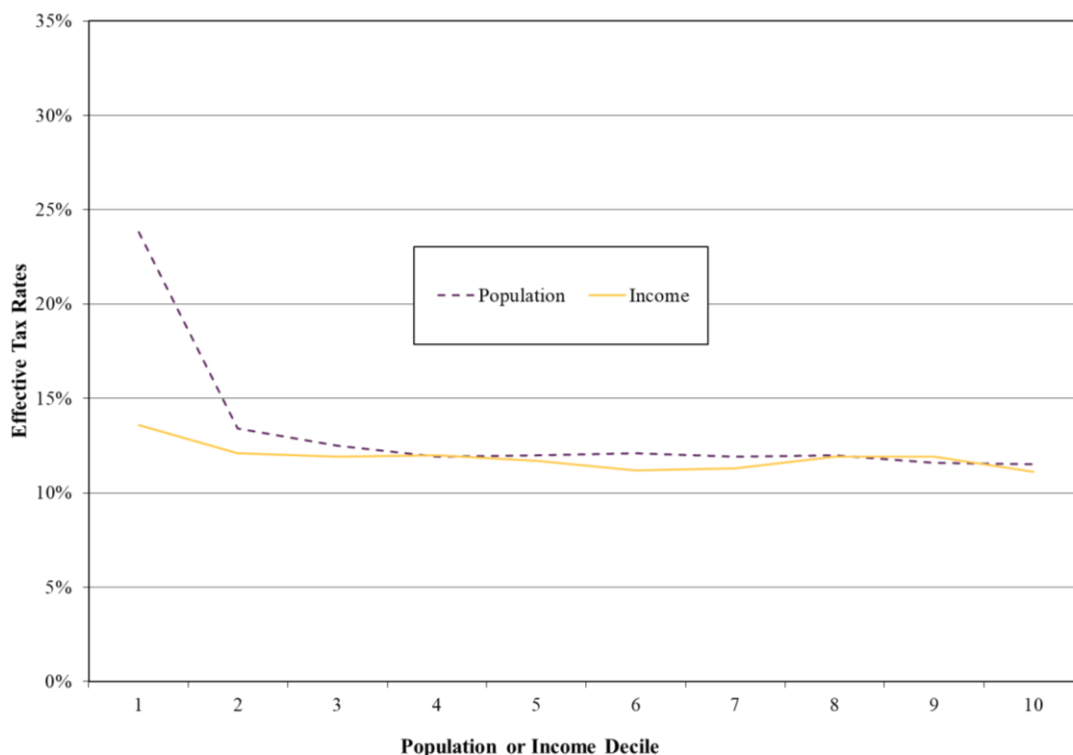
The pattern of effective tax rates also differs for the top deciles. The 10<sup>th</sup> income decile (with 3,426 households) had an effective tax rate of 11.1 percent in 2021, slightly lower than the effective rate of 11.5 percent for the 10<sup>th</sup> population decile (with about 293,739 households).

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

- The 1<sup>st</sup> 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 more taxpayers than the top four income deciles. As a result, the line for population deciles hides the substantial variation among the top four income deciles.

Income deciles provide more detailed information about the burden on higher income households, but less information about the 59.7 percent of households who are combined in the first two income deciles.

**Figure 4-1**  
**State and Local Effective Tax Rates for 2021,**  
**Income Deciles vs. Population Deciles**



## Section B

### 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 24 percent federal tax bracket, each additional dollar of itemized deductions lowers federal income tax by 24 cents. As a result, 24 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.

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 federal tax rates. 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 4-3* and *4-4*, and *Figure 4-2*. For all households combined, the federal offset for non-business taxes would reduce Minnesota tax burdens by 0.1 percent, reducing the effective tax rate from 11.9 percent to 11.8 percent of income. Federal law changes enacted in December 2017 greatly reduced the impact of the federal offset by temporarily increasing the standard deduction and suspending or limiting some itemized deductions. As a result, fewer taxpayers itemize deductions on their federal returns, reducing the size of the federal offset.

The federal offset makes no significant difference in the effective rate in the first three deciles, which include few who itemize deductions. There are measurable impacts beginning in the 6<sup>th</sup> decile and rising with income. The 9<sup>th</sup> decile enjoys the most benefit from incorporating the federal offset with a 0.2 percent change in the effective tax rate (11.6 percent to 11.4 percent). For the top 1 percent, the effective rate falls from 11.5 percent to 11.4 percent. The adjusted tax burden for all state and local taxes is slightly more regressive, with the full-sample Suits index falling from -0.024 to -0.026.

Given the small impact of the federal offset and the strong arguments to be made against such an adjustment in a study of this kind, no federal tax offset is included in the results presented elsewhere in this study.

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

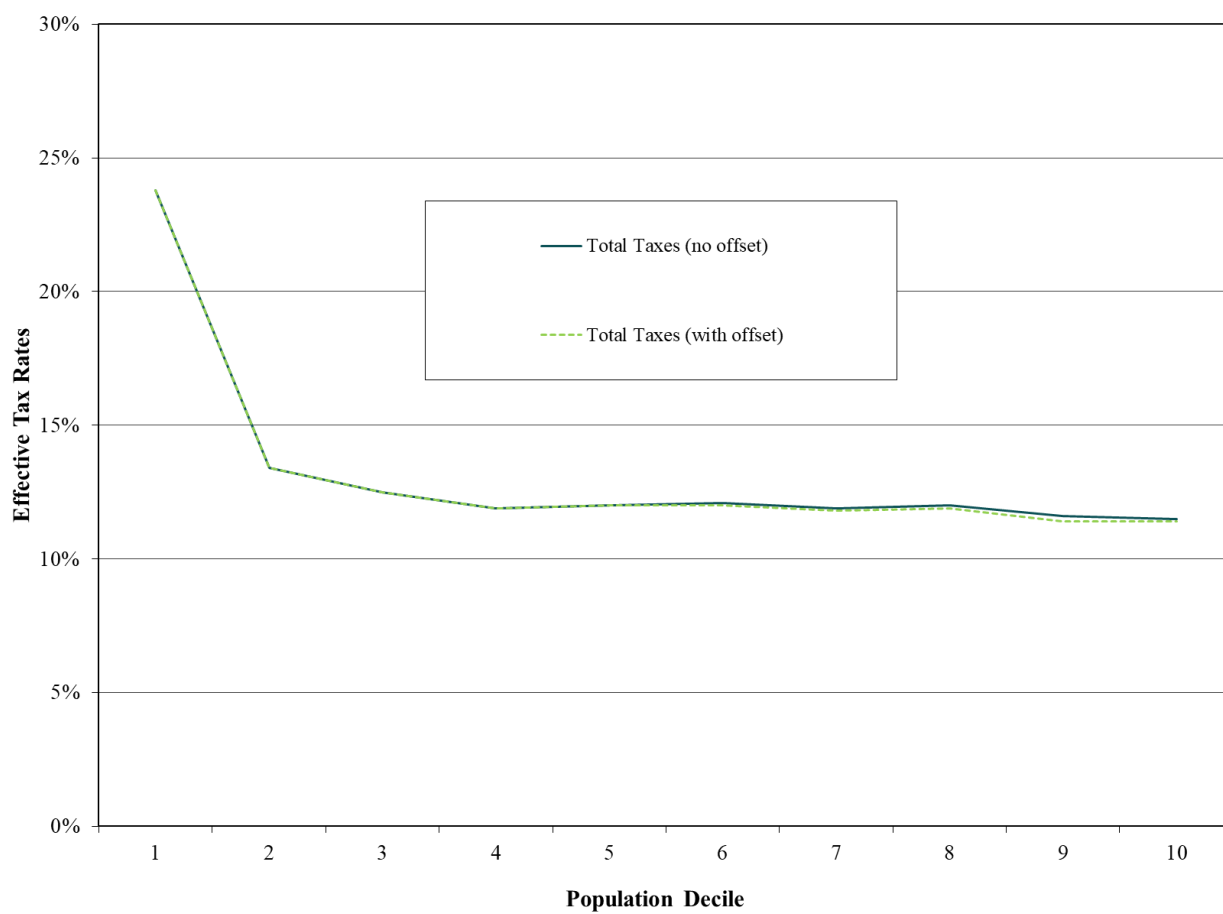
**Table 4-3**  
**Impact of Federal Tax Offset on Effective**  
**State and Local Tax Rates by Population Decile**  
**(Minnesota Residents, 2021)**

Population Decile	Household Income	Effective Tax Rate		
		No Federal Tax Offset	Change Due to Federal Tax Offset	Adjusted for Federal Tax Offset
<b>First</b>	\$15,544 & Under	23.8%	0.00%	23.8%
<b>Second</b>	\$15,545 - \$24,961	13.4%	0.00%	13.4%
<b>Third</b>	\$24,962 - \$35,168	12.5%	0.00%	12.5%
<b>Fourth</b>	\$35,169 - \$45,808	11.9%	0.01%	11.9%
<b>Fifth</b>	\$45,809 - \$58,014	12.0%	0.02%	12.0%
<b>Sixth</b>	\$58,015 - \$73,668	12.1%	0.06%	12.0%
<b>Seventh</b>	\$73,669 - \$95,360	11.9%	0.09%	11.8%
<b>Eighth</b>	\$95,361 - \$127,780	12.0%	0.11%	11.9%
<b>Ninth</b>	\$127,781 - \$183,475	11.6%	0.12%	11.4%
<b>Tenth</b>	\$183,476 & Over	11.5%	0.13%	11.4%
<b>Total</b>		11.9%	0.10%	11.8%
<b>Top 5%</b>	Over \$266,196	11.6%	0.13%	11.5%
<b>Top 1%</b>	Over \$668,416	11.5%	0.08%	11.4%

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

	Without Offset	With Offset
<b>All Taxes</b>	-0.024	-0.026

**Figure 4-2**  
**Effective Tax Rates for 2021,**  
**With and Without Federal Tax Offset**



## Section C

### 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 Education 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 4-5* shows the magnitudes of those payments in 2021. That table also shows the full-sample Suits index for each of the major categories of payments. *Table 4-5*

**Population-Decile Suits Index for Refundable Credits  
and Property Tax Refund Payments in 2021**

Payments	Amount (\$ Thousands)	Population-Decile Suits Index
<b>Income Tax Credits</b>		
Working Family Credit	\$220,140	+0.873
Dependent Care Credit	21,240	+0.761
K-12 Education Credit	5,369	+0.881
Subtotal	\$246,749	+0.863
<b>Property Tax Refund</b>		
Homeowners	\$581,190	+0.646
Renters	220,870	+0.864
Subtotal	\$802,060	+0.706
<b>Total</b>	<b>\$1,048,809</b>	<b>+0.743</b>

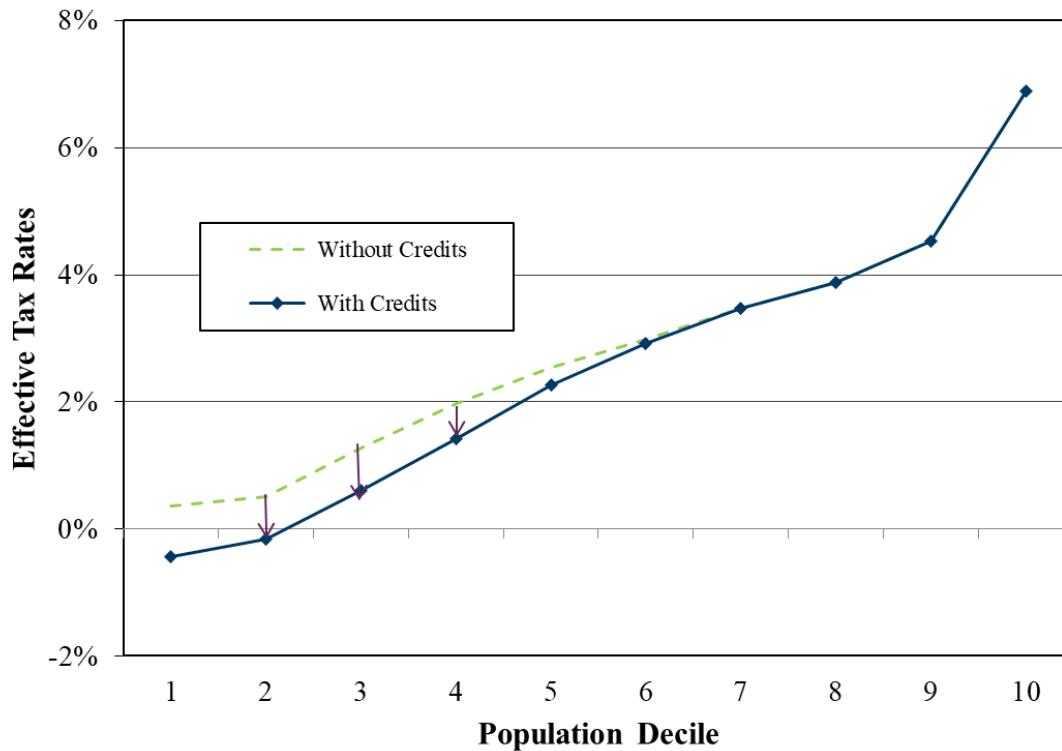
Total dollars of property tax refunds and refundable credits increased by 5.4 percent between 2018 and 2021, less than the growth in total tax collections, which increased by 19.8 percent. Credits decreased by 9.0 percent between 2018 and 2021 due to a decline in all three credits. Property tax refunds rose by 10.9 percent. Homeowner property tax refunds rose by 16.1 percent, and renter refunds fell by 0.8 percent. All of the components are progressive, with Suits indexes ranging from 0.646 to 0.881. For comparison, the Suits index for the individual income tax is 0.268.

*Table 4-6* and *Figure 4-3* show the impact of the refundable income tax credits on effective income tax rates by population decile in 2021. Without those credits, effective tax rates would be noticeably higher in each of the first six deciles. For example, the effective income tax rate in the 2nd decile would rise from -0.2 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 +0.249 rather than the +0.268.

**Table 4-6**  
**Impact of Refundable Income Tax Credits on**  
**Effective Income Tax Rates (2021)**

Population Decile	Household Income	Effective Tax Rates (Income Tax)		
		With Credits	Change If No Credits	Without Credits
<b>First</b>	\$15,544 & Under	-0.4%	+0.8%	0.4%
<b>Second</b>	\$15,545 - \$24,961	-0.2%	+0.7%	0.5%
<b>Third</b>	\$24,962 - \$35,168	0.6%	+0.7%	1.3%
<b>Fourth</b>	\$35,169 - \$45,808	1.4%	+0.6%	2.0%
<b>Fifth</b>	\$45,809 - \$58,014	2.3%	+0.3%	2.5%
<b>Sixth</b>	\$58,015 - \$73,668	2.9%	+0.1%	3.0%
<b>Seventh</b>	\$73,669 - \$95,360	3.5%	+0.0%	3.5%
<b>Eighth</b>	\$95,361 - \$127,780	3.9%	+0.0%	3.9%
<b>Ninth</b>	\$127,781 - \$183,475	4.5%	+0.0%	4.5%
<b>Tenth</b>	\$183,476 & Over	6.9%	+0.0%	6.9%
<b>Total</b>		4.8%	+0.1%	4.9%

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





In the absence of property tax refunds (PTR), property taxes on homesteads and rental housing would be even more regressive, with a Suits index of -0.302 rather than -0.246. As shown in *Figure 4-4* and the last column of *Table 4-7*, effective tax rates without PTR would be 3.7 percent in the 2<sup>nd</sup> decile and fall to 1.0 percent in the 10<sup>th</sup> decile. Property tax refunds reduce effective tax rates in the first eight deciles. With the PTR, effective tax rates fall to 2.4 percent in the 2<sup>nd</sup> decile, then rise to about 2.8 percent in the 3<sup>rd</sup> through 6<sup>th</sup> deciles before falling to 1.0 percent in the 10<sup>th</sup> decile. Net residential property taxes (after PTR) are still regressive (with a full-sample Suits index of -0.246), but much less regressive than in the absence of the PTR.

**Table 4-7**  
**Residential Property Taxes Before and After Property Tax Refunds for 2021**  
**(Homesteads and Rental Housing)**

Population Decile	Household Income	Effective Tax Rates (Property Tax)		
		With PTR	Change If No PTR	Without PTR
<b>First</b>	\$15,544 & Under	3.9%	+1.6%	5.5%
<b>Second</b>	\$15,545 - \$24,961	2.4%	+1.3%	3.7%
<b>Third</b>	\$24,962 - \$35,168	2.7%	+1.2%	3.9%
<b>Fourth</b>	\$35,169 - \$45,808	2.7%	+0.9%	3.7%
<b>Fifth</b>	\$45,809 - \$58,014	2.9%	+0.8%	3.7%
<b>Sixth</b>	\$58,015 - \$73,668	2.9%	+0.6%	3.5%
<b>Seventh</b>	\$73,669 - \$95,360	2.5%	+0.5%	2.9%
<b>Eighth</b>	\$95,361 - \$127,780	2.4%	+0.3%	2.7%
<b>Ninth</b>	\$127,781 - \$183,475	1.8%	+0.0%	1.9%
<b>Tenth</b>	\$183,476 & Over	1.0%	+0.0%	1.0%
<b>Total</b>		1.8%	+0.3%	2.1%

**Figure 4-4**  
**Effective Residential Property Tax Rates by Population Decile,**  
**Before and After Property Tax Refunds**

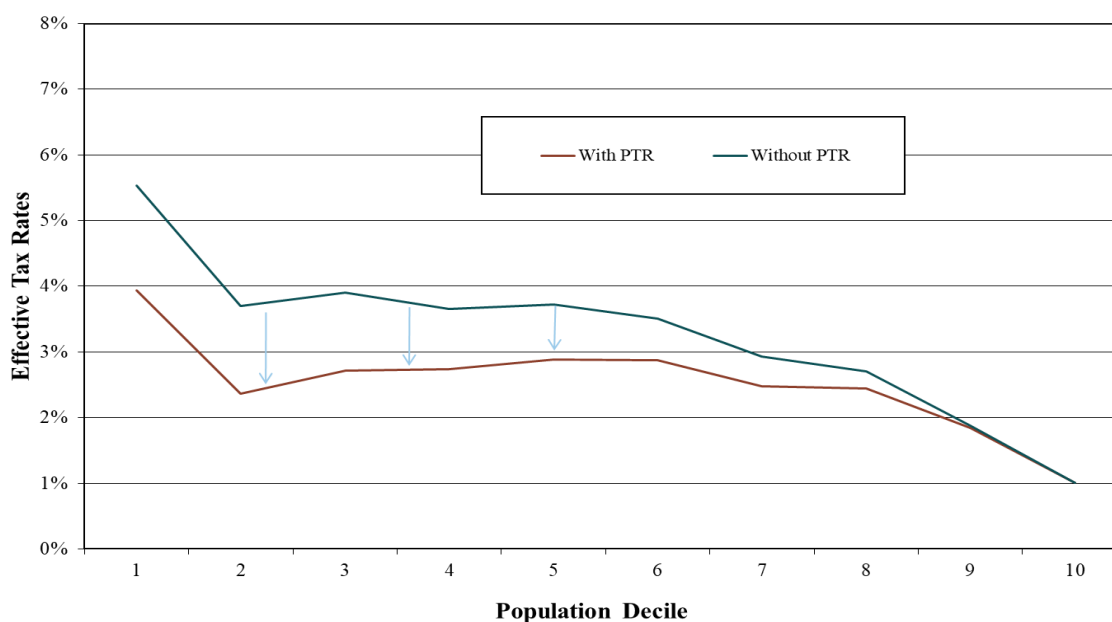
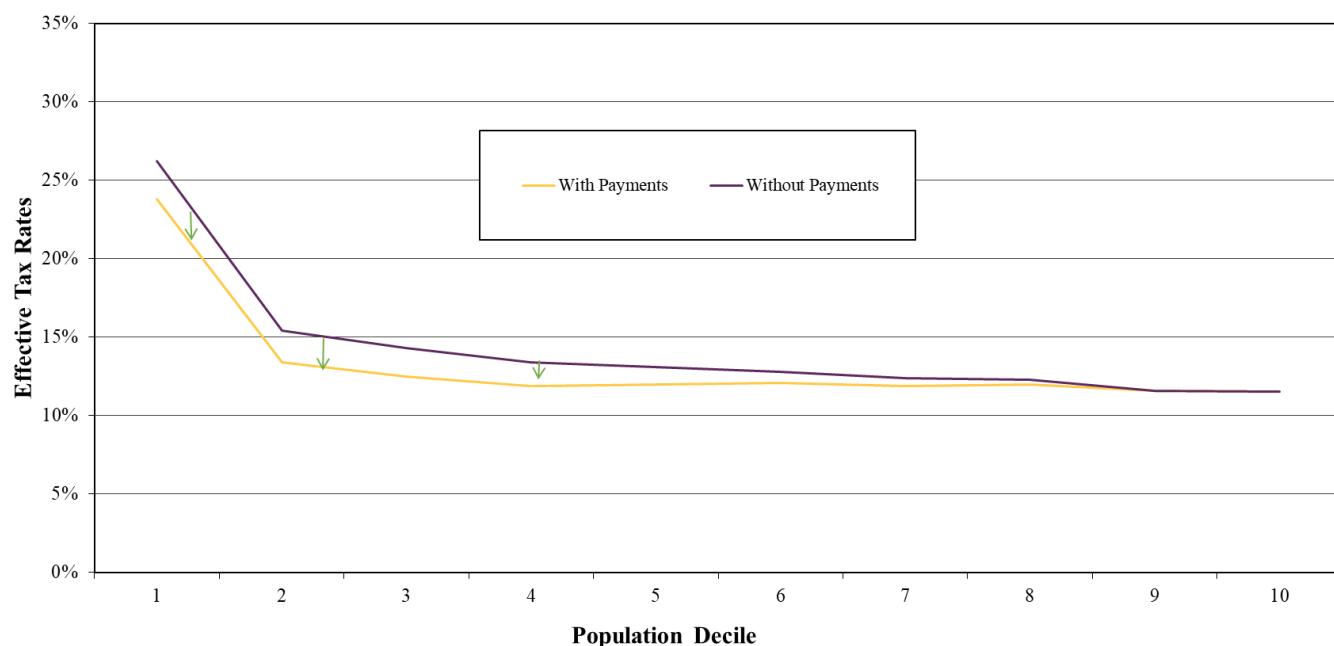


Table 4-8 and Figure 4-5 show the combined impact of both the income tax credits and property tax refunds on the overall effective tax rates by population decile. Without the credits or property tax refunds, effective tax rates would be higher in the first eight deciles. These payments make the overall tax system less regressive. In their absence, the full-sample Suits index for all taxes would be -0.044 rather than -0.024.

**Table 4-8**  
**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
<b>First</b>	\$15,544 & Under	23.8%	2.4%	26.2%
<b>Second</b>	\$15,545 - \$24,961	13.4%	2.0%	15.4%
<b>Third</b>	\$24,962 - \$35,168	12.5%	1.9%	14.3%
<b>Fourth</b>	\$35,169 - \$45,808	11.9%	1.5%	13.4%
<b>Fifth</b>	\$45,809 - \$58,014	12.0%	1.1%	13.1%
<b>Sixth</b>	\$58,015 - \$73,668	12.1%	0.7%	12.8%
<b>Seventh</b>	\$73,669 - \$95,360	11.9%	0.5%	12.4%
<b>Eighth</b>	\$95,361 - \$127,780	12.0%	0.3%	12.3%
<b>Ninth</b>	\$127,781 - \$183,475	11.6%	0.0%	11.6%
<b>Tenth</b>	\$183,476 & Over	11.5%	0.0%	11.5%
<b>Total</b>		11.9%	+0.4%	0.4%

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



<p style="text-align: center;"><b>Section D</b></p> <p><b>Incremental Incidence: Estimating the Incidence of a Change in Business Taxes</b></p>
---

The incidence of proposed changes in business taxes has, on occasion, been incorrectly assumed to be identical to the incidence reported in the *Tax Incidence Study*. This is a mistake. The incidence results reported in this study 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:

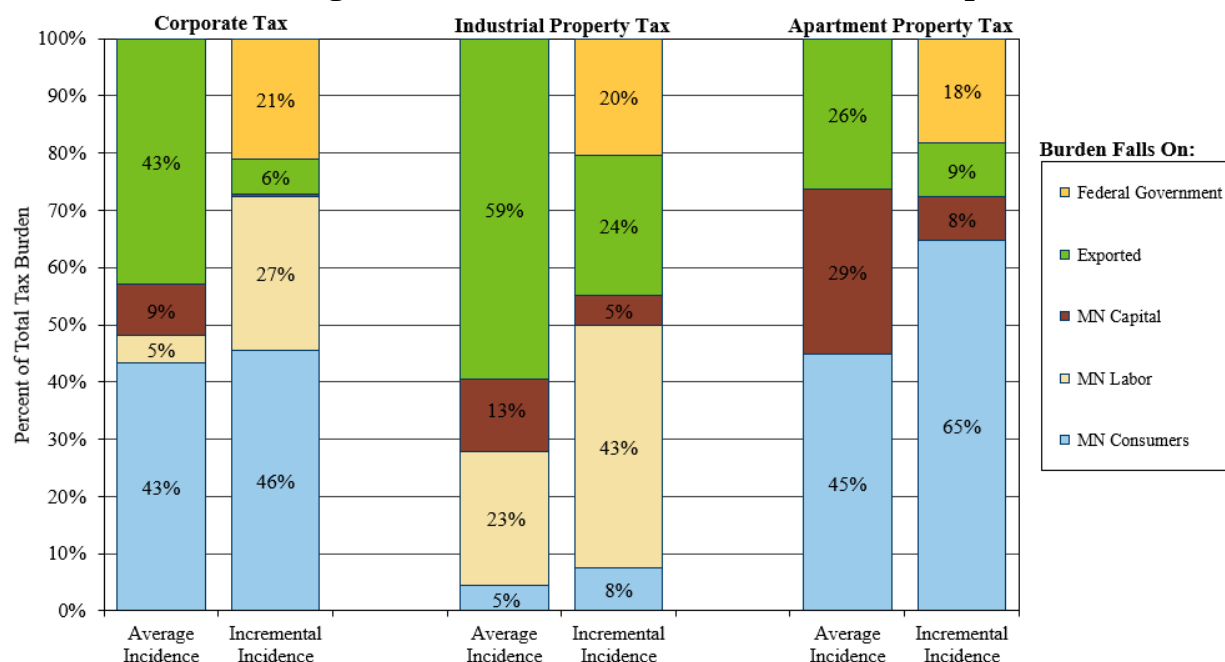
- The “average national tax rate on all capital.”
- The “sector differential,” defined as any portion of the tax that reflects higher national tax rates for a particular business sector.
- The “Minnesota differential,” defined as any excess of Minnesota's tax over the average national level of tax levied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

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 often less than is suggested by the results for “average incidence” reported here. However, the incidence of change in tax – unlike existing taxes – should take the federal tax offset into account. Part of a tax increase may be “exported” to the federal government. As a result, the exported share is sometimes larger than suggested by the results for “average incidence” reported in this study. (See *Section B* of this chapter for a discussion of the federal tax offset.)

**Figure 4-6**  
**Average versus Incremental Incidence: An Example**



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>23</sup> These results should be considered rough approximations, provided for illustration only. In calculating the federal tax offset, the federal tax rate is assumed to be 21 percent for those paying the federal corporate tax, while the federal tax rate for non-corporate businesses is assumed to be 18 percent. These rates are adjusted for the corporate rate reduction (from 35 percent to 21 percent) enacted in December 2017 as well as the 20 percent subtraction provided for most non-corporate businesses.

<sup>23</sup> Apartments are only a portion of the rental housing category shown on *Table B-2*, so the average-incidence results differ somewhat.

## Section E

### Tax Incidence in Other States

Minnesota is one of the only states to complete a comprehensive tax incidence study on a regular basis.<sup>24</sup> 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* (7<sup>th</sup> Edition), was published by the Institute on Taxation and Economic Policy (ITEP) in January 2024.<sup>25</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 compared to the results in this report with caution for several reasons.

- The population is limited to non-senior households. It also excludes all households with negative incomes.
- Income is defined more broadly, so average incomes are higher and effective tax rates are lower.
- The results are based on 2023 income levels adjusted for the impact of tax changes enacted through December 31, 2023.
- 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. Among the taxes excluded from the ITEP study are the MinnesotaCare provider taxes, insurance taxes, mortgage and deed taxes, and gambling taxes.
- Although business taxes are included and their burden is assumed to be borne partly by consumers and labor, the proportions shifted are not specified.
- The results include only seven 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

The ITEP Study's 7-point Suits index for Minnesota's state and local taxes is +0.024, making us one of the four states they show having a progressive tax system (the other three are New York, Vermont, and California.). This contrasts with the negative Suits index reported in this study.

---

<sup>24</sup> Connecticut completed its first tax incidence report in 2022 based on 2019 data. It will be an ongoing study prepared every two years.

<sup>25</sup> Available at: <https://itep.org/whopays-7th-edition/>. The 7-point Suits indexes were calculated by Jeff Van Wychen.

Despite differences in methodology, the ITEP Study helps provide useful context for the results of the Minnesota Tax Incidence Study. It is particularly useful in illustrating the great variation in how states choose to distribute the tax burden.

*Table 4-9* lists the 7-point Suits indexes for each state (for non-senior households), based on the ITEP study<sup>26</sup>. The variation across states is striking. They show four states with a Suits index greater than zero, including Minnesota. In contrast, 35 states had Suits indexes at or below -0.050, and 25 of those were below -0.072, the national average.

Minnesota would be expected to have one of the less regressive tax systems 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. Many of the most regressive state tax systems, as measured by ITEP's 7-point Suits index, were states with no broad-based income tax.
- Minnesota's income tax is one of the more progressive. The most regressive states with an income tax (such as Pennsylvania and Illinois) 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 C* of this chapter, these credits significantly reduce the regressivity of Minnesota's overall tax system.

*Table 4-9* also shows each state's average overall effective tax rate as estimated by ITEP for non-senior households. Minnesota's reported effective tax rate (at 9.9 percent of income) was above the U.S. average reported by ITEP (at 9.3 percent). The correlation (R) between the average effective tax rate and the Suits index (+0.706) suggests that the tax structures of states with higher taxes tend to be less regressive. The 10 most regressive tax structures are all in states with average effective tax rates at or below 9.4 percent. In contrast, of the 25 states with Suits indexes showing the least regressivity (or progressivity), only two (Delaware and Missouri) had average effective tax rates at or below 8.0 percent.

---

<sup>26</sup> The Suits Index rankings are slightly different than ITEP's Inequality Index, which measures the effect of a state and local tax system on income after taxes. ITEP ranks Minnesota as 50<sup>th</sup> and Vermont as 49<sup>th</sup> on its Inequality Index.

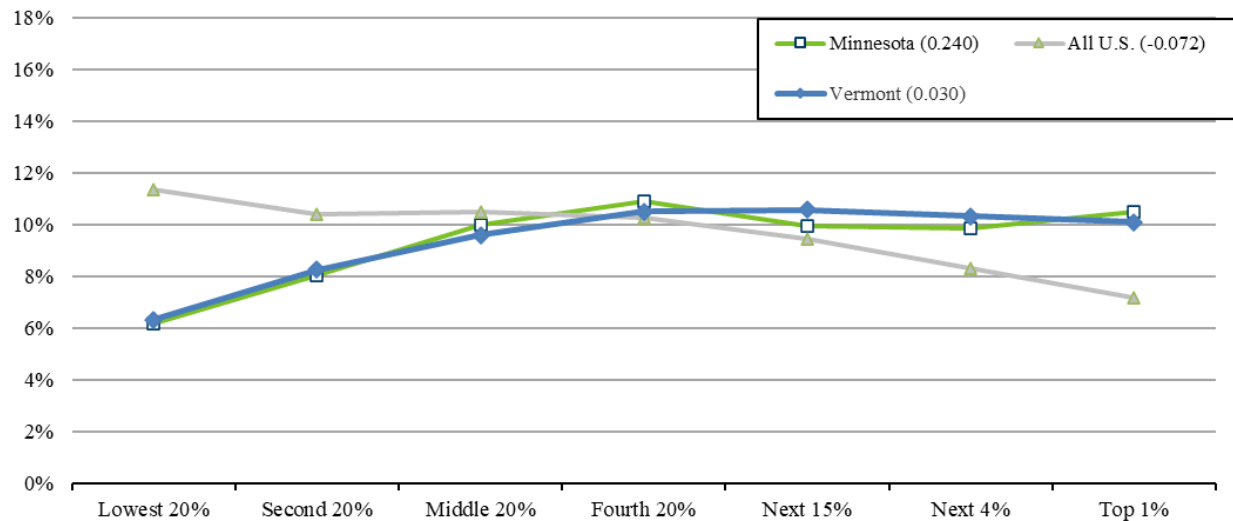
**Table 4-9**  
**ITEP “7-Point” Suits Index by State**  
**Non-Senior Households in 2023 (2023 Law)**

Listed Alphabetically		
State	7-Point Suits Index	Average Effective Tax Rate
Alabama	-0.115	8.6%
Alaska	-0.149	4.5%
Arizona	-0.119	8.0%
Arkansas	-0.113	9.2%
California	0.015	10.9%
Colorado	-0.058	8.4%
Connecticut	-0.083	10.1%
Delaware	-0.017	7.8%
Florida	-0.255	6.0%
Georgia	-0.061	9.0%
Hawaii	-0.068	12.2%
Idaho	-0.034	8.1%
Illinois	-0.098	10.6%
Indiana	-0.092	9.0%
Iowa	-0.063	10.0%
Kansas	-0.059	10.5%
Kentucky	-0.073	9.7%
Louisiana	-0.103	10.1%
Maine	-0.003	10.3%
Maryland	-0.028	10.6%
Massachusetts	-0.022	9.1%
Michigan	-0.082	8.3%
Minnesota	0.024	9.9%
Mississippi	-0.071	9.6%
Missouri	-0.061	7.9%
Montana	-0.029	8.0%
Nebraska	-0.052	9.8%
Nevada	-0.209	6.3%
New Hampshire	-0.147	5.3%
New Jersey	-0.010	10.7%
New Mexico	-0.020	10.3%
New York	0.007	13.3%
North Carolina	-0.088	8.2%
North Dakota	-0.093	6.8%
Ohio	-0.081	9.2%
Oklahoma	-0.085	9.0%
Oregon	-0.001	10.5%
Pennsylvania	-0.120	9.4%
Rhode Island	-0.034	9.7%
South Carolina	-0.048	8.6%
South Dakota	-0.196	6.2%
Tennessee	-0.194	7.1%
Texas	-0.162	7.3%
Utah	-0.093	8.8%
Vermont	0.030	10.0%
Virginia	-0.050	9.3%
Washington	-0.178	8.0%
West Virginia	-0.053	9.3%
Wisconsin	-0.074	8.9%
Wyoming	-0.143	6.3%
All U.S.	-0.072	9.3%

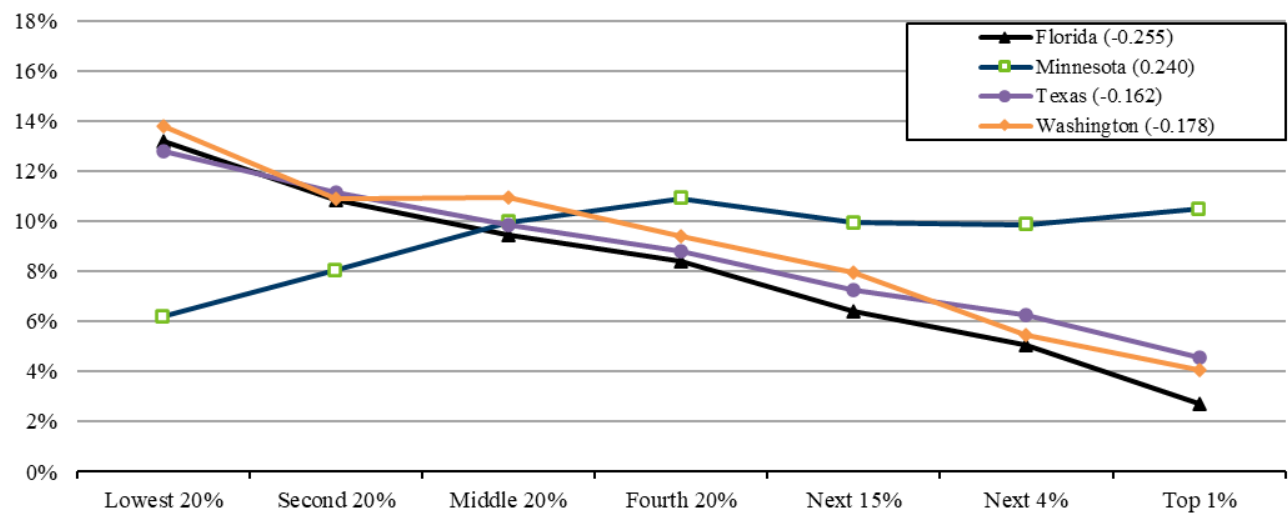
Ranked from Most Progressive to Most Regressive			
State Suits Rank	State	7-Point Suits Index	Average Effective Tax Rate
1	Vermont	0.030	10.0%
2	Minnesota	0.024	9.9%
3	California	0.015	10.9%
4	New York	0.007	13.3%
5	Oregon	-0.001	10.5%
6	Maine	-0.003	10.3%
7	New Jersey	-0.010	10.7%
8	Delaware	-0.017	7.8%
9	New Mexico	-0.020	10.3%
10	Massachusetts	-0.022	9.1%
11	Maryland	-0.028	10.6%
12	Montana	-0.029	8.0%
13	Idaho	-0.034	8.1%
14	Rhode Island	-0.034	9.7%
15	South Carolina	-0.048	8.6%
16	Virginia	-0.050	9.3%
17	Nebraska	-0.052	9.8%
18	West Virginia	-0.053	9.3%
19	Colorado	-0.058	8.4%
20	Kansas	-0.059	10.5%
21	Georgia	-0.061	9.0%
22	Missouri	-0.061	7.9%
23	Iowa	-0.063	10.0%
24	Hawaii	-0.068	12.2%
25	Mississippi	-0.071	9.6%
	All U.S.	-0.072	9.3%
26	Kentucky	-0.073	9.7%
27	Wisconsin	-0.074	8.9%
28	Ohio	-0.081	9.2%
29	Michigan	-0.082	8.3%
30	Connecticut	-0.083	10.1%
31	Oklahoma	-0.085	9.0%
32	North Carolina	-0.088	8.2%
33	Indiana	-0.092	9.0%
34	Utah	-0.093	8.8%
35	North Dakota	-0.093	6.8%
36	Illinois	-0.098	10.6%
37	Louisiana	-0.103	10.1%
38	Arkansas	-0.113	9.2%
39	Alabama	-0.115	8.6%
40	Arizona	-0.119	8.0%
41	Pennsylvania	-0.120	9.4%
42	Wyoming	-0.143	6.3%
43	New Hampshire	-0.147	5.3%
44	Alaska	-0.149	4.5%
45	Texas	-0.162	7.3%
46	Washington	-0.178	8.0%
47	Tennessee	-0.194	7.1%
48	South Dakota	-0.196	6.2%
49	Nevada	-0.209	6.3%
50	Florida	-0.255	6.0%

Figures 4-7, 4-8, and 4-9 illustrate how effective tax rates vary with income in selected states. Figure 4-7 compares Minnesota to the national average and to the state with the most progressive tax system (Vermont). Figure 4-8 compares Minnesota with three states with much more regressive tax structures. Figure 4-9 compares Minnesota with its neighboring states.

**Figure 4-7**  
**ITEP Effective Tax Rates for Minnesota, Vermont, and All States Combined (Non-Seniors)**

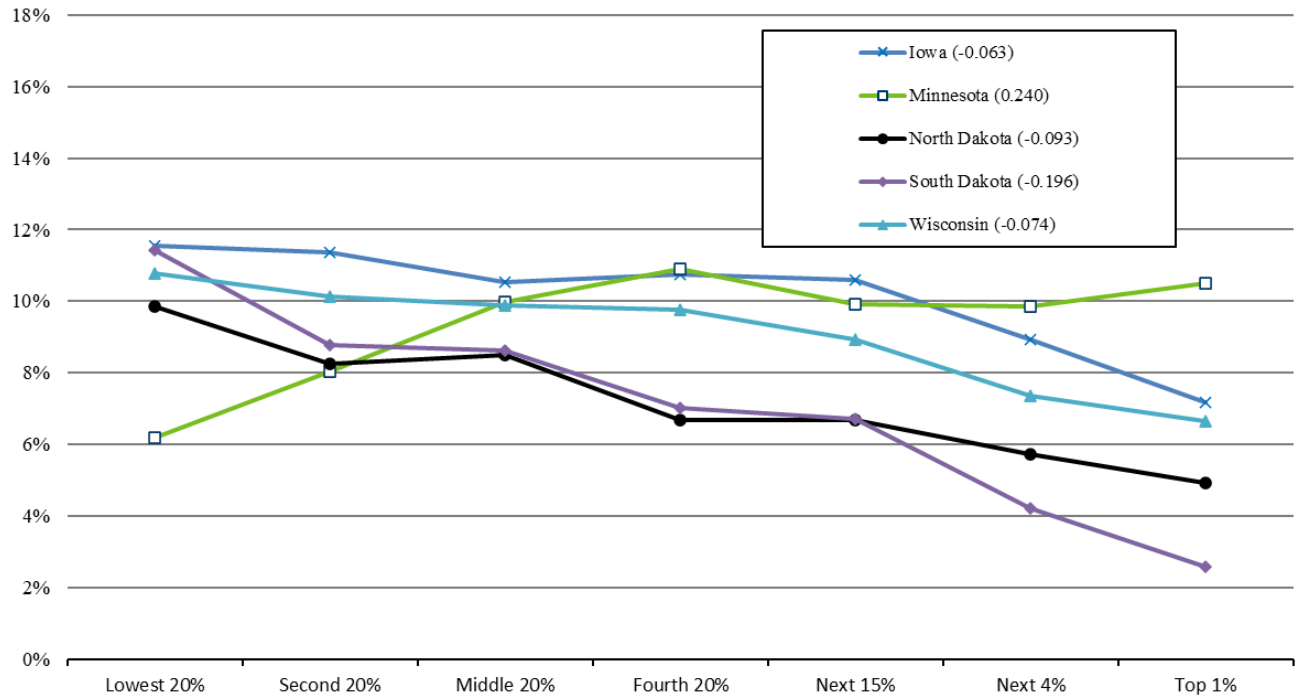


**Figure 4-8**  
**ITEP Effective Tax Rates for Minnesota and Three States with More Regressive Tax Systems (Non-Seniors)**





**Figure 4-9**  
**ITEP Effective Tax Rates 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. The tables in this chapter allow 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.

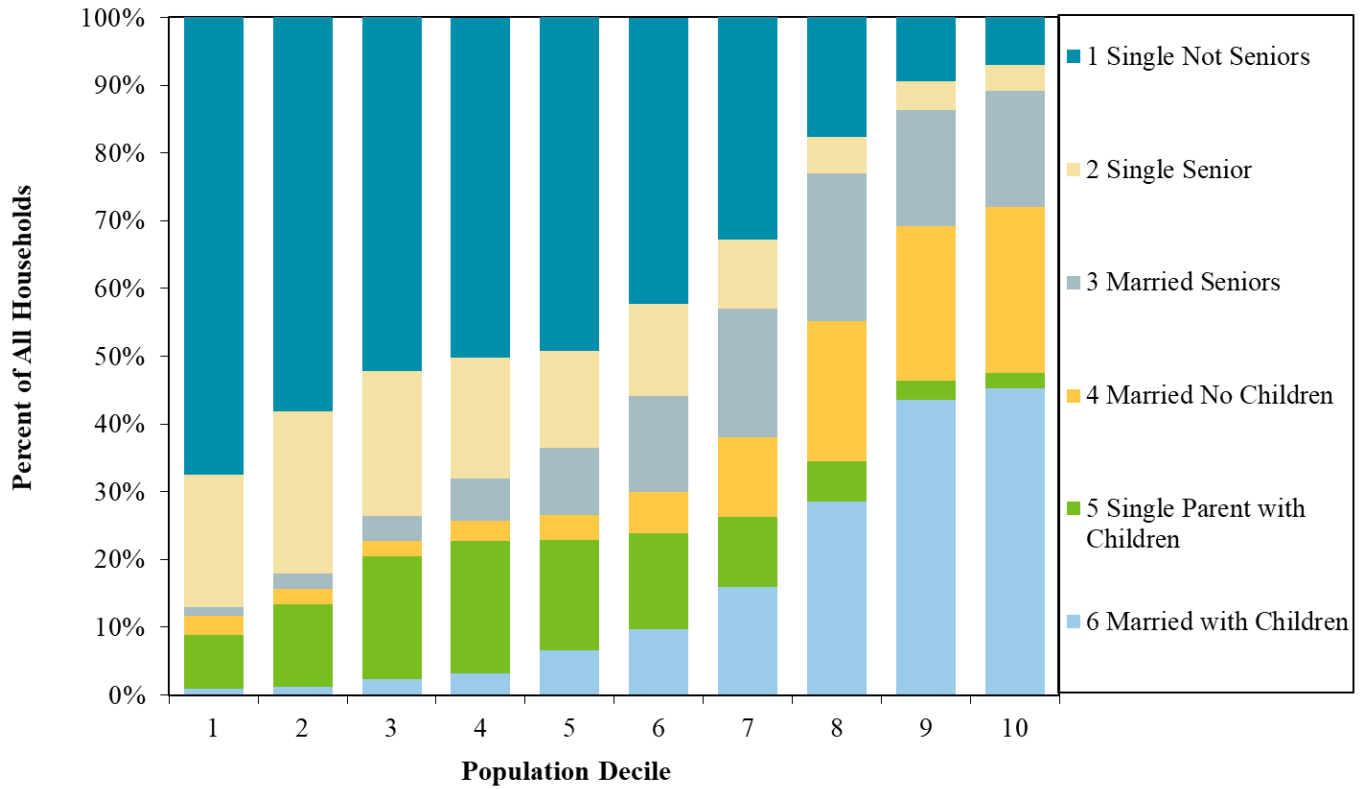
### Household Types by Population Decile

The demographic makeup of individual deciles varies greatly, as shown in *Figure 5-1*. In the bottom three deciles, 80.9 percent of the households are single-person households; only 14.3 percent include children. In contrast, in the top two deciles only 12.3 percent of all households are single-person households, and 47.0 percent include children.

*Figure 5-1* also shows that senior households (married and single) are distributed unevenly across deciles. Seniors account for about one-quarter of all households in deciles 2 through 9 and about one-fifth of all households in the top and bottom deciles – but 82.0 percent of those top-decile seniors are married. Single seniors far outnumber senior couples in the first four deciles; in the top four deciles, the number of senior couples far exceeds the number of single seniors. This trend is more extreme in the top and bottom deciles, converging to about 54 percent in the 7th decile.

In the first three deciles, 89.5 percent of households with children are single-parent households. The proportion of all households with children that include married parents increases steadily with income. In the top two deciles, 94.5 percent of households with children are married couples.

**Figure 5-1**  
**Family Type by Population Decile**



*Figure 5-2* illustrates the great differences in median incomes for each of the six family types. In 2021, the median income for a single-parent family was \$43,946, so the typical single-parent family was in the 4<sup>th</sup> population decile. The median income for a married couple with children was \$140,437, located in the bottom of the 9<sup>th</sup> decile. The median income for senior couples, \$94,981, puts them in the top of the 7<sup>th</sup> decile. In contrast, the median single senior, at \$36,587, is in the 4<sup>th</sup> decile.

**Figure 5-2**  
**Median Income by Household Type (2021)**

<b>Population Decile</b>	<b>Household Income</b>		
10	\$183,476 & Over		
9	\$127,781 - \$183,475	← Married with children	\$140,437
8	\$95,361 - \$127,780	← Married couples without children	\$123,489
7	\$73,669 - \$95,360	← Married seniors	\$94,981
6	\$58,015 - \$73,668		
5	\$45,809 - \$58,014	← Single parents	\$43,946
4	\$35,169 - \$45,808	← Single, nonsenior	\$38,588
3	\$24,962 - \$35,168	← Single, senior	\$36,587
2	\$15,545 - \$24,961		
1	\$15,544 & Under		

## Average Tax Burdens by Household Type

*Tables 5-1 through 5-6* each show how average tax burdens and demographic characteristics vary with income for a particular type of household. *Table 5-1* is limited to Minnesota's 461,815 married couples with children. The couples are divided into ten groups, each with 46,182 couples, ordered from lowest income to highest income.

For example, consider the 3<sup>rd</sup> decile of married couples with children (the shaded column on *Table 5-1*). These households have incomes between \$84,407 (the maximum income for the 2<sup>nd</sup> decile) and \$104,471 (the maximum income for the 3<sup>rd</sup> decile). This is the 3<sup>rd</sup> decile, so 20 percent of married couples with children have lower incomes; 70 percent of such families have higher incomes. For those in the 3<sup>rd</sup> decile, average income is \$94,567, and 99 percent have earned income (averaging \$77,756). Over three-quarters are homeowners, with homes valued an average of \$215,916. Twelve percent are renters (paying an average of \$1,327 per month), and 12.0 percent are neither owners nor renters (perhaps living with parents).

These married couples with children pay state and local taxes equal to 12.0 percent of their income (an average of \$11,032 of tax). This includes \$2,011 in residential property tax (net of PTR), \$2,611 of income tax, \$1,733 in state sales tax, \$565 in excise taxes (motor fuels, cigarettes, and alcohol), \$1,342 in other types of taxes levied on individuals, and \$3,039 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 from 12.0 percent in the 3<sup>rd</sup> decile to 11.0 percent in the 6<sup>th</sup> decile, then rises to 11.4 percent in the 7<sup>th</sup> decile before going down to 11.1 percent in the 9<sup>th</sup> decile. The Suits index for the population limited to married couples with children is -0.003, well above the all-household Suits index (-0.024).

*Table 5-7* shows the full-sample Suits index for each of the six household types considered separately. The tax is most regressive for single seniors (at -0.043) and married senior households (at -0.039). It is most progressive for single parents (at +0.036).

Table 5-1

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

Each Decile Contains 46,182 Married Couples with Children

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Number of Households	46,182	46,182	46,182	46,182	46,182	46,182	46,182	46,182	46,182	46,182	461,815
Average Number of Children	2.2	2.2	2.1	2.0	1.9	2.0	2.1	1.9	1.9	2.1	2.0
Average Household Income	\$41,908	\$72,703	\$94,567	\$112,957	\$130,964	\$149,407	\$169,124	\$199,033	\$267,643	\$804,800	\$198,752
Maximum Household Income	\$60,199	\$84,407	\$104,471	\$121,620	\$140,437	\$159,564	\$179,773	\$225,048	\$330,790	\$272,941,476	\$272,941,476
Percent with Earned Income	85%	98%	99%	100%	100%	100%	100%	100%	99%	99%	98%
Average Earned income	\$37,314	\$58,319	\$77,756	\$94,207	\$110,395	\$125,154	\$142,025	\$169,623	\$218,837	\$453,369	\$150,192
Housing Status											
Homeowners	44%	63%	76%	86%	88%	90%	90%	93%	93%	95%	82%
Renters	35%	19%	12%	7%	6%	4%	4%	1%	2%	1%	10%
Other	21%	18%	12%	7%	6%	6%	6%	6%	4%	3%	8%
Average Market Value	\$217,856	\$201,738	\$215,976	\$228,788	\$261,619	\$271,694	\$317,703	\$352,078	\$393,324	\$554,259	\$313,580
Average Monthly Rent	\$900	\$1,429	\$1,327	\$1,283	\$1,369	\$1,518	\$1,701	\$1,700	\$1,700	\$1,698	\$1,112
<b>AVERAGE TAX BURDENS</b>											
Local Property Tax											
All Households											
Total Tax	\$1,736	\$2,076	\$2,456	\$2,751	\$2,831	\$2,494	\$2,607	\$2,866	\$3,204	\$4,600	\$2,764
-Property Tax Refund	-650	-511	-445	-384	-260	-84	-12	-4	-2	-4	-236
Tax after PTR	\$1,086	\$1,566	\$2,011	\$2,367	\$2,571	\$2,410	\$2,595	\$2,862	\$3,202	\$4,595	\$2,529
Renters Only											
Total Tax on Rental Unit	\$2,498	\$3,158	\$1,877	\$1,021	\$3,229	\$1,201	\$1,346	\$1,345	\$1,345	\$1,338	\$2,007
Renters Share of Tax	\$958	\$1,210	\$720	\$391	\$442	\$461	\$515	\$516	\$516	\$513	\$771
-Property Tax Refund	-667	-498	-149	-2	0	0	0	0	0	0	-339
Tax after PTR	291	713	571	390	442	461	515	516	516	513	432
Homeowners Only											
Total Tax on Home	\$3,126	\$2,896	\$3,106	\$3,161	\$3,176	\$2,762	\$2,869	\$3,062	\$3,420	\$4,811	\$3,270
-Property Tax Refund	-938	-657	-563	-446	-292	-94	-13	-4	-3	-5	-245
Homeowners Tax after PTR	\$2,188	\$2,239	\$2,543	\$2,715	\$2,884	\$2,668	\$2,856	\$3,057	\$3,417	\$4,806	\$3,025
State Income Tax	-\$615	\$1,189	\$2,611	\$3,772	\$4,871	\$5,938	\$7,465	\$9,557	\$14,527	\$62,623	\$11,194
State Sales Tax	\$1,113	\$1,496	\$1,733	\$1,918	\$2,084	\$2,244	\$2,405	\$2,612	\$3,072	\$5,828	\$2,444
State Excise Taxes	\$485	\$537	\$565	\$585	\$603	\$613	\$612	\$607	\$611	\$713	\$594
Other Taxes	\$975	\$1,203	\$1,342	\$1,546	\$1,662	\$1,806	\$2,062	\$2,282	\$2,625	\$5,108	\$2,060
Business Taxes <sup>1</sup>	\$2,858	\$2,562	\$3,039	\$3,260	\$3,285	\$3,460	\$4,097	\$4,367	\$5,792	\$16,055	\$4,896
<b>Total State and Local Tax Burden</b>	<b>\$5,903</b>	<b>\$8,553</b>	<b>\$11,302</b>	<b>\$13,448</b>	<b>\$15,076</b>	<b>\$16,472</b>	<b>\$19,235</b>	<b>\$22,287</b>	<b>\$29,828</b>	<b>\$94,922</b>	<b>\$23,716</b>
Effective Tax Rate for all Taxes	14.1%	11.8%	12.0%	11.9%	11.5%	11.0%	11.4%	11.2%	11.1%	11.8%	11.9%

<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 29,266 Married Couples without Children

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Number of Households	29,266	29,266	29,266	29,266	29,266	29,266	29,266	29,266	29,266	29,266	292,655
Average Number of Children	0	0	0	0	0	0	0	0	0	0	0
Average Household Income	\$25,147	\$60,539	\$83,316	\$101,347	\$116,448	\$133,121	\$154,799	\$184,009	\$241,932	\$818,698	\$189,084
Maximum Household Income	44,895	73,698	92,499	109,368	123,489	142,933	166,918	204,425	290,729		
Percent with Earned Income	48%	93%	97%	98%	98%	99%	98%	99%	99%	97%	93%
Average Earned income	\$29,426	\$46,620	\$66,577	\$80,066	\$93,249	\$109,511	\$124,993	\$147,691	\$180,912	\$374,338	\$130,870
Housing Status											
Homeowners	37%	70%	78%	80%	86%	84%	87%	93%	87%	95%	80%
Renters	28%	17%	8%	9%	5%	9%	4%	3%	4%	2%	10%
Other	35%	12%	14%	12%	8%	7%	9%	5%	9%	3%	10%
Average Market Value	\$230,658	\$209,791	\$217,815	\$230,803	\$239,183	\$274,138	\$270,686	\$293,994	\$376,630	\$484,981	\$291,038
Average Monthly Rent	\$537	\$1,261	\$1,123	\$1,271	\$1,326	\$1,324	\$1,481	\$1,704	\$1,700	\$1,700	\$1,064
<b>AVERAGE TAX BURDENS</b>											
Local Property Tax											
All Households											
Total Tax	\$1,147	\$2,105	\$2,313	\$2,144	\$2,431	\$2,335	\$1,999	\$2,443	\$2,879	\$4,025	\$2,386
-Property Tax Refund	-330	-460	-347	-215	-164	-68	-12	-4	-16	-9	-163
Tax after PTR	\$817	\$1,645	\$1,965	\$1,929	\$2,267	\$2,268	\$1,987	\$2,439	\$2,863	\$4,016	\$2,224
Renters Only											
Total Tax on Rental Unit	\$1,399	\$3,280	\$895	\$1,006	\$1,046	\$1,048	\$1,168	\$1,346	\$1,345	\$1,345	\$1,501
Renters Share of Tax	\$536	\$1,257	\$343	\$386	\$401	\$402	\$448	\$516	\$516	\$516	\$576
-Property Tax Refund	-293	-394	-4	0	0	0	0	0	0	0	-149
Tax after PTR	\$243	\$863	\$339	\$386	\$401	\$402	\$447	\$515	\$516	\$516	\$428
Homeowners Only											
Total Tax on Home	\$2,672	\$2,668	\$2,895	\$2,646	\$2,793	\$2,734	\$2,281	\$2,617	\$3,271	\$4,231	\$2,913
-Property Tax Refund	-670	-558	-442	-269	-190	-81	-14	-4	-18	-9	-185
Homeowners Tax after PTR	\$2,002	\$2,110	\$2,453	\$2,377	\$2,603	\$2,653	\$2,267	\$2,613	\$3,253	\$4,221	\$2,728
State Income Tax	\$180	\$1,367	\$2,787	\$3,796	\$4,826	\$5,802	\$7,126	\$9,219	\$13,045	\$60,633	\$10,878
State Sales Tax	\$916	\$1,322	\$1,531	\$1,678	\$1,793	\$1,912	\$2,066	\$2,271	\$2,667	\$6,844	\$2,322
State Excise Taxes	\$561	\$567	\$575	\$581	\$586	\$591	\$587	\$580	\$577	\$746	\$600
Other Taxes	\$773	\$1,177	\$1,280	\$1,396	\$1,599	\$1,600	\$1,738	\$2,082	\$2,343	\$4,709	\$1,885
Business Taxes <sup>1</sup>	\$1,986	\$2,508	\$2,468	\$2,700	\$3,204	\$3,197	\$3,418	\$3,955	\$5,592	\$15,851	\$4,535
<b>Total State and Local Tax Burden</b>	<b>\$5,233</b>	<b>\$8,585</b>	<b>\$10,606</b>	<b>\$12,080</b>	<b>\$14,274</b>	<b>\$15,369</b>	<b>\$16,923</b>	<b>\$20,546</b>	<b>\$27,086</b>	<b>\$92,799</b>	<b>\$22,444</b>
Effective Tax Rate for all Taxes	20.8%	14.2%	12.7%	11.9%	12.3%	11.5%	10.9%	11.2%	11.2%	11.3%	11.9%

<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 113,493 Non-Senior Single-Person Households

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Number of Households	113,493	113,493	113,493	113,493	113,493	113,493	113,493	113,493	113,493	113,493	1,134,925
Average Household Income	\$7,184	\$14,342	\$20,114	\$26,594	\$34,327	\$42,567	\$51,210	\$61,749	\$78,500	\$173,970	\$49,303
Maximum Household Income	\$11,800	\$17,035	\$23,183	\$30,142	\$38,588	\$46,610	\$56,192	\$68,539	\$90,375		
Percent with Earned Income	54.5%	44.7%	61.6%	75.3%	91.4%	95.4%	96.8%	97.6%	96.7%	96.4%	81.0%
Average Earned income	\$6,543	\$11,514	\$15,462	\$21,562	\$28,685	\$36,944	\$45,251	\$54,089	\$67,843	\$119,411	\$46,058
Housing Status											
Homeowners	9%	8%	12%	13%	16%	22%	31%	36%	47%	67%	26%
Renters	64%	51%	45%	44%	40%	33%	32%	26%	19%	16%	36%
Other	26%	41%	43%	44%	44%	45%	37%	38%	34%	17%	38%
Average Market Value	\$202,267	\$146,941	\$157,367	\$195,799	\$161,911	\$175,707	\$171,895	\$170,076	\$183,755	\$249,450	\$194,255
Average Monthly Rent	\$177	\$325	\$476	\$630	\$786	\$920	\$1,112	\$1,205	\$1,158	\$1,331	\$683
<b>AVERAGE TAX BURDENS</b>											
Local Property Tax											
All Households											
Total Tax	\$393	\$333	\$467	\$687	\$794	\$864	\$1,293	\$1,400	\$1,454	\$2,576	\$1,026
<u>-Property Tax Refund</u>	<u>-\$146</u>	<u>-\$150</u>	<u>-\$194</u>	<u>-\$196</u>	<u>-\$203</u>	<u>-\$200</u>	<u>-\$247</u>	<u>-\$208</u>	<u>-\$178</u>	<u>-\$87</u>	<u>-\$181</u>
Tax after PTR	\$247	\$183	\$273	\$491	\$591	\$664	\$1,046	\$1,193	\$1,276	\$2,489	\$845
Renters Only											
Total Tax on Rental Unit	\$446	\$867	\$1,193	\$1,376	\$1,769	\$2,028	\$2,537	\$2,331	\$1,200	\$1,040	\$1,399
Renters Share of Tax	\$171	\$332	\$457	\$527	\$678	\$777	\$973	\$894	\$460	\$399	\$537
<u>-Property Tax Refund</u>	<u>-\$132</u>	<u>-\$242</u>	<u>-\$303</u>	<u>-\$283</u>	<u>-\$299</u>	<u>-\$270</u>	<u>-\$298</u>	<u>-\$205</u>	<u>-\$27</u>	<u>\$0</u>	<u>-\$231</u>
Tax after PTR	\$39	\$91	\$154	\$244	\$379	\$507	\$675	\$689	\$433	\$399	\$307
Homeowners Only											
Total Tax on Home	\$3,007	\$1,981	\$2,145	\$3,441	\$3,203	\$2,683	\$3,105	\$3,218	\$2,912	\$3,736	\$3,151
<u>-Property Tax Refund</u>	<u>-\$660</u>	<u>-\$337</u>	<u>-\$485</u>	<u>-\$563</u>	<u>-\$523</u>	<u>-\$499</u>	<u>-\$488</u>	<u>-\$434</u>	<u>-\$371</u>	<u>-\$128</u>	<u>-\$375</u>
Homeowners Tax after PTR	\$2,347	\$1,644	\$1,659	\$2,877	\$2,680	\$2,184	\$2,617	\$2,784	\$2,541	\$3,609	\$2,776
State Income Tax	-\$68	-\$70	\$119	\$448	\$944	\$1,409	\$1,946	\$2,599	\$3,703	\$10,877	\$2,191
State Sales Tax	\$465	\$569	\$623	\$672	\$720	\$764	\$804	\$850	\$983	\$1,732	\$820
State Excise Taxes	\$337	\$355	\$364	\$373	\$381	\$388	\$395	\$402	\$408	\$427	\$383
Other Taxes	\$257	\$284	\$345	\$397	\$455	\$534	\$634	\$671	\$802	\$1,333	\$571
Business Taxes <sup>1</sup>	\$772	\$859	\$916	\$1,020	\$1,117	\$1,229	\$1,304	\$1,356	\$1,683	\$3,835	\$1,421
<b>Total State and Local Tax Burden</b>	<b>\$2,010</b>	<b>\$2,180</b>	<b>\$2,640</b>	<b>\$3,402</b>	<b>\$4,209</b>	<b>\$4,989</b>	<b>\$6,129</b>	<b>\$7,071</b>	<b>\$8,854</b>	<b>\$20,694</b>	<b>\$6,230</b>
Effective Tax Rate for all Taxes	28.0%	15.2%	13.1%	12.8%	12.3%	11.7%	12.0%	11.5%	11.3%	11.9%	12.6%

<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 Single-Person Households

Each Decile Contains 39,440 Senior Single-Person Households

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Number of Households	39,440	39,440	39,440	39,440	39,440	39,440	39,440	39,440	39,440	39,440	394,402
Average Household Income	\$11,129	\$15,789	\$20,911	\$26,477	\$32,817	\$40,275	\$49,513	\$61,811	\$80,702	\$247,673	\$56,936
Maximum Household Income	\$13,772	\$18,146	\$23,823	\$29,365	\$36,587	\$44,083	\$55,184	\$68,877	\$95,721		
Percent with Earned Income	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Average Earned income	\$11,266	\$5,961	\$6,310	\$10,890	\$13,134	\$15,969	\$21,340	\$22,328	\$32,794	\$82,478	\$30,961
Housing Status											
Homeowners	27%	30%	44%	52%	60%	68%	72%	71%	77%	77%	58%
Renters	54%	49%	34%	30%	27%	20%	17%	20%	7%	9%	27%
Other	19%	21%	22%	18%	13%	12%	11%	9%	15%	14%	15%
Average Market Value	\$166,707	\$156,825	\$168,487	\$176,448	\$192,759	\$216,272	\$220,996	\$233,933	\$285,237	\$364,503	\$232,882
Average Monthly Rent	\$256	\$355	\$488	\$634	\$788	\$952	\$1,157	\$1,437	\$1,331	\$1,599	\$645
<b>AVERAGE TAX BURDENS</b>											
Local Property Tax											
All Households											
Total Tax	\$645	\$864	\$1,361	\$1,922	\$2,355	\$2,884	\$3,183	\$3,696	\$3,223	\$3,665	\$2,378
-Property Tax Refund	-169	-307	-516	-618	-698	-682	-753	-756	-536	-100	-514
Tax after PTR	\$477	\$557	\$846	\$1,303	\$1,657	\$2,202	\$2,430	\$2,940	\$2,688	\$3,565	\$1,864
Renters Only											
Total Tax on Rental Unit	\$551	\$1,070	\$2,143	\$2,575	\$2,993	\$4,050	\$4,467	\$6,378	\$3,817	\$1,382	\$2,369
Renters Share of Tax	\$211	\$410	\$821	\$987	\$1,147	\$1,553	\$1,712	\$2,445	\$1,463	\$530	\$910
-Property Tax Refund	-160	-342	-627	-673	-749	-772	-757	-810	-123	0	-499
Tax after PTR	\$51	\$68	\$194	\$315	\$398	\$781	\$956	\$1,635	\$1,340	\$501	\$411
Homeowners Only											
Total Tax on Home	\$1,940	\$2,169	\$2,412	\$3,053	\$3,313	\$3,663	\$3,892	\$4,365	\$4,026	\$4,693	\$3,619
-Property Tax Refund	-307	-462	-680	-804	-830	-776	-862	-835	-681	-124	-657
Homeowners Tax after PTR	\$1,633	\$1,707	\$1,731	\$2,249	\$2,483	\$2,887	\$3,031	\$3,530	\$3,346	\$4,568	\$2,961
State Income Tax	\$19	\$0	-\$4	-\$1	\$71	\$264	\$725	\$1,742	\$3,096	\$16,265	\$2,218
State Sales Tax	\$473	\$536	\$591	\$642	\$693	\$758	\$841	\$942	\$1,080	\$1,702	\$825
State Excise Taxes	\$165	\$183	\$199	\$214	\$228	\$237	\$237	\$239	\$242	\$260	\$218
Other Taxes	\$335	\$371	\$416	\$475	\$533	\$589	\$706	\$761	\$868	\$1,329	\$639
Business Taxes <sup>1</sup>	\$792	\$743	\$852	\$932	\$1,192	\$1,562	\$1,434	\$1,558	\$2,020	\$6,855	\$1,796
<b>Total State and Local Tax Burden</b>	<b>\$2,261</b>	<b>\$2,389</b>	<b>\$2,901</b>	<b>\$3,565</b>	<b>\$4,373</b>	<b>\$5,611</b>	<b>\$6,375</b>	<b>\$8,182</b>	<b>\$9,993</b>	<b>\$29,976</b>	<b>\$7,560</b>
Effective Tax Rate for all Taxes	20.3%	15.1%	13.9%	13.5%	13.3%	13.9%	12.9%	13.2%	12.4%	12.1%	13.3%

<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

## Senior Married Households

Each Decile Contains 33,086 Senior Married Couples

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Number of Households	33,086	33,086	33,086	33,086	33,086	33,086	33,086	33,086	33,086	33,086	330,858
Percent that are Married	11%	7%	5%	3%	4%	3%	1%	4%	6%	6%	5%
Average Household Income	\$28,903	\$49,960	\$62,916	\$75,444	\$88,148	\$102,304	\$118,396	\$143,478	\$189,925	\$647,147	\$147,326
Maximum Household Income	42,286	56,653	68,702	81,370	94,981	109,810	129,166	160,835	236,651	0	236,497
Percent with Earned Income	22%	33%	39%	45%	43%	50%	53%	53%	57%	69%	46%
Average Earned income	17,464	16,352	21,538	25,927	34,131	40,210	45,616	55,748	79,463	193,678	63,852
Housing Status											
Homeowners	68%	86%	90%	94%	96%	96%	96%	96%	97%	95%	91%
Renters	19%	9%	7%	3%	2%	1%	1%	2%	1%	2%	5%
Other	13%	6%	3%	4%	2%	2%	2%	3%	2%	3%	4%
Average Market Value	\$204,878	\$215,883	\$225,334	\$254,934	\$276,234	\$283,504	\$309,093	\$341,824	\$393,690	\$530,245	\$308,124
Average Monthly Rent	\$629	\$1,121	\$1,471	\$1,224	\$1,159	\$1,217	\$1,345	\$1,418	\$1,698	\$1,703	\$978
<b>AVERAGE TAX BURDENS</b>											
Local Property Tax											
All Households											
Total Tax	\$1,716	\$2,750	\$2,904	\$3,144	\$3,265	\$3,418	\$3,602	\$2,839	\$3,203	\$4,099	\$3,095
<u>-Property Tax Refund</u>	<u>-483</u>	<u>-682</u>	<u>-693</u>	<u>-633</u>	<u>-581</u>	<u>-482</u>	<u>-304</u>	<u>-37</u>	<u>-13</u>	<u>-15</u>	<u>-392</u>
Tax after PTR	\$1,233	\$2,068	\$2,211	\$2,511	\$2,684	\$2,936	\$3,298	\$2,802	\$3,191	\$4,084	\$2,702
Renters Only											
Total Tax on Rental Unit	\$2,003	\$4,042	\$5,002	\$2,509	\$1,025	\$970	\$1,084	\$1,122	\$1,343	\$1,343	\$2,496
Renters Share of Tax	768	1,549	1,917	962	393	366	415	430	515	515	959
<u>-Property Tax Refund</u>	<u>-465</u>	<u>-704</u>	<u>-658</u>	<u>-65</u>	<u>-48</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>-391</u>
Tax after PTR	\$303	\$846	\$1,259	\$896	\$345	\$366	\$415	\$430	\$515	\$514	\$568
Homeowners Only											
Total Tax on Home	\$2,285	\$2,993	\$3,051	\$3,310	\$3,385	\$3,529	\$3,715	\$2,962	\$3,312	\$4,293	\$3,319
<u>-Property Tax Refund</u>	<u>-580</u>	<u>-725</u>	<u>-722</u>	<u>-675</u>	<u>-603</u>	<u>-500</u>	<u>-315</u>	<u>-39</u>	<u>-13</u>	<u>-16</u>	<u>-408</u>
Homeowners Tax after PTR	\$1,705	\$2,268	\$2,329	\$2,635	\$2,782	\$3,029	\$3,400	\$2,923	\$3,299	\$4,278	\$2,911
State Income Tax	\$60	\$72	\$264	\$921	\$1,859	\$3,051	\$4,262	\$6,228	\$9,123	\$45,167	\$7,101
State Sales Tax	\$1,083	\$1,353	\$1,484	\$1,598	\$1,708	\$1,818	\$1,934	\$2,098	\$2,364	\$3,607	\$1,914
State Excise Taxes	\$272	\$315	\$333	\$347	\$359	\$371	\$383	\$399	\$425	\$534	\$374
Other Taxes	\$968	\$1,086	\$1,228	\$1,246	\$1,316	\$1,425	\$1,440	\$1,585	\$1,897	\$3,823	\$1,609
Business Taxes <sup>1</sup>	\$2,292	\$2,020	\$2,561	\$2,728	\$2,765	\$3,390	\$2,966	\$4,778	\$4,215	\$16,735	\$4,464
<b>Total State and Local Tax Burden</b>	<b>\$5,908</b>	<b>\$6,914</b>	<b>\$8,080</b>	<b>\$9,351</b>	<b>\$10,692</b>	<b>\$12,991</b>	<b>\$14,282</b>	<b>\$17,889</b>	<b>\$21,216</b>	<b>\$73,950</b>	<b>\$18,164</b>
Effective Tax Rate for all Taxes	20.4%	13.8%	12.8%	12.4%	12.1%	12.7%	12.1%	12.5%	11.2%	11.4%	12.3%

<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

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

Each Decile Contains 32,273 Single-Parent Households

HOUSEHOLD CHARACTERISTICS	Population Decile										Total
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten	
Number of Households	32,273	32,273	32,273	32,273	32,273	32,273	32,273	32,273	32,273	32,273	322,733
Average Number of Children	1.5	1.6	1.7	1.7	1.8	1.7	1.7	1.6	1.5	1.4	1.6
Average Household Income	\$12,341	\$22,441	\$29,318	\$35,226	\$40,959	\$47,437	\$55,579	\$66,339	\$83,268	\$186,568	\$52,928
Maximum Household Income	\$18,400	\$26,277	\$32,346	\$38,179	\$43,946	\$50,915	\$60,407	\$72,921	\$96,113	\$83,811,663	\$83,811,663
Percent with Earned Income	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1	\$1
Average Earned income	\$8,433	\$14,773	\$18,469	\$24,393	\$30,206	\$37,334	\$44,475	\$55,717	\$69,462	\$126,190	\$46,196
Housing Status											
Homeowners	12%	13%	18%	21%	24%	35%	41%	55%	66%	77%	36%
Renters	65%	65%	58%	52%	48%	38%	37%	22%	16%	10%	42%
Other	23%	22%	24%	27%	28%	27%	22%	23%	18%	13%	22%
Average Market Value	\$170,875	\$132,678	\$174,854	\$155,180	\$176,523	\$179,312	\$173,518	\$205,377	\$220,783	\$311,987	\$214,701
Average Monthly Rent	\$261	\$474	\$615	\$732	\$840	\$952	\$1,141	\$1,283	\$1,291	\$1,358	\$671
<b>AVERAGE TAX BURDENS</b>											
Local Property Tax											
All Households											
Total Tax	\$505	\$566	\$809	\$879	\$1,113	\$1,576	\$1,552	\$2,490	\$2,383	\$3,534	\$1,538
-Property Tax Refund	-166	-291	-339	-337	-382	-432	-401	-433	-390	-178	-335
Tax after PTR	\$339	\$275	\$470	\$542	\$732	\$1,144	\$1,151	\$2,057	\$1,993	\$3,356	\$1,203
Renters Only											
Total Tax on Rental Unit	\$552	\$1,076	\$1,458	\$1,555	\$1,907	\$2,351	\$2,628	\$2,931	\$2,138	\$1,088	\$1,563
Renters Share of Tax	212	413	559	596	731	901	1,008	1,124	819	417	600
-Property Tax Refund	-157	-327	-410	-389	-460	-499	-456	-446	-167	-13	-351
Tax after PTR	\$55	\$86	\$149	\$207	\$271	\$403	\$551	\$678	\$652	\$405	\$250
Homeowners Only											
Total Tax on Home	\$2,985	\$2,173	\$2,653	\$2,616	\$3,127	\$3,403	\$2,864	\$3,920	\$3,395	\$4,502	\$3,495
-Property Tax Refund	-542	-600	-562	-630	-678	-690	-567	-604	-548	-228	-520
Homeowners Tax after PTR	\$2,443	\$1,573	\$2,091	\$1,986	\$2,449	\$2,713	\$2,297	\$3,316	\$2,847	\$4,274	\$2,975
State Income Tax	-\$382	-\$840	-\$883	-\$773	-\$432	\$110	\$876	\$1,731	\$2,795	\$10,915	\$1,312
State Sales Tax	\$618	\$756	\$824	\$873	\$916	\$960	\$1,009	\$1,071	\$1,201	\$1,862	\$984
State Excise Taxes	\$495	\$485	\$483	\$482	\$483	\$483	\$485	\$488	\$531	\$714	\$511
Other Taxes	\$402	\$480	\$600	\$624	\$663	\$778	\$873	\$973	\$1,166	\$1,834	\$819
Business Taxes <sup>1</sup>	\$982	\$1,071	\$1,153	\$1,403	\$1,311	\$1,673	\$1,437	\$1,636	\$1,965	\$3,976	\$1,635
<b>Total State and Local Tax Burden</b>	<b>\$2,454</b>	<b>\$2,227</b>	<b>\$2,647</b>	<b>\$3,151</b>	<b>\$3,672</b>	<b>\$5,148</b>	<b>\$5,832</b>	<b>\$7,958</b>	<b>\$9,650</b>	<b>\$22,657</b>	<b>\$6,465</b>
Effective Tax Rate for all Taxes	19.9%	9.9%	9.0%	8.9%	9.0%	10.9%	10.5%	12.0%	11.6%	12.1%	12.2%

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

**Table 5-7**  
**Full-Sample Suits Index**  
**Calculated Separately for Each Household Type**

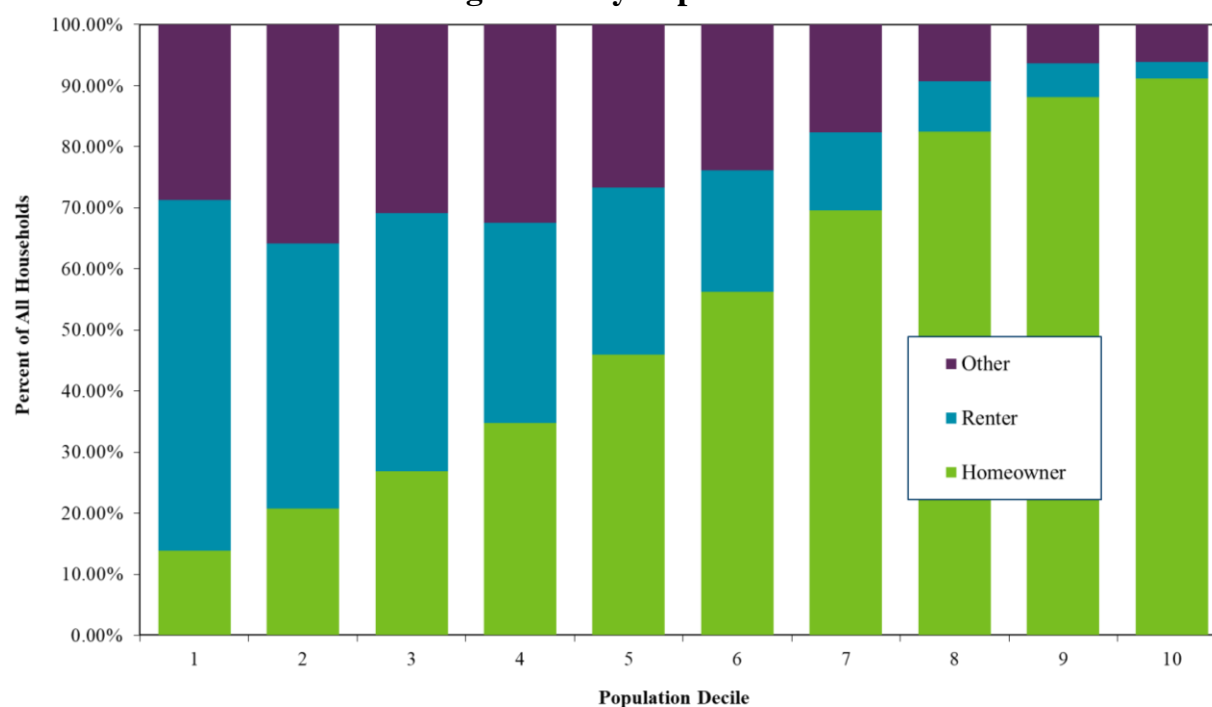
Household Type	Full Sample Suits Index	Average Effective Tax Rate
Married With Children	-0.003	11.6%
Married No Children (Non-Senior)	-0.032	11.6%
Single-Person Household (Non-Senior)	-0.034	12.2%
Single Seniors	-0.043	12.9%
Married Seniors	-0.039	12.0%
Single Parents	+0.036	11.3%
<b>All Family Types</b>	<b>-0.024</b>	<b>11.9%</b>

### 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 13.9 percent in the 1<sup>st</sup> decile to 91.2 percent in the 10<sup>th</sup> decile. For all households, 53.0 percent were homeowners. Renter households outnumbered homeowners in each of the first three deciles; the top three deciles contained about 16 homeowner households for every renter household.

*Figure 5-3* also shows that 30.9 percent or more 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 that are claimed (or could be claimed) as dependents for income tax purposes.

**Figure 5-3**  
**Housing Status by Population Decile**



In this study, a secondary household living with a primary household is assumed to pay no property tax. For example, an older child living with parents (but not claimed as 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>27</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 2,937,388 Minnesota households in 2021, with a median income of \$58,014. In contrast, the U.S. Census Bureau reports a total of 2,281,033 Minnesota households in 2021, with a median household income of \$77,720. Census households average 2.45 persons, while the incidence study households average 1.88 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.

---

<sup>27</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 27.4 percent more households than the Census, and the median household income in the incidence study is only 74.6 percent of that reported by the Census.

In summary, the incidence study's population is consistent with the Census.<sup>28</sup> The U.S. Census estimate of Minnesota's 2021 population exceeds the Incidence Study population by 3.5 percent (though the incidence study's population exceeds the population in Census *households* because it includes some in group quarters). This difference in the total population 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.

---

<sup>28</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 about 27.4 percent. This reflects both the study's broader definition of income and income underreporting in the Census.

## **Appendix A**

### **The Incidence Study Database**

The 2021 incidence study database includes detailed information on income and taxes for a stratified random sample of 138,970 Minnesota households. This sample is then “blown up” to represent about 2.94 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. Since information for 2021 was not available from the Department of Human Services, data for 2020 was used and adjusted to match the aggregate totals in 2021. Information obtained from the American Community Survey of the United States Census Bureau 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.

In 2020 and 2021, many households received Economic Impact Payments from the federal government in response to the COVID-19 pandemic. The second and third EIPs were made in 2021. The payments were estimated based on household size, household type, and adjusted gross income. Households that did not file an income tax return were assumed to qualify for the maximum payment for their household size.

Total payments to Minnesota households in 2021 are estimated at \$8.8 billion, seen in *Table A-1*. Including those payments increases household income and lowers the effective tax rates for most households. Because the payments were a flat amount based on household size, the increase in income is most noticeable for lower income households. Fewer 10<sup>th</sup> decile households received payments due to the income limits on Economic Impact Payments.



**Table A-1**  
**Economic Impact Payments by Decile**

<b>Decile</b>	<b>Economic Impact Payment (millions)</b>	<b>Percentage</b>
<b>First</b>	\$695	7.9%
<b>Second</b>	\$750	8.5%
<b>Third</b>	\$845	9.6%
<b>Fourth</b>	\$904	10.2%
<b>Fifth</b>	\$969	11.0%
<b>Sixth</b>	\$1,024	11.6%
<b>Seventh</b>	\$1,046	11.8%
<b>Eighth</b>	\$1,265	14.3%
<b>Ninth</b>	\$1,257	14.2%
<b>Tenth</b>	\$87	1.0%
<b>All</b>	<b>\$8,843</b>	<b>100.0%</b>

### ***Components of Household Income in 2021***

*Table A-2* summarizes the measure of household income used in this study. Minnesota households are divided into three groups.

- Income tax filers (87.2 percent of all households and 97.7 percent of all income)
- Property Tax Refund filers who file no income tax return (2.3 percent of all households and 0.5 percent of all income)
- Nonfilers (10.5 percent of all households and 1.8 percent of all income)

Federal Gross Income (FGI) reported on federal income tax returns accounts for 89.4 percent of total income. Nontaxable interest and retirement income reported on income tax returns adds another 4.5 percent.

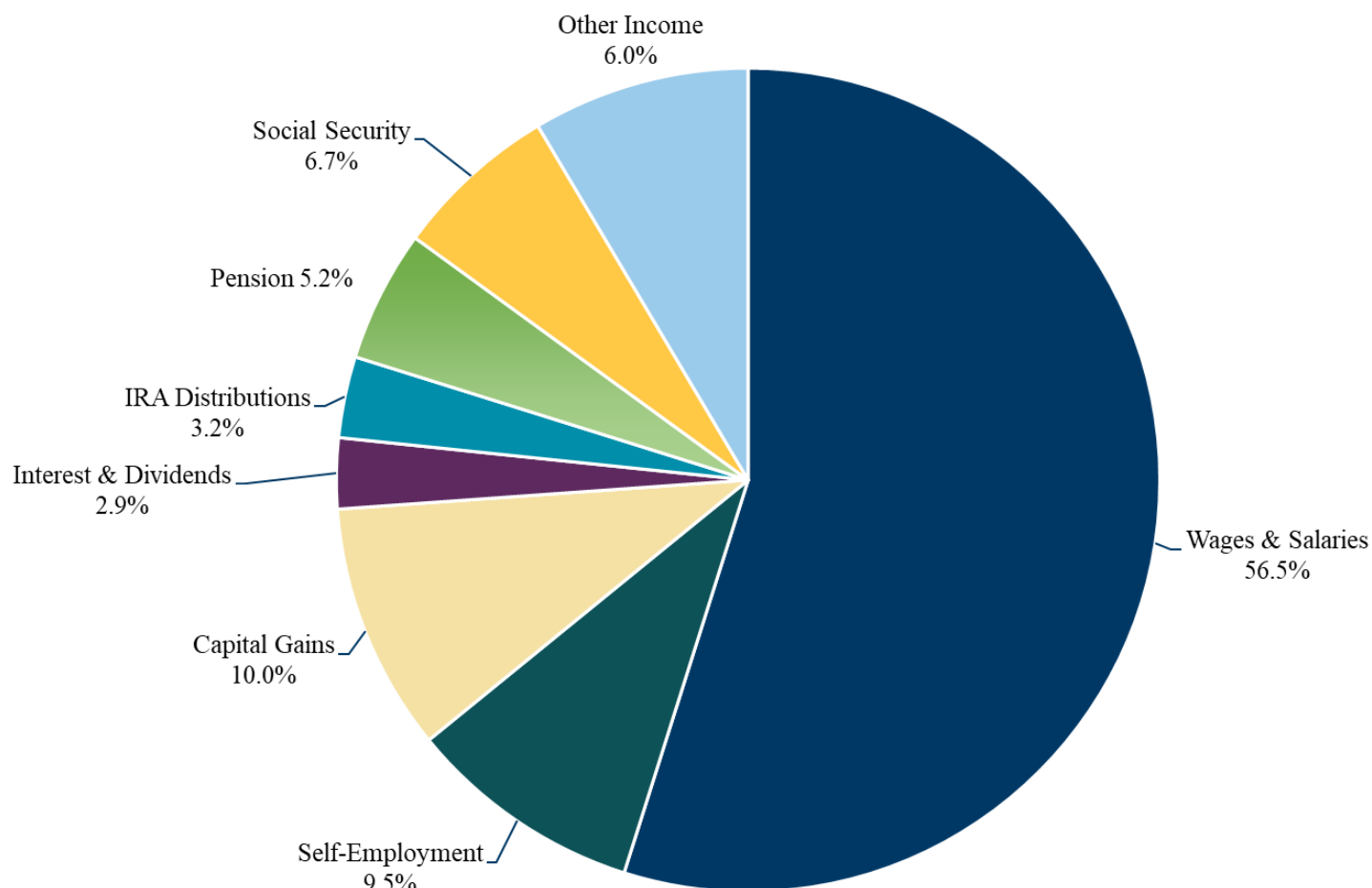
**Table A-2**  
**Components of Total Household Income in 2021 (\$ Millions)**

Group	Source of Income	Amount
File income tax 2,561,918 households  (87.2% of households 97.7% of total income)	Wages	163,008
	Taxable interest & dividends	7,352
	Business income (Schedules C, E, and F)	26,441
	Capital gains & other gains	29,157
	Taxable IRA distributions	8,274
	Taxable pension & annuity income	13,419
	Taxable unemployment benefits	3,891
	Taxable social security benefits	8,274
	Other taxable income	-254
	<b>Federal Gross Income (FGI)</b>	<b>\$ 259,562</b>
	Adjustments to FGI	
	Taxable refunds of state income taxes	-44
	Half of Self-employment tax	-569
	Self-employed health insurance deduction	-675
	Penalty on early withdrawal of savings	-1
	Alimony paid	-139
	Nontaxable interest	877
	Nontaxable IRA distributions	1,650
	Nontaxable pension and annuity	16,799
	Rollover	-13,536
	Nontaxable social security income	7,253
	Other nontaxable income	11,452
	Public assistance cash payments	360
	Economic impact payment	7,850
	Workers' compensation	207
	<b>Total Household Income</b>	<b>\$291,045</b>
File Property Tax Refund (but not income tax) 66,741 households  (2.3% of households 0.5% of total income)	Wages	189
	Interest & dividends	12
	Unemployment benefits	31
	Pension income	151
	Social security income	944
	Public assistance cash payments	175
	Economic impact payment	159
	Workers' compensation	4
	Other income	90
	<b>Total Household Income</b>	<b>\$1,756</b>
Nonfilers 308,730 households  (10.5% of households 1.8% of total income)	Wages	942
	Interest & dividends	54
	Unemployment benefits	671
	Pension income	412
	Social security income	2,865
	Public assistance cash payments	340
	Economic impact payment	833
	Workers' compensation	28
	Other income	190
	<b>Total Household Income</b>	<b>\$6,336</b>
<b>Total Population</b> <b>2,937,388 households</b>	<b>Total Household Income<sup>1</sup></b>	<b>\$299,136</b>

<sup>1</sup>Household income differs from what is shown in Table 2-2 because Table 2-2 sets negative total incomes to zero.

*Figure A-1* shows the shares of income by type of income. Wages account for 56.5 percent of all income, and income from sole proprietors, farmers, pass-through entities, and rents accounts for another 9.5 percent. Capital income in the form of interest, dividends, and capital gains combines for 12.9 percent. Retirement income totals 15.1 percent.

**Figure A-1**  
**Shares of Total Income (2021)**



### ***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 for deaths occurring between 2014 and 2021 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, medical, and household insurance, the tax burden allocation was in proportion to expenditures as estimated from the *Consumer Expenditure Survey*.

*Gambling Taxes.* Gross receipts taxes on pull-tabs, tipboards, bingo, raffles, and horse racing were assumed to be borne by the bettor. A 1994 survey by the Minnesota Lottery<sup>29</sup> provided substantial information about how gambling varies by income level. That information was supplemented by more recent data from a Wisconsin Lottery Tracking Study and current data from the *Consumer Expenditure Survey*.

*MinnesotaCare Taxes.* The 1.8 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 total (employer plus employee) 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 and County Wheelage Taxes.* 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.

---

<sup>29</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 2021, the burden of the mortgage registration tax was distributed over all mortgage holders (in proportion to mortgage interest paid in 2021); 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 B*).

## **Taxes on Business**

### ***Introduction***

This study includes \$13.3 billion in business taxes in 2021, 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 1 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 1 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 three-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.

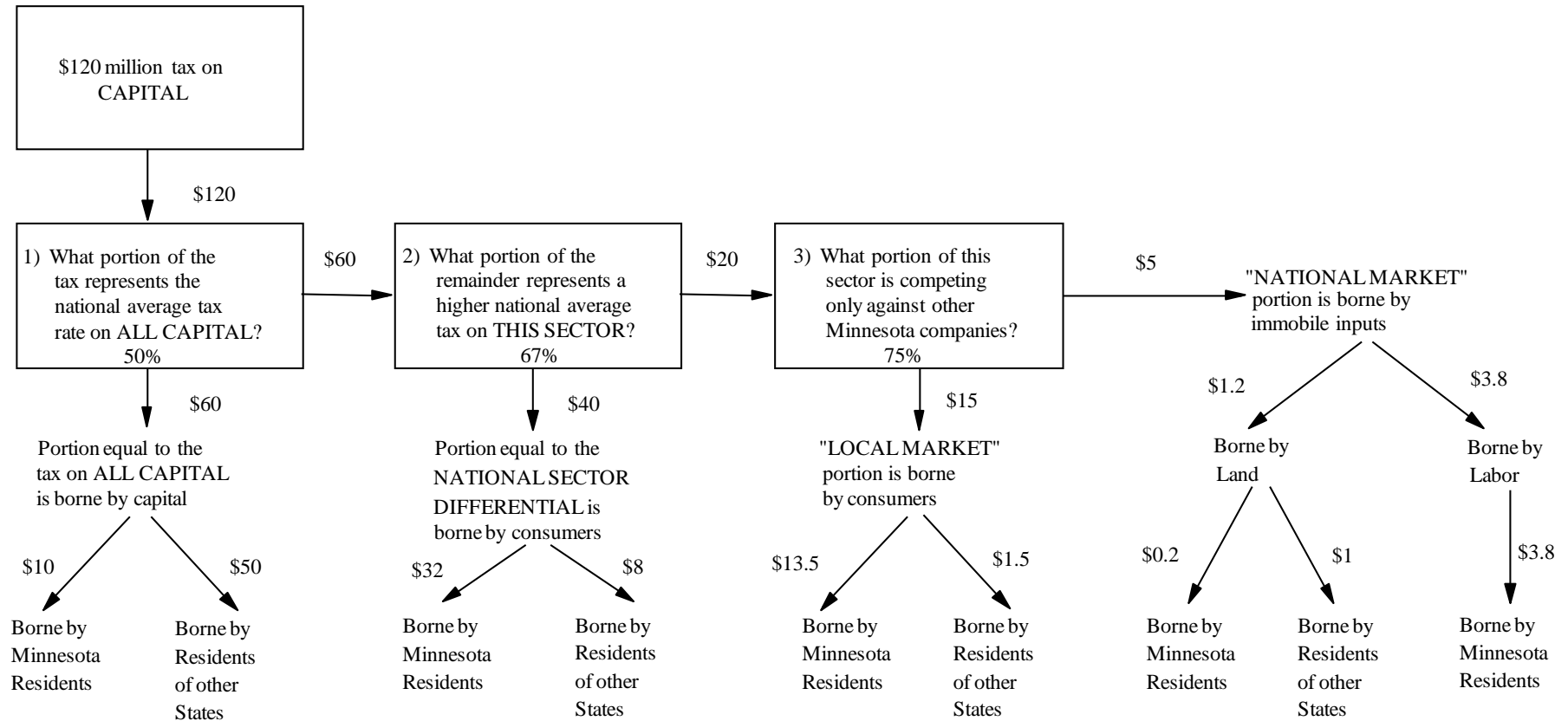
*Question 1.* What portion of this \$120 million Minnesota tax represents the national average tax on all capital? If all states levied an identical tax on *all* forms of capital, capital would be unable to shift that tax to others and the entire burden would be borne by capital. Given the variation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



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

\*Capital includes land.

*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 \$120 million 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 (\$60 million, which is 50 percent of the total).
2. The portion representing the “national sector differential” is borne by consumers (\$40 million, which is 33 percent of the total).
3. The portion representing the “Minnesota sector differential” is borne by:
  - Consumers for products sold in “local markets” (\$15 million, 13 percent);
  - Labor and landowners for products sold in “national markets” (\$5 million, 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. IRS data was used to identify the proportion of Minnesota businesses in each sector that are corporations, S-corps, partnerships, and sole proprietors. This study assumed that nonresidents own 90 percent of the stock in corporations subject to Minnesota tax, 50 percent of S-corps and partnerships subject to Minnesota tax, and 10 percent of sole proprietor businesses subject to Minnesota tax. 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-fifth 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) that may be deducted in calculating federal individual income tax liability. The net offset for the average state is again zero. The federal law changes in 2017 have further reduced the size of the federal offset by reducing the number of itemizers and lowering federal tax rates. 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 B*.

### ***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.”

### ***Property Taxes on Land***

Unlike reproducible capital, land is not mobile, so the land share of business property taxes is assumed to fall on its owners.



## 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 household type.

*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 farmland. Approximately half of all farm business property taxes were paid on rented land, reflecting higher classification rates on non-homestead farms. Therefore, about half of the farm business 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.

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 (2021)**

	Percent Borne by Minnesota Taxpayers			Percent Exported
	Capital	Labor	Consumers	
<b>State Taxes</b>				
Corporation Franchise Tax	8%	7%	51%	33%
Sales and Excise Taxes				
General Sales and Use Tax	8%	1%	58%	33%
Motor Vehicle Sales Tax	32%	2%	13%	53%
Motor Fuels Excise Taxes	0%	0%	37%	63%
Mortgage and Deed Taxes	54%	0%	18%	28%
Gross Earnings Taxes				
Insurance Premiums Taxes	19%	0%	34%	46%
In lieu of property taxes				
Motor Vehicle Registration Tax	14%	16%	39%	31%
Solid Waste Management Taxes	0%	0%	70%	30%
State Property Tax				
Commercial	22%	2%	32%	43%
Industrial	9%	2%	5%	83%
Utility	3%	3%	56%	39%
<b>Local Taxes</b>				
Property Taxes (Pay 2021)				
General Property Tax				
Commercial	22%	2%	32%	43%
Industrial	9%	2%	5%	83%
Farm (other than residence)	100%	0%	0%	0%
Rental Housing	45%	0%	38%	16%
Utility	3%	3%	56%	39%
Mining Production Taxes (taconite)	9%	1%	0%	90%
Wheelage Taxes	14%	16%	39%	31%
Local Sales Taxes	8%	1%	58%	33%
Local Gross Earnings Taxes	3%	3%	56%	39%

## 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 B*).

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

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

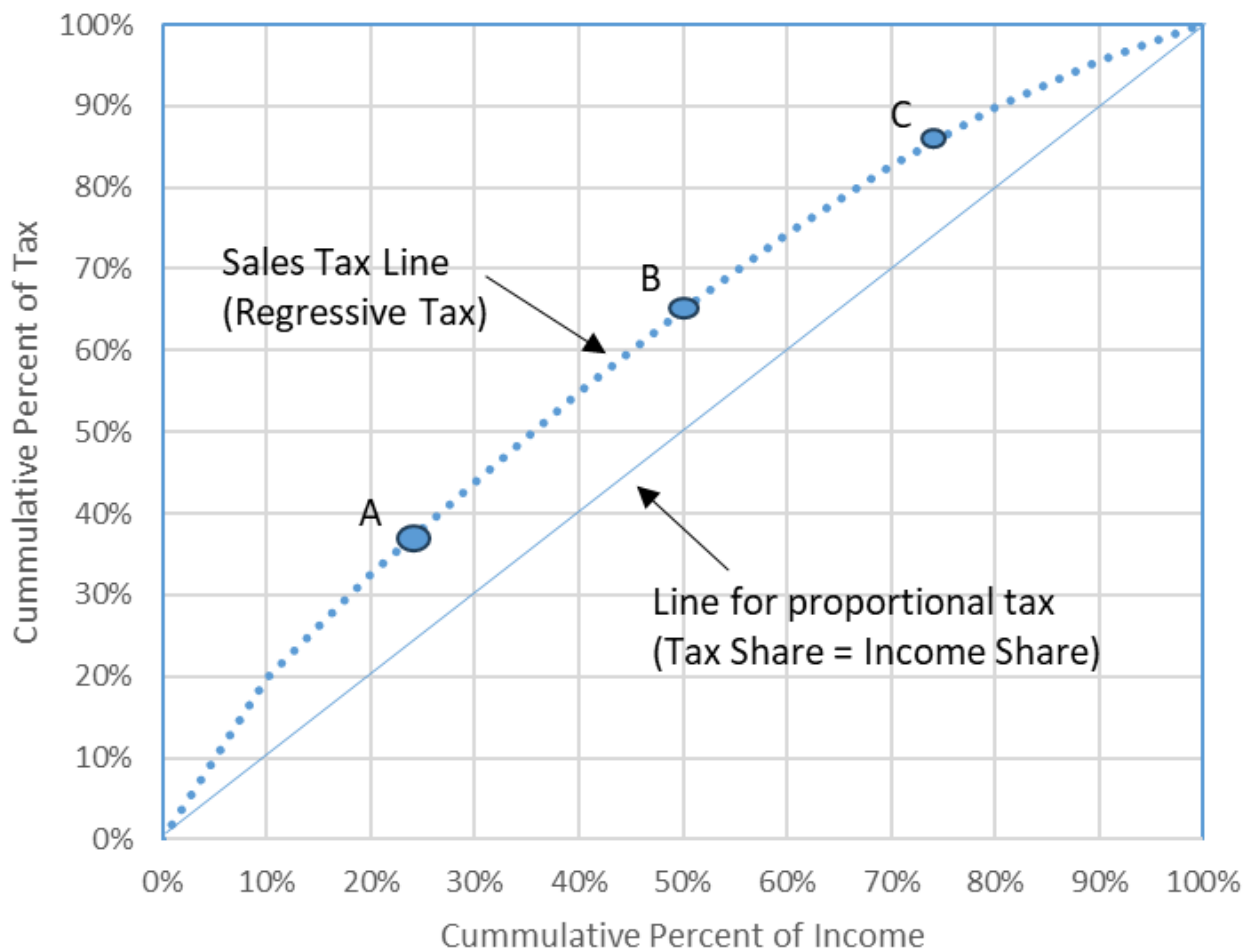
### The Suits Index

The Suits index is a summary measure of the progressivity or regressivity of a tax. The index is named after economist Daniel Suits who proposed it in 1977. The calculation of the index is illustrated in the *Figures C-1 and C-2* below, using 2021 data.

In the figures, the horizontal axis shows the cumulative percentage of total income, starting with the lowest income household. The straight diagonal line represents a proportional tax, where the cumulative percent of tax is the same as the cumulative percentage of income. Those with the bottom 25 percent of income would pay 25 percent of the tax; those with the bottom 50 percent of the income would pay 50 percent of the tax.

In *Figure C-1*, the line for the sales tax is above the proportional tax line. Those with the bottom 25 percent of income pay about 38 percent of the tax. (See point A). Those with the bottom 50 percent of income pay 65 percent of the tax. (See point B). Because the share of tax exceeds the share of income, the tax is regressive.

**Figure C-1**  
**Suits Index of Sales Tax**



The Suits index is the ratio of the area between the solid and dashed line to the area of the full triangle under the solid line, 0.221. If the dashed line is above the solid line (as it is for sales taxes), the tax is regressive, so the Suits index is negative. The Suits index for all of Minnesota's sales taxes in 2021 was -0.221.

**Figure C-2**  
**Suits Index of Individual Income Tax**

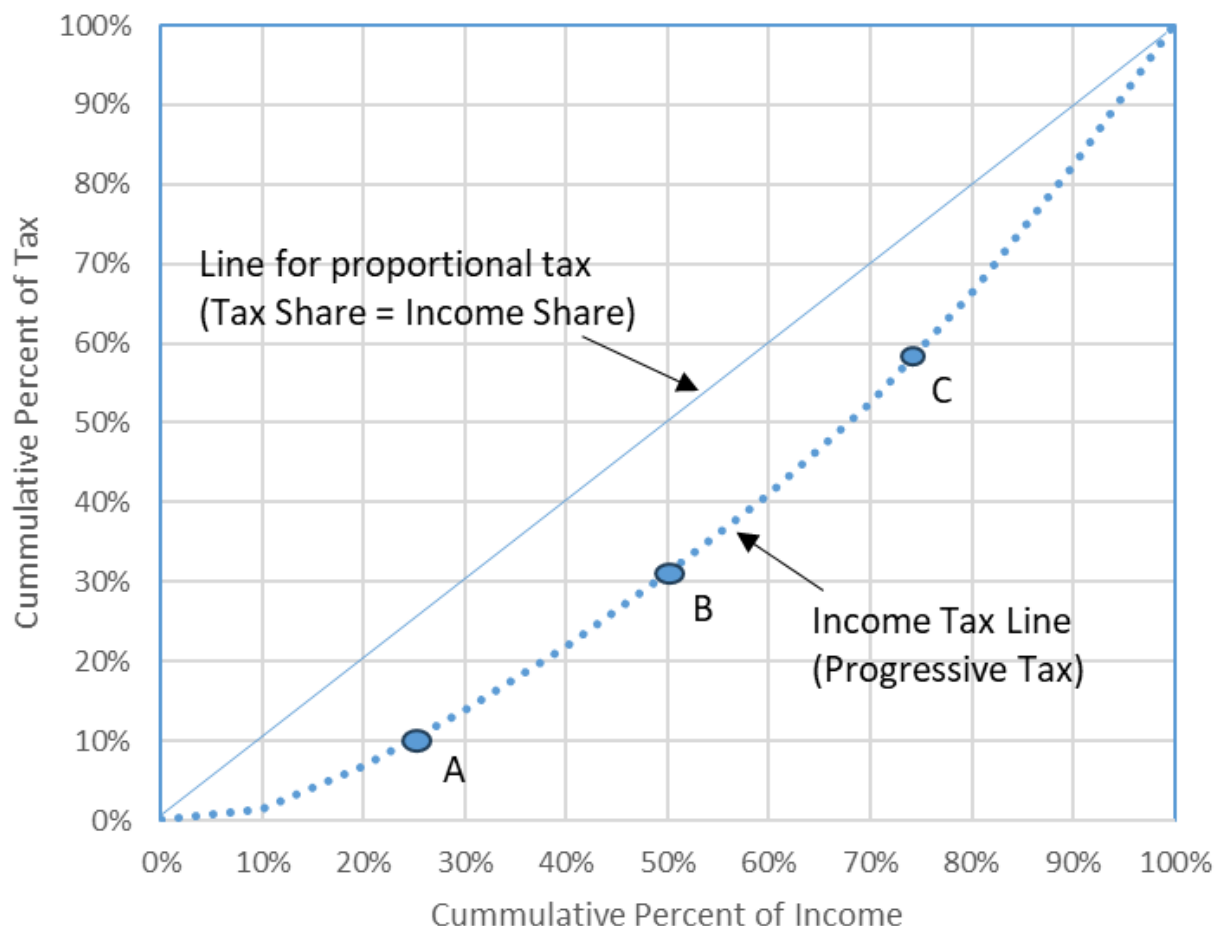


Figure C-2 shows the same diagram for the individual income tax. The income tax line is below the proportional tax line. Those with the bottom 25 percent of income pay about 10 percent of the tax. (See point A). Those with the bottom 50 percent of income pay 31 percent of the tax. (See point B). Because the shares of tax are less than the shares of income, the tax is progressive.

The ratio of the area between the two lines to the size of the triangle is 0.268. Because it is a progressive tax, the Suits index is positive, at +0.268.

Suits indexes provide an easy way to compare the relative regressivity or progressivity of different taxes. The index also has some convenient mathematical qualities. The Suits index for the income tax and sales taxes combined, for example, is simply the weighted average of the individual Suits indexes, where the weights are each of the tax's share of the combined total tax burden.

## Appendix D

### Tax Incidence by Type of Tax (2021)

The tables in *Appendix D* 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 businesses. The sum of these three parts equals the total tax collected in 2021. The business portion is based on this study's definition of business taxes (for more information, see pages 6-10 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 (“direct”) 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) as a percentage of income.

#### *Bottom Table*

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

## Appendix D Tables

### State Taxes

#### Income and Estate Taxes

Individual Income Tax .....	103
Corporate Franchise Tax .....	104
Estate Tax .....	105
Total Income, Corporate, and Estate Taxes .....	106

#### Consumption Taxes

General Sales and Use Tax .....	107
Sales Tax on Motor Vehicles .....	108
Total State Sales Taxes .....	109
Motor Fuels Excise Taxes .....	110
Alcoholic Beverage Excise Taxes .....	111
Cigarette and Tobacco Excise Taxes .....	112
Total Excise Taxes .....	113
Insurance Premiums Taxes .....	114
Gambling Taxes .....	115
MinnesotaCare Taxes .....	116
Solid Waste Management Taxes .....	117
Total State Consumption Taxes .....	118

#### Property Taxes

State Property Tax .....	119
Motor Vehicle Registration Tax .....	120
Mortgage and Deed Taxes .....	121
Property Tax Refunds – Homeowners .....	122
Property Tax Refunds – Renters .....	123
Total Property Tax Refunds .....	124
Total State Taxes .....	125

### Local Taxes

Local Property Taxes .....	126
Mining Production Taxes (Taconite) .....	127
Local Sales Taxes .....	128
Local Gross Earnings Taxes .....	129
Total Local Taxes .....	130



## Appendix D Tables (cont.)

### State and Local Property Taxes by Type of Property

Homeowner Property Tax (Before PTR) .....	131
Rental Property Tax (Before PTR) .....	132
Farm Property Tax (other than residence) .....	133
Cabins and Second Homes Property Tax (State and Local) .....	134
Commercial Property Tax – (State and Local) .....	135
Industrial Property Tax – (State and Local) .....	136
Utility Property Tax – (State and Local) .....	137
Total State and Local Property Taxes (Before PTR) .....	138

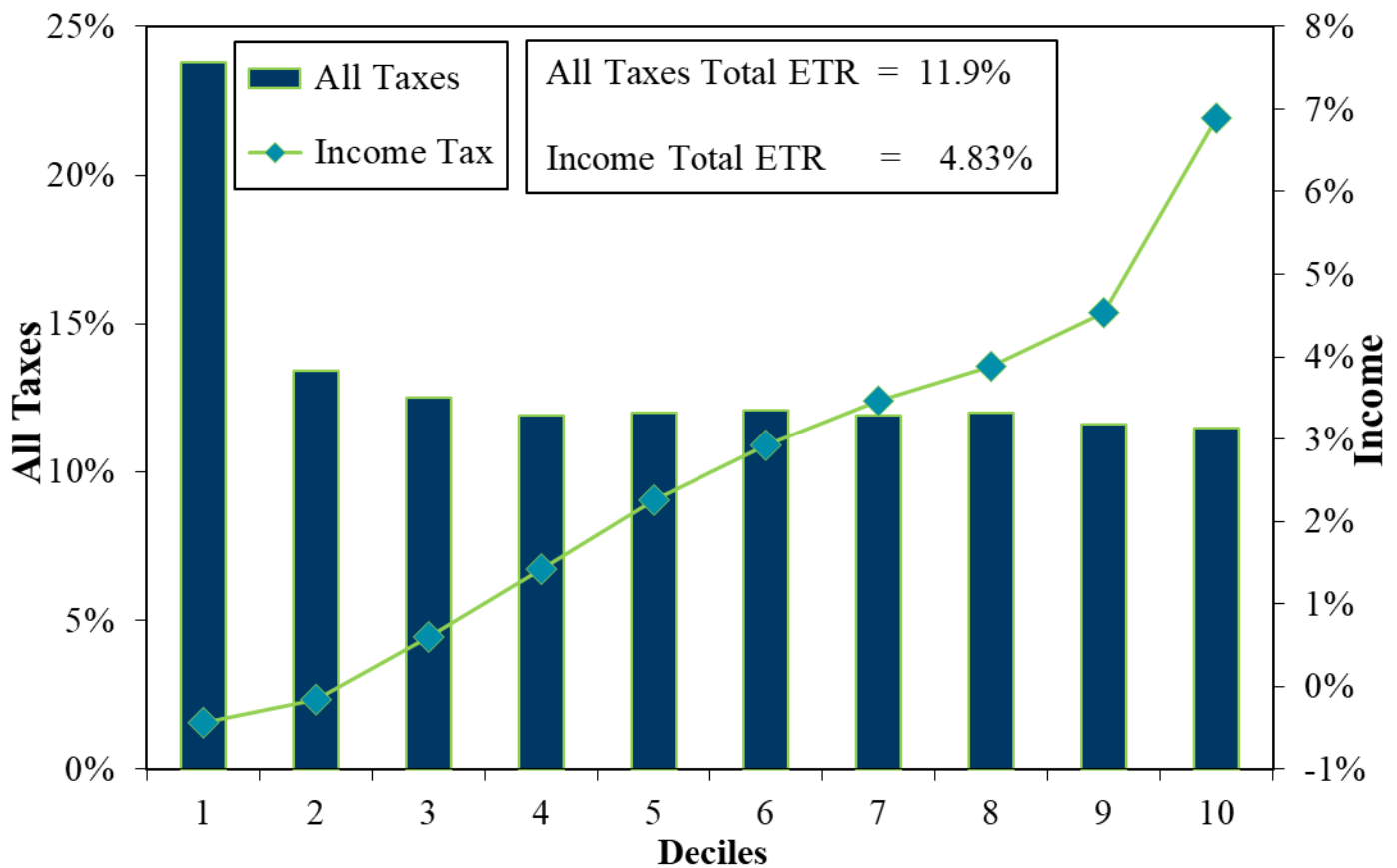
## 2021 Incidence Estimate for Individual Income Tax

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$15,488	\$14,487	\$1,002	\$0	\$14,487	\$1,002

\*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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Income	-0.44%	-0.16%	0.60%	1.42%	2.26%	2.92%	3.47%	3.88%	4.53%	6.89%	5.23%	6.46%	8.15%	0.268

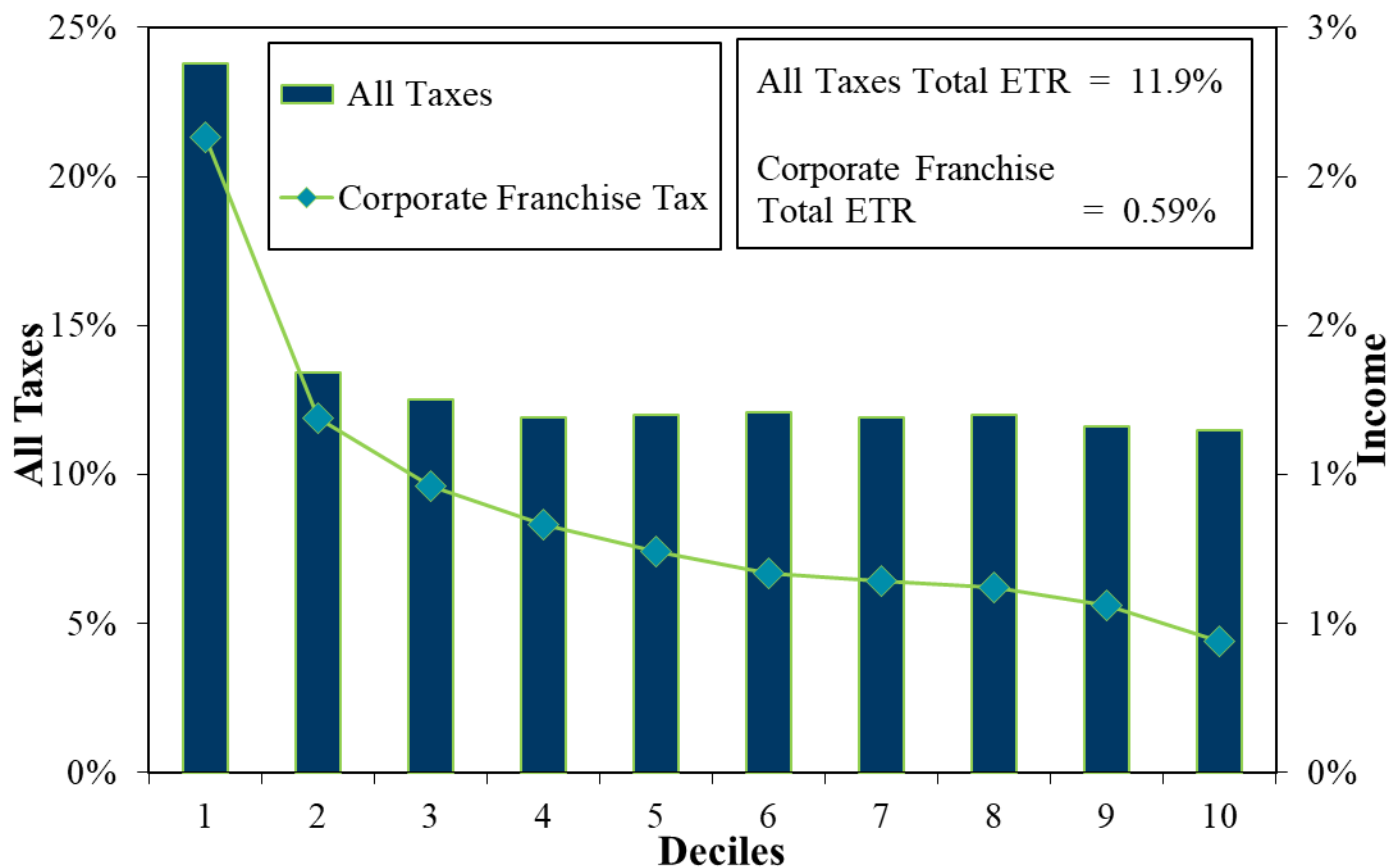
## 2021 Incidence Estimate for Corporate Franchise Tax<sup>1</sup>

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$2,637	\$0	\$0	\$2,637	\$1,763	\$874

\*Shifting allocations: Direct = 0%, Consumers = 77%, Labor = 11%, Capital = 12%

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Corp	2.13%	1.19%	0.96%	0.83%	0.74%	0.67%	0.64%	0.62%	0.56%	0.44%	0.53%	0.49%	0.36%	-0.175

<sup>1</sup>Includes Corporate Franchise Tax (\$1,487 million) and Mining Occupation Tax (\$17 million).

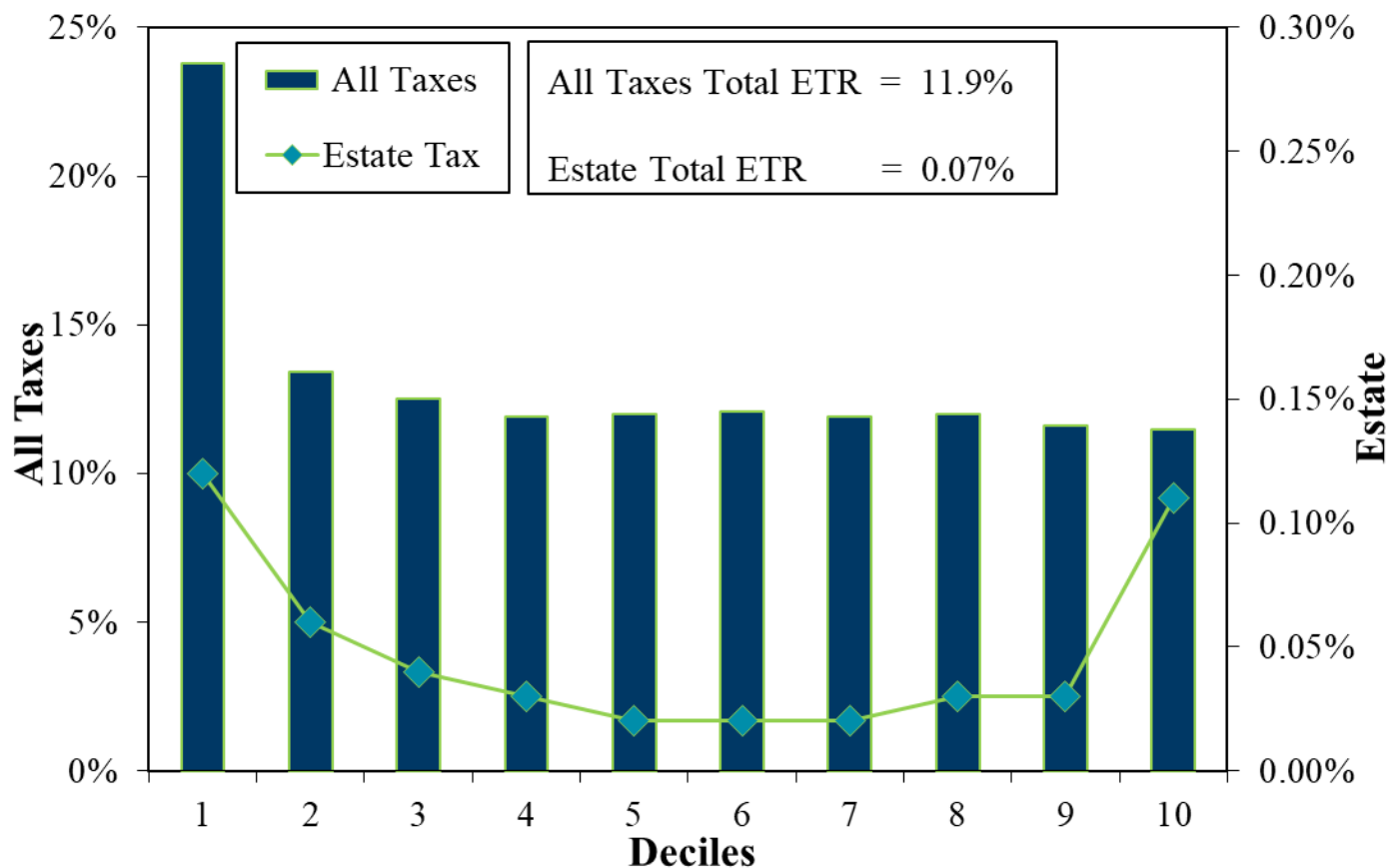
## 2021 Incidence Estimate for Estate Tax<sup>1</sup>

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$212	\$199	\$13	\$0	\$199	\$13

\*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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Estate	0.12%	0.06%	0.04%	0.03%	0.02%	0.02%	0.02%	0.03%	0.03%	0.11%	0.05%	0.09%	0.16%	0.357

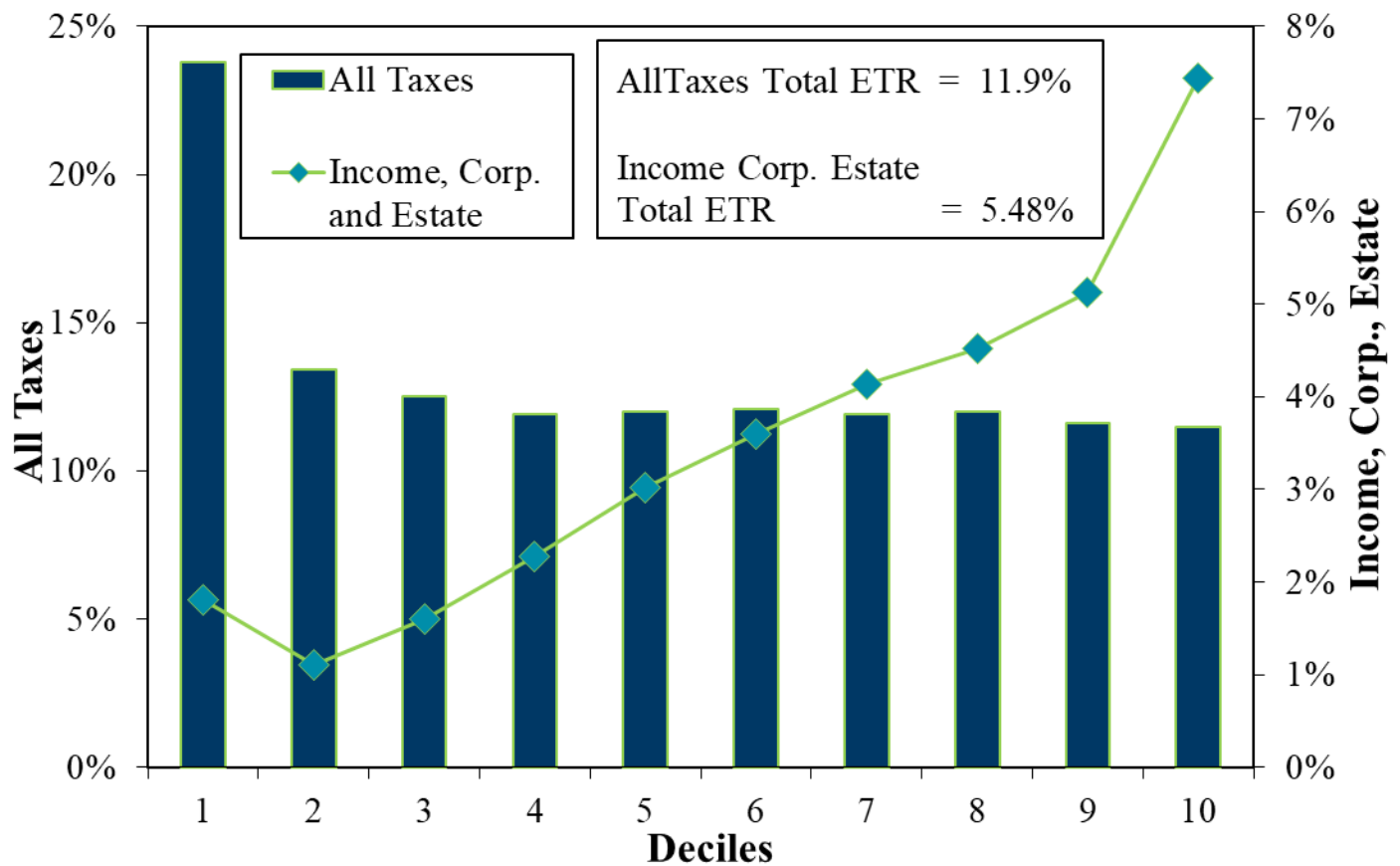
<sup>1</sup>A correction to the model since the 2016 report spread the impact of the estate more broadly across income ranges. The Suits index for the estate tax is still the most progressive of the taxes, but less so than the previous reports.

## 2021 Incidence Estimate for Total Income, Corporate, and Estate Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$18,337	\$14,686	\$1,015	\$2,637	\$16,449	\$1,889

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Income	1.80%	1.10%	1.60%	2.28%	3.02%	3.60%	4.13%	4.52%	5.12%	7.44%	5.81%	7.04%	8.66%	0.221

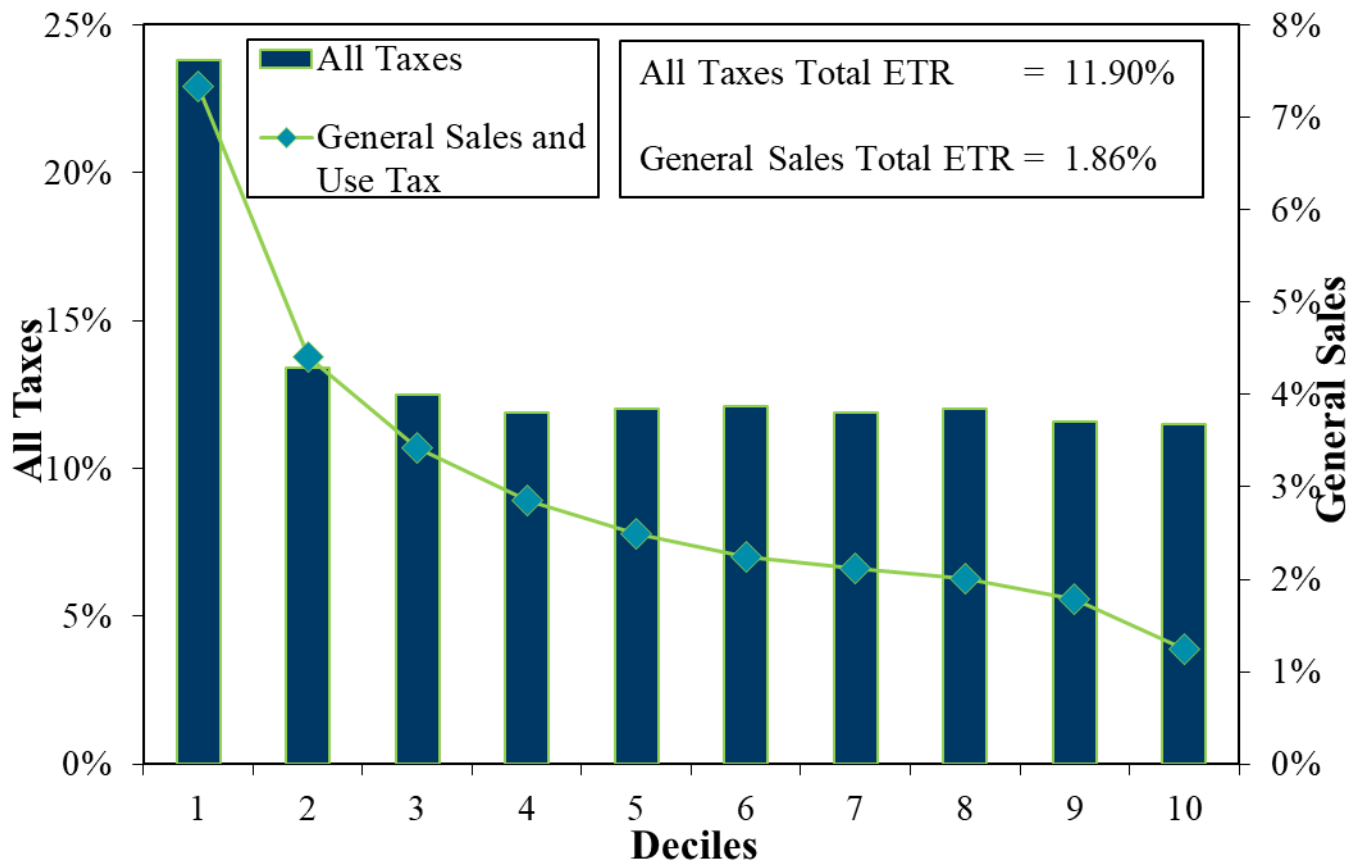
## 2021 Incidence Estimate for General Sales and Use Tax

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$6,873	\$3,343	\$204	\$3,327	\$5,568	\$1,305

\*Shifting allocations: Direct = 60%, Consumers = 34.9%, Labor = 0.4%, Capital = 4.7%

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
General Sales and Use Tax	7.33%	4.41%	3.42%	2.85%	2.49%	2.24%	2.12%	2.01%	1.79%	1.24%	1.59%	1.36%	0.94%	-0.227

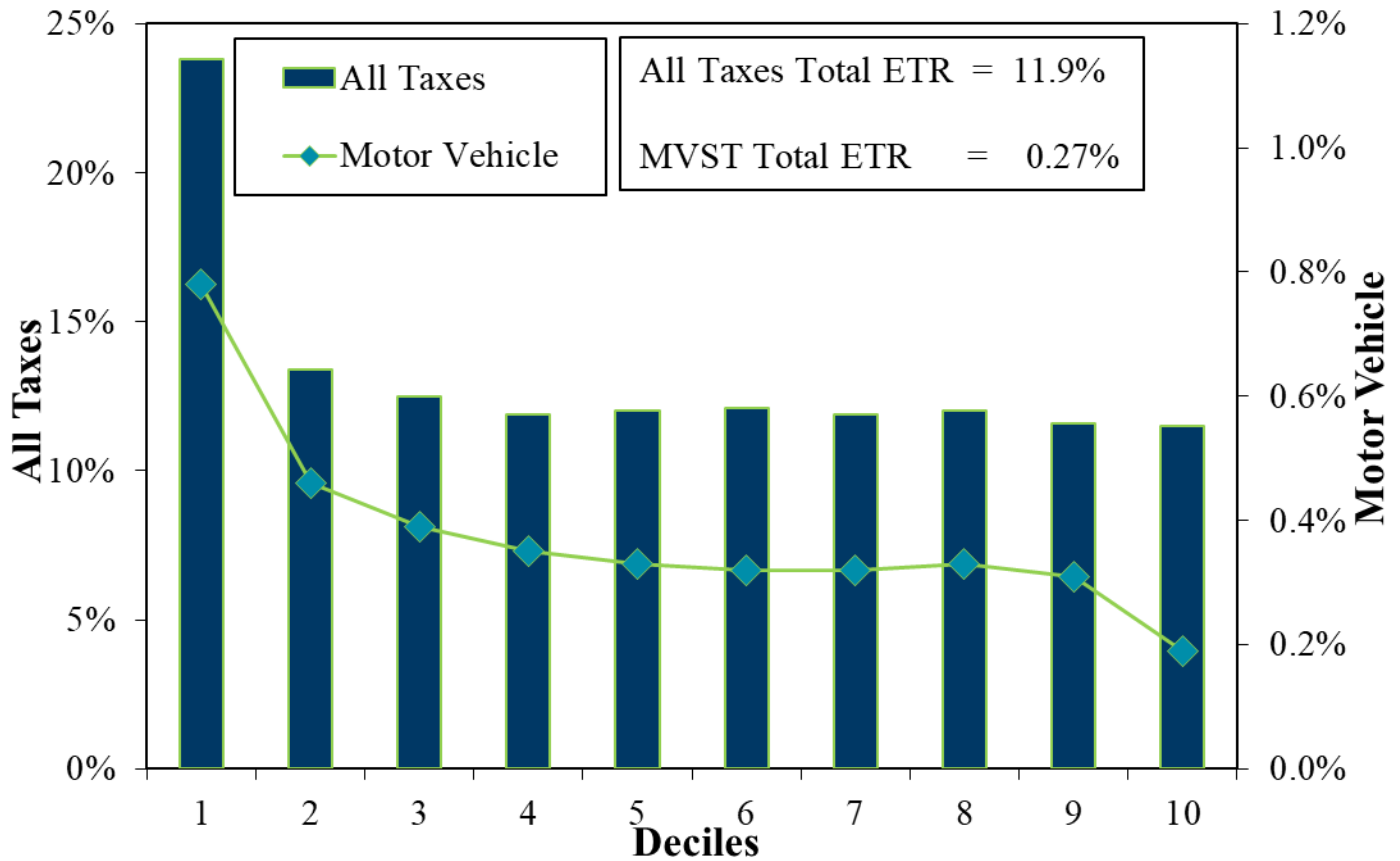
## 2021 Incidence Estimate for Sales Tax on Motor Vehicles

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$984	\$672	\$0	\$312	\$819	\$165

\*Shifting allocations: Direct = 82.1%, Consumers = 4.9%, Labor = 0.9%, Capital = 12.1%

### Effective Tax Rates, Population Deciles



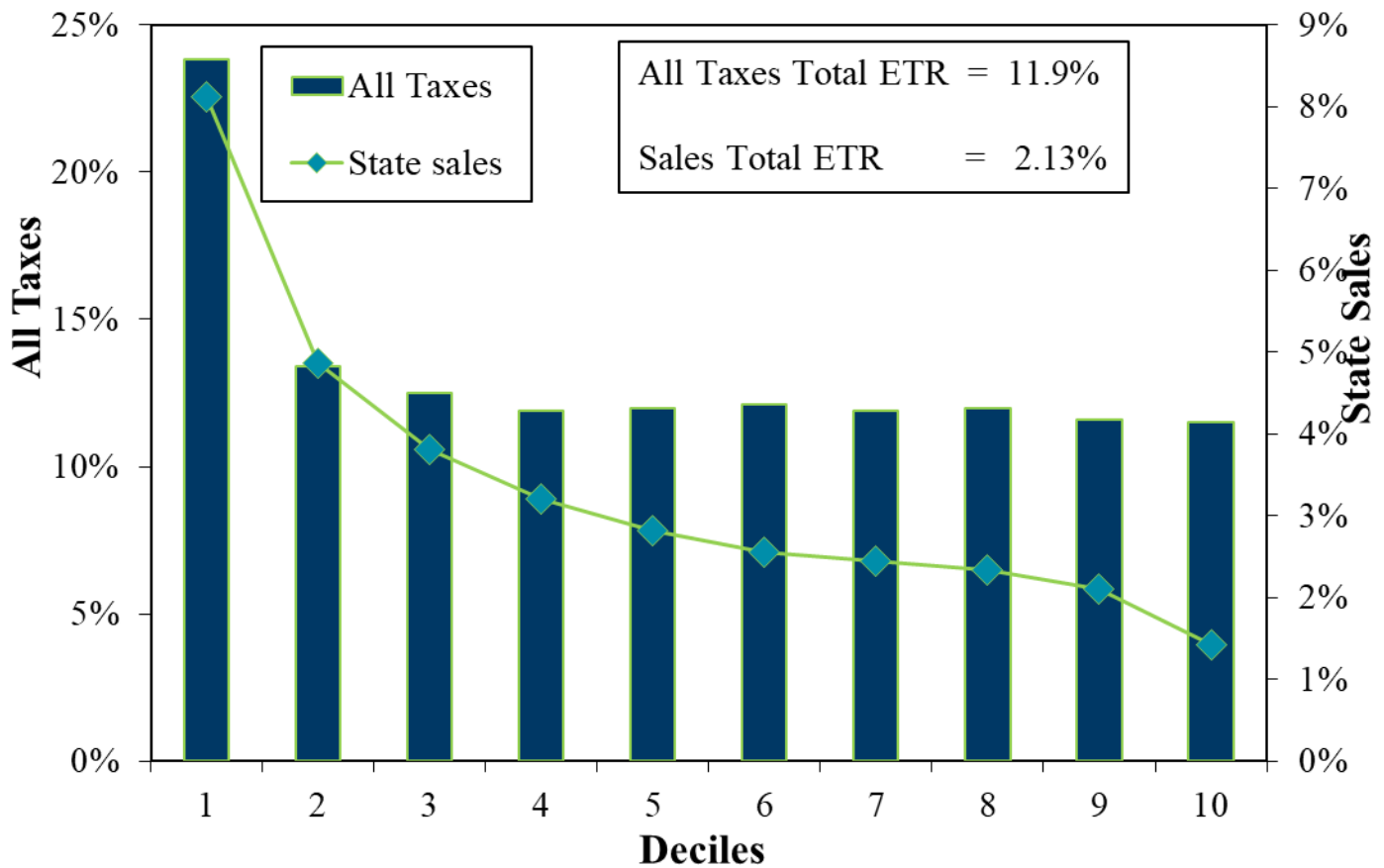
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Motor Vehicle	0.78%	0.46%	0.39%	0.35%	0.33%	0.32%	0.32%	0.33%	0.31%	0.19%	0.26%	0.21%	0.13%	-0.184

## 2021 Incidence Estimate for Total State Sales Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$7,857	\$4,015	\$204	\$3,639	\$6,387	\$1,470

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
State sale	8.11%	4.87%	3.81%	3.20%	2.82%	2.55%	2.44%	2.34%	2.10%	1.43%	1.85%	1.57%	1.07%	-0.222



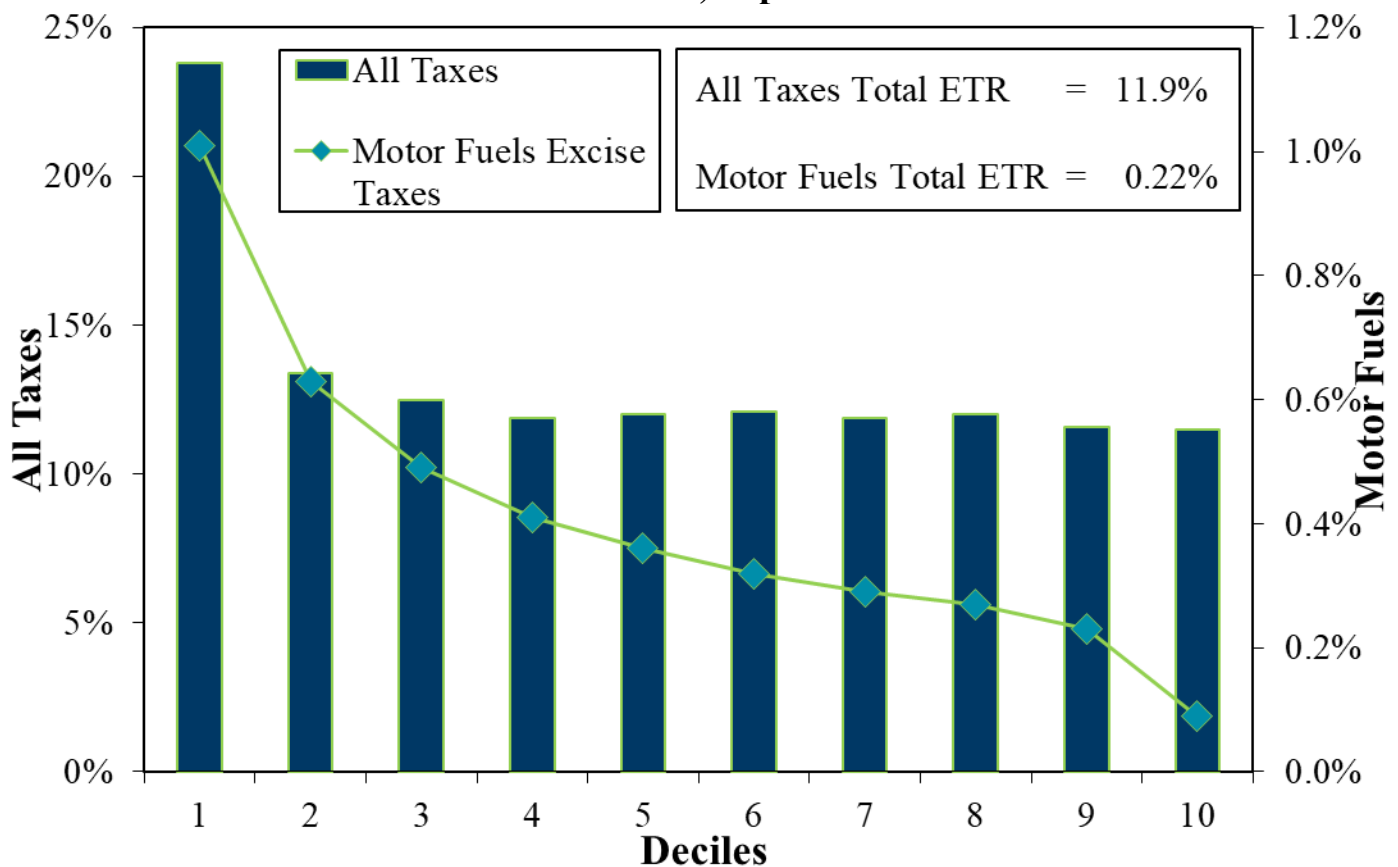
## 2021 Incidence Estimate for Motor Fuels Excise Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$874	\$554	\$29	\$291	\$661	\$214

\*Shifting allocations: Direct = 84%, Consumers = 16%, Labor = 0%, Capital = 0%

### Effective Tax Rates, Population Decile



Deciles

All Taxes

Motor Fuels Excise Taxes

1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
1.01%	0.63%	0.49%	0.41%	0.36%	0.32%	0.29%	0.27%	0.23%	0.09%	0.17%	0.11%	0.03%	-0.374

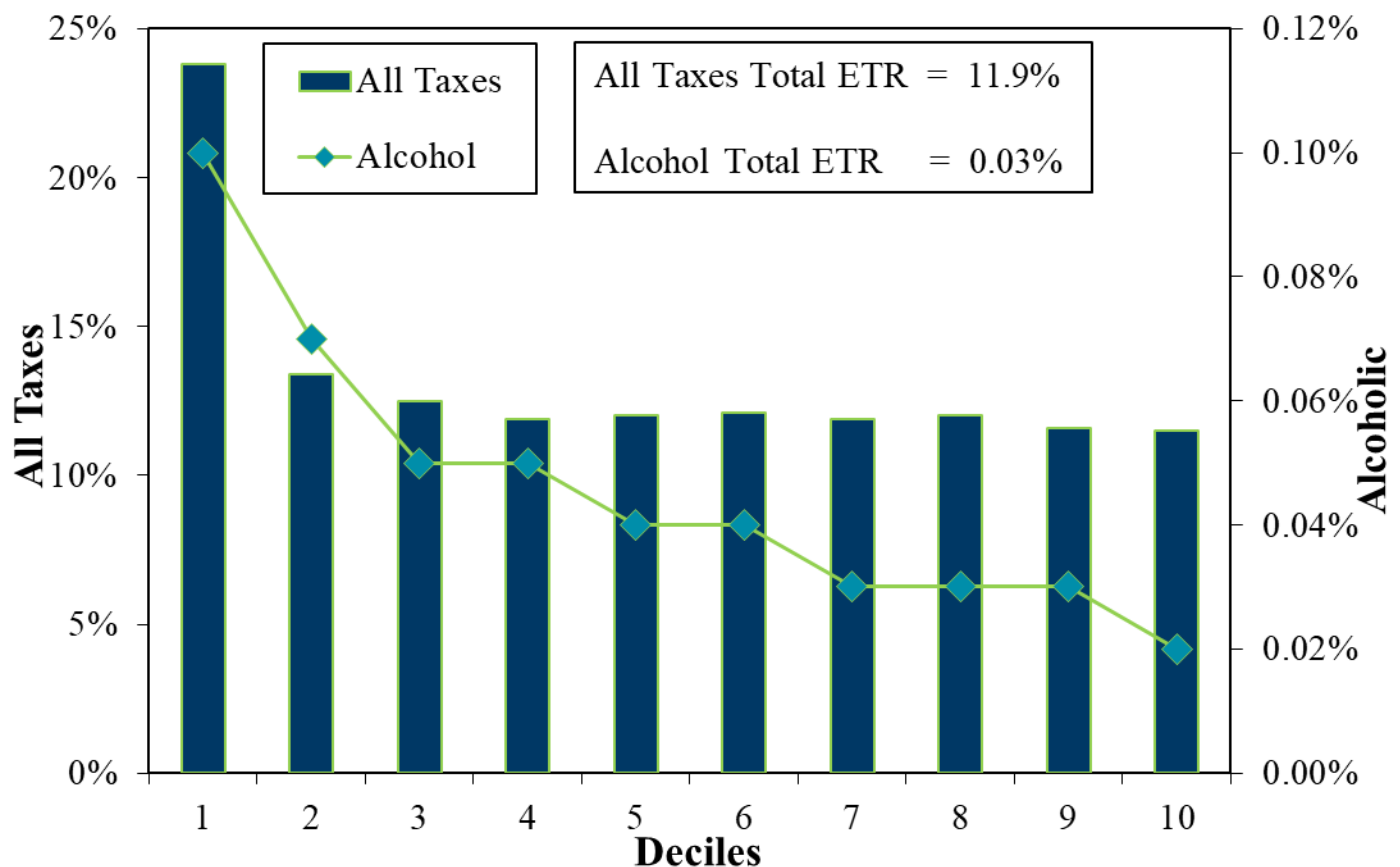
## 2021 Incidence Estimate for Alcoholic Beverage Excise Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$104	\$94	\$10	\$0	\$94	\$10

\*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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Alcohol	0.10%	0.07%	0.05%	0.05%	0.04%	0.04%	0.03%	0.03%	0.03%	0.02%	0.03%	0.03%	0.02%	-0.163

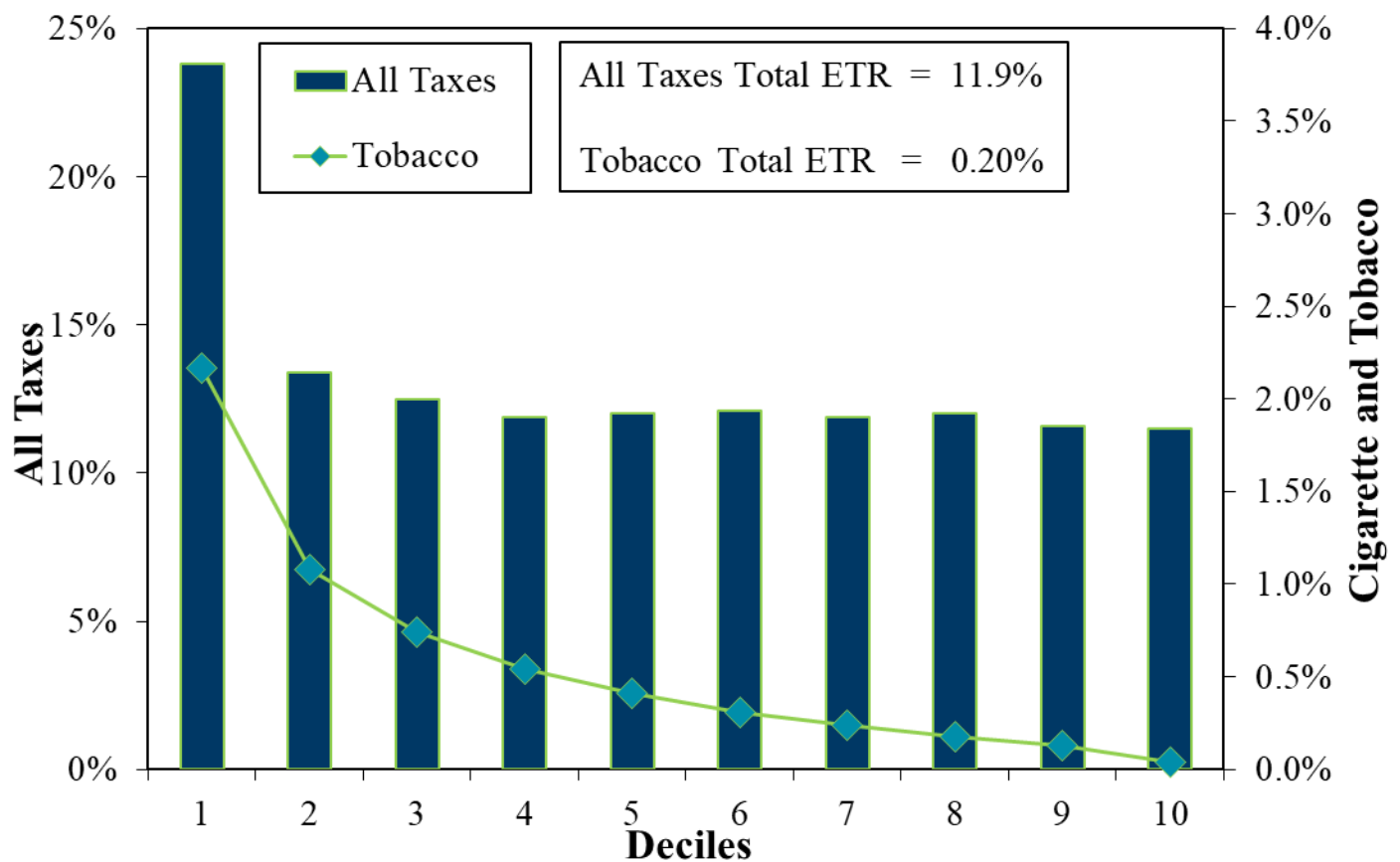
## 2021 Incidence Estimate for Cigarette and Tobacco Excise Taxes<sup>1</sup>

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$623	\$611	\$12	\$0	\$611	\$12

\*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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Tobacco	2.17%	1.08%	0.74%	0.54%	0.41%	0.31%	0.24%	0.18%	0.13%	0.04%	0.08%	0.04%	0.01%	-0.590

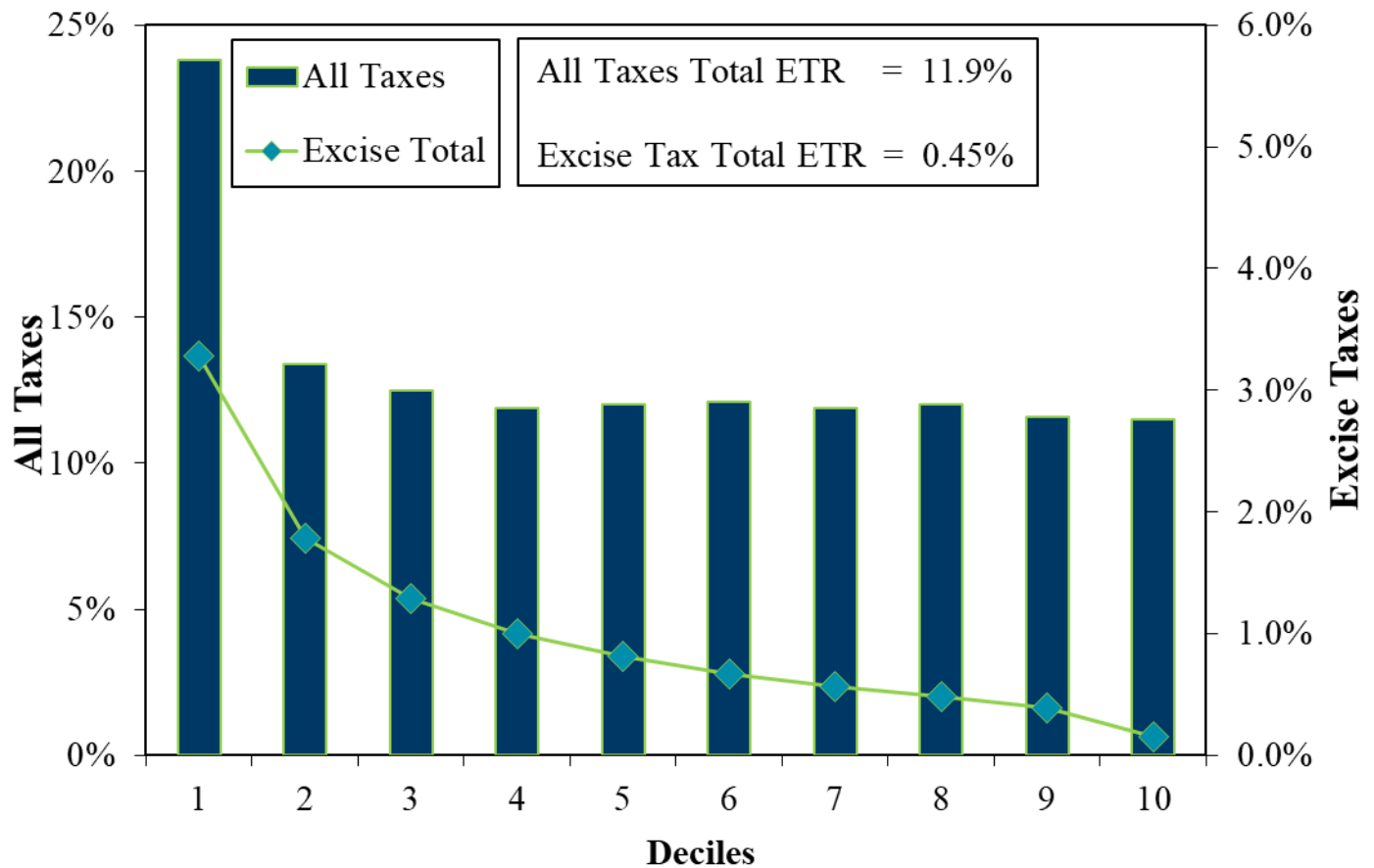
<sup>1</sup>Includes Cigarette Tax (\$511 million) and Tobacco Products Tax (\$110 million).

## 2021 Incidence Estimate for Total Excise Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$1,601	\$1,259	\$51	\$291	\$1,366	\$236

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Excise Total	3.28%	1.78%	1.29%	1.00%	0.81%	0.67%	0.56%	0.48%	0.39%	0.15%	0.28%	0.18%	0.06%	-0.456

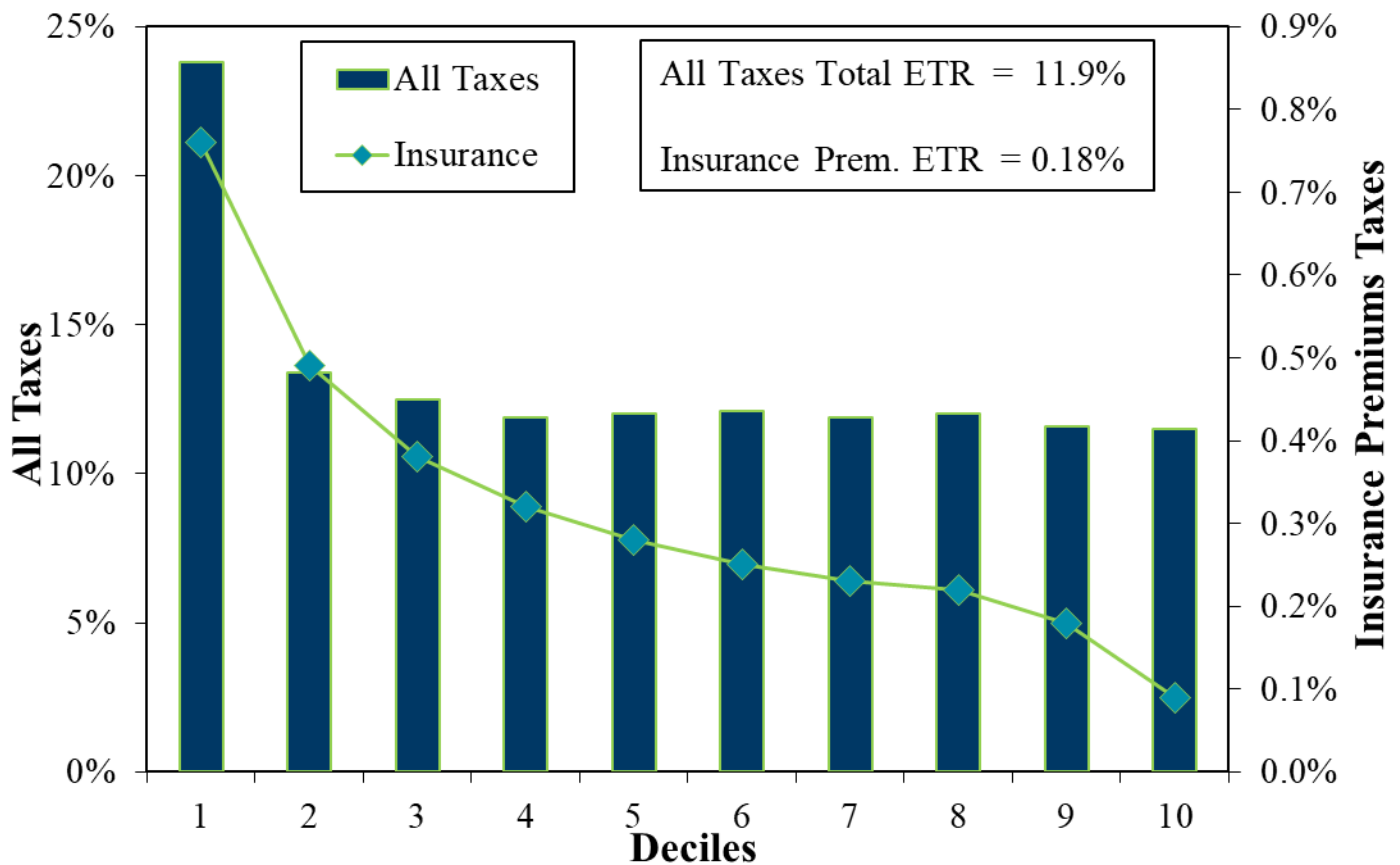
## 2021 Incidence Estimate for Insurance Premiums Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$595	\$482	\$0	\$113	\$542	\$52

\*Shifting allocations: Direct = 89%, Consumers = 7%, 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Insurance	0.76%	0.49%	0.38%	0.32%	0.28%	0.25%	0.23%	0.22%	0.18%	0.09%	0.14%	0.10%	0.04%	-0.331

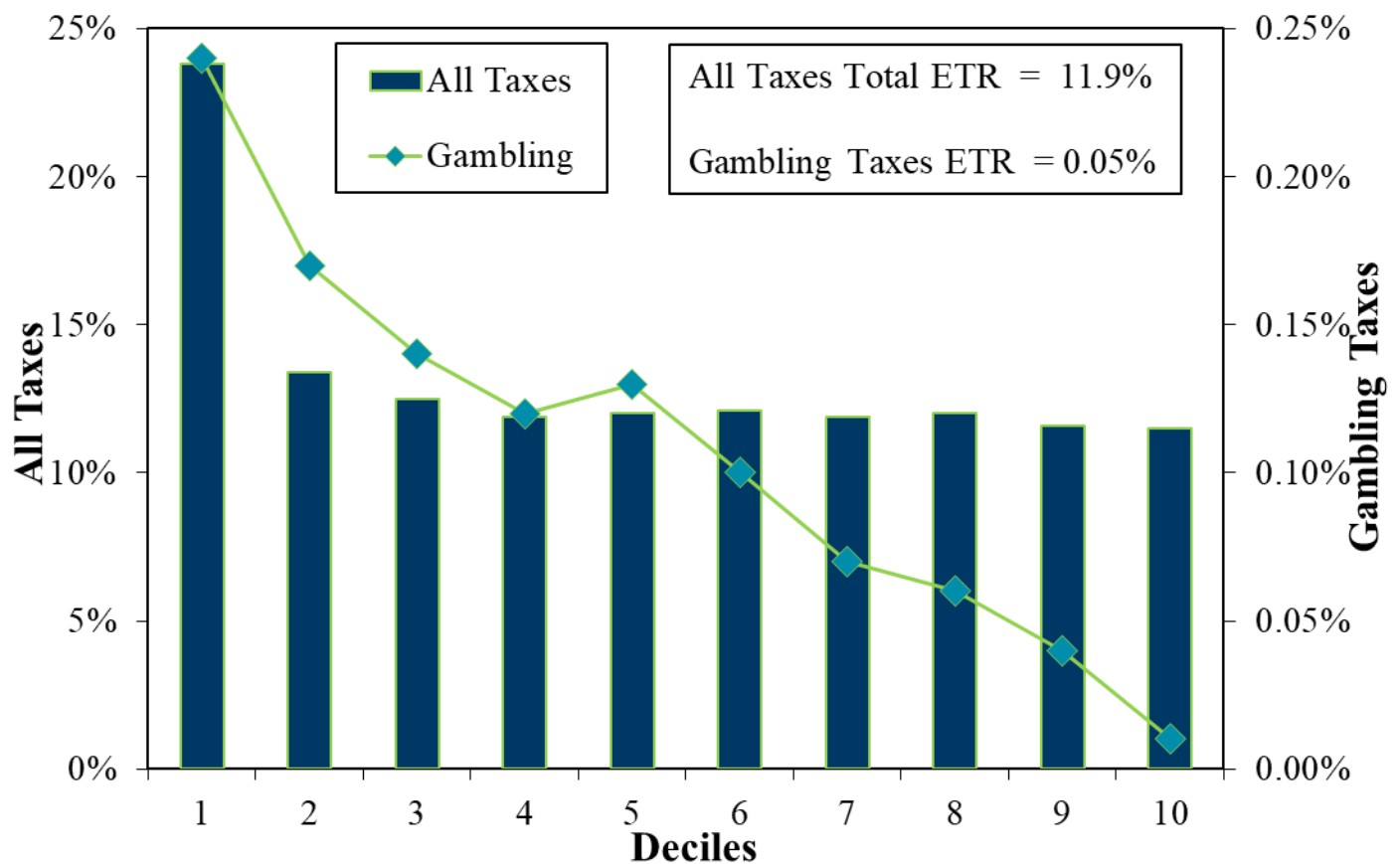
## 2021 Incidence Estimate for Gambling Taxes<sup>1</sup>

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$152	\$149	\$3	\$0	\$149	\$3

\*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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Gambling	0.24%	0.17%	0.14%	0.12%	0.13%	0.10%	0.07%	0.06%	0.04%	0.01%	0.02%	0.01%	0.00%	-0.519

<sup>1</sup>Gambling taxes include Lawful Gambling (\$2.5 million), Combined Receipts (\$79.6 million), and Pari-Mutuel (\$1.2million).

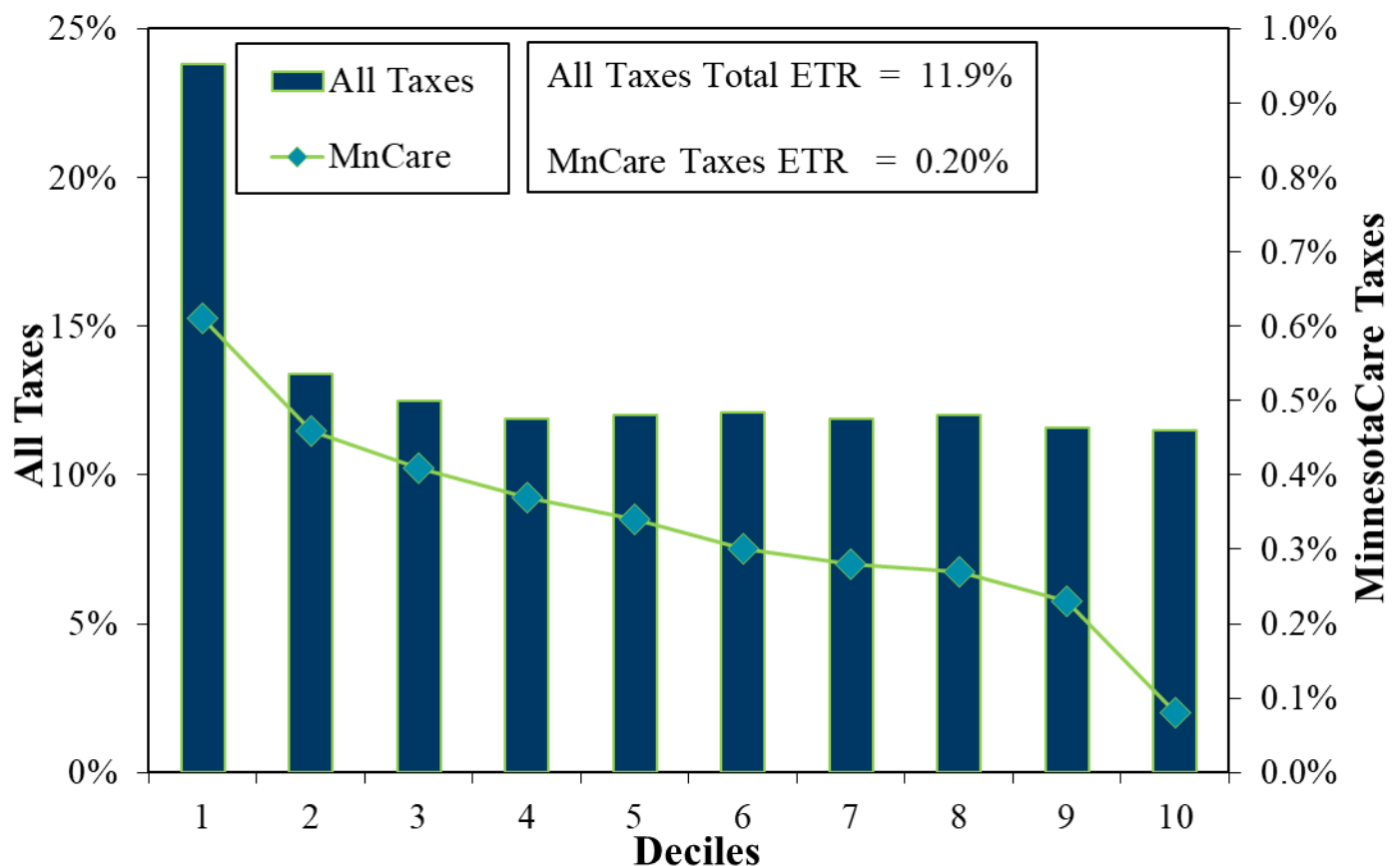
## 2021 Incidence Estimate for MinnesotaCare Taxes<sup>1</sup>

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$657	\$601	\$56	\$0	\$601	\$56

\*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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
MnCare	0.61%	0.46%	0.41%	0.37%	0.34%	0.30%	0.28%	0.27%	0.23%	0.08%	0.17%	0.10%	0.02%	-0.360

<sup>1</sup>Includes the Provider Tax (\$255 million), Hospital Tax (\$253 million), and Drug Distributor Tax (\$153 million).

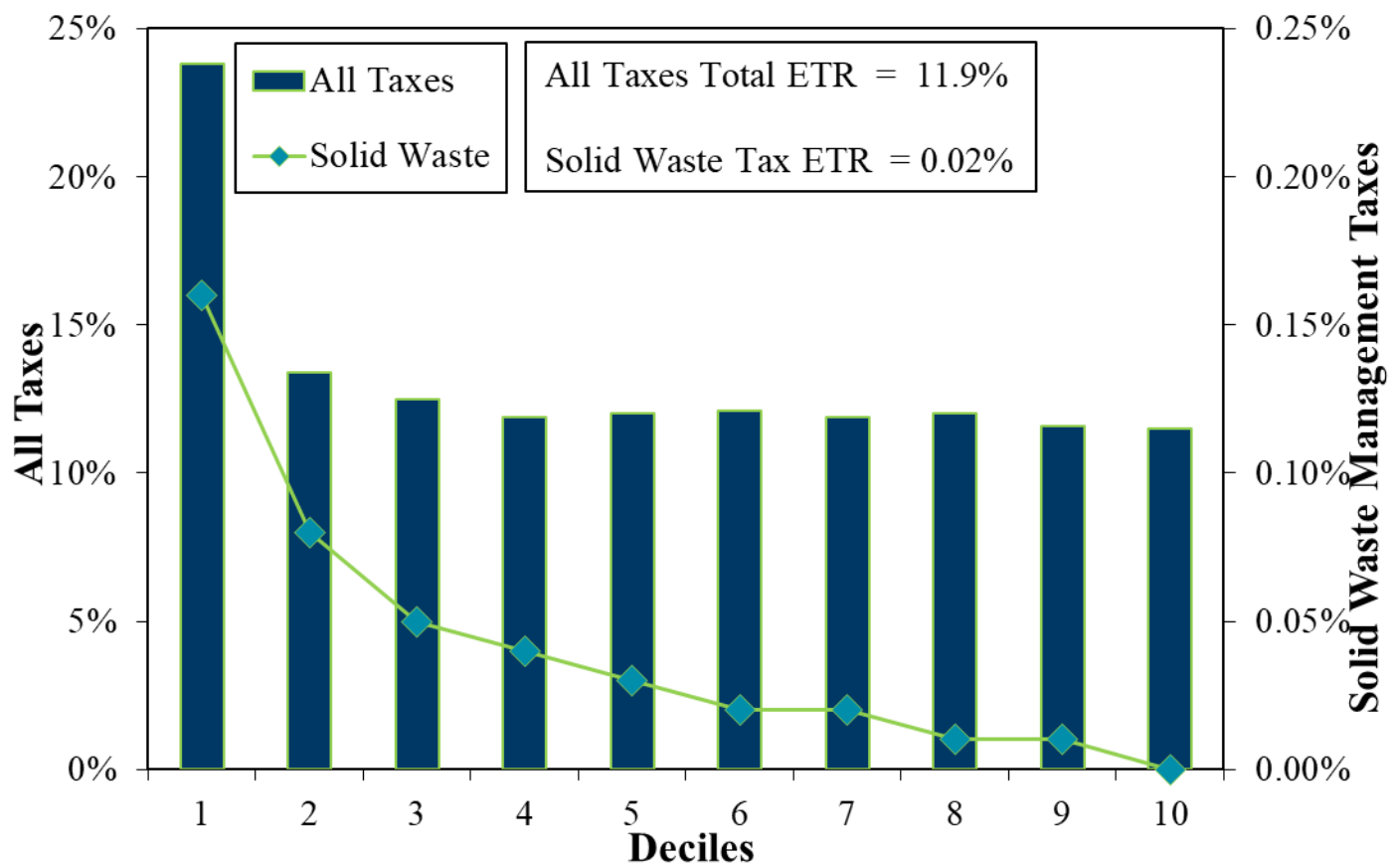
## 2021 Incidence Estimate for Solid Waste Management Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$102	\$48	\$0	\$55	\$86	\$17

\*Shifting allocations: Direct = 56%, Consumers = 44%, 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Solid Waste	0.16%	0.08%	0.05%	0.04%	0.03%	0.02%	0.02%	0.01%	0.01%	0.00%	0.01%	0.00%	0.00%	-0.429

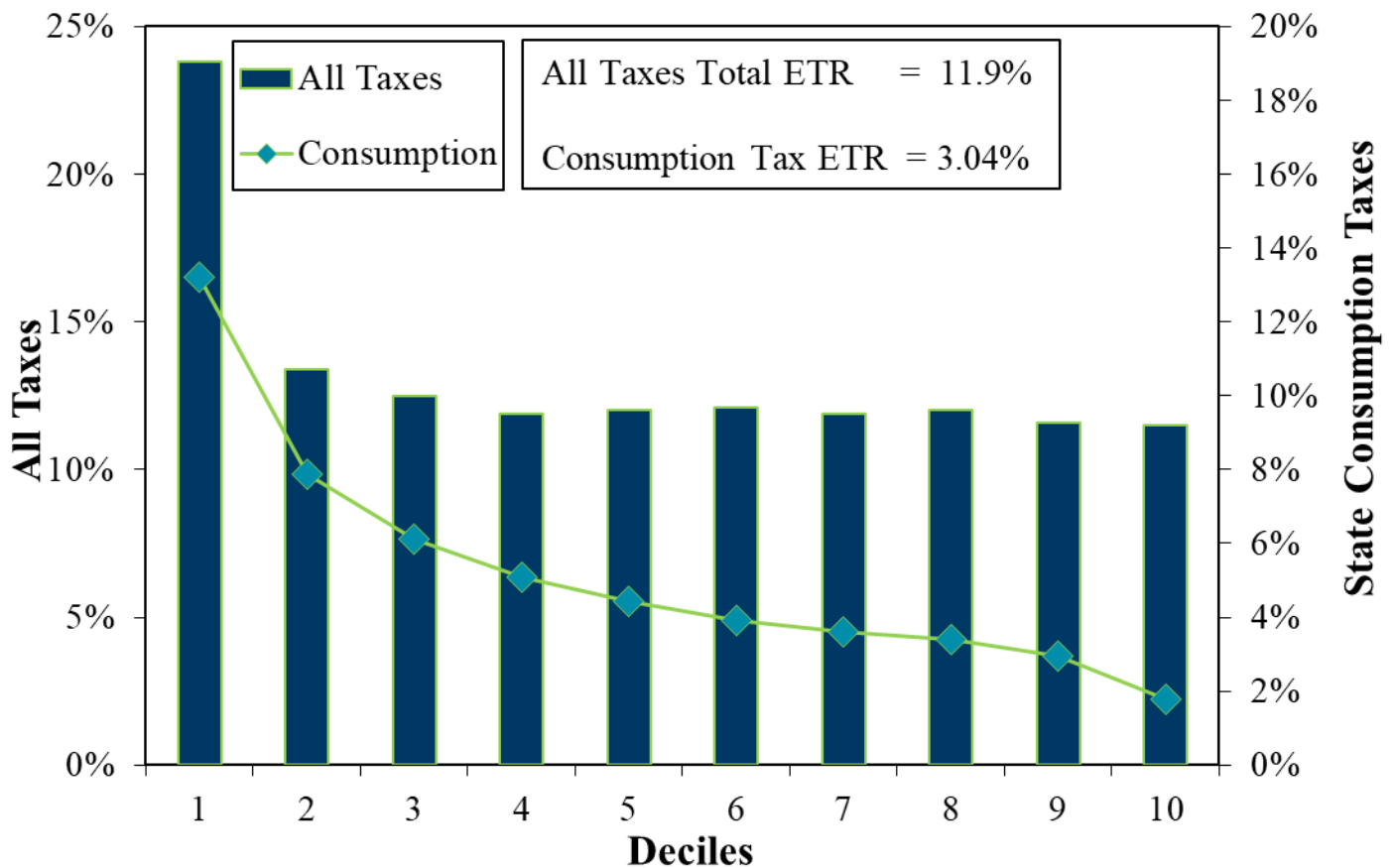


## 2021 Incidence Estimate for Total State Consumption Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$10,964	\$6,554	\$314	\$4,098	\$9,131	\$1,834

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Consumption	13.20%	7.88%	6.12%	5.07%	4.42%	3.91%	3.62%	3.40%	2.96%	1.77%	2.49%	1.98%	1.20%	-0.279

## 2021 Incidence Estimate for State Property Tax<sup>1</sup>

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$777	\$33	\$8	\$736	\$385	\$393

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
State Property Tax	0.47%	0.21%	0.17%	0.15%	0.13%	0.12%	0.12%	0.12%	0.11%	0.12%	0.12%	0.12%	0.12%	-0.067

<sup>1</sup>Includes taxes on Commercial Property (\$506 million), Industrial Property (\$157 million), Utility Property (\$112 million), and Residential Seasonal Recreational Property (\$43 million).

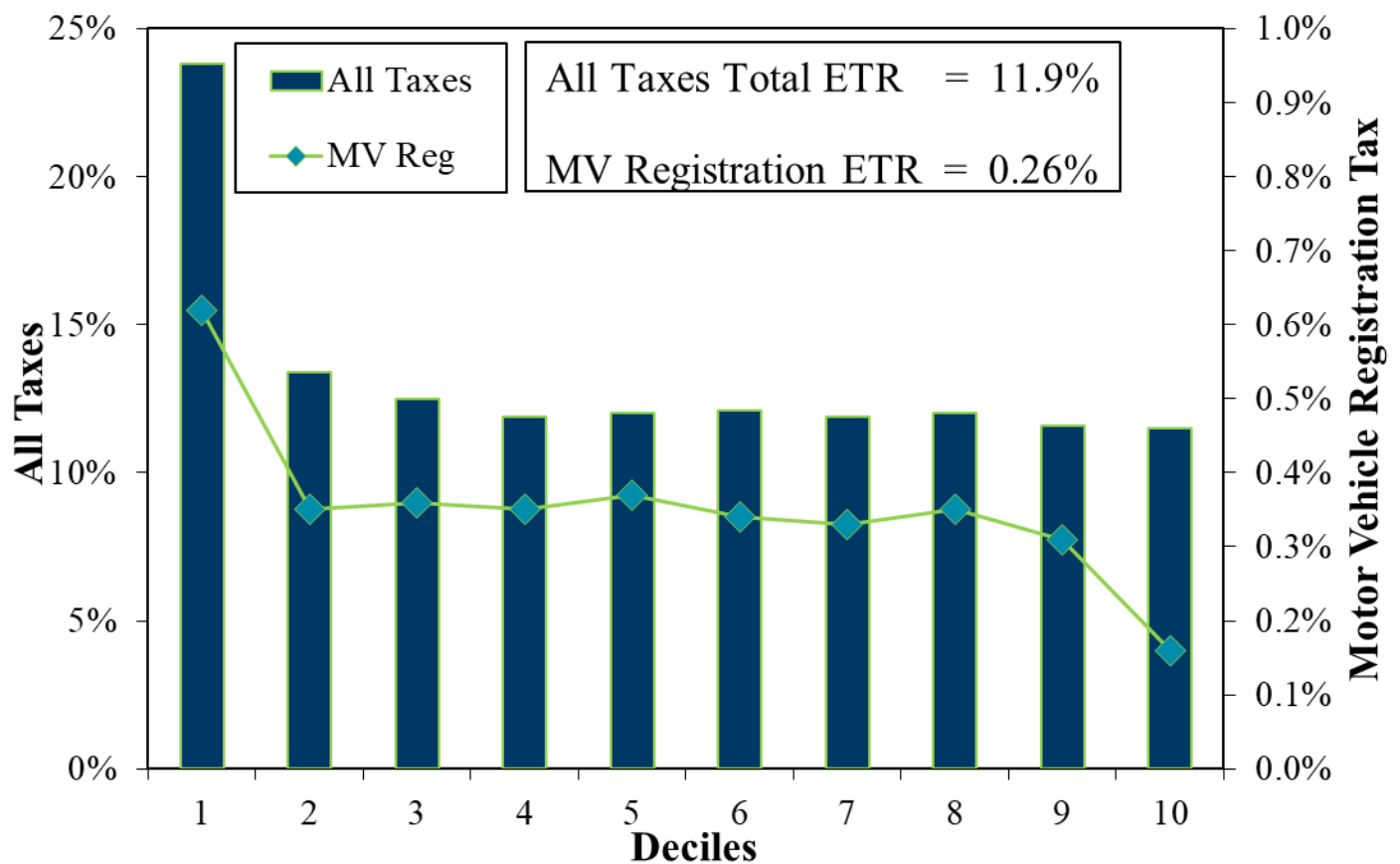
## 2021 Incidence Estimate for Motor Vehicle Registration Tax

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$838	\$684	\$0	\$155	\$790	\$48

\*Shifting allocations: Direct = 86.6%, Consumers = 7.6%, Labor = 3%, Capital = 2.8%

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
MV Reg	0.62%	0.35%	0.36%	0.35%	0.37%	0.34%	0.33%	0.35%	0.31%	0.16%	0.27%	0.21%	0.07%	-0.223

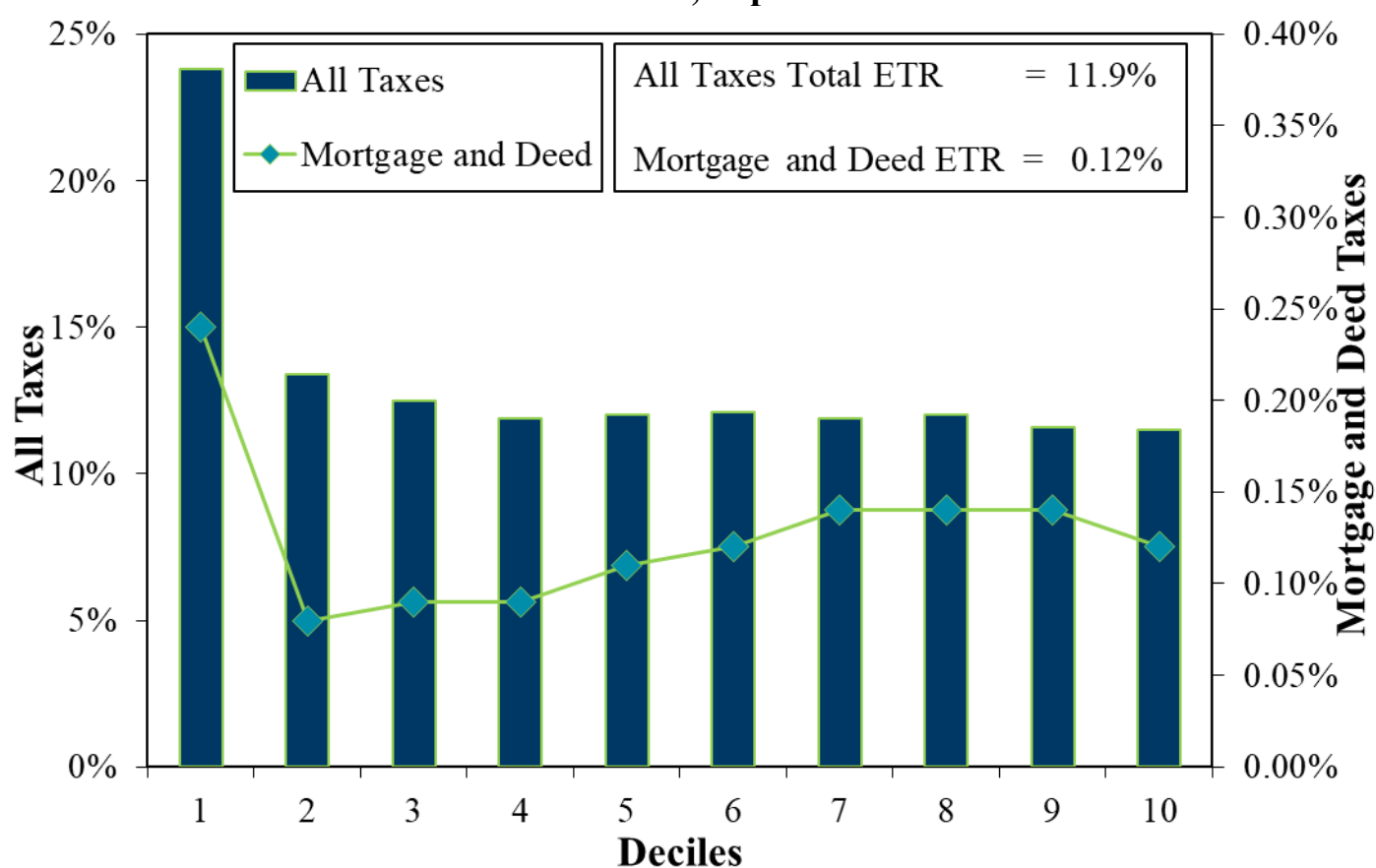
## 2021 Incidence Estimate for Mortgage and Deed Taxes<sup>1</sup>

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$407	\$289	\$0	\$117	\$374	\$33

\*Shifting allocations: Direct = 77%, Consumers = 6%, Labor = 0%, Capital = 17%

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Mortgage and Deed	0.24%	0.08%	0.09%	0.09%	0.11%	0.12%	0.14%	0.14%	0.14%	0.12%	0.13%	0.16%	0.08%	-0.028

<sup>1</sup>Includes Mortgage Registry Tax (\$119 million) and Deed Transfer Tax (\$130 million).

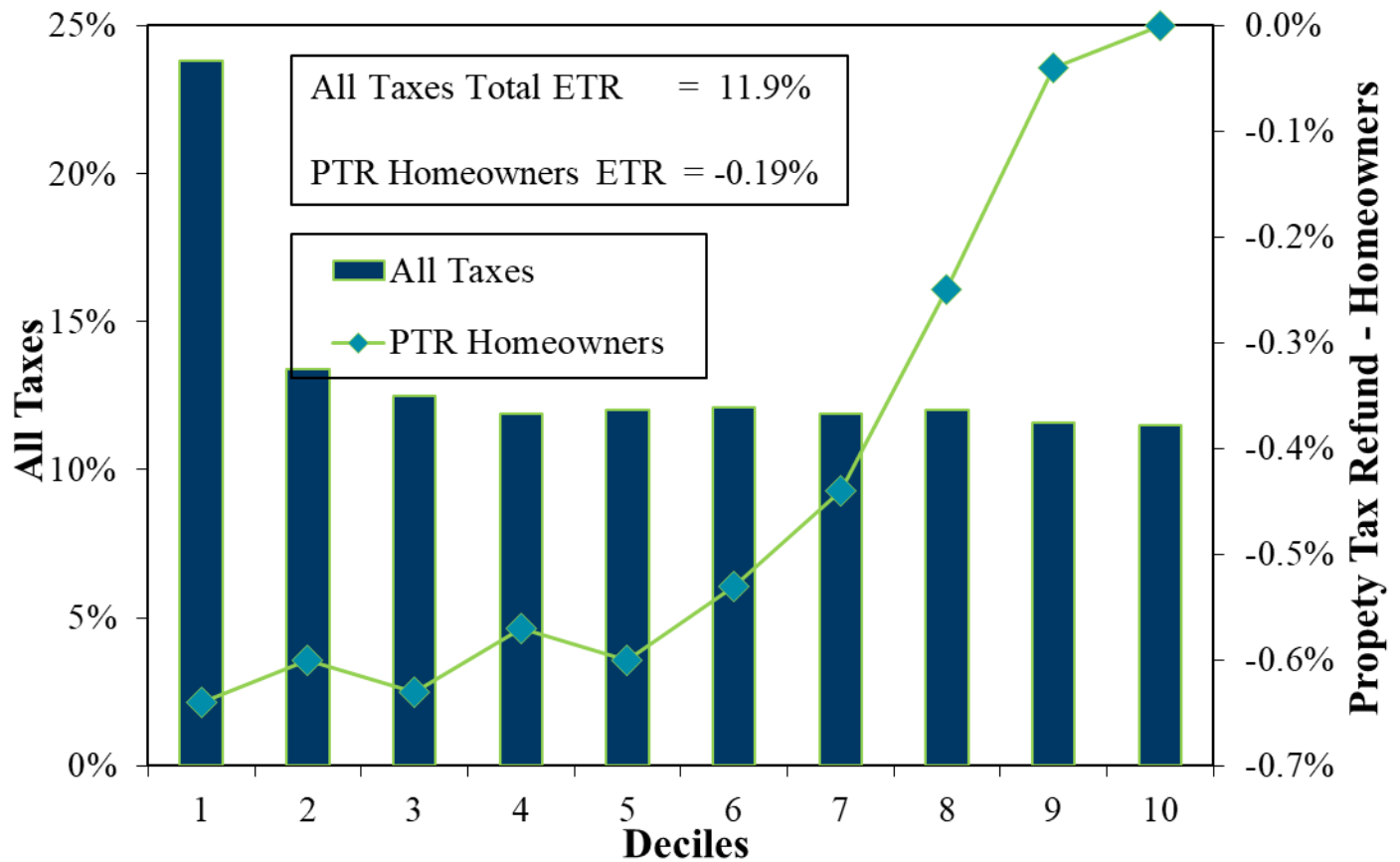
## 2021 Incidence Estimate for Property Tax Refunds – Homeowners

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
-\$581	-\$581	\$0	\$0	-\$581	\$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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
PTR Homeowners	-0.64%	-0.60%	-0.63%	-0.57%	-0.60%	-0.53%	-0.44%	-0.25%	-0.04%	0.00%	0.00%	0.00%	0.00%	0.646

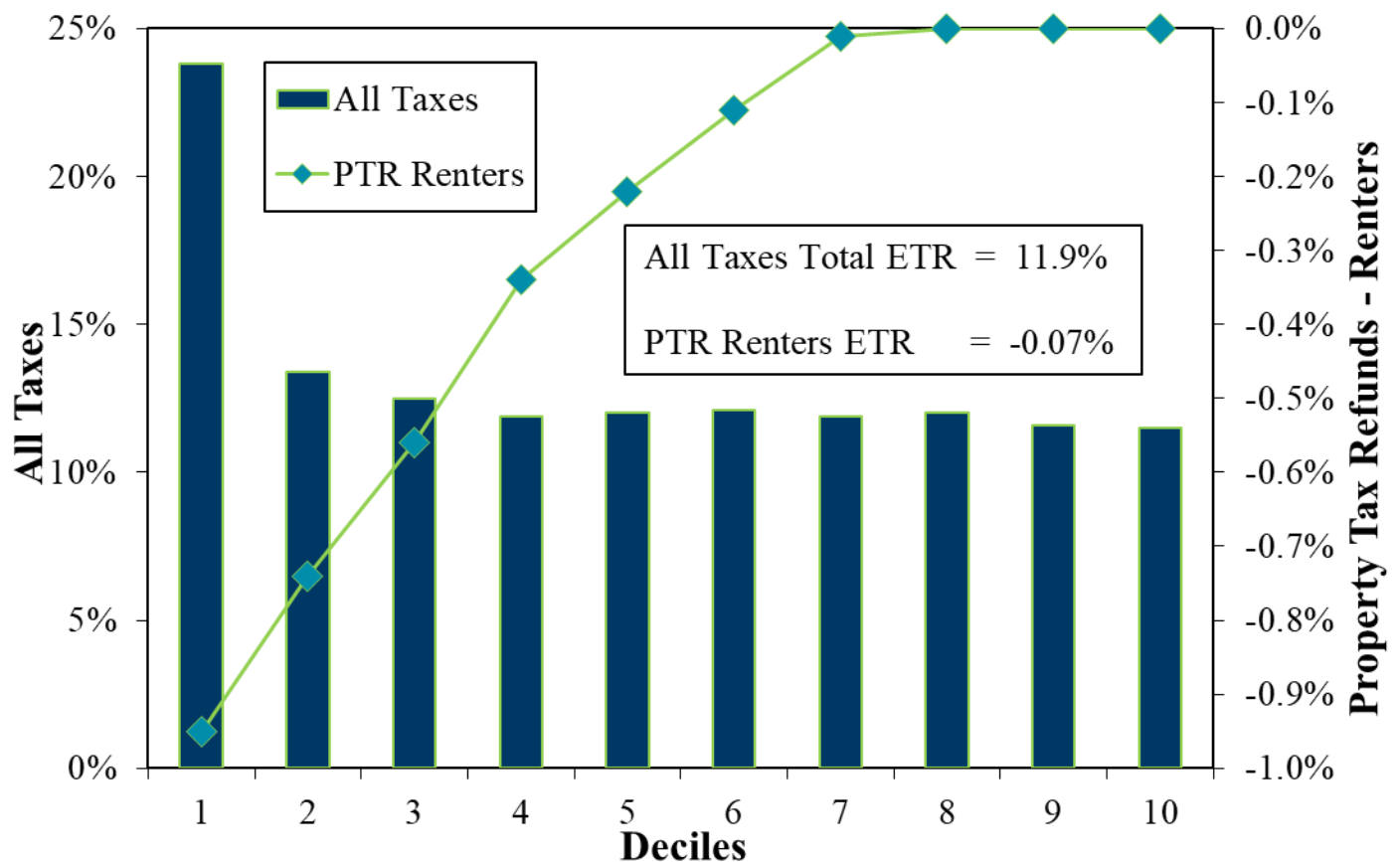
## 2021 Incidence Estimate for Property Tax Refunds – Renters

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
-\$221	-\$221	\$0	\$0	-\$221	\$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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
PTR Renters	-0.95%	-0.74%	-0.56%	-0.34%	-0.22%	-0.11%	-0.01%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.864

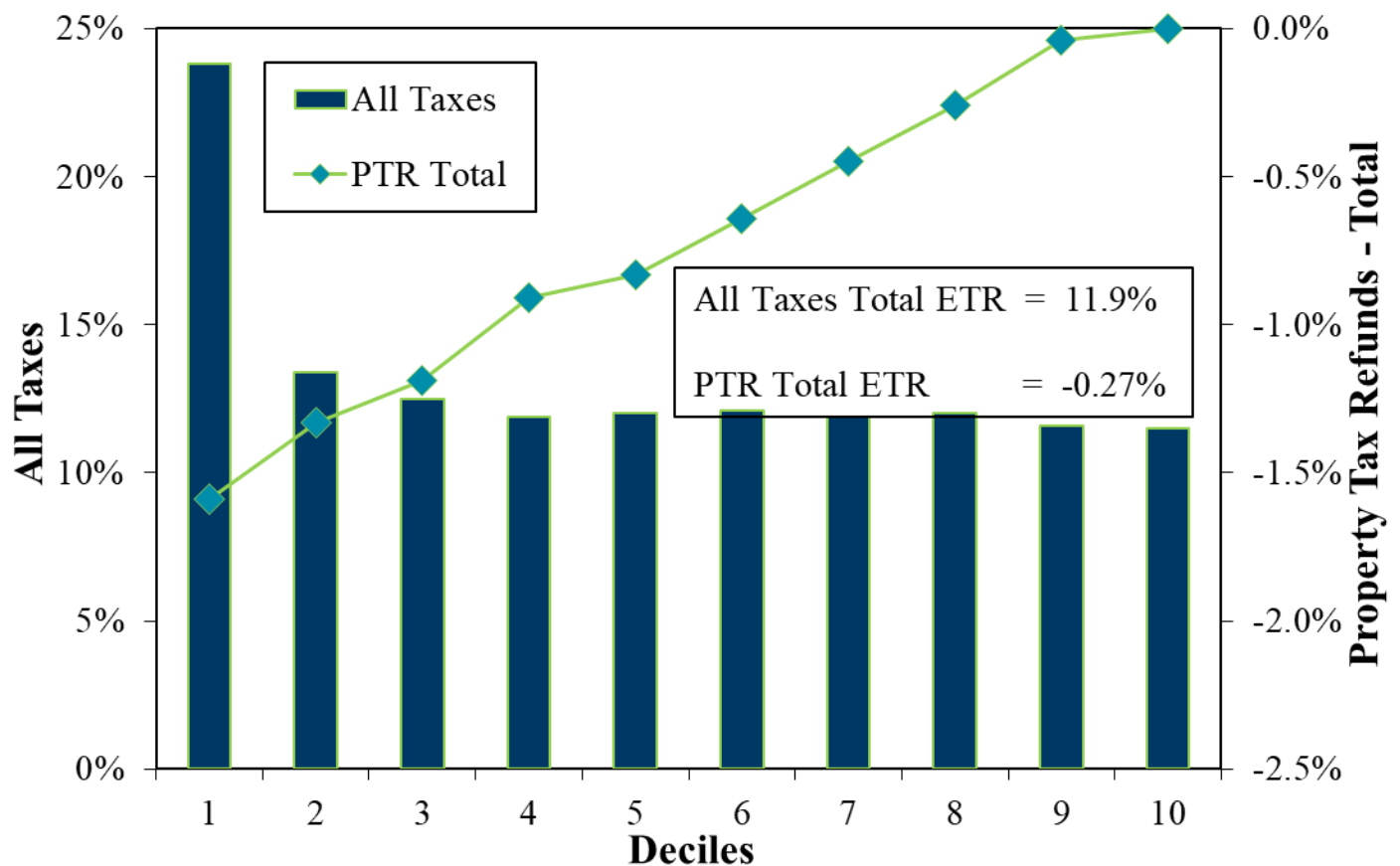
## 2021 Incidence Estimate for Total Property Tax Refunds

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
-\$802	-\$802	\$0	\$0	-\$802	\$0

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

### Effective Tax Rates, Population Decile



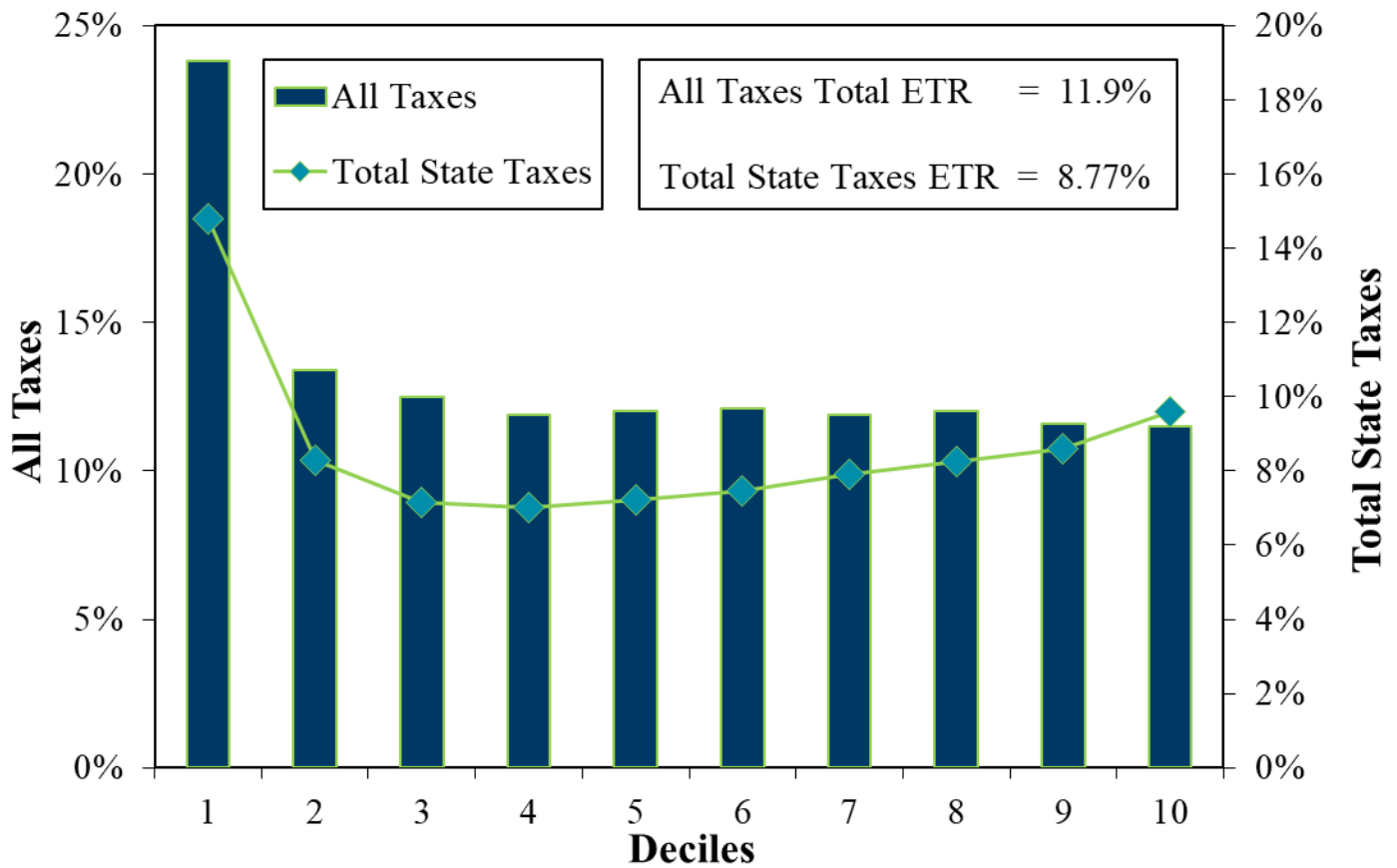
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
PTR Total	-1.59%	-1.33%	-1.19%	-0.91%	-0.83%	-0.64%	-0.45%	-0.26%	-0.04%	0.00%	0.00%	0.00%	0.00%	0.706

## 2021 Incidence Estimate for *Total State Taxes*

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$30,522	\$21,444	\$1,337	\$7,743	\$26,326	\$4,197

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Total State Taxes	14.80%	8.28%	7.15%	7.03%	7.22%	7.46%	7.90%	8.27%	8.61%	9.61%	8.82%	9.51%	10.10%	0.055

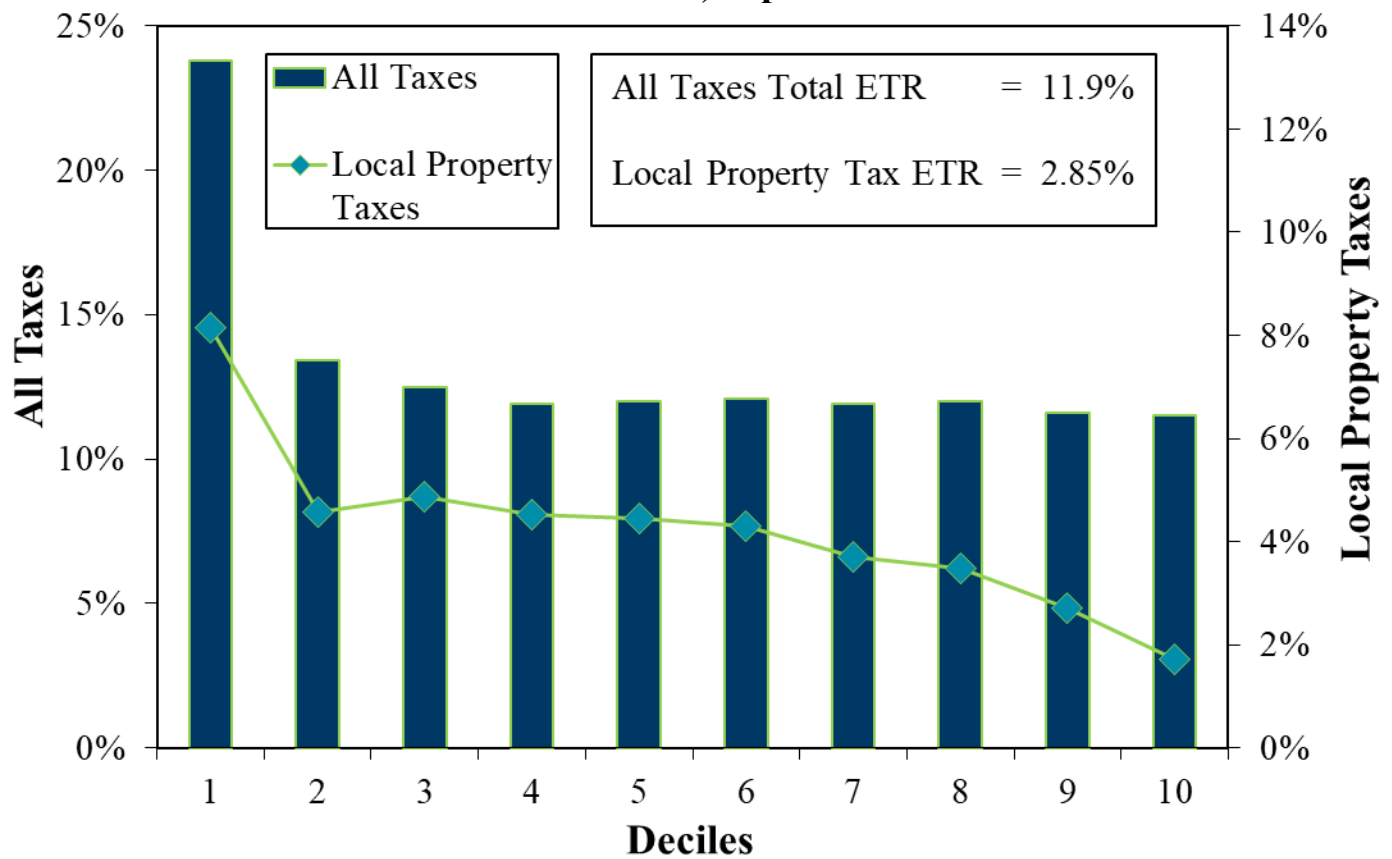


## 2021 Incidence Estimate for Local Property Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$10,351	\$5,407	\$78	\$4,866	\$8,547	\$1,803

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Local Property Taxes	8.14%	4.58%	4.86%	4.52%	4.46%	4.29%	3.71%	3.48%	2.71%	1.72%	2.14%	2.07%	1.20%	-0.249

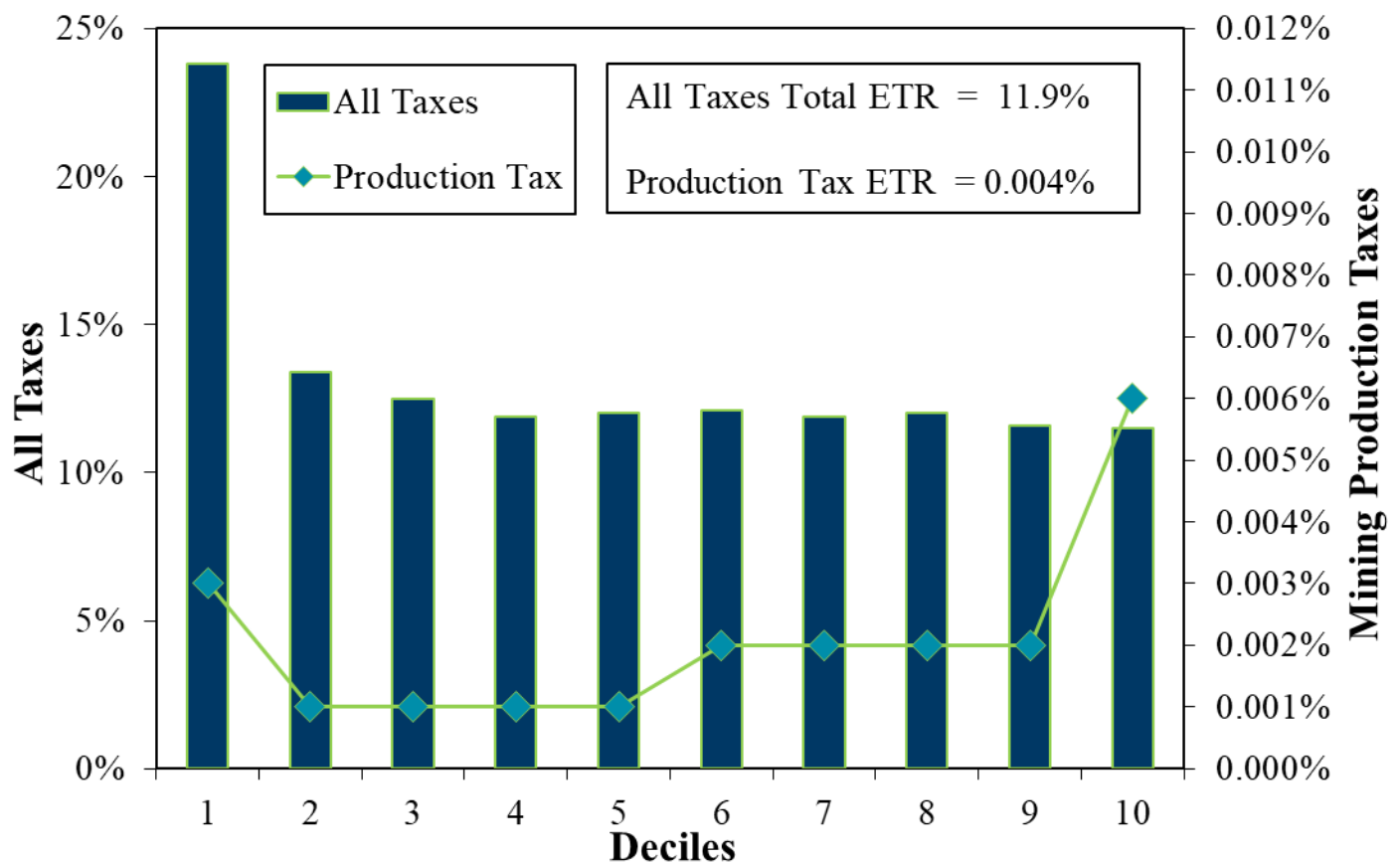
## 2021 Incidence Estimate for Mining Production Taxes (Taconite)

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$109	\$0	\$0	\$109	\$11	\$98

\*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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Production Tax	0.003%	0.001%	0.001%	0.001%	0.001%	0.002%	0.002%	0.002%	0.002%	0.006%	0.004%	0.005%	0.007%	0.318

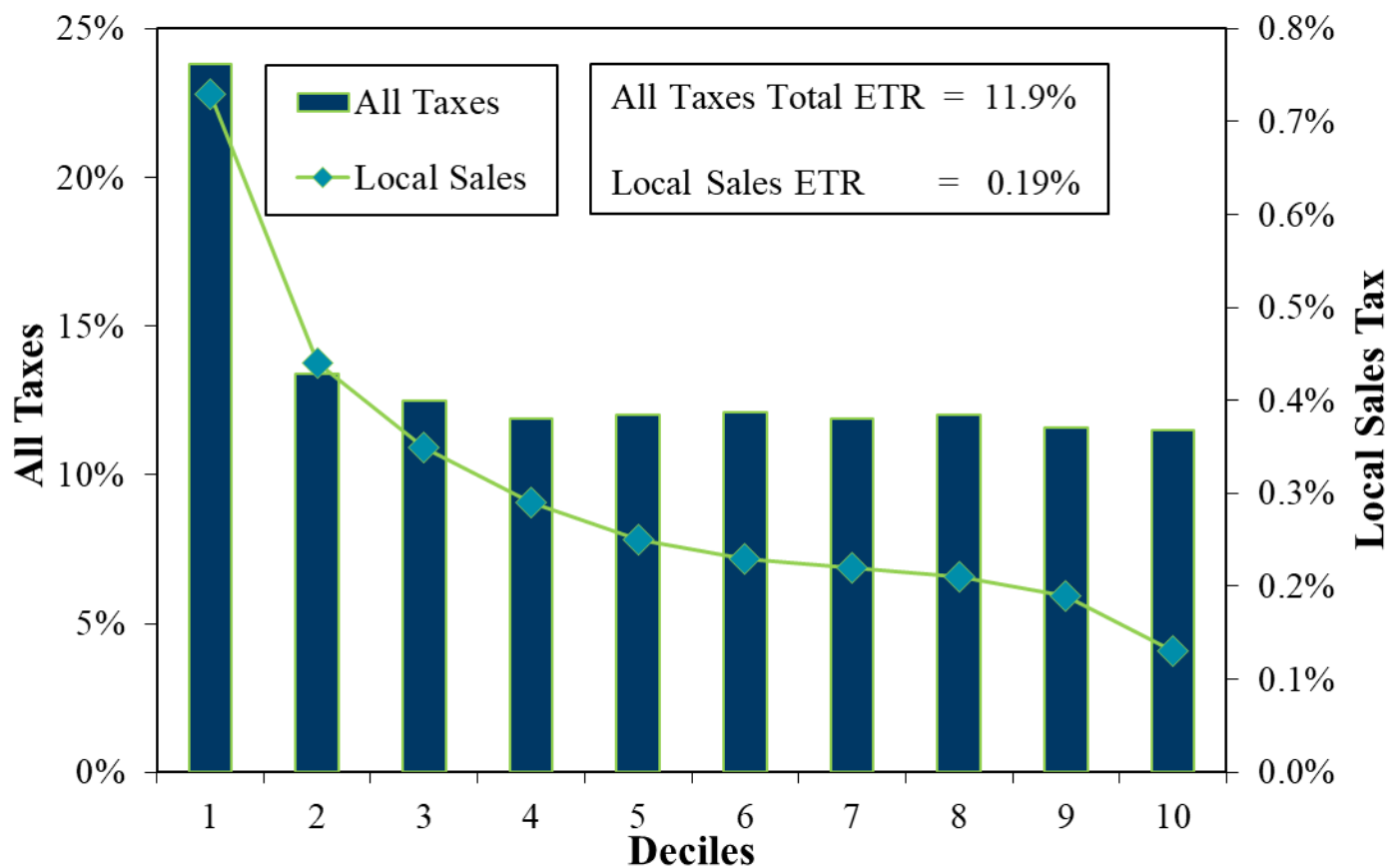
## 2021 Incidence Estimate for Local Sales Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$749	\$345	\$54	\$350	\$579	\$170

\*Shifting allocations: Direct = 60%, Consumers = 35%, Labor = 0%, Capital = 5%

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Local Sales	0.73%	0.44%	0.35%	0.29%	0.25%	0.23%	0.22%	0.21%	0.19%	0.13%	0.17%	0.15%	0.10%	-0.215

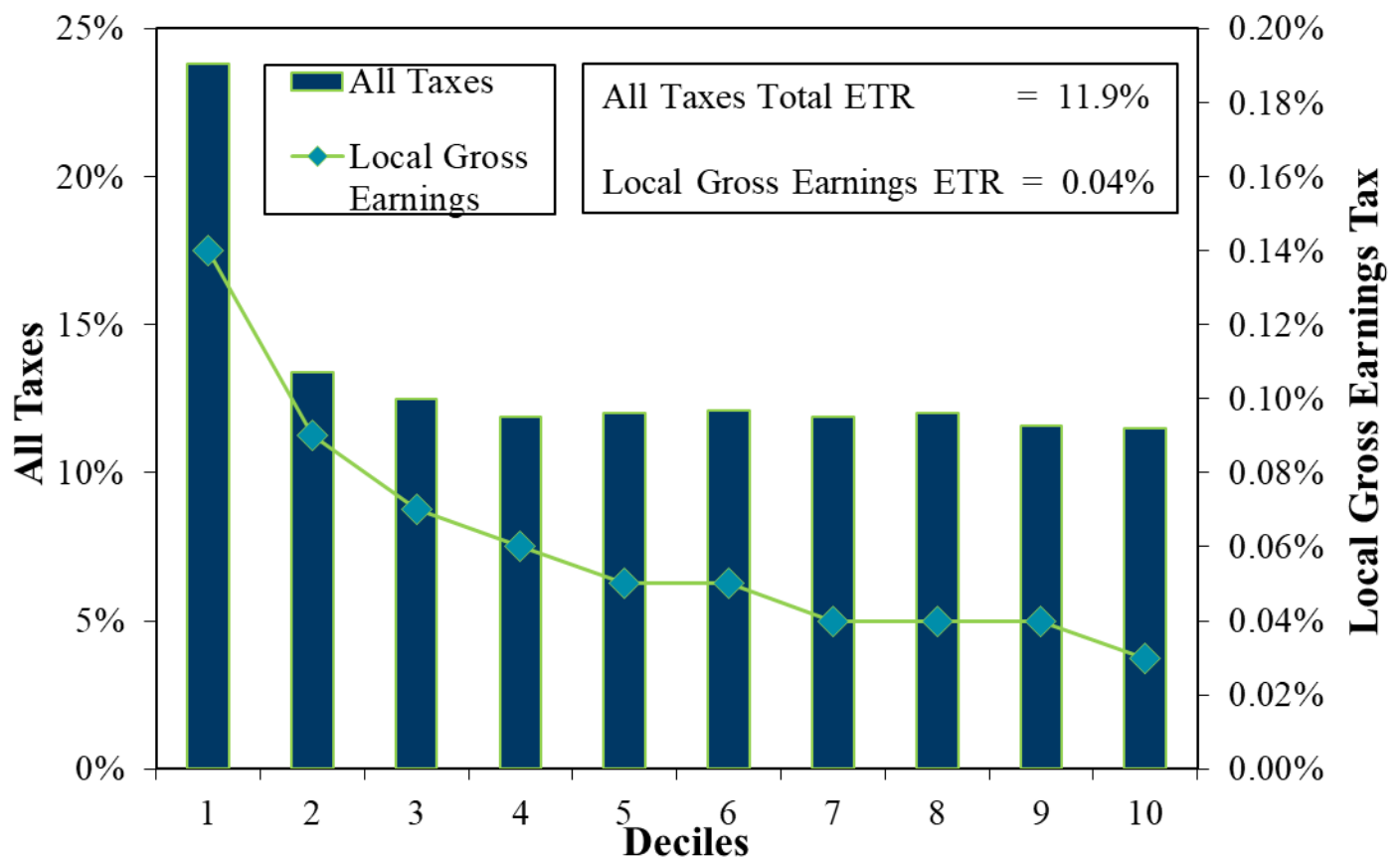
## 2021 Incidence Estimate for Local Gross Earning Taxes

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$186	\$0	\$0	\$186	\$114	\$72

\*Shifting allocations: Direct = 0%, Consumers = 91%, Labor = 5%, Capital = 4%

### Effective Tax Rates, Population Decile



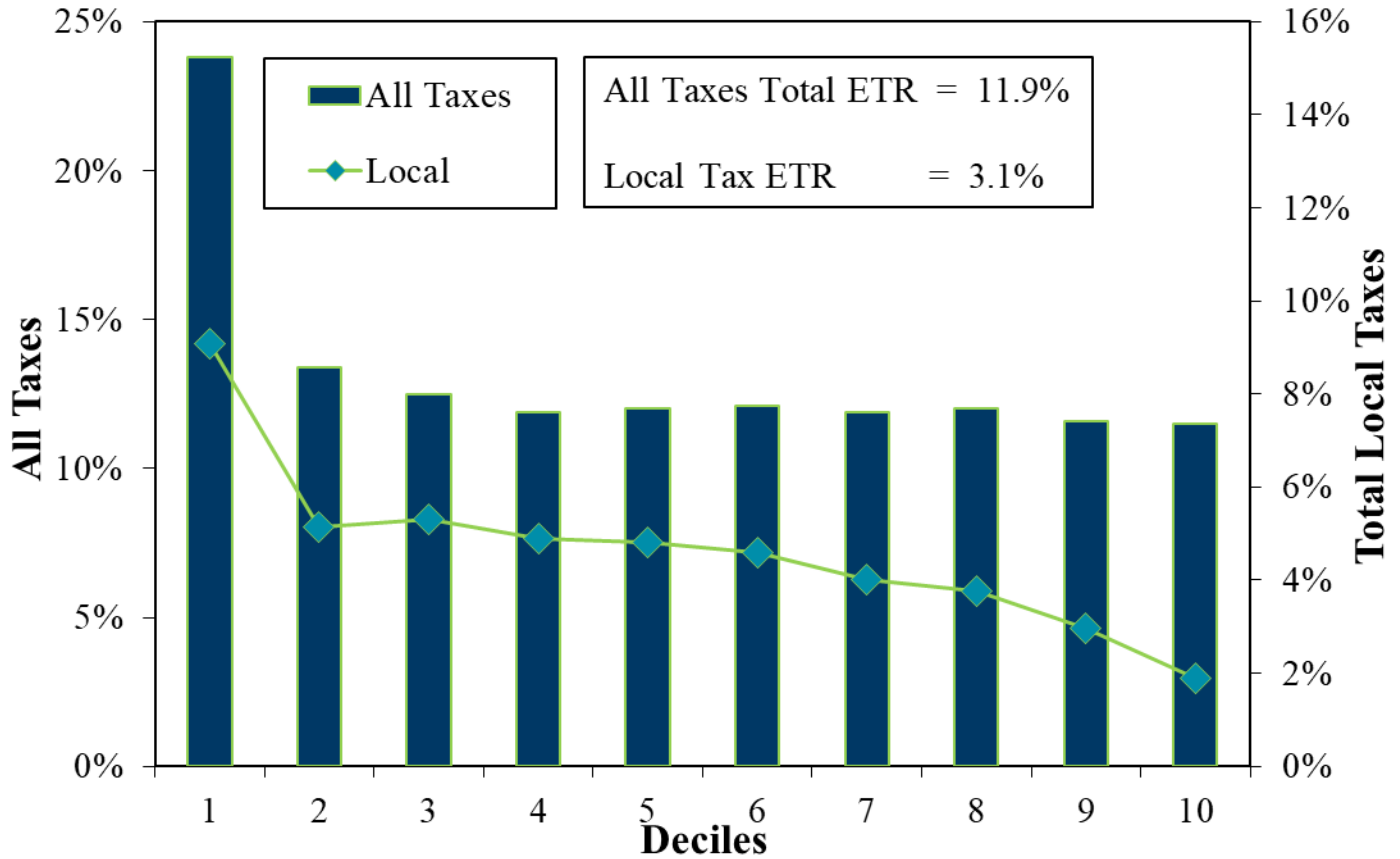
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Local Gross Earnings	0.14%	0.09%	0.07%	0.06%	0.05%	0.05%	0.04%	0.04%	0.04%	0.03%	0.03%	0.03%	0.02%	-0.232

## 2021 Incidence Estimate for ***Total Local Taxes***

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$11,455	\$5,806	\$132	\$5,517	\$9,309	\$2,145

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Local	9.08%	5.15%	5.32%	4.90%	4.80%	4.60%	4.00%	3.76%	2.96%	1.89%	2.37%	2.26%	1.33%	-0.247

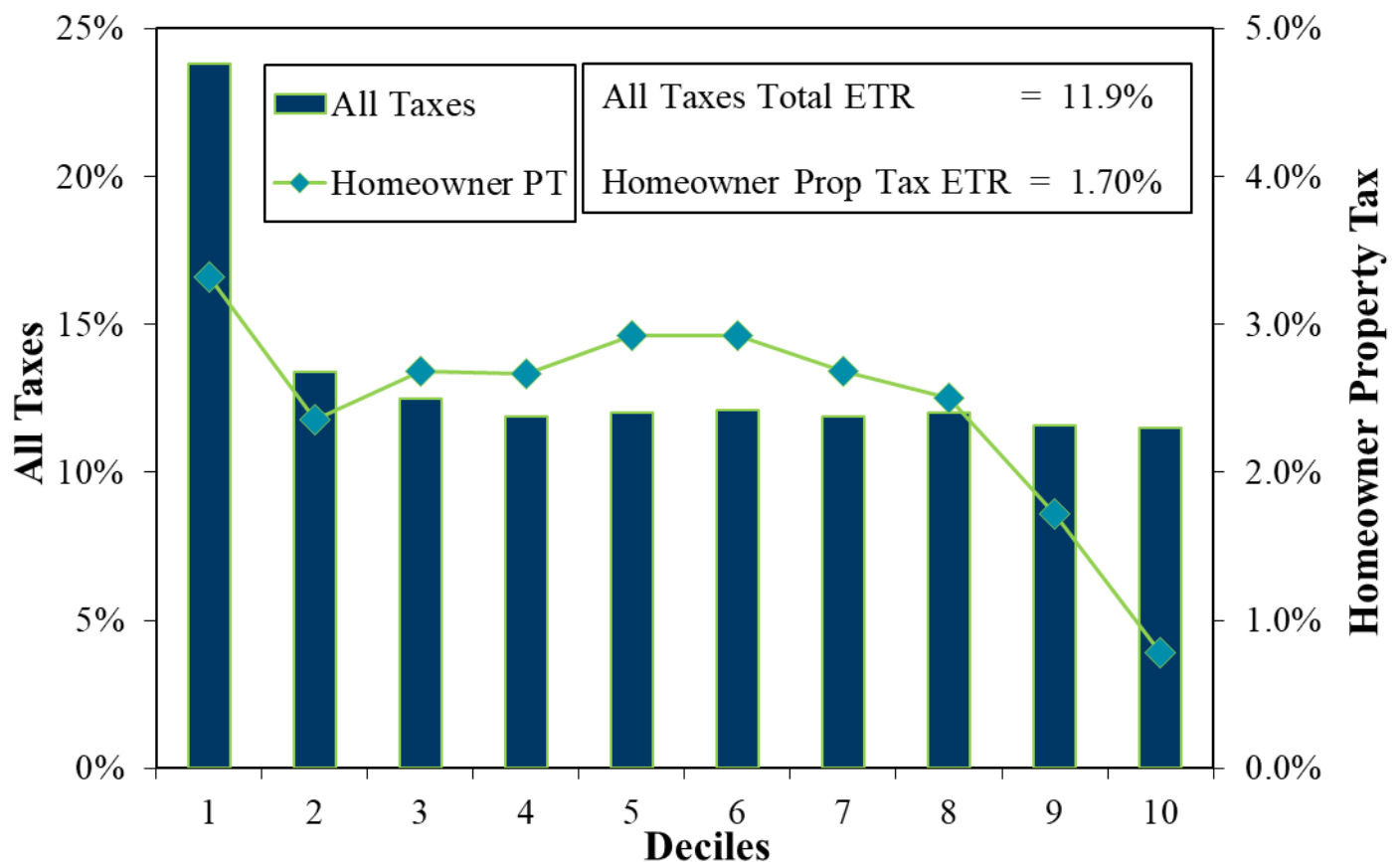
## 2021 Incidence Estimate for Homeowner Property Tax (Before PTR)

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$5,090	\$5,090	\$0	\$0	\$5,090	\$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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Homeowner PT	3.32%	2.36%	2.68%	2.67%	2.92%	2.92%	2.68%	2.50%	1.72%	0.78%	1.35%	0.98%	0.31%	-0.314

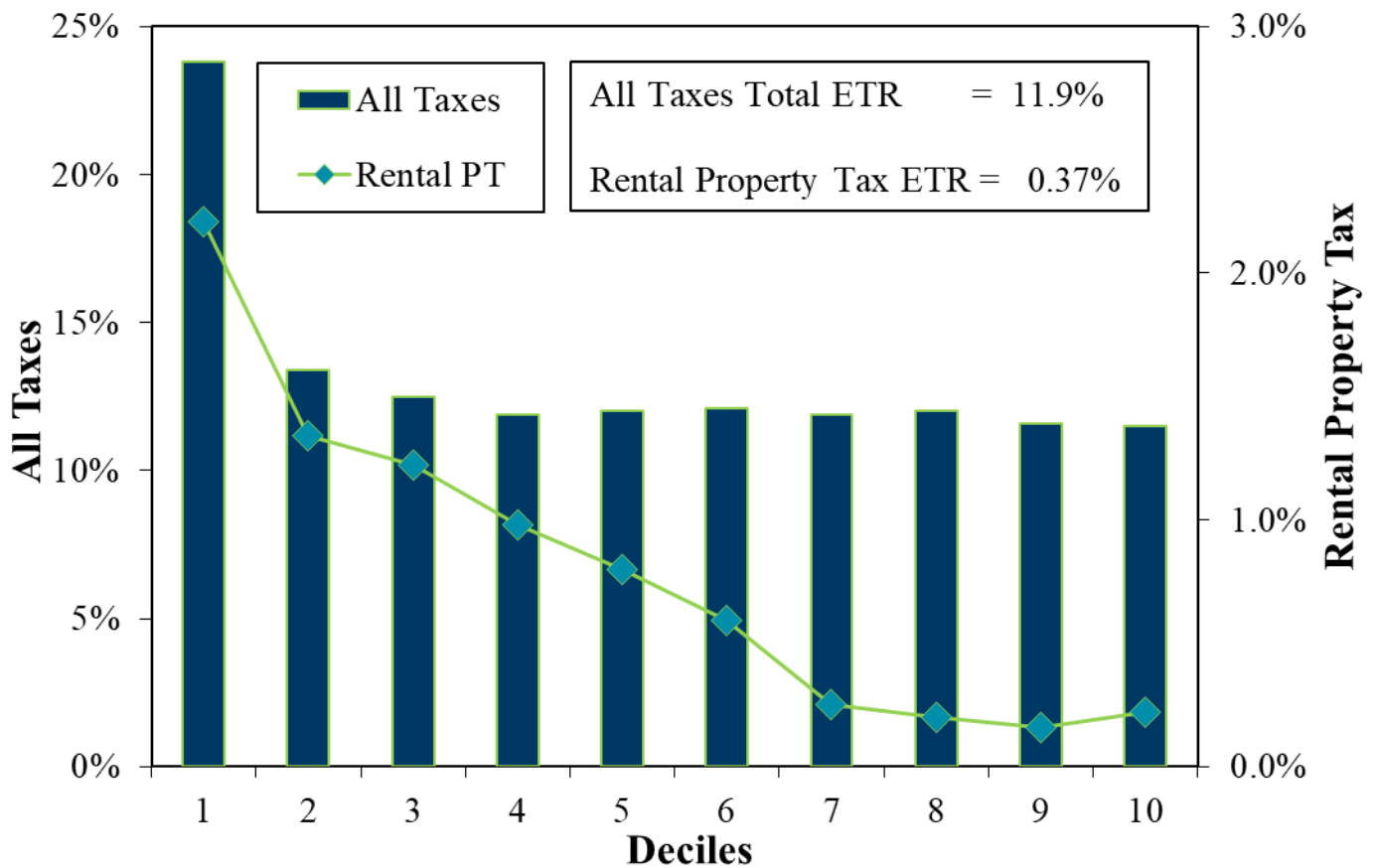
## 2021 Incidence Estimate for Rental Property Tax (Before PTR)

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$1,323	\$0	\$0	\$1,323	\$1,105	\$218

\*Shifting allocations: Direct = 0%, Consumers = 46%, Labor = 0%, Capital = 54%

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Rental PT	2.21%	1.34%	1.22%	0.98%	0.80%	0.59%	0.25%	0.20%	0.16%	0.22%	0.16%	0.21%	0.27%	-0.340

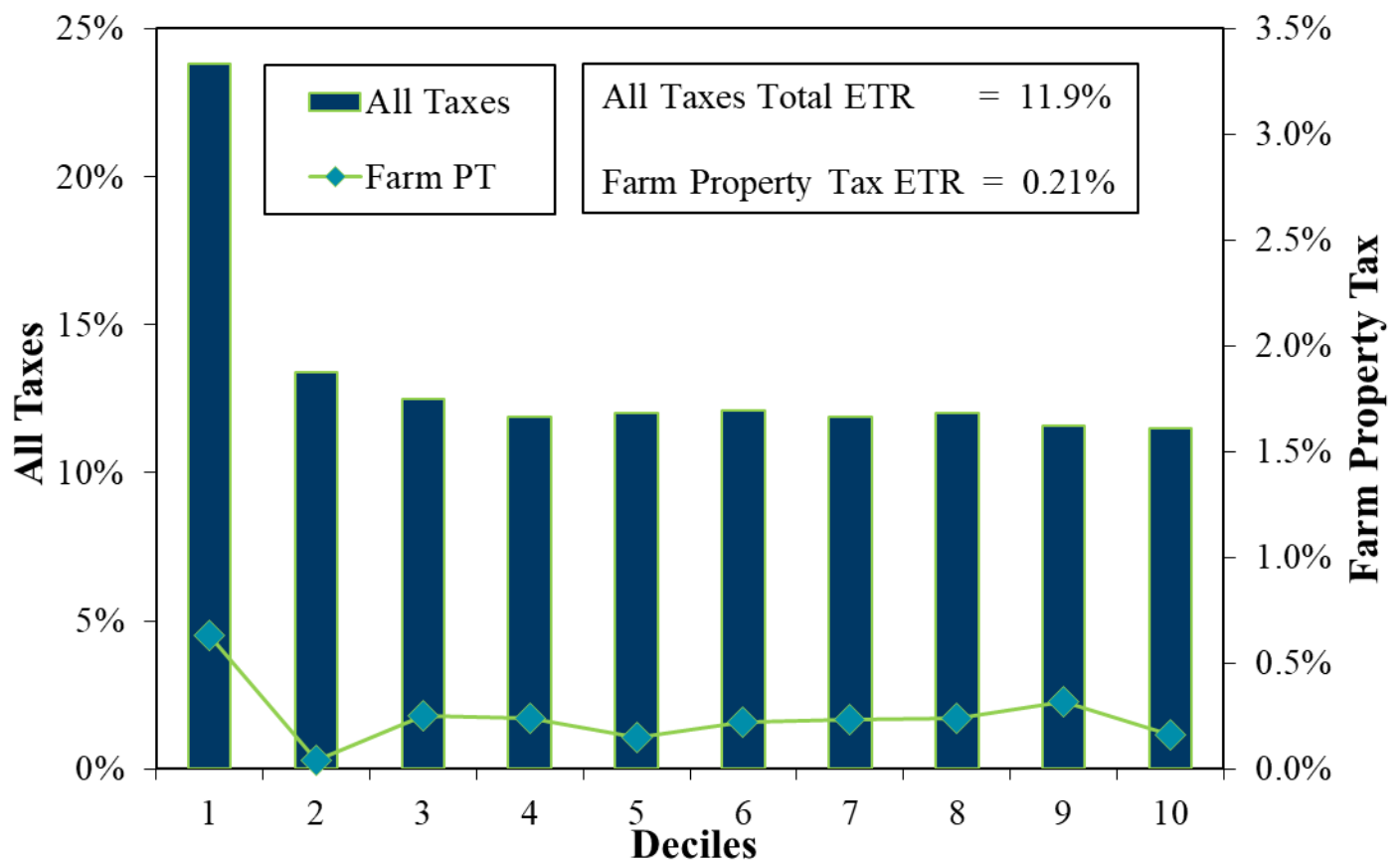
## 2021 Incidence Estimate for Farm Property Tax (other than residence)

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$635	\$0	\$0	\$635	\$635	\$0

\*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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Farm PT	0.63%	0.04%	0.25%	0.24%	0.15%	0.22%	0.23%	0.24%	0.32%	0.16%	0.10%	0.30%	0.08%	-0.106



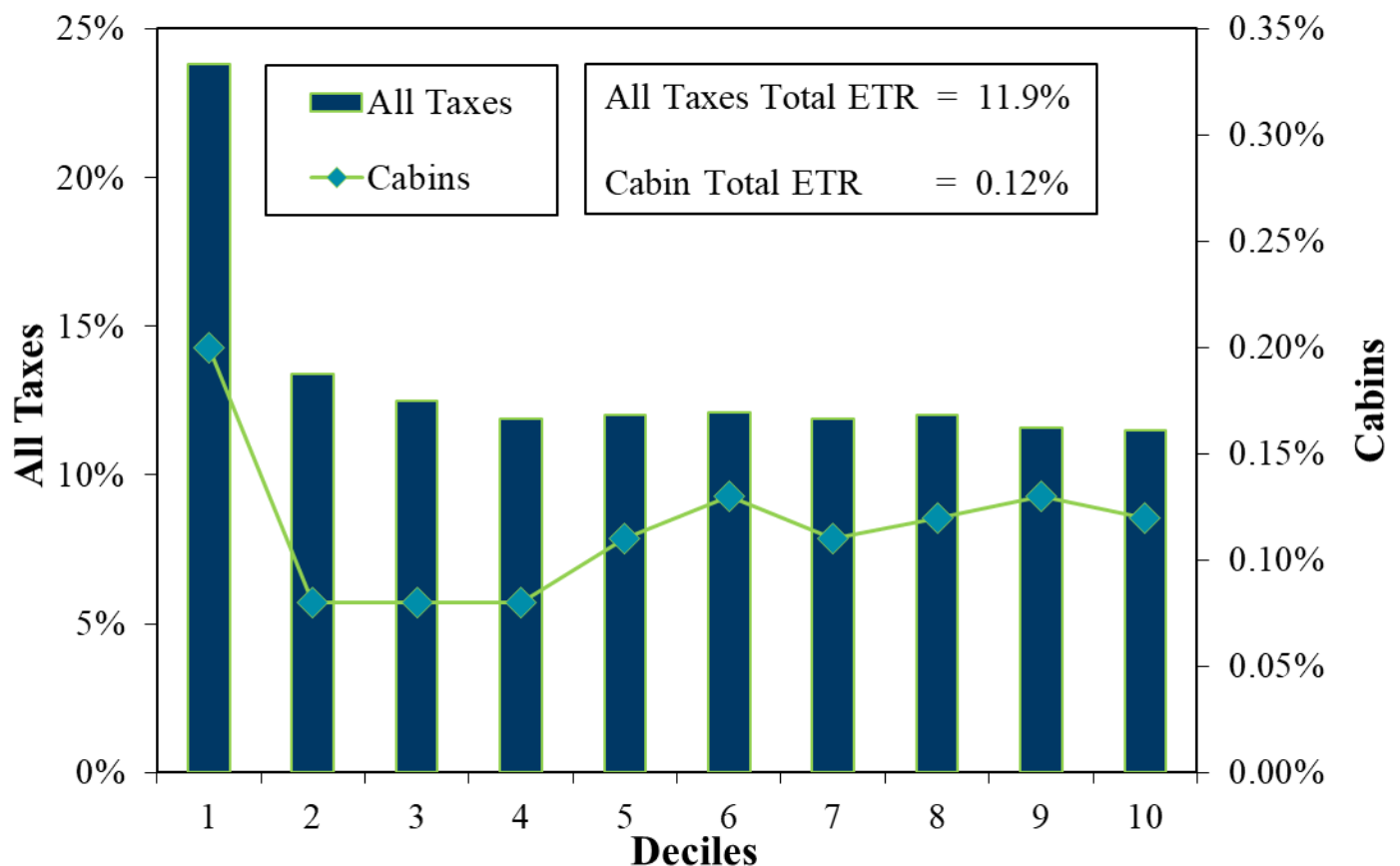
## 2021 Incidence Estimate for Cabins and Second Homes Property Tax (State and Local)<sup>1</sup>

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$436	\$350	\$86	\$0	\$350	\$86

\*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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Cabins	0.20%	0.08%	0.08%	0.08%	0.11%	0.13%	0.11%	0.12%	0.13%	0.12%	0.15%	0.15%	0.08%	-0.019

<sup>1</sup>Includes Seasonal Recreation Property Tax (\$263 million) and 20% of Residential Non-Homestead Property Tax (\$135 million).

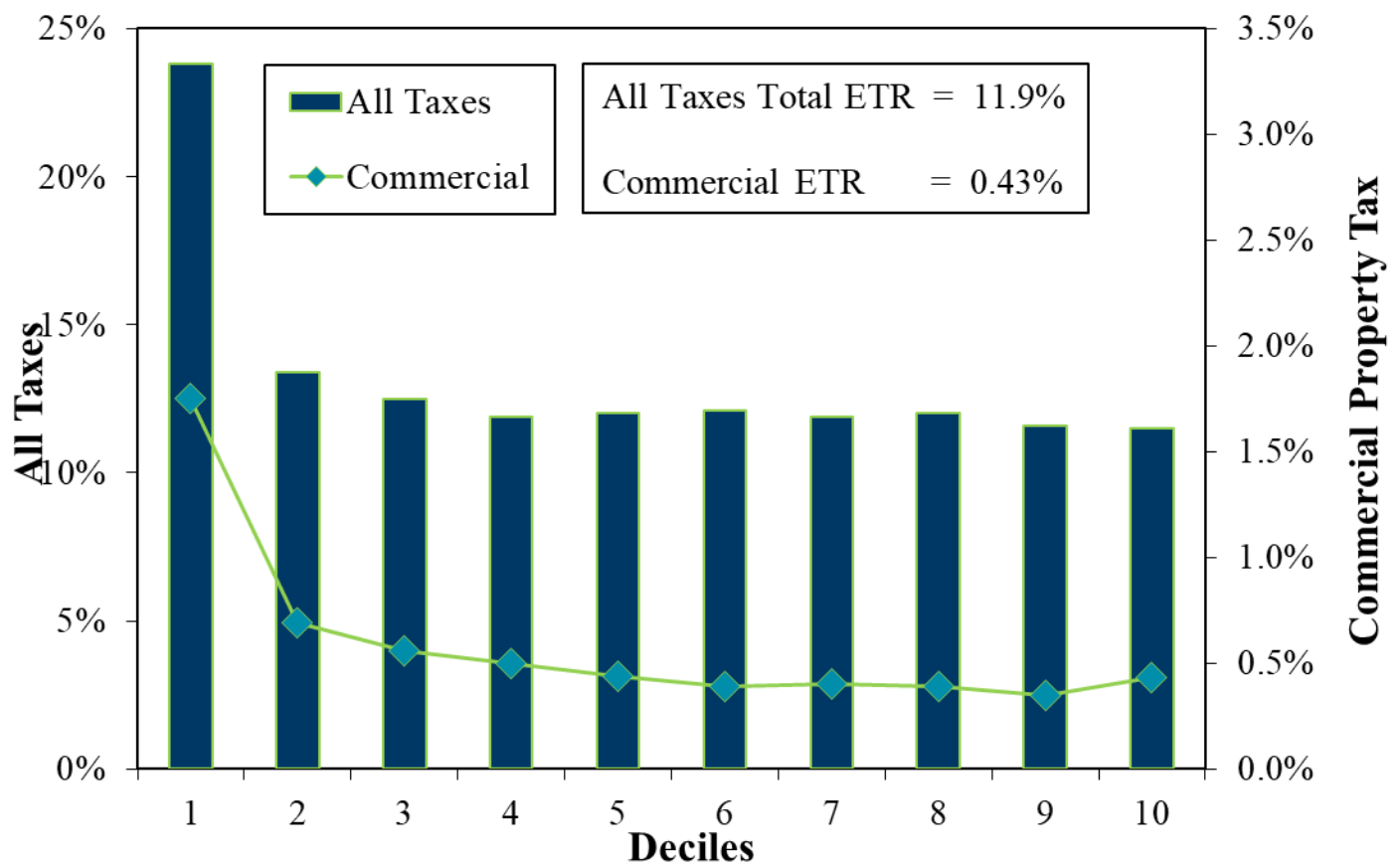
## 2021 Incidence Estimate for Commercial Property Tax (State and Local)

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$2,287	\$0	\$0	\$2,287	\$1,301	\$986

\*Shifting allocations: Direct = 0%, Consumers = 57%, Labor = 4%, Capital = 39%

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Commercial	1.75%	0.69%	0.56%	0.50%	0.44%	0.39%	0.40%	0.39%	0.35%	0.43%	0.36%	0.42%	0.47%	-0.038

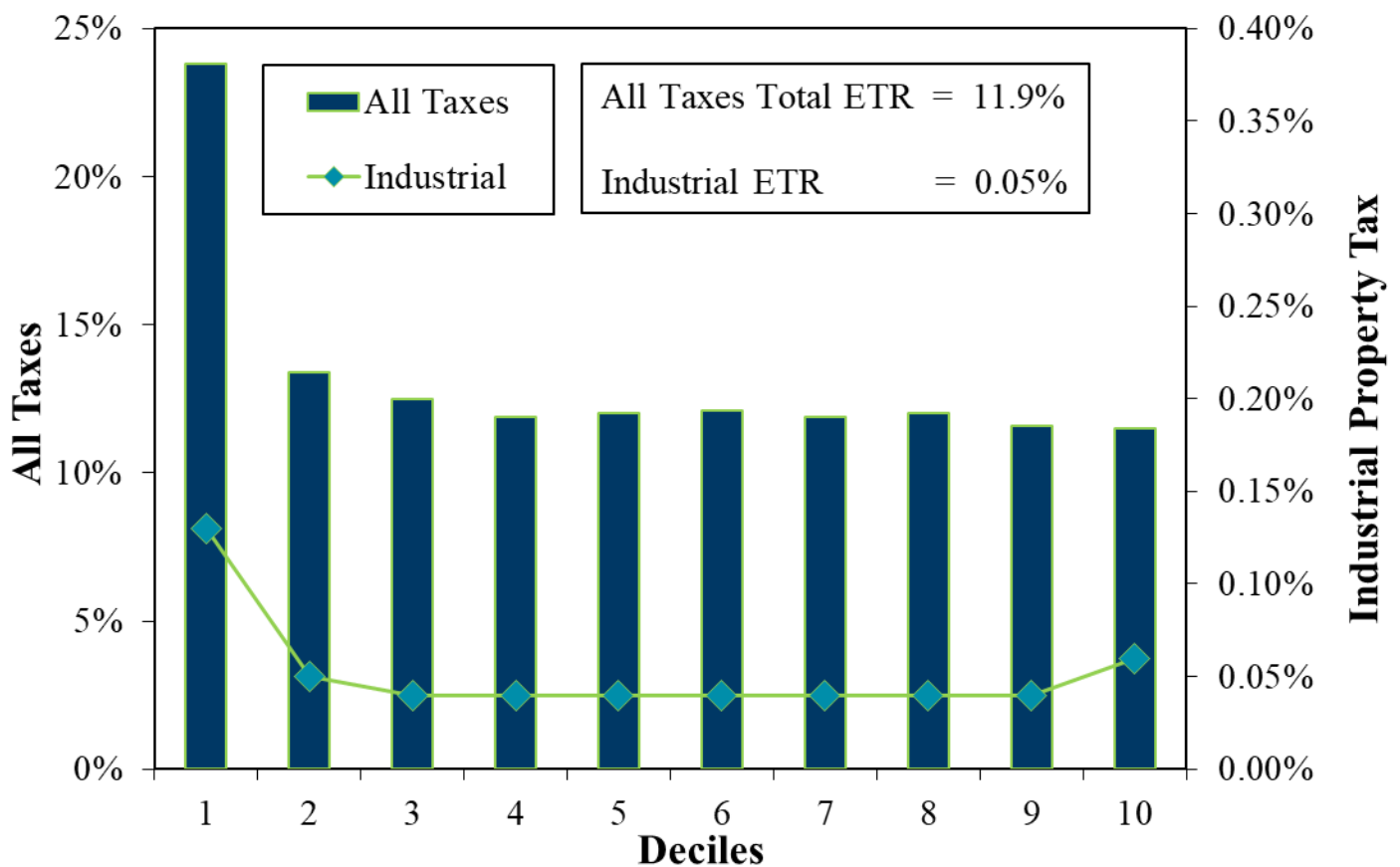
## 2021 Incidence Estimate for Industrial Property Tax (State and Local)<sup>1</sup>

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$853	\$0	\$0	\$853	\$142	\$712

\*Shifting allocations: Direct = 0%, Consumers = 33%, Labor = 11%, Capital = 55%

### 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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Industrial	0.13%	0.05%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.06%	0.04%	0.05%	0.06%	0.084

<sup>1</sup>An error in the 2016 model understated the progressivity of the industrial property tax. Minnesota's taxes on industrial property have been moving closer to the national average, reducing Minnesota's differential and making the tax more progressive.

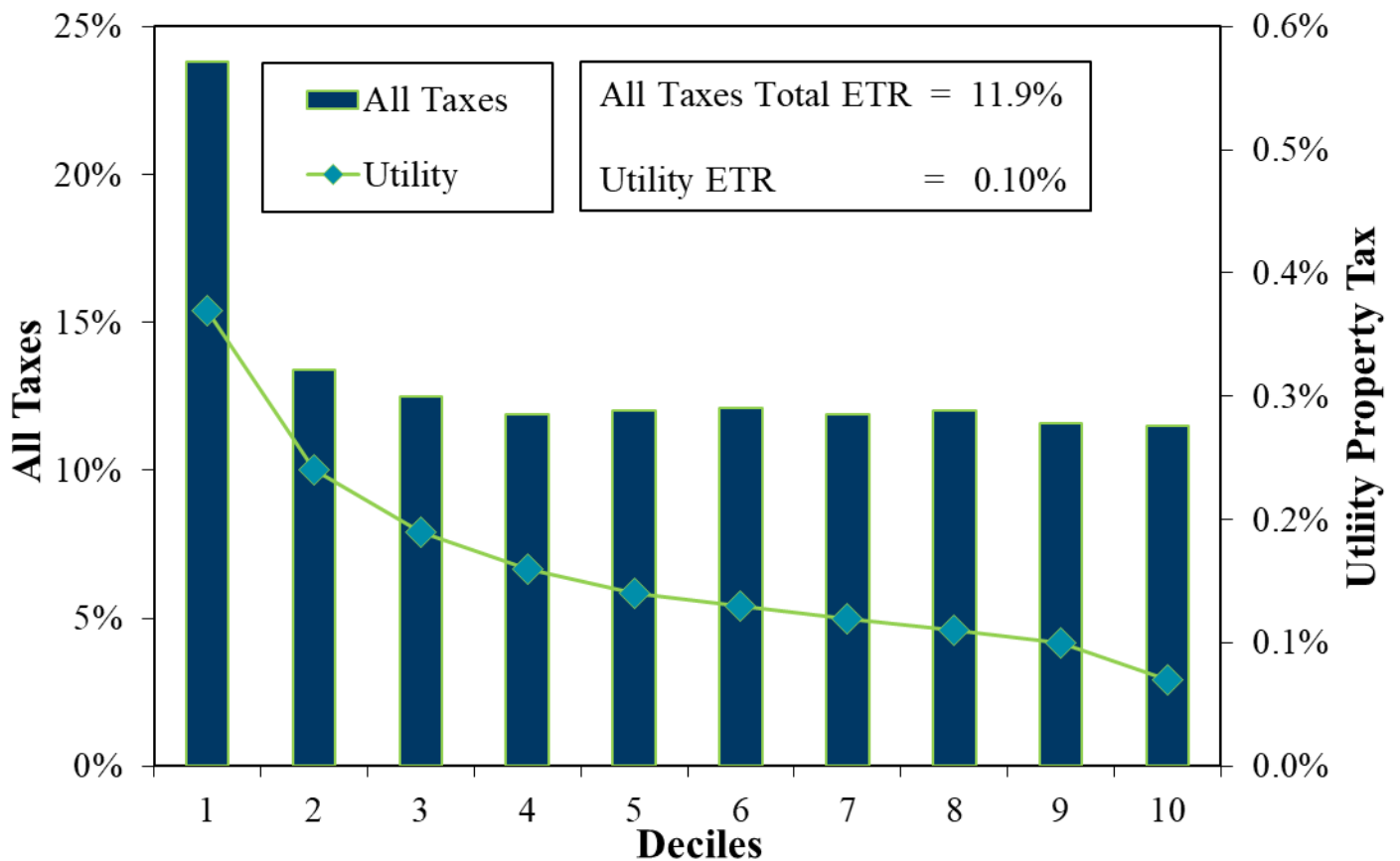
## 2021 Incidence Estimate for Utility Property Tax (State and Local)

### Tax Collection Amounts 2021 (\$ Millions)

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$504	\$0	\$0	\$504	\$309	\$194

\*Shifting allocations: Direct = 0%, Consumers = 91%, Labor = 5%, Capital = 4%

### Effective Tax Rates, Population Decile



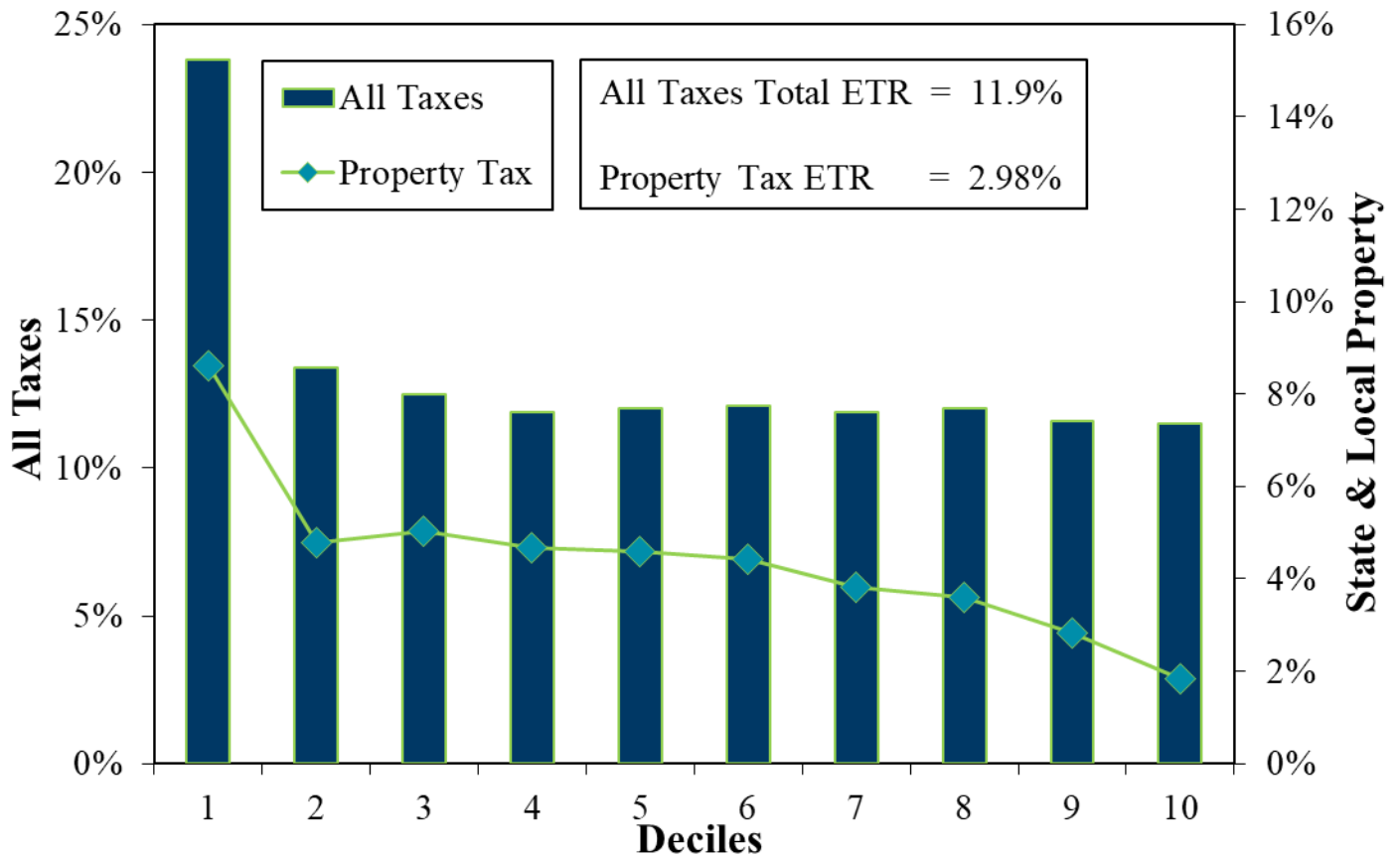
Deciles	1	2	3	4	5	6	7	8	9	10	91%-95%	96%-99%	Top 1%	Suits Index
All Taxes	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Utility	0.37%	0.24%	0.19%	0.16%	0.14%	0.13%	0.12%	0.11%	0.10%	0.07%	0.09%	0.08%	0.05%	-0.232

# **2021 Incidence Estimate for** ***Total State and Local Property Tax (Before PTR)***

## **Tax Collection Amounts 2021** **(\$ Millions)**

Total	As Imposed			After Shifting	
	MN HH's	NR	Business	Minnesota*	Exported
\$11,128	\$5,440	\$86	\$5,602	\$8,932	\$2,196

## **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	23.80%	13.40%	12.50%	11.90%	12.00%	12.10%	11.90%	12.00%	11.60%	11.50%	11.20%	11.80%	11.50%	-0.024
Property Tax	8.61%	4.79%	5.03%	4.67%	4.60%	4.42%	3.83%	3.60%	2.82%	1.83%	2.26%	2.19%	1.32%	-0.241

## 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 10<sup>th</sup> 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 10<sup>th</sup> 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. 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 1<sup>st</sup> 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, some or all of the incidence may be 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.** (a) The commissioner shall report to the legislature on the overall incidence of the income tax, sales and excise taxes, and property tax.

(b) The commissioner must submit the report:

(1) by March 1, 2021; and

(2) by March 1, 2024, and each even-numbered year thereafter.

(c) 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.

(d) The commissioner may request information from any state officer or agency to assist in carrying out this section. The state officer or agency shall provide the data requested to the extent permitted by law.

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

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

**History:** 2005 c 151 art 1 s 15; 1Sp2011 c 7 art 10 s 1; 2013 c 3 s 2; 1Sp2021 c 14 art 11 s 17; 2023 c 64 art 18 s 2